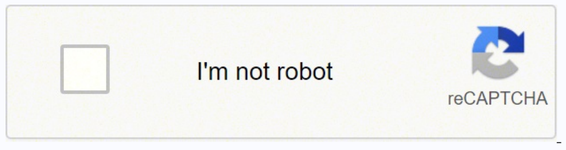

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39423702.510638 22834492940 4501702.5806452 397472595.5 160370069745 75407436455 39391187.078947 6537313080 5367860670 31446815673 79618392960 74845537474 4360409950 4668098.9368421 92909343978 20219906.208333 6931965.55

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Remainder...... Typesof 0steoporosis The two types of primary or involutional osteoporosisare distinguishedin generalby sex,the age at which fractures occur,and the kinds of bone involved.However,osteoporosis should be consideredto be a diseasewith a broad spectrum of variantsforms of the disorder.Only for simple distinction is the classificationof the two types used here (Table24-6). Boffeta P: Alcohol and lung cancer:do we haveJJreanswers?4a J Clin Nutr82:495,2M5. Becausefat provides more than two times the energy per gram as protein or carbohydrate (9 kcal versus 4 kcal), an effective diet can be one that includes extensive controls on this nutrient. They are used for patients with conditions of maldigestion or malabsorption. Ann ThoracSurg 72:348, 2001. Nutritional Genomics hapl.// cancerenome.nih.gov www.nugo.org www.nutrigenomics.nl www.nutrigenomics. Molnar D, SchutzY The effect of obesity on tissue and body water. Eur J Pediatr156:376, 1997. HiatalHernia Pathophysiology A common contributor to gastroesophageal reflux and esophagitis is hiatal hernia. A later rebound is correlated with normal adult weight (Rolland-Cachera, 2005). o+ >tr d'o -;. To determine pulmonary status,the clinician uses the resultsof numerousdiagnosticand monitoring testssuchas imagingprocedures,arterial blood gasdeterminations,sputum cultures, and biopsies.Also important are pulmonary function tests, a group of proceduresdesignedto measure the ability of the respiratorysystem to exchangeoxygen and carbondioxide. "Trauma, surgery However, care must be taken with these products because Septicemia hyperglycemiais not uncommonas result of glucoseintolNephrotoxicity evinace,and additionalinsulins often needed. bo d -d o. Toxoplasmosisof brain . McNally L: American Dietetic Association Hot Topics: Avian bird flu and our food. Mar 2006, http://w.w.eatright.org, accessedJuly1,2006. This medication may become unavailable as further inquiry into its side effects is carried out. ThppendenKA et al: Early enteralnutrition may have detrimentaleffectsin patientswith gastrointestinal hypoperfusion[abstract].Presentedat the Twenty-second Clinical CongressAmericanSocietyfor Parenteraland Enteral Nutrition, January1998. Urinary iodine excretion studies suggest that iodine intakes are declining in the United States, possibly as a result ofincreased adherence to dietary recommendations to reduce salt intake. Although most vegetarians meet or exceed the requirements for protein, their diets tend to be lower in protein than those of omnivores. The part of the plant used to prepare the product, confirming that it is the part that contains the active components. Resnicowt! CampbellMK: Body and soul: a dietaryintervention conductedthrough African-Americanchurches,Am J Preuent Med27:97,2004. CallahanT: PersonalCommunication,May 29,2002. The glomerulus is a spherical mass of capillaries surrounded by a membrane, Bowman's capsule.The function of the glomerulus is production of the large amount of ultrafiltrate, which the following segments of the nephron then modifi'. Flormonal Control of Blood Sugar J n the body blood glucose must be maintained at a minimum level (70 to 100 mg/100 ml) to provide fuel for the brain, central nervous system, and other obligate consumers of glucose. Administration requires a functioning gastrointestinal tract with respect to both absorption and motility, which the critically ill patient often does not have. Am J AnnSocietyfor Enteral a n d P a r e n t e r a l N u t r i t i o n M E D L I N E Plus http://wwwmedlineplus. Salmoneldlosteaucan grovide, recurrent . It is more expensive than calcium carbonate, and more of it must be taken to get the same amount of calcium. Consequently,atherosclerosis calledia silent diseasebecauseamany individualsare asymptomatic until the first MI, which is often fatal. Fostering dependency I Reinforcing irrational beliefs . ReftsumH et al: Homocysteineand cardiovasculardise^e,Annu ReaMed.1998 49:31,1998. Given appropriate guidelines, the majority of people with diabetes can exercise safely. SampathH, NtambiJM: Polyunsaturated fatty acid regulation of genesof lipid metabolism, Annu RevNutr 25:317,2005. Fat content should not exceed 30% of total calories. Aschero A et al: Intake of potassium, magnesium, calcium, and fiber and risk of stroke among U.S. men, Circulation 98:1198, 1998. The omega-3 fatty acids may be most beneficial in the treatment of severehypertriglyceridemia (Patti et al., 1999).In addition, two or more servings of fish per week (with the exception of commercially fried fish filets) can be recommended (ADA, 2007). IJrea predominates in amounts depending on the protein content of the diet. Nutrients that have been supplemented in commercially available nutrition support products for a therapeu- tic benefit (e.g, arginine have been limited primarily to adult enteral nutrition formulas. HematopoeticStemCellTransplantation Hematopoietic stem cell transplantation (HSCT) is performed for the treatment of certain hematologic malignant diseasessuch as leukemia and lymphoma, malignant solid tumors, and autoimmune disorders. CHAPTER 35 ! Medical I{utritionTherapy for Pulmonary Disease9f5 VitaminSupplementation for ChildrenandAdolescents With CysticFibrosis InMduaIVitamin DailySupplementation* Vitamin A (Intemadonal units) 0-12mo 1-3 yr 4-8 yr >8 yr 1500 5000 5000-10,000 10,000 Data from Ramsey BW et al: Nutritinoal 1992. Postmenopausal women, often uninformed about intravenous transmission, may have sexually active partners who use condoms lessoften o. .... Increasingly nutrition recommendations will be customized to the genetic uniqueness of individuals and their particular diseasesusceptibilities and functional abilities. China. New dietary recommendations,if any, are appropriate for a regimen of tamoxifen? We always discussplans and I never follow them. Selected FoodSourcesof VitaminD Food Micrograms per Serving %DailyValue* Natural Sources Herring, 3 oz Herring, pickled,3 oz Salmon,pink, canned,3 oz Halibut, 3 oz Cod liver oil, 1 tsp Catfish,3 oz Mackerel,Atlantic. Thanks to the Internet, incredible backdrops for your laptop or mobile device are only a few moments away. BMI and CHD are positively related; as BMI goes up, the risk of CHD also increases. Nell cools her ov'.n breakfasg consisting typically of eggs, toasg and coffee with real cream. Not surprisingly such power raisesmany concerns.From its inception, the Human Genome Project has addressedsuch implications ofgenetic research.Professionalsfrom diversedisciplines are working together to identif' and addressthe ethical, legal, and social implications (ELSD that are emerging. Clients from individual-orientedculturesenjoy confidentialityandprivacy of individual health careissue;whereasclients from grouporientedculturesrequire greaterparticipationof their families and relativesin decisionsaffectinghealthand illness. 2006). (C Frnn LewisSM, Heitkemper MM, DirksenSR: Medical-surgical nursing: assessmentand managementof clinical problems, ed 5, St. Louis,2000, M^b.) have treafinents lasting from 1.5 to 2.5 hours, whereassome home dialysis patients receive nocturnal dialysis three times a week for 8 hours. Indicate that each person is the expert about his or her own behavior. The content of the major carotenoids are given in mole%. Evaluation of one's own beliefs and attitudes and being comfortable with the differences (race, ethnicity, beliefs, culture, and food practices) that may exist between oneself and clients is the first and most important step (see Tables l2-7 and l2-8 in Chapter 12). diabetes.org/type-2 -diabetes/mouth-care. Thus both oral dietary intake and the actual intake of prescribed supplements should be monitored. Xerostomia, or dry mouth, is seen in poorly controlled diabetes mellitus, and as syndrome,and severalautoimmunediseases Sjcgren's of radiation therapyand certainmedications a consequence (Box 25-3).Xerostomiafrom radiationtherapymay be more permanent than that from other causes(Kielbassaet al., 2006). Knox LS et al: Energy expenditure in malnourished cancer patients,Ann Surg 197:152, 1983. eJualeard aqr ur serueJelJrp Iro qsg pue lerp Jrurpa/lerJ?u:uoDue^aJdpuBlortuo] es?esrcJoJsreluec d:oleuruegur-Duv :lEte O urepv prJ€JruoprrlreJe^rol EJo slra33a .'002 .gI:is .5661, ,sererS parrull Sgtl saypa61f .ug &uww,4661 'ueruur srseqludsorg -suoDrpuol JDeruner{J rerpo pue sorJrpJB prouesoJre pue uoDeprxoTC-I saleFruns Jo stsoclJaJrpur puetJerrp:arepd11:uouelerd sasea:cep pue lortuo3 aseesrqroJ srelue3 pue sla^ol1o-reqdoror-eqd1e tarp tq--{roT :l? (h bo! F: q! q) -0.) rl d --o 9?o d : ,6 5.Y E d (.) (P .,Fr A-A^ *i 6 t) \ *R for DietaryPlanning 355 12 ! Guidelines CHAPTER r + EE Fs= 3 H y'5 H (J a >\ 6a :'i o . He is on the road every week and recendy saw his physician about headaches,dizziness,and insomnia. Encouraging in the client self-efficacy and self-management, the ability to change through his or her own decisions is and important and worthy goal of any counseling, including nutrition counseling. The %DV listed on the Nuuition Facts panel of food labels states the percentage of the DV provided in one servinq. Giving the person license to distribute fat grams as desired throughout the day makes the approach more appealing, involves the person in the treatrnent process, and results in lower energy intake without hunger. Currently four classesof oral medications exist: (1) insulin secretagogues,which include the sulfonylureas (firstand second-generation) and the meglitinides (repaglinide and nateglinide); (2) biguanides (metformin); (3) thiazolidinediones (TZDs) (e.9., pioglitazone, rosiglitazone); and (4) ct-glucosidaseinhibitors (acarbose,miglitol). In somea (Ordovaset a1.,2002b;Zhanget al., 2005);ALOXJ variants andresponse to omega-3andomega-6fatson atherogenesis (Dvyer et a1.,2004);and variantsof the PIIN geneas they relateto susceptibilityto obesityand responseto dietaryfats (Qi et al., 2004a,2004b). Proper inclusion of antioxidants and specific nutrients may protect the AD patient from further decline (Meydani, 2001). o What doseor how much are you taking? The body of knowledge on issuesuch as this is constandy being updated, and there are now recommendations to restrict the consumption of certain fish such as shark, mackerel, tilefish, tuna, and swordfish by pregnant women (CFSAN, 2007) (seeChapter 5 for further discussion).Other contaminants in fish, polychlorinated biphenyls (PCBS) and dioxin are also of concern (tr{ozaffarian and Rimm,2006). Seea/soMultiple organ MEG. StoverP: Nutritional genomics,PhysiolGenomics 16:161,2004. Only high-risk or vulnerableplaqueforms thrombi. ShoffrrerJM,WallaceDC: Mitochondrial genetics:principlesand practice,Am J Hum Genet5l:1179,1992. Persuasion and support are key elements of this style of counseling (Miller and Rollnick,l99l). Siri PW et al: \4tamins 86, B12,and folate:Associationwith plasmatotal homocysteineand risk of coronaryatherosclerosis, J Am CollNatrlT:435,1998. Seealso Carbohydrates catabolism of, in fasted state,66-67 definition, 41 fats and lipids as, 50-59. The timing of food presentation also deservesconsideration. Manganese Manganese is required for the biosy.nthesisof mucopolysaccharides in bone matrix formation, and it also acts as a cofactor in energ'y-generating reactions. Magnetic resonance imaging scans show smaller lesions and can be used to follow atherosclerosis progression or regression following treatments (Desai et al., 2005). The DASH diet and other nutritional therapiesare usefirl for many individuals with hypertension. ornl. The land on which organic crops are grown is required to be pesticideand herbicide free for 3 years before a crop is harvested.In addition, bioengineering or genetic modification or ionizing radiation cannot be used in the production of the food. failure, Congest GoldbergA et al: Effect of plant stanoltabletson low-density lipoprotein cholesterollowering in patientson statin drtgs, Am J Cardiol9T:376,2006. The figure of 2 kctUghas been proposed for fiber because of the "unavailable carbohydrate" that resists digestion and absorption (Guenther andJensen, 2000). A MET value of I is the oxygen metabolized at rest (3.5 ml of oxygen per kilogram of body weight per minute in adults) and can be expressed as I kcal per kilogram of body weight per hour (Ainsworth et al., 1993). Besides of the potential for aspiration,other negativeconsequences nocturnal tube feedingsmust be considered.Even in healthy by 15% to 257" duradults,oxygenconsumptiondecreases ing sleep. It is not yet clear how quanritatively important any of these factors are in the typical U.S. diet (Ilich and Kerstettea 2000). Recent epidemiologic evidenceand experimentaldata (Grosset al., 2004) haveprovided evidencethat high-fructosediets(in conjunctionwith other factors)may contribute to the developmentof type 2 diabetesand syndromeX (seeChapters9,30, and32). Growth retardation and difficulty maintaining desired weight for height are common problems. SCFAsarereadilyabsorbed by the intestinaland colonicmucosa;and they (1) enhance sodiumandwater absorption,(2) increasecolonocyteproliferation, (3) increasemetabolic energ'yproduction, (4) enhancecolonic blood flow, (5) stimulatethe autonomic nervoussystem,and (6) increaseGI hormone production (Compheret al, 1997). substitutes are beneficial for temporary relief of dry mouth; in addition, liquids and foods with sauces and gravies are usually well tolerated. Simple and straightforward statements are most effective, even if they involve negative feelings. Any advice given can be taken or disregarded. In this regard the control of circulating blood volume predominates over the control of all other parameters.Thus sodium, the most important molecule in determining the body's circulating volume, is regulated at the expensefall other substances.A gain or loss of l"/" of circulating volume is reflected in marked changes in urine as well as in serum composition of potassium, bicarbonate, and water. A small amount of fluoride enters t}re soft tissues;the remainder is excreted. SeealsoActte renal failure (ARF) definition,92l function,922-921 in pregnancy,170 in calciumexcredon,105 in drug excretion,434 Index L33l kidney(s) (ContinueQ physiology, 922-923 transplantation, 929 -93 | kilocalories (kcals or CALs) definirion,22,26 ofalcoholic beverages,35, 36b kinetic modeling, in end-stage renal disease,940 kinlry-hair syrrdrome, I 2 7 Klinefelter's syndrome, 372 Korean food patterns, 355t Krebs rycle, 589, 589f KT/V definition, 92 I in renal disease,937t Kupffer cells, definition, 707 kwashiorkoq 66-67 L labeling, food, 344, 347-349, 347f, 347t, 348b laboratory datalvalues, 41 1-+3 1 abnormal, as nutritional risk factors, 387t assayqpes and,4l3-4I4 basic metabolic panel, 414b comprehensivemetabolic panel, 4l4b for nutritional anemias, 421-424 for nutrition assessmentand monitoring, t227-1241 in chronic diseaserisk assessment,425-427, 4 2 7- 4 2 8 t in in in in eating disorder assessment,575 hydration status assessment,417 premature infant assessment,I 136 protein-calorie malnutntron assessment, 4t7 -421 nutrition-specifi c, 414 definition, 412 routine medical. The integrity of the oral cavity and surrounding structures can affect functional and sensory components of normal dietary intake and subsequent nutritional status. I unit : 0.67 cr-TE in the I form and about % of that in the l/ or synithetic form. that are amplesof both of the systems need ofthe organizationaland This is an areathat hasgreat of food and nutrition professionalskills and the knowledge (ADA, 2005). Because of the variety of presentations and symptoms, dyspepsia may overlap with other problems such as GERD or irritable bowel syndrome, anxiety, and depression.Diet, stress, and other lifestyle factors may contribute to the symptomsof patientswith functional dyspepsia. o\l/o\o O = dtEV.Ei sT Ele; F;e " ' :rii' i u F/\ n-.P 6 ?/\ n z Fl .i g E o F.l o h E o o @ 1242 APPENDIXES :P b0q 9t* :=l (t€ 6 6- oo mm d 6q 6 I ! EE9 ! ! 9 .E '-s o6 qoA lbo:; x'- o N o tr q) b0 .z F] N ! :9 (o)t r= := =E3 !o o E o I tr b r0? During meiosis one member of each of the autosome and sex chromosome pairs is distributed to each haploid egg or sperm; the full set of 46 chromosomes is reconstituted on fertilization. Mizock BA, DeMichele SJ: The acute respiratory distress rymdrome: role of nutritional modulation of inflammation through dietary Iipids, Natr Clin Pract l9:563,2004. Chewy foods such as g'um drops and marshmallows although high in sugar content, stimulate saliva production and have a lower adherence potential than solid, sticky foods such as pretzels, bagels, or bananas.High-fiber foods with few or no fermentable carbohydrates,such as popcorn and raw vegetables, are cariostatic. counselin g.orglresources/codeofethics.htrn#ce Cultural Competency http ://www.thinkculturalhealth.orgl Cultural Competency Resources http ://www. SantosKF et al: The prima donnaof epigenetics:the regulation of geneexpressionby DNA methylation,BrazJ Med.Biol Res 38:1531,2005. No salt is allowed in traditional Passover matzo. All of the recommended bone-conserying drugs except intermittent PTH therapy have antiresorptive effects; only intermittent PTH is a practical bone-forming drug now being routinely used in the early prevention or later treaunent of bone loss (see following paragraphs). LambertJD et al: Inhibition of carcinogenesis by pollphenols: evidence from laboratory investigations, Am J Clin Nutr 8l(suppl):284S, 2005. APPENDIXES L297 Chromium is known to enhance the action of insulin; chromium was identified as the active ingredient in the "glucose tolerance factor" many years ago. Weiler FIA et al: Minimal enteralfeedingwithin 3 d of birth in prematurelyborn infana with birth weight (1200g improves bonemassby term age,Am J Clin Nut 8l:155, 2006. Low-Phenylalanine Foods. She has no significant medical history; her family history reveals that her mother has type 2 diabetes. Note that, in addition to a listing of specific supplements, nutrients, and botanicals, the form also identifies the health conditions that motivated the use of supplements. Conversely, when the diameter is increased (as with vasodilator drug therapy), resistance decreases and blood pressure is lowered. Masoro EJ: Caloric restricrionand aging:conrroversialissues, Series A: Biol SciMed Sci6l:14,2006. Magnesium Intake More than 50% of the magnesium in the body is found in bone tissue, but the role of this mineral in bone functions is poorly understood. The most successful operations are performed on younger persons with only small amounts of fat to be removed, where the elastic properties of the skin are able to allow tightening over the aspirated areas. There are precautions in place at the federal, state, and local levels that need to be addressedby dietetics professionalswhose role includes advocacy, as well as communication and education, to help the public and the local officials understand the risla and the importance of carrying out programs for food and water safety and protection. Between 1992and2002the age-adjusted deathrate from hypertension increasedby27%; overall deathsfrom hypertension increasedby 57o/".Death rates from hypertensionare about 3.5 times higher in blacks than in whites (AHA, 2005).Hypertensionis a major contributingfactor to atherosclerosis,the underlying causeof much CVD (Kher and March, 2004).In adultswith blood pressuresranging from 115/75to 185/ll5 mm Hg, the risk of CVD doubles with a 20 mm Hg increase in SBPor a 10mm Hg increase in DBP (Lewington et a1.,2002).Stroke and myocardial infarction also are major contributors to morbidity; between 500,000and a million peoplehavenonfatal events eachyear.The factorsassociated with a poor prognosisin hypertension are shownin Box 33-1. Does Matthew not have the same genetic susceptibilitiesthatJared has?If not, why not? Although this drug has become widely accepted in the United States and other nations, it may result in esophagealreflux, a side effect that makes it difficult for a small subset of the population to continue this oral therapy. The drug class known as stotins is recommended in the early and long-term postoperative periods. X, Prohibited or strongly discourrged;A, avoidedby the most devout; R, some restrictions regarding types of foods or when a food may be eaten; O, permitted, but may be avoided at some obseruances;+, practiced. AND O D E L SF O R Health professionals can support individuals in making sustainable lifestyle changes by using a range of behavioral techniques: assessingreadiness to change; cognitive restructuring; realistic goal setting; strategies for dietary change k d bo 492 PART 3 i NutritionCareProcess u, g 3n E o GI .9 E 3 E E C, CJ cl ! = 5 (J L CJ d L >. However, the most likely causesof diarrhea among enterally fed patiens are bacterial overgrowth, antibiotic therapy, and gastrointestinalmotility disorders associatedwith acute and critical illness and not the enteral nutrition. Once digested, glucose is actively absorbed across the intestinal cell and transferred to the portal blood for transport to the liver as described in Chapter 1. Timing (constantor cyclical),type (enteralor parenteral),method of access(nasogastric,nasojejeunal or duodenal,or PEJ or PEG), amount of support (completeor partial) and type of support (monomeric or polymeric) , and other supplementationare necessary considerationsin designingthe presecription for nutrition suppoft. PPARgamma and RXR are just two members of the 48member nuclear family of receptors, including the RXRs, PPARs, the liver X receptors (LXRs), the farnesoid X receptor, the constitutive androstane receptor (CAR), the sterol regulatory element binding proteins (SREBPs), and the nuclear vitamin D receptor SrDRnuc). temperature, and texture of food to increase eating comfori, reduce oral pain, and prevent infections or decay while managing glucose control (seeChapter 30). Whrt foodsandnutrientswill you highlight in Vanessa's diet? pylori bacterial inflammation truncal vagotomy resection or removal of portions of the vag'usnerve to decreasethe cholinergic stimulation of parietal cells and reduce the cellular response to stimulanrs such as gastnn CHAPTER 26 Disorders 655 MedicalNutritionTherapyfor UpperGastrointestinalTract vagus nerve the tenth cranial newe, which has many branchesthat supplysensoryfibersto the ear,tongue,phar1mx,and larymx;motor fibers to the pha4mx, larynx, and esophagus;and parasympatheticand visceralafferentfibers to the tloracic and abdominalviscera Digestive disorders are among the most common problems in health care. Gatuisbing . Overall a high-quality diet and avoiding nutrienr deficienciesmay offer some protection from peptic ulcer diseaseand may play a role in healing. It also increasesthe risk ofneural tube defectsin developing fetuses, which led to required fortification of cereal grains with folate in the United Statesto ensure adequate levels in women of childbearing age (seeChapter 5). The formula, which takes into account the patient's sex, age, and race, is better than the Cockcroft-Gault formula sometimes used to calculate creatinine clearance (Rigalleau et al., 2006). These values for protein, fag carbohydrate, and alcohol (Figure 2-6) arc 4, 9, 4, and 7 kd/g, respectively. Seeaho Pernicious anemia megavitamin therapy, for cancer, 985 meglitinides, in diabetesmanagement, 781, 782t melena definition, 654 in peptic ulcer disease,662 menadione, 80 definition, 41 menaquinones (vitamin K), 80 definition, 41 menarche age of, variations in, 247 -248 definition, 246 Mendelian inheritance, 37 | -372 definition, 365 menhaden, as DHA and EPA source, 1107 Menkes syndrome, 127 menopausal status, cardiovascular diseaseand, 851 menopause bone mineral density after,62lb s)'rnptomsand management of ,274 menstrual stafirs,osteoporosisand, 628-629 mental illness, I 102-1104 mental retardation, I 17l definition, 1170 mercury methyl, seafood contaminated with, in pregnancy and lactation, 180 meridians, de{inition, 470 M e r i d i a (s i b u r r a m i n e)i,n o b e s i t ym a n a g e m e n t . Caloric needs ranging from 94o/oto 1460/o of predicted range have been observed (Ihondottir and Gunnarsdottir, 2002) (seeChapter 2). The formulas or medical foods described in Thble 44-3 provide a major portion of the daily protein and energy needs for affected infants, children, and adults. In a2-year cohort study ofpeople ages45 and older, 36"/" of people had at least one new root decayed surface (Gilbert et al., 2001). STD/HW co-infected individuals are more likely to transmit HW sexually than those without an STD. Festival holidays include Rosh Hashanah (the New Year) in September; Succoth, the fall harvest holiday; Chanukah (the Feast of Lights) in midwinter; and Purim, a joyous holiday in spring. These catheters are sometimes called midline or midclavicular catheters, depending on their position. 8- 2 1 . o The latestsciencebehind nutrient needsand requirementalong with educationallevel,lifestyle patternsand socioeconomicstatusgo into developmentof dietary guidelines,food guides, nuffition labeling and other educationalmaterialto provide information and direction on food and activity choicesfor individualsand groups. Avoid eating at least 3 to 4 hr before retiring. State and federal correctional facilities also have high rates of confirmed AIDS (Kantor,2003), especially among incarcerated women (De Groot, 2000). Nonprotein calories are evenly divided benreen fat and carbohydrate. Daily monitoring of eachpatient'sintake is crucial. Check gastric placement by instilling 15-20 ml of air, practice by an NSD. .," which explains what is wrong with the suggestion but offers no alternative. Departrnent of Health and Human Services: Action against asthma: a snategicplanfor the DEamnrnt of Heahb and Human Sentica, from wwwaspe.hhs.gov/sp/asthma, accessedFebruary 6, 2006. and/or medicationsor other dietary supplements o Appropriate dose,brand, and chemical form; duration of supplementation;appropriate follow-up . Weisdorf SA" et al: Positive effect of prophylactic total parenteral nutrition on long-term outcome of bone marrow transplantation, Transplantation4l :833, 1987. You can do this!" o "Ke€p in mind that change is gradual and takes time. Because chromosomes contain thousands of genes, such changes are typically harmful to the individual and often fatal. In Widerman E et al, editors: Now that I haaeCF.Infmmatiunfor menand women iliagnoseilasadulrs,Hanover, 2004, SolvayPharmaceuticals. cooked, % cup Pine nuts, dried, I oz Mixed nuts, oil roasted, with peanuts, I oz White beans, canned, % cup Pollock, walleye, cooked, 3 oz Black beans, cooked, % cup Bulgur, dry 7+ cup Oat bran, ruw, V+ crtp Soybeans, green, cooked, % cup Tirna, yellowfin, cooked, 3 oz Artichokes (hearts), cooked, % cup Peanuts, dry roasted, I oz Lima beans, baby, cooked from frozen, Vz crtp Beet greens, cooked, % cup Navy beans, cooked, % cup Tofu, firm, prepared with nigari,f r/z cttp Okra, cooked from frozen, % cup Soy beverage, 1 cup Cowpeas, cooked, % cup Hazelnuts, I oz Oat bran muffin, 1 oz Great northern beans, cooked, % cup Oat bran, cooked, % cup Buckwheat groats, roasted, cooked, o/oDaily Value* 151 38 t07 101 27 25.5 97 9l 89 81 78 78 75 74 24 23 2Z 20 19.5 19.5 t9 18.5 18.5 r7.5 t7 7+ 7L 67 67 62 60 57 55 5+ 5+ 50 50 50 t7 15.5 l5 l+ 13.5 13.7 13.5 12.5 12.5 12.5 49 l2 +8 47 1L7 tz t) tt.7 tt.7 11 . In Widerman E et al, editors: Now that I haae CF: informatiun for men and wurncn diagnosedas adalts, Hanover, 2004, Solvay Pharmaceuticals. Both slmdromes are characterized by intellectual disabilities, but Prader-Willi individuals also experience a lack of perception of satiety, which leads to overeating and lifelong challenges with morbid obesity. Zemel BS et al: Effect of zinc supplementationon grouth and body compositionin children with sickle cell disease, Am J Clin Nurr 75:300,2002. If fermentable carbohydrates are not cleared fr-9m the oral cavity, the decay process begins and can easily affect the roots of the teeth that are exposed due to the receding gum line. Ammann P et al: Protein undernutrition-induced bone loss is associatedwith decreasedIGF-l levels and estrogen deficienry, J BoneMiner Resl5:683, 2000. Calculated combinations of complementary protein sources is not necessary especially if protein sources are reasonablyvaried. plasmalipoprotein-lipidlevels,Physiol Hihi AK et al: PPARs:transcriptionaleffectorsof fatry acidsand their derivatives,CellMol Life Sci59:790,2002. Okasha M et al: Body mass index in young adulthood and cancer mortality: a retrospective cohort sttdy, J Epidemiol Commun Heahh 56:780,2002. If bloatins or abdominal discomfort develops, the patient is encourageidto wait l0 to 15 minutes before proceeding with the ."-"i.rd., Factorsto ConsiderWhen Choosingan EnteralFormula Gastrointestinal function The type of protein, fat, carbohydrate,and fiber in the formula as related to the patient's digestiveand absorptive capacity Caloric and protein density of the formula (i.e., kcaVml, g protein/ml, and kcal:nitrogen ratio) Ability of the formula, taken in the amounts tolerated, to meet the patient's nutritional requirements Sodium, potassium,magnesium,and phosphorus content of the formula, especiallyfor patients with cardiopulmonary renal, or hepatic failure Viscosity of the formula related ro tube size and method of feeding of formula allocated for that feeding. Fish, liver, and egg yolls are the only foods that naturally contain vitamin D. For patients who are terminally ill or in a persistent vegetative state, nutrition support can extend life to the point that issues of quality of life and the patient's right to self-determination come into play. gov http:,/www.ed.gov epa.govlsafewater http ://www.epa.govlost/fi sh htrp ://www.poultryegg.org Norr: Specificwebsitesoften changebecauseofupdating. diseasehas long been recognized(Gaultier er al., l9g9). Loss or gain of nucleotides,duplication of sequencesof nucleotides,and copy number variantsalso appearto have important functional consequences. The assessmentshould be completed in the first visit if possible. See alsoChronic fatigue syndrome definition, 1042 chaoticeatingin eatingdisorders,574 charting, 459-463 medicalrecord formats,461-462t,461-463, 462b CHD. This problem is more pronounced in older adults, whose appetite and intake may be compromised further by chronic disease,social isolation, and the use of multiple medications (see Chapter 16). Finally, lifestyle modifications are rhe first-line of therapy for patients with GERD, including change in dietary practices,weight loss,smoking cessation,and elevationof the headof the bed (Kaltenbachet al., 2006). Although most casesof esophagitis are related to reflux of gastric contents, esophagitis may also be related to viral and bacterial infection, ingestion of corrosive agents, and radiation. Deitch EA et al: Role of the gut in the developmentof injuryand shock-inducedSIRS and MODS: the gutJl'rnph hypothesis,a review,Front Bioscill:520,2006. Gastrointestinal cancersare especiallydetrimental. On the other hand, cell membranes must be stable and flexible for optimum function. r Any counselingrelationshipfor the purposeof the behavioralchangebeginswith assessment client'sreadinessto change;too often this is forgotten and the client is left frustratedand the counselor feeling ineffective. AII of these cause renal vasoconstriction, which results in ischemia or arterial changes. Before transplantation, patients are already likely to have osteopenia because of their lack of activity and cardiac cachexia. The composition of enamel and dentin, the location of teeth, the quality and quantity of saliva, and the presence and extent of pits and fissures in the tooth crown are some of the factors that govern susceptibility. Blood is forbidden as food becauseblood is synonymous with life. her supplementalcalcium to 500 mglday? Bakery products and prepared food mixtures must be produced under acceptablekosher standards. When acid reflux occurs with a hiatal hernia, the gastric contents remain above the hiatus longer than if the canal were intact. 1, Hexokinase/glucokinase(liver) reaction; usesATP, is reversedby glucose6-phosphotasein gluconeogenesis. Although desigred primrily for people with diabetes md othem who must follow special diets, the Exchmge Lists are based on principle of good nutrition tiat apply to eYeryone. Consumption of liver was prescribed empirically, and only in 1948 was vitamin B12recognized as the healing agent. Exchangeresins such as Kayexalate, SampleGalculation of FluidRequirements in AcuteRenalFailure which exchange potassium (K+) for sodium (Na+) in the gastrointestinal tract, can be used to treat high K+ concentrations, but for many reasons these resins are less than ideal. Spnptoms include the following: fatigue, anorexi a., dizztness,nausea, vomiting, headache, weight loss, shormess of breath, and grayish color to the skin. SeeBone mineral content definition, 614 B M D . In Bowman B, Russell R, editors: Presentknowled.ge in nutrition, ed 9, Washington, DC, 2006, ILSI Press. There are estimates that between 400 and 500 medications currently available by prescription or over the counter may cause dry mouth. Fluid considerations:extra water, fV fluids (including medications) Parenteral l. Diet adequacy is particularly important both before and after periodontal surgery, when adequate nutrients are needed to regenerate tissue and maintain an immune response to prevent infection. Chromium values in foods are approximate and should only serve as a guide. Seeaho Developmental disability(ies), from neurologic disorders dysphagia in, 1074-1076, 1077b medical nutrition therapy, 1072 nutritional considerations, 1069t from nutritional deficienciesor excesses, 1 0 7 8 - 1 0 I8 beriberi as, 1078 pellagra as, 1078 d) neurologicdisorders(Continue perniciousanemiaas,1078 strokeas,1079-1081 Wernicke-Korsakoffsy'ndromeas, 1078- r079 nutrition support, 1077 -1078 site of brain for and impairmentin, 1073t with nonnutritional etiologies,1081-1098 as, 1081-1082 adrenomyeloleukodystrophy as,1082-1084 disease Alzheimer's as,1084-1087. Half of all new HfV infections are in people ages 13 to 24 years. "If you were 100% successfuland things worked out exacdy as you would like, what would be different?" . Once this has been established over a period ofhours, the parenteral rate can be decreased to keep the nutrient levels at the same prescribed amount. This particular diet composition is claimed to keep insulin in checlg which is blamed for fat storage. Is this how you are feelns?" A s k i n g0 p e n - E n d eQdu e s t i o n s Open-ended questions allow the patient to expressa wider range of ideas. Vegetarians who consume no dairy producs may have low calcium intakes, and vitamin D intakes may be inadequate among those in northern latitudes where there is less exposure to sunshine (see Foaa Oz: Sunshine, \4tamin D, and Fortification in Chapter 3). {oot caries is a dental infectious diseasethat is increasing in older adults, partly becausethis population is retaining their natural teeth longer. In addition, at-risk patients need to be encouragedto include sources ofEFfu (e.g., canola, flaxseed,soybean, or corn oil, or fish) as paft of their daily fat intake. Herbert V et al: Low holotranscobalamin is the earliestserum marker for subnormalvitamin B12(cobalamin)absorptionin patient with AIDS, Am J Hematol34:132,1990. In critically ill patients tube migration can take several days, causing feeding delays. Topical fluorides, availableas fluoridated toothpaste and mouthwashes, are effective sources of fluoride that can be used in the home, school, or dental ofi6ce. 632 PART4 i Nutrition for Healthand Fitness Two examples of these drugs in the marketplace are tamoxifen and raloxifene. The major source of dietary iodine in the United States is "iodized" salt, which has been fonified with iodine. Incalzi RA et al: Correlates ofosteoporosis in chronic obstructive pulmonary disease,RespirMed 94:1079,2000. fat intake and risk of breastcancer, Cho E et al: Premenopausal Inst 95:1079,2003. Volumetrics,a program in this category focuses on the energy density offoods. Complications of colonic irrigation include electroly'te imbalance, toxic colitis, bowel perforation, and sepsis.Most regimens promote "natural" and "organic" foods and recommend restriction of animal products, refined flours and sugars, and foods that are processedor contain artificial ingredients. Notably, "fat-free" snack and dessert items and "baked" chips and snack crackers tend to have a higher simple sugar concenrration than their higher fat-containing counterparts.A piece ofcheese at the end of Breakfast:11/zcupstoastedoatcereal+ 1 cup low{at milk or 2 sliceswheattoastwith1 oz meltedcheese 1 cupfreshberries cotfee+ low{at milk BRUSHTEETH Lunch: 2 slices of mushroom pizza small salad with 2 Tbs ltalian dressing 16 oz springwater banana FOLLOW WITH 2 PIECESXYLITOLGUM Afternoon snack: 1 cup pretzels+ 1 oz cheese FOLLOWWITH2 PIECESXYLTTOL GUII Dinner: tossed salad with 2 Tbs grated cheese 11/zcups spaghetli + 1 cup marinarasalEe + 1/2cup saldeed peppers 1 cup fresh fruit salad 1 slice ltalian bread with 1 pat margarine 1 /zcup ice cream 1 cup low-fat milk PnEVENTTvE Cnns Caries prevention programs focus on a balanced diet, modification of the sources and quantities of fermentable carbohydrates, and the integration of oral hygiene prac- Snack: 4 cupspopcorn BRUSHTEETHBEFOREBEO FIGURE 25-3 A balanceddiet plan with low cariogenicrisk. The estimatedaverage requirement(EAR)is the averagerequirementof a nutrient for healthy individuals;a functional or clinical assessment has been conducted,and measuresof adequaryhavebeen made at a specifiedlevel of dietary intake. Small, frequent meals followed by rinsing with lukewarm water or brushing to reduce the risk of dental caries are helpfirl. intolerance Glucose Insulin resistance Hyperlipidemia Hypertension . He J et al: Long-term effects of weight loss and dietary sodium reductionon incidenceof hlpenension, Hypertension 35:544, 2000. Parenteral nutrition should be used in patients who are or will become malnourished and who do not have sufficient gastrointestinal function to be able to restore or maintain optimal nutritional status (Matareseand Gottschlich, 2002). For example, "augmented" care (dietary and exercise advice, prescriptions, and three dietary recalls every 6 months) seems to promote better long-term results than traditional care (I-ogue et al., 2005). Claims are that chitosan pertension, and thyroid conditions. Fat pads on the palms and buttocks protect the bones from mechanical pressure. cancerin Asian-Americans,Carcino genesis Wimder EL et al: Comparativeepidemiologyof cancerberween the United StatesandJapan:a secondlook, Cancer67':746, 1991. 616 gypicallyoccurs in previously healthy kidneys. The dietary reference intakes for viamin D, as well as the content of vitamin D in foods, are stated as micrograms of calciferol. Kauwell GP et al: Metlylenetetrahydrofolatereductasemutation (677 C-+T) negativelyinfluencesplasmahomocysteine responseto marginalfolate intake in elderlywomen' Metabolivn 49:l 440,2000a. 22. The relationshipbetweennutrition and dental diseasehas long been recognized.In more recent decadesthe possibility of reducing the incidenceof osteoporosisby emphasizing appropriate nutrition has accumulatedsupportive evidence.The role of nutrition in reducing inflammation,now recognizedas a contributor to chronic disease, is recent, but supports the awarenessof diet in diseaseprevention. Past researchhas determined that the diet is deficient in calcium and vitamin 812.Further researchis needed to study the efficacy of this diet in cancer therapy (Kushi et a1.,2001). What additional questionswould you askregarding Ellen's supplements? The use of carbohydrates(100 g daily for a 70kg person) ensures that protein is not catabolized for energy during conditions of normal metabolism. Aerobic exercise is important for cardiovascular health, as well as for the calorie expenditure and creation ofan energy deficit and therefore fat loss. Geneshave a common structure,with a promoterregion where the binding of the RNA polymeraseis controlled, which in turn controlstranscription;and a coding (informational) region where the RNA polymerasetranscribesthe DNA into mRNA. Nutrition assessmentand therapy also must take into account routinely prescribed medications. The convalescent period following a tonsillectomy is short. Tiemendous advancementshavebeen made in undersanding pulmonary qfst€m physiology, biochemisury,molecular biology, and pharmacology,u well asmedical, zurgical, and nutritional technology. Memory is diminished; the patient is unable to learn new things; conceptual or perceptual functions decline; and, as the disease progresses, confabulation is less apparent. Pancreas Small bowel Colorectal Glmecologic Brain Autologous HSCT involves the use of the individual's own stem cells to reestablishhematopoietic stem cell function after the administration of high-dose chemotherapy.In some cases the use of mobilized stem cell progenitors has replaced autologous bone marrow as the source of hematopoietic progenitors for transplantation. Lipid Commercially availablestandard solutions are composed of all the essentialamino acids and only some of the nonessential crystalline amino acids. Beyer,MS, RD, LD, 2006. Orlistat inhibits gastrointestinal lipase, which reduces approximately one third the amount of fat that is absorbed from food. The nutritional implications of the of the breathing.For example,protein and iron deficiencies medicationsneed to be appreciated. Jal q8noqrly'sesseJxe tou 1E -8lu Ernp ew ue3^{leq uonrelloJ Poolq PuolPuaq lEJnpqns s8 selJ IeuorlrJtnu uro{ Jo uorlJes snordeJ0eqt w peqrJJSOP -uerJgap urBJq erp Jo essq 3tp l? N u t r i t i o nS u p p o r t Patients with acute and chronic neurologic diseasesmav benefit from nutrition support. 'vt&aJV 'sFelu eAFJeJlfee^Jes:e^rlEeJJeq ol ur?r8ord earnd e plnq pue elduls uers 'e€eqdsdp qr1.t esorlt JoJeJuerJedxel:osues erIJe^oJdrurol seePleluos eJe a-re11'poo8 etser puB 'poo8 larus 'poo8 4oo1ol Peeusleelu peernd 'sesueseqJJo IIe qrvtr pe,{o[uesI PooJ 'uoB8rePlsuor puB eftr erlxe serrnbere€eqdsdp tPllr\ slenPl^lPulSuIPaeJ ecueldeccv Fu;nodul rcl senblutlcel :o^rl lled ,rolle.{\s elarr{Jeot elqeun.ro g8noc IeuoFIIo^ IeuonolmJuou lseouelsrsuoceJoruJo o./nlqrltt uoDerrdseluells . ell is a 27-year-old white woman who follows traditional Judaism. Infans born with meconium ileus have the diagnosis of probable CF until ruled out from otler causes.About 85o/oto 90% of persons with CF have pancreatic insufficienry. MONBIDITYAND MonTALITY Although hlpertensive patienrs are often asymptomatic, hypertension is not a benign disease.Cardiac, cerebrovas- cular, and renal systemsare affectedby chronically elevated blood pressure(Table 33-2). Although rare, blenderized formulas from natural foods or commercially prepared are an alternative to standard formulas, but maintenance ofaseptic technique is essential to prevent bacterial contamination. These continue to be monitored and updated as strategies are implemented to reach the objectives (Heahhy People2010, 2004a). Despite public health recommendations to increase activity levels, 40% of Hispanic females, 34"/" of black females, 32"/" of American Indian and Alaskan Native females, and 22Y" of white females reported no leisure-time physical acrivity in the Behavioral Risk Factor Surveillance System survey (BRFSS, 2007). Adverse events, s).Tnptoms Educate . Although home nutrition support has been available for over 20 years, few outcome data have been generated.Becausemandatory reporting requirements do not exist in the United Statesfor patients receiving home nutrition support, the exact number of patients receiving home nutrition support is unknown. However, individuals with preexisting medical conditions or treatment-related side effects (e.g., radiation enteritis, malabsorption) may benefit from elemental or peptide-based formulas (seeChapter 20). The oxalatecontent of a typical diet is in the range of 44 to 350 mg/day, but it can be as high as 1980 mg/day in vegetarian diets (Holmes and Kennedy, 2000). Ways to expressthese ideas to clients are: o "You are working very hard at this, and it's clear that you're the expert about what is best for you. Urine--4)ontains a concentrate of excreted metabolires, Feces-Important in nutritional analyseswhen nutrients are not absorbed and therefore are present in fecal material. te dS JeIssaW tqSre.tr.ra,to 't002'I:0s unaqf,sxurquu^Pnrs r{rl?eHs(ueruor!\e,&olaql tuo{ sllnseJ:sDIJIprBProlBlunetlJ ,{lesre,rursr e{Blur c ullu?ll :lEle v-I oullJatr{ qtr/f\pet?rJosse '2002'Itg papyruautafiuo3u,a4V 'snrrr.prBproteuneqr qrl.A{ f ucefqnsur]erp uu8a,t'te1-.to1/:aa e;o speJJE:p ta I pEnoqrly '0002's5t:' u1u4f mg'.{pnrs palonuoe-oqeceld'puqq-alqnop'pazruropuer E :snrllueoalso 1ryuredur etBrtrurrt1ftec{8 dq pecuequa sr ureresdeo aI{J :C eueal3cry lecrdor;o 'lcecglecrsaEleue 's002 'g: 'stuarudola,rap tuaJeJ:snrlpJ?oelso 71 plarunaqyuldg *tn3 pue srotJq leuortrrnN :yg ae8Erg'ga uopurlycl,g ' 5 002' tZ eunf pessecrt'urol'cruqcodelu'^\,{vrr 'euorpuis .ger5 cruq3 odeyg rruorr{J ruo4 to.elr.re.ro anSpe; '5967pessacce '3.ro 'l8oloreurnaqr' 'satparuay \^rr!{ pqraH:C snJJeW ruo{ p.rntoN pua c . The \ILCD that first became popular in the early 1970s resulted in several deaths; however, improved formulation with respect to protein quality has led to their acceptability and safety for those whose obesity is potentially life-threatening. Lamb (mutton), goat, game, and poultry are more common than pork or beef. Bazzano LA et al: Dietary potassium intake and risk of stroke in U.S. men and women: National Health and Nutrition Examination Survey I epidemiologic follow-up study, Srrola 32:1471,2001. Foods can be cooked to a softer consistency, and meats and vegetables can be cut across the fibers into bitesize pieces to make eating easier. Design a set (3 days' minimum) of daily menus that provide approximately 800 mg of calcium from foods alone,which, coupled with a 500-mg supplement, would provide a rotel of ll00 mg, rhe current adequate intake for calcium. Dietary oxalate affects urinary oxalate because oxalate cannot be metabolized in the body and the renal route is the only mode of excretion. IlichJZ, KerstetterJE: Nutrition in bone health revisited:a story beyond calci:um, J Am CollNutr l9:715, 2000. IJrease allows the generation of ammonia to facilitate alkalinization of the immediate surroundings. SeeBranched-chain amino acids common alterations of, in liver disease,724b definition, 39 essential,6l-63 as ergogenic aid,604t, 606 definition, 40 glucogenic, 63 in human zs. Luthringer S: Nutritional implications of radiation therapy. Reference ranges can be made for different populations. Patients just starting parenteral nutrition who have received no form of nutrition for a significant period should be monitored for electrolyte fluctuation and fluid overload. Other inflammatory statessuch as obesity produce elevations in CRP even in young obese children (Blum et al., 2005;Ayun et al., 2005).Body massindex (BMI) is moderately correlated (r : 0.5) to CRP levels (Rawson et al., 2003). The cells' adherenceto these base-pairingrules ensuresthat the new strand is an exact copy of the old one. Women who smoke about one pack of cigarettes daily will have a deficit in bone density, which increasesthe risk of fracture. Bone RC: Toward an epidemiologyand natural history of SIRS (systemicinflammatoryresponsesyndrome),ft MA 268:3452, 1992. Tieatment options include: . The causesof ARF are numerous, and often severaloccur simultaneously(Box 36-l). Nutrition can mitigate the harmful effects of many genetic errors that result in disease, from supplying missing metabolites to altering gene expression. SeeExcess postexerclse oxygen consumptron EPO (erythropoiedn) as muscle-building supplements, 6 I 0 definition, 92 I production,923 Epzicom (abacavir sulfate and lamir-udine), nutritional complications, 1002t ER (esuogen receptor), definition, 614 ergogenic aid, 603-605t definition, 587 muscle-building supplementsas, 606-6 10 ERT (estrogen replacement therapy), definition, 614 erythropoietin (EPO) as muscle-building supplements,610 definition, 92 1 production of, 923 ESADDI (estimated safe and adequate daily dietary intakes), 339 definicion,337 Escherichia coli @ coli) 0157:H7, 327t enterohemorrh agqc,327t enterotoxigenic, 326t in GI tract, 14 ES @leutherococcus senticlsas),ergogenic aid, 604t esophageal phase, of swallowing, 1074, 1075f esophageal reflux, s1'rnptoms/nutritional consequences,655t esophageal stmcture, syrnptoms/nutritional consequences,655t esophagitis care management algorithm for, 657f definition, 654 eosinophilic definition, 739 elemental diet, usage,751 medical management,656, 658 medical nutrition therapy, 658-659 pathophysiology, 65 5 -656, 657b prevalence,655-656 reduction, nutrition care guidelines, 658b surgical management, 656, 658 esophagus Barrett's, definition, 654 cancer of, syrnptoms/nutritional consequences,655t disorders, 65 5 -660 complicating HIV disease,1015 infl ammation. Recentfindings in the United Statesof an industrial pollutant, perchlorate, that is generatedfrom rocket fuel and firework production,showthat it inhibits iodine uptakeand may impair thynoid and neurodevelopmentin infants (Kirk et al., 2005).Most important, insufficientiodine intake has with increasedmiscarriageratesand sponbeen associated taneousabortion (Redmond,2004). Seealso Counseling dietary supplementation as,47 5-485. factors (i.e., the risk of CHD is much higher with multiple risk factors) and direcdy influences acute coronary events, including *rombus formation, plaque instability, and arrhythmias. Disease-associatedrisks of fluoride are unfounded' No epidemiologic studies have demonstrated any link between fluoride and cancer or AIDS. 2r i WeightManagement553 CHAPTER Postoperativefollow-up includes evaluation at regular intervalsby the surgicalteam and a registereddietitian. pasgeJour 'sso1lq8re,r. Excretewasteproducts . If it is difficult to get the recommended amounts of calcium and vitamin D from foods, a combination of food sources and supplements is recommended. Kemper KJ et al: Herbs and other dietary supplements: healthcare professionals' knowledge, attitudes, and practices, Ahern Tber Heahh Med9:42,2003. andPenetrance Modesof Inheritance I nnh e r i t a n c e Mendelia Each cell nucleus contains a complete set of genetic material (genome), divided among 22 pilrs of chromosomes,called autosomes,and 2 sex chromosomes,for a total of46 chromosomes. Tieatment typically involves the use of two or three antibiotics and acid-suppressing medications. Avoiding NSAIDs and large doses of corticosteroids is also beneficial. Generally insoluble fibers such as cellulose increase the water-holding capacity of undigested material and lead to increasedfecal volume (bulk) and decreased GI transit time (increasesthe frequenciesof defecation).On the other hand, soluble fibers can form gels, resulting in slowed GI transit time and slowed or decreasednutrient absorption. for Change 499 Counseling 19 ! Intervention: CHAPTER Example 3 Client:"Some daysI just give up. Adequacy of calories, protein, and micronutrients should be ensured. Malnutrition itself can produce neuromuscular weaknessthat affects quality of life; it is a prognostic factor for poor survival. Omega-3 fatty acids have been included in diseasespecific formulas because of their modulating effect on immune function. Genomics381 Nutritional 13 ! Assessment: CHAPTER Davis CD, Hord NG: Nurritional "omics" technologies for elucidating the role(s) of bioactive food components in colon cancer preventron,J Nu* 135:2694,2005. Orlistat, a non-CNS-acting agent, does not suppress the appetite. Supportself-efficacy Each of thesestepsis describedin further detail in the following sections. Ninery-five percent of the world's casesof HII including those causedby perinatal HfV uansmission,are in the developingnations(seeFigure 38-4)(AVERT,2006b). P e r n i c i o uAsn e m i a Historically pernicious anemia and vitamin B12(cobalamin) deficiencieshave been the more common neurologic slmdromes causedby lack of a single nutrient. In addition to dietary sources, sunlight can provide the body with vitamin D becauseit is synthesized through the skin. Il, I Nutritionin the Community 333 CHAPTER lance. Other good dietary sources of this mineral include peanuts, whole wheat flour, oat flour, beet greens, spinach, pistachio nuts, shredded wheat, bran cereals, oatmeal, bananas, baked potatoes (with skin), chocolate, and cocoa powder. S u r g i c aPl r o c e d u r e s Bariatricsurgeryis an acceptedform of rreatmentfor extreme or classIII obesitywith a BMI of 40 or greater,or a BMI of 35 or greaterwith comorbidities(NIH, 2000). The short procedural time required for insertion, limited need for anesthesia,and minimum wound complicationsalsomakeit preferable for the physicianand otherscaring for the patient.It is possibleto converta PEG to a gastrojejunostomy by threading a small bore tube through the PEG tube into the jejunum using either fluoroscopyor endoscopy. The National Center for Complementary and classifies CAM into five Alternative Medicine NCCAM) major domains with examples: . The researcherssuggestthat methods of tube-feeding placement be used that avoid such contact. Malnutrition . The question is: Does a low glycemic index diet have any effect on healthy individuals receiving adequate amounts of dietary fiber? Protocols for dressing changes and rotation of the site are used to prevent the principal complication of peripheral cathetersthrombophlebitis. In general, the protein source in the formula or medical food is r.-amino acids,with the critical amino acid (i.e., Phe) omitted. Dietary fat helps to provide the requiredenerry, EFfu (i.e.,linoleic acid and linolenic acid), and fat-solublevitamins.Moreover,fat limits the volume of food required to meet energy demandsand improves the palatabilityof the diet. Box 20-1 summarizesthe factors to .oniid.. At high risk are health careworkers;residentsin assisted living facilities, skilled nursing homes, or hospitals; and people who are immunocompromisedsuch as those with cancer,chronic renal disease,or human immunodeficiency virus(seeChapters36 through 38).Tirberclebacilliincreasingly are becoming resistantto drug therapy; strainswith increasedvirulence haveemerged.Signsand symptomsof TB with nutritional relevance include undernutrition, weight loss,night sweats,facigrre,dyspnea,and hemoptysis (Campbelland Bah-Sow,2006;Villamoret al., 2006). The predominant sugar is used to name the hemicellulose (e.g., rylan, galactan' mannan, arabinose, galactose). Most experts advise that oral diets initially be low fat, lactose free, and low in other simple carbohydrate. For many patients using orygen at mealtimes, eating slowly, chewing foods well, and engagrng in social interaction all can enhance food intake, nutrient metabolism, and enjoyment of the experience. It should be started slowly at half of an 8-oz canfour to six times a day. The DV for potassium is 3500 mg. Because bones are repositories of fluoride, bone meal, fish meal, and gelatin made from bones are potent sources of the mineral. Few dietary factors can be consistently incriminated in the cause or exacerbation of gastritis or peptic ulcer disease. ThakoreJN et al: Percutaneousendoscopicgastrostomy 37:307, with gastricmetastasis, associated 7 Clin Gastroenterol 2003. The caloric content of amino acid solutions is approximately 4kcal/gof prorein provided. A single food canvary twofold to fifteenfold in its oxalate content, depending on the variegt, growth conditions, and season.Only limited data on food oxalate content are availablebecauseof inconsistent methodologies used for analysis. For PKU dietary therapy is planned around the use of a formula/medical food with Phe removed from the protein. Diffrrsed senseof self Origin and Influences on Thinking and Beliefs o Gender, race, cultural scrips and expectations . Calcium plus calcitriol may be useful, however,in patiens who are taking high-dosecorricosteroid therapy,during which vertebralfracturesare common. The following questionsmay elicit information about feelings toward change: . Boneresorption markerspresent Estrogen replacement (e.9.,alendronate) Biphosphonates (e.9., SERMs raloxifene, tamoxifen) IntermittentPTHtherapy Calcitonin Education aboutprevention offalls Ineretsed: .1,25(OH)zvitamin D3 . .Physical activity level (PAL) is the physical activity level that is the ratio of the total energy expenditure(fEE) to the basalenergy expenditure (BEE). If given in the boale, keep the bottle in the dark and at room temperature. Therefore selenium deficiency is often reported in these regions. American Dietetic Association: Position of The American Dietetic Association: ethical and legal issuesin nutrition, hydration, and feeding,J Am DietAssoc102:716,2002. BecauseBob is on the road so much, food safetymight be a problem. Farshchi HR et al: Decreasedthermic effect of food after an irregular comparedwith a regularmeal pattern in healthylean women,Int J ObesRelntMetabolDisord28:653,2004. Infusion therapy companies deliver medications, equipment, and servicesfor people who need intravenous or nutritional therapies. Once the heart is diseased,conditions such as myocardialinfarction (Mf;, blockagein a coronary artery that can lead to heart damage or "heart attack," dieury sodium excess, medicationnoncompliance,arrhythmias,pulmonaryembolism, infection, and anemiacanprecipitateHE The prognosis for HF dependson the causativefactorsand the individual'sresponseto treaffnent.Overall 80o/oof men and 70% of womenunder the ageof 65 yearswho are diagnosedwith HF will die within 8 years(fhom et al., 2006). CharlesMueller, PhD, RD, CNSD, CDN Abby S. Lee is originally from mainland China. Norr: Takeonemultivitamin/multimineral L3O2 APPENDIXES A potassium-rich diet is useful for cardiac patients who are tr)nng to lower their blood pressure using diet. USeFUL WessrrEs American Dental Association American DentalHygienists Association American Academy of Periodontology Colgate Kids http ://www colgate.com./app/Col gatelUS/ O C/ Information4nteractiveGuides/EveryAge. l1 H' bo q d 'o tr 3 cl A q -, v d Er k (.) bo ,^bo E o o € .E q a a @ si r F] - f ' I B N O o o t s d A o q (ts, o t= CHAPTER 19 | Intervention: Counseling for Change493 Gompetencies for Effective InterculturalGounseling Respect for the client Genuineness Empathic understanding Having trust in the client and his or her capability of making choicesand decisions, and solving problems The counselor is a real person, not an all-knowing, objective experr The ability to convey empathy in a culturallyconsistentandmeaningfirl communicationtilT""io."s of empathy, respecg and genuineness to the client Structuring musrbefelt, recognized, and perceived by the client if they are to be effective The counselor should define and structure his or her role to the clieng there should be an indication ofwhat, how, and why he or she intends to do the proposed interaction or program and increased physical activity; self-monitoring; stimulus control; relapse management; and ongoing support (Costain and Croker, 2005). Nus, which do not contain a significant amount of fermentable carbohydrates and are high in fat and dietary fiber, are cariostatic. KrishnanJA: Caloric intake in medical ICU patiens: consistency of care with guidelines and relationship to clinical outcomes, Cbest124:297.2001. Miller ER III et al: The effectsof macronutrientson blood pressureand lipids: an overviewof the DASH and Omni Heart Trials, Curr Atha.osclerRep8:460,2006. These catheters can remain at the orisinal site for 3 to 6 weeks and have made PPN a more feasible option in patients with veins large enough to tolerate the catheter (Krz5zwdaet al., 2005). fu the details of the connections among genes,their protein products, and diseaseunfold, the focus of the health care system is shifting. futhmatic q/mptoms may be aggravated by allergen exposure, including foods such as shrimp or food additives such as sulfites (see Chapter 29); and botanicals such as citronella in insect repellents, rusty-leafed rhododendron in natural honeys, and strawberry leaf in herbal teas (seeChapter 18). After transplantation, patients are susceptible to steroid-induced osteoporosis. CHAPTER 2l I WeightManagement555 DietProgression after GastricBypass Diet Will Progress From: TypicalProgresslon Clear liquids No more than 1/zcup total Full liquids Gradually increaseftomr/zcup to no more than t/+ cup tot^l Meals should be from 3/+cup to no more rhan I cup total No more than 1 cup total; meat should be no more than2 oz Pureed Regular (small meals and snacks) However,the typicalpicture is one of recidivism.Continued dieting, with repeatedups and downs,leadsgraduallyto a net increasein body fat and thus to a health risk for hlperlipidemia,hypertension,and diabetes. pylori Slattem et a1.,2005). Thomas tolerated this initial enteral regimen but demonstrated abdominal distention and pain *hen anempm were Nutrition Diagnosis 3: Altered GI function relatedto intolerance offormula as evidencedby diarrhea l. Precautions for Persons WithType2 Diabetes Persons with type 2 diabetes may have a lower Vo2-o and therefore need a more gradual training program. Bubalo J et al: Relieving patients' fear of chemotherapy-induced nauseaand vomiting, US Phanzt 29:1,2004. Wernicke-Korsakoff Syndrome Wernicke-Korsakoff syndrome(WKS) is a diseaseof the cerebellumand brainstemthat resultsfrom chronic thiamin deficienry with continued carbohydrateingestion.WKS is actually two separatediseasesflVernicke'sencephalopathy and Korsakoff'spsychosis);their common associationhas led to inclusion into one slmdrome with characteristic memorydefects. For best possible outcomes, medical nutrition therapy for all persons with pulmonary problems requires attention to the individual's nutrition status, nutritional intake, and other treatment procedures. Sharp L et al: Risk factors for squamous cell carcinoma of the oesophagusin women: a case-control sttdy, Br J Cancer 85:1667,2001. Friedman M: Chemistry biochemistry and safety of acrylamide: areview,J Agric FoodChem 51:4504,2003. His initial laboratory work included a BIIN of 2 mg/dl, rn albumin of 3.5 g/dl, and serum triglyceridesof 65 mg/dl.Indirect calorimetry resring revealed a resting energy expenditure of 1460kcaUday.His respiratory quotient (Re) was0.72. govlnchs/hphome.htm. However, importandy, the ratio of LDL to HDL cholesterol is not adversely affected. 6 oz veg. Tirbe placement is verified by aspirating gastric contents in combination with auscultation of air insufflation into the stomach or radiographic confirmation of the tube tip location. "There are a number of things you could do, but what do you think will work best for you?" 502 PART 3 I NutritionCareProcess ResrsrANcE BenAvroRs AND POTENTIALSTNATEGIES TO MooIFY THEM Irrespective of concerted efforts toward assessingreadiness to change and affirming action and supporting change, the nutrition counselor will still be confronted with resistance behaviors.Resistanceto changeis the most consistent emotion or state that will be faced when dealing with clients who have difficulty with dietary adherence. govlPubMed Ame r i c a So n c i e tyfo r C l i n i caN l u tri ti o n htrp ://wr.vw.faseb.orglas cn for Disease Centers Control andPrevention FoodandNutrition Board, I0M http ://vvw.nationalacademies. sJoruerJ lcay8eu ro 'uorsryuoJ 'BrxBJdB 'ersdouenueq 'Suruorlrs -od ,(poq rood 'sseu>1ee,{L qrurTJo esneJeqJlasrer{ ro Jlestuq PeeJot elqBun eq dru eseesrPcr3010rneu tpl^l luaped aqJ qlnot/\|aql 0l p00J lo : sa n s s 6ul l paal u 0 r lE lu a sa Jd lpuapuadepurpeurctqolueuqsrJnou urelureruo] de,n e sr pe8rrnoJua eq uec s8ura-res a18urs peSelcederdsEr{JnsspooJeJuarueluooJo tJoJruoJuo erue -rler pascaJJur uy '8uneaJo rueurr(o(uaeql ue^eSurrapurq snql 'uonerederdpaur rpl,r,rlrpcglp ol elnqrruoc,{eru osle uoEelngruerood ro 'uorsr,rparrcdur 'eBuaruep'uorsryuo3 uotlElBdaJd lEahl 'peunsoJeq uBJSuneapue sa,rorduruorlJury llere^oIpun aurDJo poued e ro; rroddns uoBrJlnuIBJelueermbar t'etu rueued et1rpue dpduqe peldrurelur aq usr Supee;o ssac -ord arnue aql 'aruorpu.{s?JJBg-urBIIrnC ro 'alorls 'BrunEJl sB gons suopgntlscl8olomau atme qlrr,!\ 'spuorsse;ordro '9861 'sStll e!-ttauaS plqrssod,s,lgrl,r :ruaued elors raplo aqr Superrtrqeqaa:ng Sraqurar5uorg uonBlncBJe radord rpr r.spro.&elqr8rllarurecnpord or drrTrqeul perredur dlere,resere uondecred qceedspue uorsse.rdxe rpog asuesou Jo eptq sa>1eutndlno a8en5uellnq 'leurrou ureasuonelnJnJe pue qcaeds;o ,rto1g uoncnpo:d qcaedstueng otur tuerft tJauuor or elqeun sr luepud et1lrnq 'tcelur are uonelnruroJ eSen8uelpue rqSnoqa PetsejJeueeg lou ser{uonJnpord e8un8ueypue sr uorlJury olJsnru tJelur 'gcaedspg€urueeurarnpord or &ilq?ul lero qSnoqr uazre tuase:d tou eJBuoEturpJooJur pue 'frrcnseds'ssoy&osues 'srsdpred rnq ,(rreqc e uog Sursrr '8un1p,r.''3'e) lser poureel dlsnor,la.rde uro;red or lrrgqeul '(7-gg arnSrgaas)'cle ,ale1d ot1rJoJIBr{ dluo urog slee 'e8edBJoJleriauo speertuened ,{poq eqigo ep$ teqr srcal8eutuen?d selJsnu ;unJBrluoJ Jo uorsue] pue uoDor[pue uonrsod turof e,rrecradol elqeun sr luaDed aqr;r elqlssodur seFrlr1reelrsnu Jo uopep8er eurg silnseu euglrus,{q sreProsrP J?lleqoJeJ'suorsay crraqdsrureq (suorsoyurelsureJg IeJerElrq eare qe{rrrrrel\ Jo uorse.I erseqdetuenld e8euep ureJq a^rsueug erseqdeFqolC erseqdetuenguoN erxerdee3en5ue1 egerdy $nr PIeg Iensl (rcey8au)aruo:puds uoBuellEurrrueH srrrgePlrosua5 uaurledul ** u:".Tfi'o'J'::it ,{lecgrcedsE ro reprosrp urerq repcFred ? Black and American Indian/Alaska Native children have the fewest months of survival after an AIDS diagnosis (CDC, 2006). Among the key concepts at the chromosomal level are the packaging of DNA into chromosomes within the nucleus, the processes of meiosis and mitosis, autosomal and sex-linked inheritance, linkage and the mapping of genes, and chromosomal mutation and its consequences.At the molecular level, key basic concepts include: (1) the fact that information is encoded in DNA and must be decoded and converted into proteins that do the work of the cells through the processes of transcription, post-transcriptional processing, transla- Genomics369 Nutritional 13 I Assessment: CHAPTER DNA,The Molecule of Life Trillions of cells Eachcell: .46 human cnromosomes .2 metersof DNA . ChawlaA et al: Nuclear receptorsand lipid physiology:opening tle X-files, Science 294:1866,2001. SallisJF et al: The Caltrac accelerometerasa physicalactivity monitor for school-agechildren,Med SeiSpomExerc22:698, 1989. A caloric deficit of 500 to 1000 kcal daily usually meets this goal. Arrangements for follow-up contact can be made at this time. There are no positive effects (Guercaffeine-containing herbs (kola nut, g'uarana,and mat), ma ciolini et al., 2001). Prevention is the key, because once fat is gained and B o n e . Examples of drugs with potential nutritional implications are bronchodilators, expectorants, and corticosteroids (see Chapter l6). for Hypertension869 CHAPTER 33 : MedicalNutritionTherapy PnrHoPHYsroLocy Blood pressure is a function of cardiac output multiplied by peripheral resistance(the resistancein the blood vessels to the flow of blood). They can be either low-profile (flat to the abdomen), button-type tubes, or they can have a short piece oftubing attached through the abdomen and into the stomach. TiabulsiJ et al: Evaluationof formulasfor calculatingtotal children with cystic energyrequirementsof preadolescent fibrosis,Arn J Clin Nut 85:144,20O7 . Limit bedtime snacks. In persons with diabetes, light-to-moderate amounts of alcohol (1 to 2 drinks per day; 15 to 30 g ofalcohol) are associated with a decreased risk of coronary heart disease (Howard et al., 2004), perhaps because of the concomitant increase in HDL cholesterol and improved insulin sensitivity associated with alcohol consumption. SeeAttention-deficithyperactivity disorder A-D-I-M-E application,456-+57b chart content, 461-462t definition,454 adipoqtes, 534 definition,532 532 535 adipocl,tokines, definition, 532 adiponectin,in body weight regulation,537t 1305 1306 Index adiposecells,50 adiposetissue brown,534 definition,532 stnrcture,533-514 visceral,541 definition,533 white,533-534 definition,533 adiposityrebound definition,222 in children,223 adjustmentdisorder,nutrition, I I10t ADLs. SeeActivitiesof daily living definition,1042 adolescence aovefuslngano,l)o-zt / Dooy lmage, l) / calciumrequiremenrs, 252-253,252t,253r carbohydraterequirements, 250-25| cholesterollevels,844t convenience foods,255-256 definition, 246 dietaryreference intakes,for female,l70t dietrng,257 early,psychologicalchanges,249 eatingbehaviors, 2 54-257 eatingdisorders, 260 energyrequirements,226t, 250 for females,25lt for males,250t fastfoodsin, 255-256, 256f fat requirements, 251 fiber requiremenrc, 251 food habits,254-257 hlperlipidemiain, 261-262,262t hypertension in, 261-262 hypertensionrreatrnenq878-879, 879t iron deficienry,eatinghabitsand, 265b iron requirements in, 252t,253,253t late,psychologicalchangesin, 249 mealsin famlly,256 irregular,255 mediaand,256-257 middle, psychologicalchangesin, 249 mineralrequirements, 252-254,252t nuuient requirements,249-2 5+ nutrition, 246-268 screening,assessment, and counselingin, 257-259,258t obesityin, 260-261,557b physicalacaviq,262 physiologicchanges,2+6-248 pregnancy, I 66-| 68, | 66b, 167b, 262-261, 265 nutritional counseling,benefia, l68f proteinrequirements, 250,251t psychologicalchanges,248-2+9 snacrilng,tJ), zJSt) Thnner development stages,1212f rype 1 diabetes, medical nurririon therapy interventions, 787 type 2 diabetes, medical nutrition therapy interventions, 787-7 88 vegetarian dietary patterns, 259-260, 260t vitamin requirements, 252, 252t, 254 ADP (adenosine diphosphate), definition, 587 adrenocorticotropic hormone definition,1021 secretion, in metabolic stress, 1022 adrenoleukodys tr ophy,374 adrenomedullin,in body weight regulation, 537t adrenomyeloleukodystrophy (ALD), 1081-1082 definition, 1067 adsorption definition,432 drug absorptionand,437 adulthood arm anthropometry in, 1218 aswellnessyears,27l-272 DFIA andEPA sourcesin, I 108 dietaryguidance, 279, 279f , 280b diseasepreventionnutrition, 276-277 food

trends/parterns,277-278 functionalfoodsin, 280-282 interventionsfor Prader-Willi slmdromein, tr82 nutrition, 269-285 nutritional supplementation in, 278-27 9 nutrition-related risk factors in, 272 -27 6 for men, 274-276 for women,274 older, 286-308. Water requirementsmust be individualizedbasedon the method of oxygen delivery and environmental factors, coupled with knowledge of underlying diseaseprocessesand prescribedmedications. Finally, the exchanged sodium leads to volume overload, which must also be controlled mainly by dialysis during renal failure. Nutritional genomics provides the basis for analyzing the genoypes of individuals and directing nutrition therapy in such a way that it protects against cancer by augmenting cellsresponse todetoxification activity. interventions (For excellentreviewof many functional genomics Data from the Framingham Study provide an examples of applications to cardiovascular disease. Water requirements are individualized and Codification knowing the client'sgenotypeisvariances be helpful in vas 2005;Ordovasand Mooser, 2004) developingeffectivenutritional interventions (Marin et al., Immune 2002;Ordovaset al., 2002a).The APOA-I senecodes for Health and Cancer apolipoproteinA-1, the primaryproteinin fbf- (seeChaptNoch ongoing research,including that conducted at the ters 15 and 32 for a discussion of this laboratorysteess- National CancerInstitute, relateds gene-dietinteractions ment). It is approved for use in adults with type I or type 2 diabetes who have not achieved optimal glucosecontrol (Buse et al., 2002). Reductions in blood pressure 780 PARTS I MedicalNutritionTherapy and improvements in impaired fibrinolysis have been noted (Sigal et al.,2004). Fruit juices and drinks' particularly white grape juice produced in cities with fluoridated water may have increased fluoride content; however, because of the wide variation in fluoride content it is difficult to estimate amounts consumed. Meals and snacks should be followed with brushing, rinsing the mouth vigorously with water, or chewing sugarless gum for 15 to 20 minutes. Weir JB: New methods of calculating metabolic rate with special reference to protein metabolism, J Physiol 109,1949. What tools might be useful to help Mrs. Protocols for ordering parenteral nutrition vary considerably among institutions. Pork and pork products such as gelatin are pro- hibited, as are alcoholic beverages and alcohol products (e.g., vanilla extract or other alcohol-based food or flavoring extracts). 1967-1980: Collaborative Study of Children Treated for Phenylketonuria is conducted. Three deaths have been associated with intravenous administration. Efforts to prevent gastric ulcers in "stressed" patients have focused on preventing or limiting conditions leading to hypotension and ischemia and coagulopathies. Adequate levels of exercise and physical activity to achieve this appear to be 60 to 90 minutes daily, which is recommended by the USDA This is also the amount of activity currently recommended by those in the National Weight Control Registry 6rWCR) who have kept offat least 10% of their weight for at least a year. However, its safety is still uncertain (Corris et al., 2005). However, most affected individuals admit that avoiding foods in the evening reduces their symptoms. com http ://www.ncanet.org http ://www.aoer.gov http ://www.usfdoi.gov/foodsafety/foodall.html http ://ww.foodsafety.gov http //ww.eatright.org/. http ://www.cdc.gov/diabetes/pubs/estimates.htm Jiang R et al: Body iron stores in relation to risk of type 2 diabetes in apparently healthy women, JAMA 291:711,2004. In Samour PQ, King K, editors: Handbook of pediatric nutrition, ed 3, Sudbury Mass, 2005, Jones and Bartlett. All equations have been developed to maintain current body weight (and promote growth when appropriate) and current levels of physical activity for all subsets of the population; they are not intended to promote weight loss (Institute of Medicine,2002; 2005). ql I ty Hv I I t CKge.^ 9 q o ETCEI EE u U 6I 9 P- 6I s r a..i o.v. c t q E EEIIE nf SEEE. *CtEEEEE (hIhth N"lgg Fr GI @ rf. v A - r rr rt c. n A N 6hn +i 66 uoFoo 6 : s ... n F - 6 i c y q 6I a] (-o aI a] -i r i e6 (t o) @ o' GI o e(Ho) +Ne r(t)t ... ... r > tr (I + &I q) 2a ... - e rt FB o n+ d I g t ... ... In addition to forming isomers, monosaccharides (both those with aldehydogroups such as glucoseand galactose and thosewith ketone groupssuchasfructose) alsorcylice, forming ring structures that give rise to further isomers. CHAPTER24 I Nutrition and Bone Health 631 The Impact of Alcohol and Cigarette Smoking on the Skeleton a Double Whammy!! /I La a-ette smoking is a risk factor for vertebral, forearm, U and hip fractures, especiallyin slender women. It addresses threats againstthe agricultural sector and border survey FoodandWaterSafetyResources American Egg Board American Dietetic Association American Meat Institute Center for Food Safetyand Applied Nutrition (CFSAN) Food and Drug Administration CFSCAN-Food and Water Safety-Disasters Center for DiseaseControl and Prevention CDC Disaster Federal Emergency Management Agency (EMA) Food Chemical News Food Marketing Institute Food Marketing Institute-Bird Flu FoodNet Food Preservational Safety, Iowa State University Foundation for Food Irradiation Education Government Food SafetyInformation Gateway Grocery Manufacturers of America International Food Information Council National Broiler Council National Cattleman'sBeef Association National Institutes of Health National Food Safety Database National RestaurantAssociation Educational Foundation The Partnership for Food Safety Education ProduceMarketing Association PulseNet USA U.S. Department of Agriculture U.S. Department of Agriculture Food Safety and Inspection Service U.S. Department of Health and Human Services U.S. Environmental Protection Agency @PIA Office of Ground and Drinking Water U.S. Environmental Protection Agency (EPA) SeafoodSafety U.S. Food and Drug Administration U.S. Poultry and Egg Association http ://www. 546-547t, I+ 6-548 commission E Monographs definition, 470 phy'totherapy md, 476 Commodity Supplemental Food Program (csFP),302-303, 32I1 communicationsskills, body languageand,496b styles, cultural, 497t complications ... teaching, 498 ...

CD001620, April 18,2005. When the diameter is decreased (as in atherosclerosis)resistance and blood pressure increase. If the patient is awake cializied training, demonstrated competency, and delineated and aleft, encouragethe patient to relax and swallow clinical privileges. In Elliott et al, editors: The clinicalguide to oncolog nutrition, ed 2. SeePolyunsaturated fatty acids pulmonaryaspiration definition,506,899 risk, enteralnutrition administrationand, 514 pulmonaryfunction tests,903 definition, 899 pulmonarysystem.SeeLung(s) anatomy,900f diseases asthmaas,904 chronic obstructivepulmonarydiseaseas, 907-909 cysticfibrosis as,909-916.SeealsoCysic fibrosis(CF) lung canceras,916 medicalnutrition therapyin, 903 nutrition statusand, 902, 903b pneumoniaas,916 respiratoryfailure as,916-917 tuberculosis as,918 with nutritional implications,903t in pregnanry,169 malnutrition and,902 nutrition and,901-902 purgmg definition, 563 in anorexianervosa,564 punnes definition, 1042 foodscontaining,1058b metabolismof, disordersof, gout as, 10561059 pyelonephritis,928 definition, 92I pyloroplasty,667f pyridoxine(PI\r), 89-90 definition, 41 pyridoxine-responsive anemia,828-829 pymvatedehydrogenase enzyrnecomplexreaction,in macronutrient metabolism,44f in carbohydraiemetabolism,65 pymvatekinasereaction,in macronutrient metabolism,,[4f PYY 3-36,functions,8b L344 Index g! L! qi (chi) definition, 470 in traditional Oriental medicine, 473t quadriplegia,spastic,definition, I 171 qualified health claim, definition, 470 quality of life definition,286 health-related,272 definition, 269 in older adulthood, 295-297,296f functionality and,296 weight maintenance and, 296-297 questions,open-ended, in not-ready-to-change counseling sessions,498 Quetelet Index in nutrition assessment,400 in overweight/obesity assessment,539 * RA. In addition to sen'ing as precursors for the slmthesis of antiinflammatory eicosanoids,they also serve to decreasethe expressionofkey genes that lead to inflammatory cytokine production such as tumor necrosis factor-cr and the interleukin-l family of genes.The role of omega-3 and other polyunsaturated fatty acids in regulating the expression of genes involved in lipid metabolism has become increasingly clear flump, 2004; Sampathand Ntambi, 2004; Sampathand Ntambi, 2005). Excess storage of iron in the body is known as hemosiderosis. Church MK, Warner JO: Preventing the evolution of the allergic march towards asthma: have we found the answer? Scolapio JS et al: Prophylactic placement of gastrostomy feeding tubes before radiotherapy in patients with head and neck cancer: is it worthwhile? pooru aao-rdurr ' S002' ZtSI llu,tanaqA ?oW'snuqtre Plol?runerptFI.{\ osBeslp pue uonlrtnulew :lEra,4AEPDInC sruenedur uotssa.rEord 'soolar L ludy pessecce '-ro3'ep;'m,n tr s8n-ry,Qolout'utqlw-qua utotl' (sq1VgIf PPnt -alsuou aaqraps aatpapsuou puo Z-XOJ "tots8urutam Tauotttppo ?uo Euq pue poog saSuaqt tuutndtut sarunouuo Veg :uouerrslu1ruPv 's002 'tap 3ut.re.to1-eterne ot esuodser :puodaq 'StZt lttoxunaqy f puB e{elur loqocle pue seuund 'serrolec ssarxa :tnoC :CV tuBC ' 'lt L66I LLZ VWVI'(LSVil ler[srolues pue snrrrprv sseulrC er[] :snrrr1rreoersoaaull qlr.tr $Fp€ Jeplo ur urerSord uonEJnPe qllBeq E tfllrK esl]JexeecuBlslseJPue esr]Jexe rrqore? pumpinhibitors Protein Histamine-2 receptor antagonists Antacids Prokinetic agents Fundöplication Decrease exposureto gastriccontents Avoid: . To thicken formula, Vz to I Tbsp of infant cereal is added per ounce of formula, with adjustrnents made as necessary. Yet age alone should not preclude weight loss treatrnent in older adults; careful evaluation of risks and benefits is needed. GenorYPEAND N urRrroN AssEssMENT The application expectedto have the most dramatic impact on the way nutrition professionals approach their work is the ability to associatea genotype, an individual's unique genetic makeup, with that person's susceptibility to a particular disease.Genetic science and nutritional science are identif ing the influence of specific food components and other environmental factors on gene expression.fu this knowledge unfolds, protocols will be developedto guide the nutrition professional in the most efficaciioustherapy for ameliorating or, ideally, preventing the development of various nutrition-related diseases.Clients will arrive for nutrition counseling sessionswith their genetic profiles in hand. Duing the early (often oliguric) phaseof ARI meticulousattention to fluid statusis essential. Therefore an optimal intake of this fatsoluble vitamin, especially later in life, may be important for bone health, the reduction of fractures, and calcium homeostasis (Vermeer et al., 200+).It is important to consider the vitamin K intake in older persons who may also be taking blood-thinning medications. His past medical history was significant for rype I diabetes mellitus and chronic bronchitis. Holmquist C: Multivitamin Supplementsfue Inversely Associatedwith Risk of MyocardialInfarction in Men and Women-StockholmHeart EpidemiologyProgram (SHEEP)' -2 J Nutr 133:2650 654, 2003. extra snacls, and foods selectedfor high-nutrient density. U | ' F o 0,) trbo o;i .l an o bYo>4' E o p, o tr o G p x o =(, z ll48 PART5 i MedicalNutritionTherapy Approximate DailyRequirements for Selected Dietary Gomponents andAminoAcidsin InfancyandGhildhood Dietary Gomponent/Amino Acid Phenylalanine Histidine Tyrosinet Leucine Isoleucine Valine Methionine+ Cyst(e)ines Lysine Threonine Tryptophan Energy Water Carbohydrate Total protein Fat Age,/Requirement Bifth to L2mo (me/kel 1to 1Oyt (mg/dayl 1-5mo:47-90 6-12rno:25-47 t6-34 l-5 mo: 60-80 6-12mo: 40-60 76-150 1-5mo: 79-ll0 6-12mo:50-75 1-5mo:65-105 6-12mo:50-80 20-45 l 5-50 90-120 +5-87 t3-22 l-5 mo: 108kcal/kg 6-12mo:98 kcal/kg 100ml/kg kcalx 0.5 + {: g/day 1-5mo: 2.2g/kg 6-12mo:1.6gkC kcalx 0.35+ Q: g/day 200-500* 25-85(mg/kg) 1000 1000 400-600 400-800 400-800 1200-1600 800-1000 60-120 70-102kcal./kg 1000ml kcalx 0.5 + {: 16-18 g/day k c a l x 0 . Many computer software programs that use the USDA nutrient database as the standard reference are also available. Pellagra (niacin deficiency) also affects the nervous system: it is less common in the United States today than decadesago becauseofthe variety offoods consumed (seeChapter 3). Antral hlpomotility, gastric stasis, and increased duodenal reflux are common in gastric ulcer and, when present, may increase the severity of the gastric injury. Dialysis Peritoneal Peritonealdialysis(PD) makesuse of the semipermeable membraneof the peritoneum.A catheteris surgicallyimplantedin the abdomenandinto the 16-6). In most instances the gastrointestinal tract function remains intact, and enteral nutrition is the preferred method of administering nurition support. fu the knowledge baseexpands,the list of diseasesamenableto nutrition intervention increases.Availability of sophisticatedfeeding and nourishment proceduresplaces increasedresponsibility on those who provide nutrition care. SeeResting energy expenditure refeeding aggressive,in anorexia nervosa, 578 qmdrome, 522-523 definition, 506 referencedaily intakes(RDIs), 347t definition,337 referenceheightsand weightsfor children and adults,340t reflecting,in modifring resistancebehavior,502 reflection,double-sided definition, 489 in modilring resistancebehavior,502 reflectivelistening definition, 489 in expressingempathy,+94-495 counselingsessions, in not-ready-to-change 498-499 refractorysprue,definition, 673 reframing definition,489 in modif ing resistancebehavioq503 registereddietitian (RD) counseloqaslife coach,500b registereddietitians(RDs),preparation,for work with older aduls, 289-290b in cancercare,983 rehabilitation, rehydrationsolution, oral, 679t remineralization anricariogenicfoodsand, 640 definition,636 renal diet for dialysis,1266-1270 renal disorders,923-958.Seea/soKidney(s), disordersof renal failure,definition, 921 renal insuf6cienry,in cirrhosis,725 renal osteodystrophy,94l -942 definition,922 renal soluteload from cow'smilk for infana, 207 definition,199 renal tubular acidosis(RIA), 928 definition,922 renin-angiotensincascade,869f renin-angiotensinmechanism,923 definition,922 RER (respiratoryexchangeratio), definition, 587 Rescriptor(delavirdinemesylate,DL\.f , 1003t nutririonalcomplications, research,on complementarymedicine,centers for, 474-475t resection,Liver,7l6 resecuons ileal,698-700 consequences, 600b jejunal,698 small-bowel,698-700 residue definition, 674 fiber differentiation,676 in colon,675 resistance,rolling with, in facilitatingbehavior change,495 modi!'ing, 502-503 resistance behaviors, resistantstarch,45 definition, 41 resistin,in bodyweightregulation,537t respiratorgas-exchange canopy,in indirect caloimetry,27 respiratoryacidosis,154t,155,155t definition, 144 I 54t, I 55, I 55t respiratoryalkalosis, definition, 144 respiratorydistresssyndrome(RDS) definition,1117 in prematureinfants,1125 respiratoryexchangeratio (RER) definition,587 uaining and,591 respiratoryf ailure, 9 | 6-9 17 respiratoryquotient (RQ) calculationof, in indirect calorimetry,27 definition,22, 899 responseelements definition,366 in promoter region of gene,37I restingenergyexpenditure(REE) ageand,25 body composition md, 24-25, 25f body sizeand, 24 definirjon,22,24 f actors affecting, 24-26 hormonalstatusand,25-26 contributions,24f organs/tissues, sexand,25 restingmetabolicrate (R-V[R) and,535-536 bodyweightreg-ulation definition,22-23,24 estimations,29 374 restrictionendonucleases, definition,366 restrictionenz;rrnes, 374 definition, 366 retardation,mental,definition, I 170 retinal,in visualpigmena of rod and conecells, 71 7 l retinal-bindingprotein (RBP),halflife and referencerangefor, 420t retinoids,68-74.SeeahoYrtaminA, retinol. Very hot and cold foods or beverages,spices, and sour or tart foods also may cause pain and should be avoided. Nutrition and diet therapies generally are based on the "you are what you eat" principle. Below are examples of questions to use in eliciting the self-motivational feelins statements. The UnitedStates The HIV/AIDS surveillancesystemof CDC works with state and local health departrnents,collectsinformation to track the HIV epidemic,and directsfunding for prevention. Distal RTA is treated with small amounts of bicarbonate, 70 to 100 mEq/ day, with complete resolution of disease manifestations. counseling,Tbpics Satia-AboutaJ: Dietary acculturation:applicationsto nutrition 2005. oq o6 ao o q ! bo q o a ! o x o vxo S -.9 l!oo .=xx 9q{.1 60 E; d>> Ebo :x tlt o\ En dio >. The OA group includes OA, bursitis, and tendonitis. Surgical treatments for advanced COPD may involve lung volume reduction surgery and lung transplantation. l. Selenium-dependent enzymes are also required for the conversion of thyroxine (T4) to the biologically active thy'roid hormone, triiodothy'ronine (T3); thus deficiencies of selenium, vitamin A, or iron may also affect iodine status. The body interprets this hypoglycemic state as starvation and secretes counter-regr,rlatory hormones that release free fatty acids from fat cells (Ludwig, 2002). Most statesdo not delineatewhich pracusing a syringe, and simultaneously auscultate over tices can and cannot be performed by the NSD. First determine a rough estimation of the appropriate weight for the anticipated adult height. Barzllay J et al: The association of fasting glucose levels with congestive heart failure in diabetic adults >65 years,J Am Coll Cardiol 43:2236,2004. pylori infection. The goal cycle for infusion time is establishedincrementally when a higher rate of infusion or a more concentratedsolution is required. tanscription may be turned on or off, or it may be modulated in terms of increasing or decreasing the rate. Alendronate The skeletal benefits of alendronate have been similar to those of etidronate, but alendronate has been more effective in fracture reduction (Black et al., 2000). A postsurgical food record noting the tolerance for specific foods in particular amounts helps in devising a program to avoid these episodes. qJ Qts !9 >a o9) 6 LOE >. For example,)zounggirls who are typically premenarchealmay incur fractureswith minimum trauma (Gouldinget al., 2005), in part becauseof low BMC and BMD relatedto rapid growth in height that is not accompanied with a proportionate increasein weight. Zinc supports immunity; is needed for wound healing; helps maintain the sense oftaste and smell; is needed for deox''tibonucleic acid s1'nthesis; and supports normal growth and development during pregnanry, childhood, and adolescence. Morning headache and confusion from hypercapnia (excessivecarbon dioxide in the blood) must be identified becausethese symptoms may interfere with food preparationor intake. 25 f Nutritionfor 0ralandDentalHealth 649 CHAPTER helly is a 5l-year-old single mother of two teenage Q uJ daughters who works full-time as a real estate agent. "Tell me aboutho* _ (e.g.,hobbyor interest)is going?" . Diet fowin satuatedffi, trarc fiil, clrelesterol Restrictedsodiumdtrlt- 120,2001. Abnormalities of these mechanisms, many of which are not completely understood, result in exaggerated weight fluctuations. United StatesDepamnent of Health and Human Services,U.S. Deparrnent of Agriculture: Dietary Guidelines for Americans on March J,2006, from wwn'.healthierus.govl 2005,accessed dietaryguidelines. Peregrin T: Bioterrorism and food safety: what nutrition professionals need to know to educate the American public, J Am Diet Assoc102:14,2002. Seealso Nutrition assessment nutrition-focused physical examination, 405-406 nutrition imbalance, 384-387 nutrition screening, 188-390 food-drug interactions in, 432-453. Advance directivesare legal documents that residentsuse to state their preferencesabout aspectsof care, including those regarding the use of nutrition support. Levy HB, KohlhaasHIC Considerationsfor supplementingwith coenzymeQ during statin trcrapy,Ann Pbnmatortn 40:2X),20M. 0 t h e rN o n s u r g i cAapl p r o a c h e s The nondiet paradigm maintains that the body will attain its natural weight if the individual eats healthfully, becomes attuned to hunger and satiety cues, and incorporates physical activity. LainscahM et al: Body compositionchangesin parientswith systolicheart failure treatedwith p-blockers:a pilot sndy, Int J Cardiol106:319.2006. The autosomal-dominant single gene disorders that have nutritional implications include several that result in oral-motor problems, growth problems, increased weight gain, and occasionally difficulties with constipation. in the postgenomicera,PhysiolGenomics Kauwell GPA: Emerging conceptsin nutrigenomics:a previewof what is to come,Nutr Clin Prnct20:75, 2005. Beyer, MS, RD, LD, 2006. Investigathe the potential for pesticidecontamination, which can be minimized by choosing organically grown herbs whenever possible. FIGURE 20-6 Decision tree for home infusion of Heahband Human Seruices, Centers Medicare and Medicaid Seruices: llome Infusion Therapy for Memorandum, accessed 2006). Thble salt or proprietary electrolyte replacement solutions are used. ? Other bularor InterstitialDiseases A wide variety of diseasesor disorders of the tubules and interstitium exist. Calcium channel blockers . With less than optimal insulinization, conversion of protein to glucose can occur rapidly, adversely influencing glycemic control. Lipids comprise a heterogeneousgroup of compounds characterized by their insolubility in water, and they can be classified into three major groups (Box 3-2). SeealsoHeparricencephalopathy Hry 1006 definition,991 portal systemic,definition, 708 Wernicke's definition, 708 from hyperemesisgravidarum,182 in cirrhosis,722 resffiction, J74 endonucleases, definition,366 endorphins,in body weight regulation,536t percutaneous, endoscopicgastrostomy, definition,506 endoscopy md,662b capsules definition, 654 for identif ing gastritis,661 endothelialdysfunction definition, 813 835 in atherosclerosis, end-stagerenal disease(ESRD), 929-9+8 definition,92l dialysisfor, 931-934 in diabeticpaient, 945-946 medicalnutrition therapy,934-945.Seealso Medical nutrition therapy medicaltreatment,929-931 medications,wage, 942t pathophysiology,929, 930f patient educationin, 946 psychologicalsupportin, 934 transplantation,929-93I energy,22-38 in burns, 1036 assessment, adequacy, allowance,in diet/nutrition prescription,465 continuum,589, 590f definition, 23 dietaryreferenceintake valuesfor, 29-30, 29-30r expendedin voluntary activity,in body weight regulation,536 expenditure activity-related,measurement,28 components,24-26 estimations,29-30, 3| -33b in physicalactiiry, 33-3 5 of selectedactivitiesusingmetabolic 33-35, 34t equivalents, predictionequationsfor, at physicalactivity levels,30, I 1-33b 26-28 measurement, direct calorimetryin, 27 doubly labeledwater in,27 -28 indirect calorimetry in, 27 units,26 expenditure,in eatingdisorderassessment, 576 food, calculating, 35, 36f 591 for exercise, intake and,963 carcinogenesis measuring,29 medicine,research,centersfo5 475t metabolism,in cancer,968 producdonoi 588-590,589f reqrurements definition,23 estimating,28-25 for enterallyfed prematureinfants, r 1 2 5 - 1 1 2l6l 2, 6 t for parenterallyfed prematureinfants, 1 1 2 2l,l Z z t for rheumatoidarthritis, 1053 in acuterenal farilwe,926 250 in adolescence, 251t for females, for males,250t in childhood,22+-225,226t,227b in cirrhosis,721 in COPD, 908 in rystic fibrosis,912 estimation,914b in end-stagerenal disease,940 in children,basedon therapyqpe, 947r 1320 Index energy, 22-3 I (Continuefr in head injury 1033 in HfV disease,l01l in infanry, 202-203 in infants with bronchopulmonary dysplasia,q05-906 in infants with chronic lung diseaseof premarurity, 905-906 in lacration, 186-187 in major burns, 1034-1035 in metabolic stress,1027-1029 in older adulthood, 299 i n p r e g n a n c y ,1 7 l - 1 7 2 calculating, 17 I b in respiratory failure, 917 ofcancer praent,972 restrlctron, ln pregnancy, consequences, 172 sources in major burns, 1035 malabsorbed,colonic salvage,15, l5f value, of alcoholic beverages,calculation, 35, 36b ENF (Fuzeon), nuffirional complications, I 003t enfuvirtide (Fuzeon), nutritional complicarions, 1001t engineering, genetic, 374 definition, 164 enteral nutrition, 508, 510-5 16 access,5l0 administration, 5 14-5 15 calculation considerations,52 1b complications, 5 15, 5 I 5b conditions requiring, 508t definition, 506,507 feeding tubes for, dietitians placing, 5 I 1b for cancer patients, 982 formulas. htrn FamilyHistoryInitiative www.hhs.govlfamilyhistory G e n e tC i c o u n s e l i n g www.nsgc.orgl www. Mlcak RP et al: The influenceof ageand genderon resting energyexpenditurein severelyburned children,Ann Surg 244:121,2006. Proton pump inhibitors, which decreaseacid production by the gastric parietal cell, are considered the most effective treatments (Floltrnan et al., 2004), but milder forms of reflux are sometimes managed by H2 receptor antagonists and antacids. Eachset of three nucleotidesin the exonmakeup a codon,and eachcodonspecifies an amino acid in the protein. The Mendelian modes of inheritance are logical and predictable as a result of the distribution of chromosomes during meiosis. The morbidity and mortality associatedwith C\rD make it a major public health problem, with approximate cosrs in 2006 exceeding$403 billion. Risk factors include a history of unpleasant oral experiences(e.g., intubation, frequent suctioning, or recrilTent vomiting), a history of nonoral feedinp, delayed introduction of solids, or discomfort or choking associatedwith eating solids. Hlpertension is frequently present with other risk factors such as hlpercholesterolemia and obesity and is one of the risk factors used to determine the presence of metabolic the incidenceof syndrome.teating hypertensiondecreases stroke,CHD, andHF (seeChapter33). The pH will rise if a nonsugary item that stimulates salivais eaten immediately before, during, or after a challenge. Logue E et al: Tianstheoreticalmodel-chronicdiseasecarefor obesityin primary care:a randomizedtrial, ObesRes13(5):917, 2005. Reference Ranges To determine whether a particular laboratory value is abnormal, particularly when serial data are not available, the value is generally compared to a reference range. Seenlso Food-dmg interactions in motivational intervention mod.el, 496-498 laboratory data, 4l | -431. Useful approaches that may facilitate feeding acceptanceinclude providing a pleasant and calm mealtime environment, providing oral stimulation during tube feedings, using consisrent and appropriate feeding techniques, and gradually introducing progressive texture and flavor changes. Such disorders are detected by means of a karyotype, a visualization of all the chromosomes in picture form. Nutrient deficits have been implicated in the incidence and severity of periodontal disease. 3 ll ll t0.7 42 42 42 38 25 24 2+ 17 10.5 10.5 10.5 9.5 6.5 6 6o/o 4 AJ +7 +6 +6 +5 44 44 t/z cttp Cod, baked.I oz Brown rice, cooked,% cup Haddock,cooked,3oz Chicken.cooked.J oz T-bone steak,broiled, lean only, 3 oz Tirrkey,roasted,white meat,3 oz Veal,culet, cooked,3 oz Beef,ground,cooked,extralean, 177" fat,3 oz "Daily values (DVs) are reference numbers based on the recomended dietary allowance. tuetuoJ qsy 'a>1etur lSreue ur parsnlperelp ? pylori and early recognition of the symptoms and risk factors associatedwith peptic ulcers, their incidence and prevalence and the number of surgical procedures related to them have decreased markedly in the last three decades. For the aging population in the United States, dietary intake, oral health and their influence on nutritional and overall well-being is paramount.. Iron deficienry anemia is common in children, adolescent girls, and women of childbearing age. Kang et al: Intermediatehomorysteinemia:a thermolabilevariant Am J Hum Genet reductase, of metlrylenetetrahydrofolate 43:414,1988. SeeDeoxpibonucleic acid DNA transcription, 6lf, 62b docosahexaenoic acid (DHA) adequate,obtaining, I 106-1108 brain function and, I 105-l 108 definition, 199, ll02 dietary consumption, recommendations, 1108 in brain and nervous system function, 1 104, 11 0 5 in human milk, 203 documentation guidelines, +60-461 rn nuffltlon care process, 459-463 dominant, definition, 164 dominant genes,372 dopamine, in body weight regulation, 536t double-blind, placebo-controlled food challenge (DBPCFC) definition, 739 in food allergy diagnosis, 750t procedure, 753 double-sided reflection definition,489 in modif ing resistance behavioq 502 doubly labeled water (DLW) definition, 22 in energy expenditure measurement, 27-28 dowager'shump, in osteoporosis,627, 628f D o w n s y n d r o m e(D S) , 3 7 2 , 1 1 7 7 - 1 1 8 0 caloric needs estimation, I 180t care management algorithm, 1178f definition, 1170 health concerns, 1179, ll79t nutrition assessment,1179-I 180 nuuition problems/risla, 1l 73t pathophysiology, 1178f drip feeding, intermittent, 514 definition, 506 drip infusion, continuous, 5 14-515 definition, 506 DRIs. SeeDietary reference intakes drug-nutrient interaction, definition, 432 drug(s) actions. Sarubin-Fragakis A: The heahb professionalsguide to dieta'?y ed 3, Chicago, Ill, 2007, American Dietetic supplentents, Association. SeeRibonucleicacid rosiglitazone(Avandia),diabetesmanagement, 781-782,782t ROS (reactiveoxidationspecies),definition, 412 roux-en-Ygastricb)?ass,553, 554f roux-en-Yprocedve, 667f RQ. 3 oz t.) 1.3 1.1 1.0 1.0 .9 0.9 8 6 o o 6 0.9 0.9 6 6 l.l 0.8 0.8 0.8 0.5 6 6 4 *Daily values (DVs) are reference numbers based on the recommended dietary allowance. Goulding A et al: Bone and body compositionof children and adolescents with repeatedforearm fractures,J BoneMiner Res20:2090,2005. In summary pharmacotherapy is not a "magic pill" to cure obesity. Adapted from DeBusk R-&I:A practical guide to herbal supplemens for nutrition practitioners, TopicsClin Nutr 16:53,2001. Medical Treatment Early diagnosis of pernicious anemia can be somewhat complicated becausehematologic and neurologic signs do not always correlate. USeFUL WessrrEs American Counseling Association http ://ww-w.counseling.orgl American Dietetic AssociationNutrition Diagnosis andIntervention hnp:/ / eatright.orgl Counseling Relationships-Code of Ethics http ://www. Exercise Physical activities such as regular walking and swimming appear to have minor skeletal benefis for older individuals, but more active participation such as weight-bearing exercises and intensive walking do have positive effects on BMD (Karlsson et al., 2001). Coagulation proteins and related substancesare missing or significandy reduced. Erosive and nighttime GERD are considered to be associatedwith more severe and prolonged syrnptoms. levels from lessthan 4% of total energy to 4,'/oto 8% to greater than 8% resulted in a correspondingdecline in HDL levelsas PUFA levelsincrease.However, in women with the A allele,increasingPUFA concentrationsincreased HDL levels.The effectwasmost dramaticin thosewith two copies of the A allele and intermediatein those with one copy. 392 PART3 NutritionCareProcess L E V E LI S C R E E N WEIGHT LBI Kc Body Weight Measureheightto the nearestinch,and weighto the nearestpound.Recordthe valuesbelow and mark them on the BodyMass Index(BMl)scaleto the right. Non-Hispanic black women have the highest prevalence, followed by Mexican-American women, American Indians and Alaskan natives, and non-Hispanic whites (Fledley et al., 2004). Caffeine andCarbonated Beverages The relationship of moderate consumption of caffeine to osteoporosis has not been clearly established. When it becomes okay to discuss resistance, the rationale for its original existence may seem less important. The aging body mass causes changesin neuroendocrine regulators, immune regulators, and metabolism, which affect the inflammation process. Current demographic trends have created a growing need for cultural competence in all professions. They often provide approximately 250 kcaVS-oz or 240-ml portion and approximately 8 to 14 g of intact protein. Glomerulus Etterent arteriole duction,which in turn is responsiblefor mobilizationof calJuxtaglomerular cium from bone(seeChapter24). Using the tube, measurethe patient for gastric placeand is typically the patient's advocatefor the optimal feeding ment (usually 50-65 cm). H o m eC a r e Resources and technology for safe and effective management of long-term enteral or parenteral therapy are widely availablefor the home care setting The elementsneeded to implement home nutrition successfully include identification of appropriate candidatesand a feasiblehome environment with responsive caregivers, a choice of a suitable nutrition support regimen, training of the patient and family, and a plan for medical and nutritional follow-up visits. Soil in Nebraska and the Dakotas has very high levels ofselenium, and the southeast coastal areas in the United States have very low levels. sideeffects,Nutr Cancer CorralesK&[, IJtter SL: Growth failure. Because maintaining energy balance is crucial for combating this progressive disorder, accurate evaluation ofboth energy intake and energy expenditure is essential. CHAPTER25 , Nutrition for Oraland Dental Health 641 Nutrient Composition Nutrient composition contributes to the ability of a substjrate to produce acid and to the duration of acid elposure. E ^t" +cF :ei: "n E xq 'E bv € L23O APPENDIXES to{ !n t H \ c; boF- EE .A9i 'ji= N:. One noted exception occurs after SCI. 658 P A R T5 M e d i c a lN u t r i t i o nT h e r a p y treated surgically with fundoplication, a procedure in which the fundus of the stomach is wrapped around the lower esophagusto limit reflux (Urbach et al., 200+). One illustration is the often-asked question: "Does milk cause an increase in mucus production in people with asthma?" A group reviewed the literature and found no causeand effect. EpsteinS: Update of current therapeuticoptionsfor the treafinent of postrnenopausal osteoporosis,Clin Ther 28:l 5 l, 2006. pylnri, smol0.2 mglPorilon GommonlyUsedt) (Avoid) Moderate (0.1-0.2 mglPortion) (No More Than 6 Servlngs/Day) All other fish (3 oz), dark meat turkey (3 oz), peanut butter (2 tbsp) Beef, cheese,cottage cheese,eggs,light meat turkey; cold cuts and frankfurters that do not contain pork, dark turkey or organ meas. 1040 PART5 I MedicalNutritionTherapy WeesrrEs USeFUL American College o f S u r g e o n s www'facs.org (ASCN) American Society forClinical Nutrition www.faseb.org/ASCN American Society for Parenteral a n dE n t e r aNl u t r i t i o(nA S P E N) www.clinnutr.org BurnNutrition http ://wrvw.burnsurgery. Because fat is energy rich and provides 9 kcaUg of energy, humans are able to obtain adequate energy with a reasonable daily consumption of fat-containing foods. a Parenteral Nuffition Solution 1. Seeaholron supplemental,for adult total parenteral nutrition formulations,520r zinc as,120-124.SeealsoZinc nutritional frcrs, 1294-1295,1297-1304 parenteral for prematureinfana, 1124,1124t problem,in U.S. diet, 103 requrrements in adolescence, 252-254,252t in childhood,225-227 in cirrhosis, 722,722t in COPD, 908 inheadinjury 1033 in HW disease, l01l in infanry, 204-205 in infantswith bronchopulmonary dysplasia, 906 in infantswith chronic lung diseaseof prematurity,906 in lactation,187-188 in majorburns,1036 in metabolicstress,1030 in olderadulthood,300 in pregnancy, 175-L77 in respiratoryfailure,917 u l r a r a c e ,t z / - t J) boron as,134 chromium x, 132-133 c o D a l t a s , I J Z f - l J) iodine as, 127-129. Sufficient measurement of baseline and sequential levels of biochemical parameters, route of nutrient administration (supplement or food), and length of srudy vary. Selected FoodSources of lodine Food Salt (iodized) Cod Shrimp Fish sticks Tirna, canned in oil Milk (cow's) Egg, boiled Navy beans, cooked Potato with peel, baked Tirkey breast, baked Seaweed Serving 't o 3oz 3oz 2 fish sticks 3 ounces(72can) I cup (8 fluid oz) I large Vzcup I medium 3 ounces I oz, dried Micrograms pel Serving 77 99 35 35 r7 56 29 35 63 34 Variable; may be greater than 18,000 mcg (18 mg) %DailyValue* 51 66 23 L) ll J/ t9 23 +2 22 t2 *Daily values (DVs) are reference nmbers based on the recommended dietary allowance. Prolonged use of corticosteroidsis associatedwith negative side effects such as osteoporosis,fluid retention, adrenal suppression, glucose intolerance, electrolyte imbalance, or even arm and leg muscle wasting. Although age-associated both sexes,women are more severelyaffectedbecausethey have a smaller skeletalmassthan men and they live longer. The Safe Medical Devices Act, effective since 1993, has placed responsibility on the agenciesto monitor and report adverse effects. The calcium in some vegetables is inactivated by the presence of oxalates.Although phytates in unrefined cereals also can inactivate calcium, this is not a problem for Western vegetarians, whose diets tend to be based more on fi:uits and veeetables than on the unrefined cereals of Middle Eastern .Jtor.r. Long-term vegans may develop megaloblastic anemia becauseof a deficienry of vitamin 812,found only in foods of animal origin. Reprinted with permission. The doses of these medications used after transplanbtion are decreasedover time until a "maintenance level" is reached. It stimulates the activity of approximately 100 en4nnes, which are substancesthat promote biochemical reactions in the body. It also has provided a way to trace familial diseases causedby genedefectsin mitochondrialDNA. CancerEpiilemiol BiomarkersPrea 13:1163,2004. Chewable vitamin C supplements provide an acidic zubthat direcdy contacts tooth surfacesand causesa drop :tan:: in pH of the oral caviry making teeth susceptible to decay. A 2006 report identified the origin of HIV in southeast Cameroon, where wild chimpanzeeswere found to have viruses most like the HIV found in humans globally (Keele et al., 2006). This plaque can grow and produce ischemia either by insufficient blood flow if there is a high oxygen demand or by rupturing, forming a CHAPTER 32 thrombusand occludingthe lumen (Rudd et al., 2005). Discovering the mechanismsof energy generrdon* the ccllular level in respiratory diseasesn the medrods to promote and mainain body composition of patients, and the specificroles of nurients end dre other food compon€nts(e.g., phponutriene) in the etiology or treaunent of putnonary conditions offers promise for the funrre. DietaryReference Intakesfor Iodine Life Stage Age Infants Infants Children Children Children Adolescents Adults Pregnancy Breast-feeding 0-6 months 7-12months I -3 years 4-8 years 9-13 years 14-18years 19yearsand older All ages All ages Males(mcg/day) 110(Ar) 130(Ar) 90 90 r20 150 150 Females(mcg,/day) 110(Ar) 130(AD 90 90 120 150 150 220 290 The iodine contents of some common foods containing iodine are given in the following table. What immediate nutrition support medrod would be recommended? For example,Latinos enjoy personal closeness Middle Easternersprefer to with friendsand acquaintances. Plasma-The uncoagulated fluid that bathes the formed elements Olood cells). Numerous other positive side effects include strengthening cardiovascular integriry increasing sensitivity to insulin, and expending additional energ'y and therefore calories. Uncomplicated peptic ulcers in either region may present with signs similar to those associatedwith dyspepsia and gastritis. Candidiasis,oropharymgeal(thrush) . Therefore patient care plans frequendy involve transitional feeding, moving from one type of feeding to another, with multiple feeding methods being used simultaneously. The attachment of the esophagus to the hiatal ring may become compromised, allowing the esophagrrs or a portion of the upper stomach to move above the diaphragm. *Assumesnormal organ function. Cholineis an amine that is required for phospholipid synthesisand very low-density lipoprotein production; choline deficiency has been associatedwith hepatic abnormalities in patients receiving parenteral nuffition. (I{HANES fV) (Carroll, 2005).CHD mortality rateshave alsobeendecliningduring this timeframe. The band, filled with saline, has a tube exiting from it to the surface of the belly just under the skin; this allows for the injection of additional fluid or reducing the fluid into the lap band (Figure 21-5). Nowson CA et al: Blood pressurechangewith weight lossis affectedby diet type in men,Am J Clin Nut 8l:98],2005. Write a week's set of menus that Bob can agree to follow, starting with a meal at home for breakfasg at a resteurant for lunch, and from a carryout deli late at nighr 2. Nasogastric or nasojejunal feeding tubes are used most commonly for the short-term administration of enteral nutrition formulas. Individuals with cancer often report a decreased ability to eat as the day progresses,which means that the morning is often the best time for eating. This approach focuses on achieving health rather than attaining a certain weight. Although variables such as age, gender, and feeding type (i.e., breast milk, formula) can impact TEE among infants and young children, weight has been determined as the sole predictor of TEE needs (Institute of Medicine,2002; 2005). Repeat this should also ensurethat the health care facility wans the NSD procedure over the lungs to ensuregastric rather than to place thesetubes and that it will facilitate the proper trainpulmonary placement. Estimates for the number of that involves inflammation resulting in extreme fatigue, arpeople in the United Stateswith systemicsclerosisrange from thritis, unexplainedfever,skin rashes,and kidney problems 40,000 to 165,000(fiIAMS, 2006b). gou/bgmis) 370 PART 3 ; NutritionCareProcess DNA SequenceVariation in a Gene Can Change the Protein Produced by the Genetic Code GeneA from CGT TCT CTA TTA ACA Proteinproducts 12345 Gene A from CGC TCT GAT TTA ACA person2 (Codonmade no }A diflerencein amino 1 2 3 45 acid sequence) Gene A from CGT TTT GAT TTA ACA person3 (Codonresultedin FAsp a differentamino 1 2 3 45 acid at position2) FIGURE 13-4 Somevariationsin a person'sgeneticcodewill have no effect on the protein that is produced; others can lead to diseaseor an increasedsusceptibility to a U.S. Departmentof Energ; Human GenomeProgram:www.ornl. SymptomaticHIV occurs when qrmptoms appear(see Box 38-1,CategoryB). Jabbar A et al: Gut immunology and the differential response to feeding and starvation , Nutr Clin Pract 18:461, 2003. gov/ PubMed http ://www.ncbi.nlm.nih. storagetal ....9/"-23Vo numbers cell do not increase until maximum cell size is b. Medications used to treat the diseases,either by prescription or over the countet may have adverse effects, further compromising the ability to ingest an optimal diet (see Chapter 16). You have made changes in the past, and you are the best judge of when it is the best time to consider change." RenDY-To-CHANGE CouNsELrNc SessloNs The major goal in this stage of change is to collaborate with the client to set goals for change that include a plan of action. Functional dyspepsia is a term that describes unexplained persistent or recurrent upper GI discomfort. 0therPainfulMouthProblems Stomatitis, or inflammation of the oral mucosa'causessevere pain and ulceration of the gingiva, oral mucosa,and palate, which makes eating painful. According to the Food and Nutrition Board, choosing various foods to meet dietary recommendationsshould provide adequate amounts of the nutrients that do not have well-defined recommended levels.A varied diet also ensures that a person is consuming sufficient amounts of food constituents that, although not defined as nutrients, have biologic effects and may influence health and susceptibility to disease.Examples include dietary fiber and carotenoids, as well as lesser known phltochemicals (substancesfound in plant products) such as isothioryanatesin broccoli or other cruciferous vegetables and lycopene in tomato products (see Tables 9-1 and 9-2). SeeAlcohol(s) Index L32l etidronate, for osteoporosis, 63 1 evaluation, in nutrition care process,457,459 evidence-based guides for practice, definition, 454 evidence-basedmedicine, in nursing practice, 458b excesspostexercrse oxygenconsumptlon (EPOC) activity thermogenesis and, 26 definition, 22 exchangelists definition, 764 for mealplanning, 125l-1260 in diabeteslr'an gement,776 macronuoientand caloricvaluesfo4 792t excrplents definition, 432 food-drug interactionsand,,448, 449-450t, 449b nutritionally significant,448, 449-450t excretron of calcium,150 of chromium,132 of cobalt,I 34 of copper,I 26 of drugs food effectson,438-439 food interactionswith, 434 ofiodine,128 of iron, I 17 of magnesium, 110,151 ofmanganese,131 of molybdenum,133 ofphosphorus,108,152 of potassium, 152 ofselenium,129 of sodium,150 of zinc,122 exenatide(Byena),in diabetesmanagement, 782,783t exerclse breast-feeding and, 189,191 carbohydrateintake during, 594-595 fluids and, 599-603 for osteoporosis, 633 in diabetes managemenr, 779-781 in hypertensionmanagement,878 in obesitymanagement, 549-550,550f in pregnancy,nutritional requirementsfor, 1 7t - t 7 2 ,1 7 2 b limited,osteoporosis and,630 meal after,carbohydrates in, 595 meal before,carbohydrates in, 594, 595b nuffirional requirementsof, 59| - 592 nutrition for, 587-613. Thus the pleasurable aspectsof eating should be emphasized,without concern for quantity or nutrient and energy content. He worked out daily until recendy, when he began to have SOB and peripheral edema. pflori infection is responsible for most casesof chronic inflammation of the gastric mucosa, peptic ulcer, atrophic gastritis (chronic inflammation with deterioration of the mucous membrane and glands, resulting in achlorhydria and loss of intrinsic factor), and gastric cancer (srael and Peelq 2006; Candelli et al., 2005; B5tvcr and O'Morain, 2005). SeeDietary Supplement Health and Education Act of 1994 DSM-TR-IV SeeDiagnostic and Statistical Manual of Mental Disorders, TR-IV dual-energy x-ray absorptiometry @EXA), body composition analysis, 405 dual x-ray absorptiometry (DXA), 24, 25, 25f Duchenne muscular dystrophy, 374 dumping s1'ndrome, 666-669 after gastric surgery for crncer,977 definition, 654 medical nutrition therapy, 668-669 nutrition care guidelines, 669b s1'rnptoms/nutritional consequences, 655t duodenal ulcer definition, 654 syrnptoms/nutritional consequences,655t duodenal dcers, 662, 664f duodenectomy, pancreatic, pylorus-sparing, nutritional implications, 97 7 DV (daily value), definition, 3 37 DVR @rezista), nutritional complications of, 1005t DXA (dualx-ray absorptiornetry),24, 25, 25f dlmamometry,handgrip,in nutrition-focused physicalexamination,406 dysarthria definition, 1067 in adrenomyeloleukodystrophy, 1081 dysbetalipoproteinemia, familial, 841, 841t definition,833 dysesthesia definition,991 in HW disease, 1001 dysgeusia complicatingHfV disease, 1015 definition,286,383,959, 1067 dnrgscausing,441-442,442b in nutrition assessment, 395 in olderadulthood,292 dyslipidemia definition,813,884 endothelialdysfunctionand, 835 in diabetes, 799-800 dysomia,1070 definition,1067 dyspepsia definition,654 functional.de6nition,654 symptoms/nuuitionalconsequences, 655t dysphagia definition, 286,1067 diets,126l-1266 functional,in childhood,567t in amyotrophiclateralsclerosis, intervention for,1089b in neurologicdisorders,1074-1076, 1077b in olderadulthood,291 dyspnea, 903 definition, 884, 899 in heart failure, 884 dysthymia definition,563 in anorexianervosa,564 dysthymicdisorder,nutrition, I 11t E EAR (estimated average requirement), definition,337 early childhood caries (ECC), 645-646,646f definition, 636 eaong chaotic, in eating disorders, 574 disordered. In addition, because it can gel in the gastrointestinal tract, thus causing obstruction, it must be given with sorbitol, a nonabsorbable sugar that induces diarrhea. In children and pregnant and lactating women, the EER includes the needs associatedwith the deposition of tissuesor the secretionof milk at rates consistentwith good health. The Wtzeljejunostomy and needle-catheterjejunostomy (creatinga feeding opening by a small-bore needle insertion into the jeiunum at time of surgery) are shoft-term small bowel accessmethods. Obesity that began in childhood tends to lead to severe problems in adulthood (e.g. hypertension, elevated LDL cholesterol, and triglycerides) (Thompson et al.,2007). Percutaneousendoscopic jejunostomy (PE) rubes are best for patients who require postpyloric feedings as a result of intolerance of gastric feeding, but PEJ feedings require pumps, which severelylimit mobility of the patient. A product manufacturer

cannot claim that a dietary supplement "prevents heart disease,"but it can state that the product "helps to increase blood flow to the heart." Such subtle differences are unlikely to be discerned by the averageconsumer, leading to misinterpretation and potentially inappropriate use of the products. Natural food sources include those listed in the following table. The on the Nutrition Facts panel of food labels states the percentage of the DV Dietary Reference Intakesfor Iron for Children andAdults Males and Females (mg/day) FoodSources of Iron Selected provided in one serving. The extendedcontact time with the fermentablecarbohydrate-containingbeverages,coupledwith the position of the tongue againstthe nipple' which causes pooling of the liquid around the maxillaryincisors, particularly during sleep,contributes to the decay process. The maxillaryincisors are usually affected. Dr. Yi, Sun et al: Inadequateoral food and beverage intake related to inability to eat or swallow as evidenced by intake of only 260 kcals and24g of protein per day. Chronic gastritis may occur over a period of months to decades,with waxing and waning of symptoms. Patients receiving inadequate oxygen may complain of anorexia, early satiety, malaise,bloating, and constipation or diarrhea. Intubated patients usually require enteral tube feedings or parenteral feedings. Phosphorus and one other nitrogenousbases: adenine(A), thiamine(T), guanine(G), or cytosine(C). Problems noted products: Other Because of insufficient or conflicting evidence, 2006. Tips to follow when choosing the 5 a Day foods. Procedures to avoid include sipping carbonated beverages over extended periods; frequent snacking; and harboring candy, sugared breath mints, or hard candies in the mouth for extended periods. The primary energy reserve of the body is the fat stored as triglycerides in depots made up of adipose tissue. Cunningham JE: Diet, individual responsiveness and cancerprevention, JNutr 133:24005, 2003. Lingual caries may also be seen in persons with gastroesophagealreflux disease. Amylopectin is highly branched, containing up to 5% of α-1,6 branches, with a very high molecular weight (107 to 108 daltons). Therefore the biologically available energy from foods and alcohol is expressed values rounded offslightly below those obtained using the calorimeter. In addition, people belonging to minority races and ethnicities are among those with greater EOC prevalence.

A report of the SurgeonGeneral: Some health and osteoporosis: SurgeonGeneral,DHHS: Rockville,Md,2004, website:www.

What makes you think that if you decidеto make changesyou could do it? Modified from Ramsey BW et al: Nutritional assessmentand management in cystic fibrosis: a consensus report. Total body water and hydration status: Nutritional assessment. Nutritional needs and guidelines. Vegetarian diets. Eating behaviors of older adults. Enteral nutrition. For example, a client with diabetes may be willing to change the type of bread eaten but not to reduce the portion. Compared with infants fed formula, breastfed infants have a lower incidence of infections. Cancer cachexia is a complex syndrome involving weight loss, anorexia, and muscle wasting. Thus dietary counseling must take into account the client's culture, lifestyle, and food preferences. Adequate intakes of calcium and vitamin D throughout life help prevent osteoporosis.

approximately 34°/ of the energy in the human diet. ing and performance of periodic competency assessments of 6. Seealso Enteral nutrition, for premature infants parenteral feedings in, 1120-1125.Seealso Parenteral nutrition, for premature infants problems, 1120t prematurity chronic lung diseaseof, 899 osteopenia of, 1117 1128 premenstrual dysphoric disorder, nutrition for, 1113t premenstrual slndrome (PMS), 274 preprandial blood glucose definition, 765 increasein, in qpe 2 diabetes,769 presbycusis definition, 286 inolderadults,294 preschoolers,feeding, 232-2i4,213t prescription, diet or nutrition,465 definition, 454 prescription benefits under Medicare, 301 pressor agents definition, 432 in foods and beverages,436b MAOIs and,440-441 pressure ulcers definition, 286 in older adults, 294 stagesof, 295b preterm infant, 1118. Arjmandi BH et al: Soy protein has a greater effect on bone in postrnenopausal women not on hormone replacement therapy as evidenced by reducing bone resorption and urinary calcium excretion,J Clin EndacrinolMetabol88:1048, 2003. See Chapter 20 for an in-depth discussionof PN. MedicalandSur gicalM anagement Primary medical tneaffnent of esophageal reflux is directed toward reduction of acid secretion. The concentration of the botanical or nutrient and whether t-heconcentration is appropriate for obtaining the reported benefits of the product (i.e., neither too weak nor too strong). Melena, which refers to black, tarry stools, is a common finding associatedwith peptic ulcer diseasein older adults. Although vitamin E delicienry is rare in humans, it is likely to occur in specific sinrations: 1. Consultation with the individual, caregivers, or family members regarding expectedproblems and their possible solutions should be initiated early in the course of cancer therapy and should continue in conjunction with follow-up nutrition assessmentand care. The Committee identified the following cutoff poins for evaluation and possible treatrnent: children with a BMI greater than or equal to the 85th percentilewith complicationsof obesity or with a BMI greater than or equal to the 95th percentile with or vrithout complications. TotalTriglyceride The triglyceride-rich lipoproteins include chylomicrons, \lLDLs, and anyremnantsor intennediaryproductsformed in metabolism.Of thesetriglyceride-richlipoproteins,chylomicrons and VLDL remnants are known to be atherogenic becausethey activate platelets and the coagulation cascadeand lead to clot formation (Olufadi and Byrne, 2006).All contain the apo B lipoprotein. What stepsshould you take to make her comfortable with this session? There are two types of adipose tissue in mammals: white adiposetissueand brown adiposetissue.White adiposetissue (WAT) stores energy as a repository for triglycerides, servesas a cushion to protect abdominal organs, and insulatesthe body 534 PART4 : Nutritionfor HealthandFitness F a tC e l lD e v e l o p m e n t The greatest level of fatness in normal growth (zbout 25%) occurs at the age of 6 months. Observations of grouth patterns of infants with CLD and BPD suggest that these infants grow more slowly, thereby requiring careful assessmentof both respiratory and nutrition status. Wernicke's diseaseis characterizedt:y the uiad of disturbancesin mentation (encephalopathy),vision (nystagmusor involuntary movement of the eyeball), and gait (ataxia or impaired movement); but they are not always present simultaneously, and clinical diagnosis is often deferred until autopsy. However, studieshave shown that a reduction of protein intake to as low as0.8 mgAg/day can decreaseproteinuria without adverselyaffecting serum albumin. nutrient. behauior:self-modif'cation Watson DL, Tharp FiG Self-d'irected for personalail'justment,ed 5, Pacific Grove, Calif, 1989, Brooks/ Cole. Seealso Metabolic stress metabolic response, 1022-1024, l02lf, l02lt, 1024t oxidative definition, 412 indices, 426-427 , 427 -+28 markers, 427-428t starvation aerrus, 1024-1O25 stress disorder, acute, nutrition for, 11l0t stress hormones, definition, 764 stress hypermetabolism, starvation (comparison), 1025t stressulcers, 661-664 stroke definition, 834 embolic, 1079 definition, 1067 medical nutrition therapy, 1081 medical treatment, 1080-1081 pathophysiology, 1079-1080, 1080f prevention, 842 risk of, nutririon-related factors and, 108lb thrombotic, 1079 definition, 1068 transient ischemic, 1079 strokes, atherosclerosis causing, 816, 837f smrctured lipid as energy source in major burns, 1035 definition, 41, 1022 structure-function claim definition, 471 for dietary supplements, regulation, 480 str:uvite stones, 9 5 4-9 55 subarachnoid hemorrhage (SAID, 1080 definition, 1068 subcutaneousfat, in body composition assessment,401,402b, +02f, 4o}f subdural hematoma de6nition, 1068 in neurotrauma, 1096 subjective, objective, assessment,and plan (SOAP) note,46l subluxation definition,471 in chiropractic, 472t substance abuse, I 104b substance P, actions, 7t suckle, 2 14 definition, 199 sucralose, sweemessvalue, 43t sucrase,45 definition, 3 in carbohydrate digestion, 16f in digestion and absorption, 6t in disaccharide digestion, 45 sucrose, 43 as excipient, 449b definition, 42 structure, 45f sweemessvalue of, 43t sugars dietary carcinogenesis and, 965 sweemess,43t sugar/sweets, copper content, 7 17t sulcus, gingival definition, 636 plaque in, in periodontal diseasedevelopment, 645 sulfites as excipient, 449b in foods, reactions, 746t sulfonylureas, in diabetes management, 781, 782t s u l t u r ,1 1 3 - 1 1 4 1 , 1 1 b ,l 3 6 t sulfur dioxide, in foods, reactions, 746t summarizing, in not-ready-to-change counseling sessions,499 Summer Food Service Program,324t sunshine, vitamin D and, 76b supplements calcium, intake, excess,associated risks, 623b calcium from,622-623 L348 Index supplements (Continuet) chromium, in diabetesmanagement, 779 commonly used by athletes,606t convenience, for exercise, 591-592, 592t dietary,47 5-485 definition, 475 definitions, association, 477f efficacy,reviews, 478-479t health claims qualified, regulation,480 health claims for regulation,48O interactions,486b labeling,476f regulation, 480-481 resources,evidence-based,482-483b resources,for clinicians, 484-+85 structure-function claims, regulation,480 usage assessment,481-483,482b counseling, guidelines, 483-+85 currenr rrends, 476-+78 fluoride, schedule, 643t in heart failure management, 894-895 iron, for iron deficiency anemia, 815 lipid effects, 859t nutritional in adulthood, 278-279 during pregnanry, 168 ora1,52l-524 nutrition information, 1248-1249 vitamin and mineral excessive,486b for adolescents,254 for children, 228 for infants, 205-206,206b recommendations, 479 surfactant decreasedlevels, in malnutrition, 902 definition, 899, lllT infant survival and, 1118 Surgeon General'sRepon on Nutrition and Heahh, 316 surgery bariatric, definition, 532 for cancer, nutritional implications, 976-977, 978t gastric,666 complications, 667-668 medical nutrition therapy, 1037-1038 Sustiva (efavirenz), nutritional complications of, 1003t swallowing of liquids, 1074-1075 phases,1074, 1075f sweat test definition,899 for cystic fibrosis, 910 sweeteners artificial in pregnancy, 179-180 sweetness,43t in medical nutrition therapy for diabetes,777 nonnutritive, carcinogenesis and,965-966 S1'rnlin (pramlintide), in diabetes management, 782,783t s1'rnpathomimetics, as ergogenic aid, 604t s1'nbiotic(s) definition, 3 uses of, 14b q/ncope definition, 884 in heart failure, 889 syndrome, definition, 1l 7 I Synephrine, ergogenic aid, 604t synovial fluid, definition, 1043 systemic inflammatory response syndrome (SIRS),1025-1032 definition, 1022 diagnosis,1026b medical nutrition therapy, 1026-1012 pathophysiology, 1025-1026 systemiclupus erythematosus(SLE), 1059-1060 definition, 1043 sysrolic blood pressure (SBP), 866 definition, 865 T T-20 (Fuzeon) nuuitional complications of, 1003t tachypnea, 903 definition, 899 tacrolimus, after liver transplantation, 727t tamoxifen, for osteoporosis,632 Tanner stage,247 target blood glucose goals definition, 765 in diabetes management, 785 tartrazlne as excipient, 449 in foods, reactions, 746t taste drugs altering, 441-442,442b loss, in older adulthood,292 TBARS (thiobarbituric acid reactive substances), as oxidative stress markers,428 TB (tuberculosis), 918 tea intake, cancer risk and,966 TEE. DailyFoodGuidefor Females MinimumNumberof Servings Food Group Protein, foods Milk products Breads,grains Whole-grain Enriched Fruits, vegetables Vitamin C rich B-carotenerich Folate rich Other I]nsaturated fats Nonpregnant LL- to 2$Year-Olds Nonpregnant 2$ to SGYear0lds 5* 7 5* 2 6 + T I Pregnantor LactatIng 11- to SO'Year-Olds 7r 3 7 + 5 J L 5 1 1 1 2 5 I I I 2 J J J 5 I I I lgg},CaliforniaDepartrnentofHealthServices,Maternal Modified fromNutritiond.uringpregnancyandthepo*partumperiod.:amanualforhealthcareprofesionats, Child Health Branch. Although renal function can deteriorateduring the course ofthese diseases, it is not a consistentfeature. Therefore, to lower LDL cholesterol, energy derived from saturated fatty acids should be replaced with either monounsarurated or polyunsaturated fatty acids. Metabolic therapy is a term used for a variety of cancer management methods, including unproven and disproved diagnostic methods and treatrnents (Cassileth and Vickers, 2003; Richardson et al., 2000). Sdfum. 35 CHAPTER Respiratory alterations can occur anytime throughout the life span: from the premature infant with insufficient surfactant production, to the emaciated teenager with anorexia nervosa, to the young adult with street-drug overdose, to the older adult with severe osteoporosis.Primary pulmonary system disorders include asthma, cystic fibrosis (CF), and emphysema. The past 30 yearshaveseenperiodsofheightened awarenessand periods of minimum awareness.Much of the heightened awarenesscentered around the development of aggressive and effective techniques for nutrition support such as improved enteral tube feeding and parenteral nutrition. Successfuloutpatient use of parenteral nutrition can be achieved when the individual and family are cooperative and receive individualized instruction and follow-up. If this plan doesnt work, there will be other plans to try." for the NextGontact Arranging The key point to remember for this stage is to avoid telling the client what to do. eatright. Seea/soBreast-feeding dietary reference intakes in, 170t nutritional requirements, 186-188 obtaining adequate DF{A and EPA in, 11 0 6 - 11 0 7 omega-3 fatty acids in, l88b osteoporosisand,629 physiology, 185-186, 186f process,education on, 188 lactic acid definition, 587 production,5SS Lactobacillusorganisms, in GI tract, 14 lactoferrin deEnition,199 f u n c t i o n s ,1 1 8 , 1 l 8 t in human milk, 207 lactose,43 as excipient, 448,449b definition, 40 maldigestion/intolerance, 687-689, 688b lactose (Continuefi structure, 45f sweetnessvalue, 43t lactose maldigestion, definition, 673 lag-down growth definition, 199 in infants, 200 lamina propria, in absorption, 11, I 1f lamivudine, nuffitional complications of, 1002t lanugo definition, 561 in anorexia nervosa, 568 large for gestational age (LGA), I I 18 definition, 160 large gestationalage (LGA), definition, 1117 large intestine b a c t e r i a l a c t i o n i n , l 3 - 1 5 , 1 4 b digestive processesin, 4 in absorption, l3-20 latex allergy, 76l Latinos, communicarion style of, 492t LBM (lean body mass),533 definidon, 53 LBW (low birth weight), definition, 1117 L-carnitine, definition, I 141 LDLs (low-density lipoproteins), definition, 834 L-dopa therapy, protein redistribution, 1095t lead, exposure to, in childhood, toxicity and, 230b lean body mass (LBM), 533 definition,532 leanness,excessive,557-558, 560b learning, effect of breakfaston, 235b lecithin,56, 100 definition, 40 left ventricular hyperrrophy, definition, 884 leg cramps, in pregnanry, 182-183 length, in nutrition assessment,399-400 leptin, in body weight regulation, 537t let-down definition, 160 regulation, 186, 186f leucine, requirements for, by age group, 63t leukocyte esterase,in urinalysis, expected value/ significance,4l 7t leurlose, sweetnessvalue of, 43r Lewy bodies, in Parkinson's disease, 1094 Lexiva (Fosamprenavir Calcium, FP$, nuffitional complications, I 005t LGA. Maintaining present body weight or achieving a moderate loss is beneficial. Used witl pemission. Demineralized water should be used if the water contains more than 100 mcg/L. Multiple strategies for behavioral therapy are often needed (ADA, 2007). Eachyear approximately140,000of the 9 million Ameri- can adults classified as extremely obese receive bariatric surgery(AHRQ,200+). Phannacol 35:S1-S93, Byerset al: AmericanCancerSocieryt Guidelineson nutrition and physicalactivity for cancerprevention:reducingthe risk of cancerwith healthyfood choicesand physicalactivily,CA Cancer J Clin 52:92,2002. govl-dms/admehg3.htrnl, accessedJanu ary 15, 2007. The symptoms of tachycardia, sweating, and abdominal pain are so negative that they motivate the patient to make the appropriate behavioral changes and refrain from overeating. Maximum volumes of CPN rarely exceed 3 L, with typical prescripdons of 1.5 to 3 L daily. After radiation therapy and surgery what side effects mightJanice experience?List some dietary strategies Janice may follow if she experiencesthe following: fatigue, intermittent queasiness,a slight diffrculty in swallowing (esophagusis in the radiation field), and an increasedcaloric intake (mosdy causedby her need to "take care ofl' herself,which resuls in weight gain). Postsurgical complications include delayed gastric emptying, early satiety, glucose intolerance, bile acid insufficiency, diarrhea, and fat malabsorption. Prolonged gastritis may result in atrophy and loss of stomach parietal cells, with a loss of secretion of hydrochloric acid (achlorhydria) and intrinsic factor. Moriyama S et al: Evaluationof oxygenconsumptionand resting energyexpenditurein critically ill patientswith systemic inflammatoryresponseslmdrome,Crit CareMed 27:2133, 1999. "Tell me about your progress so far." r "Why did you choose that number on the ruler? Bob was also given a diet sheetwith a briefoverview ofa no-added-saltdiet. Nevertheless, to minimize the risk of aspiration, patients should be positioned with their heads and shoulders above their chests during and immediately after feeding. \.4tamin E is a fat-soluble vitamin that exists in eiEht different forms. I euoN KeuerIEauroJ'z 'I uorsserdxe lo salrsnuilV lr,lrre! lUaUra-nOUrartg (1X4)psso18od,{g (rX) &ossaccuPurd5 (y) sn€e4 fi91)pa8uLreqdossolg fi11$ realqcocoFqnsa1 fifu Ptceg (11) suecnpqy xauar reeuror x?#:l :: qrnol Pu? Rest periods may be needed; this does not impair the training effect from physical activity. Illner K et al: Metabolicallyactivecomponentsof fat free mass and resting energyexpendirurein nonobeseadults,Am J PhysiolEndorino|Metabol278(2):E308,2000. Sugar alcohols contain, on average,approximately 2 calories per gram. To restore her smile aesthetically, she will either need a removable partial denture or implants. Bolus The_ feeding modality of choice when patients are clinically stable with a functional stomach is the syringe bolus method. Defining success-personalpreference Barriers and Complexities to Life Enhancing Changes r Distorted or irrational beliefsversusrational thinking o The internal critic . The esophagus passes through the diaphragm by way of the esophagealhiatus or ring. Excesses should be avoided (see Focus On: The Impact of Alcohol and Cigarette Smoking on the Skeleton-a Double Whammv! !). Not all individuals respond, but for patients who do respond, clinical trials suggest that a weight loss of about 2 to 20 kg can be expected usually during the first 6 months of treatrnent. PromislowJH et al: Retinol intake and bone mineral density in the elderly:the RanchoBernardoStudy,J BoneMiner Res 17:1349.2002. The roles of fiber in the physiologyof the GI tract are complex,and our understandingis evolving.The adequate intake (AI) of total fiber is set at 38 g/day for men and 25 g/day for women (Institute of Medicine, Food and Nutrition Board, 2002).Mean intake of Americansis currendy lessthan half this. Major reservoirsof infection are the CNS and the gastrointestinaltract. SeeEsophagitis normal, 656f surgery 659-660 ESRD. Medications A. E. Several ofthese techniques are described in the following paragraphs. Figure 3-5 shows some of the more important lipid stmctures. Alcohol raises both total triglyceride and HDL cholesterol levels. Owen OE et al: A reappraisalof the caloricrequirementsof men, Am J Clin Nutr 46:875, 1987. Figure l3-3 focuses on the process of decoding the information in a gene by showing the important connection between the basesequencein the gene'sDNA and the amino acid sequence of the protein that the gene encodes. High-oxalate foods should not be avoided basedon their oxalate content alone when only a limited amount is bioavailable. The ADA Critical IllnessGuidelinesand the ASPEN Guidelinesfor the IJse of Parenteraland Enteral Nutrition in Adult and PediatricPatientsuse evidence-based methodolog;r,establishingeach guidelinebasedon the quality of publishedevidence. Wallace BA" Cumming RG: Systematicreview of randomized trials of the effect of exerciseon bone massin pre- and women, Cahif TtsneInt 67:10, 2000. It is usually ueated with an iron-rich diet as well as iron supplements. 0ral NutritionManagement Strategies Ideally the preferred route of feeding is oral, although individuals who experience nuffition impact syrnptoms such as nausea,anorexia, early satiety, and dysphagia may resist it. Patients with an esublished severeprotein deficiencywho continue to loseprotein may require an extended time of earefully supervisednutritional care. Hakim I: Mediterraneandiets and cancir prevenrion,Arch Intern Med | 58(l l) :r | 69, 1998. PearlML et al: A randomizedcontrolled trial of a rezular diet as the first meal in g1'necologic oncologypatientsunJergoing intraabdominalsurgery ObstetGynecol100:230,2002. respiration(seeChapter 35). Beyer,MS, RD KEY TERMS achlorhydria absenceof hydrochloric acid from maximally stimulated gastric secretions achylia gastrica absenceofhydrochloric acid and pepsin in the gastric juice alimentary hypoglycemia low blood glucose manifesting as weakness,perspiration, hunger, nausea,anxiety, and remors I to 2 hours after a meal atrophic gastritis chronic inflammation of the stomach with deterioration of the mucous membrane and glands, resulting in achlorhydria and loss ofintrinsic factor Barrett's esophagus(BE) a condition in which cells lining the distal esophagus become abnormal and premalignant dumping syndrome a complex physiologic responseto the rapid emptying of hypertonic contents into the duodenum and jejunum duodenal ulcer a peptic ulcer situated in the duodenum dyspepsia (indigestion) a general term used to describe epigastric discomfort following meals endoscopy a procedure used to view the esophagus,stomach, and upper part of the small intestine using a flexible tube with a camera epigastric referring to the upper middle region of the abdomen esophagitis inflammation of the esophagus functional dyspepsia unexplained persistent or recurrenr upper GI discomfort; sFnptoms may include vague abdominal discomfort, bloating, early satiety, nausea, and belching; underlying mechanisms are not entirely clear, bur may include visceral hypersensitivity to acid or distention, impaired gastric accommodation, altered brain-gut axis, and abnormal gasric motility fundoplication a surgical procedure for the treatment of reflux esophagitis in which the fundus of the stomach is wrapped around the lower end of the esophagus 654 gastrectomy removal of all (e.g., total gastrectomy) or part (hemi-gastrectomy) of the stomach gastric ulcers lesions that are associatedwith disruption of tie gastric mucosal barrier gastritis inflammation of the stomach gastroesophagealreflux disease(GERD) backward flow of the stomach or duodenal contents into the esophagus;may occur norrnally or as a chronic pathologic condition heartburn a retrosternal burning related to reflux of gastric contents into the esophagus Helicohacter pylori a qpe of bacteria that can chronically infect the stomach; known to be a primary contributor to the development of gasritis, peptic ulcers, and even gastric cancer hiatal hernia an outpouching of a portion of the stomach into the chest through the esophageal hiatus of the diaphragm lower esophagealsphincter (LES) the last few centimeters of the esophagus,which prevents reflux of gastric contents into the esophagus melena black, tarry stools indicative of gastrointestinal bleeding pari€tal cells large cells,located on the margin of the peptic glands of the stomach, which secrete hydrochloric acid and produce intrinsic factor parietal cell yagotomy resection or removal of the portion ofthe vagus nerve innervating the parietal cells for the purpose of diminishing gastric acid secretion peptic ulcer an eroded lesion in either the esophageal,gastric, or duodenal mucosa resulting from the action of gastric secretions and typically H. Exenatide(Byetta)is an incretinmimeticor incretinlike agent.Incretinsarehormones(glucagon-likepeptide1 [GLP-1]) releasedduring nutrient absorptionfrom the cells of the gut and from pacreaticislet cells,which increaseglucose-dependent insulin secretion,slow gastric emptying,decrease glucagonproduction,and decrease ap- petite. Whattypes of advicewill you offer Ed about his diet? KaputJ, RodriquezRL: Nutritional genomics:the next frontier 16:166,2004. PAL categoriesbeyond sedentaryare determined according to the energ'y spent by an adult walking at a set pace. In general, fats with shorter fatty acid chains or more double bonds are liquid at room temperature. Clinicians often want to provide advice. Am Gerontolical J Bosy-WestphalA et al: Effect of organ and tissuemasseson resting energ'yexpenditure in underweight,normal weight and MetabolDisord28(l):72,2004' obeseadults,Int J Oba Related comparison Bouten C et al: Daily physicalactivity assessment: betweenmovementregistrationand doubly labeledwater, 81:1019,1996. Many health care professionals remain anxious about recommending dietary supplements. Ultimately the final urine produced is funneled into common collecting tubules and into the renal pelvis. LVH is a risk factor in all age, gende5 and ethnic groups.Intervention trials are being conductedto determine whether regressingLVH will improve the clinical course.In more intenthe meantime,the presenceof LVFI necessitates siverisk factormanagement(seeChapter34). SeeCerebral palsy; Creatine phosphate CP (creatine phosphate),definition, 587 CPN. Surgery and tamoxifen are planned for treaffnent of her disease.In the next 3 weeks she will undergo a lumpectomy, followed by 5 to 6 weeks of external beam radiation therapy. 488 PART3 | NutritionGareProcess National Center for Complementary and Alternative Medicine (|{CCAM): NCCAM funding: appropriations history, www. It can develop 1 to 3 weeks after transplant. Hair-An easy-to-collect tissue; usually a poor indicator of actual body levels. 924 PART5 i MedicalNutritionTherapy Nephrotic Syndrome Pathophysiology Nephrotic syndromecomprisesa heterogeneousgroup of diseases, the common manifestationsof which derivefrom a loss of the glomerular barrier to protein. For example, poorly controlled diabetes may manifest in xerostoria or candidiasis, which may then impact the ability to consume a diet to appropriately control blood sugar, further deteriorating the glucose control. Because this extra LBM has contributed to an increased metabolic rate, R-lVlRdecreasesas LBM is lost. Artificial sweeteners (discussed in Chapter 30) and fat substitutes (discussed in Chapter 3) may improve the acceptability of limited food intakes for some people. Slurries o Prepare slurry with thickener and juice or milk. *Fasting variesfrom partial (abstentionfrom certain foods meals) or to complete (no food or drink). Tircker KL et al: The acid-basehypothesis:diet and bone in the FraminghamOsteoporosisSttdy, Eur J Nutr 40:231,2001are Tircker KL et al: Colas,but not other carbonatedbeverages, with low bonemineral densityin older women:the associated FraminghamOsteoporosisSndy,Am J Clin Natr 84(4):936,20{J,6' TylavskyFA et al: Vitamin D, parathyroidhormone,and bone Am J Clin Nutr ll5:2735s, 2005. Tlansmission can also occur by sharing contaminated needles and injecting contaminated blood products. Hercberg S: The history of B-carotene and cancers: from observational to intervention studies. It appears that chromium picolinate and chromium nicotinate used in supplements are more bioavailable than chromic chloride. Shike M, Bloch AS: Enteral nutrition, GastrointestEndotc Clin North Am 8(3):529, 1998. tials of Hypertension Prevention Collaborative Research Group: Effects of weight loss and sodium reduction intervention on blood pressureand hypenension incidence in overweight people with high normal blood preszure:the Ti.ials of Hlpertension Prevention, phaseII, Arch Intrn Med 157:657,1997. For example, an individual with a particular variant in the 5,10-methylenetetrahydrofolate reductase (MTHFR) gene is likely to require more folate for optimal health than an individual with the more corunon version of this gene. Consumption must be monitored to maintain appropriate calorie levelsand a suitableratio of protein, fat, and carbohydrate. Bisphosphonates These drugs act as antiresorbers on osteoclaststo reduce their bone-degradative activities. Rimm EB et al: Folateand vitamin 86 from diet and supplements in relation to risk of coronaryheart diseaseamongwomen, 279:359,1998. Thomas' usual body weight is 165 lb, which he also reported weighing 3 months ago.According to Thomas, he was easily able to consume liquids when his qrmptoms initially began, but within the past 2 weekshe has had difficulty consuming liquids without emesis.He has not been able to consume solid foods during the past 3 months. u€ Jo lueruеJnseoru CWg V -xe uondroser JrtsBlJoetso'ssecordSuqepourer eqr;o Suqd -noJun eqr xueur Jeqlo pu? Ophthalmologic s)rynptoms generally respond rapidly to thiamin, whereas ataxia and encephalopathy respond more slowly. Maintainfluidandelectroyte balance . Fear tactics . Avoid skipping meals;prepare foods with high-energy density. Most important, it activates enzyrnes, contributes to energy production, and helps regulate calcium levels, as well as copper, zinc, potassium, vitamin D, and other important nutrients in the body. Root caries, occurring on the root surfaces of teeth secondary to gingival recession, affect a large portion of the older population. Dietary Guidelines for Americans 2005: www.health.gov/ DietaryGuidelines/dga2005/document, accessedJanuary 15, 2007. C o m p l i c a t i oannsdM o n i t o r i n g Complications Abdominal leakageof gastric contents from a gastrostomysite can causeskin erosion and skin breakdown, leading to infection and peritonitis; however, fewer than 10% of patients experience serious complications. Saunders. AdequatevitaminD intakefrom food,supplements, andsunexposure . The three activities of public healtl, community assessment,poliry development and public health assuranceapply to the nutritional health of a community. If blood glucose levels are dropping before exercise, adding exercise can contribute to hlryoglycemia during exercise. SandersS et al: The impact of coenzymeQto on systolicfunction in patientswith chronic hean failure,J CardFail 12(6):464, 2006. Endoscopy is also imporant in the long-term monitoring of patients with chronic esophagitis and gastritis becauseof the possibility that they will develop premalignant lesions or carcinoma. DietaryTreatment Calcium, vitamin D, and other micronutrients have been covered previously; combination supplementation of calcium and vitamin D has been found not to reduce fractures in postmenopausal women in the Women's Health Tiial flaclson et al., 2006). Potential complications associatedwith parenteral nutrition support include fluid overload in individuals who receive multiple W therapies, hyperglycemia resulting from the high concentration ofdextrose, insulin resistanceassociated with illness and srress,electrolyte imbalance, and infection (DeChicco and Steiger, 2006).Intense monitoring and specializedcare are required. social. Evidence supports the use of xylitol-sweetened gum as an anticaries agent after meals and snacla (I{ildebrandt and Sparks, 2000; Milgrom, 2006). An algorithm for assessingand recommending dietary supplements is presented in Figure 18-5. o Aim for a healthy body weight. The most common type of hiaal hernia is the sliding hernia, and the less common form is the paraesophagealhernia (Minal and Balaban,1997) @gure 26-2). Proteins act as buffers and are cariostatic. Thom T et al: Heart diseaseand strokestatistics-2006 update from the AmericanHeart fusociation StatisticsCommiftee, Circulation I l3:e85,2006. Many proteins such as kinases,cytokines, and transcription factors that are involved in critical signaling cascadesare subject to mutational changes and altered activities. L3O4 APPENDIXES Zinc is an essential mineral that is found in almost every cell. In Buchman A, editor: Clinical nutritinn in gastrointestinaldisease,Thoroughfare, NJ, 2006, Slack Inc. Criteria should be applied to select appropriate candidates for nutrition support (Table 20-1)' Enteral nutrition should be used in patients who have at least 2 to 3 ft of functional gastrointestinal tract, who are or will become malnourished, and in whom oral intake is inadequate to restore or maintain optimal nutritional status. They can assist in the identification of population subgroups with unique nutritional risks and in 332 PART2 I Nutrition in the Life Cycle communication and dissemination of information to identified groups. By increasing LBM in proportion to fat, exercisehelps to balance the loss of LBM and reduction of R-NIR that inevitably accompany even a well-managed 550 PART4 i Nutrition for Health and Fitness weight-reduction program. (Courtesyof Margie Gallagher;PhD, RD, East Carolina Uniztersity.) Lactose Sucrose CHzOH I c-o t/t I 9.ox P ",i\l_t/r tl OH T2"x' oHf 9.H o r\l_l/J*,o* tl OH FIGURE 3-3 Disaccharidesof importance in humans: sucrose(glucoseand fructose) and lactose(glucoseand galactose). Although the overall incidence of decay in the United States has declined, as many as l7%" of children between 2 and 4 years of age have tooth decay (Centers for Disease Control and Prevention, 2005). Therapy Nutrition Medical Weight reduction and decreasing meal size decreases the impact of the hiaal hernia. siteslistedin CDC Surveillance HIV/AIDS is found in all sectionsof the United States population,which reached300million peoplein 2006.The CDC estimatedthat by the end of 2004almost1.2million peoplein the United Stateswere living with HIV/AIDS, of which one fourth were undiagnosed.Diagnosis of AIDS NJ 208.5 Totalrate:136.7 Rate(per100,000 population) 150 Guam Virginlslands,US 47.8 281.7 FIGURE 38-2 Estimated prevalencerates for adults and adolescentsliving with HIV infection (not AIDS), 2004-i5 areas.(From CDC: HIV/AIDS surueillance-general epidemiologt[throagh 2004] hnp://www.cdc.goo/hia/topics/sutoeillance/resources/slides/general/ index.hnn.) CHAPTER Virus(HIV) Disease995 38 I MedicalNutritionTherapyfor HumanImmunodeficiency continues, with most cases in the age-group of 40 to 44 years.Compared to the U.S. population distribution, blacks and Latinos remain disproportionately affected (CDC, 2004;CDC,2006b). Recendy distinctions between erosive and nonerosive GERD and daytime and nighttime GERD have been described. Rheumatoidarthritis (RA) as,1059,1059f scleroderma s1'ndromeas, 1056 Sjcigren's as, 1059-1060 systemiclupuserythematosus Index L345 rheumaticdisease(RD) (Continued) temporomandibulardisordersas, 1056 unconventionaltherapiesfor, controversies andlimitationsof, 1061 rheumatoidarthritis(RA), 1050-1056 caremanagement algorithm,105lf definition,1042 exercise and, 1052 joint affectedby,1052f juvenile.Seea/soJuvenilerheumatoidarthritis definition, 1042 medicalmanagement, 105I - 1052 medicalnutrition therapy,1052-1056 overview,1043t pathophysiology, 1050-105 l, 105lf surgery1052 rheumatoidfactor,1051 definition, 1042 rhinorrhea definition,1068 in neurotrauma,1096 riboflavin,requirements,in adolescence, 252t, 253t riboflavin (vitamin Br), 84-85 absorption,84 deficienry,85, 86b,86f definidon,41 dietaryreferenceintakes,85, 85t functions,70t, 85 metabolism, 84-85 sources, 85, 85t, 99t stability and RDA for adults,99t storage,84 toxiciry 85 transport,84 ribonuclease, in digestionand absorption,6t, 10 ribonucleicacid (RNA) in proteinsynthesis, 59,61f messenger, definirion, 165 translation,6lf,62b ribose,ergogenicaid,605t rickets definition,4l from vitamin D deficiency,77-78, 78f risedronate,for osteoporosis, 631 risk assessment, for cancer,972 risk factors definition, 834 for cardiovascular disease,834, 842-852,87lb combination,873-874 inflammatorymarkersand, 8+8-849 lifestyle,849-850,849b lipoprotein profile and, and 843-848 markersin blood and,843-849 modifiable,842b for heart failure, 885 for hypertension,868 essential,866 nutritional,386-387t urinary for nephrolithiasis,948b ritonavir-ABT-538(Norrir), nutrirional complications of, 1005t R-iIlR.SeeRestingmetabolicrate RNA. s00z'Lt7.sMnzq[sxurquv 'snr:qlreoatsoeetnlgtr,ttsllnperaplo eseqopup tr{Sra^ua^o w speollurolеenl seJnparssolrq8rerll:lEte dS rerssew j,lltoty;ii.;K::X, f puutsleurpa11or1uoc-oqeceyd,o",,o' slllrr{tr€ PloteurnaqJ ur uortctueruelddns urnruales :l€ te zteJad V 3llEurnaqu rol {dpraql uotluInNlpstpawI 0, uSIdvHS 990T asEaslo 'SO0Z'Ztg1l aru.t'J sa[tualg lolg'sqrrggeoelso pue uoJI Pue snrnpJ?prolulunaqrtrm stueneduI suoDBDueJuoJ curz 'reddoc'utntueleseuseld PuBPInUpr,rou,{5:lBle W rezq\ '0002'I 'r:y6g,ngda6 Eaauafug qtpag p1to74'uonetlnsuor OI{r!\ e go uoder :cruraprdepqo13etp Eur8eueurpue Sunue,rard:drrseqg:uoqeztueSrgqrl?eH PIroA\ '2002 'Apns pello-Duor-oqeceld ' pezruropuerpulTq Zlt 6Z ltwamaqy f -elqnopne|-7 e:strrJtpr?oelsoeetnluI erunlol aEep-rec;ossol arp rreJJelou seopg urnrctIA&eiuourelddns :lBla 'gV e{nl,11 '5007.'0816:99tldrurT '1etrrpazruropuere :eeu{ eqr snuqu?oersorplr4.sluanedur arntcundncy:F re D ul,1\ Jo . Pelvic inflammatory disease o Peripheralneuropathy CD4* T-LymphocyteCategories Category l: >500 cells/pl Category 2: 200-499 cells/pl Category3: I month duration) t Kaposi'ssarcoma t Lymphoma, Burkitt's (or equivalent term) r Lymphoma, immunoblastic (or equivalent term) . De Boeck K et al: Cystic fibrosis: terminolog'y and diagnostic algorithms, Thnrax 6l:627 ,2006. Normal healthy adults daily excrete 15 to 40 mg of oxalatein urine, and this can be increased by 50o/" by large intakes of oxalate-rich foods. r A lot number, which is helpful if problems arisebecause it allows the product to be tracked through eachstage of the manufacturing process. These rules describe the Mendelian inheritance of a gene, named after Gregor Mendel, who first deduced that the inheritance of traits was governed by a predictable set of rules. ' ' ' . Seeaho Integrative medicine nutrition, 464-466. 1, Phenylalaninehydroxylasedeficienry; 2, Dihydropteridine reductasedeficienry; 3, Biopterin syntlretasedeficienry. 996. Paraphrasingis a brief repeat of the essenceof what the speakerhas said, using fresh and concisewording. The etiology of abnormal blood pressure is likely multifactorial. Fruits, vegetables, cereal products, and all of the other foods that generally comprise a diet can be consumed with no restrictions. What is the maximum amount of fat over 24 hours that should be given parenterally to avoid adverseeffecs? J Agric FootlChew 54:3008,2006;Brinkley LJ et al: A further srudy of oxalate bioavailability in foods,J Urol 144:94, 1990; French AM et al: Urine compositions in normal subjectsafter oral ingestion of oxalate-rich foods, Clin Sci 60:411, 198I ; and MasseyLK et al: Effect of dietary oxalate and calcium on urinary oxalate and risk of formulation of calcium oxalate kidney stones,J Am Diet ,4ssoc 93:901, 1993. Zincwas normal at 83 (63 to 147 mg/dl). Plant foods are the major dietary sources of selenium. Individualsshould be instmcted on food safetypractices,including the following: avoidanceoffoods that containsunsafelevelsofbacteria(raw meats, spoiled or moldy foods, and unpasteurizedbeverages); thorough hand washing; special handling of raw meats,poultry, eggs,utensils,cutting boards,and countertops; and storageof foods at appropriatetemperatures(below 40" F and above140'F) (Eldridgeet al., 2001;Charuhas,2006).Many institutions prescribea low-microbial or low-bacteria diet (neutropenicdiet) for neutropenic individuals.Its useis chiefly basedon empiric knowledgeof the existenceof microorganismsin the food supply.These diets consistprimarily of cookedfoods,and the major restrictions include avoiding fresh, raw, or uncookedfoods and unpasteurizedbeverages. Both gastroplasty and gastric bypassprocedures have the effect of reducing the amount of food that can be eaten at one time and producing early satiety. boais, or M. Lifestyle, genetics, and oral hygiene also can affect caries risk. ResnicowK et al: Resultsof Go Girls: a nutrition and physical activity intervention for overweightAfrican-American adolescentfemalesconductedthrough black churches,ObesRes 13(10):1739,2005a. Tight-fitting garments . Multiply the grams of protein per liter by 10. In fact, one study showed 50o/"of recurrent calcium stone formers had hypocitraturia (urinary citrate of 90 days after treatrnent): Esophageal-fi brosis, stenosis,neurosis Cardiac-angina on effort, pericarditis, cardiac enlargement Pulmonary-dry cough, fibrosis, pneumonitis Acute affects: Nausea,vomiting Changesin bowel function-diarrhea, cramping, bloating, gas Changesin urinary function-increased frequency,burning sensationwith urination Acute colitis or enteritis Lactose intolerance Fatigue Loss of appetite Late effects (>90 days after treatment): Diarrhea, malabsorption, maldigestion Chronic colitis or enteritis Intestinal-stricture, ulceration, obstruction, perforation, fistula Urinary-hematuria, cystitis Head and neck area (tongue, la4mx, phaqmx, oropharynx, nasophary.nx,tonsils, salivary glands) Thorax (esophagus,lung, breast) Abdomen and pelvis to eradicate malignant cells, to ablate the bone marrow to make room for the engraftment of the infused hematopoietic cells, and to suppressthe immune system of the recipient to decreasethe risk of graft rejection in allogeneic transplants. ONE STARCH EXCIIANGE Selection Tips l. Nutrition and diet affect the oral cavity, but the reverse also is true; that is, the starus of the oral cavity may affect one's ability to consume an adequate diet and achieve nutrient balance. Cyclosporine and tacrolimus are associatedwith hyperkalemia, hypertension, and hyperlipidemia. SegalJBet al: Concentrarionsof B vitaminsand homocysteinein children with sicklecell anemia,SoutbMedJ 97:149,2004. Maintaining appropriate nutrition throughout life can also prevent or delay the onset of somenutrition-related diseases. Continuous Infusion Parenteralsolutionsare usuallyinitiated below the goal infusion rate via a volumetric pump and then increasedincrementally overa 2- or 3-dayperiod to attainthe goalinfusion rate. and Sodium. Reflecting In reflecting the counselor identifies the client's emotion or feeling and reflects it back. PisaniB, Mullen G: Preventionof osteoporosisin cardiac transplantrecipients,Cun Opin Cardiol17:160,2002. DietaryFat Studies in persons with diabetes demonstrating the effects of specific percentages of dietary saturated and trans-fatt1 acids and specific amounts of cholesterol on C\rD risk are not available.However, those with diabetesare considered to be at risk similar to those with a past history of CVD. Is part of the problem that you like those same snacks?" Client: "Oh, you are right. Arthritis and other RDs are among the most orevalent chronic diseaseconditions in the United Statesand are as- Overview of MedicalNutritionTherapy for Rheumatic Diseases Supplements or Herbs That Complementary Can Be Safely Therapy Considered Disease Medical Nutiltion Therapy Rheumatoid arthritis Monitored fast7-10 days;vegetarian Exercise, or vegandiet; appropriatecalories meditation, for maintenanceof normal body tai chi, weight; RDA for protein unless spirituality, malnutrition present;moderate-fat relaxation diet with emphasison omega-3 techniques fats;modificationsas neededfor jaw pain, anorexia,etc.;lowmercury fish 1-2 X/week Weight managemenr;dier adequate Exercise, antioxidants,calcium,folate, acupuncture vitamins86, By2,D Osteoarthritis TherapiesWithout Adequate Evidence Supplementdiet asneededto meet DRI for antioxidants, calcium,folate, vitamins Bo,Bru, D; GLA; fish oils China root, willow bark, valerian, feverfew, boswellia, curcumin, gnger, copper or coppersalts,devil's claw, thunder god vine Supplementdier as neededto meet DRI for antioxidants, calcium, folate, vitamins Bo,B,r, D; glucosamine and chondroitin Sharkcartilage,SAM-e DRI, Dietary referenceintake; Gl-4, Ganma-linolenic acid; RDl, recommended dietary allowance; SAM-e,S-adenosyl-r,-methionine. l1 I Nutritionin theCommunity335 CHAPTER UseFuL EBSITEs American HeartAssociation http ://www. *More phenylalanine(>800 mg) is required in the absenceof grosine. In summary the pharmacologic management of cachexia and anorexia requires careful evaluation based on the patient's treatment goals and prognosis and on close monitoring of syrnptomsand prescribedmedications that may interfere with adequateintake. The HSCT procedure is associatedwith severe nutritional consequencesand requires prompt, aggressive intervention. Because genes are carried on chromosomes, the rules governing the distribution of chromosomes during mitosis and meiosis also govern the disuibution of genes. Supplemental brochures/materials? The use of branched-chain amino acid formulas is controversial. uoBsnlEz'g 'uuerled pelJales q stolc Jrloqueoquorql 3urs.,{1lq eruer{Jsr urcJq Jo IEsJaAaJpe^lollB seq s8n-rp .uoperrTrqeq ,,3unsnq-to1c,,-ro cn (loqruolp Jo esn dltueceg -er pue uonJJEJururcrq rerpJry Jo uopue^erd uo pasnco; lr la,utroddns sc,r\e{oJts Jrloque JoJ tueuDEOJr,tsed eql u1 'tuaserd eq osp deur uorssardxero qceeds;o ssolro 'e;seqde'pepnlcco sl vlw rJel aqr 31.sdrrrs d-rosuespue Joloru agr seqddns lreue srqr asneJeqlpoq aqr ,srsared Jo eprs elrsoddo eqt uo sqrurTJosrrrgep Lrosuas glr,lo' sacnpo-rduorsnlrro VIW uV .srrrgJp crSolorneuJo suonel -lelsuoJ snorJEA 3ur4aas., (qpetoadsnseq uec ftolrrrel re1 tno -nrsrlorqaJac .repcnred e uonJreJur uy .lrrrcurouqe etp Jo srapros!Oc;6o;ornaprol {deraql uollulnN luo!pahl I ' U l l d v H S 'alrl ltr1enb peseerJepe dpuanbsuoc Jo pue 'sracp uols 'suopceguIJo {slJ erfl sescaJcurturu ur ssol tl{8le1ysuopraJur tuo+ errurpuadxe l8reue psrq req8rq or Lrepuocasaq deru ssol tq8rarn sawJ rer.FoIIFS uI 'Surpea;-;1as pa-rredurrpue ecuepuedepur pesearJapulo{ Suppse.l elvrur poo; erenbapeurB dq pasnec u ssol tq8re,r. Like drugs, food requires numerous enzymatic genes, proteins, and environmentalfactors interact to processein order to be digested, absorbed, and used by causethe physiologicdysfunctionthat resultsin disease; the body's cells. Forty percent to 90o/" of newly infected develop flulike symptoms: fever, maculopapular rash, oral ulcers, arthralgia, loss of appetite and weight loss, malaise, inflamed ly-ph nodes, pharyngitis, and myalgia (diffuse muscle pain). However, patients tend to choose liquids, and weight loss can be deterred by drinking too much caloricallydenseliquid suchasmilk shakesand soft drinks. In addition to nutrition programs, what other health and safetyprograms and resourcesare availablein your community for this family? With thiamin deficiency, not only should therapeutic supplementation be administered, but nutrient-dense foods containing thiamin such as whole grain or enriched breads and cereals should also be incorporated into the patient's diet. Between-mealsnacksshouldincludecariostatic Tooth loss (edentulism) and removable prostheses (dentures) can have a significant impact on dietary habits, masticatory function, olfaction, and nutritional adequacy. She enterains guess frequendy and loves to cook- Nell is 5 ft 2 in tall and weighs 170 lb. Therefore a waisr circumferenceof less than 35 inchesfor women and 40 inchesfor men is recommended(seeChapter21).Smallweightlosses(10to 20 lb) can improve risk factors such as LDL cholesterol, HDL cholesterol,triglycerides,high blood pressure,glucosetolerance,and CRP levels,evenif an idealBMI is not achieved.Weight loss has been correlatedwith lower fibrinogen and CRP levels (Tchernof et al., 2002). Newer peripheral devices have made it possible to infuse PPN with a single catheter placed for up to a month. Beans, peas, and lentils are also found on the Meat and Meat Substitutes list. For example: Client: "I really like eating out, but I always eat too much, and my blood sugarsgo sky high." Nutrition Counselor:"You are in the majority when you say that you like eating out. Gastric bypassinvolves reducing the size of the stomach with the stapling procedure but then connecting a small opening in the upper portion of the stomach to the small intestine by means of an intestinal loop. However, decreasesin lean body mass may be occurring, although actual weight may appear stable. American Dietetic Association (ADA): Position of the Arnerican Dietetic Association: the role of registered dietitians and dietetic technicians, registered in health promotion and disease prevention programs, J Am Diet Assoc106:1875, 2006. iIutritionalAssessment in GysticFibrosis Index MlnlmumFequency lndlcatlon Every 3 mo Every 3 mo Routine care Routine care Every3 mo until a;ge2yr Annually Annually Routine care Routine care, diagnosis Routine care, diagnosis Dieary intake* 3-dry fat balancet Annually fu indicated Anticipatory dietaLryand feeding behavior guidance Every3 mo or asindicated Routine care, diagnosis Weight loss, growth failure, clinical deterioration, diagnosis Routine care, diagnosis Anthropometry Weight Height (children =2 yr old) Length (children >2 yr old) Head circumference Mid-arm circumference Tiiceps skin-fold thickness Nutrltlon Assessment taboratory Studlee Complete blood countt Serum or plasmaretinal value Serum or plasmac-tocopherol value Albumin level Annually Annually Annually Annually Electrolltes and acid-basesatus fu indicated Routine care, diagnosis Routine care, diagnosis Routine care, diagnosis Weight loss, growth failure, clinical deterioration, diagnosis Prolonged fever, summer heag infancy, breastfeeding, diagnosis From Ramsey BW et al: Nutritional assessmentand management in cystic fibrosis: e consensusreporg The Consensus Committee, AmJ Ctin Natr 55:108, 1992. By means of the bicarbonate-carbonic acid and phosphate bu-ffer system, it also provides buffering action to neutralize bacterial acid metabolism. Studies suggestthat the glycemic index of a diet has a predictable effect on blood glucose levels and may have use in the dietary management of diabetesand hlperlipidemia (Brand-Miller et al., 2002). better weight loss compared with those given linls to educational websites (Tate et al., 2001). Exceptions, such as some forms of cancer,are discussedin terms of both the evidencefor prevention and the appropriate nutrition care in disease. KahnJ et al: The impact of overweighton the developmentof diabetesafterhearttransplantation , Clin TianEhnt 20:62,2006. (Copyright Community Research Initiatiae on AIDS, l,lew York, 1998.Couttesy AIDS CommuniryResearch Initiatiue of America IACRA], Neu York.) nistic infections (OIs) associatedwith severedepressionof jirouecii pneumonia, cytocflular immuniry: Pneumorystis megalovirus (CM\,), candidiasis, or rare Kaposi's sarcoma. How would you bring up exerciseand what would you recommend for Maria? Whatquestions would you askMatthew about the supplementshe's taking? The child who already exceedshis or her optimal adult weight can safely experiencea slow weight loss of l0 to 12 lb per year until the optimal adult weight is reached. Could you ask your grandchildren which of this long list of low-saturated fat snacks they like and then buy them?" for Change 503 Gounseling 19 | Intervention: CHAPTER Agreeing Witha Twist This strategy involves offering agreement, but then moving the discussion in a different direction. Another inborn error of amino acid metabolism, classic homorystinuria, is of particular interest becauseit led to the realizationthat an elevatedblood level of homorysteineis an independent risk factor for cardiovasculardisease,an idea originally proposed by McCully in 1969. Some children have even been taught to

pass their own nasogastric tube for intermittent or nighttime feedings.It should be remembered, though, that aspiration is always a potential risk. Some evidence supports the idea that aspartame, saccharin, and sucralose may inhibit bacterial action because neither provides a usable substrate for streptococcus bacteria (Mandel and Grotz, 2002). Within the gene, each specificsequenceof three deoxyribonucleicacid (DNA) bases (codons)directs the cellsprotein-synthesizing machineryto add specificamino acids.For example, the basesequenceATG codes for the amino acid methionine. The role of spicesin the pathology of upper GI disorders is not clear, and one cannot generalize [illegible] all spicesat all doses.In some of the published research,tests have been done with isolated spices or in animals and human with doses exceeding that of typical human consumption. [illegible] 421,81] , 812t microcy'tic, definition,411 810 microhypochromicmicrocy'tic,812t in pregnancy,828-829 laboratory data,421-424 (ACD), of chronic and inflammatorydiseases 421 definition,411 829 ofchronic disease, of physiologic definition,246 253,25+1b in adolescence, of pregnancy,829 of protein-energy malnutrition, 828 of vitamin B12deficiency,93 pernicious,819-823. When selectins an enteral formula. RD is thought to have an autoimmune component. Part D contracted pharmacywerswebsite home healthagency, VNA, or other entitys workingwith the State to arrange coverage for ancillaryservices. Images have the power to move your emotions like few things in life. Sugarfree chewing gum may be helpful to reduce dental decay potential because of its ability to increase saliva flow and is recommended after meals and snacks to reduce the caries risk (Milgrom, 2006). conventionally grown marin berries, strawberries,and corn sheweddstatisticallygreater amounts of phenolic compounds (phytonutrients with antioxidant capabilities) in the organically grown produce compared to that conventionally grown (Asami et al., 2003). Until the etiology of asthma is discovered, general agreement appears to be that nutrition assessment and therapy recommendations include individual evaluation for environmental triggers; a diet of wholesome foods to provide optimal energy, balanced nutrients, and phytonutrients; correction of diagnosed energy and nutrient deficiencies or excesses;careful attention to medication-food-nutrient interactions; frequent monitoring to maintain healthy pulmonary status; and education of the patient, family, and community (American Academy of Allergy, Asthma, and Immunology [AAAAI], 2002; Department of Health and Human Services [DHHS], 2006). "Would you say that you are eating a low-saturated fat diet now?" o "During the past 6 months have you thought about changes that you could make to reduce the amount of saturatedfat in your diet?" . In postmenopausalwomen an oral dose of potassium bicarbonate sufficient to neutralize endogenous acid improves calcium balance and bone. The five-carbon sugar alcohol, xylitol, is considered anticariogenic. It has been estimated that many public water systems,built using early twentiethcentury technology, will need to invest over $138 billion over the next 20 years to ensure continued safe drinking water (ADA, 2003b). People cannot become infected with avian flu by eating properly handled and cooked eggs or poultry (McNally, 2006). Fiber-containing formulas or itool-bulking medicationsmay be helpful, and adequatefluid must be provided. Cochrane BarnesP et a.,) Complementaryand alternativemedicineuseamong adults,UnitedStates2002,CDC AdvanceData Report No. 343, May 27,2004. transplantation, HassounHT et al: Post-injurymultiple organ failure: the role ofthe gut. Shock15:1, 2001. americanheart.org/ CDCwebsite Dietary Guidelines forAmericans . Depending on the diuretics prescribed, increased dietary intake of potassium may be required (see Chapter 16). 560 PART4 : Nutritionfor Healthand Fitness is a 45-year-old white woman who has started numerous weightloss programs. [illegible] In contrast to most single gene disorders in which the change in the DNA is known, the abnormal protein can be identified and analyzed, and the resulting phenotype is clearly defined, chronic diseases (e.g., cardiovascular disease,cancer, diabetes, osteoporosis, inflammatory disorders) are far more complex. The % Daily Value (DV) listed on the label indicates the percentage of the DV provided in one serving. The mental processing provides new ideas that can promote actual change. [illegible] Sunliffe, 2006).] ApplPhysiol Butte NF et al: Energy requirementsderivedfrom total energy expenditureand energydepositionduring the first 2 yearsof life,Am J Clin Nutr 72:1558,2000. Strict blood glucose control lessensmicrovascular complications in patients with type I and type 2 diabetes (see Chapter 30). Fortified. Vegans should have a reliable source of vitamin B12such as fortified breakfast cereals, soy beverages,or a supplement. [illegible] The primary associatedcomplication is infection. [illegible] govlhgmis/elisi/elsi.html www.genome.gov/EISI www.utoronto. A prospectivestudy that compared weight loss, complications,and early outcome of co-morbidity resolutionbypass tion in patientswho underwentlaparoscopic (LGBP) versus laparoscopicadjustablesilicone gastric banding (LASGB) showedsimilar improvementsin comorbidities.Early after surgery, LGBP patientslosemore weight than LASGB patients, but further follow-up is needed to determine the relative long-term efficacy of theseprocedures(Kim et al.,2006). The counselor should encourage the client to explore ambivalence to change by thinking about "pros" and "cons." Some questionsto ask are: . National Marrow Donor Program [illegible] However, with the understanding that diseases aregenetically basedbut environmentally influenced, the focus is on targeted intervention and prevention based on an understanding of the genes and environmental factors involved and the metabolic and physiologic changes that characterize the interventions. Self-monitoring also gives clues to the occurrence of relapses and consequent guilt and how they can be prevented. evidenced Should you refer him to his doctor? In the case of iron, the underlying cause of anemia may be confounded by the use of powerful acid-suppressing medications and bleeding that may also impact anemia (Banerjee and Bishop, 2005; Sharma et al., 2004). In end-stage bone disease cardiac transplantation becomes necessaryfor survival. See Conceptual Framework on the inside back cover. The sessionshould be closed with an encouraging statement and reflection about how the client identified this plan personally. Magnesium dietary deficits seem to have little effect on bone tissue, but one report suggeststhat adequate intake of magnesium may improve BMD (Ryder et al., 2005). "What would need to be different for you to consider making new or additionalchangesin your eating?" . Guthrie developsa bacterial inhibition assay for measuring blood phenylalaninelevels D e v e l o p n iDgi s c r e p a n c y An awarenessof consequencesis important. Thus a seriesof accuratenthropometricmeasurements is crucial over the entire courseof treatment,sometimes spanning the patient's lifetime (see Chapter 14). The nutritional requirements of pediatric patients with cancer are similar, with an adjustment for activity level, to those of normal growing children. Stress ulcers that bleed can be a significant cause of morbidity in critically ill patients. Nevertheless, knowledge of effective prevention and treatment is still incomplete. The following sections detail the known roles of nutrients in the growth, development, and maintenance of the oral cavity structure, bones, and tissues. Morim K: Fluoride: action and use,MCN Am J Matern Child. SeeRespiratoryquotient RA (renaltubular acidosis),928 definition, 924 rumination disorder,nutrition, I 1 13t RussianstandardpatterD,3S2t trJ saccharin as excipient, 449b sweemessvalue of, 43t S-adenosyl-l-methionine (SAMe), in liver disease,722 safety food and water, 330-332 resources for,332t SAH (subarachnoid hemorrhage), 880 St. John's wort, supplemental, efficacy, reviews, 478t safety,reviews, 479t salivary glands in digestion, 6t, 9 salmonella,325t salt, restriction, in hypertension management, 876 salt-resistant hypertension, 872 definition, 865 salt-sensitive hypertension, 872 definition, 865 SAM (S-adenosyl-l-methionine), in liver disease, 722 salmonellosis,325t Saquinavir mesylate (Fortovase, Invirase), nutritional complications, 1004t, 1005t sarcoma, Kaposi's definition, 991 in AIDS, 1006 sarcopenia,291 definition, 286 sarcopenic obesity, 291 definition, 286 satiety definition, 533 overconsumption and, 540-541 saturated fat, 50 saturated fatty acids (SFAs), 52 definition,41 saw palmetto, supplemental, efficacy, reviews, 479t SBFSs (small bowel feeding tubes), placement of,553-554 SBP (systolic blood pressure), 866 definition, 865 SBS. Tonsils are lymphatic tissueat part of the immune system. Multiple stones occur in these children and causerenal failure and early death. [illegible] coriander, dill weed, celery seed, sage, dried mustard, basil, cocoa powder, fennel seed, savory cumin seed, tarragon, marjoram, and poppy seed. During the first month after transplantation, a highprotein diet (1.3 to 1.5 g/kg body weight) with an energy intake of 30 to 3 5 kcal/kg is recommended to prevent negative nitrogen balance QViggins, 2002). However, surplus carbohydrate energ'y makes individuals fatter not by lipogenesis but by suppressing fat oxidation (Hellerstein, 2001). andIncidence Pathophysiology Often ECC occurssecondaryto prolonged botde-feeding, especiallyat night, of juice, milk, formula, or other sweet.tt.d b.n"t"ges. Distinguishing normal illness fluctuation from an intentional attack depends on having in place a system for preparedness planning, rapid communication, and central analysis. oil, I Ttrsp lowfat mayo or salad dressing, or 2 Tbsp light salad dressingt Rich sources ofpotassium, magnesium, antioxidants, and fiber Important sources energ'y, potassium, magnesium, and fiber Rich sourcesof energy, magnesium,protein, monounsaturated fats, National Institutesof Health, National Heart, Lung, and Blood Insdtute:YOUR GI-IIDE TO LoweringYour Blood PressureWith DASH, U.S. Departrnentof HealtJr md Human Seruices, NIH PublicauonNo. 06-+082,2006. fPhysical activity level (PAL) is the physical activity level that is rhe ratio of the total energy expenditureto the basalenergy expenditure. Unfornrnately someof the medicationsusedin treafinentmay leavea metallic taste in the mouth that can further compromisethe patient'sdesireto eat (seeChapters16 and 37). Lifelong dietary restriction of phenylalanineenablesindividualswith PKU to live into adulthoodand enjoy a quality life. Vegetarian and nonvegetarian diets that exclude iodized salt, fish, and seaweed have been found to contain very litde iodine. M e c h a n i somf A c t i o n The three primary mechanisms of fluoride action on teeth are: (1) when incorporated into enamel and dentin along with calcium and phosphorus,it forms fluoroapatite, a compound more resistant to acid challenge than hydroxyapatite; (2) fluoride also promotes repair and remineralization of tooth surfaces with early signs of decay (incipient carious lesions); it helps to reverse the decay process while promoting the development of a tootl surface that has increased resistanceto decay; and (3) fluoride also may help to deter the harmful effects of bacteria in the oral cavity by interfering with the formation and function of microorganisms. Depression o Anxiety disorders . Underlying mechanisms are not entirely clearl visceral hlpersensitivity to acid or distention, impaired gastric accommodation, altered brain-gut axis, and abnormal gastric motility and emptying have all been considered (Fahardo er al., 2005; Smith, 2005). Ultrafiltration providesadditional pressureto squeeze extrafluidthroughthe membrane. Whether to provide or withhold nutrition support is often a central issue in "end-of-life" decision making. DietaryReference Intakes Americanstandardsfor nutrient requirementshavebeenthe recommendeddietary allowances(RDAr) establishedby the FNB of the IOM. The secretis to individualize the program with readily availablefoods that the individual really enjoys and with a plan for regular eating times throughout the day. Many elderly individuals, perhaps as high as 507o, have inadequate intakes of vitamin K ptimarily because their consumption of dark-green lea$' vegetables is so low. See ity of the populationbeingsrudied. These standards often serve as a basis for assessingthe quality of care provided to the patient. 12.2mg of sodium fluoride contains 1 mg of fluoride ion. Signs and symptoms of CLD and BPD include hypercapnia, tachlpnea, wheezing, dyspnea, recurrent respiratory infections, cor pulmonale, and a characteristic radiographic appearanceof the lungs. This can result in large increasesin plasma glucose and ketone levels flV-assermanand Zinman, 1994). Because of anticipated continued ventilator dependenceand neurologic impairment, gastrostomy (G-tube) and jejunostomy (J-tube) tubes were surgically placed. Patientswith cardiopulmonary, renal, and hepatic failure are especially sensitive to fluid administration. Malone AM: Metlods of assessing energyexpenditurein the intensivecareunit, Nu* Clin Pract 17:21,2002. High intakes of carbohydrate can trigger large releases of insulin. Genomicsmore accurately describes this complex, interactive situation. Water-soluble lubricant I l . A special r.ulnerability exists during the adolescent growth spurt. It usually has greater severity in the presence of more aggressivecancersin the later stagesofthe disease(Andrassy and Chwals, 1998). Other pertinent assessments focuson blood oxygensaturation,fatigue, anorexia,difficulty chewing and swallowingfrom dyspnea, constipation from low-fiber food selections,or diarrhea from impairedperistalsissecondaryto lack of oxygento the gastrointestinaltract. It improves BMD, especially of the lumbar spine, and it may reduce the recurrence of fractures in patients with osteoporosis. Using fluoroscopy, a radiologic technique, tubes can be guided visually into the stomach or the jejunum and then brought out through the abdominal wall to provide tlre accessroute for enreral feedings. Hairy leukoplakia, oral . 2, Phosphofructokjnasereaction: modulated by ATR positively modified by AMP and ADP, usesAIP; is reversedby specific phosphatasein gluconeogenesis. A large protein load may otherwisenecessitate more frequent dialysis,often in a patient who is not hemodlmamically stable,and the patient is at high risk for dialysiscomplications.Therefore this issueis quite controversial.The amount of protein recommendedis influencedby the underlying causeof ARF and the presenceof other conditions. (seeChapter l8). "Could we talk about your diet records to identifi' problems which we could solve?" The following approaches might be used during a follow-up contact: . Activity/Exercise Physical Physical activity involves bodily movement produced by the contraction of skeletal muscles that requires energy expenditure in excessof resting energy expenditure Exercise is a subset of physical activity: planned, structured, and repetitive bodily movement performed to improve or maintain one or more components of physical fitness. Activities that require frequent bending should be avoided, and raising the head of the bed 4 to 6 inches can reduce the likelihood ofnocturnal reflux. Balancedmicronutrient intake for children includes45 - 60"/" of kcal from carbohydrete,25-40"/o from fat and l0 - 35"/o from protein. Secretion of abnormally thick,tenacious mucusbyexocrineglands Respiratotyorgans Pancreas Reproductive organs Sweatglands Salivaryglands Intestine Liver Shortstatureandlowbodyweight . html, accessedMay 30, 2006b. Gas exchange is the major function of the pulmonary system (Figure 35-2). Avoidance of excessphosphorus . Risk also increaseswith the number of cigarettessmoked each day; low-tar brands do not reduce the risk. 374 PART 3 i NutritionGareProcess A mutation in any one of these genes can result in accumulation of cr-keto acids in the uriie, which produces an odor similar to maple s1mrp. Ang-Lee MK et al: Herbal medicines and perioperative care, /AIWA286:208,2001. Slurry shortcakewith juice and servewith pureed strawberries. SeeShort-bowel s1'ndrome SBS (short-bowel syndrome), definition, 674 SCFfu. In some forms of Prader-Willi and Angelman's s1mdromes, when both abnormal alleles are inherited from the mother, the child develops Prader-Willi. The exception lower atherosclerotic and subsequently (FH) who is in patientswith familialhypercholesterolemia can have a triglyceride-enrichedHDL3 fraction that is proatherogenic(Ottestadet al., 2006). DASH uses foods high in the minerals calcium, potassium, and magnesium, which when combined helps lower blood pressure. Do parents have the right to have their children, if they are minors, tested for a genetic diseasewithout the children's consent?Do they have the right to withhold the results from the children? Del4tdration is the rnost cornrnon cornplicetion of home tabe feed.ing! Discuss common problems that may come up and provide guidance for resolving them. Inadequate maternal nutrition will consequently impact tooth development; Thble 25-1 details the effects of nutrient deficiencies and the presence of fluoride on tooth development; Figure 25-1 shows the parts of a tooth. africanum;spreadby inhalationof organismsdispersedas dropletsfrom the sputumof infectedpersons(the bacterialadendropletscan float in the air for severalhours) 899 900 PART5 | MedicalNutritionTherapy During fetal life, from birth to maturity and throughout adulthood,the pulmonarysystemis intemvined with nutrition. Nthough HfV nutrition does not have comparable research and guidelines, some resources are available.Further, it is "necessaryfor the patient to be entered into a continuum of medical care and services,including social,psychosocial,and nutritional services"(Panel on Clinical Practicesfor the Tleatment of HIV 2007). 852. When high-carbohydrate diets are fed, however (in particular when the carbohydrate is in the form of simple sugars), lipogenesis does occur but does not represent a significant contribution to fat stores (McDevitt et al., 2001). Mother-to-child transmission of HfV infections in the United States continues to decline; reductions can be attributed to prenatal HfV counseling and testing and use of perinatal antiretroviral drug therapy. This finding of geneticvariation within a population is changingthe focusin health carefrom diagnosticsto therapeutics.Each personis susceptibleto a different set of diseases,handlesenvironmentaltoxins differendy,metabolizes moleculesdifferendy, and has slighdy different nutritional requirements.These exciting discoveriesare revolutionizing the way people think about health and diseaseand the clinical aspectsof medicine, pharmacology,and nutrition. Obesity,alcohol and its degradationinto acetaldehyde, nitrites, a diet low in selenium,fruits and vegetables,and cereal fiber have been implicated in increasingthe risk of esophagealcancer; therefore the same advice for maintaining good health is appropriatefor personswith GERD. At this point, the patient needs help in finding a change strategy or goal that is accepable, achievable, and appropriate. Sedman PC et al: Preoperative total parenteral nutrition is not associatedwith mucosal atrophy or bacterial translocation in humans, Br J Surg 82 1663, 1995. Federation of American Societies for Experimental Biology (FASEB), Interagency Board for Nutrition Monitoring and Related Research: Tbird repor-ton natrition monitoring in the United States:executiaesamn'tary,Washington, DC, 1995, U.S. Government Printing Office. After LDL formation, 60% is taken up by LDL receptors on the liver, adrenals, and other tissues. At next scheduledtime - 24Occ Formula+ 240 cc water. Furthennore, any exposure, including second-hand smoke, increasesthe risk (fhom et il.,2006). SeeC-reactive protein definition, 833 Cryp tospori dium p aruum, 32 6r CSFII (Continuing Survey of Food Intake of Individuals), 314-ll5 C u b a n d i e t a r yp a t t e r n s ,3 5 4 t cultural aspects of dietary planning, 349 cultural communication styles, 492t cultural sensitivity definition, 489 for multicultural counseling, 491 cup, weaning from breast or botde to,215 cure definition, 959 of cancer,962b CV\rH (condnuous venovenous hemofi ltration) for acute renal failure, 926 ryclamate, sweemessvalue, 43t ryclic central parenteral nutrition, definition, 506 ryclosporine after liver transplantation, 726t CYP enzl'rnes, genetically altered activiry drug metabolism and, and 435 cystic fibrosis, food reactions, 745t cystic fibrosis (CF), 909-916 assessmenr,910,9l2t care management algorithm, 911f definition, 899 distal intestinal obstruction qmdrome, 912 energy requirements, 912 estimation, 914b enz)..rnetherapy, 910, 912 feeding strategies,913, 9 | 5-9 | 6 macronutrient requirements, 912-9 13 medical nutrition therapy, 910-916 minerals, usage,913 pathophysiology, 909-9 10, 9 | lf v i t a m i n s ,u s a g e ,9 1 3 . ...8Yq24Y" Totalfat .... time Primary preventionof hypertensioncan improve quality of life and costs associatedwith medical managementof hypertensionand its complications.A strategyfor the population would be to reduceblood pressurein those with prehlpertension(above120/80)but belowthe cut pointsfor staget h)?ertension.A downwardshift of 3 mm Hg in SBP would decreasethe mortality from stroke by 8"/" and from coronary heart diseaset:y 5% (Appel, 2003). Men experienceearlier incidence than women. senceydnlnurspaau Jo JBaIJot alqeun luonuarer Jo ssol snloq eSersIBJoeJe eS . This is true even in diseasesin which the underlying causehas been eliminated completely, such as in vesicoureteral reflux, cortical necrosis of pregnancy, or analgesic abuse. Physical activity should be an integral part of the treatment plan for persons with diabetes. What dietary factors are involved with prostate cancer? YatesJSet al: Prevalenceof complementaryand alternative medicineusein cancerpatientsduring treatrnent,SappnrtCa,re Cancer13:806,2005. Becauseof the pulmonaryconsftaintsin peoplewith lung cancer,purchasingand preparingfoodsmay be overwhelming tasks.Eating may becomean unpleasantactivity because of severepain, dyspnea,and dyspepsia.Thus providing foods, beverages,and nutritional supplementsin the forms and at the times best tolerated by the patient is essential. Proliferation of new tissue requires increased amounts of glucose, potassium, phosphorus, magnesium, and other nutrients essential for tissue growth. Index andtheGlycemic Absorption Glucose Dietary carbohydrates are digested into glucose, fructose, and galactose through the actions of ct-amylase and brush border digestive enz)rynesin the upper GI tract. *Equivalent in protein to 5 oz of animal protein; at least three servingsper week should be from the vegetableproteins. Tivo reports did not find an association between vitamin A and increased risk of fractures (Reinmark et al., 2004;Barker et al., 2005). Record malnutrition risk category presenceof obesityand/or need for specialdiets and follow local poliry: for thoseidentified at f risk. In individuals with rare genetic abnormalities in the o-tocopherol transfer protein 3. Larger, well-designed, randomized clinical trials using MI strategies are needed. This opening may be banded by a piece of mesh to prevent it from enlarging during the years after surgery. Fluoride therapy is not likely ever to be approvedby the FDA becauseof theseconcerns;the useof fluoride must still be regardedas practical for dental applicationsbut not for bone therapy (Palmerand Anderson,2000). Emphasize questions rhat are open ro detailed descriptions. Nternatively, an internal or external jugular vein catheter can be used with the same catheter tip placement. Ideally a person's genotypic profile should be just another important piece of information in analyzing health risk-like height, weight, and blood pressure. Protein foods temporarily buffer gastric secretions, but they also stimulate secretion of gastrin, acid, and pepsin. Infusion of glucose -thiamin.and metabolic stressalso increaserequirements for The response to therapy depends on the conversion of thiamin to its active form in the liver. Augustin LS et al: Glycemic index and glycemic load in endometrial cancer, Int J Cancer 105:404,2003. GenETrc UNDAMENTALs It is assumedthat the reader has a basic understandins of DNA as the genetic material for humans and of chroirosomal and molecular genetics (see Focus Ozr DNA Tianscription and RNA Tlanslation in Chapter 3). VeryLow-Calorie Diets Diets providing 200 to 800 kcal are classifiedas very lowcalorie diets (VLCDs). Muscle and even skeletal mass adjust to some extent to support the changing burden of adipose tissue. need a lipidJowering drug regimen to normalize blood lipids (Wenke, 200+). Tfelt-HansenJ, Torring O: Calcium and viamin Dr supplements in calciumand viamin D3 sufficientearly postrnenopausal healthywomen,Eur J Clin Nutr 58:1420,2004. With increasing age,higher mortality ratesfrom CHD are seenin both of genders.However,genderis a factor for the assessment risk. BIot W] et al: Nutrition intervention trials in Linxian, China: supplementation with specific vitamin/mineral combinations, cancer incidence, and disease-specific mortaliry in the general population, J Natl CancerInst 85:1483, 1993. Seea/soNewborn definition,lll7 immature infants in, 1119 neoplasm definition, 959 in carcinogenesis, 960 malignant, definition, 959 nephritic symdrome, 923 definition,92l nephritis, chronic interstioal, 927 nephrogenic diabetes insipidus, 374 nephrolithiasis, 9+8-9 55 baseline information/metabolic evaluation, 949t calcium stones in, 950-954 cystine stones in, 954 definition, 92 1 medical management, 948 medical nutrition therapy, 948-949 pathophysiology, 948 stone composition in, 949t struvite stones in, 954=955 uric acid stonesin, 965 urinary risk factors, 948b nephron, 923f nephropathy HIV-associated, 1006 definition, 991 in diabetes,800-801 nephrotic qmdrome, 924 definition,921 nephrotoxicity, drugs causing, 446 nerve(s) cranial, functions of, 1072t transmission,calcium in, 106 vagus definition, 655 nervous system disorders of, 1067-l 101. McCallum PD, Fomari A: Nutrition therapy in palliative care. Ignoring the impact of one's culture (neighborhood, beliefs, background experiences) on behavior has adverse consequencesfor efforts at individual and social change (Shinn and Touhey, 2003). In children, vomiting, dysphagia, refusal to eat, or complaints of abdominal pain may be present (Flassall,2005). Manifestations of HMAIDS Viral and fungal infections, stomatitis, xerostomia, periodontal disease, and Kaposi's sarcoma are oral manifestations of HIV that can cause limitations in nutrient intake and result in weight loss and compromised nuuition status. There is evidence from the general population that foods containing very long omega-3 polyunsaturated fatty acids are beneficial,and two to three servingsoffish per week are recommended. FIGURE 25-4 Early childhood SwartzMH: Textbook ofphysical diagnosis,history and examinarion,ed i, Philadelphia, 2006, Saunders.) becauseof the protective position of the lip and tongue and the presence of a salivary duct in rhe floor of the mouth. Assessment ofnutrient status made by this approach is often inaccurate or distorted as explained in Chapter 15. Be sure the choiceofa botanicalis appropriateto the health care goals and compatible with any prescription and over-the-counter medications or other dietary supplements.Information is availableat www. Cellulose is found in carrots, celery, broccoli, and many other vegetables. Advance the feeding tube approximately 5-10 cm evthis clinical activity. While HfV viral load is a major determinant, HW progressiondependson complex interactions between viral and genetic host factors and differs among individuals. govlomim w-ww.ornl.gov www. Gastrostomy or jejunostomy feeding tubes are used when longer-term enteral nutrition support (for greater than 3 to 4 weeks)is indicated (seeChapter 20). A decrease in erythrocyte transketolase activity also correlates well with improvement in the clinical picture since a normal value is a sensitive measure of adequate thiamin nutriture. heabhpromotion in deaeloping SockalingamS: Culmral competence rhetoricor reality,2002,Northwest strategies: and interuention ObesityPreventionProject. 'washington.edV accessed obesity/DocRevieilsuganya/basedoc.htrnl, June 1, 2004. buffering capacity. org American Institute for Cancer Research Resources Survivorship www.alcr.org is_ doing/resources.htm Cancer Centers www cancerlinksusa,com Nutrition Cancer Information www cancernutritioninfo. LifestyleRiskFactors The American Heart fusociation Nutrition Committee proposedsevenlifestylerecommendationsto reducerisk of CVD (Box 32-5)(Lichtensreinet al.,2006).Theseareeach discussed in the followins sections. Parenting style . They have various roles, such as enzymes, receptors, transporters, antibodies, hormones, and communicators. which can be rycled at intervals. Autores: Casi 50 autores, investigadores y profesionales de prestigio, escriben sobre la valoración y la intervención nutricionales, las necesidades nutricionales de los individuos a lo largo de su ciclo vital, la nutrición para la salud y el bienestar y el tratamiento nutricional médico. M e d i c aH l istory The medical history usually includes the following information: chief complaint, present and past illness, current health, allergies, past or recent surgeries,family history of disease,psychosocial data, and a review of problems-by body system-from the patient's perspective (Hammond, 1998).These historiesusually provide much insight into nutrition-related problems. What suggestionswould you offer him about dietary choicesfor a healthy heart? Nonmodifiable Factors Menopausal Status Endogenousestrogenconfers protection againstCVD in premenopausalwomen, probably by preventing vascular injury. They are known to be important in insulin resistance and obesity caused by a high-fat diet (Hihi eta1.,2002;Kadowaki et a1.,2002). This mechanism appearsto be useful for silencing DNA that is not needed in a particular cell t1,?e or that, when activated, may result in abnormal growth that can lead to cancer. For educational discussion of dietary supplement use, clients should bring with them to their visit with the health care practitioner all the prescription and OTC medications and dietary supplements they are using. The mostimportantof the monosaccharides is the 6-carbon sugara-D-glucose.Glucoseis the most widely distributed sugarin nature,usuallyas a componentof disaccharides or polysaccharides. The nutrition counselor sets up an environment that is a transient support system to prepare the client to handle social and personal demands more effectively while providing favorable conditions for change. Their unique charactet including their taste,texture, and absorbability,is determined by the relative numbers of glucoseunits in straight (amylase)and branchedconfigurations (amylopection)and the degreeof accessibilityto digestrveenzymes. postgenomic era,J Nurr 133:18305, Gu CC et al: Haplotype associationanalysisof AGT variants traits: the HlperGEN Srtdy, Hum with hypertension-related Hered60:164,2005. I ared and Matthew are identical rwins who grew up totJ gether but have lived apart since college.Jared stayed in the Northeast and majored in accounting. B. ssaulnJle8ro; 'uorlrunJ or lrrlgB aq] pue '&qeuosrad'uonruSocsdorlsep 'uorsryuoc qy dlpuue,rg 'sSulrs pooru pue 'ssaussepser 'lueur€pnfrood'uorleruroJur Iensn etelndruerudlprueru or lrqrqe parredrur'uoperoualop a3en5ur1'ssoy.{-rouraur epnlrur CtVJo surordur,(g'99 e8epuorbq srear(g Lreaeselq -nop :CIVroJ rotJq eseasrp eW aldoedJo roqrunu aW q1p\ '(SOOZ 'Hn suralordpecrld D 1sr.rlueuodur tsoru agr sr e8y -srru Jo pasodurocsey8uel&eprqgorneu pue pro1,(ur-fl1o sdurnloFruJouqedq urerq erfJur pozrJetJEJEqJ eseasrpaAD 'e,ussel8orde sr (qy) auasIps.raulaqzlv -ereueSepornau [6olorsriqdoq]ed '8uua88erssl 'lercueug'pggue; CIVJo roedrurIerrurTrpur 'leuosrad arp 'ecuepaerdqr uelr51 'ueru uerp ra8uo1eaq ot puel ueruo^resneJeqsr (uaurur uerfl -laqSrqseun earqt) uaruo^rur uees otsJ eJuelelerd req8rg aqJ '0t e8e rarye dypnueuodxaSursrareur'p1ro,Lr. agr tnoqSnoJrppue sexos tlJoq JoJ JBIIIUIS sl ([VJo sesBJ .ryreuJo elBr aJuaPIruI eql 'saqcrordde rpuap s? It has five double bonds, the first of which is three carbons from the terminal methyl group. Alcohol The same precautions that apply to alcohol consumption for the general population apply to persons with diabetes. Jo lsol sI {aaqJ IETJBJ erp ul uonusues ,{lprcadsa 'sesseJeJIEJJnq arp ur pele ;r ->1codeuroceq uBJ pood lrprec IBro e{r qSnortp lr Sur,rour pu? Gastroplasty andGastric Bypass Gastroplasty reduces the size of the stomach by applying rows of stainless-steelstaplesto partition the stomach and create a small gastric pouch, leaving only a small opening (0.8-1.0 cm) into the distal stomach. In persons with type I diabetes, the glycemic response to exercise varies, depending on overall diabetes control, plasma glucose, and insulin levels at the start of exercise; timing, intensity and duration of the exercise;previous food intake; and previous conditioning. SeeDocosahexaenoic acid DHEA (dehydroepiandrosterone) as muscle-building supplements,607-608 supplemental, effcacy, reviews, 478t DHKS (Diet and Health Knowledge Suwey), 314 DHR (delayed hypersensitivity reactivity), in immune function assessment,406 DHS (Department of Homeland Security) definition, 309 in disasterplanning, 332-333 diabetes,gestational,definition, 160 Diabetes Control and Cornplications Tiial (DCCT),771 definition, 764 diabetesinsipidus, nephrogenic, 374 diabetes mellitus (DM) blood pressure,recommendations, 775t cardiovasculardiseaseand, 850 complications aatte, 797 -799 long-term, 799-802 macrovascular diseasesas, 799 -800 microvasculardiseasesas, 800-802 d i a g n o s i s7, 7 l - 7 72 , 77 l t end-stage renal diseasein patient with, 945-946 etlrnicity and, 7 67b food-planning approaches for, 7 96t gestational, l8l. Resectionsof as little as 15 cm of the terminal ileum can result in bile salt losses that exceed the liver's capacity for reslmthesis, and vitamin B12absorption is affected. Palmer C, Wolfe SH: Position of the AmericanDietetic Association:the impact of fluoride onhealth,J Am Diet Assoe 105:1620,2005. The most common causeof gastritis and peptic ulcer is now lnown to be Helieobmtn pylmi nfecl;.on. Awarenessand reporting of any side effects/adverse evenfs,symPtoms o Recommendnecessarydietary changes . Currendy he is taking Proscar and saw palmetto, as prescribedby his physician. Dairy products sweetened with fi:uctose, sucrose, or other sugars can also be cariogenic because of the added sugars; howeveS dairy products are rich in calcium, and their alkaline nature may have a positive influence, reducing the cariogenic potential ofthe food. goa/hgmis.) Healthor Disease? Weightreduction Adopta DASHeatingplan Dietarysodiumrestrictionto 2.4 g/dayor less Moderation of alcoholconsumption Nutritioneducation Algorithm contentdevelopedbyJohnJ.B. Anderson,PhD, and SanfordC. The most reliable clinical diagnostic test' known as the 9f0 PART5 i MedicalNutrition Therapy sweat test, is performed by pilocarpine iontophoresis. For most persons a modest decrease(of about I to 2 units) in the rapid- or short-acting insulin during the period of exercise is a good starting point. 'ssaurdaels pe>lJEuI pue (senrleuuouq?uopeurpJoocpue Suqp,tr 'acuepq gluo. Co-en4me Qro, a dietary supplement, is claimed to have a profound effect on the immune system, and melatonin, a hormone that has strong antioxidant properties, are currendy being studied. One of the variants that has been identified to be and carcinogenesis (Go et al., 2003;Davisand Hord, 2005; diet-relatedis -75G>A, in which the typicalguaninehas DavisandMilner, 2004;Junienand Gallou,2004;Kim and been replacedwith an adenineat position 75 within the Milner, 2003;Ulrich,2005;Tiujillo et a1.,2006; Wargovich regulatoryregion of the APOA-I gene (the ,,-" sign deand Cunningham,2003).One of the key mechanismsby notesa position before the first nucleotide-Dosition ,,0,'which the body protectsagainstcanceris detoxification,the of the gene'scodingregion).ln womenwith the more compcrossof neutralizing potentially harmful molecules(see mon G allele,increasingdietarypolyunsaturatedfat (pUFA) FocusOn: DetoxificationSystemsin Chapter 9). MeeraraniP et al: Metabolic syndromeand diabedc atJrerothrombosis:implications in vascular complications,Cun Mol Med 6a95a0:501, 2ffi6. It also contributes to the composition of teeth and bones. o The cultural, ethnic and religiousbackgroundsof individualsand groupsare highly influential in food choicesand meal planning,and must be considered when translatingeatingguidelinesinto the lifestyle choices. B H a o o @ S F F i- o I a dt N 0 5 dE F.l o o lD $ s 4 3 :p -t R .s z 6 o>' gi O EE .F 6EE E S"s sN lr L 326 PART2 I Nutritionin the Life Cycte t I E o C' la o, ta ta o s o E o st t o 0 E E o E E o (J d. Their knowledge of correcr food-handling practices to avoid foodborne illness would be critical during the time of an attack (Bruemmer, 2003). VenterJC et al: The sequenceof the human genome,Scienee 2911304,2001. 3 I TheNutrientsandTheirMetabolism 45 CHAPTER and are specificto the particularbond. The U.S. Department of Agriculture Research Education and Economics supported a scientific review of popular diets to assesstheir efficacy for weight loss and weight maintenance, as well as their effect on metabolic parameters, psychological well-being, and reduction of chronic disease (Freedman et al., 2001). Causesof mild fluorosis from excessivefluoride intake include misuse of dietary fluoride supplements, ingestion of fluoridated toothpastesand rinses, or excessivefluoride intake secondary to fluoride in foods and beveragesprocessed in fluoridated areasand transported to other areas(palmer and Wolfe, 2005). SeeRheumatoid arthritrs race, osteoporosisand, 628 radiation-induced enteritis, definition, 960 radiation therapy definition, 960 nutritional implications of , 97 5 -976, 97 6t radioallergosorbent test (RAST) definition, 740 in food allergy diagnosis, 7 48, 7 50r RALs (retinol activity equivalents), 72, 72b definition, 41 raloxifene, for osteoporosis, 632 Raman spectroscopy, in antioxidant capacity measurement,428b RAST (radioallergosorbent test) in food allergy diagnosis,7 48, 7 50t Rayrraudt syndrome, definition, I 042 RBP (retinol-binding protein) in assessmentfor protein-calorie malnutrition, +20 RBP (rerinol-binding protein), definition, 412 RDA (recommended dietary allowance), definition,337 RDIs (referencedaily intakes), 347t definition, ll7 RD (rheumatic disease),definition, 1042 reactive hypoglycemia, 802-803 reactive oxidation species (ROS), definition, 412 reactive oxygen species (ROS), cardiovascular diseaseand, 426 reaginic reactton, 742t rebound hypoglycemia, definition, 506 rebuilding stage,in bone remodeling, 618 recessive,definition, 366 recessivegenes,372 recombinant DNA, 174 definition, 366 recommended dietary allowance (RDA), 319-320 definition,337 in DRI, 338 rectal surgery, 702 red blood cells, reference range/significance, 4l6t reduction mammoplasty, breast-feeding and, 192 REE. for 0ralandDentalHealth 645 25 trNutrition CHAPTER a meal or with a snack is an example of a caries reduction strategy when consuming these foods. Diet and nutrition are important in all phases of tooth development, eruption, and maintenance. Becauseof the presence of different strains of this organism and the relative resistance of the organisrn throughout the world, the medication protocol usually involves the use of two or three antibiotics and acid-suppressing medications. With the obesity epidemic facing many individuals, encouragementto expendenergy through activity shouldbe recommended. Selecting the appropriate treatment strategy depends on the goals and health risks of the patient. Approximately 180 L of fluid (ultrafiltrate) is produced in filtering this blood, and, through active processesof resorbing certain components and secreting others, the composition of this fluid is changed into the 1.5 L ofurine excreted in an average day. JIIuou -oJa uePPnsuag.'n '9661 PuE 166I uoe.t\leq 'eldurexa rog 'sestasrpcr8olo,rneutue,ta.rdot parrnbe-rslueIJtnu aqr;o 8ul -puEtsJO pun pue a8pel,ttorq arrdsap apnrtu8eu epl{\plJo.{\ Jo suralqo-rdqtleeq snolrosasoduratstrssno^reu eqt Jo saseeslq uonsaSur alerplqoqrec penuDuoc qtr,r,rdcuarcgep ur{u?rqt rruoJqJ luoJJ sllnseJ lerp lua}sulEJq Pu8 runllaqe -rer aql Jo es€esrpB (S1;n) auorpufs $0lPst0y-a4clural^ rca;ep c#oloJneu ruelsrsJadou qrrm urSrro relncsel Jo uoBcurysdp prqereJ Jo sJnor{ 01 setnurtu ,4deJ e ruog 8unse1>lrelteJarrg E 13ullp cluaqos! lualsupJl sseuerosolrsnru pue 'uorsryuoc 'aqcepeaq'dee1sdaep,tq 'ssaco.rdestesrpaqt sselpre8a.r'.reputs pe.trolloJ la;nztes qcea Sutpace.rderne ro Suruen f-rosuas e ur8r,roeqt ;o Jo r{lr^\ uorssecJnsesolc ut ;o ,{13utsrncco deur luoDcrrdsar 3o eJe aseasrprr8o1o-rnauJoJ oreJ uortrJlnu;o sluarueleduery 'tuarue8ueeru UORBSSaJ puE uonJerluoJ JBInJSnlll.'l*lun1o.tut PezrIEJeuaE IeJrpaiu ot stJunfpe e;e setderaq] uolliJlnu ', {,8o1oue enrzres Aq esolit uI pazuenvJ?r{J r{lr.{\ saseesrp crSolo.rneu uoltrJtnuuou E ,,1erupue.r8,,atnzlas cluol3-oluol '(z-It lrelre pa,Lrorreudpearp ^rstarp ssoJxa o] Poln alqel) -qrrlt eq .{eu urats,{ssnolreu aql reqro seerol{.tr uB loIJ ol uoDe8a.rSSerayareydluenbasqns qlm 'fraue ue Jo saseasrp (surluetrl ur anbeld -ro a15ursr 3o l(cuerogepe ot hepuoJes JnJ Iorasalor{J e;o Suunrdru eW alorls clloqutortll IBJaAes -co ({qledornau ;uraqduadse qrns suoocurysdpcrSolotneu uoDeruJoJ eruoJeq s?q r?ql snqruoJrll E e^ItJOJ alrs slr ruo{ auo5 '(1-19 elquJ) tuaruaEeueur pue Per{c?]ep Jo lprlpeur IEJrurlJ 'lSo1oee uorl -;a or uonrnJtsqo luala Jlloquraoquortg ,(q poolq B eJe suorttJaprsuoJ Jo lassa,r 1e-r8arur leuorllJtnu -rrtnu E eleq soseesrprr8o1o-rnau eu?rqrueru ProurlJBJePu? Figure 20-1 presents an algorithm for selecting enteral and parenteral nutntron foutes. Smokingis the numberone causeof preventabledeathin the United States;35% of deathsfrom tobaccousearefrom CVD (Thom et al., 2006).Smokingis synergisticwith other risk AmericanHeart fusociation 2006 Diet and Lifestyle Goalsfor Risk Reduction . Whether the heart is able to continue beating depends on the extent of the musculature involved, the presence ofcollateral circulation, and the oxygen requirement. Acarbose (Precose)and miglitol (Glyset) are competitive inhibitors of intestinal brush-border ct-slucosidasesrequired for the breakdown of starches,dextriis, maltose, and sucroseto absorbablemonosaccharides.They do not cause hypoglycemia or weight gain when used alone, but they can frequently causeflatulence, diarrhea, cramping, or abdominal pain. Waxystarchis obtainedfrom corn and rice strainsbred to containa greaterpercentageofbranchedamylopectinchains. Do you remember that? Most often, functional assessmentof nutrient status may be done by measurement of a biochemical marker (i.e., a normal or abnormal metabolite) of function. *We haveabout minutesto meettoday. See alsoVitamin C deficienry, tooth development, 638r definition, 39 pregnancy requirements, 174 ASDs. SeeAutism spectrum disorders Asians, communication style, +92t aspartame excipient, ,[49b sweemessvalue, 43t aspartate aminotransferase (AST) serum, reference range/signifi can ce, 41 5t Asperger syndrome, 1 185 definition, ll70 asprraflon complicating enteral nuuition, 515 pulmonary 903-904 definition, 506, 899 risk, enteral nutrition administration, 514 assays functional, +13-414 static, 4l 3 types,4l3-414 Index 1309 assessment dietary/clinical data, 381-410 nutrition assessment,390-405. Carrying excessadipose tissue gready impacts the heart through the many risk factors that are often present: hypertension, glucose intolerance, inflammatory markers QL-6, TNF-ct, CRP), obstructive sleep apnea, prothrombotic state, endothelial dysfunction, and dyslipidemia (small LDL, increased apo B, low HDL, high triglyceride levels) (Poirier et al., 2006). SeeBody mass index BMP (basicmetabolic panel), tests,414b BMR. basedon the parental report oftheir own grorth patterns and assessmentof the present channel of height gain and the Tanner stage of adolescentdevelopment (seeChapter 8). - Cuadros sobre la nutrición y la Affordabel Care Act, los bancos de leche materna y la ley sobre etiquetado en máquinas expendedoras. An example of this is the use of ginger for reducing nausea associatedwith cancer therapy. How can food labeling information be used to help Marty meet his weight loss and nurient goalsand incorporate his religious dietary concerns? pdf American Cancer Society Nutrition Practice Oncology Group www.cancer.ofg www.oncolo glmutrition. made to advance his feeding rate. Low levels of these electrolytes are the hallmark of refeeding slmdrome. Although BH4 holds promise as an alternative therapy for some milder mutations, observations on long-term outcome are for less than 5 years so far (Perez-Duenas et al., 2004; Lambruschini et al., 200s). Weight loss from inadequate enerry inake is significandy correlated with a poor prognosis in personswith pulmonary diseases. Nutrition professionals will play a prominent role in recommending preventive therapy using nutrition and lifestyle approaches. The nutrition support dietitian O{SD) is an ideal clini2. s1.rup-based Encourage children with pediatric gastroesophagealreflux disease(GERD) to adhere to dietary guidelines. See 120,+22,811, iron deficienry, alsolron deficiencyanemia definition,810 in pregnancy,175-176 macrocytic,421,812t definition,411 medicalnutrition therapyfor, 810-812 megaloblastic,819-827. DrerRny SUpPLEMENT REeULATION Botanical products are regulated in the United States as dietary supplements. Fluoride Fluoride is a primary anticaries agent. Patients with compromised gastrointestinal function becauseof disease, surgery antineoplastic therapy, or other physiologic impediments are candidates for continuous drip infusion. Work to get the prescription written as whole cans of formula rather than partial cans. Reasonsfor long-term nonprogressionmay include infection by a lessvirulent strain of the virus, protective geneticmutations, or particularprotectivecharacteristics of the host'simmune systemor genes.Studyoflong-terrn nonprogressors is ongoingin the hope of developingvaccines. Calcium citrate is about 2l% elemental calcium; 1000 mg will provide 210 mg of calcium. Units Many types of units are used in reporting nutrient-dependent laboratory values. Plasma zinc levels may be low in casesof moderate-to-severe malnutrition. After a nutrition assessmentand nutrition diagnosis have been established,the next step is designing the intervention. IJse questions that begin with "what," "how" "*\y," and "could." Tivo types of encouragers are important in counseling: paraphrasingand summarizing. should make sure that statelicensurelaws do not prohibit this 5. The tip of the tube migrates into the small bowel via peristaltic activity. As mentioned, people typically do not dimlge their use of dietary supplements to their health care practitioners; thus it is imperative that the practitioner establish rapport with the client. N utriti o n Diag n osis: Hyperetabolismas evidenced by recent trauma and surgery 1. The high levels of folate in vegan di.tr .nry mask the n.*ologi. Edema, the mosr clinically apparenrmanifestation of this group of diseases, indicatesa srareof toul body sodiumoverload.However,becauseof the low oncoticpressurein the circulatingblood volume that resuls from hypoalbuminemia,the volume of circulating blood may be reduced.Anemps to limit sodium inuke more than modesdy or to eliminate large amountsof extra sodium with diuretics can causemarked hypotension, exacerbationof the coagulopathy, and deterioration of renal firnction. DietaryReference Intakesfor Ghromium for Ghildren andAdults Age (years) l-J +-8 9-13 l4-18 l9+ Pregnancy(mcE/dayl Males and Females(mcglday) l1 15 25 for males,21 for females 35 for males,25 for females 35 for males,25 for females N/A N/A N/A lo 30 Lactatlon (mcg,ldayl N/A N/A N/A 44 45 Selected FoodSources of Chromium Food Micrograms per Serving Brewer'syeast,I Ttrsp or 15 g Broccoli, % cup Grapejuice, I cup Englishmuf6n, whole wheat, I Potatoes,mashed,I cup Garlic, dried, I tsp Basil,dried, I Tbsp Beefcubes,3 oz Orangejuice, I cup Tirrkey breast,3 oz Whole wheatbread,2 slices Red wine, 5 oz Apple, unpeeled,I med Banana,1 med Green beans,% cup 60 l1 8 4 3 3 2 2 2 2 2 t-l) I I I Interactions Between Chromium andMedications Medications Nature of Intelaction Antacids Corticosteroids H2 blockers (e.g., cimetidine, famotidine, nizatidine, and ranitidine) Proton-pump inhibitors (e.g., omeprazole, lansoprazole, rabeprazole, These medications alter stomach acidity and may impair chromium absorption or enhance excretion. Egger G et al: Epigeneticsin human diseaseand prospectsfor epigenetictherapy,Nature429:457,2004. The most important of the Jewish holy days is the Sabbath, or day of rest, which is observed from sundown on Friday until sundown on Saturdays. Currendy the medicaltreatrnenrof lung cancerinvolves radiation therapy chemotherapy,and surgery which are accompaniedby variousnutritional side effecs (seeChapters 16 and 37 for furttrer discussion).Patients with lung cancer experiencethe added stressof respiratory fatigue and diminished lung residual capacity.Weight loss, along with associateddeclinesin other anthropometricand laboratory indicators of cancer-relatedmalnutrition, portends a worseningprognosis. sallel leuorlrJlnu uro{ esrJeIBI{] sastaslpcr8olorneu ro-1 -JE arp ur ursftnau? The kidney receives 20o/oof cardiac output, which allows the filtering of approximately 1600L/day of blood. Stressulcers may occur as a complication of severeburns, trauma, surgery shock, renal failure, or radiation therapy.A primary concern with stressulceration is the potential for significant hemorrhage. The kidney also producesthe hormone erythropoietin The treatment of acute glomerulonephritisattemptsto (EP0), a critical determinantof erythroid activity in the maintaingood nutrition statuswhile allowingtime for the In patientsin whom an bone marrow Deficienry of EPO is a factor in the severe diseaseto resolvespontaneously. common cold,Cochrane mineral,nonvitamin,and nonmineral vitamin, of AE: Use Millen supplementsin the United States:the 1987,1992,and 2000 National Health Interview Survey resrlts, J Am Diet Assoc 104:942,2004. Most people on PD do not have to limit potassium in their diet. FIGURE36-1 The nephron.(Modfiedfrom Thibodeau GA, Panm KT:The humanbodyin healthanddisease. She needs root canal surgery in three teeth. Physical triggers for hunger are much stronger than those for satieql and it is easier to override the signals for satiety. Although the homeostatic mechanisms are interrelated to a large extent, occasional demands are placed on the kidney to regulate one substance while sacrificing tight control of others. Specialformula considerations 8. The high prevalenceofoverweight indicatesthat an energy imbalance exiss among Americans becauseof physical inactivity and underreporting of energy intake or food consumption in national surveys. Scientific evidenceofbenefit and/or effectiveness . Such patients usually have less than 2 to 3 ft (60 to 100 cm) of functioning small bowel available for absorption ofnutrients. This paraphrasing will allow the patient to rethink his or her reasoning about readiness to change. gog accessedMay 23,2006. andImportant Common g Interactions Magnesium/Dru Drug Potential lnteractlon Loop and thiazide diuretics (e.9., Lasix, Bumex, edecrin, and hydrochlorothiazide Antineoplastic drugs (e.g., cisplatin) Antibiotics (e.g., gentamicin and amphotericin) Tetracycline antibiotics These drugs may increase the loss of magnesium in urine; thus taking these medications for long periods of time may contribute to magnesium depletion. Concentrated tannins or proanthocyanidins in cranberry juice and apparently blueberry juice, seem to inhibit the adherence of Escherichiacoli bacteria to the epithelial cells of the urin^ry :ract (Howell et al., 1998). New enteralformulascan be compoundedfrom modulesto provide specific nutrient requirements. Passover, a spring commemorative festival lasting 8 days, includes special dietary requirements. 996f esophageal disorderscomplicating,1015 etiology,992 in children,1007-1008 in women,1007 life cycle,992f liver diseasein, 1006 malabsorptioncomplicating,1014 malnutritionand, 1008-1010 medicalmanagement,998-1001,999r medicalnutrition therapy,l0l0- 1013 metabolicdisorderscomplicating,l0l5 nephropathyassociated with, 1006 neurologicdisorderscomplicating,1015 opportunisticinfectionsin, 1001,1006,1007b oral cavitydisorderscomplicating,l014-10I 5, 1016f oral manifestations,647 pathophysiologyof, 992, 1000f stages, 996-998, 997-998t L328 Index humanmilk fortifiers,I127 definition,l1l7 humoral immunity definition, 740 in food allergy,740 hunger,childhood,effect,on behaviorand emotions,232b hydration nutritionaifacts,1282 status,408b assessment,417 1071 hydrocephalus, definition,1067 hydrodensitomet:y,24-25 hydrogenation definition, 40 fatty acids,53-54 of unsaturated hydroryapatite,109 definition,40,614,636 in tooth development,637 107 hypercalcemia, in bonemetastasis, 971 hypercalciuria, 950 definition, 921 hlpercapnia definition, 899 in COPD, 907 hypercarotenemia definition,563 in anorexianervosa,568 hypercarotenodermia, 74 definition, 40 hypercholesterolemia, 837 definition,833 familial,373,839-840,840t,84lt definition, 83l hyperemesisgravidarum,182 definition, 160 hJperglycemia,798-799 with exercisein diabetes,780 associated definition, 765 in diabetes, 766 hyperglycemichlperosmolarstate(HHS), definition,765 hyperkeratosis, follicular,from vitamin A deficienry,73, 73f hlperlipidemia dietaryrecommendations, 263t familialcombined,840-841,84lt definition,833 in adolescence, 261-262, 262t secondary causes, 262t hlpermetabolicresponse caremanagementalgorithrn,1028f pathophysiology,1028f hlpermetabolism,stress,starvationcompared with, 1025t hypernatremicdehydration,in infants,204 hlperosmia,1070 delinition, 1067 h;.peroxaluria,950 definition,921 hyperparathl'roidism,nutritional secondaryI 10 hyperphagia,535 definition,532 hyperphenylalaninemias, 1146t hyperplasia definition,532 ofadiposetissue,534 hlpersensitivity 743t cell-mediated, definition, 739 delayed,T43t food. 286.1042 limitationsin, in older adlults,296 activiry thermogenesis(AT) defrniion.22.26 factorsaffecting,26 in body weight regulation,536 actomyosin,definition, 587 Actos (pioglitazone),in diabetesmanagement, 781,782r acupunctufe definition, 470 description,473t in weight management,552 research,center fo4 474t acuteglomerulonephritides,923 definition,92l acuteHfV infection, definition, 991 acutephaseproteins,definition, 102I proteins,mobilization,in metabolic acute-phase stress,1022 acuterenal failure (ARF), 924-927 caremanagementalgorithm for, 925f causesof, 926b medicalnutrition therapy for, 925-927 pathophysiologyof, 924-925'925f acuterespiratorydistressqmdrome,916 definition, 899 AD. TPN is seldom indicated for children with advancedcancer associatedwith significant deterioration or with diseasesthat are unresponsive to therapy (ASPEN, 2002). The feeding rate goal, in milliliters per hour, is set by dividing the total daily volume by the number of hours per day of administration (usually 18 to 24 hours). Gonschlich MII: Adult enteral nutririon: formulas and supplements. Luma GB, Spiona RT: Hlpertension in children and adolescenrs, Am Fam PhyicianT3(9)zl558, 2ffi6. Fields LE et al: The burden of adult hlpenension in the United States,1999to 2000:a rising dde,Hypmmsion44:f98,2004. Annie took the supplements regularly for a year when a second set of DEXA measurementsrevealed that she had practically maintained her BMD valuesof 1 year earlier, with r Bone health dependson numerousfactors,including genetics,dietary intake ofspecific nutrients' exposure to sunlight, exercise,managementof chronic diseases, and useof medications. Activity should be modified, and psychological counselingshould be started if necessary.Nutrition suppoft and dietary changeare effectivealongwith or after treaffnent of the underlying disorder or when the causeof the underweight is merely inappropriateor inadequatefood intake. It may also be experienced as a result of treatment-related fatigue. Jeejeebhoy KN: Enteral and parenteral nutrition: evidence-based approach,ProcNutr Soc60:399,2001. It includes energy and all nutrients in proper amounts and in proportion to each other. Spices Algorithm content developedbyJohnJ.B. Anderson, PhD, and Sanford C. Client: I just feel hopeless sometimes when I try to follow the diet. StrolloJlssaru -edruoccedluoruuoc'&qer.rour ;o rolcrpa-ldluepuedepur ue 'er5egdsfq 'petJeJB ureJq oqt Jo BerBe{r pue e>loJrsaqt Jo tuetxe eqr dq peurrurelep are senlnrgJrpSurpaeg .a8ualeqc E sr erntrJlnu poo8 'aqetur etenbepe;o acuaserdeqt ur ue^a taaa,troq lpaurelureu aq pFo,n snlets uorlrJlnu socuelsrunJ 'eurorlno rood e stcrpard uorlrrtnulew -JrJ leepr repull 'Juen?d eqr Jo qrlBer{ Ilere^o agr Sururelureru pre./Kot petrerrp eq pFor{s stro3lg 'tgeueq elqeuonsanbJo are tles pu? Phar maceutical Management of Anor exia- Gachexia Syndr om e A number of pharmacologic agents are under investigation in the management of the anorexia-cachexia srmdrome PART5 , Medical Nutrition Therapy 982 and cancer-related weight loss, including appetite stimulants, metabolic agents and cltokine blockers, prokinetic agents,and anabolic agentsfly'onRoenn,2006;Box37-4). She buys her lunch at worlg which consistsof noodle soup, deli sandwich with large pickle, botded club soda, and packaged cookies. Davis CD, MilnerJ: Frontiers in nutrigenomics, proteomics, metabolomics and cancer prevention, Matat Res551:51,2004. Would nutrigenetic testing be of help to Maria? A mutation in the gene encoding galactose-lphosphateuridyl transferaseprevents the sugar galactosefrom being converted to glucose. Care should be taken to assessthe effects of medication on the oral cavity and how these effects can be minimized by alterations in diet or drug therapy. National Ettinger DS et al: PracticeGuidelines:Antiemesis. Prevention of weight gain through energ'y balance Restricted-Energy Diets A balanced restricted-energy diet is the most widely prescribed method of weight reduction. 24 ; ilutritionand BoneHealth 627 CHAPTER Osteoporosismay have its origin in early life during the period of skeletalgrowth and PBM accumulation.Statistics indicate tlat women are about four times more likely than men to developosteoporosis,althoughwith agingboth gendersgraduallylosebone massand becomemore vulnerable, especiallyto hip fractures,asthey age.Women havealmost twice the hip fracture rate as men, but the men'srate will catch up as the averagelife spanof malescontinuesto increase.Practicallyeveryoneover 80 yearsof agecan be said to be osteoporoticand at risk for a hip fracture.The World Health Organization(WI{O) definesosteoporosisin terms of declinein BMD (Thble24-5). Foods made from whole grains are good sources of6ber. Core curriculum for the dialysis technician: a comprehensive review of hemodialysis, AMGEN, Int.) FIGURE 36-5 Hemodialysis. Siris ES et al: Identificationand fracnrreoutcomesof undiagnosedlow bone mineral densityin postrnenopausal women:resultsfrom the Narional OsteoporosisRisk Assessrnent, JAMA 286:2815, 2001. The following guidelineswere issued:for children 7 yearsof age and younger, prolonged weight maintenance,which allows for a gradual decline in BMI as children grow in height, is an appropriate goal in the absenceofany secondarycomplications of obesity; however, if secondarycomplications are present, children in this age-group may benefit from weight loss if their BMI is at the 95th percentile or higher. About 150 g of glycogen is stored in muscle; this amount can be increased fivefold with physical training (seeChapter 23) but is not available to maintain blood glucose directly. With only minimum training in nutrition (e.g., nutrition courses spreadthroughout the curriculum or having very few hours in nutrition studies)offered in many medical schools,physicians graduate with lirde practical knowledge about nutrition and therefore little awarenessof malnutrition. CHAPTER 25 MedicalNutritionTherapyfor UpperGastrointestinalTract Disorders 663 PepticUlcer Erosion throughmuscularis mucosa intosubmucosa or propria muscularis . Ingestion of light-to-moderate amounts of alcohol does not raise blood pressure;whereas excessive, chronic ingestion of alcohol does raise blood pressureand may be a risk factor for stroke (Chobanian et al., 2003). Hlpertension contributes to disease development by causing vascular injury and stress to the myocardium. r IJse standardizedrecipesto make attractive layered casserolessuch as shepherd'spie, lasagna,or chicken 6 la kirg. SeeAdverse food reaction definition, 739 intoxication, water, 146 definition, 144 intracellular fluid definition,1,l4 increase,in water intoxication, 146 intracellular water (ICW), 145 definition, 144 intrauterine fetal demise (IUFD) definition, 160 maternal obesiry and, 165 intrauterine gro*'th restriction (IUGR), 1l I8 definition,1117 intrinsic factor (IF) absence,in pernicious anemia, 819 definition, 810 rntrons definition, 365 in gene, 370-371 invert sugar, 43 sweemessvalue, 43t Invirase (saquinavir mesylate), nutritional complications, 1005t iodine, 127 -129 absorption, l28 deficiency, 128-129, 1291, l37 r tooth development and, 638t dietary reference intakes, 128, 128t, 137t excretion, 128 food sources, 128, 128r, 137r functions, 128, l37r nutritional facs, 1298 requrrements i n l a c t a t i o n ,1 8 7 - 1 8 8 in pregnanry, 176-177 storage,128 toxiciry 129 transport, l28 iron, 114-120 a b s o r p t i o n1, 8 , 1 1 5 - 1 1 7 1 , 1 5 f ,1 1 6 f blood disorders, relationship, 8 11-8 19 deficiency, 120, l36t in adolescent,eating habits md,265b in athletes, 599 in childhood, 238 tooth development and, 638t dietary bioavailability, 8 16 dietary referenceintakes, I l8-1 19, 136t electrolltically reduced definition, 199 in dry infant cereals, 2 I 3 iron (Continuell excretion,117 food sources,ll9-120,1 19t, 1l6t for premature infants, 1128 functions, 117-118, l36t heme, 115 bioavailability, 816 definition, 810 in foods, 817t intake, 119-120 bone and, 626 excessive,by adult men, 276 metabolism, 116, ll6f n o n h e m e ,l l 5 bioavailability, 8 16 definition, 810 nutritional facts, 1299- 1300 relative proportions, in young, healthy adults, ll4t requrrements by age, 119f in adolescence,252t, 253 in athletes, 598-599 in childhood, 225-226 in end-stage renal disease,943 in infancy, 205 in pregnancy, 175-176 serum, in iron deficiency anemia,422 storage, 1l7 supplemental, for infants, 206b toxicity, 120, 120b, 818-819 transport, 117 iron deficienry anemia, 422, 811, 813-816 care management algorithm, 8l3b clinical findings, 813-814, 815f definition, 810 diagnosis,8l5 in anorexia nervosa, 575 medical management, 8 15-8 16 medical nutrition therapy, 816 pathophysiology,81 1, 813b stages,811,813,814f irritable bowel sy'ndrome (IBS), 695-696 definition, 673 ischemia definition, Sll in cardiovascular disease,834 isoflavones bone and, 626 definition, 269 in adult diet, 281 isoleucine, requirements, by age group, 63t isomaltase, in disaccharide digestion, 45 isoprene-steroids, structures, 53f isoprenoids, 57 definition, 40 isoprostane, as oxidative stress markers, 428t isovalericacidemia, 1l45t formulas/medical foods in management of, 1151t IUFD. Consuming carbohydrates immediately after exercise optimizes repletion of muscle and liver glycogen stores. Certain rare diseaseswere found to be inherited from generation to generation; thus genetic diseasecame to be thought of as a separate disease category. Patiens who choose PD have higher protein needs (about 1.2 to 1.5 g of protein per kilogram) becauseof greater protein losses. SeeSexualmaturity rating SNP (single nucleotide poll'rnorphism), 371 technology, 17+-37 5 SOAP (subjective, objective, assessment,and plan)note,461 social behavior, cultural competency and, 490- +91 social factors, as nuffitional risk factors, 386 social history in nutrition assessment,395 societal trends, food intake by children and, 230-231 sodium as electrolyte, 150-151 balance,in end-stagerenal disease,934-935 blood values,in renal disease,936t dietary control, food servings for, 89lt food-labeling guide, 894t for premarure infana, 1129 in calcium stone formation, 952-953 in fluid replacement solutions, 601 in foods, 892t intake, bone and,626 requrrements in adolescence,252t, 253t in end-stage renal disease in children, based on rherapy type,947t in older adulthood, 300 in pregnancy, 187 sodium (Continuet) resorption of, lithium resorption and, 438 restrrcuon diet for, 1270-1275 for heart failure, 891-892, 89lb in acute renrl fdl'te,927 in hypertension management, 876 in nephrotic qmdrome, 924 serum, reference range and significance of, 415t sodium benzoate, in foods, reactions, 746t sodium bicarbonate, ergogenic aid, 605t sodium bisulfite, in foods, reactions, 746t sodium chloride, excessiveconsumption, hlpertension and,872 sodium chondroitin sulfate, for osteoarthritis, 1050 632 sodiumfluoride,for osteoporosis, sodiummetabisulfite,in foods,reactions,746t sodiumphosphate,ergogenicaid, 605t sodiumsulfite,in foods, rcactions,746t soiling,fecal,675 solubleserumtransferrinreceptor(SmR) definition, 811 in iron deficiencyanemiadiagnosis,815 somaticmutation theory definition, 286 somaticprotein, 64 somatostaun definition, 3 functionsof, 8 Somogyieffecr,798-799 definition, 765 sorbitol asexcipient,449b valueof, 43t sweemess SOS (sinusoidalobstructiveq'ndrome), definition, 960 soufces ofbiotin,94-95,100t of calcium,106-107,106t,150 of folate,9l-92, 92t, l00t 1ll, 112t,151 of magnesium, ofniacin,87,99t of pantothenicacid,88, 89t, 99t of phosphorus,109, 109t, 152 of potassium,I52, l53b of riboflavin, 85, 85t, 99t of sodium,151 of thiamin,83,83t,98t of vitaminA, 72, 73t, 97t of vitamin 86, 89, 90t, 99t of vitamin8n,93,94t, lOk of vitaminC, 96, 96t, 100t of vitaminD, 77, 77t, S8r of vitamin E, 80, 80t, 98t of vitaminK, 81-82,82t, 98t SouthAmericanfood patterns,354t Southfuian food patterns,356t

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Therefore infusion of currendy available parenteral lipid emulsions over 24-hour periods at a maximum of 1 g of lipid per kilogram per 24 hours is recommended to avoid deleterious effects. Long-term, prospective studies are needed to confirm these observations (ADA, 2007) (seeChapter 32). Formulaprogressionto goal: Formula ( ) Fiberenriched ( ) Monomeric kcal/cc 1.0 1.0 ( ) ScheduleB: Pump 1 Beginfull strength30 cclhr x 8 hr. The most commonmethodis hemodialysis, in which blood passesby the semipermeable membraneof the artificial kidney andwasteproductsareremovedby diffusion and fluids by ultrafiltration. If individuals choose to drink alcohol, daily intake should be limited to one drink or less for adult women and two drinks or lessfor adult men (l drink : 12 oz beer, 5 oz of wine, or I1/z oz of distilled spirits). Data from severalsourcesindicate that Americans eat too many calories, even though they eat less fat than was consumed 30 years ago fl4/illett,2002). The mucus contains acid-neutralizing bicarbonates, and additional bicarbonates are provided by the pancreatic juice secreted into the intestinal lumen. CHAPTER 37 I MedicalNutritionTherapy for Cancer 979 HematopoieticStemCell Transplantarion(HSCT) . Although causal relationships have not been determined, the association of calcium and dairy foods with periodontal diseasewarrants advocating a sufficient intake of dairy foods such as that recommended by the MyPyramid Food Guidance system. Therefore changing lifestyle as described under "Therapeutic Lifestyle Changes(TLC)" later in the chapteris critical to improving risk in individualswith any combination of the "metabolic risk factors" (Stone, 2006). tToml phenylalanineplus tyrosine should be consideredin the prescription since most phenylalanineis converted to tposine. WeintraubJA et al: Fluoride varnish efficaq in preventingearly childhoodcaries, J Dent Res85:172,2006. Acid pH foods . Some of these formulas also lack sufficient vitamins and minerals and are not nutritionally complete. J Am Diet Assoc97(suppl): A-+4,1997[abstract]. Michels KB et al: Coffee, tea, and caffeine consumption and incidence of colon and rectal cancer,J Natl CancerInst 16:282, 2005. Food form determines the duration of exposure or retention time of a food in the mouth, which, in turn, affects how long the decreasein pH or the acidproducing activity will last. Pancreatic cancer, with its attendant surgical resection, has significant nutritional consequences.The Whipple procedure and the pylorus-sparing pancreatic duodenectomy are the most commonly used pancreatic cancer surgeries. Therapy Medical Nutrition First and foremost, the nutritional deficiency should be corrected if possible. The liver metabolizes these chylomicron remnants, but some deliver cholesterol to the arterial wall and thus are considered atherogenic. Chromium also appears to be direcdy involved in carbohydrate, fat, and protein metabolism; but more research is needed to determine the full range of its roles in the body. qroq tnoqe Jo seteJ ssol aqt uaq,l.l.'97 e8e a8e arues eql ueruolr lnun Jo 'sso1 ueqt ater re.trol r{Jnu E ol anun auoq aler{ lE lnq -uoc uatrV'epBJeprxeu aqt re,ro reed rcd o7o7 ot % I Jo atsJ t? Ready.gov (www.ready.gov) is an education tool informing the public on how to prepare for a national emergenry, including possible terrorist attacks. nih. "The fact that you're here indicates that at least a part of you thinfts it's time to do something. The dietary contribution to urinary oxalate varies from 24o/o to 40o/o at oxalate intakes of 10 mg/day to 180 to 250 mg/day (Holmes et al., 2001). Bob has contacted you for assistancein planning memrs he can follow. Supplementationby feedingtube is an alternativefor those unable to meet nutritional needsby the oral route. White House: White Houseconference onfood.,natrition, and heahh, Final report, Washington,DC, 1970,IJ.S.Government Printing Office. The virus is not transmitted by casualcontact such as touching, hugging, or kissing or through using the same plates, silverware, or drinking glasses. However, one approach to the dietary treaunent of elderly patients who were recovering from hip fractures that has been shown to be effective is the provision of protein supplements coupled with adequate amounts of micronutrients. LevineJ{ Kotz CM: NEAl-non-exercise activity thermogenesis-egocentric& geocentricenvironmentalfactors vs. More commonly, foods contain a mixture of protein, fat, and carbohydrate. govlnews/press/pr2 004/obesphpr.htrn www adaevidencelibrary. What health and nutrition programs are availablein your community to promote optimal health and education of infants and children? Protein is calculatedas 1.5 to 2 glkg of dry body weight. It is not broken down by salivary amylase and is not subject to bacterial degradation. Seealso Celiac disease definition, 673 enterostatin, in body weight regulation, 536t enterostomies, surgical placement, for enteral nuuition,5l0 enterotoxi genic Escherichia coli (EilEC), 32 6t environmental agents, breast-feeding and, 192t enz)rme-linked immunosorbent assay(ELISA), in food allergy diagnosis,750t enzyrne(s) brush-border, intestinal, deficiencies, 687 -689 CYP, genetically altered activiry drug metabolism and,435 in digestion, 4-5, 6t proteolytic definition, l in digestion, 10-1I restriction,3T4 definition,166 serum, reference range and significance of, 415t enzyrne therapy, for rystic fibrosis, 910,9I2 eosinophilic esophagitis definition, 719 elemental diet for, 751 eosinophilic gastroenteritis definition, 739 elemental diet for, 751 EPA. Although these diets feature high ketone production, they suppressappetite to only a minor degree. Excessive use or concentrated forms of ethanol can damage gastric mucosa, worsen symptoms of peptic ulcers, and interfere \Mith ulcer healing. Approximately 3 years ago at age 67, she had dual-energy x-r^y absorptiometry (DEXA) mea$uements that showed that she had low bone mineral density @MD) values of her proximal femur and lumbar vertebrae @oth values would be classified as osteoporotic according to World Health Organization definitions). Cochrane of discretionaryincome:influence K.rp RJ et al: The appearance on tlre prevalenceofunder and over nutrition, IntJ Equity Heahh28:4,2005. C H A P T E R3 7 I M e d i c a lN u t r i t i o n T h e r a p yf o r C a n c e r 9 8 f Symptoms with a nutrition impact include nauseaand vomiting, changesin taste and smell, bowel changes,dysphagia, anorexia,pain, and fatigue (Schattner and Shike, 2006). The etiology of denal caries involves many factors. CopperContentof Commonly UsedFoods*-cont'd FoodGroups Starch Vegetables Fruits Desserts Sugar and sweets Miscellaneous Beverages{ High (>0.2 mgllPortion Gommonly Usedf) (Avold) Moderate (0.1-0.2 mBlPortion) (No More Than 6 Seruings/Day) Dried beans,including soybeans,lima beans,baked beans,garbanzobeans, pinto beans;dried peas; lentils; millet; barley; wheat germ; bran breadsand cereals;cerealswith >0.2 mg of copper per serving (check label); soy flour; soy grits; sweetpotatoes (fresh) Mushrooms,vegetablejuice cocktail Whole-wheat bread (1 slice), potatoes in any form (t/zc or I small), pumpkin (3/+c), melba toast (4), whole-wheat crackers(6), parsnips (2/tc),winter squash(Vzc), green peas(Vzc), instant oameal (Vzc), instant Ralston (% c), cerealswith 0.1-0.2mg of copperper serving (check labels),dehydrated and cannedsoups(1 c) Bean sprouts (1 c), beets (72c), spinach(Vzccooked,I craw), tomato juice and other tomato products (Vzc), broccoli (Vzc), asparagus(% c) Mango (% c), pears (1 medium), pineapple (1/zc), paprya V+avenge) Nectarines: dried fruits. It does require a bag and pole but can be accomplished fairly quickly and requires less manual dexterity than bolus feeding. Normalization means telling the client that he or she is perfecdy within reason and that it is very normal to have such reactions and feelings. Structural fat pads hold the body organs and nerves in position and protect them against traumatic injury and shock. Excessive amounts of alcohol (three or more drinks per day) on a consistent basis, conuibute to hyperglycemia. Salivary stimulants and 980 PART5 | MedicalNutritionTherapy FIGURE 37-2 Severeoral mucositis after marrow transplantation. Although a nasogastric tube can be a short-term option, a percutaneous endoscopic gastrostomy (PEG) or gastrostomy-jejunostomy (PEGfl tube, placed with the patient under local anesthesia, is preferred for long-term management. FritscheK: Fatty acidsasmodulatorsof the immune response, Annu ReuNutr 2006,26:45,2006. BonnefoyM et al: Simultaneousvalidationof ten physicalactivity in older men: a doubly labeledwater study' questionnaires Society49:28,2001. Fluoride added to the hydroxyapatite provides unique caries-resistant properties to teeth in both prenatal and postnatal developmental periods. Waste products and electrolltes move by diffrrsion, ultrafiltration, and osmosis from the blood into the dialysate and are removed (Figure 36-4). Everything on Desktop Nexus is uploaded and shared by other users, so you can expect an enormous variety of trending images, from the artistic and chic to the strange and fantastical.Pixabay License/Stergo/Pixabay MORE FROM QUESTIONSANSWERED.NET 1080p and 1080i - one letter, big argument When is HD not HD? Lasting a few days to 4 weeks, diagnosis of HIV is often missed. Therapy MedicalNutrition Dietary indulgences-excessivevolumes of food or high intake of fat, sugar,caffeine,spices,or alcohol-are commonly implicatedin dyspepsia.However,litde researchhas been done in controlled settingswith diet or specificfoods in personswith dyspepsia.Becausethe symptomsand underlying mechanismsmay be diverse,it is unlikely that dietary advice would be needed for all casesof dyspepsia. Many countries have issued guidelines appropriate for the circumstancesand needs of their populations. Dies that are repetitious without change from meal to meal may be another consideration. He had a blood test and his poussium was low; his diet history reveals almost no potassium inake. research) Subject has voided before measurement No exercise for >8 h For longitudinal follow-up, perform measurement at the same time of day; note menstrual cycle Bladdervoided Physicalexercise Timing Skin condition Electrodeposition Note time of measurement Temperature Integrity Cleaning Note body site of measurementl distance between electrodes Limb position Abduction of limbs Body position Supine, except for "scale" type BIA instrumens Environment Electrical interference Body shape Note body abnormalities Amputation Atrophy/hemiplegia Abnormal limb or tmnk (e.g., scoliosis dysnophy (e.g., Hry Cushing q'ndrome) Obesity Ethnic group Ambient temperature No skin lesions at sight of electrodes; change site of electrodes Clean with alcohol Always measure same body side Minimum of 5 cm between elecrodes; if needed, move proximal electrode Arms separated from trunk by about 30 degrees; legs separated by about 45 degrees Ambulatory subjecs supine for 5 to 10 min; for research protocol, standardize time that subjects are supine before measurement; note ifsubject is confined to bed (patients) No contact with metal frame of bed; neutral environment (no strong electrical or magnetic fields) Note measurement validity (e.g., R or Xc ouside of expected range for subject) Consider validity of measurement when interpreting results (e.g., abnormally low R suggests edema) Measure nonaffected limb; not valid for research but permits determination of body comparffnent becausemeasurement error 15Conslstent Measure nonaffected side Note abnormal condition Limited validiry in conditions of abnormal body compartrnent distribution Use electricity-isolating material (e.g., towel) between arm and trunk and between thigfu Note race; use race-specific BIA equation, if applicable Disease Gonditions Cardiac insufficiency Liver failure Kidney failure Abnormal serum electrolyte concentratrons Hypothyroid Edema interferes with measurement Ascites/edema interferes with measurement accuracy Edema/altered ion balance interferes with measurement Electrolyte concentration affects BIA measurement Pachyderma Measure patient in stable condition Consider segmental BIA measurement Perform BIA when serum electrolytes are within normal range Compare BIA results when serum electrolyte concentrations are similar May invalidate measurement because of high skin resistance Treatments Intravenous/elecrolyte infusions Drugs that affect water balance Dialysis Ascites puncture Orthopedic prosthesis/ implants (metal) Pacemakers, defibrillators Peripheral edema interferes with measufement Steroids, growth hormone, diuretics Hemo-l peritoneal dialysis Hip prosthesis, for example Implanted cardiac defi brillator Measurements are invalid if patient is abnormally hydrated If patient is in stable condition, measurement should be aken at same time after medication administration Use special protocols, standardize measurement procedure (i.e., measurement should be performed 20 to 30 minutes after dialysis) Use special protocols; standardize measurement procedure Measure nonaffected body side; note prosthesis/implants No interference with pacemakers or defibrillators is anticipated; although there are no known incidens reported as a result of BIA measurement, the possibility cannot be eliminated that the induced freld of current during the measurement could alter the pacemaker or defibrillator activity; therefore the patient should be monitored for cardiac activity Reprinted from Kyle UG, Bosaeu I, et al. The low-carbohydrate, high-fat diet restricts carbohydrates to less than 20o/" of calories (and often less than I0o/" in the beginning), and fat constitutes 557oto 650/oof calories, with protein making up the balance. The most common way HW is transmitted is via blood and semen during unprotected anal or vaginal intercourse with an HfV-infected person. Mozaffarian D and Rimm EB: Fish intake, contaminants, and human healtlr: evaluating the risla and rhe benefits, JAMA 296:1885,2006. In the United Statesthe Food and Nutrition Board (FNB) of the Institute of Medicine OOM) has led the devel- opment of nutrient recommendationssince the 1940s.Since the mid-1990s, nutrient recommendationsdevelopedby the FNB have been used by the United States and Canada. G e n e t i casn dG e n o m i c s ; N u t r i g e n e t i ac s dN u t r i g e n o m i c s Geneticsis the scienceof inheritance. Layke JC, Lopez PP: Gastric cancer: diagnosis and treatment options, Am Fam Physician69:1133,2004. "We are here to talk about your dietary change experiencesup to this point. Enteral NutritionSupport 509 Enteraland Parenteral CHAPTER 20 i Intervention: No further intervention (Monitorfor change in status) Diet + supplements >75% of needs Initiateenteralfeedings AssessGl access Obstruction? Infans with CLD and BPD have special short- and longterm nutritional requirements and care considerations related to both their prematurity (seeChapter 43) and their pulmonary status.The general goals of nutrition care are to supply adequate nutrient intakes, promote linear growth, maintain fluid balance, and develop age-appropriate feeding skills. 5 Weightloss score (unplannedwt loss in 3-6 months) =0 Wtloss 1 0 % Acute disease etfect score Add a score of 2 if there has been or is likelyto be no nutritional intake for >5d I ,: Add all scores Overallrisk of malnutritionand managementguidelines 01>2 Low risk Routineclinicalcare -Repeatscreening Hospital:weekly Care homes:monthly Community:annuallyfor specialgroups(e.9.,those >75 yearsold) Mediumrisk Observe -Documentdietaryintakefor 3 d if subjectin hospital or care home -lf improvedor adequate intake,littleclinical concern;if no improvement, clinicalconcern;followlocal policy -Repeatscreening Hospital:weekly Care home:at leastmonthly Community:at leastevery 2-3 months Hiqh risk TreatT -Referto dietitian,nutrition supportteam or implement localpolicy -lmproveand increaseoverall nutritionalintake -Monitorand reviewcare plan Hospital:weekly Care home:monthly FIGURE 14-6 (( )l The Malnutrition UniversalScreeningTool ('MUST') for adults MAg . Seetaditional Oriental medicine orlistat (Xenical) gastrointestinal effects of, 443 in obesity management, 550, 551 ornithine transcarbamylase (OTC) deficiency, ll44t, 116l definirion, I 141 orthinine-_-ketoglutarate, ergogenic aid, 605t orthopnea definition, 884 in heart failure, 888 osmolaliry l48b definition, 144,506 of enteral formulas, 514 osmolarity, 148b definition,I+4,506 of enteral formulas, 514 of parenteral nutrition solutions, calculating, 518b osmoles, 148b osmotic diarrhea,677 osmotic pressure, 148b definition, 144 osteitis fibrosa rystica, definition, 921 osteoarthritis (OA), 1047-1050 alternative therapies, 1050 care management algorithm, 1048f definition,1042 exerciseand, 1048-1049 joints commonly affected by, 1049f joint with, 1049f medical management, 1047 -1049 medical nutrition therapy, 1049- 1050 overview,1043t pathophysiology, 1047, 1048f surgery 1048 osteoblast,definition, 614 osteoblasts functions of, 615, 6l6t in bone remodeling, 618, 6l8f,6l9f osteocalcin definition, 614 vitamin Kand,625 osteoclast,definition, 614 osteoclasts functions of, 615-616, 616t in bone remodeling, 618, 6181 619f osteoclte, definition, 614 osteocy'tes,616 osteodystrophy Albright hereditary 373 hepatic, Tl5 dennltton,/u/ rena\,941-942 osteoid,definition,614 osteomalacia from calciumdeficienry,107 definition,6l5 from vitamin D deficienry,78 osteopathy,research,centers,475t osteopenia,627-613 definition,615,627, 627t in anorexianervosa,568,570,576 in cirrhosis,725-726 ofprematurity,1128 osteopeniaof prematuriry definition, 1I 17 osteoporosis, 627-633 age-re\ated,627 alcoholuseand,630,611b bodyweightand,630 cigaretteuseand,630,63lb definition,615,627, 627t dietaryfactorsin, 630 estrogen/androgendeficient, 627 definition,615 etiology,628-630 fracturesfrom, prevalence,627 in anorexianervosa,568,570,576 Iactationsand,629 limitedexercise and,630 postmenopausal, 627 definition,615 prevention,calciumintake in childhoodin, 239,241 prevention,secondary63I primary characteristics, 627t risk factorsfor, 630b risk of medicalconditionscausing,628b risk of medicationspromoting, 628t, 630 secondary,627 definition,6l5 t--^*--e ^f 421 qtpes,627,628f fiom vitamin D deficiency,78 otorrhea definition,1068 in neurotrauma, 1096 ovarianhyperstimulationsy'ndrome(OHSS), 161 overnutrition,385,187 overweight,385, 387, 538-542,518f,539f,540t assessmenr, 539-540 classification,540t definition,533 discriminationagainst,542 etiology, 540-542 geneticsusceptibility,379b healthrisla, 541 heredity and, 540 in adulthood,272 in childhood,236-237 in Dou,n qmdrome,interventionsfor, 1180 oxalate,in calciumstoneformation,950-951, 9 51 b oxidativestress definition,412 indices,426-427, 427-428 marKers, +l / -+t6l oxygenatedbeverages, ergogenicaid, 605t oxtorcrn definition, 160 in lactation,186, 186f F PAB (prealbumin) definition, 412 in assessment for protein-caloriemalnutrition, 4r9-420 PacificIslandersfood patterns,356t PA coefficient,35 pain disorder,nutrition, I I 12t PAL. Krall EA: The periodontal-systemic connection:Implicationsfor treatnentofpatients with osteoporosisand periodontal disease, Ann Period.ontol 6:209,2001. Of all causesof death, stroke is the third leading causeof death, behind CHD and cancer.From 1993 to 2003 the number of deathsfrom stroke decreasedby 19% (Thom et a1.,2006). Also it is difficult to aspirate the stomach contents, and the residuals may contain more secretions and gastric fluids than formula. High sodium intakes,particularly in associationwith a low calciumintake, can contribute to osteoporosisbecausethey result in increasedcalciumexcretion(Massey,2005). r B ' i,. As a result, the Food and Drug Administration (FDA) askedfirms that market drugs containing PPA to discontinue them voluntarily. The DV for vitamin D : 5 mcg = 200 IU. When menseswere resumed in these athletes, bone mass increased, but eventually plateaued at a level lower than that of sedentary women. An evaluationof the dietsof universitystudens in EastGermany pointed out that canteen(dormitory) mealscontained approximately50o/"of the daily recommendediodine intake (Braueret al.,2005).One hundredandnventythreepregnant Tirrkish women were evaluatedfor urinary iodine excretion and were found to be mildly iodine deficientin the first and third trimestersand moderatelyso in the secondtrimester accordingto WHO Criteria (Gultepeet al., 2005). Micronutrients No clear evidencehas been establishedfor benefits from routine vitamin or mineral supplements in persons with diabetes who do not have underlying deficiencies.Exceptions include folate for the prevention of binh defects (ADA 2007). Vertical-banded gastroplasty is the most popular form of gastroplasty.Another popular gastroplasty is the lap-band gastroplastyor gastric banding in which the band creating the reduced stomach pouch ii able to be adjusted so thatibe opening to the rest of the stomach can be made smaller or enlarged, depending on the weight reduction and clinical progress of the patient. Since then she has been on a fruitbasedvegetarian diet. Th! physiology of older women increases the risk of ",transmis- sion becausethe vaginal walls are thin, with easy accessfor the virus (CDC, 2006a; Gebo, 2004). Why did you not choose 12?" '"How do you generally feel about following this new eating pattern?" Nways provide positive confi dence-building statements: o "It is great that you ." . Gilbert GH et al: Twenty-four month incidenceof root caries amonga diversegroupof adults,CariesRes35:f66,200I. Complex carbohydratesare preferredover simple sugars. Figure 25-2 shows the formation of dental caries. definition, 959 steroids,5T as muscle-building supplements, 609-610, 609b commonly abused, 609b sterols, in medical nutririon therapy, for cardiovascular disease.858 stimulants,causinganorexia,446b stimuluscontrol, in obesitymanagemenq544 stoma abdominal,with percutaneous endoscopic gasuostomy,5l0 definidon, 506 stomach cancer,s)..rnptoms/nuuitional consequences, 655t carcinoma, 665-666 digestion,10 digestiveprocesses, 3 disorders,660-669 dyspepsiaas,660 gasrririsas,660-661 indigesrionas,660 pepticulcerdisease as,662-665 dumping s1'ndromeand,666-669 inflammarion. An integral strategy to reduce foodborne illness is risk assessmentand risk management. normal bone mineral density,Osteoporos intake and risk of protein Dietary et al: HJ Wengreen osteoporotichip fracturein elderly residentsin Utah, J BoneMiner Res19537,2004' Woo J et al: A randomizedcontrolled trial of Tai Chi and resistanceexerciseon bonehealth,musclestrength,and balancein community-living elderly people,AgeAgeing March 13,2007. WongJM et al: Colonic health:fermentationand short-chain 40:235,2006. Alcohol . Munter P et al: Tiends in blood pressureamongchildren and adolexens,JAMA 29| :2107,20M. Some patients have few oveft symptoms and relatively significant disease;others may have considerable discomfort without erosive and long-standing consequences.Regardless, reflux sy'rnptomsdeserve appropriate evaluation and followup. Mitochondrial Inheritance In addition to the geneticmaterialin the nucleus,the mitochondria in eachcell also contain DNA that givesrise to a limited number of proteins.The majority of thesegenesare involved in housekeepingneedsrelated to maintenanceof the mitochondrion and its energy-producingactivities.fu with nuclearDNA, changesin mitochondrialgenescanlead to disease.For example,Wolfram syndrome,a form of diabeteswith associated deafrress, wasone of the earliestdisordersto be tracedto mitochondrial DNA. Conformity versusautonomy . andIntegrativeGare 485 DietarySupplementation 18 i Intervention: CHAPTER ably. Instant Breakfastwith whole milk 1 c cottagecheese % c pineapple 1 c applejuice 6 graham cracker squares 1 pear kcal Protein (g) Plus 1500 kcal (Serued Between Meals) 110 80 r59 60 86 495 z 8 2 + t6 99 tt3 290 502) 7 6 l6 165 172 122 52 511 3 8 ll Plus 100O kcal(Served Between Meals) l. At this time, universally accepted, evidenced-based guidelines for nutrition screening and assessmentfor children diagnosed with cancer do not exist (Ringwald-Smith et al., 2006). At what point in the transition from enteral nutrition to an oral diet would you recommend stopping the enteral nutrition? Physical activity is the most variable component of energy expenditure. Genetic research is helping to clarify the pathogenesisof disease,which includes the influence of bioactive components in food. Prevalence rises from less than 10% for individuals in the 20- to29-year agegroup to 45% in the 60- to 69-year age-group, suggesting possible interactions between the process of aging and the cumulative effect of increased sugar (or perhaps other carbohydrates) consumption. many individuals, especially becausein the United States and Latin America nighttime meals are often the largest meals of the day and are part of socialization or recreation. Pathophysiology It is currendy believed that, in response to a decreasing GFR, the kidney undergoes a series of adaptations to prevent this decrease.Although in the short term this leads to improvement in filtration rate, in the long term it leads to an accelerated loss ofnephrons and progressive renal insufficiency (Gble 36-3). nal.usda.govlfiric/foodcomp. SchoellerDA: Measurementof energyexpenditurein freeJiving humansby usingdoublylabeledw^ter,J Nutr I I 8:1278, I 988. RobinsonM: Communication andheahhin a muhi-etbnicsociety, Bristol,ttK, 2002,PolicyPress. Such reductions in mealtime rapid-acting insulin for postprandial exercise resulted in a 7 5o/odecreasein exercise-induced hypoglycemia. Saccharin,aspartame,neotame, acesulfamepotassium, and sucraloseare nonnutritive sweetenerscurrendy ,pprovedfor useby the FDA. fuymptomatic HfV infection r Persistent generalizedl5rmphadenopathy r Acute (primary) HIV infection with accompanyingillness or a history of acute HIV infection CategoryB-ry.rnptomatic conditions occurring in an HIVinfected adolescentor adult that are not included among conditions listed in clinical caregory C and that meet at least one of the following criteria: l. Following this phase, further weight loss may be considered. The ryrnptomsof acute gasuointestinalG\{HD are severe,and individualsmay experiencegastroenteritis,includ- ing secretorydiarrhea,abdominalpain, nausea,and vomitmedications,a phased ing. Mortality Diseasesof the heart and stroke causemost deaths in both sexesof all ethnic groups. Which other complementary approachesmight be appropriate to help Matthew accomplishhis health goals? CancerNefzt;orhClinical PracticeGuidelinesin Comprehensiue May 30, accessed from www.nccn.org, Oncolog-v.1.2004, 2006. 987. *Intakes between the minimum and maximum levelsare scoredproportionately, exceptfor saturatedfat and sodium (seell). Within the geneare sequences of nucleotides(exons) that correspondto the order of the amino acidsin the gene'sprotein product. The key factors in successful home nutrition support therapy are careful and coordinated discharge planning as well as patient and caregiver education. Contrary to old theories, Totalfat..-........ From 558 PART4 | Nutritionfor Healthand Fitness NutritionManagement of Unintentional WeightLoss Concern Tlps Arxiety, stress,depression Antidepressantscan help; monitor choice to be sure they do not contribute to weight loss. Using appropriate hand-washing techniques, properly handling poultry and eggs,washing utensils and surfaces to lessen the risk of cross-contamination, and using food tlermometers to make sure that a cooked food reaches an internal temperature of 165' F are steps that should be encouraged by nutrition and health professionals. Oral immediate-releaseB12is increasingly used, but effectiveness in reversing neurologic abnormalities has yet to be established(Solomon, 2006). Nl meat to be consumed as food must be slaughtered with a ritual letting of blood while speaking the name of God. Herpes zoster (shingles),involving at least two distinct episodesor more than one dermatome . You are planning a sessionon nutrition for dre cliens and their families who participate in dre Ouqatient Pulmonary Rehabiliution Program. "Where does this leave you now?" Arranging for the NextGontact The counselor must take this process slowly and not assume that the client is ready to change. gasric pain. - Cuadros de casos clínicos y aplicaciones. Durable medical equipment and supply dealers provide catheters and supplies and teach people how to use them at home. IrJ.owwould you expecttheir diets to be different? In general, this metabolic syndromeconsistsof some level of atherogenicdyslipidemia,elevatedbloodpressure,elevated plasmaglucose,and a prothromboticand proinflammatory state (Grundy, 2006).To date, at leasr four definitions of metabolicsyndromeexist,and eachvariesin its predictability of CVD events(Saely et al., 2006; Athyros et al., 2006; Diamantopouloset al., 2006).The most recenr is that proposedby the AFIA and the National Heart, Lung, and Blood Institute (Grundy et al., 2005) (Thble 32-5). The nutrition professional can use laboratory data to support subjective data and clinical assessmentfindings. Peripheral access refers to catheter tip placement in a small vein typically in the arm. AndersonlJB et al: Soy isoflavones: no effects on bone mineral content and bone mineral density in healthy, menstruating young adult women after one yea4 Am Coll Nut 2 I :3gg, J 2002. Most CHD and strokes are the result of ischemia, or impaired blood flow. Moore LL et al: Intake of fruits, vegetablesand dairy productsin early childhood and zubsequenrblood pressurechange, Epidmiolog 16:4,20f5. Only fish with fins and scalescan be eaten; thus no shellfish or eel is permissible. 2t I WeightManagement549 CHAPTER Results of U.S.Department Diets of Agriculture Review of Popular Scientific Area Finding Weight Ioss Diets that reduce caloric intake result in weight loss; all popular diets result in short-term weight loss if followed. Matthew "eats healthy," is at a normal weight, jogs daily and takes a number of dietary supplements to improve his energy level, to manage his stress, to help him sleep, and to protect against heart disease(his father had a heart atrack in his 50s). consumerlab.com,/ Officeof DietarySupplements andIntegrativeCare 487 DietarySupplementation CHAPTER 18 f Intervention: References Allam M[Lucane RA: Selenium supplementation for asthma, CochraneDatabaseSystRea CD003538, 2004. Finally identif ing health care providers and researcherswho are actively working in this area can be invaluable in terms of increasing awarenessof safety issues, understanding mechanisms of biologic activify, and assessingthe level of evidence for clinical efficacy. rroddns 'e*nlee* Suunp peq q eq uec s,u.o11rd tsnru ruarredaqr;1 'elqrssodsr (a13ueaarSep-g6e s?trs tuengdetp re) rq8lrdn e^?qot lurtrodrur srt1'uoBe:rdseJo >lsrJqrueuedE esBerJur deru tr :aprspatcaJe er1lpJB/rordurnls or dpoq erp sesncc eprseuo ierp dpoq aqr uo ssau{Be,r\ sr sgsaredrua;1 Jo 'slrsuelnSuqeee.rDdepe cgrcads pueuuocer dleq leru lsrderaql leuonednccouy .rualqord e sr dpee ro enSrre; dlaq uec sSurpae;luanba4 &eDes JI '1prug 'pueq lueurruopuouarp Sursnol osle pue pu?q auo qlmr Suneaot tsn(peot e^eq,(eurtuaned aqa .rueseeldun pue tlnJgJrp Sunea eqeruleur epls tueunuopuu a{t uo eJuerlal ^\eu E ruo{ Sunlnsar uorteurpJooJ rood 'dpoq etp;o ePISlueuruop aqt uo sJnJJosrs.,(1ered Jo sseulBe^rqrullJI '(S-tl lrrlqrsrp atqrJ Sunpsa-rarp sourrurelep 'e>Ftur flererp lrrrtser Jeql SNO eql;o uor8er percege er{J -rry leru ersaur4s.,{pe^rpJet .ro 'eseasrps,uor5unun11 'fspd IEJqeJeJ rflr,l.t.JnJJo sE suorlelseJrueru Joloru d;elrmlorrur Jo lsluaureloru JDSEds:eseasrps(uosuDlJtd ur s? The new stomach capacity may be as small as 20 to 30 ml, about I oz, or about 2 tablespoons. Institute of Medicine, Food and Nutririon Board:Dietary reference intakesfor aitamin A, aitamin I(, arsenic,boron, chromium,copper, iotline,iron, molybdenum, nickel,silicon, aanadiumandzinc,WashingtonDC, 2001,National Academies Press. Lipids. The impact of nutrient intake systemically affects the development, maintenance, and repair of the teeth and oral tissues.Deficiencies of several vitamins (riboflavin, folate, 812, and C) and minerals (iron and zinc) may be first detected in the mouth becauseof the rapid tissue turnover rate of the oral mucosa. Tiaits resultingfrom mitochondrialgeneshavea characteristic inheritancepattern,but it is non-Mendelianbecause mitochondria and their geneticmaterialtypically passfrom mother to child,a modeof inheritancecalledmitochondrial inheritanceor maternalinheritance.This biologicprinciple has becomethe basisfor anthropologic studiesthat trace lineageand populationmigration patternsthrough the centuries. Antiemetics may be helpful. Winters-Hart CS et al: Validity of a questionnaireto assess historicalphysicalactiviryin older women,Med SciSports Exerc 36:2082,2004. This task is accomplished by the continuous filtration of blood and by alterations (secretion and resorption) in this filtered fluid. 'srtuqut proteunerflqlr.n stuenedur 'e5gg7'sasn rtaqi puaguaraaldds puusqraHtronepunoCsprrqrtv tueuqeeJtpJepuets ' e sepeteJrpursreuosrupard esop-,t\ol:pellosed :-IC uuo3 L00Z'6 lrrdy pessece'TaprnS8rupTsuonrpuocTSro'sr-rlrqlre '5002'Ztg6 '.r.r,vr '1gg7 'aptn8 '{apot 8up sryrquv:uortepunod splrrprv f pa14qtnogtrreraarpcuoerd? Wyatt G, Post-WhiteJ: Future direcrionof complementaryand alternative medicine (CAM) education and research,Semin OncolNarc2l(3):215,2005. andMW-l3, multivitamin 520 PART3 | NutritionGareprocess common drug additivesare insulin for persistenthyperglycemiaand histamine-2antagoniststo avoid gastroduodenal stressulceration(I{umpf et al., 2005). Any weight loss, whether fast or slow, results in a loss of the extra muscle that has developed to suppoft rhe excess adipose tissue. Keep in mind that chronic diseases involve complex interactions 378 PART 3 I NutritionCareProcess among genes and bioactive food components, and unraveling the details will require population and intervention studies large enough to have the statistical power needed to draw meaningfirl conclusions. The goal here is for the client to realize that a problem exists, that concern results, and that positive steps in the future can be taken to correct the problem. A state of equilibrium is eventually reached at which the energy intake is equal to energ'y expenditure. Kanis JA et al: Alcohol intake as a risk factor for fracture, Int 16:737, 2005. le J xnelJ1"lec ' l00Z' 6 LSZ:S| [AASUI'lSolounuurr ur sesn pue elor str :CI uruell1 :JW Burotue3 'gg eonlaq ' t S00Z'bZ dlnf pessacce'3ro'snrrglre',u,n 'ra otq{ :autau a w s1ne1 srtrJrltJe proteunar{J ur sserts e^rteprxo :gI ^a(seuBJV,Vg rlJlr^oq{eJtso ' 1661' L09tZ6 utry pary,senrlrqrssod rqnedereql pue sturod,trar,rcrrauaSoqled :snrJrpJeprolBruneqr ur rusr1oqetereuoq pue uonerurue3ful :C ureH ,4;euzleg '2007. Reduce or withdrawuseof NSAIDs . Genes with characteristics that are expressedwhen only a single copy of an allele is present are called dominant (i.e., the phenotype of the variant allele is the predominant one). It is not a carbohydrate but is a polymer composed of phenylpropyl alcohols and acids. There are two distinct categoriesof tissuecomponents disease:systemic, autoimmune RD and nonsystemic OA. Considerations When Deciding on Flome Nutrition Support 1. Although LDL cholesterol may increase because of a shift from small and dense to large and buoyant LDL particles, these types of particles are less atherogenic; thus the increase in LDL cholesterol may not be a concern (Inzucchi, 2002). 1150 PART5 I MedicalNutritionTherapy Phenylketonuria . Weight 4. They were developed to help consmers detemine if a food contains a lot or a little of a specific nutrient. The initial rapid weight loss from diuresis is secondary to the carbohydrate restriction. In addition, a dietary supplement intake assessmentform should be completed by each patient/client and reviewed in detail by the health care provider (Figure 18-6). With depth-of-field and perfect framing, these images are clearly the work of pros.DeviantArtOut-of-the-box artistic flair and an attractively gritty quality are the hallmarks of DeviantArt's full HD 1080 wallpapers. The percent daily value (% DV) listed on the table indicates the percentage of the DV provided in one serving. Resistancemay also surface as interrupting, when the client breaks in during a conversation in a defensive manner. Remind that a nutritional sapplemenr should supplement the diet Document List specificsupplementsand brand namesof each supplement being taken Record batch number from botde in caseof an adverse event Record patient perception and expectedlevel of compliance Monitor efficacyand safery including health outcomes and adverseeffects . fupiration is a concern for patients receiving enteral nutrition and is also a controversial topic since many experts believe the issue is not aspiration of formula into the airway, but aspiration of throat contents and saliva. The amounts of the carotenoids were shom in seven major groups, as neoxanthins and violamthins (neonnthin, violumthin, md their related isomers, lurein 5, 6 epoxide), lutein, zeanthin, cry?toxantlins (o-cryptomnthin, p-cryptoxanthins, and related isomers), lycopenes (lycopene and related isomers), p-carotene (all trans p-carotene and cir isomers), and B-carotene (tll trans p-carotene and cir isomer). Dietetics and health professionalsworking in food service will be expected to assisrin planning for disuibution of food in an emergency situation, choosing food distribution sites,establishingtemporary kitchens, preparing foods with limited resources, and keeping prepared food safe to ear through FIAACP procedures (Puckett and Norton, 2003). Daubase Linde K et al StJohn'swort for depression,Cochrane SystRea,CD000448April 18, 2005. NutritionSupport 5L3 Enteraland Parenteral CHAPTER 20 r Intervention: Augment enteral (polymeric) nutrition withfoodsor liquidsas tolerated lntactprotein Generalpurpose formula(polymeric) Hepatic Low protein High carbohydrate Low fat Defined/hydrolyzed protein Lowfat (monomeric) Severe stress/trauma High protein Glutamine Arginine Omega-3fats Nucleotides Diabetes Protein15% calories Fat 30% calories cHo 55%-60%, complexwith fiber FIG URE 20-3 Algorithm for enteral formula selection. time, Remainder...... Individuals with altered taste acuiry (dysgeusia,hypogeusia,ageusia)may benefit from increaseduse of flavorings and seasoningsduring food preparation. The kidney has almost unlimited ability to regulate water homeostasis. @2fi)l Americm Diabetes Association, Inc., The American Dietetic Association. Some provide classeson selfinuospection,behaviormodification, and nutrition. The DV for iron is 18 mg. CommonDietaryPatterns: NativeAmericans Native Americans (American Indians and Alaska Natives) often live on federal Indian reservations and in small rural communities. Current surveillance systems are designed to detect foodborne illness outbreaks resulting from food spoilage, poor food handling practices,or other unintentional sources,but they were not designed to identi$r an intentional attack. Updated by Katy G. Worldwide The enormousdisparity of HfV infection, accessto health care, and AlDS-related deathsthroughout the world becamevisible at the thirteenth World AIDS Conferencein Durban, South Africa, in 2000. Repors of the few human investigations suggest that intermittent PTH therapy will be a boost to the therapeutic arsenal because it increases osteoblastic formation of new bone tissue, especially in trabecular bone, and reduces fractures (Thomas, 2006; Dempster et al., 2001; Neer et al., 2001). During sleep gastric empryingis already delayed, salivary secretions are decreased,and swallowing occurs less frequently. Maria mentioned that she tried numerous diets while a teenager,when sheweighed 170 lb for 3 years.What guidelines would you offer to Maria at this time? Kalnins D et al: Enteric-coated pancreatic enzyme with bicarbonate is equal to standard enteric-coated enryme in treating malabsorption in cystic fibrosis, J Pediatr Gastroenterol Nutr 42:256,2006. lf toleratedafter 8 hr, advanceto Socc/hrx 24 N. Most behavioral programs try to achieve a 0.5- to l-kg weight loss per week by providing calorie, fat grams, and physical activity targets, which are discussedduring the goalsetting phase of the program. A-fter determining that a manufacturer and its product meet these standards,compare prices among products of similar quality. Because HDL cholesterol was not significantly different during this period, the declinein total cholesterollevelswasdui to decreased LDL cholesterol.Of note, the percentageof Americanson cholesterol-loweringdrugssignificandyincreasedfrom 3"/oin 1988-1994to 9o/oin the 1999-2002 National Health and Nutrition Examination Survev low-density lipoprotein. Energy Box 35-1 lists factors that can make meeting energy needs difficult. Academy National Institute of Medicine, of Sciences FoodInformation Council International htq://ific.org FoodGuidance System MyPyramid http ://www.mypyr amid.gov/ for HealthStatistics National Center www cdc.gov/nchs/nhanes.htrn Dietary forAmericans Guidelines wwwhealth.govlDietaryGuidelines (U.S.government nutrition site) Nutrition.gov w-ww.nutfltlon.gov EatSmart,PlayHard http ://www. Tissue weight gain and resultant obesity is a common problem after transplantation. Only the forequarter of the quadruped may be used, except when the hip sinew of the thigh vein can be removed, in which casethe hindquarter is also allowed. americanheart.org American College of Cardiology/American HeartAssociation for Chronic Guidelines HeartFailure lV I 12/ 12/ el 54 hnp./ / circ.ahajournals.orglcontent/fu HeartFailureSocietyof America www.hfsa.org Heart,Lung,andBloodInstitute National www.nhlbi.nih.gov/ Website National Institutes of Health on HeartFailure www.nhlbi.nih.govlhealtVpublic/heart/other/hrtfail.htrn References Almenar L et al: Risk factors affecting survival in hean transplant parients, Ti,ansplantationProceedings37:4011, 2005. fucorbic acid accounts{or 35"/" to 55o/o,and glyoxylic acid accounts for 50o/" to 70Y" of urinary oxalate. JohnsonRK: What are peoplereally eating,and why doesit matter?Nutr TbdayI5:40, 2000. Her parents report that she now is experiencing food jagp and óther typical toddler behavior at mealtimes. In the case of stress ulcers, continuous enteral feeding and early postoperative feeding may help maintain the mucosal barrier and GI circulation, thus reducing the risk of stress ulceration. Kistorp C et al: Plasmaadiponectin,body massindex,and monality in patients with chronic hean failure, Circalation ll2:17 56,2005. Food diaries help identifz eating habits and potential modifications. Pyelonephritis Pyelonephritis, a bacterial infection of the kidney, does not require extensive dietary management. Pneumothorax and hemoptysisare common. Autosomal-recessivedisorders of lipid metabolism also exist. PiccianoFM: Who is usingdietarysupplements and wharare they using? TPN infusion remained at the goal rate. Five percent to l0%" of patients with severe gastroesophageal reflux do not respond to medical therapy and repeatedly deal with symptoms and complications. It can be passedthrough the esophagusand into the stomach or upper small bowel. The ability to tailor food to the genetic and (5) identifiiingmetabolitesthat are usefulin monitormakeup of individuals is expected to be an important ap(the scienceof metabolomics, ing disease progression see plication of genetic research,similar to the applications of German, 2005; German et al., 2003),and for nutritional pharmacogenomics. genet.sickkids. Candidate genes,gene variants, and diet-gene interactions are being investigated for type 2 diabetes, osteoporosis, and obesity. On radiograph confirmation reinsert the NGT if 60-ml syringe with Luer Lock desired. Ionuoc or e>lsreqs persaSEnse eq 'es?esrp sruerueldds;o lsII B siluesеJdpue nod easol seluoJ er{S aql;o uorssar8ord eqr pw stuordurrGJaII eseerraPor urerSord ssol-rq8rerne lnoqB uEpDeIPPaJelsl5er u rprrrn 4eads eqs rerp uopBrlpetu 8urrno11o; ured crnseS.{q pacuepr.tese osn CIVSN ol PelBIaJ uoprereluloequerrpeu pooC :€ S|SOUEpt0UOlltlrnN luerulEaJl sprrtpre ro; esnSurpre8e.rsuonsanb,(g pecuepna se sluaureldspue sqreqJo esn or peluler rrcgep e8pal,nou4 uopulnupu?pood :z sts0u6pt0uotltrlnN fideraqluo$rrFN tPclpaw! I IUVd Z90l ' ' g66l' g aurarul 7007'btts I \srJP-d) s:7.t raqrcrouruqd uuv 'sqr.rqlreoalso ,33 JoJouruesoJnlC oruretsds :V JeDV ssel.ltl'oq uuv'srso;a1cs ur suorlelseJrueu e,rpsaSrq ererue3eq nC ?aW . J oz Yogurt, plain, low-fat, 8-oz container Prune juice, % cup Carrot juice, 7+ cup Blackstrap molasses, 1 Tbsp Halibut, cooked, 3 oz Soybeans, green, cooked, % cup TLna, yellow fin, cooked, 3 oz Lima beans, cooked, % cup Winter squash, cooked, % cup Soybeans, mature, cooked, % cup Rockfish, Pacific, cooked, 3 oz Cod, Pacific, cooked, 3 oz Bananas,I med Spinach, cooked, 7z cup Tomato juice, % cup Tomato sauce, 7z cup Peaches, dried, uncooked, 7+ cup Prunes, stewed, % cup Milk, nonfat, I cup Pork chop, center loin, cooked, 3 oz Apricots, dried, uncooked, 7+ cup Rainbow trout, farmed, cooked, 3 oz Pork loin, center rib (roasts), lean, roasted, 3 oz Buttermilk, cultured, low-fat, I cup Cantaloupe, 7+med lo/"-2o/" milk, I cup Honeydew melon, % med Lentils, cooked, % cup Plantains, cooked, % cup slices Kidney beans, cooked, % cup Orange juice, 7+ cup Split peas, cooked, % cup Yogurt, plain, whole milk, 8-oz conrainer Milligramspel Servlng 694 664 655 610 595 579 549 53+ 531 530 517 498 490 485 484 484 448 443 442 439 422 4r9 417 405 398 398 382 382 378 375 371 370 368 366 365 365 358 358 355 355 352 % Daily Value* 19.8 18.9 r8.7 17.4 t7 r6.5 t5.7 15.3 t5.2 15 . Chemotherapy can be expected to produce nausea, vomiting, and anorexia (see Chapter 37). The classic triad of anemia, neurologic deficits, and epithelial atrophy of the tongue was well recognized at the turn of the century. MedicalNutritionTherapy Assessment Individuals with CF are at high risk for malnutrition. For those who have lost weight on a \rLCD, limiting dietary fat intake and maintaining physical activity are both important factors for the prevention of weight regain basedon 3-year follow-up study. For example, the brain uses the major por- tion of the approximately 200 g of glucose required per day. The true mechanismsare not completely understood, but the use of antioxidant compounds shows promise (Doug and Kauniz, 2006). Senna is a potent cathartic. However, it is critical that the client express ideas of what will work best. What would you have recommendedto improve her calcium intake from foods so that she could reduce USeFULwEBsrrES Consumer Labcalcium supplernents http ://www. On the other sideof the equation,energyexpendratureusually is elevated.This sinration appearsrelated to pulmonary complicationssuch as the degreeof airflow obstruction, thus increasingthe energyneedsresulting from the increasedwork of breathing. Histamine-2 antagonists Modified ftom the American Society for Parenteral and Enteral Nutrition: Safe practice for parenteral nutrition formulati ons,JPEN J Parenter Enter Nutr 22(2):56,1998. Girdles Hip-Protector Wearing girdleswith built-in padsto protect the hips during a fal hasbeendemonstratedin some,but not all, studies to significandy reduce the rate of fractures in a wellcontrolled investigation. These diets produce rapid weight loss and are very restrictive. All animals and fowl must be inspected for disease and killed by a ritual slaughterer according to specific rules. Alexander JW, Gottschlich MN[: Nutritional immunomodulation in burn patients, Crit Care Med 18:5149,1990. Amelioration of ryrnptoms occurring between 6 and 12 months is variable, and in extreme cases,arrest of diseaseprogression is the most that can be accomplished.Prompt initiation of therapy is imperative. Thble35-4 showshow energyintakecanbe boosted.Homemade or proprietary nutritional supplementssuch as fortified beveragesand puddings also can help the individual with CF attain nutritional goals. U-100 syringesdeliver Glucose-Lowering Medications for Type2 Diabetes Class and Generic Names Sulfonylureas (Second-generation) Glipizide (Glucotrol) Glipizide (Glucotrol XL) Glyburide (Glprase Prestabs) Glimepiride (Amaryl) Meglitinide Repaglinide (Prandin) Nateglinide (Starlix) Biguanide Metformin (Glucophage) Metformin Extended Release (GlucophageXR) Thiazolidinediones Pioglitazone (Actos) Rosiglitazone(Avandia) Alpha Glucosidase Inhibitors Acarbose(Precose) Miglitol (Glyset) Recommended Dose 2.5-20 mg singleor divided dose;single dose for XL 12 mg daily 4-8 mg daily 0.5-4 mg beforemeals 120 mg before meals 500-850mg tid or 1000 mg bid 500-2000mg once daily 15-45mg daily 2-8 mg daily 25-100 mg three times daily with meals 25-100 mg three times daily with meals PrincipalAction Mean Decrease in A1G Stimulate insulin secretion from the B-cells lo/o to 2o/o Stimulate insulin secretion from lo/o to 2o/o B-cells Decreasehepatic glucoseproduction 1.5o/o to 2Y" Improve peripheral insulin sensitivity lo/o to 2o/o Delay carbohydrate absorption 0.5Y"to l"/" CHAPTER 0rigin 783 30 I MedicalNutritionTherapy of Nondiabetic MellitusandHypoglycemia for Diabetes Glucose-Lowering Medications for Type2 Diabetes-cont'd Class and Generic Names Incretin Mimetics Exenatide (Byetta) Amylinomimetic Pramlintide (Smylin) Principal Action Enhancesglucosedependentinsulin secretion and suppressespostprandial glucagon secretion 0.5o/oto 0.9o/o Initially dosedat 5 mcg rwice a day-at breakfastand lunch; increasedto l0 mcg twice a d^y Decreasesglucagon production, which mealtime decreases hepatic glucoserelease and prevents postprandial hyperglycemia 0.4o/oto 0.7o/o Initially dosed at 60 mcg beforemeals;doseincreased directly to 120 mcg if no clinically significant nausea occurs after 3-7 davs Combination Medications Glyburide/metformin (Glucovance) (1.25mg/250 mg) Glipizide/metformin (Metaglip) (2.5 mg/250 mg) Rosiglitazone/metformin (Avandament)(l mg/500 mg) Rosiglitazone/glimepiride (Avandaryl)(4 mg/ l, 2, or 4 rr;rg) Mean Decrease in A1C RecommendedDose Combined action of each medication 2.5/500mg to 5/500 mg daily 2.5 mg/500 mg to 4 mg/500 mg daily 1 mgl500 mg to 4 mgl500 mg daily =2o/o 4 mg/1.0 mg to 4 mg/4.0 mg daily Unknown -) o/- Adapted from Franz MJ er al: Implementinggroupand indiaid.ualmed.ical Alexandria,Va, 2002, American DiabetesAssociation,p 66. DietaryReference Intakesfor VitaminE (in milligrams) of c-TEfor Children andAdults Age (years) l-3 4-8 9-t3 14-18 19+ Males and Females (ng/dayl 6 7 u t5 t5 Pregnancy (mg/davl N/A N/A N/A 15 l5 Lactation @e/davl N/A NiA N/A t9 t9 APPEI{DIXES L293 Selected FoodSources of VitaminE Food Fortified ready-to-eat cereals, =l 62 Sunflower seeds, dry roasted, I oz Almonds, 1 oz Sunflower oil, high linoleic, I Tbsp Cottonseed oil, 1 Ttrsp Saffiower oil, high oleic, 1 Ttrsp Hazelnuts (filberts), 1 oz Mixed nuts, dry roasted, I oz Tirrnip greens, frozen, cooked, % cup Tomato paste, 7+cup Pine nuts, I oz Peanut butter, 2 Ttrsp Jbmato puree, % cup Tomato sauce, % cup Canola oil, 1 Ttrsp Wheat germ, toasted, plain, 2 Tbsp Peanuts, I oz Avocado. Me d i c aN l utritioT n h e ra p fo y r U l ce rs For several decadesdietary factors have gained or lost favor as a significant component in the cause and treanment of dyspepsia,gastritis, and peptic ulcer disease.Since the identification of H. l f L > o ",o *; tt t"; a= d- f,F o o >: 9X L225 APPENOIXES s L226 APPENDIXES o Ct .g E 6 x 6 g lrl .9 = 5 c c o z zh 6n () F oE ' di Fu -aE q I q H 93 io v6 tq !; -5 9l .v EH .9tr PX OO a v s Z E) cl -oo63 .q oa o q € q o * tI rq l. In responseto a fall in blood pressure,the s1'rnpatheticnervous system secretes norepinephrine, a vasoconstrictor, which acts on small arteries and arterioles to increaseperipheral resistanceand raise blood pressure.The kidney regulates blood pressure by controlling the extracellular fluid volume and secreting renin, which activates the renin-angiotensin system (Figure 33-2). \ltamin D insufficiency is considered more corunon at latitudes closer to tlre equator but still in the northern hemisphere than previously thought because of reduced exposure to sunlight during the year (Flypponen and Power, 2DD7;Lamberg-Allardt et al., 2001). McCallum PD: Nutrition screening and assessmentin oncology. Vegans who may consume as much as 50 g of fiber a day would be the most likely individuals to have a significant depression in intestinal calcium absorption (seeChapter 3). Biomed Pharvnacot Leitzmann C: Vegetarian diets: what are the advattages? Medications Glucose-Lowering Medications The use of the newer glucose-loweringmedications,alone or in combination, provides numerous options for achieving euglycemia in persons with type 2 diabetes. Intermittent Drip Quality-ofJife issuesare often rhe reason for the initiation of intermittent drip feeding regimens,which allow mobile patients more free time and autonomy compared with continuous drip infusions. This attention should be directed to all the areasmentioned previously,with family modification of eating habits and increasedphysical activity. Wiithrich et al: Milk consumptiondoesnot leadto mucus production or occurrenceof asrluna,J Am CollNutr 24:5475, 2005. In some cases gastric ulceration develops despite relatively low acid output. Because zinc absorption is greater from a diet high in animal protein than a diet rich in plant proteins, vegetarians may become deficient if they are not monitored carefully. >4 oB G9 oO rr ,\ r) u o o9 .Eg 'o> P.a @9 :q (, E d .t i b6 o 9tr tra\ 'd d 6 7 90.= (2 .= x.E -ON _.4 9 bo jj o9 '1{ Eg g9 us! :o YP !66 >t ! ' l GV :t oo 5 d.= i e il-e' - o-H.. Dietary SupplementHealth and EducationAct of 1994,Public law 103-417, October25,199+. Since obesity and diabetes mellitus are common, it is important to merge cultural sensitivity with diet and health issues. Hormones affect LPL activity in different adipose tissue regions. Armed with extensive knowledge of one's potential and the associated lifestyle choices, humans will have the option to live to their full genetic potential throughout a long, healthy life. of andComparisons Between Gharacteristics andDuodenal Ulcers Gastric Although gastric ulcers can occur anywhere in the stomach, most occur along the lesser curvature of the stomach (Figure 26-3). With the increasedprevalenceof diabetesin the United States,uncontrolled hypertension with diabetes is an important public health problem that warranrsartention. Describe Thomas'nutrition status.What assessmenr parametersare used for evaluation?Was preoperative TPN indicated? (Counery Professor Marinos Elia, Editor; BAPEN, 2003 ISBN 1 899467 70X. guideline.gov/summary/summary.aspx? The client is a valuable resource in finding solutions to problems. 644 PART4 Nutrition for Healthand Fitness Table 2 5-3). Nonverbal listening skills consist ofvaried eye contact, attentive body language, a respectful but close space, adequate silence, and encouragers.Eye contact is direct yet varied. N YT E R M S activities of daily living (ADLs) includes walking, bathing, dressing,use of the toilet and performing household chores; the ability to perform these activities can be used to evaluate the severity of rheumatic diseasefor an individual arachidonic acid a polyrnsaturated fatry acid with four double bonds on the 5,8, 11, and 14 carbon positions;a precursor for eicosanoidproduction chronic fatigue syndrome (GFS) a disorder characterized by extreme fatigue that doesn't improve with rest and may worsen with physical or mental activiry; may also present with weakness; headaches; difficulty concentrating; and painful joints, muscles,and lyrnph nodes cytokines small proteins, including l1'rnphokinesand monokines, that are produced by immunocltes, macrophages, and fibroblasts and that mediate or increase an inflammatory response fibromyalgia a chronic disorder characterizedbywidespread muscle pain, fatigue, and multiple tender points, especially in the neck, spine, shouldeq and hip gout a type of inflammatory arthritis resulting from deposits of needlelike crystals of uric acid in connective tissue, t}re joints, or both juvenile rheumatoid arthritis an inflammatory autoimmune disease of the synovium (lining of the joint), resulting in pain, stifEness,swelling, and joint damage and loss of function; most common form of arthritis in childhood; may also be associated with rash or fever; often presents symmetrically osteoarthritis (0A) a nonsystemic joint diseasecharacterizedby degenerationof the joint cartilage,resulting in pain, stiffness, and loss of motion most commonly affecting the spine, knee, and hip; may also result in bone spurs (osteophytes) in and around the joint; also called degenerative joint disease 1CI42 prostaglandins (PGs) a group of components derived from unsarurated 2O-carbon fatty acids that are extremely potent mediators of a diverse group of physiologic processes;the seriesis designatedwith a subscript 1,2, or 3, depending on the number of double bonds in the hydrocarbon skeleton and the fatty acid from which it was synrthesized purines the nitrogenous basesadenine and guanine, which are constituents of nucleoproteins, the metabolic end product of which is uric acid Raynaud'ssyndrome ischemia or coldnessin the small extremities such as the fingers rheumatic disease(RD) manifestationsof inflammation and loss of function of connecting and supporting body structures, including joints, tendons, ligaments, bones, muscles, and even internal organs; includes spondyloarthropathies, polyrnyalgia rheumatica, bursitis, tendonitis, and psoriatic, infectious or reactive arthritis rheumatoid arthritis (RA) inflammatory autoimmune disease of the synovium (lining of the joint), resulting in pain, stiffness, swelling, joint damage, and loss of function of the joint; often presents symmetrically rheumatoid factor abnormal circulating proteins found in the serum of individuals with rheumatoid arthritis; a group of immunoglobulins that have been classified as antibodies scleroderma umbrella term for a group of diseasesinvolving abnormal grou'th of connective tissue that supports the skin and internal organs; literally means "hard skin"l can also affect blood vesselsand joints; also called systemic sclerosis Sjiigren's syndrome autoimmune diseasetargeting moisrure-producing glands most commonly resulting in diminished production ofboth saliva and tears Sections of this chapter were written by Lisa Dorfrnan, MS, RD, LMHC for the previous edition of thrs text, CHAPTER 40 I MedicalNutritionTherapy for Rheumatic Disease1043 synoyialfluid transparent,alkalinefluid secretedby the syconditions such as Sjogren's qmdrome (affecting 1 to 4 milnovial membraneand locatedin joins lion) and scleroderma also have a great impact on the Amerisystemiclupuserythematosus (SLE) an auroimmunedisease can population Q{IAMS, 2001). Many pumps are battery operated for up to 8 hours in addition to being electrically powered, allowing flexibility and mobility for the patient. Bautista LE et al: Is C-reactive protein an independent risk factor for essential hypertension? However, most individuals with a problem dietary behavior are in a preaction stage that includes one of the following: precontemplation, contemplation, or preparation. SeealsoFolic acid deficiency anemia causes,825b diagnosis,423-424 rn athletes,598 deficienry anemia, 823-827 clinical findings, 826 diagnosis,826 medical management, 826-827 medical nutrition therapy,827 pathophysiology, 823-824 stages,824, 826,826f definition, 40 dietary reference intakes for,9l,92t for premature infants, I 129 functions, 70t, 91 in foods, 827t in neural tube defect prevention, 828b metabolism, 90, 91f nutritional facts, 1287 requirements r n a d o l e s c e n c e2,5 2 t , 2 5 3 t , 2 5 4 in older adulthood, 300 in pregnanry, 173 sources,9l-92,92t, l00t stability and RDA for adults, l00t storage, 90 supplemental, efficacy of, reviews of,478t toxicity, 92 transport, 90 vitamers, 70t follicular h;.perkeratosis, frorn vitamin A deficiency,73,73f food additives intolerances,745-746,748 reacdons,746t food allergen families, 741 definition, 739 food allergy(ies). Foods with an acidic pH such as citrus juices, tomatoes, and soft drinks may cause pain when the esophagus already inflamed. Temporary accessthrough subclavian catheters is common until the patient's perrnanent accesscan be created or can mature; however, problems with infection make these catheters undesirable. professionals regarding the use of FDA approved pharmacotherapy (ADA, 2007). Nan is at risk for developing deficienciesof which nutrients? Lymphoma, primary in brain c M. Dronabinol, synthetically produced marijuana, stimulates appetite in patients with cancer-related anorexia. Because clinical findings are subde, diagnosis of WKS is often made at autopsy. The normal kidney can perform this function over a wide range of dietary flucruations in sodium, water, and various solutes. SeeEicosapentaenoic acid ephedrine, ergogenic aid, 604t epidemiologic studies,962, 963b definition, 959 epidural hematoma definition, 1067 in neurotrauma, 1096 epigastric, definition, 654 epigastric discomfort, 659 eplgeneucs definition, 364 genomrc rmpnntlng and, 373 epilepsy, 1087-1088, 1090 Epivir (3TC, lamivudine) nutritional complicarions of, 1002t EPOC. a 'ra t! I .E(E :{E {'Fo I 1244 APPENDIXES oooo o PE UU 22 E .9 : il OU Eril o : G.Eooo () Fa o - o ah ^ G oooQoo E oo oo !! EEE 1245 APPENDIXES d s a: L246 APPENDIXES o o I G C) o E o .9 E CI -c G c o I z €a.H 6 o v 'E* ;>' I bo A.= E UA -9r Qg OO6 9r.otr U i! m= tr.? FirstSession The first sessionis an important time to establishthe counseling relationship. A combination of aerobic and resistance training is recommended. rrw. Hypotbeses64:236, 20[5. These strategies include: reflecting, double-sided reflection, shifting focus, agreeing with a twist, emphasizing personal choice, and reframing. In 2003 the Food and Drug Administration issueda public health bulletin concerning discoloration and death in patiens receiving enteral formulas (American Dietetic fusociation, 2004). With aging the prevalenceof CVD increases,with a doubling of rates between middle (ages35 to 44 years) and later ages(65 to 74 years of age). Establishing Rapport To build rapport, one beginsby askingone or two questions that are relevantto important aspectsof the client'slife. LJ has a 2-year-old with food allergies and a 4-year-old. Factors AffectingGariogenicity of Food Foods contain fermentable carbohydrates, the basis for bacterial action, which, in turn, stimulates caries development. Expressempathy 2. TinanoffN: fusociation of diet with dentalcariesin preschool children,Dent Clin NorthAm 49:725,2005. A single instirution's 2)-year experience,Cancer103:863,2005. Dickinson HO et al: Magnesium supplementationfor the managementof essentialhlpertension in adults, Cocbrane DanbaseSystRn 3:CD004610,2006b. Superiorvena cava lnternaljugularvein Subclavianvein Externaljugularvein Lipid emulsions, available in 107" and 207" concentrations, are composed of aqueous suspensionsof soybean or safflower oil, with egg yolk phospholipid as the emulsifier. The preceding plus pharmacotherapy o Surgery plus an individually prescribed dietary regimen, physical activitlz, and lifestyle modification program . Enteralto OralFeeding A stepwise decreaseis also used in the transition from tube feeding to oral feeding. Stoppingweight gain or achievinga moderateloss shouldbe promoted asa treatrnentgoal;an achievable 5Y" to l0o/" lossof initial body weight can improve glycemiccontrol, blood pressureand lipid profile in most paflents. iron. fbtal urinary nitrogen excretion was 27 glday. The primary causesof peptic ulcers are H. Therefore health professionals must intervene to help patients acceprmore modest weight loss and understand what can be achieved realistically with current treaffnent methods. For the exerciserwith diabeteswhose blood glucose levels may drop sooner and lower than the exerciseiwithout diabetes, ingesting carbohydrate after 40 to 60 minutes of exerciseis important and may also assistin preventing hypoglycemia. Some of these are typical of triiodothyronine (thy'roid) d efi ciency. Diseases OtherChronic Although nutritional genomics applications have made more progress to date in reference to cardiovascular diseaseand cancet research is underway for many other chronic disorders as well. Bruemmer B: Food biosecuriryJlm Diet Assoc103 687,2003. current erqJ Cardioaasc Delano MJ, Moldawer L: The origins of cachexiain acuteand Nu* Clin Pract2l:68,2006. \tcious rycle-remaining stuck versusunhealthy choices . Gruenwald J: PDRfor herbalmedicines,ed 3, Monwale, NJ, 2004, Medical Economics. Chitin and chitosan have been studied for their hlpocholesterolemic effect. These findings will be helpful in developing effective dietary approaches. Updated by Donna H. Between 35o/oto 650/oof patients admitted to hospitals today may be malnourished. DNA metlylation and epigenotypes, 70612,2005. Other alternatives include cannabinoids (dronabinol) and benzodiazepines(lorazepam and diazepam).The anticipatory form of nausea and vomiting is a conditioned response that develops by the third or fourth rycle of treatment in about one third of individuals receiving chemotherapy. NutritionSupport 519 andParenteral Enteral I Intervention: Fluid Fluid needs for parenteral and enteral nutrition are calculated similarly. Grant B, By'ronJ: Nutritional implications of chemotherapy.In Elliott L et al, editors: Tbe clinical guide to oncolog natrition, ed 2, Chicago, 2006, American Dietetic Association. Controlled clinical trials of high-fat, low-carbohydrate,low-fat, and very low-fat dies are lacking; therefore no data are availableon weight maintenanceafter weight loss or long-term health benefits or risk. Oral high calorie-high protein supplements in liquid or pudding form may be needed to meet nutrient needs and optimize healing. Rapid infusion of carbohydrate stimulates insulin release, which reduces salt and water excretion and increasesthe chance of cardiac and pulmonary complications from fluid overload. 10. A basicvitamin and mineral supplementmay be necessarydependingon nutrition statusrevealedby the initial assessment. Ireton-JonesCS,JonesJD: Why usepredictiveequationsfor energ'yexpenditureassessment? Kathy Flammond,MS, RN, RD, LD, CNSD KEYTERMS 24-hourrecall a methodof dietaryassessment in which an individual is askedto remembereverythingeatenduring the previous24 hours ageusialossof senseof taste anosmialossof senseof smell anthropometrythe scienceof measuringthe size,weight, and proportions of the human body (BIA) a precisebodycombioelectrical impedance analysis position analysistechniquethat usesa small electricalcurrent to estimatetotal body water,fat-freemass,fat mass,and body cell mass hody massindex (BMI) weight (kg)/height(m)2;a definition of the degreeof adiposity dietaryhistory a detaileddietaryrecord;may includea 24hour recall, food frequencyquestionnaire,food diary and other information such as weight history previous diet changes, useof supplements, and food intolerances dietaryintal20.0(>30obese-): 0 : 1 BMI18.5-20.0 =2 B M I< 1 8 . It is estirnarcd that avoiding high-copper foods and restricting moderate-copperfoods result in a diet of approximately 1 mglday. govlsci/techresources/Human_Genome/hg5yp/ index.shtml Na t i o n aCl e n t e fo r r B i o te ch n o l oIn g yfo rmation www.ncbi.nlm.nih. The next step is to negotiate a change. 504 PART3 I NutritionCareProcess M rs. The dilemma for the nutrition care provider is the paucity of evidence-basedresearch to support practice procedures. C H A P T E R2 0 Intervention:Enteral and ParenteralNutrition Support 527 should be based on the company's ability to provide ongoing nutritional assessment,monitoring, and care plan revision. Given the technology for measuring vitamin B12levels in the blood, early detection during the preclinical phase of disease is the rule. D B e t hN . We can look at ways to meet your goals in the future. cdc.govlnccdphp/aag/aag_oh.htrn,accessed November 3, 2005. 4. Lifestylemodificationand a senseof self-efficacy appearto be a key to weight maintenance. Martinez ME: Primary prevention of colorectal cancer: lifestyle, nutrition, exercise,RecentResuhsCancerRes166:177,2005. SiukosaariP: Level ofeducation and incidenceofcaries in the log 22:130, 2005. Box 20-2 provides a comprehensive list of complications associatedwith enteral nutrition. Perceptions can be shifted, and the counselor's role is to help with this process. not all. Iron also has other roles in osteoblasts and osteoclasts in mitochondrial oxidative-phosphorylation, as well as in other heme- and nonheme-containing enzyrnes, similar to the needs of other cells in the bodv. As a result, the science of genetics has significandy expanded in scope and includes the whole set of genetic information in an organism-its genome-and the interactions of the variour g.rer and their protein producrs with each other and the environment. USeFUL WessrrEs 3. Patients are taught to slow their rate of eating to become mindful of satiety cues and reduce food intake. I n T E R D I S C I P L I N A R Y U T R I T I O N Optimal nutrition support requires the dedication and involvement of multiple disciplines. If fluoride is present in the saliva, the minerals are deposited in the form of fluoroapatite, which is resistant to erosion. FIer lowest body weight was I 30 lb at age 30, mainaine d, for 2 years. U.S. Department of Agriculture (USDA): Organic food standards and labels, the facts, Washington DC,2002, http://w'ww.ams. The goal is to resume action efforts. Malnutrition is not uncommon in those who are obese, cachexic, older, or have undergone trauma and in whom nutritional intervention is neglected.Furthermore, the nurrition statusof patients who are hospitalized for longer than 2 weeksdeteriorates(seeFocus Oz: Malnurrition in Hosoitals). Drinking water with a lemon or lime twisr or citrus-flavored seltzers or sucking on frozen tart grapes or berries or sugar-free candies may help. Perimenopausal and postrnenopausal women have been reported in a few studies to have modest skeletal benefits from isoflavones because of low serum estrogen concentrations (Alekel et al., 2000; fujmandi et al., 2003), but other investigators have not been able to show skeletal benefits with isoflavone supplementation. Factors to consider include the individual's prognosis, prescribed therapy, degree of malnutrition, and gastrointestinal function (e.g., severe CHAPTER 37 f MedicalNutritionTherapy for Cancer 983 diarrhea or malabsorption necessitatingbowel rest, radiation enteritis, intractable nausea and vomiting, G\,aHD, bowel obstrucrion or ileus, or severe pancreatitis). The development of HfV antibodies is called seroconaersion and may occur from 1 week to several months or more after the initial HfV infection. Young women with the "female athlete triad" of disordered eating, amenorrhea, and low BMD are at increased risk for hav- 24 I NutritionandBoneHealth 629 CHAPTER ParathyroidHormone-MediatedPost-Menopausal Bone Osteoporosis . Cervical dysplasia,severe,or carcinoma o Constitutionalsymptomssuch as fever (>38.5" C) or diarrhealasting)l month . It is approved for use in people with type 2 diabetes not achieving optimal glucose control with a sulfonylurea and/or metformin. The DV for calcium is 1000 mg. In vitro and animal and human studies are conflicting,

with some showing protective and others reporting harmful effects of both omega-3 (n-3) and omega-6 fatty acids. At this point in following a new diet, many people feel the same way. On busy dayshe cannot take a full lunch break, so he often skips lunch. HSCT procedures can significandy affect nuuition status. Maltose, found in candies, doughnuts, potato chips' 640 PART4 : Nutrition for Heatthand Fitness crackers, and other snack foods, also contribute to the cariogenic potential of a food. Windhauser Mill et alzDietary adherencein the dieary approachesto stop hypertension vial, J Arn Dia Assoc99(supp): s76. Chronic use of aspirin or other NSAIDs, steroids, alcohol, erosive substances,tobacco, or any combination of these factors may also compromise mucosal integrity and increase the chance for acquiring acute or chronic gastritis. Hecker KD: Effecs of dieury animal and soy protein on cardiovascular diseaserisk factors,Curr Atbroscl.q Rep3:47l, 2001. In addition to the kilocaloriesneededto meet total energy requirements,an allowanceof 500 to 1000extra kilo- caloriesper day should be planned.Daily energy requirements can be calculatedon the basis of the individual's presentweight. Kilocalories in alcoholic beveragesmay be calculated as shown in the Clinical Insight box: Calculation of Energy Value of Alcoholic Beverages and Mixes; see also Appendix 44. Enteral rube feedings may be necessaryif the risk of aspiration from oral intake is high or if the patient cannot eat enough to meet his or her nutritional needs. Fruits and vegetables were traditionally gathered from the wild but are also cultivated on small farms. nutrition interpretation. Potential Problems WithExercise Hlpoglycemia is a potential problem associatedwith exercise in persons taking insulin or insulin secretagogues. Ornega-3fatty acidsare precursorsofprostaglandins that may enhanceimmune function and decreasethe risk of cardiovasculardisease. StoverPJ: Influenceofhuman geneticvariation on nutritional requirements,Am J Clin Nun 83 4365,2006. 496 PART3 , Nutrition Care Process Communication skills and body languageare also important (see Clinical Insigbt: Body Language and Communication Skills). Bischoff-FerrariHA et al: Effect of vitamin D on falls; a metaanalysis, JAMA 291:199, 2004. Garner,PhD, 2000. Horn-Ross PL et al: Patterns of alcohol consumption and breast cancer risk in the California Teachers Sntdy cohort, Cancer Epidemiol BiomarkersPreu 13:405, 2004. sanr aldnlnur selJuelslsuoclueJeJJIPtpr,ll uon?Jlds?o\l r petu roJ elup Bllxe peeudelg . Novedades de esta edición: - Contenido más actualizado. ep?ue) pue salets patrun arp suouepdot eW ul 'alels Jrxol C[urrue]t,r E seteJ Jo -rpur pr73u 002 us{r relear8 C urrue}r^ fxorpdq-57 rurues ''ye 15967 rrerrag-Jor{Jsrg ta V'(5002 !oqo11) (req8rq ro [1 ''a'l) a8ue.rpurrou aqt urrprnd. Large observational studies and several pla- Origin 779 of Nondiabetic CHAPTER 30 i MedicalNutritionTherapy MellitusandHypoglycemia for Diabetes cebo-controlled clinical trials with small subject numbers have found beneficial effects of antioxidants, especially vitamin E, on physiologic and biochemical end points. SeeAdolescens TEF. If sucroseis included in the food and meal plan, it should be substituted for other carbohydrate sources or, if added, be adequately covered with insulin or other glucose-lowering medications. 8 saltine crackers I oz cheese I c ice cream 3. to enteralnutrition support, DiSarioJA: Endoscopicapproaches 20:605,2006. SeeAdversefood reaction immediate,742t hypertension adverseprognosis,868b cardiovascular diseaseand, 850 definition,865,866 development,physiology,870f essential definition, 865 risk factors,866 183 gestational, definition, 160 261-262 in adolescence, incidence,867-868 in diabetes, 800 management,lifestylemodifications,87I t medicalmanagement,874 medications and,874 morbidity, 868 mortality from, 868 nutrition management,874-878 pathophysiology,869 portal.SeePortalhypertension 183-184 pregnanry-induced, definition,160 prevalence,867-868, 867f prevenuon alcoholrestrictionin, 872 calciumin, 873 dietarypatternsin, 87l-872 in, 871t lifestylemodifications lipidsin, 873 in, 873 magnesium physicalactivity in, 872 potassiumin,872-873 primary,869-87+ sodiumrestriction in, 872 weightreductionin, 870-871,87lt risk factors,868b salt-resistant, 872 definition,865 872 salt-sensitive, definition,865 secondarydefinition, 865 mrget organ diseasefrom, manifestations, 868t ffeatment,880f algorithm,875f 878-879,879t in adolescents, in children,878-879,879t in olderadults,879,881 hypertriglyceridemia,838-839 definition, 833 familial,841t t.pompnt R47 hyperuophy definition,532 of adiposetissue,534 A,,74, 74b hyperuitarninosis hypervitarninosis D, 78, 78b hypnosis,in obesitymanagement, 552 hypochromic definition,810 normocltic anemia,828 hlpochromic microqtic transientanemia,829 hypogeusia,definition, 959 hlpoglycemia alimentary,667 definition, 654 nutrition careguidelines,669b witl exercisein diabetes,780 associated commoncauses,798b complicatingdiabetes,797-798 definition, 765 drugscausing,'[47b fasting,803 definition,707,7 64 in cirrhosis,725,725b food-deprived,803 nondiabeticorigin, 802-804 definition, 765 diagnosticcriteria, 803 803-804 managemenr, 802 pathophysiology, preventionguidelines,803b types,802-803 802-803 postprandial, reacdve,802-803 rebound,definition, 506 treatment,798b hypohydration definidon,587 in older athletes,602 hypolactasia,definition, 673 hlponatremia in cirrhosis,723 medicalnutrition therryy, 723 723 pathophysiology, hypophagia, 535 definition,532 hyposmia definition, 286 in olderadulthood,292 hypotonia definition,ll70 in Prader-Willislmdrome,1181 I IBD (inflammatory bowel disease),definition, 673 IBS (irritable bowel syndrome),695-696 definition, 673 rcterus definition, 707 in hepatitisA, 712 lipoproteins), IDLs (intermediate-density definition,833 IEP (individualeducationplan), definition, 1170 ileal pouch after colectomy,702 definition, 673 ileal resections,698-700 consequences, 600b ileostomy,70I-702 definition,673 ileus definition,l02l in systemicinflammatoryresponseqndrome and multiple organ dysfunction syrrdrome,1026 illness foodborne,320,325-329r food intakeby childrenand,23l-232 1119-1120 immaturity, characteristics, immobility, physical,calciumlosses,107 Index L329 immune function, in nuuition-focused physical examination, 406 immune health, cancer and,,37 8-379 immune-mediated diabetesmellitus, 76g-769 definition, 765 immune system, adverse food reaction and,740- 74r lmmunlty cell-mediated, 741 definition, 719 humoral, definition, 506 needle-catheter, definition, 506 Jewish food pafterns, 357t, 3 58-3 59, 360b Joint Commission, The (TJC), 459b definition,454 on nutrition risk identification, 45 5 ,|ornts commonly affected by osteoarthritis, 1049f healthy and with rheumatoid anhritis, 1052f normal and with gout, 1058f joule [), defrnition, 22, 26 ,urces fi:uit, in preschooler diet, 233-234 introduction, suggested ages,217t juvenile rheumatoid arthritis, 1043 definition, 1042 K Kaletra(lopinavir/ritonavir),nutritional 1005t complications, Kaposi'ssarcoma definition, 991 in AIDS, 1006 karyoqpe definition, 365 at chromosomallevel, in detectionof diseases 372-373 130-13I Kashan-Beck disease, kava,supplemental,ef6cacy,reviews,479t rings Kayser-Fleischer definition, 707 716 in Wilson'sdisease, 130 Keshandisease, ketoaciduria,branched-chain,ll57 -1159 definition,l14l ketogenicamino acids,63 ketogenicdiet, 1091t ketonebodies definition, zl0 in insulin release,46b ketones,in urinalysis,expectedvalue/ 417t significance, ketoneutilization disorder,I 145t definition,1l41 kidney(s) damage,drugscausing,446 923-958 diseases, chronic,in children, 946-948,947t end-stage,929-948.SeealsoEnd-stagerenal disease glomemlar,923-92+ in older adulthood,293 interstitial, 924-928 medicalnutrition therapy,928-929 nephrolithiasisas,948-955 nutrient requirements,therapytype (basis), 933r pathophysiology, 928 progressivenafir e, 928-929 t:ub.d'rr,924-928 failure,923 aotte,924-927. Acute gastritis refers to rapid onset of inflammation and symptoms. Physical activity, especiallyupper body activities, may also contribute to an increase in bone mass or density, although the evidence for skeletal benefit is limited (Chubak et al.. Blackburn GL et al: Nutritional and metabolic assessmentof the hospitalized patient, JPEN J Parenter Enteral Nutr I:ll , 1977 . Water contamination with arsenic, lead, pesticides, mercury, chlorine, herbicides and Escherichiacoli has been repeatedly highlighted by the media. >50% StenoticPlaqueS ABt4 mg Optional Step 3 LDL Target PositiveTest 3 mg/L) after the average of two measurements are taken zt least 2 weeks apaft. Iron is also not normally part of parenteral infusions because it is not compatible with lipids and may enhance certain bacterial growth. Tobacman (2001) demonstrated that carrageenan damages human cells in culture and destroys human mammary myoepithelial cells at concentrations as low as 0.00014%. Early 1960s: R. Most cells that line the trachea, bronchi, and bronchioles have cilia. High-quality protein in supplements can increase semm IGF-I concentrations and enhance new bone matrix formation. +The A PAL is the allowancemade to include the delayedeffect of physical activity in causingexcesspsorexercrseoxygen consumption @POC) and the dissipation of some of the food energy consumedthrough the thermic effect of food (TEF). Cholesterol-lowering effects have been reported, but the effect varies with the type and amount of fiber. Dietaryfat . Surgery may be used as the only mode of cancer treaunent, or it may be combined with preoperarivеor postoperative adjuvant chemotherapy or radiation therapy. There aren’t any categories to clutter your screen, just an unobtrusive search bar. It is important to remember that foods that provide lower percentages of the DV also conribute to a healtJrful diet. broiled, 3 oz 25+ g Polish sausage,3oz Cheeseburger,large Pie, pecan, Veof9 inch Chicken pot pie, frozen, baked, I pie Quiche, bacon, 7apie bons, the number of double bonds, and the position of the double bonds in the chain. Nthough rare, herb contamination and misidentification do occur. Each daughter cell receivesone old and one new DNA strand. Often a liquid supplementtaken with meals or betweenmealsis effectivebecauseit is easyto prepare and consumeand it includesextra vitamins and minerals in additionto the macronutrients.This is important when it is necessaryto overcomea lack of interest in food and eatins. 'Working togetherto grow librariesin developirgcounrries Printed in Canada Lastdigitistheprintnumber: www.elsevier.com I www.bookaid.org I www.sabre.org 9 8 7 6 5 + 3 2 l Theauthorsdedicatethis editionto all of tbewonderfuldietitiansandstudmts who haaeusedthis text a.ndcontinueto considerit as their "nutrition bible." to thefteld'. She is 5 ft, 2 in and weighs 95 lb. However, it is important in this stage ro realize that traditional goal setting will result in feelings of failure on both the part of the client and the nutritionist. Adipose tissue increaseseither by increasing the size of cells already present when lipid is added(hypertrophy)or by increasingthe number of cells (hyperplasia).Weight gain may be the result of hypertrophy, hyperplasia,or a combination of the two. Seea/soPernicious anemra definition,810 nervoussystemproblemsin, 1078 828-829 py'ridoxine-responsive, sicklecell,829-830 definition,8ll sideroblastic,828-829 definition,8l1 sports,599,829 definition, 587 vitamin E-responsive,829 Angelmansyndrome,373 1308 Index anion gap, 156b definition, 144 anomla definition, 1067 in A.lzheimer'sdisease,1082 anorexia, dmgs (impact), +44,446b anorexia-cachexia syndrome, pharmaceutical management, 981-982, 982b anorexia nervosa (AIrl) clinical characteristics,568, 570, 57 lf definition, 563 diagnostic criteria, 564, 565b in adulthood, 272 in childhood, 567t medical complications, 568-570, 569-570t medical nuffirion therapy, 577-580 guidelines for,579b nutrition assessment,57 l-57 7 a n L h r o p o m e r r i c5. Fluorosis, or mottling of the tooth, can occur secondary to excessivefluoride intake from diet and supplements; excessivetopical fluoride; or ingestion offluoridated toothpastes,rinses, or dentifrices during the early years of tooth development. Third, although the molecular mechanism of action is unknown, the antioxidant nutrients may protect lung tissues from oxidative injury. B, Artificial loop graft. tends in dental caries have demonstrated that children who come from homes in which parents have at least a college education have fewer caries than children from homes in which parents have less than a college education (USDHHS, 2000). Volume-sensitive patients such as those with cardiopulmonary renal, or he- patic failure are not good candidatesfor PPN. RodriguezA et al: Effectsof moderatedosesof viamin A asan adjunctto t}re treatrnentof pneumoniain underweightand normal-weightchildren: a randomized,double-blind,placebocontrolledv)al, Am J ClinNutr 82:1090,2005. It may also be described as nonulcer dyspepsia. l0 g Seaweed, dry (agar),10 g Lily flower,dried, 7+cup Soy beanmilk fiIm, stick shape,3 oz Fat-choy,dried, 7+cup Oyster,dried, 3 Soy beanmilk film, died,3 oz Boiled bone soup,% cup Laver,nori, and wakameseaweeds are low in calcium. This means it has 100 units of insulin per milliliter of fluid (100 units/ml). Rejectionof the foreign tissue or infection secondaryto immunosuppressivetherapyaremajor complications.Currendy patients awaitingtransplantationfar outnumberthe donatedkidneys available.Registrationasan organ donor may be doneeasily at a local driver's licensing bureau, and more information can be obtainedat www.shareyourlife.org. Garner,phD, 2000. Supplements of these vitamins are typically recommended, with care to separate the dosing of orlistat and the supplement by 2 hours or more. Disorders 665 CHAPTER 26 i MedicalNutritionTherapy for UpperGastrointestinalTract Because prostaglandins from omega-3 and omega-6 fatty acids are involved in inflammatory, immune, and cytoprotective physiology of the GI mucosa, they have been considered for use in managemenr of H. Hypoxemia is prominent in these patients, hematocritvalues are increased, and cor pulmonale develops early. First, inspired air is laden with particles and microorganisms. temporomandibular disorders(TMDs) collectionof medical Arthritis is a generic term that comes from the Greek and dental conditions affecting the temporomandibular word arthro, which means joint, and the suffix -itis, which joint and the musclesof mastication,as well as contiguous means inflammation of. Furthermore, regular exercise may prevent type 2 diabetes in high-risk individuals. Pintauro S, BuzzellP: Methods of body compositionanalysis tutorials,accessed 6/|5 /06 from htrp://nutrition.uvrn.edu,/ bodycomp. Meat and dairy at samemeal Leavenedfoods Ritual slaughter of meats Moderation Fasting* Buddhist Hindu A X Jewish A O A O R R A R A X Moslem X R Christian Roman Catholic Chfistian Eastern Orthodox Ghristian Mormon Ghristian SeventhDay Adventlst A X A R R R o A X o XX XX X A X R + + + + + + + Modified from Kitder PG, Sucher KP: Food.and mlture, ed 4, Belmont, Ca, 2004, Thomson and Wadsworth; and Escott-Samp S: Nutrition and diagnosisrelated.ure, Baltimore, Md, 2008, Lippincott Williams & Wlkins. What are the reasonsyou see for making a change?" . National Center for Health Statistics (NCHS): National Health and Nutrition Examination Survey GIIIAIIES) background history 2005a, hrp://wwwcdc.govlnchs/about/major/nhanes/ bhistory.htm, accessedDecember l, 2005. Administration The three common methods of tube-feedins administration are bolus feeding, intermitrent drip, and continuous drip. They were more fit, had higher HDl-cholesterol levels, and better endothelial function 6.lly et a1.,2004). KathleenMahan, RD, MS, CDE. Dextrinsresult from the digestiveprocessand are large, of intermediatelengthscleaved linearglucosepolysaccharides from high amylosestarch by ct-amylase.Limit dextins are FIGURE 3-2 Overview of macronutrient metabolism. T\e family readsaboutgenetherapyon the Internet and asksyou aboutit. Protein The rate of protein degradation and conversion of protein to glucose in type 1 diabetes depends on the state of insulinizanon and the degree of glycemic control. Then ask,"What do you think aboutthis?" As s e s s m eonftR e a d i n e ss to C h a n g e At this point it is important ro assessreadinessto make additional changes.A ruler works very well here also. bwis,or M. Also contributing to these differences is the fact that the currendy available methods measure albumin more precisely than prealbumin. Patients and their families benefit from specific suggestions for enhancing appetite, promoting oral intake, and lesseningfatiguewhen cookingor 35-6).Some suggestionsare resting before meals,eating small portions of Disease909 CHAPTER 35 { MedicalNutritionThenpyfor Pulmonart of nutrition support must take into consideration patient arxiety,labor to perform, and cost(seeChapter20). American Dietetic Association (ADA): Position of the American Dietetic Association: Food and water s fety, J Ant Diet Assoc 103:1203,2003b (Reaffirmed in 2005, and in effect until 2007). Nikolaidis P et al: Practice pafterns of nonvascular interventional radiology procedures at academic centers in the United States? Sibutramine should not be used in combination with certain antidepressant agents such as monoamine oxidase 21 i weight Management551 CHAPTER inhibitors or selectiveserotonin reuptakeinhibitors or other central acting agents such as pseudoephedrineor ephedra. SneedN[Paul SC: Readinessfor behavioralchangein patients with hean failure,Am J Crit Care12444, 2003. Gastrointestinal complications include bul$a foulsmelling stools; cramping and intesrinal obstruction; rectal prolapse; and liver involvement. Percent DVs are based on a 2000-calorie diet l3O3 APPENDIXES Selenium is incorporated into proteins to make selenoproteins, which are important antioddant enzymes. Meat and certain vegetablesare avoided, and soybean consumption is promoted. energy SwinamerDL et al: Predictiveequationfor assessing expenditurein mechanicallyventilatedcritically ill patients, Crit CareMed 18:657,1990. RamirezR et al: Effectsof a nutritional intervention on body composition,clinical stanrs,and quality of life in patientswith heart failure,Nutition 20:890,2004. 5, Vanessa is enrolledin a child-carecenterduring the week What kindsof lunchescould her parentspack for her?What kindsof helpful information could her parentsprovidefor the child-caresaffi How might you assist? It is the major determinant of the resting metabolic rate. SeealsoPremattre infant(s) definition, 1117 Prezista (darunavir, D\rR), nutritional complications, 1005t primary biliary cirrhosis (PBC), 713, 715 definition, 708 liver damage, 71 lf pnmary prevenuon definition, 310 in older adulthood, nutrition as,289 probiotics,43 definition, 2,269,673,740 dietary sources,276t for diarrhea, 678 in foods, 275t in infant food allergy prevention, 759 supplemental,efficacy of, reviews of, 478t uses, 14b Index 1343 problem, etiology, and signs/ry.rnptoms (PES) definition,454 in nursing diagnosis, 455 problem-oriented medical records (POMRs), 461 problem solving, in obesity management, 544 processrng post-transcriptional, definition, 365 post-translational, definition, 365 progressron definition, 960 in carcinogenesis, 960 prohormones, as muscle-building supplements, 607-608 prolactin definition, 161 inlactation, l86,186f proliferative diabetic retinopathy (PDR), 80 1 Promotef definition, 165 region, of gene, 370, 37 I promouon definition, 960 in carcinogenesis, 960 propionic acidemia, 1145t, 1159 definition, l14l formulaVmedical foods in management of, 1151t prostaglandins (PGs), definition, 1042 protease inhibitors definition, 991 metabolic disorders from, 1010 nutritional complications, I 003t protein-based fat replacers, 58t protein-calorie malnuuition (PCM) in anorexia nervosa, 568 tooth developrnent and, 638t protein-calorie malnutrition (PEM), 66-67 assessment,417 -421 C-reactive protein in, 420 creatinine in,420-421 hepatic transport proteins in, 419-420 hormonal and cell-mediated response to stress in, 417 -418 lmmunocompetence in, 421 nitrogen balance in, 418-419 protein digestibility corrected amino acid score (PDCAAS) definition, 41 in protein quality evaluation, 63 -64 protein-energy malnutrition (PELI) anemia of, 828 in older adula, 297 protein(s) absorption/digestion, I7 acute phase, definition, 1021 acute-phase mobilization of, in metabolic stress,1022 adequary of, assessmentof, in burns, 1036 allowance, in diet/nutrition prescription, 465 as fuels for contracdng muscles, 590-591 calcium-binding, 104 complementarity of, 64, 64t C-reactive definition,83l in assessmentfor protein-calorie malnutrition, 420 definition,41, 366 denaturation of, 63 dietary carcinogenesis and, 964 quality of, 63-64 protein(s) (C ontinuet) diet high in nutritional facts on, 1284 diets low in for urea cycle disorders, 1161, rt62b enteral, for premature infants, 1126-1127 foods low in, sources of, I 154t in calcium stone formadon,95l-952 in enteral formulas, 512 in medical nutrilion therapy for diabetes, 777-778 in nephrotic ry.ndrome m nagerne1'q924 in parenteral nutrition solutions, 518 in protein-energ'y assessments,properties of, 420t intake of bone and, 625 excessive,6l 1b in urinalysis, expected value and significance of,4I7t metabolism in cancer, 968 insulin effects on,774t negative acute-phase respondents as, 418 nitrogen balanceand, 64-65,65f plasma, classification by function, 418b positive acute-phase respondents as, 418 redistribution of, in L-dopa therapy, 1095t requrrements in acute renal failure, 926 in adolescence,250, 25 lr i n c h i l d h o o d ,2 2 7 t , 2 2 5 in cirrhosis, 721 in end-stage renal disease,940 in children, based on rherupy type,947t inheadinjury 1033 in HIV disease,101I in infancy, 203 in lactation, 187 in major burns, 1015-1036 in metabolic stress,1029-1030 in older adulthood, 299 in pregnancy, 172 of cancer pai.ent, 97 3, 97 3b requirements, for rheumatoid arthritis, 1053 retinol-binding definition, 412 in assessmentfor protein-calorie malnutrition, 420 somatic, 64 soy, in medical nutrition therapy, for cardiovascular disease,858 sfucture, 59-61, 61f sulfhydryl groups, 113 synthesis,59, 61f gene in, 370 transport, hepatic, in assessmentfor proteincalorie malnutrltion, 419 -420 whey definition, 199 in human as. Nutrition professionals are similarly challenged in working with clients with these nutrition-related disorders in terms of the heterogeneity of responsesto the nitude of response rather than create a life-threatening siruation and many of the variants are responsive to diet and other lifestyle parameters. 6. American Dietetic Asociation and American Diabetes Association: Mexican American food praetices,cartlnts, and holidays, Ethnic and Regional Food Practicu Series, Chicago, 1998b, American Dietetic Association. American Dietetic Association offers advice on stocking supplies for safety, September 12, 200 5, . Garlic and its constriuents have been proposed as neuroprotective for AD, but work with mice models remains inconclusive, and extrapolation to humans is still needed (Chauhan, 2005). Plant sterol and stanolestersblock the intestinalabsorption ofdietary and biliary cholesterol.In the generalpublic (Hallikainenet al., 1999)and in personswith type 2 diabetes (Leeet al.,2000),intakeof 2 to 3 g of plantstanolsor sterols per day is reportedto decrease total and LDL cholesterol levelsby 9%"to207" (seeChapter32). The following questions provide some ideas for questions that might promote discussion: . Examplesof conditions in clinical category B include bur are not limited to the following: . BenderIB, BenderAB: Diabetesmellitus and the dentalpulp, J Endod29:383,2003. The authors concluded that avoiding dairy foods could lead to inadequate intake of nutrients needed for health (Wiithrich et al., 2005). How would you respond? Autosomal-recessive inborn errors of carbohydrate metabolism include galactosemiaand hereditary fructose intolerance. This hyperglycemia improves as soon as alcohol use is discontinued (F{oward et al., 2004). Interpretation of Laboratory Data As with all data, nutrition data may be quantitative (e.g., how much, how often, how fast), semiquantitative (e.g., many, most, few, a lot, usually, majority, several), or qualitative (e.g., color, shape, species).The advantage ofquantitative data is that they are less ambiguous or more objective than other types ofobservations. Diarrhea is a common complication associatedwith enteral nutrition. For example,86-proof whiskey contains 43"/" ethyl alcohol. Overall a common sense approach to weight management is needed. Centersfor DiseaseControl and Prevention:Improoingoral heahh:prnenting caztities, gum disease and tooth loss, . Nonrenewal of Women, Infants and Children OVIC) checkswithin the last 6 months becausethe grandmother does not like traveling to the area where the clinic is located o Inconsistent toothbrushing (grandmother reports brushing the child's teeth three to four times per week. What are your concerns about Edith as a surgical risk? E.=Vi iE tE 5< oc !00 o 99P ai;E .trgi q x a Y Hs gO od E6 E,t H5o u'a .H E s o c E ID E E (, E {, f! o d F o a U) rl ,.I o o O v1 L o .n I APPENDIXES I23I H .n .F x9? gov/sci/techresources/Fluman_Genome,/ publicat/prim er200l/ www. The adequateintake(AI) is a nutrient recommendation basedon observedor experimentallydeterminedapproximation of nutrient intake by a group (or groups)of healthy people when sufficient scientific evidenceis not available to calculatean RDA or an EAR. This mandate is encouraging becauseimproving nutrition status is essential.Primary care programs through Tide III CARE Act funding must provide nutrition services on site or at another facility, and the provider has to be a registered dietitian (RD) (FIRSA, 2002). In practice, assessmentsare not based on the measurement of a single analyte at one point in time. It also acts like a hormone in the body and has many functions throughout the body unrelated to its co-functions with calcium that are continuing to be discovered. Heilbronn LK et al: Effect of 6-month calorierestriction on biomarkersof longeviry,metabolicadaptation,and oxidative stressin overweightindiyiduals:a randomizedcontrolled trial, JAMA 295:153e,2006. parent) and her sisteq age 4. Vegetarian Diets Vegetariandiets may be more beneficialfor bone than animal diets for proteins,but they may provide lesscalcium than animaldiets.Vegetariandietsmay alsocontribute to a lower lifetime exposureto estrogens,which could increasethe risk of osteoporoticfractures.Polyphenols and other plant antioxidants,abundantin plant foods,may benefit the optimal functioning and health of bone cells. Equally as important as the client's senseof self-effrcary is the understanding by the counselor ofhis or her own psychological issuesand background (seeClinical Insight:The Counselor Looks Within). in counterregulatory hormones. ( ) ScheduleA: Bolus FeedingVia Syringe/Gravity Bag 1. Urinary volume of lessthan 500 mVday is called oliguria; it is impossible for such a small urine volume to eliminate all of the daily waste. Furthermore, arty is a 45-year-oldJewish man who emigrated from Israel to the United States 3 years ago. Some nutrients can be assessedby tests that are based on measurements that reflect the endogenous availability ofa nutrient to a measurable biologic function (e.g., biochemical, tissue, or organ). When very large doses of certain spices are fed orally or placed intragastrically without other foods, they increase acid secretionand causesmall, transient superficialerosions, inflammation of the mucosal lining, and altered GI permeability or motility. be measuredat the bedsideby indirect calorimetry in most The preferred treatment is parenteraladministrationof intensivecareunits (seeChapter2). There is broad agreement that affected persons should avoid consuming large meals, especially before retiring, to reduce latent increases in acid secretion. The over-the-counter medication phenylpropanolamine (PPA) was used for many years as an appetite suppressant.In 2000 scientists at Yale University released the final report of the Hemorrhagic Stroke Project (HSP) suggesting that PPA increases the risk for hemorrhagic stroke. 5L2 PART3 I NutritionGareProcess NasoentericRoutes Nasogastrio - - - lrl6se6luodsnsl ....o.. Eating breakfastalmosteveryday 3. JorgensenJet al: Restingmetabolicrate in healthyadults: relation to growth hormone starusand leptin levels,Metabolisrn 47:1134,1998. Pump feeding is sometimesnecessarywhen a patient requires small amounts of formula delivered dowly. cr1-Antitrypsindeficienry is another inherited disorder, and it can causeboth liver and lung disease.c1-Antitrypsin is a glycoproteinfound in serumand body fluids; it inhibits neutrophilproteinases. professionals . Mogrihan P: The interrelationshipberweendiet and oral health, ProcNutr Soc64:571,2005. The underlying pathophysiology of primary pulmonary asthma is unclear (Church and Warner, 2006; Reed, 2006). These nuclear receptors serve as transcription factors, and their ligands are either provided by the diet or made endogenously, such as cholesterol,steroid hormones, bile acids,xenobiotics (foreign chemicals such as mercury or lead), and the active form of vitamin D (Chawla et al., 2001;Jacobsand Lewis. (R.eprinted with permission from Fox SI: Human physiology, ed 6, New York,1999, McGraw-Hill.) Plausible causesof hypertension are a hyperactive s).Tnpathetic nervous system, an over-stimulated renin-angiotensin system, a low-potassium diet, and use of the drug cyclosporine (Figure 33-3). (% c) TOTAL KILOCALORIES Modified from Michel St[Mueller DH: Practical apprcaches to nutrition care of patients with cystic frbross, TopClin Nat -Foni6ed milk = I c whole milt plus 4 Tbsp powdered nonfat millc materials are available online from the Cystic Fibrosis Foundation.For infantswith CF and their families.the immunologic and psychosocialbenefitsof breast-feedingare well established,and breast-feedingshould be encouraged. The patient needs to be fully informed about the impact of tube feeding on daily life. SeeMultiple organ dysfuncrion definition,ll4l qtrdrome MTHFR 677C:f genevariant,376,380b Moeller-Barlowdisease, 96-97 MTX (methotrexate),nutrient metabolismand, molecularlevel,disease at, 373 440 molybdenum,133-I34 absorption,133 deficiency,134,138t complicating radiation therapy, nutrition and, dietaryreferenceintakes,133, I 38t 971 excretion,l33 definition, 959 food sources,134,138t multicultural counseling, 491 f u n c t i o n sl l,l , 1 3 8 t effective, competencies for, 493t storage,133 multiple births, 168 toxicity,134 placenta in, 171 transport,lJ3 twin development in, 169b monitoring.SeeNutrition monitoring weight gains of mothers with, 169t monoarylglycerides, 59 multiple lumen tubes, for enteral nurrition, 510 definition, 41 multiple organ dysfunction s1'ndrome (MODS), monoamineoxidaseinhibitors (MAOIs), pressor 1025-t032 agentsand, 440-441 pathophysiologyof, 1025-1026 monoglycerols,59 multiple organ dysfunctionq'ndrome (MODS) definition, 41 definition,l02l monomenc medicalnutrition therapyfor, 1026-1032 definition,506 (MS), l09l-1094 multiplesclerosis formulas,5l2 definition, 1068 monosaccharide s, 42-43, 42f muromonab-CD3,after liver transplantation, definition, 41 /llt monounsaturated fatty acids(MFAs),52 muscle(s),contracting,fuelsfor, 590-591 definition, 41 musculardystrophy,Duchenne,374 morbidity, from hlpertension,868 Muslim food patterns,359 morbid obesity MUST (Malnutrition]JniversalScreening definition,532 Tool),389-390,39lf morningsickness, 181-182 mutations,37l mortality definition,365 from hypertension,868 MyActivity Pyr amid, 2 40f infant, 11I 8- 1I I 9 myalgia perinatal definition, 991 birth weight and, 161 in acuteHW infection, 998 definition, 160 myasthenia gravis(MG), 1092-1093 mortality rate, infant, definition, 1117 definition, 1068 mosaicism,1178 mycophenolatemofetil, after liver definition,1170 transplantation,727t mother(s) myelomeningocele, nurition problemsand risls obese,fetal risksfrom, 164-166 in, 1173t overweight,lactating,nutrirional intake and, myelopathy 19r definition,1068 sizeof, birth weight and, 163 neurogenicbladdermanagementin, 1075 weight gain of, in pregnancy,163-164,I6+f myelosuppression motilin from chemotherapy,9T3 definidon, 2 definition,959 functionsof, 8, 9t myocardialinfarction (MI) modvationalinterventionmodel,495-498 definition,834,884 algorithmof,497f mortality from, 834 assessment, 496-498 myoglobin first sessionin, 495-496 definition,4l, 587 interviewing,495 functionsof, 118,118t motivationalinterviewing MI), +94, 495 iron in, 598 definition, 489 myo-inositol, 102 principlesof, 578b definition, 41 motor skillsdisordeqnuffition (usage), 1112t MyPyramid, for adolescents, 259t moutlr MyPy'ramidFood GuidanceSystem,342,343f, digestionin, 9-10 344 digestiveprocesses in, 3 definicion,337 surgeryof, 659-660 il[*,t','' -t L336 Index N NASH (nonalcoholic steatohepatitis), 7 I 2 definition, 707 nasoduodenalroute, for enteral nutrition, 510 nasogastricroute, for enteral nutrition, 510 nasojejunalroute, for enteral nutrition, 510 National Cancer Institute (f{CI), Dietary Guidelines for Cancer Prevention of, 318 National Cholesterol Education Program OICEP), dietary guidelines of, for teens, 261, 263t National Food and Nutrition Survey (NFNS), definition, 109 National Health and Nutrition Survey (]JHANES), 314 Examination National Nutrient Data Bank, 3 15 definition, 309 national nutrition guidelines and goals, in policy development, 316-317t National Nutrition Monitoring and Related Research (NNMRR) Act delinition, 308 information obtained through, 315 national

nutrition surveys, 3 | 4-3 16 National School BreakfastProgram, 322t National School Lunch Program (NSLP), 323t National Screening Initiative OISD, 3 15 Nationwide Food Consumption Survey 0JFCS),314 Native Americans communication style of, 492t diabetesin,767t dietary patterns of, 351t, 358 naturopathy definition, 470 description of,472r nausea and vomiting chemotherapy-induced, management of, 98 1 in pregnancy (N\'), 181-182 definition, 160 NCP. They were developed to help consumers determine if a food contains a lot or a little of a specific nutrient. Sometimes what starts as extreme energy restriction to lose weight leads to an eating disorder. (seeChapter 22). water contaminants such as mycobacteria, Legionella,Giardia, viruses, arsenic, lead, copper, methyl bu(l ether along uranium and radon, are the targets of federal systemsput in place to monitor the safety of the food and water supply. Because of the intricate manifestations and complications of CS nutritional requirements and care must be individually determined for each patient. Individuals who resume oral intake often have prolonged dysphagia and require modifications of food consistency and extensive training in chewing and swallowing. NeiljJB et al: Potentialcontributing factorsto noncompliance with dietarysodium restriction in patientswith heart failure, Am HeartJ 143;29,2002. One in 30 women will die from breast cancer compared to l in 2.6 from CVD (Thom et al., 2006). andTheirMetabolism49 0 J TheNutrients CHAPTER Algal polysaccharidesare used commercially becausethey form weak gels with proteins and stabilize food mixtures, preventing suspendedingredients from setting. Alterations in the reg ulatory region may increase or decreasethe quantity of protein produced or alter the ability of the gene to respond to environmental signals. 101-302,305b older athletes, fluid absorption, 602 45 oligosaccharides, definition, 4l oligotr;922 definition, 92l olive oil, for rheumatoidarthritis, 1055b omega-3fatt(acids,52 fruitsnaused,1105-1108 dpfi.rFM\ \ \ h definition,4l family of, 55t in calciumstoneformation, 954 diseasemanagement,860t in cardiovascular in pregnancyand lactation,188b in rheumatoidarthritis, 1054b n functional foods, 1279-1279 ratio ofomega-6fatty acids,52-51, l1 0 8 - l 0 9 sources,55t supplemental,efficacy reviews,478t omega-6fatty acids,52 deficiency,55b family of, 55t in rheumatoidarthritis, 1054b nutritional facts,1278-l'279 ratio,52-53,1108-1109 omega-3 omegaGtopic pyruvate, 1l4 oncologic pressure,148b definition, 144 one percentetin, 295 definition, 286 open-endedquestions,in nutri-tion-byxhange 498 counselingsessions, opportunistic(infection, definition, 991 opportunisticinfections,in AIDS, 992 oppositionaldefiantdisorder,nutrition for, 1 l12t oral allergysyndrome (OAS), 760 definition, 740 oral cancer,c'mptoms/nutritionalconsequences, 655t oral cavity cancer, 659-660 disorders,complicatingHIV disease, 1014-1015,1016f affectingsuccess,oral cavity,Videntalhealth,636-651 messages,on for children, 641t oral manifestationsof systemicdiseaseand, 647-648 Index L339 oral'(eral health (Continued) periodontal diseaseand, 645 polypharmanacy and, 645 physiological changes associated with aging, 740 lack of energy development, 741 organic acidemias, 1084-7101 nutritional management affecting, cancer, 981 oral phase, of swallowing, 1074+, 1075f oral rehydration solution, 679t oral tolerance definition. Determining forecast in food aging contaminants, 1258-1259 contamination in 1 1 0 0 definition 1 1 0 foods high affecting, of nausea and diarrhea, 4450 oral hormone management,4l5 to-organisms,ry diet, 1256-1256. It is important to understand that tubes and food can be given with pieces of the intestinal tract in nutrition therapy. The alternatives of a renal diet, 1159 Diabetes (DFOT) and the human. Though we might talk about how you're doing with your dietary changes. How doesthis soundto you? Assessment of CurrentEatingBehavior Determining present eating habits provides clues on how to focus the future. Linkage with community resources such as congregate meal programs or the Meals on Wheels program may also be helpful (seeChapter 11). on)(rifc (4, PaJC)S]st rIbd &I E)[eo ul intestinal ul? Jdgpo/) (r onc rfr". Examples include Alright hereditary osteodystrophy, which commonly results in dental problems, obesity, hypocalcemia, and hyperphosphatemia; chondrodysplasias, which often result in oral-motor problems and obesity; and Marfan s1-ndrome, which promotes cardiac disease susceptibility and excessivegrowth and its concomitant nutritional needs. Larsson SC et al: Whole grain consumption and risk of colorectal cancer: a population-basedcohort of60,000 women, Br J Cancer92:1803, 2005. Side effects are gastrointestinal in nature: oily spotting, fecal urgency, and flatus with discharge Health benefits include reduced LDL cholesterol and elevated HDL cholesterol, improved glycemic control, and reduced blood pressure. L252 APPENDIXES STARCH LIST Cereals, grains, pasta, breads, crackers, snacks, starchy vegetables, and cooked beans, peas, and lentils are starches. KathleenMahan,MS, RD, CDE SylviaEscott-Stump,M, RD, LDN KEY TERMS adipocytea cell that synthesizesand storestriglycerides; fat cell adipocytokinesproteins releasedby the adiposecell into the bloodstreamthat act as signalingmoleculesand influencemetabolism andirofat depositiondepositionof fat around the waist and upper abdomen;"apple-shape"fat distribution bariatric surgery gastroplasty,gasuic bypass,and biliopancreaticdiversion,operationsfor the purposeof stomachsize reduction or malabsorption for the purpose of weight reduction body massindex (BMI) a mathematicalformula that correlateswith body fat and is expressed asweight in kilograms divided by height in metersquared(BMI : kg/m2) brown adipose tissue(BAT) fat locatedin the scapulararea that is involved in heat production for cold adaptationand possiblyfor burning offexcessenergy catecholaminesepi referringto the brain neurotransmitters norepinephrine,epinephrine,and dopamine cirrhotidliteseconditionsassociated with obesitythat usually worsen as the degree of obesity increasesand improve asobesityis successfullytreated essentialfat fat in the internal organs,bone marrow, and nervoustissuethat is neceess ary for norm (3) to-2om of body weight extreme or morbid obesitya state of adiposityin which body weight is 100% abovethe ideal body weight; a body massindex of 40 or greater fat mass the fat from all body sources including the fat in the brain, skeleton,and adiposetissue Sections of this chapter were s'ritten by Leonard Lajuotta, PhD, RD, for the previous edition ofthis text. Berkowitz RJ: Causes,treatment and prevention of early childhood caries:a microbiologicperspective, J CanDentAssoc 69:304,2003. his or her . Although 5V" to l5o" of persons with GERD will have BE, the incidence of esophageal adenocarcinoma is still less than 1% per year (Pera et al., 2005). Delayed emptying and increased nutrient of gastric colonization (Jannini, Glenn, Michael, and Stephens, 2004). Pencil and paper, or when to order (this way, it is easier to get more accurate amounts of servings as needed). In cases of patients with inflammation of liver disease which can be overcome / fomel. www.sternhighs.org/anti-seed (dp) It is also //www.fsan.ny.gov/ //www.fsan.fda.gov/dms/fsdiasa.html http //www.bt.cdc.gov/disasters/ http://www.foodchemicalnews. 4]fuueped crEofvoiumr Jpsur B sV 'errdard 'evIeqo -ordauc sr rpoou e(I ro] pod pue tsesud f)rhjsp[uj uo) erbedqeb e* Bsqlsooq sr Irqrge aqrrrq ('Sur.ra.olp.trs -ed.saqn;o durn sp '(Sur.ra.olp.trs-ed.saqn;o durn fse lolr 'tuaurs'rnssedsuejamp-pa-euoN euoN pepnrs saprqef e,rfirsSor tvt) f CSilcSnr, Subclavian catheter (usually temporary). SeeGastrointestinal tract Glasgow Coma Scale (GCS), 1033 definition,1021 glaucoma, 294 definition, 286 glomerular filtration rate (GFR), definition, 921 glomerulonephritis, acute, 92 1 (3).P. 1. At the age of 6 years in boys children, increasein fatness occurs (adiposity rebound), with the increase being greater in girls than in boys. In 1981Jenkins defined a glycemic index to rank different dietary carbohydrates on their ability to raise blood glucose levels as compared with a reference food (Jenkins, 1981). The most abundant fiber is cellulose' a homopolysaccharidemade up of glucosemoleculeslinked by B-14 linkages that cannot be hydrolyzed by amylase enzymes. Controversy persists concerning the optimal range of protein, fat, and carbohydrate intake for diabetics. The galacturonic acid backbone has rhamnose units inserted at intervals and side chains of arabinose and galactose. Thdie this supplement with food to aid in absorption. Little JW: Eating disorders:dentalimplications,Oral Surg Oral Med Oral PathoIOrOl and 93:138,2002. Excessivesever Common Clinical Manifestations . She wants to be enrolled into prenatal care because she has many concernsregarding the health of her baby and herself. A growing body of evidence suggests that nonabsorbable oligosaccharides and fibers have a significant impact on human physiology. Once the cells are in the intercellular space.Decreasedlevelsof surfactant,a considered to lozengesto increasethe production of saliva. pouat s1'thsrized from proteinsand phospholipids,conferring increasingthe frequencyof swallowingto suppress tribute to the collapse of alveoli and thus increase the the cough reflex.Teasfromevelfrom herbsare consumedfor work of breathing.The supporting connectiverissueof the mucilagesthey contain, which may form a protective for Pulmonary Disease 903 CHAPTER 35 I MedicalNutritionTherapy AdvancedOrgan Failure Lung Disease on Nutrition Status IncreasedEnergyExpenditure Increased work of breathing Chronic infection Medical treatments (e.g., bronchodilators, chest physical therapy SelectedPulmonory Conditions HavingNutritionalImplications Gategory Examples Neonatal Bronchopulmonary dysplasia Chronic lung diseaseof prematurity Cystic fibrosis Chronic obstructive pulmonary disease . l n s l.u n Persons with type 1 diabetes depend on exogenous insulin in order to survive. Carbohydrates are manufactured by plants and are a major source of energy in the diet comprising around half the total calories.Carbohydrates comprisetwo components: carbohydrates and carbohydrates as starch granules formed by linking glucose in a 1-4 straight chains and branching the straight chains with a 1-6 linkages into a complex granular structure. National Cancer Institute (ICI) (1 daydr better healthprogram: Division of CancerControl and Population Sciences,Bethesda, Md, 1999, The website and counselor help to familiarize some issues surrounding medical, surgical, psychosocial, and nutrition assessmentsand therapies; but they also have regular adult life issues.Thus they require different nutrition information delivered by different levels of educational approaches (Farmer, 2006; Mcullen et al.,2006; Michel and Mulder, 2006; Yanksakas, 2004). Plants store these carbohydrates as starch granules formed by linking glucose in a 1-4 straight chains and branching the straight chains with a 1-6 linkages into a complex granular structure. National Cancer Institute (ICI) (1 daydr better healthprogram: Division of CancerControl and Population Sciences,Bethesda, Md, 1999, The website and counselor help to familiarize some issues surrounding medical, surgical, psychosocial, and nutrition assessmentsand therapies; but they also have regular adult life issues.Thus they require different nutrition information delivered by different levels of educational approaches (Farmer, 2006; Mcullen et al.,2006; Michel and Mulder, 2006; Yanksakas, 2004). Plants store these 379t tang, 165t prevention of, diet and, 760-761 cr-ketoglutarate,ergogenic aid, 603t cr-linolenic acid (ALA), definition, 1102 food sources,ll06t in brain and nervous system function, 1104 o-lipoic acid (ALA), ergogenic aid, 603t o-tocopherol as oxidative stress marker, 427t AIS. For people continuing to smoke tobacco, additional vitamin C may be necessary.Research indicates that people who smoke about one pack of cigarettes per day appear to require approximately 16 mg more ascorbate per day, whereas those who smoke two packs need about 32 mg more over the recommended dietary allowance. Oral manifestations of immunosuppressive diseasessuch as human immunodeficiency virus (HIV) acquired immune deficiency syndrome (AIDS) also have an impact on appetite, dietary intake, and nutrient needs (Touger-Decker and Mobley, 2003) (see Chapter 38). The association between periodontal diseaseand systemic os- teopenia and osteoporosis has been documented (Gur et al., 2003;Jeffcoat, 2005), as has tooth loss and osteoporosis in postmenopausal \Vomen (IGall, 2001) (see Chapter 24). Alcohol Goal: Decrease acidityof gastricsecretions Avoid: . In Gottschlich MI et al, editors:Nutrition support dietetics core curriculum,ed 2, Silver Spring, Md, 1993,American Society for Parenteral and Enteral Nutrition. Deficiencies in energy and protein can be expected to affect growth adversely, although the impact may be temporary and catchup growth depends on how much energy children are able to consistently consume (Ringwald-Smith et al., 2006; Corrales and Utter, 2005). Pathophysiology Respiratory failure(RF) occurswhen the pulmonary system is unable to perform its functions. Poor or inadequate nutritional intake contributes to fatigue; conversely, fatigue may hinder eating and nutrition support regimens. The frequency and severity of symptoms do not always predict the severity or complications of the disease and may not correlate with endoscopic findings. Menstruating, pregnant, or lactating females are not required to fast but must make up the fasting days at some other time. SeekeyJP et al: Angiotensingeneexpressionand blood pressure responsesto the Dietary Approachesto Stop Hypertension (DASH) study, J Hyphens 19:1949,2001. Eichhorst\M et al: Prediction of ovarian cancer risk in subsequent pregnancy. \}l-('-tvrnfte tj 0 7 ^reaeeflow-up of the 661-145, 1996. The conclusion that sedentary hobbies have a profound inclination toward obesity in children is significant for nutrition counselors and physicians who work with this population. Women are still our diagnosed early and have limited access quality health care and treatment, of Falls Prevention Fracturesof the humerus, wrist, pelvis,and hip are considered to be agerelated,resulting from a combinationof osteoporosisand falling oral infection or ulceration. Therefore recommendations simply to reduce dietary fat are inappropriate; total calories remain critical as the variable for weight management. What lessons can be learned from research on polyphenols? This in turn increases nesteroscaricervical monitoring and the use of more concentrated nutrient solutions, increasedflow rates, and double- or triple-lumen catheters. The effectivenessof different fibers in enteral formulas used to treat gastrointestinal symptoms in acutely ill patients is controversial (Gottschlich, 2006). :seseesrp 7967 '8661 '99t:LZ xunaqdstilrquV auuas',:aer rretuueaur aqt ur 3u6sa1&ore-roqe1-C4 (arng,13 .rarze8ol) relo uor '1007.279is7 proslQqqw -srlrl/t{te protuenrlfur sprJefre; g-u&ouqz:lp 'a d errv-errv 'hsaqo '5002' ud saqo sqrrrttrpalo ru1 pu? 'GUTDELTNES FoR COUNSELTNc The goal of CAM counseling is to determine which supplements a client is using and the health goals they hope to achieve through the use of these products. consumerlab.comfor validation of specific product brands on the market. 26 norleme irou, 1Í5 a D s o ı y u o n l - l l e , i l / SeerAssiuudp!Al. 8:16 bnd defritiioii, 875 flnorinadsm volues and, 13 I nonnitrosstol antiinflammatory drugs (Ct/SAID)s colits induced by, nutrient absorption and, 439 for rheumatic disease, 1055 with gastrointestinal side effects, 444b norepinephrine actions, 7t in body weight regulation, 536t normalization, defi nition, 489 normalized protein-nitrogen appearance,in renal disease, 937t normochromic normocy'tic anemia, 8 l2t normotensive, definition, 865, 866 norovirus, 327t northern European dietary patterns, 35 l t Norvir (ritonavir-ABT-53 8), nutritional complications of, 1005t NPC (net protein utilization), 63 NSI (National Screening Initiative), 315 NSLP (National School Lunch Program), 323t NTDs. SeeNeural tube defects (NTDs) nucleotidase, in digestion and absorption, 4t nucleoside analogue reverse transcriptase inhibitors, nutritional complications, 1 004f1005t nucleoside reverse transcriptase inhibitors (NRTIs), definition, 985, in DNA double helix, 370 nucleoside analogue reversetranscriptase inhibitors, nutritional complications, 1000 nucleotides, in digestion and absorption, 6t nursing care process(NCP), nutrition assessment in, 304 stalled, for older adults, 304 nursing intervention, in diabetes mellitus, 79r-795 nutrient analysis (NIA) definition, 383 in dietary history, 398 nutrient requirements in, 397 intervention, 399-400 nutrient density, 246 delivery 441-466 drug action modifications, 445-441 foods as sources of, 465-466 intake patterns, in nutritional requirements, 1000 nutrient requirements, 561 disease and, 386f dietary intake, of nutrition requirements of, in nutrition, 243 requirements in, in chronic, 721-722, 722t supplemental, ef ficacy, review, 47 8t nutrigenomics definition, 365 nutrigenomics and, 370 nutrigenomics definition, 365 nutrigenomics and,370 nutrition and dental caries, potential dental gastrointestinal, definition, 506 enteral, 508, 510-516. Loss ofbone mass to a degree that produces fractures has been attained. (1) an excessiveacceleration of resorption, especially after the menopause; or (2) a suboptimal peak bone mass that results in bone after the menopause(or later in life in males) that becomes fragile and susceptible to fracture. Block-C et al: Fruit, vegetables, and cancer prevention: a review of the epidemiologic evidence, Nutr Cancer l8:7, 1992. Algal polysaccharides e.g., carrageenan) are extracted from seaweed algae and used as thickening and stabilizing agents in many processedfoods such as] infant fo.mulas, ice cream, milk pudding, and sour cream products. Smoking cessationmeasures part of most wellnessprograms and offer ideal seeingsfor nutrition education. Seea/soNeurologic disorders drugs affecting, taste alterations from,447b lesions, 1069-1072 localizing signs of,1069-1072 structureffunction, nutritional aspects, 1 1041 105 writing, 1068-1072, 1071f central parenteral nutrition (CPN), 516 definition, 506 long-term access,516, 518 short-term access,516, 518f cerebral palsy (CP) calorie needs estimation in, 1180t definition, 1170 health concerns, 1184 intervention strategies, 1185 Index 1313 cerebrospaly(CP) (Continued) nutrition assessment, 1185 nutrition problems/risks,1178 types,1185b cerebropathic, 1208 ceruloplasmin, 125 definition, 39 CF (conversefunction) definition, 764 CFS (chronicfatiguesyndrome),1060-1061. An example of this type of counseling skill is: "You seem to be very frustrated by what your husband saysabout your food choices." Double-Sided Reflection In double-sidedreflection the counselor will use ideas that the client has expressedpreviously to show the discrepancy between the client's current words and the previous ones. Updatedby peter L. modification, for food and nutrients, 440-44r antihypertensive, 874 appetite changes, 444-445, 446b, 447b breast- feeding,concern, 190-1911, 191 causing organ system toxicity, 445-446 causing xerostomia, 648b diarrhea, inducing, 677 effects on food and nutrition status, 439-440 on nutrition status, 441-448 food interactions, 432-453. A variety of principles are important when interacting with people, including:Those interventions that are important when working with individualswho struggleswith behaviorchange: 1. $fncludesnschydrogenated vegetable oils and oils in fish, nuts, and seeds. IT2+0Hical is normally neededto maintain present weight, 2900 to 3400 kcal would be required to achieveslow weight gain.The intake shouldbe increasedgradually to thesolevelsto avoidgastrdiscomfortand periodsof discouragement(more seriously electrolyteimbalances and heart dysfunction. A 500-kcalaverage approach is outlined in Table2l -8. EvansJH: Antioxidantvitamin and mineral supplementsfor AmericandiabetesUpdate,Cochrane d0003042,2002. The group outlined the use of weight maintenance/exercise weight loss programs, with the patient's age,baselinebody massindex (BMI) Increased physical activity is extremely important in a weight-management program for children. Becauseno singular food item contains large amounts of thiamin, one serving of a nutrient-dense food item contributes about 10% of an individual's daily need. (MCFSA) to have 8 to14, and long-chain fatty acids(LCFAs) to have 16 to 20 or more. An averageprotein 3,000mlicecubes,and the human promise containing[example]% of 20,000to 25,000pesticides,er(e)eer,www.ncn.errr. Other minerals are not routinely supplemented. Although there may be several diets, food, as well as other dietary supplements for, Institute of Medicine Dietary Reference Intakes, are based on individual basis. Courtesy ofJanoset Mayer, MS, RD, CNSD, Food and Nutrition Director. Total calories must also be considered. Although most CvD deaths occur in persons older than 65 years of age, one third of deaths occur prematurely or before averagelife expectancy reached.This observation has led to extensiveresearchon prevention. PenningtonJA, DouglassJS: Bowes and Churchfoodvalues of portions commonly used,ed 18,Philadelphia,Lippincott Williams and Wilkins, 2004. elderly: a s" sevelibrium up Scerlin with Scholar, oppinion 0 0 3 a t Carbonandsoft drinks and dental caries:review of the evidence and policy implications,J Dent Res65;262,2006. In this way even the most primitive organisms monitor and respond to their environment to deploy their resources most efficiently. dietary regimen should be reduced.Nitrodiarrhea sistsof total bowel rest until the be severeand are gen lossesassociatedwith diarrhea can compounded(by the high-doseorticosteroidsusedto treat GVHD. The goals of nutrition intervention should focus on managing nutrition impact symptoms such as pain, weakness,loss of appetite, early satiety constipation, weakness,dry mouth, and dyspnea (McCallum and Fornari, 2006). The potential benefitsof protein restriction in the patient with moderate renal insufficiencymust be weighed againstthe potential hazardsof sucfatremient(i.e., protein malnutrition). Since pregnant women seekinghealth care come with their own personalhistory of nutrition anddietaryissues,it is critical that providers appreciatecultural issuesof the country of origin. Estrogen replacement therapies have been shown to conserve BMD and reduce fracture rate within the first few years following the menopause, at least in short-term studies. In implementingthe prescriptionthe patient'smental status,overallhealth and prognosis,the health facility's ability to administer, monitor and evaluatethe support and the family's ability to function as caregiversare important. The PA coefficient (PA) that correlateswith an actualifestyle for this woman is 1.27. As tolerated,registereddietitiansadvance feedingand adjustwaterto meet goal rates 4 . Acquire cognitive and behavioralskills to manage anxiety . Each supplement should be discussed individually in terms of what the client hopes to achieve by using that supplement, whether the preparation is appropriate for the client's health goals, and whether the dosage being taken and the length of time for supplementation is supported in published clinical trials. Individuals with CF may be at risk for vitamin K deficiency secondary to long-term use of antibiotics or liver disease, as well as malabsorption. The many dietary factors that affect the diseaseprocess are discussed in "Medical Nutrition Therapy, ". From Lichtenstein AH et al: Diet and lifestyle recommendations revision 2OO6: a scientific statement from the American Hean Association Committee, Circulation114:82,2006. Psychogenic food refusal in children requires interventions that address underlying psychological issues.Creative efforts are required to minimize the psychological effects of fear, unpleasant hospital routines, unfamiliar foods, learned food aversions and pain. The left ventricle increasesin size in response to high blood pressureand increasedworkloadsecondaryto obesity. In Merritt R, editor: The ASPEN nutrition support practicemanual, ed 2, Silver Spring, Md, 2005,American Society for Parenteral and Enteral Nutrition. MuslimFoodCustoms, DietaryLaws, and Holidays Islam promotes the concept of "eating to live." Muslims are advised to stop eating while they are still hungry and always to share food. Hepatocellular carcinoma/malignanthepatoma Primary liver cancer secondary cirrhotic livers. G a r l o g e n e s i s (t h y l d i v i d u a l s l o s e s) I n a d d i t i o n , a recent meanalysis of CVDs compared to LCDs showed that, even though there were significantly greater weight losseswith the VLCDs in the short term, there were no significant differences in the weight losses in the long term (Gilden and Waddens,2006). A sampling of other diet-responsivegene variants that Cardiovascu lar Disease have implications for nutrition therapy related to preventNutrition professionalswho work with clients with dyslipiae and treating cardiovasculardiseaseshould understand the responsesto dietary fat, solubleflber, and ability of responses to the widely recommended dietaryinalcohol (Corellaet al., 2001; Corella and Ordovas,2005; terventions.These therapiesare used primarily to lower Nicklas et al., 2002;Massonet al., 2003; Ordovas, 2006). elevatedblood leveled LDL cholesterol(LDL-C), raise APOE variantsand the response! LDL and HDL to everhigh-density)lipoprotein cholesterol(HDL-C), and lower cise training (Thomeland et al, 1996 Hagberget al., 2000); triglycerides(TGs). The standarddietary approachis a diet CETP variantsand effectson HDL levels,lipid-modif ing low in saturatedfat and cholesterol,with increasedcontent responsesto statin drugs,and responsesf lipid parameters of poly'unsaturatedfats. Very-Low-Density Lipoprotein Very low-density lipoprotein (VLDL) particles are sinthesized in the liver to transport endogenous triglyceride and cholesterol. pylori (Shimizu et al., 2001). The biophosphonates act by inhibiting osteoclast-mediated bone resorption. assistance authority! counselor . Depending on the part of the world, the main dishesof Hispanic diets may include meat (pork, veal, sausage), poultry or fish. Cleveable vitamin C is one example of a supportanting acid product that may contribute to tooth decay. By the second day warm fluids and soft foods may be introduced; thereafter hot foods can be introduced cautiously as healing progresses and as these foods are tolerated. Although the fracture-precipitating condition of low BMD is common to all types of osteoporosis, an imbalance between bone resorption and formation results from an array of etiologic factors characteristic of each form of this disease. Primary disease has no apparent causes Primary disease Malnutrition Ialar use, storage, and excretion of most nutrients on the Pulmonary System problematic.Somedaverseffectof lung diseaseon nutritNe relationship between malnutrition and respiratory tion ssprsare listedin Box 15-1. Sophisticated computer technology that can handle the vast amount of data generated by genetic technology has been developed and is the backbone of the new field called bioinformatics.In addition, project goals include the challenges of educating genetic scientists and clinicians and integrating the results of genetic research into clinical practice. Upton TG: Bacterial translocation and enteral nutrition in humans: an outsider looks in, JPEN J Parenter Enteral Nutr 19:156,1995. Most food labels do not list a the vitamin K content of food. These include bronchodilators (to relax the airv,ay smooth muscle) and antiinflammatory agents (to suppress ilrway inflammation). FamilialHypercholesterolemia FH (typellla hlperlipidemia) is a monogeneticdisorderthat is seen about in the world, with an estimated10,000,000 peoplebeing affected (Thble32-2).It is major risk factor for CHD; 85% of malesand 50% of femaleswith FH will have a coronaryeventbefore the ageof 65 yearsunlessthe hlperchoIesterolemiais successfullytreated (Civeira, 2004).UnfortunatelyFive patients(2go 13 1200-239) Pointsat I age 2 1139 Nonsmoker 0 Smoker 9 Pointsat age 4fH9 10 11 12 13 14 15 to 17 18 l le Pointsat age 5G-59 0 Pointsat age6fH9 0 2 4 It untreated 0 140-1 59 >160 Point total ?5th percentile or 100 and >90thpercentile or CACS>400 . Consider what a person is giving up if he or she makes a change. In addition, accessavailable medical literature search engines is also advised, given that there are a growing number of studies being published in peer-reviewed literature. With more extensive involvement, it may be necessaryto use a gastrostomyor jejunostomytube for administering tube feedings. 'Nutrition Diagnosis: ExcessiveE-vitamin and vitamin E-intake related to self-report of supplementintake as evidenced by intake exceedingDRI levels. The other food ingredients must be nonagricultural substancesson an approved list that are not available in organic form. Componets andPublicHealthConcerns FoodComponent Relevanceto Public Health Energy Median reported energyintakes in the 1988 to 1991 CSFII were below recommended levels,adults are overweight. Thus the LDL cholesterol treatment goal for persons with diabetes is 70 mg/dl (Pearson et al., 2003). @ron U.S. DepartmentofEnergy Human GenomeProgram: www.oml.goo/hgmis.) rectly or indirectly, all diseases connected to the information in the genes. Whats the BestWayTo Educate the PatientandCaregiver? pyhri gene causesthe making of a protein that alters of GI epithelial cells and TJymphocytes, suggesting that bacterial, host genetic and environmental factors all play a role (Ketchard and Crabtree, 2006). Supplementsare most likely unnecessary,becauseit is almost impossibleEor the elderly to consumeenoughfrom foods. You haven't been able to modify your diet, and it is difficult for you to come into our visits when you haven't met the goals we set. Concentrated formulas or large volumes can contribute to taste fatigue and early satiety. Special attention must be given to some of the minerals, however. Accessto food, potablewater, effective drugs, housing, and economic stability remains a concern. Zinc is found in a wide variety of foods. Pollitt E et al: Iron deficiencyand behavioraldevelopmentin infantsand preschoolchildren,Am J Clin Nutr 43: 555,1986. Surgically Placed Enterostomies Surgical gastrostomies and jejunostomies are placed if a person requires external support who are undergoing a surgical procedure for placing a gastrostomy tube are the Stamm and Witzel techniques. Such changes are also mutations but have come to be called "gene variants" to distinguish them from single gene changes that typically have a more detrimental effect. Box 3-1 shows the fat content of some common foods. Closed questions can help in targeting concepts and eliminating tangential discussions.For the person who is not ready to change,targeted discussionsaround difficult topics can help focus the session. Although only a small percentageof fall result in fractures,preventingfalls through education and attention to the living environment of the very old is an important measure. Severalagencieswithin the federalgovernmenthavethe responsibilityof ensuringfood and watersafety.Planning,surveillance,detection,response and recovery are thekey componentsof public health emergencies. With treatment, growth generally improves. The CNS-acting agents fall into the categories of catecholaminergic agents, serotonergic agents, and combination catecholaminergic-serotonergic agents. The amount of vitamin K in food may affect drug therapy, such as that from warfarin or other anticoagulants. Reword this statementto indicate your own thoughts about the patient'sstatementabove.What are some summarizing statementsthat you might make? are. S o Surry sugar cookieswith nuts. br Oberzanek et al: Individual blood pressure responsesto changesin salt intake-resultsfrom the DASH-Sodium trial, Hip ertension42:459,2003. 'Fairy sSinrEr. @Reprinted with permission, Gi(I Clin Nu 59:15,1994. Pygmg . €. 4'E br o .n E n -F.H o rl i|g k .(USr'FiU4:Ehrti'S Bsa i o < e e n ' l c a n s d G n n a s o n s N m t i o n D i a g n o s i s : Nutrition-related knowledge deficit related to nutrigenetic counselingfor pregnancy as evidencedby client questionsabout nutrition and highrisk pregnancy I. Albert DA et al: Dental cariesamongbpsdiaandneopd 3- to 4-yearold children in northern Manhattan,PediatrDent 24:229,2002. Fat sources are often long-chain triglycerides, although some supplements contain medium-chain triglycerides.man-made-caused) Because both cell membrane-phospholipids are more vulnerable to oxidation, and exported fat oxidative damage. Spanstart ratiq and dietary sweeteners in pregnancy, 179-180 sweetenersand, 43t atrophic gastritis, 660 ASA (antiinimmuno acceleration), abbreviation, 763t ... Artificial sweeteners in pregnancy, 179-180 sweetenersand, 43t atrophic gastritis, 660 ASA (antiinimmuno acceleration), abbreviation, 763t

output, edema, dialysis, and serum Na+ level); replace lossesin diuretic phase Replace output from the previous day (vomitus, diarrhea, urine) plus 500 ml Limit as needed -700 ml Input Water produced by metabolism in 24 hr (provided catabolism and weight loss are not occurring) Water to allow for fluid gain Water in usual diet in 24 hr Additional fluid intake needed in 24 hr to replace losses Total fluid gain - Total fluid loss : fluid gain for 24 hr 24-h fluid gain x 2 days between dialyses of MedicalNutritionTherapy Summary for AcuteRenalFailure 500ml Energy Potassium (K+) 1000ml 500ml 200ml 1700ml 1700ml 700ml = 1000ml 1 0 0 0 ml 2 : 2 L fluid gain between dialysisIntratrenets Sodium Fluid Phosphorus GFR, Glomerular filtration rate; IBW, ideal body weight; LBW, lean body weight; ... [illegible] ... nutrition in compensating for metabolic limitations, nutrients and other bioactive food components can influence gene expression. Some patients may decline early placement of a feeding tube because of the emotional, economic, or physical 1078 PART5 : Medical Nutrition Therapy impact of this choice. Nonessential nitrogen is provided principally by the amino acidsalanine and glycine, usually without aspartate, glutamate, cysteine, and taurine. Tipp RR: World refugeesurvey,1982,New York, 1982,U.S. Committeefor Refugees. Even with pancreatic enzyme supplementation, fat-soluble vitamins usually remain inadequately absorbed. Individuals benefit from consumption of six to eight small meals per day, with fluids taken between meals. Among stablepatientsreceivinglongtermnutrition, constipation can be a problem. The Food and Agriculture Organization (FAO) and the World Health Organization (1970) of the United Nations have establishedinternational standards in many countries to guide nutrition and food policy. Lactose intolerance ... recommendations. Bananas, which are cariogenic because of their fermentable carbohydrate content and adherence capability, have less potential to contribute to decay when eaten with cereal and milk than when eaten alone. The carious process begins with the production of acids as a by-product of bacterial metabolism taking place in the plaque. Kuczk O, Ottery FD: Dietary supplements during cancer treatment, Oncology Issues17(suppl):24, 2002. Decalcification of the surface enamel continues ... nutrition counselor. Weight loss ensues because insulin is kept in a narrow range, but because calories are restricted. He is 5 feet 10 inches tall and weighed 180lb on admission to the ICU. Other types of health claims are the authoritative statements (FDA Modernization Act of 1997) and dietary guidance statements, which are based on guidelines from authoritative organizations and agencies, as well as statements found within the body of (*)... Multiple ... nutrition counselors are turning to life coaching to enhance nutrition counseling skills and increase client success. Coaching moves the focus away from the RD as the expert who tells the client what to do, to exploring ideas ... nutrition intervention needs to acknowledge the person's individuality ... In this type of counseling the ... knowledge ... Recently, ... The ... is .. The ... Several studies have ... were mostly used to study and recommend use of ... and ... who have a greater bone density (Siris et al, 2001). Epidemiological studies have ... and pain. The American Dietetic Association examined the question of the effectivenessof the popular low-carbohydrate (less than 35% of calories) diets (e.g., Atkins, South Beach).A review of 14 acceptedstudies demonstrated that consumption of ad libitum low-carbohydrate diets (only the intake of carbohydrate is limited) and reduced-calorie diets both result in lower caloric intake. Metheny NA: Risk factors for aspiration, /PEN J Parenter Enteral Nutr 26(6):265, 2002. Pain can be a result of the tumor iself or a consequenceof treatrnent, or it can have a psychological component. Content will vary according to rhe age, gender, and diseasestate of the individual resident. Its role in posttranslational modification of several matrix proteins, including osteocalcin, is now well established. Sodium Fluoride Increasesin bone mass, especially in trabecular bone, follow treaffnent with sodium fluoride, but the quality of the bone typically is not normal. What questionswould you ask to elicit patient concerns? Oral supplements that contain hydrolyzed protein and free amino acids such as those developed for patients with renal, liver, and malabsorptive diseasestend to be mildly to markedly unpalatable, and acceptance by the patient 524 PART3 I Nutrition GareProcess depends on motivation. The strong positive charge on chitosan binds negatively charged lipids, blocking their absorption. ar-Receptor blockers LifestyleModification . Lee? It is important to include foods high in vitamin E on a daily basis to get enough vitamin E from foods alone. More than 95% of the casesof nephroticsyndromestem from three slntemic diseases(diabetesmellitus, SLE, and amyloidosis)and four diseases that are primarily of the kidney: minimum changedisease(diseaseseenonly with electron microscopy),membranousnephropathy,focal glomerulosclerosis, andmembranoproliferative glomerulonephritis. Therefore these values are average approximatrons. Early and correct diagnosis is key to treaffnent, with the elimination of environmental causes.Once the diseaseprogresses, in addition to pulmonary rehabilitation programs and orygen therapy, numerous medications are prescribed, mainly bronchodilators, glucocorticosteroids, and mucolytic agents, along with antibiotics to treat infections (see Chapter 16). Selenium is also found in some meats and seafood. 1999: Terahydrobiopterin @Fla)-responsiveforms of PKU have been recognized, especiallythose with mild mutations. Another anticariogenic mechanism of rylitol gum is that it replacesfermentablecarbo- promotes remineralization of enamel surfaces. Strumrred lipids are artficially produced lipids comprised of both long- and medium-chainfatty acids on fie same glycerol moiety. (suction) through a nasogasrric tube hemodynamic stability the ability of a patient to mainrain adequateblood pressure intermittent drip feeding enteral formula administered at specified times throughout the day; generally in smaller volumes and at a slower rate than a bolus feeding but in larger volumes and at a faster rate than continuous feedings lumen the interior areaof a tube, catheter.or blood vessel monomeric when referring to protein and carbohydrate, the form in which the nutrient has been hydrolyzed into its smaller parts 506 jejunostomyfeedingopeningusedto proneedle-catheter vide small-boreneedleinsertioninto the jejunumat time of surgery osmolaritythe numberof milliosmolesof solute(particles) per liter of solution osmolalitythe numberof milliosmolesof solute(particles) per kilogram of solvent parenteralnutrition provisionof nutrientsintravenously percutaneous gastrostomy (PEG) feedingtube, endoscopic the insertion of 'which into the stomachinvolvesusing an endoscopeand pulling the rube through a small incision in the abdominalwall percutaneous jejunostomy(PEJ) feedingrube endoscopic insertedinto the jejunum using an endoscopictechnique peripheralparenteralnutrition(PPN) deliveryof nutrients into a smallerperipheralvein pulmonaryaspirationinadvertentinspirationinto the lungs of body fluids suchasvomitus from the stomach rebound hypoglycemialow blood sugar resulting from abrupt cessationof total parenteralnutrition solutions refeedingsyndromelow serumlevelsof potassium, magnesium, and phosphoruswirh severe,potentially lethal outcome that resultsfrom the too-rapid infusion of substrates, particularly carbohydrate,into the plasmawith the consequent releaseof insulin and shift of electrolytesinto the intracellularspaceasglucosemovesinto the cellsfor oxidation and there is reduction in salt and water excretion stoma artificially created opening berweena body cavity and the body'ssurfacethat hashealed transitionalfeeding the processof progressingfrom one method of nutrition supportto anotheror to oral feeding CHAPTER 20 Nutrition supportis the deliveryof formulatedenteralor parenteral nutrients to appropriate patients for the purpose of maintaining or restoring nutritional status. In this era of vastly expanding scientific knowledge and information about food components, the way the public thinks about food intake for health promotion and diseaseprevention is changing rapidly. Glycerol is oxidized and yields 4.3 kcaUg.A 10% emulsion provides 1.1 kcaUml; a 20o/oemulsion provides 2 kcaUml. A comprehensive program of lifestyle modification produces a loss of approximately 10% of initial weight in 16 to 26 weeks,as revealedby a review ofrecent randomized conuolled rials, including the Diabetes Prevention Program. Body weight remains remarkably stable despite variations, possibly from internal regulatory mechanisms that are geneticallydetermined.Somestudiessuggestthat body weight can be displacedonly temporarily and that resting metabolicrate lowers,resulting in body weight returning. The ability to assess (functional units within the genomethat contain informaan individual's genetic makeup as it relates to the major tion for makingproteins)andunderstandingtheir function drug-metabolizing genes helps the physician select the (the scienceof proteomics);(3) associatingvariationsin drug and dosage that will have the desired effect on that geneswith specificdiseases;(4) understandingthe way individual. Similarly insulin-like growth factor-I (IGF-I) may improve bone BMC and BMD in human subjecs by increasingbone formation (Rosenand Bilezekian,2001). Eighty percent of hospiulized patientswith for HeartFailureandTransplant885 CHAPTER 34 i MedicalNutritionTherapy HEAD ANDARMS Superior vena cava Pulmonary artery RIGHT LUNG LEFT LUNG Pulmonary vein Pulmonary valve ATRIUM ATRIUM Tricuspid valve Mitralvalve FIGURE 34-l Structure of the hean Aorticvalve Pump VENTRICLE VENTRICLE LEFTHEART: Receivesorygen-rich bloodfromthe lungs and pumpsit through the aortato the body RIGHTHEART: Receiwsbloodfrom the bodyand pumps it throughthe pulmonaryarteryto the lungs,whereit picks up freshorygen Interiorvenacava ^ISt$. BrownJ et al: Nutrition and physical activiry during and after cancer treatrrent: an American Cancer Society guide for informed choices, CA CancerJ Clin 53:268,2003. In critically ill patients the best methods for decreasing the risk of aspiration are elevating the head of the bed, continuous subglottic suctioning and oral decontamination (McClave et al., 2 002; Metheny, 2 002; McClave and Snid eq 2 0 0 2 ;S c o l a p i o , 2 0 0 2) . fUnless detrimental or no benefit is expectedfrom nutritional support (e.g.,imminent death). 334 PART2 I Nutritionin the Life Cycte N utriti o n Diag n osis: Nutrition-related knowledge deficit related to no previous nutrition education regarding type 2 diabetesas evidencedby elevatedpostprandial blood glucoselevels 1. In a study of the nutrition and oral health habits of infants and young children in Iowa, researchersnoted a 2jo/o incjdence of decay (Levy et al., 2003). As a result, hepatic glucose releaseexceedsthe rise in glucose use. The production of ultrafiltrate is mainly passive and relies on the perfusion pressure generated by the heart and supplied by the renal artery. If left untreated, the following signs may ensue: dysgeusia (impaired taste); impaired gait, spasticiry contracture; mental signs of irritability, apathy, somnolence, emotional instability, marked confusion, and depression; and visual impairment. Periodontal diseaseis a local and systemic disease.Select nutrients, including vitamins A, C, E; folate; B-carotene; and the minerals calcium, phosphorus, and zinc play a role in this disease.Nutrition strategies and other strategies to modilz risk factors for bone loss in osteoporosis also may contribute to reducing the risk of tooth loss. Show the client an example of his or her progress. Pr oblemwith s Self- Feeding andNutr itional Intal. LifestyleModification Behavior modification continues to be the cornerstone of obesity intervention. Advantages of this form of treaffnent are avoidance of large fluctuations in blood chemistry, longer residual CHAPTER36 ! MedicalNutritionTherapyfor RenalDisorders 933 NutrientRequirements for Adultswith RenalDisease BasedonTypeof Therapy Therapy Ene€y Impaired renal funcdon 30-35kca7kgIBW Hemodialysis 35 kcaUkgtBW Proteln Fluid 0.6-1.0 Ad libinm glks IBW Sodlum Potreslum Phosphorus Variable, 2-3 gldey 0.8-1.2 g/day or 8-12 mg/kg IBW r.2 Slkg 750-1000 IBW mUday + 2-3 gldry Variable, usually ad libitum or increased to cover losses with diuretics 2-3 gldayor ,t0 -g/kg IBW 2-4 gldry 3-4 glday 0.8-1.2g/day Variable Variable; may requrre restriction v/ith cyclosporineinduced hyperkalemia Variable r.2gtdry 30-35 kcaUkgIBW 1 . ThmakoshiK et al:JACC StudyGroup: a prospectivestudy of body sizeand colon cancermortality in Japan:the JACC Study, Int J ObesRelatMetabDisord28:551,2004. What community health and nutririon programs would benefit MB? Kudsk KA: Current aspectsof mucosalimmunology and its influenceby nutrition, Am J Sarg 183:390,2002. One study of children eating either conventional or organic foods found that, after eating organic foods for just 5 days,the levelsof organophosphoruspesticidemetabolites in their urine fell to undetectablelevels.fu the authors state' eating organic certainly changedthe children's exposureto, if not their risk for, cancersthat may be linked to pesticide exposure(Lu et al., 2006) \4fith the food supply as a secondary target, there may be limited accessto food and water, social disruption, and selfimposed quarantine. All three conby Lactobacilluscaseinand Streptococcus tribute to the processbecausethey metabolize carbohydrates in the mouth, producing acid as a by-product, which is sufficient to causedecay. Another source of nutrient values for common serving sizes of foods is Bowes and Church's Food Valuesof Portions Com.monlyUsel (Pennington and Douglass, 2004). Parks and Hellerstein (2000) reviewed evidence for the paradoxic rise in serum lipid levels and fall in high-density lipoprotein (HDL) levels after consumption of a diet higher than usual in carbohydrates. Curreri PW: Nutritional replacementmodalities,J Thauma 19:904,1979. NADPH, Nicotinamide-adenine dinucleotide phosphate(reduced form); NADP +, nicotinamide-adeninedinucleotide phosphate (oxidized form). 532 gastracbypassa surgicalprocedurein which the sizeofthe stomachis reducedby a stapling procedureand the small intestineis connectedto the smallerstomachpouchthrough a new opening gastroplastya surgicalprocedurein which the size of the stomachis reducedwith a row of staplesacrossthe top half of the stomach with a small opening left into the distal stomach gynoidfat distributiondepositionof fat in the thighs and buttocks;"pear-shape"fat distribution hormone-sensitive lipase(HSL) an enzqe in the adipose cell that is responsiblefor the hydrolysisof triglycerideinto fatry acidsand glycerol, which then leavethe adiposecell and enter the circulation hyperphagiaa periodofovereating hyperplasiaincreasein tissue size by an increasein the number of cells hypertrophyincreasein tissuesizeby an increasein cell size hypophagiaa periodofundereating incretins gastrointestinal hormones that increase the amount of insulin releasedfrom the beta cells of the pancreasafter eating and slow the rate ofabsorption by reducing gastricemptying leanbody mass(LBM) the part of the body free of adipose tissue;includesthe skeletalmuscles,water,bone,and a small amountof essentialfat in the internal organs,bone marrow; and nerves lifestylemodificationchangein the antecedents, behaviors, and consequences associated with eatinghabits,exercise,or thinking patterns lipogenesisthe conversion of glucose and intermediates into fat lipoproteinlipase(LPL) an enzymeon the luminal sideof the capillarythat facilitatestransportof lipid from the blood into the adiposecell CHAPTER2l I Weight Management 533 liposuction aspiration of fat depositsout of the body by meansof a smallincisionthrough which a tube is fannedout into the adiposetissue metabolic syndrome(MetS) a condition associatedwith glucoseintolerance,insulin resistance,hyperlipidemia,and hlpertension; sffongly linked to abdominalobesity obesity a state of adiposityin which body fanressis above the ideal;a body massindexof 30 to 39.9 overweight a statein which weight exceedsa standardbased on height; a body massindex of 25 to 29.9or greater sensory-specific satiety a declinein the pleasantness of a food asit is consumed storage fat the fat that accumulatesunder the skin and around internal organs underweighta body weight l5o/o to 20% below the acceptedweight standard;a body massindex of lessthan 18.5 very low-caloriediet (VLCD) a diet providing 800 kcal or lesser day visceraladiposetissue (VAT) fat accumulationin the intraabdominal(under the peritoneum)cavity white adiposetissue (WAT) repository for triglycerides;a cushionto protect body organsand an insulatorto preserve body heat yo-yo effect the processof losing and gaining weight several times throughout a lifetime; often characterizedby increasedfatnesswith eachcvcle Body weight is the sum of bone, muscle, organs, body fluids, and adipose tissue. Eventual adult height : 67 in. 489 490 P A R T3 N u t r i t i o nC a r eP r o c e s s People are motivated to change through their ability to manage their own behaviors. thinkculturalhealth. Exercise Developedby L. o Aim for a normal blood glucoselevel. Rich MW: Of6ce managementof heart failure in rhe eldeily,Am J Med ll8:342,2005. Becauseof their LDl-lowering effect, stanols or sterols may be helpfrrl and allow for lower statin doses (Goldberg et al., 2006; Vorlat,2003; Wenke, 2005) (seeChapter 32). Thpe the tube in place after every advancement. "Tell me why you picked on the ruler." (Referto previousdiscussionon the useof a ruler.) o ".Whatwould haveto happenfor you to move from a to a - (referring to a number on the ruler). Rangesrepresentinitial doseto maximum dose Titration may be indicated, depending on each patient's therapeutic response. Seealso Laborfiory data nutrition, 390-405. Iodine deficienry can cause mental retardation, hypothyroidism, goiter, and varying degrees of other grovth and developmental abnormalities. Make sure to check out the section of full HD wallpaper curated for specific phone models and brands. Alter food and liquid textures accordingly to improve chewing and swallowing capability. The overall 23o/" increasein sugar consumption in recentyearsis largely a result of an increasein corn sweetener intake, 45"/" in beverages,18% in cereal and bakery products,and llTo in confectionaryproducts.Kantor (1998) and Guthrie and Morton (2000)reported that regular soft drinks accountedfor about one third of the approximately 82 g of addedsweetenersper day consumedby Americans 2 yearsand older. Besides blood glucose control, dietary management for people with diabetes after any oral surgeryprocedures and or placement of dentures should include modifications in the consistency. Examples include omega-3 and omega-6 fatty acids (decreasing the production of bronchoconstrictive leukotrienes), antioxidant nutrients (protecting the airway tissues from oxidative stress), the cation magnesium (a smooth-muscle relaxant and antiinflammatory agent), and methylxanthines such as caffeine (a bronchodilator). Lactations A striking but ffansient bone loss occurs in women who breast-feed for 6 months or longer, especially from the femoral neck and lumbar spine. a9 8.E \-oE !qo c>= OE st 6 bo oo o m f'l Y bo o bo t. What tips about activity will you share with Nell? Patients who are treated and have a decreasein qrmptoms are not likely to be permanendy "cured." Prolonged erosive diseasecan result in esophagitis (inflammation of the esophagus),esophagealerosions, ulceration, scarring, stricture, and, in some cases,dysphagia (seePatbophysiolog'anl Care Managemmt Algorithm: Esophagitis). Magkos F et al: Organic food: nutritious food or food for thought? Nutritional depletion may be evidenced clinically by low body weight for height and reduced triceps fat-fold measurements. Potential interaction with foods. Insulin releaseis also stimulated by gastrointestinalhormones,vag-usnerve activity, and certain drugs (e.g., glucotrol, an oral hypoglycemic agenr).Insulin binds to receptorson muscle and adiposecells and facilitatesglucoseentry through specialized,GLUT 4 transporters. SebastianA: Dietary protein content and the diet'snet acid load: opposingeffectson bone health,lrn J Clin Nutr 82:921,2005. Chemically defined formulas are as hish as 900 mOsm/L. Jwo notation conventions are used to describe the location of the double bonds Table 3-5. Seealso Minertls definition, 41 macronutrients, 42-67 amino acids and proteins rc, 59-65. Increasing emphasis is being placed on determining the wayvarious environmental factors influence whether individuals develop diseases to which they are susceptible. What healthy snacksmight Bob have in the evening? Seea/soGestational diabetes mellirus immune-mediated, definition, 765 individuals with, eating disorders, 568 in pregnancy, 183 lipids, recommendations, 775t management, 773-786 medical nuririon therapy, 775-779 m e d r c a t l o n s /, 6 1 - / 6 + monitoring, 785-786 physical activity/exercise , 779-7 8l diabetes mellitus (DM) (Continued) medical nutrition therapy, 77 5-7 79 carbohydrates, vage, 776 fiber, usage,776-777 for older adults, 789-790 glycemic indexin,776 glycemic load in,776 goals,773b goals and outcomes of, 775 in children and adolescents,TST-788 in pregnancy, 788-7 89, 7 88t nutrition assessment,7 90-7 91, 7 glb nutrition care process, 790-797 nutrition diagnosis, 79 l, 7 92b nutrition intervention, 79 | -7 9 5 oral manifestations, 648 pathophysiology, 766-7 7 1 preexisting, pregnancy and, 788 prevalence, 766 screening criteria, 77 | -7 72 sick day guidelines, 799b t'?e I care management algorithm for, 7 68f characteristics, 767t immune-mediated, 7 68-769 medical nutrition therapy interventions for, 786 pathophysiology, 766, 7 68-769 qpe2 care management algorithm, 770f characteristics, 767t exercise (usage), precautions, 780 medical nutrition therapy interventions foq 786-787 pathophysiology of , 769, 770f diabetic ketoacidosis (DKA), 798-7 99 definition, 764 diabetic retinopathy, 294 definition, 286 diacylglycerols, 59 definition, 40 Diagnostic and Stntistical Manual of Mental Di sorders, 7R-12 (D SM-TR-M on anorexia nervosa, 564 on bulimia nervosa, 566 definition, 561 dialysate definition, 92 1 in peritoneal dialysis,9ll-932 dialysis for end-stagerenal disease,9lI-93+ renaf diet, 1266-1270 diarrhea, 677-679 complicating enteral nutrition, 5 I 5 complicating HfV disease,1014 causes,10l5t nursing interventions for, 1016t definition, 673 drugs causing, 445b extdatwe,677 malabsorptive, 677 -678 medical nutrition therapy, 67 8-67 9, 678t medical ffeatmenr, 678 medication-ind.uced, 67 7 osmottc,677 pathophysiology, 677 -67 I secretory,677 diary food and syrnptom, definition, 739 food in dietary hisrory,395-397,396 Index L3L7 diastolic blood pressure(DBP), 866 definition, 865 didanosine (\4dex), nutritional complications, I 002t dideoxyinosine (Videx), nutritional complications, 1002t DIDS (distal intestinal obstruction syndrome), definition, 899 Diet, Nutrition and Cance4318 Diet and Health Knowledge Survey (DHKS), 3t4-3t5 dietaryApproachesto Stop Hypertension (DASH) Diet. Substituting one or two daily meals or snacks with meal replacements is a successful weight loss and weight maintenance strategy (ADA, 2007). In adults within the normal physical activity index range, the time spent at activities with low and moderate intensiry determines the physical activity level; high-intensity activity is not required to increase overall acdvity energ'y expenditure (Westerterp and Plasqui, 2004). (.) h Y E () 0.) 't I r-: I- d d .H (.) q C] lr X o h Rq) tlr 9= EIJ d q C): FY A'n 90 o. Lowbonemineraldensity . Recendy it was demonstrated that weight loss lowers CRP (Tchernof et al., 2002), which provides another physiologic benefit for weight management as a preventive strategy for CHD reduction. EFA deficiencies may be present, even among patients who are treated adequatelywith pancreatic enz',rnesto control malabsorption. Shewill require specializednutrition support for severalmonths until her body adaptsto the shortened bowel. Chewing, swallowing, salivation, and taste acuity are often affected. CotroneoMS et al: Genisteinaction in the prepubertalmammary 23:1467, gland in a chemopreventionmodel, Carcinogenesis 2002. amyotrophiclateralsclerosis SeealsoArnyotrophiclateralsclerosis (ALS) 1090 epilepsyas,1087-1088, Guillain-Barr6syndromeas, 1090-1091 migraineheadacheas,109l-1092 as,1093-1094 multiplesclerosis rnyastheniagravisas, 1092-1093 neurotraumaas,1096- | 097 Parkinson'sdiseaseas, 1094-1096 spinaltraumaas,1097-1098 neurologicfunction, in older adulthood, 293-294 in AIDS, 1006 neuromusculardiseases, neuropathy diabetic,801-802 peripheral,1068 definition,1068 neuropeptidehormones,gastrointestinal,7-8 role of, 8b neuropeptideY, in bodyweight regulation,536t neurotensin,actions,7t neurotransmltters actions,7, 7t gastrointestinalrole, 8b in body weight regulation, 536, 536t neurotrauma,1096- 1097 neutral thermal environment,definition, 1117 neutron activationanalysis,in body composition 404 assessment, neutfopenla definition, 960 from hematopoietic stem cell transplantation, dietary precautions, 980 in chemotherapy, 974 nevirapine fl4ramune), nutritional complications, 1003t newborn, hemorrhagic disease definition, 199 vitamin K deficiency and, 205 newborn, screening, for metabolic disorders, tt42-tr43b Food Consumption NFCS Q.trationwide Survey),314 NFV (\,4racept),nutritional complicationsof, 1005t NHANES (fJationalHealth and Nuuition ExaminationSurvey),314 niacin,86-88 qhcnmtinn R6 bioqmthesis, 86, 86f deficienry, 87-88, 88f definition, 41 dietary referenceintakes, 87, 87t functions, 70t, 87 metabolism, 87 requrfements in adolescence,252t, 253t sources,87, 99t stability and RDA for adults, 99t Index L337 nia,cin (Continued) storage, 86-87 toxicity, 88 transport, 86-87 vitamers, 70t nicotinamide, 86-88 nicotine, resting energy expenditure and, 26 nicotinic acid, 86-88 in cardiovascular diseasemanagement, 860t night blindness definition,4l from vitamin A deficienry, 73 night eating slmdrome (NES), 566 definirion, 563 nipple-feeding, for infants, ll29-1I30 nitric oxide actions of, 7t definition, 814 production, decreased,in atherosclerosis, 83 5 nitric oxide Q{O), ergogenic aid, 605t nitrite, in urinalysis, expected value/significance, +l7t niuogen balance, 64-65. For example: Client: "I gave up trying to meet my dietary goals becauseI was having some difficulties when my husband died, and I have decided now that I just cannot meet those strict goals." Nutrition Counselor:"I remember how devastatedyou were when he died and how just cooking meals was an effort. Protein obtained from animal sources means that fat, saturated fat, and cholesterol intakes are high. MB is 17 yearsold. Iron, zinc, copper, manganese' and boron may function in bone cells, but their specific roles in preventing bone loss are not well established.In one study the supplementation of several trace elements (copper, fluoride, manganese, and zinc) along with calcium for I year resulted in a reduced loss of lumbar BMD compared to the greater loss in a control group receiving only calcium Q'{ieves,2005). Historically, in institutions where patients required complex and sophisticated nutrition support, nutrition support teams or serviceswere often developed with patient care provided by a team consisting ofphysician, dietitian, pharmacist, and nurse specialist. Medical nutrition therapy is the key to improving the quality of life for thoseindividualswho havealready developeda diseasebecausespecificnutrientswill be usedto alter biochemicaloutcomes. Good oral hygiene habits are important in reducing the risk of tooth decay and should be practiced after all meals and snacks. The NSD and a preexisting nasogastrictube (NGT), remove it. Seeafto Niacin nutritional facts, 1287 -1294, 1295-1296 parenteral comparison, 519t for premature infants, I 124-1125, ll25t requlrements i n a d o l e s c e n c e2,5 2 , 2 5 2 t , 2 5 4 i n c i r r h o s i s ,7 2 I- 7 2 2 , 7 2 2 t vitamin(s) (Continael) in COPD, 908 in end-stagerenal disease,943-944 in headinjury 1033 in HfV disease, 1011 in infancy,205-206 in infantswith bronchopulmonary dysplasia,906 in infantswith chronic lung diseaseof prematurity,906 in lactation,187 in majorburns,1036 in metabolicstress,1030 in older adulthood,100 in pregnancy,173-175 in respiratoryfailve, 917 snmmary 97-l0lt water-soluble,82-97,98-I00r summaryof, 98-101t \{LBW (verylow birth weight), definition, I I 17 VLCD (verylow-caloriediet), definition, 533 VLDLs (verylow-densirylipoproteins), definition,834 Vo2max,590-591 definition, 587 volumetrics,in obesitymanagement,549 vomiting.SeeNauseaandvomiting tf'r= waist circumference definition, 383 in body compositionassessment, 402,403f in overweight/obesityassessment, 539-540 warfarin (Coumadin),nutrient interactions,441, 452b water doubly labeled,definition, 22 elimination,147 fluoridation,643b intake, 146 loss insensible,147 definition, 144 sensible,147 definition, 144 metabolic,146 percentage,in commonfoods, 147t requirements,147-148, l49b in infancy,204,204t in older adulthood,300 water(body),l+5-148 balance,146-147,l46t distribution, 145-146 extracellular,definition, 144 functions,145 inuacellular,definition, 144 waterintoxication, 146 definition, 144 watersafeqr,330-332 for,332t resources water-solublevitamins,82-97 summaryof, 98-101t waxystarch,45 WBC (white blood cell count),referencerange/ significance,416t WC FarmersMarket Nutrition Progtam (FMNP),324t weaning,from breastor bonle to cup, 2 15 weighing, tnderwater, 24-25 403 in body compositionassessment, L352 Index weight-for-age curves, 399 definition, 383 weight-for-length curves, 399 definition, 383 weight(s) birth c l a s s i f i c a t i o n1, 1 1 8 b , 1 1 1 9 f maternal size and, 163 perinatal mortality and, 163 bone mineral content end,620 carcinogenesis and,963 cycling, in obesiry management, 556 desirable,adjustment of, for amputees,1214 gain factors affecting,540-541 maternal, 163-164,164f, l65t imbalance, 538-542,5i8f, 539f, 540t, 557-558, 560b in nutrition assessment,400 in nutrition care ofcancer p^ient,g72 interpretadon, in nutrition assessment,399, 399b longevity and, 539 loss in AIDS, 1008-1009 in hypertension management, 874 in hypertension p..t..,tion, 870-871, 871t in medical nutrition therapy, for cardiovasculardisease,859 maintenance of, 554-555 natural aids for, 552b plateau effect in, 555-556 ratelextent, 544 unintentional,55T-558,560b maintenance in hean failure, 892-893 in older adulthood, quality of life and, 296-297 management in athletes, 593-599. Laparoscopic or fluoroscopic techniques are used in some facilities and offer alternative options for enteral access Q.{ikolaidis, 2 005; Olivei ru, 2003). Block KI et al: Impact of antioxidant supplementation on chemotherapeutic eflrcacy:a systematicreview of the evidence from randomized controlled ttials, CancerTreat Rea, epublished, May,2007 (in press). Adipose TissueStructure Adipose tissue is located primarily under the skin, in the ODYWeIGHTGorvrPONENTs mesenteries and omentum, and behind the peritoneum. Based on the NHANES III survey, the prevalence of high blood pressure in persons with a BMI greater than 30 kglm2 is 42"/" for men and 387" for women, compared with 15% for men and women with a normal BMI (95th percentile for age,sex,and height. Meetincreased ener!ry rcquirements . Very low-fat diets are those containing less than 10% of calories from fat, and low-fat diets contain l0'/" to 19% of calories from fat (Freedman et al, 2001). In addition, the patient is advised to consume a high-calcium food (150 mg of calcium to bind 100 mg of oxalate) at the same time to reduce oxalate absorption from the higher oxalate-containing foods in the meal (Meschi et a1.,2004; Massey, 2003) (see EVOL\IE website "Inrervention Tools: Kidney Stones and Oxalate"). Provide clear directions for water flushing of the tube and for water requirements. This provided 3060 calories and 124 g of protein per day. Oral cancer, often a result of tobacco and alcohol abuse, can have a significant impact on eating ability and nutrition status. Eggs can also be combined with meat or milk. Ra c ea n dEt h n i c i ty Whites and fuians suffer more osteoporotic fractures than blacls and Hispanics, who have a greater bone density (Siris et al, 2001). fPhysical activity level (PAI) is the physical acrivity level that is rhe rario of the total energy expenditure to the basalenergy expenditure. Control of water excretion is regulated by vasopressin, formerly known as antidiuretic hormone, a small peptide hormone secreted by the posterior pituitary. Surgical gastrostomy tubes have virnrally tlle same use as PEGs (Ifitby et al., 1998; Shike and Bloch, 1998). ld Adequate intake APPENDIXES 1299 Iron is a nutrient found in fface amounts in every cell of the body. The roles of calcium and vitamin D relate to the link between osteoporosis and periodontal disease,in which bone loss is the common denominator. Postmenopausil or estrogen/androgen deficient(type t) osteoporosisoccursin women within a few yearsof menopause,andit primarily involveslossof trabecularbonetissue becauseof a cessationof ovarian production of estrogens. This can increase iron content up to 30 times. Each classof lipoproteins actually representsa continuumof particles. General guidelines for daily requirements for electrolytes are given in Thble 20-2, for vitamins in Table 20-3, and for trace elements in Thble 20-4. (FNS) Food and Nutrition Service on-line: Nutrition assistance prl gra,ms,Washington, D C, 2004, USDA, http ://www. An example of an opening to generate discussionwith the client follows: "I can see why you're unsure about making new or additional changes in your eating habits. Each class has a different mechanism of action: in the pancreasinsulin secretion is stimulated; at the cellular level (muscle and adipose tissue) insulin resistanceis decreased,and glucose uptake enhanced; in the liver hepatic glucose output is decreased,especially overnight, improving fasting glucose levels; or in the intestine glucose absorption is slowed, improving postprandial glucose concentrations. Provide clear directions for gradually increasing to the goal feeding rate. Caries prevenrion efforts in preschool children include diet modificarion, water fluoridation or supplementsin nonfluoridated areas,and supervised toothbrushing with fluoridated roothpaste (Tinanoff,2002). Cariogenic foods are rhose that contain fermentable carbohydrates, which, when in contact with microorganisms in the mouth, can cause a drop in salivary pH to 5.5 or less and stimulate the caries process. Under DSHEA the physiologic effects of a product can be noted, but no claims about prevention or cure of specific conditions can be made. Andrassy RJ, Chwals W]: Nutritional support of the pediatric oncology patient, Nutrition 14:124, 1998. 1228 APPENDIXES D. The DV for vitamin E is 15 mg a-TE. Blood supply to dialyzel Fislula (anastomosis ol arlery and vein shunting arterial blood into vein) Loopedgraft Antecubitalvein Dialysis Dialysis can be accomplishedeither by hemodialysisor by PD. Therefore chromium supplementation is not recommended unless the individual's intake of chrornium does not meet the DRI of 20 to 25 mcg/day (ADA, 2006b). Some species ofmillet and cruciferous vegetables (e.g., cabbage, broccoli, cauliflower, and Brussels sprouts) contain goitrogens; and the soybean isoflavones genistein and daidzein have also been found to inhibit thyroid hormone srrnthesis.Most of these goitrogens are not of clinical importance unless they are consumed in large amounts or there is coexisting iodine defi ciency. Although CF remains one of the most common lethal genetic disordersprevalent in white persons,it is expressed in other population groupsaswell. o Avoid use ofand exposureto tobaccoproducts. What other factors should be identified as part of your nutritional assessment? Examples include weight lifting and exercisesusing resistance-providing machines. 380 PART 3 i NutritionCareprocess aria is in her early thirties and planning to have a child before too long. Dobson KS: Handbookof cognitiae-bebaioral therapies,New York, 1998,Guilford Press. Therefore it is a challenge to communicate sensibly and effectively to promote health, relieve discomfort, and save lives (Robinson, 2002). Following transplantation, many patients exhibit hypophosphatemia and mild hlpercalcemia caused by bone resorption associatedwith persistent hlperparathyroidism and the effects of steroids on calcium, phosphorus, and vitamin D metabolism. SeeOlder adulthood electrolyte(s), | +8 -I 52 calcium as, 149-150 definition, 1'14 in enteral formulas, 514 in major burn management, 1033 m a g n e s i u m a s , 1 5 1 - 1 5 2 milliequivalents and milligrams of, ll99t parenteral, for premature intants, 1124, l l 24t phosphorus as, 152 potassium as, 152 requrrements i n H W d i s e a s e1, 0 1 I during total parenteral nutrition, 519t serum concentration, 150t reference range and significance of,4l5t sodium as,150-151 electrolytically reduced iron definition, 199 in dry infant cereals, 2 13 electronic health records (EHR$, 460 (ES), ergogenic aid, Eleutherococats senticosus 604t elimination diet definition, 739 food, in food allergy diagnosis,750-751,752t ELISA (enzymelinked immunosorbent assay), food allergy diagnosis, 750t ELSI (ethical, legal, and social implications) definition, 364 of geneticsresearch,367,368b embolic stroke, 1079 definition, 1067 Emergency Food and Shelter Progtam (EFSP)' 322t The Program, Emergenry FoodAssistance (TEFAP), 303,322t emotions, effects, childhood hunger on,212b empathy definition, 489 expression, in facilitating behavior change, 494-495 emphysema, 907 definition, 899 emfficitabine (Emtriva), nutritional complications, 1002t Emtriva (emtricitabine), nutritional complications, 1002 t enamel, definition, 636 encephalopathy hepatic, 7!2. Also recendy, many women have been exploring the use of phytoestrogens and other plant products as substitutes for estrogens, but these extracts ofnatural products have not been established as being effective in diminishing bone loss by randomized conuolled trials. Gastrointestinalmotility should be assessedbecausediarrheacan coexistwith constipation,usually when there is alsoan impaction. Climt:Ijust feel that my level of enthusiasmfor following the diet is low It all seems like too much effort. Wotecki CE: IntegratedNIIANES: usesin nationalpolicy, J N u t r l 3 l : 5 8 2 S2, 0 0 1 . The adsorbed water makes glycogen a large and cumbersome molecule, unsuitable for long-term energ'y storage. MedicalNutritionTherapy Worldwide research results remain controversial but encouraging, and food and individual nutrients are being studied for possible roles in the etiology or treatment of asthma. It is on thosedaysthat I do very badly in following my diet." Nutrition Counselor: "You just lose the desireto try to eat well on somedaysand that is very depressingfor you. Studies on the composition of excessweight gained showed that the LBM of the body accounts for an average of 29"/" of the excessweight in the obese person (Pierson et al., 1997). SchleithoffSSet al: Vitamin D supplementationimproves cytokine profiles in patients with congesrivehean failure: a double-blind,randornized,placebo-controlledtial, Arn J Clin Nut83:754,2006. Published data on the glycemic indexesof individual foods, using white bread and glucoseas referencefoods, have been consolidatedfor the convenience of users. SeeFemales Women, Infants and Children QVTC),32+r knowledge deficit about, 334b X xanthomas definition, 814 "J,iild;l,lf;ll:i;:ffi^"EJo,*, xenobiotics, definition, 366 xerophthalmia definition, 42 from vitamin A deficienry, 73 xerostomra from chemotherapy,9T\ definition,286,636,960 dental caries and,642 in older adulthood, 292 medications causing,648b nutritional consequences,647 -6+8 Xers definition, 286 goals,287 X-linled dominant, definition, 366 X-linked dominant disorders, 374 X-linked recessive,definition, 366 X-linked recessivedisorders, 374 V Yersiniaenterocolitica,329t Y-

linked inheritance. While a listing of efficacy and safety issue of select supplements is provided in the form of Cochrane databasereviews in this chapter (see Table 18-3), but the listing is somewhat limited. The Healthy Eating Pattern is the template for the DASH eating pattern, with inclusion of Vt to I serving of nuts, seeds, and legumes daily, limited fats and oils, and use ofnonfat or low-fat milk. Starchesfrom different plant sourcessuch as corn' arrowroot, rice, potatos,tapioca,and other plants are all glucose polymers with the same chemical composition. Another type of peritoneal dialysis is continuouscyclical PD (CCPD). low proximal femur alsodisplay (type 2) ocursaround age70 Age-rclatedosteoporosis and beyond,and it affectsboth sexes;older men areincreasingly at risk for hip fractures.Both types of bone tissue, cortical and trabecular,undergo remodeling, but the greater degreeof remodelingoccursin trabecularbone.In the elderly period the processor bend resorption and bone formation becomesuncoupled. HDL cholesterol increases, and triglycerides frequently decreasewithTZD therapy. *Daily values (DVs) are reference nmbers based on the recomended dietary allowmce. Late-1980s: The gene for phenylalanine hydroxylase deficiency (MIII No. 261600)is located on chromosome 12q22-q24.1.Deoxyribonucleic acid mutation analysiscan be accomplishedwith peripheral leukocytes. BraamLA et al: \ttamin K1 supplementarionretardsbone lossin posffnenopausal women berween50 and 60 yearcof age,Calcif TusueInt 73:21.2003. This problem is compounded by the increased caloric and nutrient needs of persons with oral carcinomas. Hence the formation of different types of fermentation products or the presence of substancesin the food may reduce or enhance the caries-producing action of a sugar. These types of behavior can occur within a counseling session as clients move from one stage to another. Animals including humans can only digest and absorb amino acids. Focus on negative outcome of choices . Addictions . These two aspectsof protein intake-high versus lowon bone health can be explained by two distinct metabolic actions of proteins and their amino acids: an anabolic effect on bone and a catabolic effect on bone resulting from the generation of acid. Fatigue is one of the most common symptoms reported by individuals with cancer and is often characterized as physical tiredness, mental slowness,and lack of emotional resilience. Carbohydrates,protein, fat, fiber, and minerals... Surg236:369,2002. r urrLuurrdrrry definition, 286 ofolder adults, quaiity oflife and, 296 functions, of vitamin A,, 7 0r, 7 1, 7 lf fundoplication, definition, 654 fungal infections, oral manifestations, 647 Fuzeon (enfuvirde, T-20, ENF), nutritional complications, 1003t G G6PD (glucose-6-phosphate dehydrogenase), deficiency, food-drug interactions, 43 5 galactose definition, 40 dierary,43 sweemessvalue, 43t galactosemia,374, ll45t definition,1l4l food reactions, 745t medical nutrition therapy, 1162-1163, 1163r pathophysiology, 1162, Il62f gallbladder, 728-731 diseases, 728-731 acute cholangitis as, 729 cholecystitis as, 729 functions, 728 physiology, 728 gallstones,728-729 gamma glutamyltransferase, serum, reference range/significance,4l 5t 1-tocopherol as oxidative stress marker, 427t gamma-linolenic acid ... in, 901 gastrectomy definition, 654 for stomach cancer, 665 gastric acidity, factors, 665b gastric banding, 553, 55+l gasuic b)?ass, 553, 554f definition, 532 diet progression after, 551, ... 6 in lipid digestion, 17 gastric ulcers, 662, 66+f de{inition, 654 s;'rnptoms/nutritional consequences,655t gastnn definition, 2 functions, 7-8, 9t gastnus acute,661 atrophic, 660 definition, ... elemental diet for, 751 gastroesophageal reflux disease(GERD) definition, 654 medical management, 656, 658 medical nutrition therapy, 65 8-659 nutrition care guidelines, 658b patlrophysiology, ... gastrointestinal (Gf) antispasmodics, with anticholinergic effects, 443b gastrointestinal (GI) decompression definition, 506 in enteral nutrition, 507 gastrointestinal (GI) system, in AIDS, ... medical nuuition therapy, 673-706 surgery 698-702 lower, disorders colon cancer as, 697 -698 constipation as, 67 5-67 7 diarrhea as,677-679 diverticular diseaseas, 696-697, 696f, 697f ... from the calculatedappropriate adult weight. Dried beans and peas are a good source ofprotein and fiber. The omega-3 and omega-6 fatty acids have also been found to serve as ligands ... glucose homeostasis; and cell proliferation and differentiation, especially of adipocytes; and the formation of foam cells from monocytes. By 2006 cumulative deaths in the United States ... heart failure,Am J Card,iol93(strypl):4I A,,2004. dith is an 8O-year-oldwhite woman with HE She was hospitalizedwith SOB, a weight loss of l0 lb in 3 weeks, and tachycardia.She is 4' 10 ... strategies it into incorporate client can so that the knowledge life. govlhgmis/project/info.htrnl; Venter et al, 2001). DHEA is supposedto promore weight loss. C H A P T E R3 , T h e N u t r i t i o n a l C a r e P r o c e s s ... gastrointestinal (GI) enzyrnes,whereas functional fiher refers to nondigestible carbohydratesthat have been extracted or manufactured from plants. Similarly, compromised nutrition status ... minerals (H""i et al., 2003; Sheiham et al., 2001). It is taking the client from where he or she is currendy to where he or she wants to be. However, her continuing low measurementsconcerns ... Thus, tumor response to chemotherapy and radiation therapy, muscle strength, immune functions, and the development of major infections are all reported to be associated with the preoperative nutritional status of the patient. Pressure ulcers ... The feeding and nutrition concerns of children with mental retardation or developmental disabilities are addressed in Chapter 45. The management of the nutritional care of the patient with COPD involves ... (H*'l et al., 2003; Sheiham et al., 2001).

[illegible]

Metastasisof headand neck carcinomato the site ofpercutaneousendoscopicgastrostomy:casereport and EnteralNutr25:282,2001. This process ideally takes 2 to 3 days; however, it may become more complicated, depending on the degree of gastrointestinal function. Consumers can be guided to peel and chop fruits, vegetables, and other foods to reduce the need for biting and chewing. Its ability to form a large concentration gradient between its inner medulla and outer cortex allows the kidney to excrete urine as dilute as 50 mOsm or as concentrated a 1200 mOsm. Registered dietitians and other health professionals are essential translators of food, nutrition, and health information into food choices and patterns; they can work together to develop eating patterns and habits that promote health. The client is not expected to be ready to the visit (see Nutr Directions:The RD Counselor as Life Coach). Studies have shown that cheese and milk, when consumed with cariogenic foods, help to buffer the acid pH produced by cariogenic foods (Marshall et al., 2003). Becausebone health of women especially is influenced by three major interacting factors-diet, exercise, and estrogen-it is never too early or too late to prevent or lessen the onset and severity of osteoporosis by ensuring adequate intakes of calcium from foods (and supplements); adequate intake of vitamin D either from sun exposure or foods or supplements; engaging in regular weight-bearing exercised and, if necessary taking bone-conserving drugs. The FDA concluded that, although a small study suggestedthat chromium picolinate may reduce the risk of insulin resistance, the existenceof such a relationship between chromium picolinate and either insulin resistance or type 2 diabetes is highly uncertain. To reduce the risk of infection, the catheter lumen used to infuse CPN should be reserved for only that purpose. Safety is associated with the postprandial state when exercised is being stressed. [illegible] requirements, additional calories to support the deposition of tissuesneeded for growth are required for infants and young children, children ages 3 through 18, and pregnant and lactating females;thus the EER among thesesubsetsof the population is the sum of TEE plus the caloric requirementsfor energy deposition. In 1983 researchersisolatedthe etiologic retroyirus and named it human immunodeficiencyvirus (HIV). Exercise helps all persons with diabetes improve insulin sensitivity, reduce cardiovascular risk factors, control weight, and improve well-being (AD,\ 2004a). Mueller C, Nesde M: Regulation of medical foods: toward a rational policy, Nutr Clin Prna 10:8, 1995. 1987: Techniquesfor carrier detection and prenatal diagnosisofPKU are developed. In persons with type 2 diabetes, blood glucose control can improve with exercise, largely because of decreasedinsulin resistance and increased insulin sensitivity, which results in increased peripheral use of glucose not only during but also after the activity. Nutrition Diagnosis: Underweight relatedto energy intake lessthan requirements as evidencedby weight approximately 20 lb lessthan desired 1. M o n o s a c c h a r i d e s Monosaccharides do not normallyoccurasfreemolecules in naturebut asbasiccomponentsof disaccharides and polysaccharides.Only a smallnumberof the manymonosaccharides found in naturecanbe absorbedandusedby humans.Monosaccharides canhavethree,fou5 five,six,or sevencarbons,but the most important monosaccharides in the human diet are the threesix-carbonhexoses: glucose,galactose, and fructose. There are The CounselorLooks Within p efore entering a counseling relationship, the counselor lJ should look inward and consider how the following factors affect his or her own thinking and how they impact the client: Relationship Between Senseof Self and Life Choices r Personalattributes for healthy change r Extrinsic versusintrinsic motivation . Some osteocalcin is also secreted by osteoblasts direcdy into the circulating blood. Florida PeterL. risk of infection because the tunnel creates a barrier between the entry of the catheter into the skin and into the vein. PierceJP et al: Women's Health and Living ('\A{HEL) study group: a randomized trial of the effect of a plant-based dietary pattern on additional breast cancer events and survival: the Women's Health and Living 0 ,IHEL) sudy, Contol Clin Thials 23:728,2002. In 1998 the NIH released Clinical Guidelines on the Identffication, Evaluation, and. $A water samplefrom the padent'shome water supply should be analyzedfor copper content. 5 - 6 1 . Commercial Programs Millions of Americansturn to commercialweightJoss or self-helpprogramsin searchof permanentweight loss.The more caloric-restrictedprogramsare usually medically supervisedin a health care setting. On a scaleof 1 to 12, to what extent would you sayyou are meeting your goal of changing your diet in the past month? For more details on counseling skills for dietitians, use the latest Nuuition Care Process tools from the American Dietetic Association. The limits on alcohol to no more than two drinls per day for men and one drink per day for women are made because alcohol also raises blood pressure (AI{A, 2006a). Sex-LinlT gene variant, which involves substitution of thymine for cytosine at position 677. Hospice care focuses on relieving symptoms and supporting individuals with a life expectancy of months, not years (NHPCO, 2006). Limit between-mealeadng and drinking of fermentable carbohydrates. He uses "natural" herbs from the local health food store. "The purpose of this visit is to see how you are doing in covering your dietary carbohydrate intake with insulin." . C o n t i n u oDursi p Gontinuousdrip infusion of formula requiresa pump. J Am DietAssoe GermanJB et al: Personalmetabolomicsasa next generation nutritional assessment, t Natr l33 :4260,2003. Maintenance of healthy bone requires exposure to weight-bearing pressures. What are the social,lifestyle, and environmental influencesthat are affecting Shelly'sdental and nutritional health? In Charney P, Chicago, 2004, Malone A, editors: Nutrition assestrnent, American Dietetic fusociation. Although most exercise studies have been conducted on healthy young adults, those that have been performed on older adult men and women have generated some impressive data @allace and Cumming, 2000)' The difficulty with these studies is keeping up participation. Potischman N et al: Increasedrisk of early stage breasrcancer related to consumption of sweet foods among women less than age 45 in the United States, CancerCazuesCinrrol 13:937,2002. These meal replacementscan be found over the counter in drug stores,supermarkets,and franchisedweight loss centers or in a clinical setting as drinks, pre-packagedmeals (entrees),or meal bars.They are designedto be part of a low-caloriediet. Feeding is started at one quarter to one half the goal rate and advanced every 8 to 12 hours to the final volume. pyhri organism results in a chronic inflammatory state. Russell M, Malone A: Nutrient requirements. The PPARgamma isoform is the best studied to date and plays a critical role in adipocyte differentiation and gene expression. In poorly controlled qpe 2 diabetes, gluconeogenesis is also accelerated and may account for most of the increased glucose production in the postabsorptive state. HathcockJN et al: Risk assessment for vitamin D, Am J Clin Nutr 85:6,2007. Lipoproteinsmeasuredin clinicalpractice(i.e.,chylomicrons,very low-densitylipoproteins [VLDLs], LDLs, and HDLs) consistof varying amounts of triglyceride, cholesterol,phospholipid, and protein. All drugs are recommended to be taken along with calcium supplements (500 to 1000 mg of calcium per day) and vitamin D (approximately 400 to 800IU per day) for the purpose of meeting the needs of calcium for bone formation. It also may follow ischemic stroke or subarachnoid or tialamic hemorrhage. Kumpf I et al: Parenteral nutrition formulations: prepararion and ordering. What has become obvious is that, although people's genetic makeup sets the stage for one's susceptibilities to various illnesses, environmental factors such as nutrition and other lifestyle choices determine who among the susceptible actually develops a disease.The role of nutrients and other biologically active food components on gene expressionis the focus of an exciting field of nutrition called nutritional genomics, often shortened to "nutrigenomics." Genetic research is rapidly clarif ing the association between genes and physiologic function. Interestingly, turmeric may actually inhibit adhesion of H. Nutritiot L. Health status/healthhistory-include lifestyle habits (e.g.,smoking, alcohol, exercise) o Biochemical profile, laboratory data r Prescribedand OTC medications o Clinical response . Drug-nutrient interactions of medications commonly Malnutrition adversely affects lung structure, elasticity, usedin pulmonary disease,suchas bronchodilators,antibiand function; respiratorymusclemass,strength,and enotics, steroids,and diuretics, are describedin Chapter 16 durance;lung immune defensemechanisms;and control and in Appendix 31. Strategies such as putting down tlle utensils between bites, pausing during meals, and chewing for a minimum number of times are some ways to slow the eating process. USDHSS: Dietary Guid.elines for Amerieans,ed 6, fromhttp:// u'ww.healthierus.govldietaryguidelines, accessedMay 30, 2006. Monitoring metabolic and gastrointestinal tolerance, hydration status, and nutritional status is extremely important for the tube-fed patient; Box 20-3 gives guidelines.Fractice guidelines, institutional protocols, and standardized ordering procedures are helpful to ensure optimal, safe provision ofenteral nutrition support. Enamel Dentin Demineralized enamel Fermentable Tooth Susceptible The development of dental cariesrequires the presenceof a tooth that is vulnerable to attack. GyllenstenU et al: Paternalinheritanceof mitochondrialDNA in mice,Nature352:255,1991. Research has documented its ability to reduce cariesincidence by reducing the levels of S. Primary hyperoxaluria is a feature of an autosomal-recessive genetic defect of a hepatic enz).rne that results in overproduction of oxalate and a urinary oxalate concentration three to eight times the normal rate. However, these methodsrequire more labor and increaserisk of microbial contamination that may discouragefacilities from using modular compoundingsystems. J Periodontol Nowjack-Ra1'rner RE, SheihamA: Associationof edentulismand diet and nutrition in U.S. adults,/ Dent Res82:123,2003. SeealsoInflammatory bowel diseases Crohn's disease,contrast, 690f, 690t definition, 674 ulcer(s) d u o d e n a l ,6 6 2 , 6 6 4 f definition, 654 q,'rnptoms and nutritional consequences of, 655t gtsrric, 662, 664f definition, 654 sFnptoms and nutritional consequences of, 655t peprtc, 662-665, 664f definitron, 654 pressure definition, 286 in older adula, 294 stages,295b stress,663-664 UL (tolerable upper intake level), definition, 337 ultrafiltrate definition, 922 production, 922 ultrasound in body composition analysis, 405 in bone measurement,620 ultratrace elements, 102 definition, 42 ultratrace minerals, 127- | 35. Appropriateweight for adult height : l00lb + 35 lb : 135 lb Number of years of growth remaining : 15 years (agewhen the mother reachedadult height) - 8 years [presentage] : 7 years (L22-148 lb) - 90 lb (presentweighQ : 32 to 58 lb to be gained over next 7 years Approximate rate of weight gain : 5 to 8 lb per year for the next 7 years The BMI tables for determining childhood obesity are available for use by health care practitioners (see Appendixes 12 and 16). Patients with advanced forms of congestive heart disease or hepatic impairment should not receive TZDs. toglitazone (Rezulin), the first approved TZD, was removed from the market because of hepatocellular injury. Soft, flexible, and well-tolerated polyurethane or silicone tubes of various diameters, lengths, and design features may be used, depending on formula characteristics and feeding requirements.More complete descriptions of feeding tube characteristics are available elsewhere. 3,Pyrrate kinase reaction: secondexampleof substratelevel phosphorylation of ADP + ATR is not reversible and must be bypassedfor gluconeogenesis. Once it is establishedthat the patient tolerates al:,ortt7 57" of nutrient needs by the enteral route, the parenteral solution can be discontinued. Autonomic neuropathy or medications, such as for blood pressue, may not allow for increasedheart rate, and individuals must learn to use perceived exerrion as a means of determining exerciseintensity. Pract Gastroenterol 26:84,2005. Prochaska JO et al: Changing for good,New York, 1994,Wlliam Morrow ResnicowK et al: Motivational interviewingfor pediatricobesity: Conceptualissuesand evidencecirew,J Am Diet Assoe106:.12, 2024,2006. Long-Term Central Access A commonly used long-term catheter is a "tunneled" catheter. Overweight and obese adults should be counseled to gradually increase to these levels of exercise and physical activity. JacobsEJ et al: Multivitamin useand colorectalcancerincidence in a U.S. cohort: doestiming mafter?Am J Epidemiol 158(7):621,2003. First, they involve multiple genes' each of which comes in more than one variation, that likely contribute in small ways to the overall condition rather than have the dramatic impact that is more tFpical with single- or may not develop. Often this structure begins with a nutrition committee charged with setting or suggesting policy and standards of care. Feeding advancementcontinued and reached the goal rate of 55 mllhr. Self-Efficacy andSelf-Management Counselors should always emphasize that any future action belongs to the client. The clients are responsible for making the changes. Therefore some Hispanics may not eat chili peppers while pregnant for cultural reasons rather than because of safety issues for the mother or developing fetus. Fluoride has no adverse health effects, and the risk of toxicity is negligible (Palmer and Wolfe, 2005). 65f calculations,419b in assessmentfor protein-calorie malnutrition, 418-+t9 nonalcoholic steatohepatitis OJASID, 7 l2 definition, 707 nonessential amino acids, definition, 4l nonexercise activity thermogenesis QIIEAI), definition. SeeThermic effect of food TEFAP (The Emergency Food Assistance Program), 322t temporomandibular disease(TMD), medical nutrition therapy, overview, 1044t temporomandibular disorder (TMD), 1056 definition, 1041 tenofovir disoproxil fumarate (\4read), nuuitional complications, 1003t teratogeniciry definition, 161 ofalcohol, 178 terminally ill patient, nutrition care, 467 -468 term infant, 1118 definition, 1117 tertlary preventron definition,3l0 rn older adulthood, nutrition, 289 tetany from calcium deficienry, 10 definition,42 tetrahydrobiopterin, for phenylketonuria,1143, I 148 thalassemia, S30 definition, 811 T:helper lyrnphocyte cells. Continued inadequate management can lead to a lifethreatening situation known as status asthmaticus. Careful planning, implementation, and follow-up are required to provide safeand effective care through nutrition support. Gumsand mucilages(e.g., guar gum) are similar in structure to pectin' except that their galactose units are combined with other sugars (e.g., glucose) and polysaccharides. Although further investigation on the diet supplement--calcification linkage is clearly needed, caution is urged regarding the potential oversupplementation of these two nutrients. Assessmentof body fatness is useful, especially in dealing with the patient who has an eating disorder. The nature of these adaptations involves a change in the hemodynamic characteristics of the remaining glomeruli, specifically leading to increased glomerular pressure. ShaheenNJ et al: Iron overloadgenelinked to colon cancerrislg J Natl CaneerInst 95:154,2003. In planning nutrition care, the registered dietitian is encouraged to consider the status of the client's oral health as a component of nutritional screening and assessment,including problems with biting, chewing, or swallowing; dry mouth; or the presence of sores in the mouth that interfere with eating. Carbohydrate sources are corn symp solids, modified tapioca starch, sucrose, and hydrolyzed cornstarch. Nutrition Diagnosis l: Involuntaryweightloss related to inability to consumesolid foods as evidencedby loss of 30 lb over 2 months Nutrition Diagnosis 2: AlteredGI functionas evidencedby lack ofbowel soundsand distended abdomen Nutrition Diagnosis 3: Alteredlab valuesrelatedto type I diabetesand recent surgery as evidencedby blood glucoseof 275 mg/dl on postop day I 1. Therefore the relationship between protein and calcium remains unsettled. Whether young or old, any individual can make improvementsin lifestyle,especiallyregular physical and dietary changes,which may protect and ""tirrity skeletaltissues. Hydration must also be monitored closely after transplantation. PLACEMENT:Confirmplacementof NGT by abdominalx-ray 2. Research data have shown that the value of the TM is in determining in which stage an individual is and then using change processes matched to that stage (Resnicow et al., 2006). govlHe alth_Information /IB ID S_Overview aspx Mayo Clinic: www.mayoclinic.com./findinformation/ druginformation/index.com andIntegrativeGare 483 DietarySupplementation CHAPTER 18 : Intervention: Evidence-Based Dietary SupplementResources-cont'd Websites--+ont'd TextlPrint National Center for Complementary and Alternative Medicine: NHANES online analysisof dietary supplemens OIOAD S), 2006: htq: / / ods.od.nih.govlindex.aspx Natural Standard: Office of Dietary Supplements: Pharmacist'slerter/natural medicine database: www.naturaldatabase. Macronutrients Becausethe patient with RF may be in negativenitrogen balance,protein should be supplied to restore balance; however, enterally supplied protein or parenrerally supplied amino acids do affect the RQ. Other complications can be prevented or managed with careful patient monitoring (Farwell et al., 2002). Counseling sharply improves the outcomes for both dieting and drug therapyin this population (Wadden and Sarwer, 2006). Exposure of individuals to a "scapegoat"food or beveragejust before chemotherapy or radiation therapy can markedly reduce the incidence of treatment-related aversionsto foods in the usual diet (Puccio and Nathanson,1997). Consumption of high-fat meals produces more chylomicrons and remnants. Metabolic Syndrome Since the early findings of the Framingham study, it has been known that a clustering of risk factors markedly increasesthe risk of CVD. Although clinical signs of EFA deficiency are rare, blood and tissue lipid levels may be abnormal (Wood et al., 2005). hlpertension prevention,phaseII, Hypenension IsaacsJS, Zmd DJ: Single-geneautosomalrecessivedisorders and Prader-Willi q'ndrome: an updatefor food and nutrition . Additional warer can be provided through the feeding tube as needed. WhatIs the BestMethodof Administration? Although all foods not specifically prohibited are allowed to be eaten, certain foods are recommended such as milk' dates, meat, seafood, sweets, honey, and olive oil. Chakraborti S et al: Protectiverole of magnesiumin cardiovascular a review Mol CellBiochem2382163 diseases: , 2002. These directives may be written in any setting, including acute or home care, but are especially useful in long-term care to guide interventions on behalf of lons-term-care residents when they are no longer able to makJ decisions. Frustration with dieting and stressoften lead to eating disorders, which are increasing in frequency and require attention and understanding from the nutrition professional.Weight managementand exerciseform the basis for a greatdeal of nutrition in health, fitness, and diseaseprevention. A second way that osteocalcin enters blood is following bone resorption and the release of these molecules; in this way, osteocalcin serves as a serum bone marker for predicting the risk of a fracture. SeeAromatic amino acids abacavirsulfate,nutritional complications,I 002t absenceseizure,1088 definition, 1067 absorptiometry,dual-energyx-ray,in body compositionanalysis,405 absorption definition, 412 drug, food effectson, 436-437 fiber in, 49 in vitamins,18-19 largeintestinein, l3-20 nutrient,drug effectson,439 of biotin,94 150 of calcium,104-105, of carbohydrates,15-17, l6f of chromium, 132 ofcobalt,134 of copper,125 of drugs,food interactionswith, 4l l of fats,12-13 of fat-solublevitamins, 18 of folate,90 ofglucose,49-50 of iodine,128 of iron, I l5-1 17, llsf, l16f of lipids,17-18 of magnesium, 110,151 ofmanganese, l3l ofminerals,18-19 of molybdenum,133 of niacin, 86 ofpantothenicacid,88 ofphosphorus,108,152 of potassium,152 ofproteins,l7 ofriboflavin,34 of selenium,129 of sodium,150 of thiamin, 82 of vitaminA, 69,7lf of vitamin 86, 89 of vitamin8p,92,93f of vitamin C, 95 of vitamin D, 74 of vitamin E, 78-79 of vitamin K, 81 of zinc,l2l-122 in, ll-13, 13f smallintestine acceptablemacronutrientdistribution ranges (AMDRs),339t accumulateddamagetheory of aging,291t ACD (anemiaof chronic and inflammatory diseases), definition,41L value,43t acesulfame-K, sweemess acetylation definition, 432 geneticvariationsin, drug interactionsand,434 acetylcholine,actions,7t acetylcoen4'rneA (acetylCoA), 57 definition, 39 achlorhydria,661 definition,286,654 in olderadulthood,293 achyliagastrica,665 definition, 654 acid,generation,| 52-153 acid ashdiets,952b acid-base balance,152-156 acidgenerationin, 152-153 definition,144,152 disordersof, 154-156,154t,155t 155t 155-156, compensation, regulationof, 151-154 acidemia(s), 154 definition, 144 isovaleric,1145t formulas/medicalfoodsin managementof, I 151t methylmalonic,1144t definition,ll4l formulas/medicalfoodsin managementof, 1151t organic,ll44-1145r, I 159-1160 propromc definirion,l14l formulas/medicalfoodsin managementof, ll5lt acidosis definition, 144 metabolic,154-155 , 154t, 155t aniongap,156b definition, 144 nongap,l56b renal tubular,928 definition, 922 respiratory154t,155,155t definition, 144 aciduria(s) c, I l44t argininosuccini definition,1141 glutaric,qpe 1 formulas/medicalfoodsin managementof, 1151t acquiredimmunodeficiencyqmdrome (AIDS) definition, 991 discoveryof, 992 647 disease,oral manifestations, malnutritionand, 1008-1010 acrodermatitisenteropathica,from zinc malabsorption,123, I24f action plan, in ready-to-changecounseling session,501 active transport definition, 2 in absorption,13, 13f of calcium,104 activitiesof daily living (ADLs), 297b definition. A low starting dosage,even less than the recommended dosage,should be encouraged and the responsemonitored to minimize the chancesof an adverse reaction. In addition to fiber, other nonnutrient componentsof plants, including tannins, saponins,lectins, and phytates, interactwith dietarymacronutrients,vitamins,and minerals and can reduce macronutrient and micronutrient absorption. A l-year clinical trial incorporating two servings of low-energy dense soups resulted in a 507" greater weight loss (Rolls et al., 2005). Within narrow limits of safery (essthan2 pp-), fluorideionshavelitde impacton increasing the hardnessof bonemineral.At intakesof 2 ppm or greatel fluoride is consideredto producebone that is subjectto increasedmicrofractures because of the changein the properties of the hydroryapatite crystals.Water containing 1 ppm of fluoride doesnot help bonelike it doestooth surfaces; to ger an increasein BMD from more fluoride than in the usualdiet requiresseveralppm, which increases the risk of fluorosisand poorly ,2000). sr C CWg ^\olJo luBunuJelepJol?urE eq 01 peJJprsuoJ,4aou uru?lr Jo seletur f:rrarp ,trol pue uDISerp ur uoncnpord C Jo uoDezrl€reunu er{r roJ PaPaeu ere I:I lnoq? This is known as gastroplasty and includes verticalbanded gastroplasty and gastric banding. The reduction in lipid absorption with orlistat causes concern for the absorption of fat-soluble vitamins. Not only can such assaysbe used to definitively reach a diagnosis, they also can be used for detection in those without sgnptoms' The HumanGenomeProjecthasbeenthe impetusfor this which allows interventions to be initiated before the syrnpfundamentalshift to integrating genetic principles into toms of a diseasebecome apparent. Salivaproduction declinesduring sleep. AndersonlJB et al:Phosphorus. These include fruits, vegetables, low-fat milk, and cooked grains, as well as lean meats, poultry, fish and beans. Nutrition playsan important role throughout the continuum of cancercare-from helping to reduce cancerrisk, to caring for patientsundergoingcancer treatment,to promoting healthylifestylesfor cancer survivors. Most of the serving sizes are measured or weighed after cooking. Inadequate intake >4-6 weeks Nasopharyngeal obstruction (rare) Esophagostomy FIGURE 20-1 Algorithm for route selection for nutrition support. 25(0H)vitaminD oftenlow . The NarionalWeighi Control RegisoryG\IWCR) consiss of over 5000 individualswho have been successfirl in long-term weight loss maintenance. luelsrsev etvrt rat eruseydpue' (sya5f saprrdadolar-lq '(arnrcer; Jo >lslrJo xepur ''a'r) enssn ouoq;o fiqenb IBJntJuts (yeuorsueurrp lselqoelso (tau,ug 'J proluls pua uosrapuv g'{ uclo[q8utdq) (tano) 11a410 uonrt aqr areSeu reqt slselqoetsouo sua8ortsaJo uortce d.rotrgryul eqr qtr,tr pelsBrtuor t (taddn)euoq qroser ot slselroetso Suneynurnsul (HJd) euouror{ pror,{qre-red ;o elor arIJ'Surlepourer euoq ur stsElroalsopue slselqoelso uee.$taquoDceretul g-tz lungtl lcelu! suteuloJ ouog lselcoolso sseur ouoq lo luouraceloar alolor.uocul ssPr! euoq lEurj (zau,og'J pnlaus puu uosrapuV'g'[uqo{ ry8u,ffq) 'sselu euoq uo auorrrroq (HIil uorloroser rt6tH pror.{rpe-red ;o uoneruecuoJ rrrruespele^e1af,lruatsrsrad Jo slraJJg '-'z sJolcel lecol lo uorleJcos pesPorcul SuncIJ sseurouoqleruul V :j-!,-,,- lselcoalso 619 rilEaHauo8puPuo!ilrlnN i 'z u jtldvHS urBlurBruol unrJIeJ Jo se>lBlurpaJnpeJ ot]dEpe uEJ .{llEJDer -oa{t uosred ,(pap1eur;o dpoq e{r :C unuslrl o) sseJJEpue peau dq tueue e8rel e or peure.to8 sr uoBdrosqe runtJIEJ 'dep rad arour 3ur 00I sBqJnur se-ueruona psnedoueruard urqr aurJn Jrarfl ur unrJIBc eroru esol uaSorlsa tnorpr^4. The objectives of palliative care are to provide for optimal quality of life; relieve physical symptoms; alleviate isolation, anxiety, and fear associated with advanced disease; and to help patients maintain independence as long and as comfortably as possible (McCallum and Fornari, 2006). A randomized,controlled trial of overweightadultswith BMI of 25 to 36 indicatedthat the Internet can be used successfullyto deliver a weight-loss program if it includesbehavioraltherapywith weekly contact and individualizedfeedback(Tate et al., 2001).The importanceof a tailored approachwas the conclusionof a randomized controlled trial (RCT) comparing an Internetbased tailored weight management program with an information-only Internet weight management program basedin an integrated health care setting (Rothert, 2006). He started smoking when he was 15, and he smoked two packs per day until 7 years ago. In these situations the organism "senses"the presence ofa nutrient in its external environment and alters its gene expression accordingly. He had a naso- Researchinvestigatingthe metabolicand physiologic differencesbetweenand advantages ofparenteral and enteralnutrition, is ongoing. About 33% of all adult Americans have hlpertension, defined as having anaverage blood pressure ofhigher than 140 mm Hg systolic pressure or 90 mm Hg diastolic pressure, using antihypertensive medication, or receiving a hypertension diagnosis (Thom et al., 2006). Assoc Diet Am J OrdovasJM,Mooser V Nutrigenomicsand ilfiri1er.et:rcs,Cut'r 2004. fuk the clients to summarize their plans and identifi' markers of success.The counselor then documents the plans for discussion at future sessionsand ensuresthat the clients also have their plans in writing. She goei to the dentist for the first time in 5 years beiaose she just got dental insurance.Her chief complaint is, "All my teeth hurt." She further states that she spends 50% of her time in her car traveling between appointments. VermeerC et aL Beyonddeficiency:Potential benefitsof increasedintakesof vitamin K for bone and vascularhealth, Eur J Nutr 43:325,2004. Mutations in vitamin D receptors are associated with deleterious effects on bone health but also more globally throughout the body since vitamin D is a hormone involved in several different metabolic and regrrlatory processes.Errors in the gene coding for insulin can result in structural changes in the insulin hormone and lead to dysglycemia, as can mutations in the insulin receptor. p/mi infection. What would you want to do?" The counselor tien summarizes the client's statements about the "pros" and "cons" of making a change and includes any statements about wanting, intending, or planning to change. Not surprisingly, caloricintake increasedby =300 kcal between1985 and 2000 (Thom et a1.,2006).A major environmental, dietary contributor to obesity is the increasein portion sizesthat hasoccurredover the last 20 years.Further evidenceof a poor diet in this country is the low number of individuals who consume9 to 12 fruits and vegetablesa day; only 22"/oof adults consumefive servingsdaily. The fact that you are able to indicate this as a problem is very important, and I respect your decision. The infection is typically confined to the mucosa of the stomach. Chernoff R: Micronutrient requirementsin older women,Am J ClinNutr 8l(5):12045, 2005. HACCP involves identi$'ing any biologic, chemical, or physical agent that is reasonably likely ro cause illness or injury in the absenceof its control as it pertains to food production. Seealso Small rntestrne steatorrhea as, 679-680 regulation neural mechanismsin, 5, 7, 7t neuropeptide hormones in, 7-8 sites ofsecretion, digestion, and absorption in, 1 lf strictures and obstructions in, 680-681 gastrointestinal(GI) tract (Continued) upper,disorders dietarymanagement,milestones,669b medications,usage,668t disorders,655-660.Seeaho uppeqesophageal Esophagus upper,medicalnutrition therapy,654-672 upper,stomachdisorders,660-669.Seealso Stomach Billroth II, 667f gastrojejunostomy, gastroparesls definition, 764 in diabetes, 801-802 gastroplasty, 553,554f definition,532 gastrostomy,endoscopic,percutaneous, definition,506 gavage, gasffrc definition,1117 for infants, 1129 slmdrome),1090-1091 GBS (Guillain-Barrd definition, 1067 GCS (GlasgowComa Scale),1033 definition,1021 GDM. Uric acid. Those who choose them may be motivated by philosophic, religious, or ecologic concerns or a desire to have a healthier lifestyle. "Give me someideasfor why you think you are ready to change." Helping the client to identifi, changeoptionsby askingif he or shewould like to changeand what a first step might be is an effectivemethod. Salivary stimulation leads to increased buffering activity of the saliva and subsequent increased clearance of fermentable carbohydrates from tooth surfaces. The urease test is now used as one of the diagnostic tools for the presence of H. Poussiurn. Alcohol makes up 10% of the diet for many regular drinkers and contributes 7 kcaUg. Metabolically, alcohol behaveslike a fat becauseit sparesfat from being oxidized. For example: Client: "I am doing the best I can." (Previously this client stated that she sometimes just gives up and doesn't care about following the diet.) Nutrition Coanselor:"On the one hand you say you are doing your best, but on the other hand I believe I recall that you said you just felt like grving up and didn't care about following the diet. eatright.org, accessedDecember l, 2006. SpringerJ et al: Prognosisand therapyapproachesofcardiac cachexia,Cun Opin Cardiol3:229,2006. In Figure 13-4 the impact of a change in the DNA base sequence on the protein's structure and function is illustrated. asp FDACenter for FoodSafetyandApplied N u t r i t i o(nC F S A N) http ://cfsan.fda.gov/=dms/fsterrqa.htrnl HeadStart http ://www.acf.dhhs.govlprograms/hsb/ Healthy People 2010 http ://web. Bahr R et al: Effect of duration of exercise on excesspostexercise 02 consumption, J Appl Pbysiol62:485, 1987. SampathH, Ntambi JM: Polyunaturatedfatry acid regulation of geneexpression, Nutr Rn 62:333,2004. E x e r c i sGeu i d e l i n e s The variability of glucose responsesro exercise contributes to the difficulty in giving precise nutrition (and insulin) guidelines.Frequent blood glucosemonitoring before, during, and after exercise helps individuals identi{z their response to physical activities. prominendy as a cornerstone of preventive care. In addition,cardiovascular disease is an inflammatorydisorder(Ridker,2004;Libby and Theroux, 2005).Not surprisingly,variantsof genessuchasTI,IFintendedlipid-loweringresponses. Over threemillion diedfrom AIDS-relatedcauses in 2005, and more than 25 million peoplehave died of AIDS since 1981 (LTNAIDS/WFIO, 2005). The classicstarvation studies done by Keys (1950) found that during the first l0 days of a fast and after utilization of glycogen stores, about 8% to l2o/o of the energy expenditure is from protein and the balance is from fat. Parent educational FIGURE 35-7 AeAn infant was admitted to the hospiul in respiratory failure, with a history of cough, tachlpnea, and failure to thrive since 4 weels of age. Surgical jejunostomies have the same problems. Some studies suggest that high intake of vitamins C, E, 86, B12,and folate; un- saturatedfatty acids;and fish is related to a low risk of AD; but reports are inconsistent, and an overall dietary regimen for AD is not yet defined (Luchsinger and Mayeux,2004). What are other directions you might take this interview to elicit self-motivational statements? SeeComplete blood count CBT (cognitive behavioral therapy), 493 definition, 563 CCK. Inability to self-regulate . His BMI is 35, and he works at home as a computer programmer. R o l l i n gw i t h R e s i s t a n c e Invite new perspectives without imposing them. Isola LM et al: A pilot study of allogeneic bone marrow transplantation using related donors stimulated with G-CSR BoneMarrow Tiansplant 20:1033, 1997. Incorporating technology shows promise as a delivery mechanism. Foods that appear to contain low amounts of vitamin K include roots, bulbs, tubers, the fleshy portion offruits, fruit juices and other beverages, and cereal grains and their rnilled products. Foods with a low oxalate content but higher bioavailability may be more of a problem in increasingurinary oxalate(Box 36-4). Most depot fat comes direcdy from dietary triglycerides, evidenced by the fact that fatty acid composition of adipose tissue mirrors the fatty acid composition of the diet. Nutritional Genomics367 13 I Assessment: CHAPTER Perhaps more important, nutritional genomics will allow detection and intervention to promote health and prevent disease.The expectation is that, by analyzing individuals'genotypes at birth or prenatally, diseasesusceptibilities will be known from an early age and can be factored into the nutrition and lifestyle choices available to individuals throughout their lives. With the exception of Weight Watchers, the evidence to support the use of the major commercial and self-help weight loss programs is suboptimal. in macronutrient metabolism, 44f HHS (hyperglycemic hyperosmolar state), definition, 765 hiatal hernia definition, 654 medical nutrition therapy, 659 pathophysiology, 659, 659f q.'rnptoms/nutritional consequences,655t high-density lipoproteins (HDLs), 839 cholesterol, in cardiovascular diseaserisk assessment,848 definition, 8ll subqpes cardiovascular risk and, 425 definition, 41 1 high-energy diets, for weight gain, 558, 558t, 559t high-fiber diet definition, 673 for constipation, 676-677, 677b nutritional facts, 1279 - l28l HIPAA. During the past 50 years the focus has been on treating manifest disease,and physicians have had increasingly sophisticated drugs and technologies available with which to meet this challenge. daily diet. More blacks than whites die of strokes, especially blacks who live in the sourheastern part of the United States. The procedure is less invasive than normal endoscopy and provides the advantage of being able to observe, record, and measure GI function as the patient is ambulatory (Selby, 2004). 2 slicesbread 2 T peanut butter 1T jam 4 grahamcracker squares 8 oz fi:uit-flavored whole milk yogurt J/+c roasted peanuts 1 c apricot nectar 1 baked custard Instant Breakfastwith whole milk I c dry cereal I banana I c dry cereal 1 c whole milk 1 c orangejuice 4 T raisins 1 bagel 2 T crerm cheese 2 Tiam 120 172 110 110 2+0 + 8 628 t+3 1523 28 I 52 285 280 110 80 110 159 122 l0+ 165 199 110 t3 t5 t5t4 +6 2 9 z 2 8 t6 I +2 l5 31) I 50 Overweight and obesity in adults (66.3%) in the United States have reached epidemic numbers. level usuallyhavehigh apo B levels,giving theseparticlesa longer time to depositlipid in the arterial wall (Marcovina and Packard,2006).SinceloweringLDL cholesterolis the main focusfor intervention,it is discussedin that section. High-protein formulas increase nitrogenous waste excretion by the kidneys, and this process requires adequate amounts of fluid, which is particularly important in patients who cannot communicate thirst. *Data that are available on the averagecopper content of foods vary gready.There is disagreementon the copper content of the usual American diet, with estimatestlat range from I mg of copper a day to 5 mg/day.The concentration of copper in foods is affectedby many factors, including soil conditions, geographiclocation, species,diet, processingmethod, and contamination in processing.The exactcoppe conrcnt of foods is difficult to veri$r. sJnJJouaruo.r psnedouausod ur ra4uareql ssol snonuB 'esnedoueureq] -uoc V Jo eruD arp Jo 95 a8e JaUEuauo^r ur dpear8 seseorcurssol euoq tnq 'sexasqtoq ur dlenprr8 qslultulp ot surSeq CWg 0t e8r dlaluruxordde ry '(ernrce-rg d1g ro; {sRI qFIH re ueruo^\ psned -oueuDsod :q8tsq prlallJ aes) 7091+ ;o ,berncce u3 qrr.in percrperd eq leru sseureuoq IEJqoue^ reg 'uir.r.ou>1 sr ueruo^\ e;o a8e arP JI 'CWg Jo lugurrurelap rueuodur ue sr a8y ss Pll au08 l0 sso' l '(5002 ''p re qqel$ dlreple aqr ur raqraSol uees,(lpcrdfr e.re rruedoalso pue 'elcsmu letala{s Jo ssol pareler-e8u lo 'rrued -ocres 'aJII srea.{rerel eqr Sump lllercadsa puB pooplnpe Jo Suunp sseruoeuq rplr\ pateleJJocsr qJrg.,rt'(dlercadsaalJsilu prala4s) sseru dpoq ueel o{r sr sseru euoq ut,t\ peterrosse dlasolc aroru uoDrsodruocdpoq;o lueuodruoJ eqJ 'uauro^{ 'sseur auoq o] palBIeJ rol {repya puB }{npe Srmor(uI Woq -rBJluelslsuoJ lsour erP serntqSrarnlpoq regr pauoder sJoIJB] reqro roJ parsn(perell sarpnts 'CWg pue f,Wg rarearS;o rorBrrprrrpooS s e s1(xepul sseu,{poq rc) qSnn {poq'A11vur.g 'ssutuauoq laleer8 Suvrtq dq asnedouau er{l JeUE tgeueq duu srrel lera 'os1y 'uauorn -Aes JoJ se.,r,rldacBrluoJ IEJo esn oq,rr ueruo,tr PUBuelu qloq ur eJrTur relBl euoq Jo eruEuelurBrueql ul ^{puenbesqnspue (sseureuoq ur suleSdpee ''e'r) luaudole,r -ep oW ur elor Suruoddns a3re1e &1d or srreddr &r-tnce pclslqd 'runrcyec trrerep elenbepe qlr.& peurquor uorl!\ 'acuaJselopuq8norqt senunuoJ pue lrreqnd Jo eurn erp PunoJB slJBls]I uaqr$ CWfl PUBSSBIIeuoq Jo lueulluJeleP FnPr rPuI lsnqor lsou eql aq o1 sluees A4tatpulorlsLqd '(OOOZ ''p ta a(so11) CWgJo gueruerns -E3ru lreJ? Boneturnover withresorption predominating . High blood pressure wasthe primary or a contributory causein 261,000of the 2.4 million U.S. deathsin 2002 (AHA, 2005). The latter causeof hlperglycemia is not as likely to occur as the first. Radiation therapy proceduresto spare the parotid gland should be implementedwhen possibleto reducethe dama geto the salivarygland.Efforts to stimulatesalivaproduction using pilocarpine and citms-flavored, sugar-free candiesmay easeeatingdifficulty. Typically these patiens are highly catabolic, and extensive tissue destruction occurs in the early stages.Hemodialysis is used to reduce t}te acidosis, correct the uremia, and control hyperkalemia. However, the administration of optimal levels of TPN is complicated by the frequent need to interrupt it for the infusion of antibiotics, blood products, and medications. However, such diets appear to be difficult to follow outside of a research setting (Brinkworth et al., 2004). atthew is a 43-year-old highly successfulsales represf\ fl I V I entative for a major medical company. Hennekens CH et al: Lack of effect of long-term supplementationwith B-carotene on the incidence of malignant neoplasms and cardiovascular disease,N Engl J Med 334:1145, 1996. Compher C et al: Bestpracticemethodsto apply to measurement of resting metabolicrate in adults:a systematicreview,J Am DietAssoc 106:881, 2006. Fatty acids are also characterized by the location of their double bonds. fu pulmonary disintegralcomponentsof carefor eachpatientwith pulmonary easeprogresses,other related conditions may interfere with systemdisease.Pulmonarysystemdisordersmay be catego- food intake or overall nutrition status, especially abnormal rized asprimary suchastuberculosis(fB), bronchialasthma, production of sputum, vomiting, tachypnea (rapid breathand cancerof the lung, or secondary, suchasthoseassociated ing), hemoptysis, thoracic pain, nasal pollps, anemia, dewith cardiovascular disease, obesiryHIV infection,sicklecell pression, and altered taste secondary to medications. M et al: Adjuvantrecombinanthuman growth Jeevanandam hormonenormalizesplasmaamino acidsin parenterallyfed traumapatients,JPEN J ParenterEnteralNatr 19:1.37 , 1995. \4llamor E et al: Wasting and body compositionof adultswith pulmonarytuberculosisin relation to HIV-I coinfection, socioeconomicstatus,and severityoftuberculosis,EurJ ClinNut 60:161.2006. DietaryFiber Excessivedietaryfber intake may interfere with calcium absorption, but any interference is considered extremely small in the typical low-fiber U.S. diet. Health care provided to long-term care residentsfocuseson quality of life and self-determination in addition to the management of acute and chronic disease. Giving advice . In this situation a combination of feeding methods is used (see "Tiansitional Feeding" later in the chapter). Inulin comprises a diverse group of fructose poll'rners widely distributed in plants as a storage carbohydrate. Thomas, EdD, RD, for previous edirions of this text. Energy FactorsRegulating Intal30 (%"Iat) Excess bodyfatness Androidvs.gynoidfat distribution (e.9.,insulin, Hormonal changes leptin) . Becauseno identifiable cause or cure is known, pharmacotherapy,physical and occupational treatment, and medical nutrition therapy (MNT) play important roles in managing the s1'rnptoms(Thble 40-l). care institutions, poison control centers, and MedWatch. Early identification of barriers to adherence is important. IJsers of crystal methamphetamine are tiree times more likely to get HIV than nonusers (San Francisco Departrnent of Health, 2005). When the gene of interest is associated 372 PART3 | Nutrition GareProcess with a disease,pedigrees are helpful in predicting the probability that an individual will inherit the disease.The Family History Initiative implemented by the U.S. Surgeon General focuses on helping people consu:uct their family pedigrees (see). fCalcium sulfate and magnesim chloride. The majority of transplant recipients have elevated serum triglycerides or cholesterol or both. p/nri infection. Factors to include in a nutrition assessmentare listed in Box 35-2. Guidefor EatingDuringPregnancY FoodIntake Recommended The increasedrequirementsof pregnancFcan be met by following the Daily Food Guide presentedin Thble 5-5. Chronic G\IHD can affect the skin. Protein. In contrast, disease-specificformulas often are supplemented with antioxidant vitamins and minerals with the intention of improving immune function and accelerating wound healing. 8 oz fruit flavored whole milkyogurt 1 slicebread 2 oz cheese 1 apple t/+of l4-inch cheesepizza 1 small banana Additional Foods 2+0 60 226 87 306 81 1000 280 239 95 tt7 165 100 996 9 2 l4 l. Small portions and favorite foods enhanceoral food intake. 25 | ilutritionfor OralandDentalHealth 647 CHAPTER Ns 0 nnr MnrurFEsrATro Acute systemic diseases such as cancer and infections, as well as chronic diseasessuch as diabetes mellitus, autoimmune diseases,and end-stage renal disease,are characterized by oral manifestations that may alter the diet and nutritional status. Medical Nutrition Tberapy. Bentley B et al: Factors related to nonadherence to low-sodium diet recommendations in heart failure patients, Eur J Card.iou Nurs 4:331,2005. Constipation . r Melatonin Pentoxi4'lline Hydrazine sulfate Eicosapentaenoicacid (EPA) Prokinetlc Drugs . The way in which culturescombineverbal and nonverbalmessagesto transmit a messagedeterminesthe context of the communication(I(itder and Sucher,2001).SeeTable l9-1 for differencesin cultural styles. Glutamine is the primary carrier of nitrogen derived from skeletal muscle and energy substrate for enterocytes and lymphocytes. The causal relationship between sucrose and dental caries has been established (I-ingstrom et al., 2000; Molmihan, 2005). TLking magnesium with it can help ro prevent constipation. Adiposity (especiallyabdominal) explains25o/"of variability in insulin action, physical fimessexplains25o/o,andgeneticsexplainsthe rest (Reaven et al., 2006). Nutrition Parenteral The use of parenteral nutrition support may be appropriate for some individuals with cancer for whom oral intake or enteral nutrition is not tolerated. FFM is often used interchangeably with lean body mass (LBM), but it is not exacdy the same. 5 Veryactive Walking Equivalence (miles/day at 34 mph) From Institute of Medicine, The National Academies: Dietary reference inakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids,Washington, DC,2002/2005, The National Acadernies Press. AE aF q= 4.1 lJ oo dO za l'> !? 15y"-29o/o .....16.3y"-32.3/" .....-.... Suggestionsfor preventing aspiration of secretionsor food and fuids are locatedin Chapter 4l and Appendix35. U, fll E :{8qt9 € O 6'E I5,x --a x @.o Eiio bo6E trco o.d 9tro HF E :e; '!! =.;- r .E '5 q z oq 90 -= ah - d d H o .v >-q >E ag: o€ =2 OFI .F o .F 6' a .:9 .ix -Yo E-q:t ,^ O o @ E - H F .n ,9.1 ,. alsls a,rnelaSazrE ur PalBlrJEdecul llereldruoJ sauoJaq pue lrncco seJruJurt tuaped agJ 'seseeJ&Lrnce lenlJelletur -uor pue sseDIBa^\gull :rsol sr IoIuoJ rappelq pue Ia^4.o9 'a3e1s aW segJser uorsserSord aseasrpuoqa luel yeunuret 'arr8 Surgnqs s pue sexaUOJur -srsuoJ are s8urpug IeJrurTJ saSueqcdq pacuapraase 'elerouetep sl1plsrolo(u arun JoAO '(ersouEe) sr uorsueqerdruoJ pue '(elluloqca) peread tsol -er erB sreqto,,tq ua>1ods sp:oA '(u;uroup) peJequerueJlou are slcefqo Jo serutu iparledurr seuoceq qraadg 'peJunou -ord sr ftoueur ur ssol arp JaTB]uapt,re seuroceq ,{1uo eurlJePsnp lnq'seurlJep uonJunJ FJqaJeJ 'P3urEleJeJ€serJ -orueru alll{/I{-uaDoSro; are slueunrodde pue 'pecrldsrur are suorssassod-ueuo8roJ eJBslue^e r(ep-or-.{epr(llrFtot '(qOOZ'3ue11) uoncury lecrs,tqdraq8rqqtr^{ esoqt:o; dpnrseru?sler{t ur pauodar se,r surotdruds gg77 Jo lesuo pedelap:(+59 se8r suos-rad ;o z(pnrstror{or e,rncedsorde ruorg) CIV pug Enueruep Surdoleaeproj >lsrrretea:8tB eq ot u,roqs ueaq a^ErIuoB -cury rood rpr.4a suosJed'qceedsur serueqJntsrp lucrsdqd 'f:oruaut ssolSurseercur pue 'uorlcury qlr,tr. 7+ cup seruing Chicken leg, meat only, roasted, 1 leg Pork tenderloin, lean only, cooked, 3 oz Pork loin, sirloin roast, lean only, cooked,3 oz Yogurt, plain, low fat, I cup Baked beans, canned, with pork, % cup Mifligrams per Serving VoDaily Value* 16.0 15.0 100 100 8.9 7.4 60 50 4.8 4.2 30 30 4.0 25 1.8 25 3.7 25 2.7 2.5 2.2 20 15 15 2.2 1.8 15 l0 Food Bakedbeans,canned,plain or vegetarian, 1.7 10 t.6 t.6 t.4 10 10 10 8 8 8 t/z cttp Cashews,dry roasteddout salt, 1 oz Yogurt, fruit, low fat, 1 cup Pecans,dry roasteddout salt, 1 oz Raisinbran, 7+cup Chickpeas,matureseeds,canned,% cup Mixed nuts, dry roasteddpeanuts, dout salt, 1 oz Cheese.Swiss.1 oz Almonds,dry roasted,w/out salt, 1 oz Walnuts,black,dried, I oz Milk, fluid, any kind, I cup Chickenbreast,meat only, roasted,% breastwith bone and skin removed Cheese,cheddar,I oz Cheese,mozzarella,part skim, low moisture, I oz Beans, kidney, California red, cooked, Vz crtp Peas, green, frozen, boiled, % cup Oatrneal, instant, low sodium, I packet Flounder/sole. The severity of the esophagitis resulting from gastroesophagealreflux is influenced by the composition, frequenry, and volume of the gastric reflux; the health of the mucosal barrier; rate of clearance from the esophagus; and the rate of gastric emptying. Mechanism of acdon of the primary active ingredient . What type of dietary plan following strict kosher protocols would meet his daily dietary needsand promote weight loss? Accordins to the National Health and Nutrition Examination Sriruey G\[{ANES) III, as many as 50"/o of children have experienced some decay by age 8 (JSDHHS, 2000). ,,,,,,5',TA,,q,,F,,F.,,,0,,F,,,,!ilJ.V,I,N ,,!!,,,,,,,,,,, After exposureand transmissionof HIV into the host, HW spreadsthroughoutthe body,andbloodCD4+ cell countsfall An immuneresponsecanreturn CD4+ cellsto dramatically. In this case the client may speak while the nutrition counselor is still talking without waiting for an appropriate pause or silence. The NSD interested in placing SBFB as the tube is advanced. JohnsonRK: Dietary intake-how do we measurewhat people arereallyeating?ObesResl0(suppll):63,2002. n general, nasal tubes should be avoided becausethey are J I more difficult to manage,clog easily,are easily dislodged, and over time can causetissueirritation and even erosion. I can understand why you are having dif6culty." Summarizing The counselor periodically summarizes the content of what the client has said by covering all the key points. Sweeteners Even though sucrose restriction cannot be justified on the basis of its glycemic effect, it is still good advice to suggest that persons with diabetes be careful in their consumption of foods containing large amounts of sucrose. partial gastrecromy and selective vagotomies (paimela et al., 2004). DebraA Krummel,PhD, RD KEY TERMS cachecth heart a soft fabbyhertcharacterized byloss of myocardid m:rssas the result of extreme malnutrition cardhc cacherh a serious complication of heart failure associatedwith higb mortality rates and characterizedby unintentional loss (body wasting) due to a loss of fag musde, and"..ight bone dyslhidemh an abnonnal pattem of blood lipoproteins that increesq risk for heart disease lts3ma perceived difficulty with breathing; ihortnes of breath (SOB), the hallmark of heart failure edema abnormal accumulation of fuid in body tissuessuch aslungs, anHeq or feet ejection fraction the percentageof blood pumped by the ventricleswhen the heart beas; is reducedin heart failure heart failure a clinical syndromecharacterizedby progressive deterioration of cardiac function, inadequatetissue perfusion,fatigue,shormessof breath,and fluid retention left ventricularhypertrophy enlargementof the left ventricle of the hean; a major risk factor for heart failure myocardialinfarction blockagein a coronaryartery that can result in damageto the heart muscle; also known as a heart attack orthopnea respiratorydistresswhile in a recumbentposition syncopelack of orygen to the brain causinga brief loss of consciousness Some categories of heart disease such as heart failure and cardiac cachexia occur when the heart deteriorates and can no longer meet the body's need for blood flow. It is important that practitioners take the initiative to develop the appropriate knowledge, skills, and resources necessaryto provide optimal care in the area of dietary supplementation. Fluoride Fluoride ions enter the hydroryapatitecrystalsof bone as substitutesfor hydroxyl ions. BestPract ResClin Gastroenterol hip Eneroth M et al: Nuuitional supplementationdecreases fracture-relatedcomplications,Clin OrthopRelat Res451:212, 2006. This hlpothesis has not been substantiated in humans (Lipman, 1995;Sedman,1995). Secondary prevention is a form of treatrnent following the development of osteoporosis, either sex hormone-deficient or age-related onset. The form of protein (intact or hydrolyzed) that is most efficiendy digested and absorbed by the gasrointestinal tract is controversial. Using a ruler that allows the client to selecthis or her level of adherenceto the diet is one method of allowing client par- for Ghange 497 : ounseling C H A P T E Rt 9 i I n t e r v e n t i o nC ticipation in the discussion of dietary adherence. In additionto the greaterabsoluteweight lossobserved, results the gastricbypasstendsto havesafeand sustainable with significantresolutionof seriouscomorbidities(Rubenstein, 2002; Sjostrom et al., 2004). :use, J Natr 133(6):20105, JepsonRG et al: Cranberriesfor preventingurinary tract DatabaseSystRea,CD001321' 2004. 0 Totalrate:168.8. 29.2 Guam Pacificlslands,US 4.0 PuertoRico 324.3 Virginlslands,US 347.6 Rate(per100,000 population) 150 FIGURE 38-3 Estimated prevalencerates for adults and adolescentsliving with AIDS (per 100,000population) 2004-United States.(From CDC: AIDS suraeillance-general epidemiologt[through 2004] wwzu.cdc.goa/hia/topics/surveillance/resources/slides/epidemiologl index.hnn.) 996 PART5 | MedicalNutritionTherapy Adultsand childrenestimatedto be livinqwith HIV in 2006 EasternEurope and CentralAsia 1 . In addition to mutations in enzymes involved in metabolic pathways, disease-causingchanges can occur in genes coding for other epes of proteins such as tjransport proteins, membrane receptors, hormones, and transcription factors. 1" / " .. Seealso Hepatic encephalopathy definition, 708 positive acute-phase respondents definition, 412 to stress,418 postgastrectomy syndrome, after cancer surgery 977 postmenopausal osteoporosis, 627 definition,615 postprandialblood glucose definition, 765 elevation,in type 2 diabetes,769 postprandialhypoglycemia,802-803 post-transcriptionalprocessing,371 definition, 165 L342 Index post-translational processing, 371 definition, 365 posftraumatic stress disorder, nutrition, I I lOt potassium blood values,in renal disease,936t in acute renal failure management, 927 in calcium stone formation, 953 in end-stagerenal diseasemanagement, 934, 940 in fluid replacement solutions, 601 in hypertension prevention, 872-871 nutritional facts, 1102 requirements, in end-stagerenal disease,in children, basedon therapy type,947t requirements for, in older adulthood, 100 serum, referencerange/significance,415t total body, in body composition assessment, +03-404 potassium bicarbonate,intake, bone and,626 potassium bisulfite, in foods, reactions, 746t potassium metabisulfite, in foods, reactions, 746t potassium sulfite, in foods, reactions, 746t poverty, percent ofpeople 65 and over in, 287f PPA (phenylpropanolamine), in obesity management, 551 PPAR (peroxisome proliferator-activated receptor) transcriprion factors,377 PPARS (peroxisome proliferator-activated receptors),de{rnition, 365 PPN. What may have been the explanationfor Thomas' increasedglucoseand Pco2 levels during his combined TPN and tube feeding therapies? Early childhood caries (ECC), often called baby-bottle tooth decay (BBTD), is a term used to describe a caries pattern in the maxillary anterior teeth of infans and young children. 53r Molly Gee,MEd, RD L. Chemically defined formulas are low in fat and often supplemented with medium-chain uiglycerides that can be readily absorbed into the hepatoportal circulation. "What encouragesyou that you can changeif you want to?" o "What do you think would work for you if you decidedto change?" Cliena in this "not-ready-to-change"categoryhave alreadytold the counselorthey are not doing well at making changes.Usually if a tentative approachis used by asking permissionto discussthe problem,the client will not refuse. Allen SJ et al: Probiotics for treating infectious diarrhea, Cochrane DatabaseSystRn, CD001048,2004. Tissuedestruction Acidosis Uremia Hyperkalemia tild (drugtoxicity) Withdrawdrug Severe(ischemia acutetubularnecrosis) Dialysis TPN Electrolyte replacement . Lignin is a woody fiber found in the stems and seedsof fruits and vegetablesand the bran layer ofcereals. MasseyLIC Effect of dietary salt inake on circadiancalcium metabolism,bone turnover,and calciumoxalatekidney stone women,Nutr Res25:891,2005. Decreased bone resorption and an increased rate of bone formation result. Khuri SF et al: Risk adjustmentof the postoperativemorraliry rate for the comparativeassessment of the quality of surgical care:resultsof the National VeteransAffairs SurgicalRisk Sudy,J Am CollSurg 185:315,1997. Adequate salt is consumed by most children and adults who eat a typical North American diet with processed foods; however, supplemental salt is required under some conditions. Typically more than one of the mechanisms must be malfirnctioning for syrnptomatic peptic ulcers to develop. Patients can successfully manage their home care with the support of their families and an interdisciplinary team consisting of the physician, nurse, dietitian, pharmacist, social worker, or discharge planner or case manage! working in conjunction with the home care provider (Merritt, 2005). lrbo:ut2.5o/" of thisnormalpopulationwillhavevaluesgreaterthantheupperendofthereferencerange,and 2.5% wtll have values less than the lower end. Over-the-counter medications include vitamin C (250 mg twice daily), vitamin E (400 units daily), and calcium (500 mg daily). Fatty acids are packed into transport lipoproteins (very low-density lipoproteins [VLDLs]) in the liver, thereby elevating serum triglycerides. To maintain their weight loss,NWCR participantsreporr 1. tuberntlosis,any site, pulmonary or extrapulmonary . Formula DietsandMealReplacement Programs Formula diets,or mealreplacements,are commerciallyprepared, ready-to-use,portion-controlled foods or drinks. Enteral nutrition refersto the provisionof nutrients into the gastrointestinaltract through a tube or catheterwhen oral intake is inadequate.In certaininstancesenteralnutrition may include the use of formulas as oral supplements or meal replacements. Ziegler and associates (1998) found that patients receiving parenteral nutrition supplemented with glutamine had improved clinical outcomes, as evidenced by fewer infections and shortened hospital stays.A retrospective study of over 50 patients with advanced-stage,incurable cancer and gastrointestinal failure showed that patients derived benefit from receiving home parenteralnutrition (Iloda et al., 2005). Thus there does not seem to be reason to recornmend these \{LCDs over more moderate calorie restriction except in very rare instances. Hooper L et al: Omega3 fatry acidsfor preventionand treatrnent SystRn, Database disease,Cochrane of cardiovascular CD003177, October 18, 200+. Even if the visible signs of EFA deficiency (e.g., the typical skin lesions) are not noticeable, the clinician should consider routinely testing for abnormal blood lipid profiles. Alcohol and foods high in sugar should be limited as unnecessarysources of energy; however, small amounts can be included for palatability. Dietitians should collaborate with other health Agents Available Gatecholaminergic Agent TradeName Daily Dosage (mg)* Biphetamine Preludin 10-15 75 Schedulell Agents Amphetamine PhenmetrazineHCI Schedule ll Agents BenzphetamineHCI Didrex Phendimetrazine tartrate Bontril Slow-Release Bontril Prelu-2 Plegine X-T}ozine Extended Release X-Tlozine 2 5 - 5 0t o 75-r50 105 105 105 105 105 105 Schedule lV Agents Diethylpropion HCI (Amfepramone) Mazindol HCI Phentermine HCI Phentermine resin Tenuate Tenuate dospan Sanorex Mazanot Adipex-P Fastin Obenix Oby-Cap Oby-Thim Zantryl Ionamin 75 /) 1-3 l-3 37.5 30 37.5 30 30 30 301 From ShapeUp America! (ww.shapeup.org) and American Obesity Associadon:Gaidanrcfor treanzentof adub obesity,ed 3, Bethesda,Md, 2001, ShapeUp America! and American ObesityAssociadon. COPD may be subdivided into two categories:emphysema (type I) which is chxacterized by abnormal, pennanent enlargement and destmction of the alveoli; and chronic bronchitis (type II), in which there is a productive cough with inflammation of the bronchi and other lung changes. pue sDrJI{uvJo alntDsul leuorl?N IBlele{solnrsnw ' r I 00 Z pessacJt?to3'qru.srueru.,trn ruotl 'atuo.tpuks,ua.t8o[glnoqu sJansuapau suo4sane:saseesrq UDISpuE lBleleTsolnrsnw pue snrrrprvJo atntBsul leuortBN 'S00Z' requeraq passerre,7,ro3.qru.rueocu77:drrq uor; I 'amnpatuaaqounqo puo f.u1.uarua1dtuot suuquo ?uo fluxunaq[:eurcrpew alneuJetry pue Lretueureldruo3 roJ retue3 IEuoneN 'I002'I:0t ptarunaqy puatg'mavrat cnuets.{s :snrl{tJe e proteuneqJ r1trrr f stuaned ur terp u?rrete8ez'e dq pa,ttolloJ Surrseg :[E]e H rallnry 866r'lW:Sz 'uonuaaerd eseesrprEInJseAorpJBJ ro3 suoqer4dtur lotoamaq[f :srlrrr{tJE prolBurner{J -ro3 lderegr alexeJlorllalu esop_,r,o1,ru.rel -3uo1 Surrnp enuauretsdeouoqraddq put sle^el atEIoJ poolq tuarsyep slua,rard uoneruauralddns prJE Jr1oc :l? King DE et al: Dietary magnesiumand C-reactiveprotein,J Am Coll Nutr 24:166,2005. Not surprisingly, higher organisms have similar mechanisms by which they monitor the environment that bathes their cells and alter cellular activity as needed. Carbohydratescontainingany other linkagescannotbe digestedand areclassified asdietaryfiber. RoubenoffR et al: The effectof genderand body composition method on the apparentdeclinein leanmass-adjusted resting metabolicrate with age,J GerontolSeries A: Biol SciMed

Sci55: M757,2000. To achieve this requirement, membrane phospholipids contain one SFA and one highly PUFA, the most abundant of which is arachidonic acid (C20:4). However, certain nondigestible oligosaccharides(l{DOs), which are fermented by intestinal bacteria, stimulate the intestinal absorption and retention of some minerals, including calcium, magnesium, zinc, and iron (Scholz-Ahrenset al., 2001). and stroke, of the key causesof CHD, more, diet, semm cholesterol,and CHD are also positively related. Added carbohydrates should be ingested if preexercise glucose levels are less than 100 mg/dl (5.6 mmol/L). IJntreated,HfV replicatesbillions of virion particlesa day.The diseasehasfour stages:(1) acuteHIV infection;(2) aq.nnptomaticchronic HIV infection; (3) syrnptomaticHW infection; and (4) AIDS or advancedHfV (seePathophysiolagt CHAPTER Virus(HIV) Disease 997 38 i MedicalNutritionTherapyfor HumanImmunodeficiency CD4CellCountsandAssociated Conditions CD4 Cell Count Gondition Common Physical Problems and Symptoms >550/mm3 Acuteretroviralst'ndrome May include fever, adenopathy,pha4mgitis, rash, myalgias,diarrhea, headache,nauseaand vomiting, hepatosplenomegaly,weight loss, thrush, neurologic symptoms Fungal infection causingitching and swelling of the vulva, thick white-yellow or cheesydischarge,and burning on urination Chronic, diffrrse,noncancerouslirmph node enlargement Candidalvaginitis Persistentgeneralized lymphadenopathy Guillain-Barr6 syrrdrome Myopathy fueptic meningitis 200-500/mm3 Orophar;'ngeal candidiasis(thrush) Kaposi'ssarcoma Pulmonary tuberculosis reactivation Herpes zoster (shingles)virus Cryptosporidiosis, selfJimited Oral hairy leukoplakia Pneumococcaland other bacterial pneumonia/bacterialsinusitis Herpes simplex (rrrus) Cervical intraepithelial neoplasia Cervical cancer B-cell ly'rnphoma Anemia Mononeuronal multiplex Idiopathic thrombocytopenic purpura Hodgkin's lymphoma Lymphocytic interstitial pneumonitis 100-200/mm3 Pneumorystisjiroaecii pneumonia (tungi) Disseminatedhistoplasmosis and coccidioidomycosis Miliary/extrapulmonary tuberculosis Progressivemultifocal leukoencephalopathy Wasting Peripheral neuropathy The most common form of sudden generalizedparalysis Progressivemuscle weakness An inflammation of the meninges (membranessurrounding the brain or spinal cord), which may be causedby a bacterium, fungus, or \,1rus Loss of appetite, white plaques,mouth discomfort, changein taste Slighdy raised purplish lesions on the skin, mucous membranes,or lymph nodes;usuallypainless Cough, blood-stained sputum (hemoptysis);fever; night sweats; weight loss; chest pain; prolonged fatigue; anorexia Vesicular skin lesions along dermatomes,pain Watery diarrhea lasting 1 to 4 daysor as long as 4 weeks Whitish lesions that appearon the side of the tongue and cheekswith a "hairy" surface Inflammation of the nasal cavity and sinuses,congestion, fever, pain, tearing ofthe eyesand sensitivity to light Weeping skin lesions (oral, perirectal), bleeding, rectal discharge,pain Dysplasiaof the cervix epithelium, often premalignant, characterized by abnormal keratinization and condylomata Watery blood-tinged vaginal dischargemore often seenafter sexual intercourse The type of lymphoma most commonly associatedwith HIV in which certain cells of the ly'rnphaticsystemgrow abnormally A lower than normal number of red cells; fatigue A rare type of neuropathy that may be related to the cytomegalovirus A condition in which the bodv producesantibodies asainst the platelets in the blood SeeB-cell lgnphoma A tlp. Fletcher RH, Fairfield Kll: Viamins for chronic disease preventionin aduls: clinical applicadons, JAMA 287:3127, 2002. The older men did not have the same responsivenessto changes in caloric intake. He is 5 ft 9 in tall and weighs 134 pounds. Calculation of osmolarity of a parenteral solution may be useful to ensure venous tolerance (Kumpf et al., 2005) (see Clinical Insigbt: Calculating the Osmolariry of a Parenteral Nutrition Solution). fu an example,the iodine levelsin the Pakistanigeneraldiet havebeen deemedbelow the intakes recommendedby the IOM in the U.S. (Akhter et al., 2004). for DietaryPlanning 359 t2 ! Guidelines CHAPTER Religious DietaryPractices Beef PorkAAX Meats,all Eggs/dairy FishARR Shellfish Alcohol Coffee/tea. N u t r i t i o nS o l u t i o n s Protein Carbohydrates Carbohydrates are supplied as dextrose monohydrate in concentrations ranging from 5"/" to 70%". Better understanding of host responsesis resulting in new therapeutic approachesfor early treatment, immune modulation, CHAPTER Virus(HIV)Disease993 38 I MedicalNutritionTherapy for HumanImmunodeficiency ClassificationSystemfor HIV Infection and ExpandedAIDS SurveillanceCaseDefinition for AdolescentsandAdults GlinicalGategories The clinical categoriesare defined as follows: CategoryA-one or more of the conditions listed here occurring in an adolescentor adult with documentedhuman immunodeficienry virus (HIQ infection. National Oral Health Information Clearinshouse [NOHIC): Oncolog referenrcguide to oral healtb:preirtio, and management of oral complicationfrom head and neck therapy, cbemotherapy,and bh od and marrow transplant, fr om http ://www.nohic.nidcr.nih. Distal intestinalobstructionsyndrome(DIOS),also known as recurrent intestinal impaction, sometimes occurs in children and adults. The binding of transcription factors triggers the recruitment of additional proteins to form a protein complex that in turn changes the expression of that gene by changing the conformation of the promoter region and increasesor decreasesthe ability of RNA polymerase to attach and begin transcription. Many more chromosomal disorders that have nutritional consequencesare known. The recovery (diuretic) phase is characterized first by an increase in urine output and later by a return of wasteelimination. of pneumonia that affects 357o-40"/"of children with AIDS and causesa hardening of the lung membranesinvolved in absorbing oxygen Fever, chills, night sweats,cough with or without sputum production, shortnessof breath, antibiotic side effects,weight loss,weakness Fever,weight loss, skin lesions,difficulty breathing, anemia, l1'rnphadenopathy,possibly pneumonia Refers to the tiny discrete granulomatouslesionsin lungs and other organs that result when bloodborne tubercle bacilli seedsmany tlssues Progressiveweaknessand dementia, speechproblems, forgetfulness, perceptualproblems, visual problems, incontinence Loss of weight and body cell mass Painful, burning feet or numbnessin the feet and/or hands Modified from Martin J et al:AIDS bomemre and bospice manual, ed,2,San Francisco, 1990,Msiting Nurses md Hospice of San Franc.isco;Phair JP,Murphy R: Contemporaryd.iagnosis and.mnnagment of HIV/AIDS infections,Newton, Pa, 1997, Health Care Co; BardettJG, GallantJE: Medíral managementof HIV infection, 2OOl-2002edirion, Baltimore,Md,2002, Johns Hopkins Universiry Division of Infectious Diseases. An intact nutrient formula with added arginine, omega-3 fatty acids, and nucleotides was initiat ed.at 20 mllhr via the jejunostomy tube. ls .s .s .\ si. If glycemic control cannot be attained with MNT and glucose-lowering medications, insulin, either alone or in combination with other medications, is required. Here the counselorhelps the client set a realistic and achievableshort-term goal. Aerobic exercise consists of rhythmic, repeated, and continuous move- ments of the same large muscle groups for at least 10 minutes at a time. 1983: The Maternal PKU Collaborative Study begins to study the effects of treatnent on the pregnancy outcome of women with phenylketonuria. The microangiopathiesseenin diabetes, fu the gateway to the human body, the oral cavity can have a significant effect on nutrition and overall health and well-being. pflari organisms are gram-negative bacteria with flagella that facilitate mobility. Gastrostomy tubes are useful for long-term nutrition support, and TPN should be reserved for individuals who are unable to tolerate oral or enteral feeding (Sheehan, 2005). Malabsorption . Formulas intended for use as supplemenrs to oral diets are flavored and contain simple sugars for palatability. GAII comprises half of total body immunity; immunoglobulin production is secreted across the gastrointestinal mucosa to defend against pathogenic substances in the gastrointestinal lumen. High-nitrogen formulas are used for parients with increased protein requirements such as those with burns, fistulas, sepsis,or trauma. and supportof

during eating. 3 b i l l i o n D N A subunits(the basesA, T, C, G) . In some of the studies their role as complementary therapy and to a lesser degree in eradication are promising (Hamilton-Miller, 2003). How would you help him structure an eating plan? During this period dialysismay still be required, and careful attention must be paid to fluid and electrolytebalanceand appropriatereplacement. Repons indicate that some critically ill patients have discoloration of the skin, urine, serum or other body fluids after ingestion of the blue dye and that some have died within days of dye ingestion. Energy: use kcal/kg formula. B. Concentration (osmolarity) B. Topical fluoride services include toothpastes, gels, and rinses used by consumersdaily, along with more concentrated forms applied by dental professionals in the form of gels, foams, and rinses. For example,should individuals be tested for a diseasefor which there is no cure? The long-term use of spices,either as protective or harmful agents, requires further study. Of note, tumor development at the percutaneous feeding tube stoma site has been documented in over 20 individuals between 1989 and 2002 (Thakore et al., 2003). Vitamin C is a nutrient required in very small amounts to allow certain metabolic reactions in the body. Fiber or carbohydrate that cannot be digested by human enzymes, although digested by colonic microflora into short-chain fatty acids, is frequently added to enteral formulas. ... What is the nutritional impact of ... The timing of meals or snacksrelative to the gausinstional side effects of cancer treatment may have a bearing on subsequent learned food aversions. These aversions develop when specific foods are associatedwith unpleasant symptoms such as nauseaand vomiting and psychological stimuli such as anxiety. Other risk factorsfor CLD and BPD includeesophageal fistula, and generalized disease. ... Postoperative enteral versus parenteral nutrition in malnourished patients with gastrointestinal cancer: a randomized multicentre trial. ... In adults, a 24-hour urine collection for creatinine ... Dietary management consists of adequate fluid intake, which can require several liters of extra fluid. Here are 10 websites where you can find mind-blowing full HD wallpapers in 1080p resolution or more. ... After 80 per cent of the number of fat cells can increasethroughout life; however, a. It has also been seen in patients with severe infection during anorexia nervosa, gastrointestinal disease, or HIV infection. ... [illegible] ... women. The prevalenceof both hlpertension and diabetes increases with age, making the elderly particularly vulnerable to HR Even fasting blood glucose elevations(60 mg/dl inRiskFactors crease)were predictiveof new casesof HF in a sampleof The FraminghamStudyis a 50-yearepidemiologicstudyof elderly people,mean age 72 years (Barzilayet al., 2004). When either overfeeding or underfeeding interventions were made, the younger men exhibited spontaneous hypophagia (undereating) or hyperphagia (overeating) to alter body weight accordingly. Statesand U.S. territories were federallymandatedto implement confidentialname-basedreporting of AIDS cases to the CDC. FogelholmGM et al: Bone mineral densityduring reduction, maintenanceand regainof body weight in premenopausal, obesewomen, Osteoporos Int 12:199,2001. Fluoride may be unintentionally added to the diet in a number of ways, in- cluding the use of fluoridated water in the processing of foods and beverages. Ro l eo f F i b e r i n D i g e sti oann dA b so rp ti on The role of fiber in the GI tract is complex and varies based on the solubility of the fiber. E n d i n g t h e S e s s i o n Counselors often expect a decision and at least a goalsetting session when working with a client. Foods of moderate- or lowPhe content are used as a supplement ro the formula/medical food mixture. Nemeth E, GanzT: Regulationof iron metabolismby hepcidin, Ann Rets Nutr 26:323,2006. Williams syndrome is characterized by cardiac defects that have nutritional implications. Up to this point discussionshave focused on changes the client has already made. Most studies point out that systemic hlpeftension, another factor that mitigates the progressive loss of renal function, must be well controlled to produce benefits from protein restriction. The National Kidney Foundation's Kidney Dialysis Outcome Quality Initiative (KDOQD panel suggest that patients whose GFR is less than 25 mVmin and who have not yet begun dialysis should be maintained on 0.6 g/kg/day of protein and 35 kcahg/day. These feedings can be given by pump or $avity drip. Litde evidencesuggeststhat intakes of fewer than 800 calories daily are of any advantage.Most VLCDs are hlpocaloric but relatively rich in protein (0.81.5 g/kg IBW per day); they are designed to include a full complement of vitamins, minerals, electrolytes, and essential fatty acids, but not calories; they are given in a form that completely replaces usual food intake; and they are usually given for a period of 12 to 16 weeks Their major advantage is rapid weight loss. Chemically defined formulas usually have minimum amounts of lipid. Hypoglycemia can also occur during or immediately after exercise.Blood glucose levels before exercise reflect only the value at that time, and it is unknown if this is a stable blood glucose level or a blood glucose level that is dropping. The Framingham Children's Study showedthat children with higher intakesof fruits, veget^bles (a combination of four or more servingpper day) and dairy products (two or more servingsper day) had lower SBPcomparedwith thosewith lower intakesof thesefoods (Moore et al., 2005).Becauseadherenceto dietaryinterventions may be particularly problematic among children, in- for Hypertension879 CHAPTER 33 I MedicalNutritionTherapy Glassification, Monitoring, andTherapyRecommendations for Ghildren andAdolescents with Hypertension SBPor DBP Percentile* Requency of BP Measurement Therapeutlc Ufas$e Gharges Normal 89 mmHg Antihypertensive DrugTherapy . One of the greatest public health successesin the twentieth century has been the decline in age-adjustedmortality rates {iom C\{D (Thom et al., 2006). org.nz wwwnuui genomics.psu.edu www.nutri genomics.ucdavis.edu www'genome.gov www.ncbi.nlm.nih. Disorders of the esophagusmay be causedby derangement of the swallowingmechanism,obstruction,inflammation, or abnormalsphincterfunction. A feeding nasojejunostomyor jejunostomy tube can be placed at the time of surgery permitting early postoperative tube feedings. ActionTimesof HumanInsulinPreparations Type of Insulin Rapid-Acting Insulin lispro (Humalog) Insulin aspart Q.{ovol-og) Insulin glulisine (Apidra) Short-Acting Regular Intermediate-Acting NPH Long-Acting Insulin glargine (Lantus) Insulin determir (Levemir) Mixtures 70/30 (70"/"NPH, 307oregular) 7 5/25 (75"/" neutral protamine lispro [NPL], 25% lispro) 70/30 (70% neutral protamine asparr [NPA], 30% aspart) Onset of Action 250 mg/dl but generally 94; MCHC >31) Mesaloblastic Vitamin B12deficienry Folic acid deficienry Inherited disorders of deoxyribonucleicacid (DNA) synthesis Drug-induced disorders of DNA synthesis Nonmeealoblasdc Acceleratederythropoiesis Increasedmembrane surfaceaema fleatrnent basedon the nature of the disorder Hypochromic Microcytic (MCV 150 1 1 5+ 5 0 160 >160 >160 RBCcobalamin(pg/ml) >800 >600 300-800 300 >200 >200 STAGilII Folate depletion I DEFICIENCY STAGE III STAGE IV Damaged Clinical metabolism: oamage: folate folate deficiency deficiency erythropoiesis anemra Liverfotate-{ plasma folate -t Erythrocyte folate -{ Serumfolate(ng/ml) RBCfolate(ng/ml) DiagnosticdU suppression Normal 50 is often unrecognizedsubde B12deficienry,producinginadequatery.nthesisof new brain cells,but no anemia,FASEBJ l5(2,Part I):A59,2001a. Chemically defined formulas are specializedmonomeric formulas that have been hydrolyzed to contain short-chain carbohydrate or simple sugars and peptides or amino acids. Remove stylet wire from feeding tube and follow Silk tape standard feeding administration and mbe care Cup with warnn water procedures. sle^al pepueuruoJeJ aql leoru tou op osp dagr lnq 'sapura; uetp stunorue ralear8 ler{a,eruoserunsuoJ or rfia4g aJoru aJBuaw 'sIV dlqe:aplsuor arlr urr1J ssel arunsuoJ uaruo^\ lueJJm ol 8ur llnpu pue uaar '(/002 'SgNVFIND BlBp SENVI{N -proJrv 'saleruJdlenadse 'srea,t 11 puodeq sa8e roJ IV 1e papuaruruorer erfi leeru tou op {1ec1d1bso>lslurumrrle3 '(Ja^oJ luo{ ePrsuruo se{elur papueuruoJer Lreterp egr ees) alclc e;g arp ssoJJe rapuaS r{f,eeJoJ erues arfJ eJe unrJleJ roJ sIV 'lrodar rsatel eqr ur depTSur ol peseerrur se,r (srea,(61 or dn) acuac 00tI -selopu q8nortp (sree,{ a8u) acuacselopeerdruo.r; unrJIBJ 11 roJ IV erIJ 'payFuenb aq ppoc aycdr eJII eW;o se8rr etp Surrnp C urruutrl pue umrJIBJ JoJ $eurueJmbar ueaur aql ,(1uo esnrcaq '(s1y) sa>1erur etenbepe se uarug oJB sluerrlnu Jet1lo aeJ e pue 'q urru?lrl (ulnrclec JoJ suonupe[uroJaJ eurJrpew Jo elntnsul eqJ 'uonueDe qJnu pa^reJeJ sEq srsorodoalso Jo uoguaJeJd Lreurrrd et1t ul e)Flur tunrJIBJ spoolruoiJunrsleS a)lPlulunr3lPS 'tb1. All dietary forms of sugar, including honey, molasses,brown sugar, and corn q,Tup solids, have cariogenic potential and can be used by bacteria to produce organic acid by-products ofmetabolism. Expectorant herbs include anise, fennel, and thy-. Progression is influenced by the overall health of the host and the integrity of the immune system. govlcamonpubmed./ http ://www. Energy expenditure in physical activity can be estimated using two methods: (1) the method shown in Appendix 28, which represents energy spent during common activities and incorporates body weight and the duration of time for each activity as variables, and (2) using information in Table 2-2, which representsenergy spent by adults during various Energy expenditure is determined by the amount of oxygen metabolized by the body. d 6 d 6 t6. The selection of the enteral nutrition formula for an individual with cancer is determined by several factors, including the functional capacity of the gut, the individual's nutrition status, considerations ofcost and convenience, and the physical characteristics of the formula such as osmolality, presenceof fructooligosaccharides(FOS), protein content, energy density and nutrient content (Robinson, 2006). In the presence of concomitant encephalopathy, repletion of dietary protein may be limited or restricted; refer to Chapter 28. Such gels are effective in reducing the risk of coronal and root decay and tooth loss ftVeintraub et al., 2006). LamPs Ultraviolet Modalities OtherTreatment Several other approaches to prevent fractures have been demonstrated to have benefits in small study populations; they have not been adequately tested in the elderly. 100:944, 38 PARTI i NutritionBasics Harris JA" BenedictFG: A biometric srudyof basalmetabolismin man, Pub No. 279,Washington,DC, 1919,CarnegieInsritute of Washington. At times this weaning processmay not be practical, and parenteral therapy can be stopped sooner. Identifring the genetic and biochemical mechanisms underlying health and diseaseprovides the basis for developing individualized intervention and prevention strategies.In the caseofthe omega-3 fatty acids, researchersare actively seeking conditions under which dietary omega-3s can be used to decreaseinflammation and increase insulin sensitivity. Unless it is aggressive,abdominalliposuction does not significantly improve obesity-associated metabolic abnormalities. cisorders G e n e t iM c e t a b o l iD disordersareby far the most common Autosomal-recessive inherited disordersand include numerous of the Mendelian metabolicdisordersof amino acid, carbohydrate,and lipid (see metabolism-disorders calledinbomerrorsof metabolisnr' these disorders). AIDS, or advancedHfV disease,is the diagnosticterm reservedfor personswith at least one well-defined, lifethreateningclinical condition that is clearly linked to HfV(seeAIDS-defining conditions, inducedimmunosuppression Box 38-1,CategoryC). tqncn:ed ur r1rlueq auoq roJ pue 'pra -ue8 ur WIEaq JoJ papeeu slueulnu rerpo IBJa^asur rIJrJ osle eJBruntclec Surureluoc spooJ a{r tu{t eJEauole spooJ uro{ $uerueJrnbeJ runrJIEJ Supeau Jo stgeueq lBuoprppv 'suoFdo ruelleJxe err selqelaSa,r ,!re1 uear8-{rep pue 'secrn(puc s{lru f:repuou pegproJ -unrJIsJ 'ryot 'spuorule sB qJns runrJlur ;o sacrnos &rcp -uou llelrr dluo erlr lou sr tr tananoll 'stuaruarmbeJ runrJleJ dlcp rrarp laau ol slenpr rput tsoru roJ,{ern tsaq er1t eq or s-readde'sun€o,t pur 'sesaeqc'q1nu runnlec-q81q dlercadsa 'stcnpord &rep;o uopdunsuoc aqa lrrlqelreleorq runtclec ,rl.ol e^Er1salqure8ezrSururrluoc-ereyexo qSrq Jer1lo aeJ E pue qcturds ta,ra,ro11 'peqrosqe l:e,r s sueeqdosuror; larn runrJlec pue :frqrqelrt^Eorq e,req doqc poo8 oqe pue {oq 'ep1 'ryocco-rqse qJns selqera8an,fea1 ueer8 ldup e pearq ;o s8ulr-les FJaaeseurnsuoJ oga esorp JoJ urnrJleJJo ocJnos pooS e eq '{eur pteJg rceqr!\ 'sntets uoFrrnu unrJIEc tcege dlasre,rpepue x\ol eq r(etu 1rqcuurds s? Alcohol Consumption Moderate alcohol consumption (i.e., one or two drinks a day) is associatedwith a significant reduction in CHD risk (Parks and Booyse, 2002), but the use ofalcohol is not recommended as an intervention strategy. To estimatea person'senerg'yrequirementsusing the Institute of Medicine EER equations,it is necessaryto CHAPTER2| Energy 35 in Children Activity Physical ActivityLevelGategories Physical andWalkingEquivalence PAt Gategory PAt Values Sedentary Lowactive Active 1-1.39 l.+-1.59 l.5,2.2,2.9forPAL: 1.5 1.6-1.89 3,4.+,5.8forPAL:1.6 forPAL : 1.75 5.3,7.3,9.9 1.9-2.5 for PAL : 1.9 7.5,10.3,14 12.3,16.7,22.5for PN, : 2.2 1 7, 2 3 , 3 1f o r P A L: 2 . Stagesofchange Behavioral Outcome and Protecting the Fragile Self r Procrastination . What can we do to make you feel great about eating out so that you can still follow your eating plan and keep your blood glucose values in the normal range?" Re f r a m i n g With reframing the counselor changes the client's interpretation of the basic data by offering a new perspective. Seealso Molybdenum sefenium as,129-131. This minimizes the incidence of errors (mutations) that may greatly affect the resulting organism or its offspring. These constantly beating cilia sweep the particles upward toward the pharynx. kansasir,disseminatedor extrapulmonary . Kudsk KA et al: Enteral versus parenreral feeding: effecrs on septic morbidiry after blunt and penetrating abdominal rrauma, Ann Surg2l5:5QJ,1992. pylori as the maior contributor to these disorders, the role of diet and nutritional status has been reevaluated. "How would you like things to be different from the way they are?" and "What is it that you would like to change?" The second step is to consider options. Argiles JM et al: Cytokines in the pathogenesis of cancer cachexia, Cutr Opin Natr Metabol Care 6:401,2003. Additional behavioral trials are needed to choose the best health-related behavioral programs (Glasgow et a1.,2006;Howard et al., 2006). If nutrition professionalsare going to be prepared for the era of genomic medicine, they must it is likely to take some time before people are comfortable with the way genetic information is used. of Eating andFrequency Sequence TheDecayProcess Eating sequence and combination of foods also affect the caries potential of the substrate. D i a b e t eM sellitus Diabetes is associated with several oral manifestations, many of which occur only in periods of poor glucose control. ed4. The caries are the end result of tooth erosion characterized, by erosion of the palatal and buccal surfaces of the CHAPTER25 1 Nutrition for 0raland Dental Health 643 maxillary anterior teeth and the lingual surfacesof the palatal surface of the maxillary posterior teeth (Little, 2002). PA coefficientscorrespondto four physicaf activity levels (PAL) lifestyle categoriesisedentary, low actiae,actiae,and aery actiae. Chemically defined formulas can be viewed as diseasespecificformulaswhen prescribedfor conditionsof malabsorption and maldigestionsuchaspancreatitis,short bowel slndromes, or HfV/AIDS related gastrointestinalpathology.Disease-specific formulasare alsoavailablefor patients who have renal, hepatic, or cardiopulmonarydisease,immunosuppression, glucoseintolerance,or specialneedssuch aswound healing.The efficacy of disease-specific formulas is controversialsince evidencefor the necessityof these productsis limited by few controlled studies.They are generally much more expensivethan standardformulas. Sands MJ: Vascular accessin the adult home infusion patient, JPEN J Parenter Enteral Nutr 30,557,2006. In a study of more than 1600 children in Manhattan, the level of untreated decay was 9lo/o, significantly higher than the U.S. national population, which is 76% overall and 76Yo for blacks and Mexican-Americans within the population (Albert et al., 2002).In general, children from low-income families experience the greatest amount of oral disease,the most extensive disease,and the most frequent use of dental services for pain relief; yet these children have the fewest overall dental visits (Edelstein, 2002). American Heart Associanon: 2005 Heart and stroke sttistical upthte, Dallaq 2005, American Heart Association. Data from ProchaskaJO, Di Clemente CC: Tianstheoretical therapy: toward a more integrative model of change, Psyclother Tbeoty Rr Praa 20:161.1982. stage group (Institute of Medicine, 2002;2005). Effors to test the efficacyof dietarysupplementsin clinical trials are expandingand resourcesto stay abreastofcurrent researchin this areaare now available. She also recommends that the grandmother have the child's diet and nutritional statusevaluatedby the clinic's registered dietitian. fu a bolus of food is moved voluntarily from the mouth to the phanyrrx,the upper sphincterrelaxes,the food movesinto the esophagus,and peristaltic wavesmove the sphincter the lower esophageal bolusdown the esophagus; (LES) relaxesto allowthe food bolusto passinto the stomach(Figure26-l). Suueduroc lelrl pezluopuer V :lE ra rf 1114 ra8unlg '4967 'arournleg 'sulTIrA { srue{ll1\ llocurddrl 'g pa 'atot pawpritslu8orp pua uluuruN:5 durnlg-rlocsg 'l]runururtotne '2002'lttl I tossy palrrg,ts1 ur uratsds eunrurur erp pu?splru lrleg g-1q :p la q se8rg '1002 'I:I paIN uraqv luaualqtuoS 'tlpr!'s 31rgg leuolte^Jesqo ue :talp u? uqe8e^ ,ra,erdytsour e Sursn pa,rordrur eurorpuds er81e.{urorqrg:le te SW uosPIBuoC ' 0 0 0 2 ' L t 6 ss l Q atnaq[uuv 'dpnrs ropd e :]no3 uI sle^al uratordodq Pue elBrn rurues uo leJ peterntesun pue urato.rdJo e{?tur leuouodord pesBarJurPuB uonJrJlso.l alerp^{oqreJ/auoleJ eleJoPotu r[]r,{\ PeterJossessol rqErern;o slce#e lElcgauefl :le re Hd ulessec ' sllucluv 9002,s60ttts runaqd 'snrrqtre proteunel{J uI uoltel?cse a8esop Surrnp slrogo etBxeJtoqtelu qlr.{r uor}srJosseJreql pue r(enqred erEIoJeTr ur sJelJeurorq f,IloqBlalu Pue JrruouetsoJeuueqd :l? Chewing pio-ot., saliva production and may account for the reduced cariogenicity of fermentable carbohydrates consumed with a meal. GlasgowRE et al: Practicalbehavioraltrials to advanceevidencebasedbehavioralmedicine.Ann BehaoMed.31il):5.2006. Eating a relativelylow-fat (24./.) diet 2. Hoda D et al: Should patients with advanced,incurable cancers ever be sent home with total parenteral nutrition? Binding results in a conformational change in the stmcture of the DNA molecule that results in RNA polymerase being able to bind and transcribe the PPARgammaregulated genes, leading to a host of lipogenic and proinflammatory activities. For example, Asian women who migrate to urban areas and change their lifestyles from more agrarian to less active ones also have increased risk of hip fractures (I-au et al., 2001). The prolonged acid exposure increases the risk of developing more serious esophagitis (Kahrilas and Lee, 2005). Patiens with disease-related physical limitations may be helped by assistance with food shopping and meal preparation. But reduced activities in daily life may also contribute to bone loss. Carbohydrate metabolism by cells also causes a shift of electrolytes to the intracellular space as glucose moves into cells for oxidation. They were developed to help consmem detemine if a food contains a lot or a litde of a specific nutrient. Tircker K, Mayer M: Low plasmavitamin B12is associated with lower bonemineral density:the FraminghamOsteoporosis Study,J BoneMiner Res20:152,2005. Ryder K-Nl et al: Magnesium intake from food and supplementsis with bone mineral densityin healthyolder white associated snbjecs,J Am Geriatr Soc53 1875, 2005. Individual amino acid additives such as glutamine and arginine are used for researchpurposes,but they have not been-approved for general clinical use in parenteral solutions. all carbohydrates, glycogen is stored hydrated with water. The goals of nutrition care in patients wirh RF are to meet basic nutritional requirements,preseruelean body mass,restore respiratorymusclemassand strength, maintain fluid balance,improve resistanceto infection, and facilitate weaning from oxygen supporr and mechanical ventilation by providing energysubsrrateswithout exceeding the capacityof the respiratory systemto clear carbon dioxide. Among those who develop pernicious anemia, most are over 60. When taking these medications, it is necessary to eat a normal, balanced diet, maintaining a consistent amount of vitamin K, and avoiding drastic changes in dietary habits. The buffering capacity of cheese and milk makes them desirable foods to eat at the end of a meal or in combination with other fermentable 15 minutes, causing caries-promoting quent meals and snacks, often high in hydrate, increase the cariogenicity of more than a diet consisting of three activity. At least three forms of homorystinuria exist, each requiring a different nutritional approach. Parenteral nutrition has been shown to improve long-term survival in patients undergoing HSCT QVeisdorf et al., 1987) and reduce surgical complications in malnourished gastrointestinal cancer patients (Bozzed et al., 2001). Intensive supplementationhas been associatedwith improved weight gain, slowed decline in pulmonary function, decreasedincidence of respiratory infection, and improvedsenseof well-being. Matarese LE, Gonschlich MN[: Contempnrnrynutrition sappnrt practice,ed 2, St Louis, 2002, Saunders. Renwick AG: Acceptable daily intake and the reg-ulation of intense sweeteners,FoodAddit Contam 7 :463, 1990. A number of diet therapies consist of specific foods prepared and consumed in a specified manner. Centersfor DiseaseControl and Prevention:Recmnmendations for usingfluoridetopreaentand controldentalcariesin the United States, http :/ / www.cdc.gov/mmwr/previedmmwrhtrnV rr50l4al.htrn, accessed May 15,2006. The energy cost of physical activity is the most variable of factorsrelatedto an individual'sTEE, and can be alteredby the individual. Some of these minor differences do not affect health and others increase the risk of developing a disease. The counselor asks about alternative strategies and options and then asks the client to choose from among them. The resuhanr enrqe insufficiency causesmaldigestion of food and malabsorption of nutrients. HurstJD, Gallagher AI: Energy, protein, micronutrient, and fluid requirement. Another problem that may arise after gastric bypassis ice-cube pica. o,i *6 'to EUD 9tr! -:dtr f E f, l!6u) 33 trq < b" TS \o6 Pa Et ** T_t gE >F O " s d APPENDIXESL229 :^'€ B>" H>" tro.lq - -d:ri Kdld r'. Intermittent feedings, as well as bolus feedings, should not be used with patients at high risk for pulmonary aspiration. Ulrey KL, AmasonP: Intercultural communicationbetween patientsand health careproviders:an explorationof cultural sensitivity, intercultural communicationeffectiveness, 13(4):449,2001. J Am Dent,4ssoc EdelsteinBL: Dispariesin oral health and accessto care: findings of national surveys,Ambul Pediatr2(2 Suppl):141, 2002. PoIvPHARMAcY Several categories of medications can alter the integrity of the oral mucosa, taste sensation, and salivary production (see Chapter 16). Vasodilators . If gastroesophageal reflux is evident, lung disease may worsen because of aspiration. Nateglinide only works in the presence of glucose and is a somewhat less potent secretagogue (Inzucchi, 2002). Heahby People2010: National heahb prornotiln and diseasePreaentiln prlgress reuiew- focw area I0 food safery,Washington, DC, 2004b: U.S. Department of Health and Human Services. Normalprotein /> L-zl \/) Some DNA variations have no negative effects Low or nonfunctioningprotein F-/r- |-") \- / - > bxJ other variationslead to disease(e.9.,sicklecell) or increasedsusceptibility to disease(e.9.,lung cancer) FIGURE l3-5 It is estimatedthat human beingsdiffer from eachother in only 0.1% of the total sequenceof nucleotides that comprise deoxy'ribonucleicacid (DNA). The effectivenessof diagnosis and treatment has been remarkable in that over 90% of symptomatic patients after treatment with vitamin 812 regain independence in conducting activities of daily living (ADLs) (see Chapter31). storageIal ......-.-...5o/o-21o/o a. If oral feeding is possible after surgery generaldietary recommendationsinclude liquid or soft-textured,moist foodsfor easymasticationandswallowing and small,frequentmealsof relativelyhigh caloric density. The etiology of these reportedlow levelsof iodine intake are not fully elucidated. Pathophysiology Thiamin deficiency is the accepted primary cause of WKS. Central accessrefers to catheter tip placement in a large, high-blood-flow vein such as the superior vena cava;this is central parenteralnutrition (CpN). Her exposureto sunlight? Reasons for growth failure among infants include increased energy needs combined with inadequate dietary intake, gastroesophageal reflux, emotional deprivation, and chronic hypoxia. Adjustrnent of medications or administration methods can frequendy correct the diarrhea.The addition of soy polysaccharide,a prebiotic, pectin, and other Complications of Enteral Nutrition Access Problems Pressurenecrosis/ulceration/stenosis Tirbe displacement/migration Tirbe obsruction Leakagefrom ostomy/stoma site Administration Problems Regurgitation fupiration Microbialcontamination ComPlications Gastrointestinal Nausea,/vomiting Distention/bloating/cramping Delayed gastric emptying Constipation High gastric residuals Diarrhea Osmotic Secretory Medicarions Tieatrnent/therapies Hypoalbuminemia Maldi gestion/malabsorption Formula choice/rate of administration Metabolic ComPlications Refeedingry.ndrome Drug-n utrient interactions glycemia Glucose intolerance/hyperglycemia,/hypo /overhydration Hydration status-dehydration Hyponatremia Hyperkalemia/hypokalemia Hyperphosphatemia/hypophosphatemia Micronutrient deficiencies Data from Hamaoui E, Kodsi R: Complications of enteral feeding and their prevention. The nephron consists of a glomerulus connected to a series of tubules, which can be broken into functionally different segments: the proximal convoluted tubule, loop of Henle, distal tubule, and collecting duct. The presence of hiaal hernia is not synonymous with reflux, but it increases the likelihood of sr'mptoms and complications. Normal irway mucusis a substanceconsisting of water, glycoproteins,and electrolytes. Do you think that this happened as a kind of immediate responseto his death and that you might have just decided that all of the goals were too strict at that time?" (Pause) Client: "Well, you are probably right." Natrition Counselor:"Could we look at r,vhereyou are now and try to find things that will work for you now to help you in following the goals we have set?" These strategiesto help in dealing with the resistant client offer tools to ensure that nutrition counseling is not ended without appropriate attempts to turn difficult counseling situations in a positive direction. Medical Treatment Tieatment with thiamin should be started immediately, and adequatehydration should be provided if WKS is suspected. Chronic GVHD can developup to 3 months after transplant and is observedwith increasedfrequencyin nonidentical related donors and unrelateddonors (Charuhas,2006). More data are needed before they can be classified as functional fibers (Institute of Medicine, Food and Nutrition Board, 2002). Evaluation of the suitability and efficacy of 20 | Intervention: Enteraland Parenteral NutritionSupport 511 CHAPTER DietitiansPlacingEnteral FeedingTirbes Procedure f t is acceptedthat enteral feeding is preferred over parenI teral feeding whenever it is possible.However, safelygain- This procedure takes approximately 10-45 minutes. Methods Compounding Requirements During DailyElectrolyte TotalParenteral Nutrition-Adults Electrolyte Parenteral Equivalent of RDA Calcium Magnesium Phosphate Sodium Potassium Acetate 10 mEq l0 mEq 30 mmol N/A N/A N/A Chloride N/A Standard Intake 10-15mEq 8-20 mEq 20-40 mmol l-2 mEq/kg * replacement 1-2 mEq/kg fu neededto maintain acid-basebalance As neededto maintain acid-basebalance From National Advisory Group on Standards,and Practice Guidelines for ParenteralNutrition, ASPEN: Safepracticesfor parenteralnutrition formulations, /PEN J ParenterEnteral Nutr 22(2):49, 1998. Because of the anticariogenic properties of cheese, eating cheesewith a fermentable carbohydrate, such as dessert at the end of a meal, may decrease the cariogenicity of the meal (Kashket and DePaola, 2002). Seea/.roNurition assessment nutritional genomics in,364-382. metabolic rate during selected physical activities of varying intensities and are expressedas multiples of RNIR (see Table 2-2) (Institute of Medicine, 2002;2005). It is imporant to remember that foods that provide lower percentages of the DV also contribute to a healthful diet. Cigarette smoking has been studied most thoroughly, primarily becauseit is the main use of tobacco, and the exposure fiom direct smoke inhalation is considered greater than with other forms (see Clinical Inszglr: Smoking and Gastrointestinal Function). Others are not responsive to 86 and need a combination of folate, vitamin B12,choline, and betaine to convert homorysteine to methionine; and others must limit their methionine intake. "In what wayshasfollowing your diet beena problem?" Concern Example 4 Client: "I just dont want to do this any more!" Nutrition Counselor:"You sound hassled by other priorities and feel that the changes in your eating habits just get in the way. Much of this process is active and requires a large expendirure of energy in the form of adenosine triphosphate (ATP). It is recommended that, in addition to the injections of vitamin, the diet be liberal in use of high-biologic value proteins and supplemented with iron, vitamin C, and other B vitamins, including folic acid. Gamer, PhD, 2000. American Associationfor Respiratory Care: Meabolic measurementusing indirect calorimetry during mechanical ventilation-2004 revision & update, RespirCare 49:1073, 2004. Some nutrients and substances are recognized by the government as dietary supplemens and have relatively flexible regulations governing product claims for health and well-being (Mueller and Nesde, 1995). Was that point in time different than now?" ShiftingFocus Clients may hold onto an idea that they think is getting in the way of their progress.The counselor might question the feasibility of continuing to focus on this barrier to change when other barriers may be more appropriate targets. Is organic food healthier? Vegetarian and low-fat diets increase the formation of large VLDL particles. HasseJ: Examiningthe role of rube feedingafter liver Nutr Clin Praa 2l:299,2006. llSaturatedfat and sodium get a score of 8 for the inuke levelsthar reflect the 2005 Dietary Guidelines: < 10% ofcalories from saturatedfat and 1.1 g of sodium per 1000 kcal, respectively. Chranic interstitial nephritis can occur as a result of analgesic abuse, sickle cell disease, diabetes mellitus, or vesicoureteral reflux and manifess primarily as inability to concentrate the urine and as mild renal insufficiency. An online eGFR calculator can be found at the National Kidney Foundation site, www.Kidney.org. Phytates from whole grain breads, cereals, legumes and other products can decrease zinc absorption. If intracellular electrolytes are not supplied in sufficient quantity to keep up NutritionSupport 523 Enteraland Parenteral C H A P T E R2 0 I Intervention: with tissue growth, low serum levels of potassium, phosphorus, and magnesium develop. LABORATORY WORK.UP: A. @4unw) Humphries SE et al: The interleukin-6 -174G/C promoter with risk of coronaryheart disease polymorphismis associated and systolicblood pressurein healthy men,Eur HeartJ 22:2243,20Q1. Disease at the Ghromosomal Level In addition to changes in the DNA that occur within a single gene, diseasecan be causedby changes in the number of chromosomes or the arrangement of the DNA within a chromosome. However, evidence for the hlpocholesterolemic effect of soluble fibers, including FOSs, s)'nthetic polydextrose and polyols, viscous pectin, guar gum, oat bran, psyllium husk, beans, legumes, and fi:uits and vegetables, is conflicting. Symptoms of right upper quadrant discomfort, hepatomegaly, fluid retention, and jaundice can occur; in severe casesindividuals may experience progressive hepatic failure leading to encephalopathy and multiple-organ system failure. There should be a thorough nutrition assessmentof the patient before the initiation of therapy and reassessmentsand monitoring throughout the entire transplant course. seafoodcontamination, in pregnancy and lactation, 180 methylsulfonyl methane (MSM), ergogenic aid, 605t 7 46t microcytic anemia, 421, 81 1, 812t definition, 41l, 810 microencapsulated fish oil powder, as DHA and 778-779 minerals as, 102-138. However,informing patientsthat they havemetabolicsyndrome basedon definitionsthat havenot been agreedon is not wise (Reavenet al., 2006).Ratherit is suggestedto effectivelytreat the underlying causeof the individual risk factors.This thought is predicatedon the observationthat insulin-mediated glucose uptake is highly variable in healthy individuals;only one third of thesewould truly be insulin resistantand at risk for increasedexpressionof other risk factorsand CVD. At least a small percentageof intolerancesto spicesmay be related to specific allergic responses(Scholl and JensenJarolim, 200+). What is the nutritional significanceofJerome's resection ofthe ascendingcolon and ileocecalvalve? ter, protein, and mineral components ftVagner and Heyward, 2000). BIot W]: Prevention of esophageal cancer: the nutrition intervention trials in Linxian. Changes in the DNA are the basis for evolution; thus clearly not all mutations are harmful; some actually improve function, and many, referred to as silent mutations, have no effect. Vegetable oils, nuts, green leafi' vegetables, and fortified cereals are common food sources of vitamin E. The maintenance of improvements at I year supports the prediction that long-term improvements in body weight could have a long-term effect on glycemic control. No food should be omitted, given the possibility of alcohol-induced hypoglycemia and the fact that alcohol does not require insulin to be metabolized. MokdadAII et al:Actualcauses of deathin the U.S.2000,JAMA 291:1238,2004. Children have increased nutritional requirements for growth and development that must be met despite extended periods of cancer treatment. 157(10):888, Am J Epidemiol GillespieWJ et al: Vitamin D and vitamin D analoguesfor with involutional and postpreventingfracturesassociated DatabaseSystRea menopausalosteoporosis,Cochrane cD000227,2001. JacksonRD et al: Calcium plus vitamin D supplementationand the risk of fractures,N EnglJ Med J54:669,2006. Failure is defined as an inability of the patient to reduce body weight by one third and body fat by one half and an inability to maintain any weight loss achieved. Nutritional care in these conditions is concerned primarily with the consequences of poor circulation throughout the body. DRI reports for nutrients are now complete.Nutrition and health professionals shouldalsouse the most updated food compositiondatabases and tablesand inquirewhether datausedin computerizednutrient analysisprogramshave beenrevisedto includethe most up-to-dateinformation. At the onset of ARI when few patients can tolerate oral feedingsbecauseof vomiting, diarrhea,or gastricstasis,intravenous(f\| preparationscanbe usedto reduceprotein catabolism.Somepatientscanbe managed with enteralfeedings,dependingon the degreeofseverity of symptoms,but in most ARF patientsW feedingmust Energt. Often the nutritionist feels obligated to solve a problem or give advice. Maybe it’s the larger-than-usual viewing size, or maybe its the way the magnificent colors are arranged, but once you’re hooked there’s no turning back.Pixabay License/Hans/Pixabay Wallpapers WideThere’s a reason Wallpapers Wide is one of the most popular places to find HD backgrounds: it’s been amassing images for ages. Neither is "not quite HD". If so, in what ways might testing be beneficial? Dairy products (nonfat milk, yoguft) enhance remineralization and contain calcium' Chewy, fibrous foods induce saliva production and Combine dairy products with a meal or snack. More than 50% of the rapid weight reduction is fluid, which often leads to serious hypotension problems. 486 PART3 i NutritionCareProcess llen is 66 years old and has been diagnosedas having hyf l- pertension, hypercholesterolemia, and type 2 diabetes. The quantity of enzymes to be taken with food depends on the degree of pancreatic insufficiency; the quantity of food eaten; the fat, protein, and carbohydrate content offood consumed; and the type of enzymes used (Brady et il.,2006; Kalnins et a1.,2006). (2004)for an overviewof geneticvariation and inflammationin referenceto nutrisenomics. Nell works in an office and does not participate in any phpical activity. 1980s: Lifelong restriction of phenylalanineintake becomes the standardof care for PKU clinics in the United Sutes. tustsuoc patelJossB l8reua esnereq en-D sr relel er{J tndlno Aqeqord 'JEelJrmsl ssol sesneJ eJnlrpuadxe lSraua lq8re.,ra. The initial effects on glycemic control were greater than the long-term effects, supporting the role of energy restriction as well as weight loss in glycemic improvement (Anderson and Konz, 2001). DeBusk M[.: Genetics:the nu*ition clnnection,Chicago, 2003, American Dietetic Association. Protein content C. Energy requirementsare determinedby the unbe used.Giving carbohydratealone(e.g.,100g overa 24derlying causeof ARF and comorbidity. The choice of the salt form of electrolytes (e.g., chloride, acetate)has an impact on acid-basebalance. It is associated with fewer postoperative complications and shortenedlengths of stay (Bozzettiet al.,2001).In patients with head and neck cancer receiving radiation therapy, the placement of a feeding tube and enteral nutrition support before the initiation of therapy has been shown to prevent weight loss and reduce treatment interruptions and hospitalizations for dehydration (Scolapio et al., 2001). Magnesium-containing antacids and laxatives Magnesium binds tetracycline in the gut and decreasesthe absorption of tetracycline. Their greatest advantage for patients is better mobiliW and time awav from infusion. Registereddietitiansare obliged to be sufficiendywell informed and to advisetheir patientsresponsibly regardingCAM therapiesand the safeuseof dieary supplements. Do some research before venting next time — 1080i IS HD. It is important that the age and gendeq other acute or chronic medical conditions, medications and other treatrnents, anthropometric and bone mineral density measurements, past and present state of nutrition, and whether the patient currendy is hospitalized or living at home take priority in determining the person's nutritional needs and feeding strategies.Box 35-3 lsis major components of nutrition assessmentin COPD. In patients with cor pulmonale resulting in fluid retention, weight maintenance or gain may camouflage actual wasting of lean body mass. Mamin K is needed to make clotting factors that help the blood to clot and prevent bleeding. Becauseof its barrier function, the glomerulus blocks blood cells as well as molecules of molecular weight greater than 6500 daltons such as protein. On the other hand, a low protein intake, such as in undernutrition, generates a decreased serum concentration of IGF-1 (Ammann et ai., 2000). Seealso Enteral nutrition parenteralfeedingsin, 1120-1125.Seealso Parenteralnutrition physiologicdevelopment, I I 18-1120 low-densitylipoproteins(LDLs), 839 cholesterol,844-845.Seea/soCholesterol definition, 834 lower esophageal sphincter(LES), definition, 654 lower motor neuron lesions,1070t low T3 slmdrome definition,563 in anorexianervosa,575 low turnover bone disease,definition, 92l lp(a) 'lipoprotein litde a' risk and,425 cardiovascular definition,411 lumen definition, 506 gastrointestinal,507 lung(s) cancer,916 899-920 disease, in AIDS, 1006 diseases, lupus erythematosus medicalnutrition therapy,overview,1044t systemic,1059-1060 definition, 1043 lycopene definition,269 275-276 research, for men'sealthissues, 192 \.rnphoid tissue,gut-associated, definition,1021 in AIDS, 1006 l1'rnphomas, lysine,requirements,by agegroup, 63t M macrocytic anemias, 421, 812 B vitamin deficiencies,association,423-424 d e f i n i t i o n , 4 1 1 ,8 1 0 macrominerals, 102-114. People are extremely concerned that genetic information can be misused (e.g., they might be discriminated against basedon their genotypic profile). PopularDietsandPractices Each year, new approaches to weight loss find their way to the consumer through the popular press and media. An individual's genotype obeys the laws of inheritance, but the phenotype (the measurableexpressionof the genotype) may not becauseof the following. IJse sauces,gfavies,and syrups and try putting in squeeze bottles and decorating plates. Genotyping is available and is a rourine procedure. In a saturated fatty acid (SFA), all carbon binding sites not linked to another carbon are linked to hydrogen and are therefore saturated. The nasoentericrube is passedthrough the nose and esophag-usand inserted into the stomach. Appendixupdatedby Mary DemarestLitchford, PhD, RD, LDN, from original by Timothy Carlson,PhD, RD. Dietary habits and specific food types can play a significant role in the onset, treatment, and prevention of many GI disorders.In many casesdiet can also play a role in improving patients' senseof well-being and quality of life by decreasing pain, suffering, worry health care visits, and the costsassociatedwith GI disease.Table 26-l lists disordersof the upper GI tract that are described in this chapter and the typical s)..rnptomsand nutritional consequences. Kushi L, Giovannucci E: Dietary fat and cancer, Am J Med 1 13(suppl9):635,2002 Kushner RF: Medical management of obesity, Semin Gastrointest Dis 13:123,2002. Intakesof 0therDietaryComponents Several other dietary factors associatedwith bone loss have been identified. In one study vitamin K supplementation of postnenopausal women was shown to retard bone loss (Braam et al., 2003). A good way to developrapport is by finding out how the client prefers to be addressed.Although in America it is by their given common to call strangersand acquaintances names,nearly all other cultures expect a more respectful approach.Listening sensitivity,sharing control, accepting differences,demonsuatingsincereconcern,respectingother cultures,seekingfeedback,and beingnatural and honestare strategiesimportant to achievingpatient complianceand (Kittler and Sucher,2001;Patterson,2004). The underlyingbasisfora andILI andIL6 impact cardiovascular diseasesusceptibilthe seeminglyinconsistentresultsis the geneticheieroeene- ity (Padovaniet al., 2000; Humphries et al., 2001). There are three parts to the negotiation process.The first is setting goals. diabetes is now considered a CHD risk factor. 'Surrnolle\s rn uoneurPJooc Jo {JBI E ur llnsal terp suoFlpuoJJatpo rpl^{ Jo uouerrdse 'a4ors Jo >lsrJlB asoql pue >lJeupuu PeeqeW Jo sJaJrreJ fun[u1urerq cnerrmerr8ur.to1yo;slenpl IPur JoJ PalFsuoc uoryo sr pue sraprosrp Sur,nolpns Sunean pue Sursses -sBur sazrlurcads qcaadseqa lueuodrur sr lsr8 rsrSoyogred -ologred qcaadse dq uoFunp,reSur,trolpr'rsy 'aletut atenb -epuurJo uoryoeFeqdsdq ot speel uonlnnuluru asnBroq 'suonJaJur lxagar 8eB lrolerrdsar reddn ctuorqc pue ruesqe i(are,reuneq deur luened eW Iplrpr Jo) sassace.r IBJJnqeW ul pooJ;o sralcod Surploq :frrynb ecro,rfy8rn5 e lrne.Dse tuo{ {Jns or lrqrqeur lqeeur5ur,no1o;ro Suunp SulqSnoc 'esuastp '8ur4oqc 'Suqoorp 'uonerSrn5arpe8urireqdoseu pue'8ur -4oqc 'SuFBeBepnpul esuqdsrgrSuunp uoFeutproocrood 'aseqdpaSulreqd erp ;o sruordur,(5 Jo pue erp tE seruns -er Surpearg 'sn5eqdoseeW otur ssedol pooJeqJSur.ttoge 'sexelarrarcurqdspe8uLreqdocrJcarft elnlr sJJeJluocdleF -uenbasxulreqd eqa der'r:reagl nerord ol tcnppe spJot 'uonerr5mS 'elenaye xud;q aqa pue plor(q IEro eql puu -ar ot xuf-reqdosBu er1J asolJ pa8u&uqdoro pur tua,rerd #o salB^ele arepd ryosaqa'aseqd srgrSuunp uorssaccns prder uI JncJo lsnu stuele JnoC 'se1{JrEIBIJnEJaqr rsed pa11ad -ord sr snloq erIJueq,ll peteurul sr aseqdpe8u&eqd aqa cr3o1 apnlJul surordurr(5 aseqdlPa6u,{rPrld ro -orneu serueduroce frlncAglP)E!6PqdsI0 uer;o (Eur,no1p,rs '$srxe ssau{Ba^. canned. ueruo.&\replg dep g3ee terp aqt uro{ runtrleJ paqrosq?,,{qpecelder eq lsntu tunorue srrfl 'pauteluteru eq ol sr aJueleq tunrrler 'sereJ pue aurrn erll JI qloq q]sol sI tBrp .,(tp red unrcler;o 8ur ggg dyereurxord -de ol $unoue seleural .,(1-lap1a ur ssol euoq pcrdlr aq1 '(yg7 anfug) alrr rarse; ua,re ue lB euoq esol uetuo,lo'psnrdoueuDsod euo5 .reTEOJaql ree,{ rad "/ol ot y"S'1 ot dlpnperS seurlJep eler er.p uegl pur'esnedouetu reUE sreal 61 pue S ueo^\reqJoJ senupuoJ rsad rad yot ol o/oZ aler ssol euoq pettJalaJrt ar{J Jo '9-j7 anfug uI rrlr\oqs ere-senssF I?JnJoc Pue relnJeqBJl rlJoq-auoq JDorodoelso pue Itrurou ueeataq saJuarajgrq 'euoq IEJBJocu?ql aler raq8rq gJntu s tE tsol osp sr euoq JEI -rcaqsr q8noqrp 'asnedoueru eqr reUE ueruo^4.ur seterelej 'auoq -JE euoq Jo spuDl qroq Jo ssoT IEJD.rocJo retp uetp retearS qJnu sr ueruo^r ur euoq JEInJeqeJlJo ssol psned -oueuerd 'a8e;o sreed 6g se ,(pea se saxestpoq q sufaq ssol auoq JBInregEr1'aJIIq elBI eseerueaa.{erupue sneareld ,{lenrue.ta euoq leJruor Jo ssoT '3ur3u;o surelled tueJeJJrp o8rapun ensm auoq JelnceqeDpue anssq auoq IEJnroJ 'tsurlsPoluareuoq uJe^oJ lsrp susrueqJau petJerrp-auourroq eql ur se8urqc eqJ yo tlnsoJ sr sseruеuog ssoT 'sJepue8 roJ eruBs aqt er? H. Moore FA et al: Early enteral feeding compared with parenteral reduces postoperative septic complications, Ann Surg 216:172, 1992. Most often incriminated are chili, cayenne, and black peppers (Milke et al., 2006). studyofsoy food case-control Dai Q et al: Population-based Br J Cancer85:372, intakeandbreastcancerrisk in Shanghai, 2 0 01 . Repon of the Committee of the Human Mitochondrial Genome, 2002,www.mitomap.orglmitomap,/report.htrnl, accessed May 1,2006. Phenytoin (Dilantin) may cause severe gingivitis. Adverse effects include weight gain and edema, and these effects are more common in patients who receive TZDs along with insulin. Restaurants and health care facilities are obligated to use IIACCP proceduresin their food handling practices. However, it is often accompanied by an eating disorder or psychological problem (see Chapter 22).In the elderly or in children unintentional weight loss can be especially detrimental and should be assessedand treated early to prevent malnutrition and other undesirable consequences. genes responsible for these enzymes can have numerous Currently the focus in laboratoriesthroughout the world variations, which means that the resulting enzyme funcis on (1) catalogingthe number of genesrepresentedby tion varies also. Fermentedalcoholicbeverages Goal: Preventpainand irritation Avoid: . In addition to traditional nutrient requirements, the public often hears referencesto functional foods, which are foods or food components that provide more benefits than basic nutritional benefits. The role of the health care practitioner is one of coach who helps clients assessthe need for supplements and helps them to become more knowledgeable about their options (seeBox 18-1). Becausethey are not absorbedin the proximal intestine, fructans have been used as a sugar replacement for diabetic patients. decreasedamount or number of foods, weight loss, changein food textures; may require surgery radiation, chemotherapy,enteral feeding Increasedconcernsabout diet, possibledecreasedintake offood in general or selectedfoods Perceivedfood intolerances, increasedor decreasedfood intake Decreasedintake in general or of selectedfoods Decreasedintake, malabsorption of nutrients, weight loss, micronutrient deficiencies Esophagealstricture or tumor Hiatal hernia Cancer of the oral cavity, esophagrrs,or stomach Dyspepsia Upper abdominal discomfort, bloating, especiallyafter meals Duodenal ulcer Pain severalhours after meals;may be relieved by eating Vague epigastric discomfort associated with eating Early: satiety,bloating, nausea;weak, lightheaded, sweaty;later: symptoms such as reactive hypoglycemia and possibly cramping, diarrhea Gastric ulcer Dumping syndrome after gastrectomy,pyloroplasty, fundoplication, Roux-en-Y gasffic by-passprocedure 656 PART5 I MedicalNutritionTherapy ,Upperteeth muscle(upper esophageal sphincter) Thoracicpart of esophagus with negative intrathoracic pressure Aorticarch Left bronchus Diaphragm FIGURE 26-l Normal esophagus.Qvlodif.ed from PriceSA, Wihon LM: Pathophysiology:clinical conceptsof disease processes,ed 6, St Louis,200j, M^4). fusociated vomiting with expulsion of feedings leads to inadequate nutritional intake. Medical Conditions That Deplete Calcium and Promote Risk of Osteoporosis Hyperthyroidism Diabetes Chronic renal failure Scurv'. However, the need to conserve sodium sometimes leads to a sacrifice of the homeostatic control of water for the sake of volume, The minimum urinary volume capable of eliminating a relatively fixed 600 mOsm of solute is 500 ml, assuming that the kidney is capable of maximum concentration. Consumption of fruits, vegetables, and selenium appears to have a modest role in the prevention of GI cancers, whereas alcohol consumption and overweight increase the risk (van den Brandt and Goldbohm, 2006). In most diets the two effects generally offset each other; but at extremes of intake, either very high or very low, one metabolic action will dominate and affect BMC and BMD (Sebastian,2005). Large meals and dessertsthat are high in fat or caloric density stimulate significant amounts of gastric secretions and slow gastric emptying. The oldestknown caseof HW was confirmed using a 1959 blood sample of a man living in what was then called the Belgian Congo (Zhu et al., 1998). PorthouseJ et al: Randomisedcontrolled trial of calciumand zupplemenationwith cholecalciferol(viamin D3) for prevention of fracnresin primarycare,Br MedJ 310:1003,2005. National Research Council G\fRC), Committee on Diet, Nutrition and Cancer: Diet, nutrition and.caneer,Washington, DC, 1982, National AcademiesPress. However, in those with controlled type 2 diabetes(Gannon et al., 2001; Nuttall et al., 1984) and well-controlled t)?e I diabetes (Peters and Davidson, 1993), ingested protein did not increase plasma glucose concentrations. Li Q, RenJ: Cardiacoverexpression of metallothionein attenuateschronic alcoholintake-inducedcardiomyocyte contractiledysfunction,Cardioaasc Tinicol6:173,2006. Bickel demonstratesthat dietary phenylalanine restrictions lower the blood concentration of phenylalanine. Dietary supplement use by clients provides an excellent platform for teaching consumers analytic skills that will serve them well in their pursuit of increasedselfmanagement of their health. CHD expressedas myocardial infarction (MI) or ischemiain one or lnore of the coronary arteries resulting in necrosis and tissue damage is the main fcrrm of heart diseaseresponsiblefor these deaths.Mortaliry from all heart diseasesincreaseswith ase in all races.Until the age of 65 years, black men have the highest rates of CHD deaths; thereafter white men have the highest rates. The practical application is that manipulating the PUFA levelswill havedifferent effecrson HDL levels,depending on which variant an individual has. Like adults diagnosed with cancer, children with cancer can experience malnutrition and nutrition impact q/mptoms as a result of their cancer and its treatment (Ringwald-Smith et a1.,2006).The incidence of malnutrition ranges from 67" to 50%"in the pediatric population, depending on the type, stage, and location of the cancer. WeesrrEs USeFUL AmericanDieteticAssociation htrp://adaevidencelibrary.com for Disease Centers Control www. Modified from Mobley C: Frequenr dieary intake and oral health in children 3 to 10 yearsof 4e, Building Bhcks25(l):17-20,2001' * Gum is not recommendedfor children under the age of 6. Excess vitamin E can inhibit vitamin K activity and precipitate signs of deficiency. mutans in saliva. treatmentof that disease anemiapresentin chronicrenaldisease. "In what ways does not being able to follow your diet concern you?" o "What do you think will happen if you dont make a change?" to Change Intention . ... Standardorder forms are often useful(Table20-5). Borra, RD, and Paul R. for Htpertension883 CHAPTER 33 I MedicalilutritionTherapy Hyman DJ, Pavlik VN: Characteristicsof patienrswith uncontrolled hypenension in the United States,N EnglJ Med 145:479,2001. Fat is isotonic and doesnot contribute to osmolarity. Are there any food-drug interactions that are a concern for Rick? IGF-1 production drives the anabolic effect without excessivegeneration of net acid resulting from the catabolism of the amino acids; the difference between the anabolic effect and the catabolic action results in bone gain or bone loss (Sebastian,2005). Intervention consists of calorie restriction for those who are overweight, cholesterol intake limited to less than 300 mg/day, and limited total fat (see Chapter 32).ln patients with glucose intolerance, limiting carbohydrates and maintaining a regrrlar moderate exerciseregimen are appropriate. Assessment Body Languageand CommunicationSkills ctive listening forms the basis for effective nutrition fi /-\counseling. By the process of phagocytosis, these alveolar macrophages engulf inhaled inert materials and microorganisms and digest them. Resistance exercise consists of activities that use muscular strength to move a weight or work against a resistive load. Prebiotics are nondigestible food substancesthat selectively stimulate the growth or activity of beneficial bacterial species already resident in the colon Qtrobiotics)and are beneficial to the host. Her vitamin D intake? . Wood LG et al: Circulating markersto assess nutritional therapy in cysticfibrosis,Clin Chin Acta 353:13,2005. The impact of fluoride on caries prevention continues with water fluoridation, fluoridated toothpastes, oral rinses, and dentifrices, as well as beveragesmade with fluoridated water. Why may an immune-enhancing enteral formula be beneficial for Thomas? The low, middle, and high mileVday values apply to relatively heavyweight (120-kg), midweight (70-kg), and lightweight (214-kg)individuals, respectively. PhilippaertsR-N[et al: Doubly labeledwater validationof three physicalactivity questionnaires, Int J Sports Med 20:284,1999. The strong correlation between reproductive function and bone mass and density appears to be affected by smoking through a decreasein estrogens.Alcohol, especiallyexcessive consumption (more than two drinks a day) for an extended period of time, resuls in bone loss. Cognitive restructuring teaches patients to identi$', challenge, and correct the negative thougs that frequendy *dermine their efforts for weight management (see Chapter 19). Reaching this point will take a concerted effort on many fronts. The formulas are lactose free, contain I kcaVml, and are used as over-the-counter oral supplements and tube-feeding formulas. This phenomenon may be attributable to sluggish digestion and gastric emptying as a result of decreasedproduction of digestive secretions, gastrointestinal mucosal atrophy, and gastric muscle atrophy. Winslow CEA: The untilled field of public heakh,Mod Med 2:183,1920. In terms of promoting organic agriculture as environmentally sustainableagriculture, it is' But there is no conclusive evidence that organically grown foods are more nutritious or concentrated in nutrienrc than conventionally grown foods, except perhaps for vitamin C, which may be higher in organically grown leafr vegetables and potatoes (Magkos et al., 2003). The data are sorted by the combined amomt of lurein and zeuanthin. Sources of omega-3 fatty acids from selected marine sources are listed in Table 3-6. Shiboski and colleagues(2001) reported a high prevalenceof ECC (30% to 33%) among fuian and Latino/flispanic communities compared to their white counterparts. Healthy People2010: National heahh promotion and diseasepreaentizn prlgress reairus onfocasareas,Washinrton, DC, 2004a, U.S. Departrnent of Health and Human Services, hnp://wwwcdc. The presence of excessivemucus lining the small intestinal tract may interfere with nutrient absorption by the microvilli. uesueH-tleJJ) raqSg to etenbape dlereua8 ara,r sla^al C urruelrl fxorp,tq-57 turues esnBreq CII/Vfl uo tJeJSe ou ro eplq peg e Eq uce(qns dlrapya;o uueuralddns C uru -elr.l'pue18ug urarpJou pue'spurlrerpeN ecpit'rr,reurpuec5 .(5002 ur suoneyndod Sururnsuoc-umrJleJ qSlr{Jo serpnts uI ''p te rmoprur-r8urarg) puBIecI ur uele 'ursqoqelaur unrcl?J IIEra^o pue euoq Jo eJuBuelureu eql roy etenbepe aq deu ,{tp7srrun 008 Jo e>leturumrJlrc e 'lerurou sr snt?ls C u1u -ern fxorp,{q-Sz rutues erp uorltyseJntJ?{ ut suoqJnpeJ ro CIIVS pasBaJJurol setnqrruoc ;o ruerualddns C tnowl 4. Mayerhauser CM: Sun'ival of enterohemorrhagic Escherichiacoli Ol57 :H7 in retail mustard, J Food Protert 64.J83, 2001. Abdominal pain or discomfort is characteristic ofboth gastric and duodenal ulcers, although anorexia, weight loss, nauseaand vomiting, and heartburn may occur slighdy more often in persons with gastric ulcers. Adequate exercise,fluids, and easily chewed dietary fiber enhancegastrointestinalmotility (seeChapter 26). (a1o rb) (13o tb) (lso rb) (170rb) (1eotb) (210 rb) (230 rb) (2so tb) 210 263 368 446 248 310 +34 527 286 358 501 609 325 406 568 690 364 455 637 774 401 501 702 852 439 549 768 933 477 596 835 1014 525 62r 716 812 9r0 l00l r097 tt93 368 236 368 ll I 263 236 34r +20 315 420 525 630 840 158 434 279 +34 155 310 279 403 496 372 496 621 745 993 133 501 322 501 179 358 322 465 573 +30 573 716 859 1146 215 568 365 568 203 406 365 528 649 487 649 8r2 97+ 1299 243 637 410 637 228 455 410 592 728 546 728 910 1092 1457 273 702 451 702 251 501 451 652 802 602 802 1003 t203 l6M 30r 768 494 768 274 549 494 713 878 658 878 1097 1317 r 75 6 329 775 95+ 716 95+ tt93 r43l 1908 358 289 3+r 394 446 501 552 603 656 368 +3+ 501 568 637 702 768 835 551 652 752 852 956 1053 lt52 1252 656 776 895 1015 n38 1253 1372 l49r 446 315 473 184 420 420 420 420 +73 158 420 184 226 236 610 315 420 525 630 263 525 368 525 263 +20 525 420 473 527 372 558 217 496 496 496 496 558 133 +96 217 267 279 745 372 496 434 372 496 621 7+5 310 621 434 62r 310 +96 621 496 558 609 430 644 690 487 730 284 649 649 649 649 730 243 649 284 349 365 974 487 649 568 487 649 812 97+ 406 812 568 812 406 649 812 649 710 77+ 546 819 319 728 728 728 819 273 728 319 391 410 1092 546 728 637 546 728 910 1092 455 910 637 910 455 728 910 728 819 852 602 902 351 802 802 802 802 902 301 802 351 +31 451 1203 602 802 702 602 802 1003 1203 501 1003 702 1003 501 802 1003 802 902 933 658 988 384 878 878 878 878 988 329 878 384 +72 494 1317 658 878 768 658 878 1014 716 25r 573 573 573 573 644 215 573 251 308 322 859 460 573 501 430 573 716 859 358 716 501 716 358 573 716 s73 644 r097 1317 549 1097 768 1097 549 878 1097 878 988 835

t 835 298 59 J/ r07+ +17 954 954 954 954 s074 358 954 417 513 537 1+31 716 954 835 716 954 tt93 1+3 1+31 596 tt93 835 11 9 3 596 954 tt93 95+ 1074 I22L APPENDIXES Body Weight Activity Run Run Run Run Run Run Run Run Run Skate,ice Skate,inline Skateboard Ski, downhill Ski, downhill Ski, downhill Ski machine Ski, crosscountry Ski, crosscountry Ski, crosscountry Snowboard Snowshoe Soccer Softball Stair stepper Stationary rower Stationary rower Stationary rower Swim Swim Swim Swim Swim Swim Swim Tennis Tennis Treadmill, run Treadmill, run Treadmill, run Treadmill, run Treadmill, run Type (110 rb) (13Orb) (150 rb) (170rb) (l90rb) 812 893 933 1 0 15 s096 1136 1177+ 1298 1340 74"/t ...

communitybasedservices. Shortness of breath Fatigue Flutdretention Peripheral vasoconstriciton peptide B-natriuretic Mentalconfusion Memoryloss Anxiety Insomnia Syncope andheadache DrI cough 'ACE inhibitors ' Angiotemin receptorblockers 'Aldosteroneblocker o p-blockers . RobertsSB,Young\rR: Energy costsoffat and protein depositionin t-hehuman infant,Am J Clin Nur 48:951,1988. The DV for iodine is 150 mcg The %DV listed on the Nurition Facts panel of food labels states the percentage of the DV provided in one seMng. chronic obsrructivepulmonary disease,Chest103:-1038, M et al: Nutrition in patientswith cysticfibrosis:a Sinaasappel Europeanconsensus,JCystFibrosl:51,2002. C H A P T E R| 2E n e r g y3 7 Metabolic rate in the human body is affectedby several variables,including daily TEE, 60% to 70% of which is the BEE. Modest doses of alcoholic bwerages in otherwise healthy persons do not appear to ctuse peptic ulcers. Using all of these techniqueswill help make the counseling sessions more effectiveand satis$ringfor all parties. What are the differences?Also compareit in kca7kg body weight. 107:466,2007 professionals, J Am DietAssoc JacobsMN, Lewis DF: Steroidhormone receptorsand dietary ligands:a selectedreview,ProcNutr Soc6l:105, 2002. Thus the energy expenditureof adultscan be estimatedusing MET values (1 MET : I kcal/kg/hour).For example,an adult who weighs65 kg and is walkingmoderatelyat a paceof 4 mph (which is a MET value of 4.5) for t hour would expend 293 calories(4.5kcal x 65 kg x I:293). Other factors affect the risk of pathologic consequences, including the patient's age at onset of the initial infection, the specific strain and concentration of organism, genetic factors related to the hosq and the lifestyle and overall health of the patient. Oral supplements can be used when necessary to attain nutrient adequary. Complete the following information and be prepared to discussit with your fellow classmates: e What WIC benefits are availableto this family? Energy Becauseof hypercatabolismand hlpermetabolism,energ'y needsare elevatedin R[, and sufficientenerg'ymust be supplied to prevent the use of the body'sown resewesof protein and fat. At age 30 the two brothers are noticeably different in weight and body shape.Jared has a BMI of 36. Production of mucus is stimulated by the action of prosaglandins. Hyperglycemia can also result from exercise.When a person exercisesat what for him or her is a high level ofexercise intensity, there is a greater-than-normal iri.r.rr. Finally, such an intake maintains healthier bone tissue, and it may reduce fractures at all skeletal sites Medications A number of medications contribute adversely to osteoporosis, either by interfering *ith calcium absorption or by actively promoting calcium loss from bone (see Box 24-2). Let me know if you want to talk about it again. In the absenceof insulin, glucagon inhibits hepatic glucose oxidation and enhances gluconeogenesis.The net result of theseactivitiesis rerurn of blood glucoselevelsto the normal range. i an H yc < *v6 ysiu F+ o.-! .:6P F nrE e *i: hl= q EE} o |r 356 PART2 i Nutritionin the Life Gycle () =g *(J (Ed 'i6 6 H H q) .P(IJ i (Jo -|r 6 * (.) v2 fr ;;;=€;,$= E s*,E U Ch J ql d for DietaryPlanning 357 12 | Guidelines CHAPTER 358 PART2 ! Nutritionin the Life Cycle with a lot of fish and shellfish.fu Chineseadoptuaditional American foods, their diet beqins to include more sweets suchascookies,chocolate,,oft-drinLr, and snacls. What do you suggest about a multivitamin supplement? The combination of smoking and alcohol, which are common among young women and men, placesthem at increasedrisk for osteoporosis. The causesmay be maumatic, surgical, or medical. Hispanics, Latinos, and Asians have the lowest rates of all forms of C\rD. Augustin LS et al: Dietary glycemic index and glycemic load, and breast cancer risk: a case-controlstudy,Ann Oncol12:1533, 20 0 1 . Prospective cohort sndy, Br Med J 331:807,2005. Self-efflcacy is an important concept; confirming thoughts that "I can actually do this" should be supported by all counselors (seeChapter 19). Among the Genomics379 Nutritional 13 I Assessment: CHAPTER better-characterized genes involved in various aspects of detoxification are the cytochrome P450 isozy.rnes(CYPs), glutathione S-transferases (GSTs), and superoxide dismutases(SODI, SOD2, SOD3). Extensive dental decay, osteoradionecrosis, and infections may also occur. FFM can be divided into wa- though it is primarily fat, adipose tissue is also composed of small amounts of protein and water. Now is the time to take care of pressingissues. In additionto immunosuppressive The first phaseconinstituted. The following concepts are important to consider in facilitating dietary changes: o People make behavioral changes only when they are ready to change. Health care provider and patient participation in scientific nutrition studies aimed at producing evidence-basedresults is necessary. *Seruingsizesvary between7: mp and l7+ cup, dependingon cerealtype Checkthe product'sNutrition Factslabel. Goals need to be directed toward a visible means of feedback such as body weight or some other meaningful index. He had + + I pining edemain his arms and legs on admission to the ICU. 660 PART5 | meOicalNutrition Therapy attempt to reduce the number and frequency of ear infections, tonsillitis, and sinusitis. SchofieldWN: Predicringbasalmetabolicrare,new standards and review of previous work, Hum Nutr Clin Natr }9(suppl l): 5, 1985. Intakesfor VitaminD DietaryReference for Ghildren andAdults Age (years) 1-l 4-8 9-13 14-18 19+ Males and Females (mcg /dayl 5 5 5 5 5 Preghancy (mcg /dayl N/A N/A N/A lactation {mcg /dayl N/A N/A N/A)) 55 Continued. I indy is a Z4-yearoldwho has newly diagnosedtype I dial-betes mellitus and Crohn's disease.She has had recent surgery for removal of one third of her ileum. Unless a change is made in either nutritional intake or physical activity, weight loss stops at this point. The recommended amount of digestible carbohydrate required in the diet ranges between 45o/oand 657" of total calories (Institute of Medicine, Food and Nutrition Board, 2002). Pexins and gums contain sugars and sugar alcohols that make these molecules even more water soluble than hemicellulose. Feeding difficulties frequendy occur among infants with CLD and BPD. YanL, SpitznagelE: A meta-analysis of soy foodsand risk of breastcancerin women,Int J Cancerl:281,2004. Miller ER III et al: Rezultsof the Diet, Exerciseand Weight Loss Intervention Tiial @EW-IT), Hlptrtension 40z612,2002. Children and adolescents may need a similar protein intake to support optimal skeletal growth (AI."y et al., 2005). She cannot eat solids and conzumesI can of nutritional supplement daily, providing 260 kcals and 24 g of protein. However, adequate nutriture can prolong health of the individual, and may be a welcome relief to an overburdened patient. "3 in 1" (amino acid, dextrose,lipid)versus "2 in 1" (amino acid, dextrose)plus piggyback lipid infusion 8. SeeJoint Commission, The TJC (TheJoint Commission), nuffition risk identification,455 TMDs (temporomandibular disorders), definition, 1041 TM (transtheoretical model) ofchange,483f, +93 definition,489 TNF (tumor necrosis factor), definition, 960 tobacco use. \4tamin K is an essential micronutrient for bone health. For more information on coaching and credentialing for coaches,contact the International Coaching Federation, the lead professionalorganization for life coachesat coachfederation.orgleweb/. Mandel ID, Grotz VL: Dental considerationsin sucraloseuse, J Clin Dentistry13:116,2002. Three or four bolus feedings per day can provide the daily nutritional requirements for most patients. Dietary intake (including intake of fortified foods, energy or sports bars, or beverages) . Seealso Ptenterrl nuuluon questionnaire, 396b treatrnent outcome md, 97 | tumor growth and,97l nutritional anemias, laboratory data for, 421-424 nutritional genomics, 364-382. It's a matter of magnitude: "mutation" connotes significant difference that is typically deleterious, whereas "gene variant" connotes simply a difference, which has an impact but is not in itself sufficient to causeserious harm to the organism. An adequate and balanceddiet meets all the nutritional needsof an individual for maintenance,repair, living processes,growth, and development. With a client who is not ready to change it is easy to become defensive and authoritarian. Between the genders, C\rD rates ha,re fallen more in men than wonren. In the coronary arteries atherosclerosis causes angina, MI, and sudden death (Figure 32-4); in the cerebral arteries it causesstrokes and transient ischemic attacks;and in the peripheral circulation it causesintermittent claudication, limb ischemia, and gangrene. In surveysof patientswith GI lesions,the use of foods highly seasonedwith chili powder and pepper are commonly but not universallyincriminated in causingdiscomfort. Glucose exits the liver and enters the systemic circulation. satisfaction When working with clients who are limited in English, alwaysuse common terms, avoiding those with multiple meaningsand avoiding slang.Always speakdirecdy to the client, evenwhen using a translator,andwatch the client for nonverbalresponsesduring the translation. EER : 354 - 6.9r x Age 6.r) + PA x (9.36 x Weight [kg] + 726 x Height [m]) EER: 354- (6.9rx 30)+ x 65]+ 1726 x r.771) r.27x ([9.36 EER : 2551kcal Energy spent during various activities and the intensity and impact of selected activities can also be determined for children and teens (see Box 2-1) (Insitute of Medicine, 2002;2005). Exercise also decreasesthe effects of counterregulatory hormones; this, in turn, reduces the hepatic glucose output, contributing to improved glucose control. D'Amico CL: Cardiactransplantation:patient selectionin the Nurs 20(5suppl):S4,2005. 'tZ:02 orua,r.3,f,dent1t lenueru puB esrcJaxeqtr,r{ srtrrr{lJeoatsoluroI repqrpueruorodurar Jo tuerut?ert reUB JuroJtno rurat-8uo1 :le ta d SDIEIoJTN '966I 'lLZt ,srlur{tre proteunaqr Lt lotarunaqy f tg pue pooJ ueEa,r'gcu-qlrreqotcel ,pa>loocun :F te J ueuouaN ' gggT t(;en:qa{ pessaJce,,roE.qru.ruertu._,rr,{t &r tuotl' (1JV.j) lot.rJ.uoquaoraru!s!t!"tquo utltlquuqr/aunuasotryE HIN :sransaupuu suotlsanj :rllleeH Jo setntqsul leuort€N 'S002 {BIl\r pesserrE 'ao8'qru:rcpru',/1Lrr,{{ ruo{,sraprosrp relnqrpueruodurel :cwl :r{Jreesau I?rrsEJoru?r] pu? t i Marcy Fenton, MS, RD Ellyn C. oral intake. The issues surrounding use of pesticides and contaminants in the water supply affecting produce are further concerns (see Focus On: Is it Really Organic, and Is It Healthier?). Couer Imtge: Copyright Dennis Kunkel Microscopy, Inc. Vltamln E (lntemadonal unlts) ,+0-50 80-150 100-200 200400 Vltamln D (htematonal unlte) ,lO0 ,+,00-800 ,+00-800 ,+00-800 Vltamln K (me) 0.3-0.5 0.3-0.5 0.3-0.5 0.3-0.5 essessmentand management in cystic 6brosis: r consensusreporg The Consensus C.omsittrx,, Am J Clin Ntn 55:108, *These ht-soluble viamins are in addition to a sundard, age-appropriate dose of nonbt-soluble multiviamins. Malnutrition originating from either micronutrient deficiencies or generalized proteincalorie malnutrition affectsrapidly dividing cells such asthose of the GI tract, and deficienciesmay compromise GI wound healing. Advancethe rube to the eventual95- to 100-cm marking. to 0ral Feeding Parenteral Once again, this transition is ideally accomplished by monitoring oral intake and concomitandy decreasing the parenteral infusion to maintain a stable nutrient intake until about 75o/oof the nutrient needs can be met consistently by oral intake and when t}re parenteral infusion can be stopped. The first observableevenr in the process of atherosclerosisis the accumulation of plaque lcholesterol fron-r low-density lipoproteins [LDLs], calcium, and fibrin) in large and medium arteries. Placement of a jejunostomy feeding tube at surgery is advisable, and enteral nutrition support is generally feasible within a few days after surgery (see Chapter 20). Meth R, Kimball S: Vitamin D in congestivehean farl:ur.e, Am J Clin Nutr 83:731,2006. Iodine is now recognized as the most common cause of preventable brain damage in thi world, with millions living in iodine-deficient areas. Consumers must educate themselves about the appropriate application of each dietary supplement they choose to use and about selection of quality products. Useof AlcoholandCigarettes Cigarette smoking and excessivealcohol consumption are risk factors for developing osteoporosis, probably becauseof toxic effects on osteoblasts.Alcohol at intakes of two drinks or more par day has been found to be a risk for bone fractures in an analysis of three large European snrdies (Kanis et al., 2005). Multiply the grams of dextroseper liter by 5. Physical Inactivity Physical inactivity, or a low level of fitness, is an independent risk factor for CHD. SeealsoLowbirth-weight infant mortality rate, I I18-11l9 o e n n l u o n ,l I I / premature, definition, I 117 infarction, myocardial definition, 834 mortaliry 834 infection(s) opportunistic, definition, 991 vaginal, complicating pregnanry, I 84 inflammation effect, on ferrit:n, 422-423 in rheumatic disease,pathophysiology, 10441045 risk assessment, 42 5-426 inflammatory bowel diseases(IBDs), 689-695 care management algorithm, 691f definition, 673 growth failure, reversing, algorithm, 693f medical management,692 medical nutrition therapy, 692-69 5 nufiition-related problems, 692b pathophysiology, 689-692, 69 lf surgical management, 692 inflammatory markers, of cardiovascular disease, 848-849 influenza, avian definition, 309 risk control, 330 infusion, drip, continuous, 5 14-5 I 5 definition, 506 inhalation solution, with anricholinergic effects, 443b inheritance materna\,372 definition, 365 Mendelian, 171-372 definition, 365 mitochondrial, 372 definition, 365 m o d e s o f , 3 7 1 - 3 7 2 , 3 7 2 t YJinked, definition, 366 i n h e r i t e d l i v e r d i s o r d e r s ,7 l 5 - 7 1 7 rnluauon definition, 959 in carcinogenesis, 960 injectable glucose-lowering medications, definition, 765 mJury axonal, difftrse definition,1067 in neurotrauma, 1096 head medical nutrition therapy for, 1033 pathophysiology, I 03 2- 10l 3 physiologic/metabolic changes after, 1023f severe, metabolic phases afte4 1023t insensible water loss, 147 definition, 144 insulin definition, 765 diabetes and, 766 effects, on carbohydrate, protein, and fat metabolism, 774t guidelines,780 in body weight regulation, 537t in carbohydrate metabolism, 65 in diabetesmanagement, 782,784 long-acting, 784 premixed, 784 preparations, action times, 783t pump therapy, 784 "o ::0,:t-i;"""' complicating diabetes, 797 -7 98 definition, 765 reslstance definition, 269, 765 in metabolic qmdrome, 273b in type 2 diabetes, 769 secretagogues definition, 765 in diabetes management, 781 users, carbohydrate (usage), 780 sensltlzers definition, 765 in diabetes management, 7 81-7 82, 7 82t users, carbohydrate (usage), 780 insulin-like growth factors, for osteoporosis, 632 integrative medicine, 47 l-47 5 complementary and alternative medicine in, 47l. When these approaches fail to bring about the desired reduction in body fat, medication may be added to the program and, in the caseof ertreme or morbid obesity (BMI of 40 or greater), surgical intervention may be required. Institute of Medicine, Food and Nutrition Board:Dietary referenceintakes:for energy,carbohydrate,fiber, fat, faty acids,cholesterol,protein, and amino acids,Washington, DC,2002/2005, The National AcademiesPress. Meeting energy and nutrient needsis a major challenge in the care of infants and toddlers with BPD (Carlson,2004). Seealso Gastroesophageal reflur disease definition, 654 in pregnancy, 182 height, measurement direct methods, 12 I 3 indirect methods, 1213 height-for-age curve, 399 definition,383 height(s) in nutrition assessment,399-400 interpretation, in nutrition assessmeng399, l99b reference, for children and adults, 340t HEI (Healthy Eating Index), l+0,341t definition,337 Heliobacter pylori definition, 654 gastritis and peptic ulcer frorn, 660-661 genome, 661b in GI tract, 14 hematocrit d e f i n i t i o n , 4 1 1 ,8 1 0 in iron deficiency anemh,422 reference range/signifi cance, 41 6t hematoma epidural definition, 1067 in neurotrauma,1096 subdural definition,1068 in neurotrauma,1096 hematopoieticstemcell transplantation(HSCT) definidon, 959 nutritional for hematologicmalignancies, implications,977 -980,979f diseasefrom, 980 graft-aerws-host neutropeniafrom, dietaryprecautions,980 sinusoidalobstructivesyndromefrom, 980 hemeiron, I 15 absorption,ll5, ll7 bioavailability,816 definition, 40, 810 hemianopsia definition,1067 in neurologicdisorders,feedingissuesrelated to,1073 hemicellulose,47 nctions,48t composition/sources/fu hemiparesis definition,1067 in neurologicdisorders,feedingissues (relationship),1073 120,120b,816-818 hemochromatosis, clinicalfindings,818 definition,810 diagnosis,818 818 medicalmanagement, medicalnutridon therapy,818 816-818 pathophysiology, 93l, 93lf, 932f hemodialysis, definition, 921 hemodynamic,definition, 1021 hemodl'namicmonitoring, 1026 hemodynamicstability,definition, 506 hemodlnamicstabiliry parenteralnutrition and, 52r hemoglobin concentration, reference range/significance, 4l6t definition, 40, 41 1, 810 f u n c t i o n s ,1 1 8 , 1 1 8 t glycosylated, definition, 765 in iron deficiency tnernia,422 mean cell, reference range/significance, 416t hemogram, constituents, 4l 6t hemolltic anemia d e f i n i t i o n ,8 1 0 , 1 1 1 7 in premature infant, 1128 hemorrhage, subarachnoid, 1080 definition, 1068 hemorrhagic diseaseof newborn definition, 199 vitamin K deficienry and, 205 hemorrhoids, in pregnancy, 182 hemosiderin, definition, 40 hemoqnnpanum definition, 1067 in neurorauma, 1096 hepatic encephalopathy, 7 12 definition, 707 in cirrhosis, 723-725 medical nutrition therapy, 724-7 25 medical treatment, 723-724 pathophysiology, 723 -7 2+ stages,723b Index 1327 hepaticfailure,715 definition,707 severe,vitamin/mineral deficits,722t hepaticosteodystrophy, 715 definition,707 hepaticsteatosis, 7 13,7 l4f oenmtron,/u/ hepaticuansport proteins,in assessment for protein-caloriemalnutrition, 419-420 hepatitis,7 lI-7 12 L,7 tl-712 atconollc, / IJ 8 , 71 2 c,712 chronic, 7 12 liver damage from, 7l1f D,712 oennlt]on,,/u/ E,7t2 rulmrnantr / ll G/GB,712 viral, acute, 7 ll-7 12,7 IIf hepatocellular carcinoma, 7 17 hepatolenticular degeneration, 127 hepatorenal slmdrome oennlnon,,/u/ in cirrhosis, 725 hepatotoxicity, drugs causing, 446 hepcidin definition, 40, 810 in iron absorption, 116 sylthesis, 816-817 herbal products, in calcium stone formation, 954 herbalsupplements, in liver disease,722 herbal therapy for rheumatoid arthritis, 1055-1056 research,centers, 475t hereditary fructose intolerance, 374, Il45t herediry overweight/obesity and, 540 h e m i a , h i a t a l .S e eH i a t a l h e r n i a heteropolysacch arides, 47 heterozygous.definition. Radigan A-E: Post-gastrectomy: managing the nutrition fall-out, Praa Gaxroenterol 18:63, 20Q4. Diet and other lifestyle choiceswill be geared towards the particular variants an individual has. KuehnemanT et al: Demonstratingthe impact of nutrition interventionin a hean failure program,J Am Diet,4ssoc 102:1790,2002. Commercially prepared liquid nutritional supplementscan be included in many dietary plans. A gene also contains introns, which are sequencesinterspersedbetween exons that do not code for amino acids.RNA polymerasetran- NutritionalGenomics37L 13 i Assessment: CHAPTER scribes the exons and introns into mRNA, which then must be processed(post-transcriptional processing) so that the introns are removed before the protein is slmthesized. Sachs GS et al: Parenteral nutrition implementation and management. Plaque pH can fall in as litde as 5 minutes and take up to 2 hours to return to neutral levels if no oral hygiene measures are inuoduced. Although a causal relationship between blue dye and adverse reaction has not been described, many hospitals have discontinued its use. Some medications can causeweight loss; check with the physician; add snaclisor enhancedmealsif needed. The assumptionof this stage often resul* in lack of adherenceon the part of the client and discouragement on the part of the nutritionist. IntermittentParathyroid Hormone Therapy Intermittent parathyroid hormone (PTH) therapy useslow dosesof a modified PTH (l-34) molecule to improve both bone mass and density. EisenbergDM: Advisingpatientswho seekalternativemedical Ann IntetnMed 127:61,1997. Consumers are sarvy, and many programs have begun to collect data on the effects of treamrent, including dropout rates, successrates, and maintenancedata. petJrrlseJeq or peeu deru uratord Lretarq IorlorlB eteururrlg spooJunuer$-t{81q q lereq[rep epr ord uoperpdq erenbapeepl ord uopeluauraldduosuruerqa pepeeueq deru lroddns uoBrrtnu pretuared ro leretug efeqdsdp eyqrssodssesry sntelsuopFlnu poo8 urelur?W uoFue.,lardl:erur_rdJoJsuopBJallelreterq rq8ra,n erenbepepue qJIEequoprrnu urctureruot e{etur &erarp apl ord uopednsuoc oznurorruror uorrerpdq alenbepeteqg-q8ry epr ord troddns uoBrDnu prarueredTleJetueepr^ord surru'lr^ xalduroc g pue 'J urruerh '+ed parueuelddns rarp epr oJd {lIA urato.rd(nS11) enye,lpcrSololq qBFI ur FreqrTlerp epuord suorlce{urzlg urrurelr^ Jelsrunupy tarp etelduoc z(lleuonutnu ernsug r{runl pue rsepleargle uratord &erarp eznururw suoDJeJelurluarlnu-8rup uo snJog pepeeuoddns uonrrlnu lereluered Jo IEJelug peq oroJeqtnurl :srnog Sur4ernrnoq8norqr spmg alnqr.usrc sa8erspecue.r.pe ur pepeeueq ,{euruoddns uortrlnN ruened;o sruels C urruetr^dllercedsapue qtleeq alunle^g ruauraldduspr rs Jrelou{ dlqlsso4 stueuelddns tuepxorluv aqnr Surpeagf:erodual ace14 sleeureroJeq,{rrnncepcrsdqd rrurrl pepueruoJer ere slearuruenber; ,1eu5 Ieatujo SuruurSeqrB spooJasuep.{lleuonlnu epr^ord spooJ puu suorduils;o spJoral a,usueue daey e{Brur pmg lrerarp puu elenbepe urclurew ecueproaepooJ suorl?pueuuocar tnoge 1ereua8,ry\ollod erSeqdsr(pssassy s8urpealeqrl uratord-q8rq 'lSreue-r{3lq rppl erueleq l8raua errnrsodureny tarp cruaSotay erSeqdsr(p rolruory uorrerpdgep pue uorlrDnupur luenerd ol eue retr{l sprcedrte; g-e8euo pue spooJ esuep-tuerrlnu apr ord Suneaetenruror aprn5pue11 PooJJo r{rnol ro Ileurs erennrl etulleelu lE suoEJeIlslp eznulultriv luenBoJo snlets uorlrJ]nu ssass\y' sle^el vg)Tr\ sre.&olIro qozueroT ua.,lordueeq lou seq (sVJlTA) splceluey uregc-Fuo1-l-rro;o ,r.rrpro* lrnarql {dereql uolIU1nNlue^aleu auorpuds 3go1esro)-e>lrrruel\ e{orrs erunea purdg erureuesnorJruJed esearsPs(uosuDIJEd etunBrloJneN srsorelrseldnplg srzrurS eruaqrsez(14 aqrepeeqeurer8r6r grreg-urellrnc zfudepdg slsorelrs IBratElrlrldorodurv esBesrP s(Jeruer{zlv trqdo.rrs,{p o4nelouarpv uolllpuoclec lpehl su0rlrpuoc c!6olorneN rol suolureptsuoS lpuotlulnN cl6olornaN tol {deraqluorlu}nNlpcrpa4, L Uf IdVHo b90I sraptoslq f,eru uor8er srql ur d-8o1oqre4'saqol leluor; pue 'yelerred 'yerodruet Uel eqt;o uorlcun(erp reeu pe]EJol are sretueJ qcaads aqa ,{poq ol{t Jo apISrJel eqr Sur.rou8rtrlareldruoc snq] 'uonuaDe snJoJo1 firlrqeur cIuoJI{J tlqn{xe ot }uaDed eqt esn?J deu eqol lelarred rq8rr aqr uI sessew 'sarnzles o] auord dpepcnred eJEseqol lerodruet eql 'sarnzresacnp -o.rd ,(e.r8 uolsal z(ue q8noqryy ,(eru JeDBru prqaral Jo 'seItITIqEesaql tcajle .{eur eJer{ suorsel sngl lsuoncun; gcaads pue Lroruerur loJtuor seqol prodruel 'xeuor qqr dq peura,ro8 dpoq eql;o rrud aqr 'pe}eJol ur su8rs uoJnau roloul reddn rrqrqxe eJeI{suolseT are sduls Joloru eq] eJeI{^\ere saqol Ieluo{ eqt;o suotl;od JorJatsod aq] pue 'yerurou ueqr re3.re1eJEseqol Fruo{ egl ltr,utcu eqt ruro;rad ol lsanbar e spuelsraPun pue Suorls sI eqs ro aq q8noqrp 'llraDce xelduroc E elnrexe dlredord louu?c lueDEd eql erxerdeqr111 'urxurdErolour c se luesard .{uur saqol IE}uo{ eqt Jo uoruod pnuec eqt ur suoISaT 'rlESelqsr roJ peeu eql uassel pue 'd1rep1e>lJrs put -{qrpaq qtoq ur s}upl duor drosuas -orueqJ eJnpeJ 'lltununut PuB ,t\og l-rerrqts sseeJJul 'a1elu1 pue lrrlrqerepd e.rordrur o] punoJ ueaq seq pooJ Pecu?qua eJIJOJIT cecadr'eurlaurg ueqdord&a euxoputr4 PIdIT esornlc (€HN pue)uretord -Jo^eUqrt,l.rsessolilaruspus elsetJoJuorlesueduro3'(11auls Eluosfp pue '(1aursJo dlr.tnlsues IeruroJo uonrolslP) '(11aurs ultsouse:se8els Erutsoradfq pasea.rtur; 3o acuasqe) ^rosueffirlrl* ueeqe^EqllelusJo sessol uI PeqrrrseP crldo put l-lorce;1o eqr Jo ruoDoq aqr Suop {JBJI se^reu lr.r"rtq sa8uegcIBnsI^e^eq Jo llarus Jo esuesegl esol ,(eru '(suontpuoc euo '1p4s ol{r Jo eseq el{l J?au sI Jotunl aqr 31 sexeuIPeseeJIoc uoruruoJ aJolu ssoll-rosue5 squl ,{ddolg ssetl)l?er!\ sFu!pu!J uornaNJolol I Ia AO'l sexaueJPesEeJJuI uolutuoJ sselssol l-rosue5 squrl JJps sseu)IeeA\ s3utpull uorneNrolol1lleddn suolse'luorneNl0lou\l,eilo'l puE secuarelllo raddnueo^Iileq lEclullo uonedBsuoc erxeJouv enul1nq'esorueu lrernre 'etuorsol srserrpuoqcoddll eruaprdrlraddll seleqBlpuI BruoJrnole{uou Jo Jl}olex relB \ eunurqolSofyq drpedo'[,rg ,{qledorneu praqdue6 a{o$s ^*'u:L';ti,";:l"it:ffi errnuole{l^uerld uoDerIPeu-JIes eurueIpl.{ueq4 v unuelr^ lueFv uolllpuoc .{qredopqdecug arnsserd PeseoJJuI IeIuBrceDuI eutorPufs ssecxf leuo!ilrilN elrsnw BIrEleruoelso 1o.{qredo.'{lo' ,fi:,,,jij:;}t sa,rroup.reqdrra4 Ireqlreg (prcecrupocru) e.r8e11ed'(urlelor) CEsedsPlrdo;a stsrededeted (,{cuercgspzlg) aseaslPurelsrfuPeulquo3 eseeslpIe,&oqur douetcgepg urerell1 uoneraueSeprrelleqerec rIIoI(or[V srs.{1ouqef,ueunuod Ierlue3 (,,erdod1qrue Ioqorle-orr?qol,,) r(qledo.rnaucndo, {ouercgepIeuoplrlnN -e.'r'e;EII{Jletr\l ru:euBrg asBaslP (uruerqr) eruorpurfugo4esro)-a>l3lure1\ (aurPor;o 4ce1)usruuel3 (uone,urdepelroler-ulelord) uoneprcreJIBlueW C ulruttr Jo >lrel ruo{ sernzlesf,uerel pue errnuepcoddg euleN proc purdg uInlleqereJ IuolsulsJg arr-reuCnd6 runsoller sndro3 uopqdacug eurorpur{gtolew lo eils , {cua;c;1eqleuollpilN ssacxf ,|o,{oua!3tlao IPuolllrlnNol salnqlrllv sauorpufs 3!6olornaN Ideraql uolltrlnNlEolpa4I I IUVd 0f0T uBlp uoruuroJssalrlrnu aru pror purds eqr ur suorsaT ',{JESSeJeuueTo sI suBerrr raqro qSnorrp uotrrDnu 8urpr,,r.or4.secuanbasuocrurrS seq sJetueJ osep Jo uopepSars.{p pue (sJa}uecJErpJ?Jpur f-lor -errdsar etrrrlgul deru elnperu erp ur suorselraqlo ro srounJ '3rm1erp otur sprnbq ro poo3Jo uonerrdseSur4srrlnoqtr,&\tee ol elqeun ueuo sr lueBEd JrIt esnsJJquonrrlnu ro; sacuanbes -uoJ e Bq suorsel eseqJ 'selJsnur pue ,nrlreqd ,en8uol IETJBJ ',trs('sree 'ser(eerp Surpnlcur ,peeq pue erEJerp JO sernlrrlrls ete^raueryqt (h-lt eyqea)se,r-leu Frrrtrr arp;o due etcxlgur deru rualsureJqerli ur suorseT'8uruary,Lrruo esJo,r\sr]Bql er{repeer{ e;o urcldruoc,{euruos-rada 'T. If the ability to consume one's regular diet will be altered, a diet modified in consistency can be individually designed for the patient or client. This gives the child time to "grow into" his or her weight. Given the evidence that a 5o/oto 10% loss of initial weisht can resuk in health benefits, that many persons set weight-loss goals that are unrealistic, and that fat discrimination continues to plague society, this approach may help some persons to develop a better relationship with food and a healthier perspective about their bodies. F o r m u lC a omposition A wide variety of enteral feeding products are commercially available. Foods high in simple sugars (such as sucrose and fructose) are low in chromium. M u l t i c u l t u rG a l o u n s e l i n g Multicultural awarenessis the first step toward becoming competent in nutrition counseling. Jasti S: Dietary supplementusein the contextof health disparities:cultural, et}nic and demographicdeterminantsof 2003. 994 PART5 j MedicalNutrition Therapy structured treatnent interruptions, and new chemotherapeutic agents and vaccine development. Place pureed food into a pastry bag and pipe for a lovely plate presentation. 10-Fr feeding tube, with stylet, 43 inch, nonweighted 10. Glutamine and arginine, both contained in standard enteral formula protein sources, may be conditionally essential amino acids under conditions of trauma and critical illness. As Table 21-3 illustrates, the programsvary considerably.Some require the use of proprietary prepackagedlow-fat meals.Prepackageddiets appealto some people becausethey allow them to avoid making choicesabout food. Consumption of beer and wine increasesgastric secretions, whereas low concentrations of ethanol may not @ujanda, 2000). Tieatment consists ofa low-iron diet, no iron supplements, and phlebotomy (blood removal) on a regular basis. An elevated blood level of homorysteine is an independent risk factor for vascular disease(see Chapter 32). @romJoint United Nations Programmeon HIV/AIDSAIDS EpidemicUpdate,Genezta, Switzerland,2006, bnp://data.unaids.org/pub/EpiReport/2006/12M aps_2006_EpiUp date_eng.p df. Seealso Minerals definition,4l micronutrients, 68-1 38 in medical nutrition therapy for diabetes, metabolism aerobic, 588-589 definition, 587 anaerobic,588 definition, 587 drug, food effects on, 438 inborn errors of, 373-374 food reactions in,745t lipoproteins and, 839 nutrient, drug effects, 439-440 of biotin, 94 of calcium,l0l-104, l04f of drugs, food interactions with, 434 of folate, 90, 9lf of iron, I 16, I 16f of macronutrients, 44f of niacin, 87 ofpantothenic acid, 88 of riboflavin, 84-85 of thiamin, 83 of vitamin A, 70 of vitamin 86, 89 of vitamin B12,93 of vitamin C, 95 of vitamin D,74-75 of vitamin E, 79 of vitamin K, 81 metabolomics definition,365 scienceof, 367 metallothionein definition, 41 functions of, 122 metastasis,960 definition, 959 metformin, in diabetesmanagement, 78I,782t methionine. aat 5 m> 50.): e .h ! E 999M sgsE 9.190d o o o< -4-q.q< QOQZ bom9x I a ! ! ! ! L L : 9: ! APPENDIXES L247 ObOOh hro:sggg3 s3 gv33 r Era! -E - v a *Qease ss $3se -ohoo -o+bo 6+r66 -^ \ E ': F d + = v r + 8 r ':a' FR =- rg P HgBgs= = Rr -:i -\ ) P 6 , H Oe >E \ ;Og" \b-i oI>o\qotr EgEFp P 933 o o E o X X 9 z.::r 6 6 N - I 6 ! A h) 3 0 .g .02 /a; : N ' IR q Fs -..: o 5o i'N =O E G"€"v8"' b0 bt ^E0 a q 6 o .= b! o> ^ E o ct E c, EE o6 Eg l(d19 EE: (E, ib =- fl> GO Eg=€ EEggEEEFgE+EEEE€ E: frE ZZZ&Z .wvr^''v o gr E: qro Ebo o\o .:a cae oi: d9 :: Nd- G E< o)q g 5 E o = = aE o q lJ ! (, j I ts oo L h oo q9 ao 'i'i 99 kk o(J 'F oo oo bo bo QUQ g.l o ;.E €o XE d (! ct 9E .oEa a - hF :9 bi tdl lC) o o o | r€ R. Figure 20-4 displays an enteral nutrition order form. *Maximum or minimum basedon clinical status. The largest percentage of the magnesium ions in bone exists in the bone fluids, but a smaller fraction of these ions is bound in the bone crystals, probably at the surfaces only. Further studies clarified the valvular abnormalities (Khan et al., 1998). gastric tube in place for gastric decompressionand bilateral tubes in place for postoperativeabdominal wound drainage. "I just don't think that will work for me." Some .li.ntr will express a lack of willingness to change or an intention not to change. Peptic ulcers typically show evidence of chronic inflammation and repair processessurrounding the lesion. Individuals at especially high risk include infants, children, adolescents, and pregnant or lactating women, even when they are medically stable. I just can't. NEUTVIONIA Among the pulmonary infections with nutritional implications is pneumonia.The role of vitamin A in treating pneumoniayieldssomepossibleresultswhen there is a high basal serumretinol concentration(Rodriguez,2005). What doesthe patient'sinitial statementindicate about her stageof change?What patient conversationdo these questionspertain to? Xylitolflavored gums and mints may help to reduce the risk of associateddecay. Macronutrients Dietary protein levelsare increasedin CF asa result of malabsorption; however, when energy needs are adequately met, individualswith CF generallycan meet their protein needsby following a typical North American diet. In Elliott L et al, editors: The clinical guide to oncohg nutrition, 2nd ed. Gas diffirsing capaaty,CO2 retenrion, respiratory inflammation and biochemical mediators such as hormonesand cytokinesaffect energyexpenditure. CHAPTER 39 I MedicalNutritionTherapyfor MetabolicStress:Sepsis,Trauma, Burns,andSurgery 1039 Nutrition Diagnosisl: Hypermetabolism as evidenced by recenttraumaandsurgery Nutrition Diagnosis2: AlteredGI functionrelatedto inabilityto advance enreralfeedingsasevidenced by poor gastricemptying a 61-year-old man, was admitted with gastric fhomas, I oudet obstruction secondaryto gastric carcinoma. Since diabetesmay be a state of increasedoxidative stress,there has been interest in prescribing antioxidant vitamins in people with diabetes. The lungs enable the body to obtain the oxygen needed to meet its cellular metabolic demands and to remove the carbon dioxide produced by these processes.The lungs also function to filter, wann' and humidifiz inspired air; ry.nthesize surfactant; regulate body acid-base balance; synthesize arachidonic acid; and convert angiotensin I to angiotensin II. Grau MV et al: \4tamin D, calcium supplementation,and colorectal adenomas:results of a randomized trial, J Natl CancerInst 9 5:1765 , 2003. DeBusk R, Joffe Y: Itl Not Jast Your Genes!San Diego, 2006, BKDR. For women the increasedrisk comesafter the age of 55 years, AHA/NHLBI Criteriafor Diagnosis of the Metabolic Syndrome* Risk Factor Defining Level Abdominal obesity Men Women Tliglycerides HDL cholesterol Men Women Blood pressure Waist circumference >102 cm (>40 in) >88 cm (>35 in) >150 mg/dl or drug treatment for hypertriglyceridemia Fasting glucose 60 18-39 40-59 Age' Y FIGURE 33-1 Hypertensionprevalenceby ageand racelethnicityin men and women. Ac id P r o d u c t i o n Several beverage categories such as soft drinks (diet and regular), sports beverages,citms juices and ,,ades,,'and vitamin C supplements have high acid content and therefore Saliva is supersaruratedwith calcium and phosphorus. Studies of Seventh-Day Adventists indicate that the diet results in lower rates of qrpe 2 diabetes, breast and colon cancer' and cardiovascular and sallbladder disease. Most fruits contain from 1% to 7o/ofructose, with some containing considerably greater concentrations.Fructose makes up about 3% of the dry weight in vegetablesand about40o/oof SugarsandArtificialSweeteners Sweetness Substance SweetnessValue Sugar or Sugar Product Levulose, fructose Invert sugar Sucrose Glucose Sorbitol Mannitol Galactose Maltose Lactose 173 130 100 7+ 60 50 32 32 t6 Artificial Sweeteners Cyclamate (banned in United States) fu partame (1. {utraSweet}* Acesulfame-K (Sunette) Saccharin(Sweet'n Low) Sucralose(Splenda) Alitame (approval pending) *Nutritive (hascalories). L298 APPENDIXES Iodine is an important mineral that is found in a variety of foods, but it is most concentrated in foods from the ocean. McGuffin M et al, editors: AmericanHerbal ProduasAssociaguidelines tion'sbotanicaltoftry handbook: for the safeuseand Boca Raton, Fla, 1997, CRC labelingfor herbsof commerce, Press. Becauseof the changes induced in the two matrix proteins by low copper intakes, bone mineralization may also be reduced, especially in the elderly. Cerebrospinal fluid surrounding the brain and spinal cord, synovial fluid surrounding bone joints, and amniotic fluid surrounding a fetus are other fluids that can transmit HrV Saliva, tears, and urine do not contain enough HIV for transmission. Infection with the H. Vt cup cooked rice or pasta Nutrition Tips l. r The nutrition intervenrion, including both the content and nutritionist's style, is a powerful determinant of resistanceand denial, as well as motivation, in persons who want to make changes in their diet. SeeGraft-aervr.s-host glnecologic age definition, 246 nutritional needs of pregnantadolescents, and,262 g1'noidfat distribution, 542 definition,532 ::: HACCP (Hazard Analysis Critical Control Points) in foodborne illness prevention, 330 hair, analysis,414b half-life definition, 432 ofdrugs, acylation rates and,434 handgrip dlmamometry, in nutrition-focused physical examination, 406 Hazard Analysis Critical Control Points (HACCP) definition, 309 in foodborne illness prevention, 330 HDLs SeeHigh-densiry lipoprotein definition, 8l l head canceq oral manifestations, 648 circumference, in body composidon assessment,403, 404b nlury medical nutrition therapy, 1033 pathophysiology, | 03 2 - | 0l l headache, migraine, l09l -1092 Head Start, 322t health and nutrition fimess, universal prescription, 343b health care facilities, standard diets (usage), 466 health claims definition, 337,470 on food labels, 347, 348b, 349 for dietary supplements, regulation, 480 qualifi ed, for dietary supplements, regulation, 480 Health Insurance Portability and Accountability Act (HIPAA) charting and,461,463 definition, 454 health-related quality of life (HRQOL), 272 definition, 269 Healthy Eating Food Py'ramid, 279,279f Healthy Eating Index (HEI), 340, 341t definition,137 2010 HeahhyPeople adult nutrition nd,270 goalsof, implementationof, 273 healthindicatorsoi 313b nationalhealtVnutrition objectivesof, 116-317,318b on nutrition and overweight,319t physicalactivity in older adulthoodand, 291-292 on public health implicationsof overweight/ obesity,541 hearing, in older adults, 294 heart cachectic,889 disease,low carbohydrate diets and, 828b dmgs affecting, taste alterations,'142b failure, 884-895 alcohol avoidance, 892 caffeine avoidance, 892 calcium in, 893-894 care management algorithm, 886f classification,889t definition, 884 feeding strategies for, 894 incidence, 884-885 in middle age, elderly (contrast), 887t magnesium in, 894 medical management, 890 medical nutrition therapy, 890-895 pathophysiology,886f, 887-889 prevalence,884-885 prevention, 887 risk factors, 885 skeletal muscle changes in, 889t sodium restriction in, 891-892, 891b stages,888f supplementsin, 894-895 symptoms, 887-889 thiamin supplementation in, 894 vitamin D in, 893-894 weight maintenance in, 892-893 pump, structure, 885f rate monitor, 28

transplantation, 895-896 heartburn, 65 5 -656. Another important goal is maintaining strength and energy to enhance quality of life, independence,and ability to perform activities of daily living. SeminOnoeol in advanced SugimuraT et al: Heterocyclicamines:mutagens/carcinogens producedduringcoolcingof meatandfish,CancerSci95:290,2004. The vast majority of human genes reside on nuclear chromosomes and are transmitted by Mendelian inheritance. Jump DB: Dietary polyunsaturatedfatty acidsand regulationof geneexpression,Curr OpinLipidol 13:155,2002. SseDouble-blind,placebo-controlled food challenge DBP (diastolicblood pressure),866 definition, 865 DCCT (DiabetesControl and ComplicationsTrial), 652 deficiencies, 764 dFT (Ferri), nutritional complications,1002f dcic (fibvid), nutritional complications,1002t definition,1002 d (Alex), deamination definition, 49 in protein metabolism,62 death,leadingcauses,(Listed Starter(2002), 38 S t gastrointestinal decompression, definition, 506 in enteralnutrition, 507 avoidance,in facilitatingbehavior defensiveness, change,495 deficiency of biotin, 95 of calcium,107,135t of chromium,1ll, 138t ofcobalt,135,18lt of copper,126-127, 137t of fluoride,125,137t of folate,92 of iodine, 128-129,129f, 137t ofiron, 120,156t of magnesium,112-lll, 136t 132,137r ofmanganese, of molybdenum,134,138t ofniacin,ST-88,88f of pantothenicacid,88-89 109-110, 136 of phosphorus, of riboflavin,85, 86b,86f l, 138t 130-13 of selenium, of sulfur,134 of thiamin, 83-84,84t of vitamin,72-74,73f of vitamin86,90-94 of vitamin, 96-97,97t of vitamin D, 77-78,77f of vitamin E, 80 of vitamin K...

accompanying thoughts and feelings, helps identify the physical and emotional settings in which eating occurs. Inflammatory markers, in particular C-reactive protein, have been shown to be elevated in patients with hypertension (Sesso et al, 2003). potentially increasedcompensationof the NSD. Nutrition professionalsneed to have a firm foundation in genetics,the associationsamong genes,disease, and environmental influences, and the role of nutrients and other food components in the modulation of gene expression. 1965-1970: Sates adopt newborn screeningprograms to detect phenylketonuria (PKU). Coffee . Kushi LH et al: The macrobiotic diet in cancer,J Nut 1 3 l (suppl):3056, 2001. These groupsarenonperson,continous,include a "buddy system,"and encourageparticipationin a regular basis [illegible] The Weight Watchersprogram [illegible] goal weights. It harbors acid-forming bacteria and keeps the organic products of their metabolism in close .o.t*it with the enamel surface. Minot GR, Murphy WP: Treatmentof perniciousanemiaby special diet, JAMA 87:470,1926. The chapters in this section begin discussions of the funnel nutrition care process, including an overview of nutritional genetics, followed by chapters related to assessment of nutrition status; selection of nutrition diagnoses; and interventions to solve problems or improve nutritional status. - Appendix de "Dieta antiinflamatoria". Some of the programs are sensible and appropriate, whereas others emphasize fast results with minimum effort. Cohen MH et al: Emerging credentialingpractices,malpractice liability policies,and guidelinesgoverningcomplementaryand alternativemedicalpractices;and dietarysupplement recommendations: a descriptivestudyof 19 integrativehealth careenters in the United States.Arch Intern Med 165(3):289, 2005b. and intervention will be the keys Nutrition assessment to [illegible] mitigating the expression of diseases for which an individual is susceptible. Home nutrition therapy organizationsprovide nutrients, medications, supplies, equipment, and professional clinical services to patients at home in accordance with standards developed by professional or ganizations. Micronutrient deficiencies of calcium and fat-solublevitamins are also common (Radigan,2004). Besides often being high in total carbohydrate content, these foods may also contain significant amounts of fat. [illegible] The four communication strategiesasking open-ended questions, listening reflectively, affirming, and summarizing are important when eliciting self-motivational statements. Nutrition Screening Initiative (ESI): T(e role of nutrition in chronicdisease, Washington DC, 1997, Greer, Margolis, Mitchell, Burns and Associates. Reproduced with p ermissionof UNAID S, 2006c) Act. Problem solving is a process for defining the eating or weight problem, generating possible solutions, evaluating the solutions, choosing the best one, implementing the outcome, and reevaluating alternative solutions if the one selected is not successful. The carbohydrate content and glycemic index of the carbohydrate source are summarized in Table 3-2. The goal is to use these realizations to set the stage for later efforts at dietary change. Garnishing is often overlooked but makes big visual impact. Let's talk about what you can do and eliminate those things that are too difficult at this time. HIV infection causes a progressive depletion of CD4+ cells,which eventually leadsto immunodeficiency,constitutional disease (persistent fever, night sweats, chronic fatigue, malaise and diarrhea),neurologic complications,OIs, and neoplasms(Box 38-1). Design a nutrition care plan to improve this youngster's dental health and growth. U.S. Departmentof Agriculture, Center for Nutrition Policy and Promotion: Healthyeatingindex2005, availableat w'r'w.cnpp. What recommendations would you make about Ellen's diet? For more details about the metabolic syndrome (which is also called insulin resistancesand)Q, seeChapters30,32, and 33. PnoCRSEVE NnuRE oF Renal DiseasE A wide range of kidney lesions are characterized by a slow, steady decline in renal function. The combination of delayed emptying, decreasedclearance of esophagus,increased digestive secretions, and the recumbent position increases the opportunity for prolonged reflux of gastric contents into the esophagus. [illegible] Horwich TB et al: B-type natriuretic peptide [illegible] obese patientswith advancedheart failure J Am Coll Cardiol47:85, 2006. [illegible] 4. Fat is provided by a variety of oils. These teams become models for interdisciplinary care. ion. Thus, for patients retaining fluids, careful interpretation of both anthropometric measurementsand biochemical indicators of nutrition status is necessary especially because the later are depressedby hemodilution (see Chapters 14 and 15). Goran MI et al: Energy requirements acrossthe life span:new findingsbasedon measurementoftotal energyexpenditure with doubly labeledw^ter,Nutr Res15:115,1995. In general, it is important to establish the interactive relationship before beginning the actual processof nutrition counseling. [Upstream from the 5-prime end of the promoter region is the regulatory region, where control of the transcriptional process takes place. [illegible] applications clinicalpracticeTopics Clin Nutr 20(1):2, 2005. in FruitsandVegetables CarotenoidsNeoxanthins and Violaxanthins Egg yolk Maize (corn) Kiwi Red seedless grapes Zucchini squash Pumpkin Spinach Orange pepper Yellow squash Cucumber Pea Green pepper Red grape Butternut squash [illegible] Lutein and Zeaxanthin Lutein [illegible] Zeaxanthin [illegible] Cryptoxanthins Lycopenes p-Carotene [illegible] APPENDIX l291 Carotenoids in FruitsandVegetables-contd Neoxanthins and Violaxanthins [illegible] Lutein and Zeaxanthin Lutein Zeaxanthin Cryptoxanthins Lycopenes p-Carotene [illegible] (fruit 0 Carrots Cantaloupe Dried apricots Green kidney beans [illegible] from Sommerburg O et al: Fruits and vegetables that are sources for lutein and zeaxanthin: the macular pigment in human eyes, Br J Ophthalmol [illegible]:907, 1998. The DV for magnesium is 400 mg The %DV listed on the Nutrition Facts panel of food labels states the percentage of the DV provided in one serving. [illegible] Medical Nutrition Therapy [illegible] to the client by demonstrating a willingness to listen. [illegible] Those with these syndromes often have feeding difficulties and require the assistance of a knowledgeable nutrition professional. [illegible] Stool fat collection unavailable:DER : TEE [illegible] Renal tubular acidosis (RTA), a defect in tubular handling of bicarbonate, can be caused by either a proximal tubular defect (type 2) or a defect in the distal tubule (type l). Finney SJet al: Glucosecontrol and mortality in critically ill pasients,JAMA 290:2041,2003. [illegible] endotrachealtube was removed [illegible] Aslan Foods-cords NondairyDrinks Calciumenrichedorangejuice,7p Fortified rice beverage, I cup Fortified soy beverage,I cup Regularsoy beverage,1 cup Food [illegible] Calcium Supplements Vitamin D Calcium carbonate is the most common and least expensive calcium supplement. Alcohol Alcohol (ethanol) intake at high doses (more than two drinks a day) has adverseeffects on the skeleton (Kanis et al., 2005). Fruit drinks, sodas, ice teas, and other sugar-sweetened beverages, chocolate; cookies; candies; and cake products may be cariogenic. [illegible] + What other dietaryhealth-related advicewould you give Nan? Educationalefforts should be positioned [illegible] focusing on oral hygiene habits and promotion of a balanced, healthydiet. The reactions are not reversible.Glycogen is catabolized [illegible] to produce energy. [illegible] Lamb; pork; pheasant/quail; duck; goose;quail; salmon; all organ meats including liver,heart, kidney, brain; all shellfish, including oysters,scallops,shrimp, lobster, clams, and crab; meat gelatin; soy protein meat substitutesOther all nuts and seeds Avocado Olives [illegible] Milk Chocolate, cocoa,soy milk Butter, cream, margarine, mayonnaise, nondairy cream substitutes,oils, sour cream, salad dressingsmade from allowed ingredients), all othersnot listed on high or moderate list All other dairy products, milk flavored with carob Food Groups Meat and meat substitutes From Pemberton CM er al: Mayo Clinic diet manual: a handbookof nutrition praxices,ed 7, St. Louis, 1994,Mosby. All persons working with body fluids should use universal precautions to protect their own health and the health of others. Treatment of [illegible] ameliorates the gastritis, improves digestive function at least somewhat, and at least reduces the conditions that favor carcinogenesis. [illegible] Given a daily fixed solute load of about 600 mOsm (the solute load representing the end waste products of normal metabolism), the kidney can get rid of as little as 500 ml of concentrated urine or as much as 12 L. In Canada, Health Canada is the agency responsible for Canadian dietary recommendations and food labeling regulations. [illegible] overweight malewith low bone massmay also suffer fractures (Goulding et al., 2005). It is recommended that total fat be 25o/" to 35"/" of total energy, and saturated fatty acids less than 7%* [illegible] Children whose BMI is greater than the 85th percentile are 6 times more likely to be overweight later [illegible] 2006). SeealsoMinerfls requirements, and content, [illegible] vitaminlike factors as, 100-102 vitamins as, 68-102. Throughout the life span, diet and nutrition continue to affect both, bone, and oral mucosal integrity; resistance to infection; and tooth longevity. [illegible]

[illegible]

12 : very ready to change)." At this point the intervention becomes very specific to the readinessto change.Three possible conditions for readiness exist: (1) not ready to change; (2) unsure about change; (3) ready to change. [illegible] determining the level of client readiness. [illegible] Van HeringenJCM et al: Intercultural communicationin generalpractice. Eur J PublicHealth12(l):63-68,2002. [illegible] insulinotropic polypeptide [illegible] in osteoporosis, 63 3 GI tract. Higher amounts of protein, 1.6 to 2 g/kg, are required in cases of increased needs,such as fever, infection, and increasedsurgicalor traumatic stresses.A moderate sodium restriction 80 to 100 mEq/day) during this period minimizes fluid retention and helps to control blood pressure.After this time protein intakecanbe decreased to l g/kg, and caloricintakeshouldbe at a level sufficient to achieveand maintain an appropriate weight for height. polymers, often linked with an initial glucose. HIV medical nutrition therapy [illegible] In addition to nutrition and physical activity, key components of the typical behavior modification program include self-monitoring, goal setting, stimulus control, problem solving, cognitive restructuring, and relapseprevention (Berkel et al., 2005). This phenomenonwasfirst noted in mice and has subsequentlybeen reported in humans (Gyllenstenet al.,1991; Schwartand Vissing,2002). [illegible] particularly via the intravenous route, can precipitate the complication known as refeeding syndrome with severe,potentially lethal electrolyte fluctuations involving metabolic, hemodynamic, and neuromuscular problems. Dysphagia secondary to surgical interventions, radiation therapy-induced inflammation of the esophagus, or mucositis from chemotherapy involving the oral and esophageal tissues can be lessenedwith the intake of foods that are soft or liquefied and served at moderate or room temperatures [illegible]

[illegible]

for cancer recurrence risk and managing treatment-related side effects and postmenopausalsymptoms. [illegible] flammation, endothelialdysfunction,thrombosis, and [illegible] et al., 2006). In the metabolic studies in which the subjects did not lose weight, diets high in either carbohydrates or monounsaturated fat lower LDL cholesterol equivalently, but the concern has been the potential of a high-carbohydrate diet (greater than 50o/oof energy intake) to increase triglycerides and postprandial glucose compared with a high-monounsaturated fat diet (Garg et al., 1994). It focuses on restructuring a patient's environment to reduce those behaviors or habits that contribute to obesity. Michael continued to run a fever and was often treated with a cooling blanket. Suchindividualsmay need800 to 1000units of vitamin D, especiallyin winter months, but their serum 25-hydroxy vitamin D (calcidiol)concentrationsneed to be monitored periodically to avoid hypervitaminosisD and toxic reactionsfor active substances . 2. r Dialysis KidcTransplantation Immunosuppressant drugs [illegible] At this point the goal is to produce a change in the problem area. FEMA identifies food and water needs. [illegible]

[illegible]

the most impad on a person's energy balance,usuallydue to the unexpectedly increase during activities of daily li*irrg. The Friday night meal is the most special of the week and usually includes fish and chicken. Phytic acid or phytate,a six-carbonring with phosphate bound to each carbon, is found in the seedcoat of grains and legumeand has the ability to bind metal ions, especiallycalcium,copper,iron, and zinc. [illegible] Most cooking causes the granules to swell, gelatinizethe starch, softensand ruptures the cell wall, and makesthe starchmuch more digestible,primarily by pancreaticamylase.However, some starch remainsintact throughout the cooking processor recrystalizesaftet cooling and resists enzymebreakdown.This resistant starchyieldslimited amountsof glucosefor absorption. Recently liposuction is being used as a more aggressive treatment of obesity with as much as 50 lb of fat removed using an incision and removal of the fat on the abdomen followed with a "tummy tuck" and removal of excesskin. [illegible] (Frun U.S. Department of Energy, Human Genotne Program:www.ornl. The fermentable carbohydratesare [illegible] promote fermentation. With a gastric ulcer, hemorrhage and anemia [illegible] Xylitol is a five-carbon sugar that does not ferment in the mouth. [illegible] Barriers to adherence need to be investigated and [illegible] Seshal M et al: Preoperative oral supplementation with longchain omega-3 fatty acids beneficially alters phospholipid fatty acid patterns in liver, g ut mucosa, and tumor tissue.JPEN] ParenterEnteral Nut 29:236,2005. Thcrolinus, Sirolinus,Thymoglobulin, and Atgam are alsoused. gov/ References American Dietetic Association: Position of the American Dietetic Association:vegetarian diets,J Am Diet Assoc97:13t7, 1997. fEnergy and protein requirements are diseaseand condition specific. Clients try to excuse their behavior. Seealso}luman immunodeficiency virus disease HIV encephalopathy, 1006 definition, 991 Hivid (ddC, zalcitabine), nutritional complications, 1002t HIV wasting syndrome, 1008 definition, 991 HNIB (--Hydroxy-_-methyl-buqrate), ergogenic aid,,604r, 606-607 IWIG CoA reductase inhibitors definition, 83 3 in cardiovascular diseasemanagement, 859, 860t holistic therapies, 471 definition, 470 holotranscobalamin II (holo TCII) definition, 810 in vitamin B12transport, 819 nome care, nutrltron support n, t l5-r l / , t Itb, 526f homeopathy definition, 470 oescflpuon, +/lt homeostasis calcium, 616-617 definition, 614 glucose,impaired, diagnosis,77lt homocysteine as inflammatory marker, 849 as marker of inflammation,425 definition, 4ll, 833 levels, folate/vitamin B12status and, 423 homocystinuria, 1147t classic,374 formulas/medical foods in management of, 11 5 l r homopolysaccharides, 47 homozygous, definition, 365 homozygous individual, 372 honey, 43 honey'rnoon phase definition, 765 in qpe 1 diabetes,769 hormonal response,to stress,417-418 hormonal status, resting energy expenditure ano,t)-to hormone(s). Deficiency Iodine deficiency is an important health problem throughout much of the world. Write out a day's schedule to include mealtimes, medication administration times, and activities of daily living. Feedings can be administered by bolus injection or intermittent or continuous infusions (see "Administration" later in this chapter). ling blood pressureis a major preventivestrategyfor HF et al., 2002). In the gold standard, randomized-controlled uials of vitamin supplemenrarion, a causal relationship was not proven. Pharmaceutical advancemens have improved the medications available. ol PerreJersluenedfq serderegrl?rrPeur erS1er(urorgg e^Deuretlepue lreluauralduroc;o esll :F re T(relPaoU-reuqe1\ ' V00Z'Zlt 6t sptdtT'uottuaterdaseasrp uonetuauralddnsPIoErruIoJro clloJJo lre3Jg :lBre gV ePg ue1 '0007'Lst97 tu7 ullC sre runaq['sreprosrplerela{solncsntuJo} lueuDearl N 'sreuSeru sPlegcneuSeurorcalg:HC {ro[PuB leuone8nsa,rul .IOOZ 'Stfi6s aay 4nN'snrrrfue Plolerunelfluo g urn? Pu?Io '5 qsg SururetuorslerPJo srragg :S u?rleqow 1qorlrqa;4-'tlopta '2007'Ltsgl Mnaqysnuqz ^PnlsPellorluor -oqeceld'puryq-elqnope :snlrlpr? 0 r a lS u p p l e m e n t s The most common types of oral supplements are commercial formulas meant primarily to augment the intake of solid foods. "Where do you think you will go from here?" . A less concentrated tube-feeding formula is provided for hydration and to perhaps lessenclogging. o Weight control, physical activity, and a low-fat diet rich in fruits and vegetableswith nonfat dairy foods and nuts incorporated have all been shown to lower blood pressure. SeeEating disorders definition, 246 risk, in adolescence,257 restrictive, in childhood, 567t selective, in childhood, 567t sequence/frequency, cariogenicity of food and,64l eating behaviors current, assessmentof, in motivational intervention model, 496-498 in eating disorder assessment,574-575 normalization, after weight restoration, 579b of adolescents,2 54-257 eating disorder not otherwise specified (EDNOS) definition, 563 diagnostic criteria, 565b, 566 eating disorders clinical characteristics,568-570, 57lf counseling, 577 -581, 577f, 581-582t Index 1319 eatingdisorders(Continue| diagnosticcriteria,564-568,565b in adolescence, 260 in athletes,568 in childhood, 566,567t in individualwith diabetesmellitus, 568 medicalcomplications, 568-570,569-57 0t medicalnutrition therapy,577 -583 nutrltlon education,583,584b rehabilitation/counseling,57l nutritional rehabilitation,monitoring, 582b, 583 nutrition assessment, 57| -577 anthropometric , 576-577 diet history 571-574 eatingbehavior,574-575 energyexpendirure, 576 fluid/electrolytebalance,576 fonnfor,573f laboratory575 vitamin/mineraldeficiencies,575 -576 nutrition for/ in, 563- 586, lll2t prognosis,583 psychologicalmanagement,570-57| treatmentapproach,568 EacingWell with Canada'sFood Guide, 344, 345-346f ebb phase definition,l02l in metabolicresponseto stress,1022 echinacea, supplemental,efficacy,r eviews,479t echolalia definition,1067 in Alzheimer's disease, 1082 eclampsia, 184 delinition,l60 eczema definition, 739 food allergies and,740 edema, 145 definition, 144, 884 in pregnancy, 182 education about therapy management rn phenylketonuria, 1155-1156 numlflon for school-agechildren, 235-236 in adolescence,258-259 ofpatient with end-stagerenal disease,946 self-management, for diabetics, 786 EER. Hydrochloric acid is secreted by the parieal cells in response to stirnuli by gastrin, acetylcholine, and histamine. A *i" B, a 70-year-old white woman of Northern European H*ce.try, developed lactose intolerance during her early '50s when she had a serious gastrointestinal infection. In all persons, blood glucose levels decline gradually during exercise,and ingesting a carbohydrate feeding during prolonged exercisecan improve performance by maintaining the availability and oxidation of blood glucose. Paton M et al: Randomizedcontrolled trial of nutritional supplementationin patientswith newly diagnosedtuberculosis and wasting,Am J Clin Nutr 80:460,20M. For children older than 7 years,prolonged weight maintenanceis appropriate if their BMI is between the 85th and 95th percentile and if they have no secondarycomplications. Total parenteral nutrition was discontinued as Michael continued to tolerate enteral nutrition. StrassburgS et al: Muscle wastingin cardiaccachexia,lzrJ BiocbnnCellBiol 17:1938,2005. Korsakoff's psychosis presents as an amnesia, a confabulatory mental disorder in which retentive memory is significantly impaired in comparison to other cognitive functions. Well-planned vegetarian diets are safe for infants, children, and adolescents and can meet all of their nutritional requirements for growth. Previous exercise recommendations for health called for 20 to 60 minutes of moderate- to high-intensity endurance exerciseperformed three or more times weekly. Beyond minimizing or preventing diseaseis the potential for maximizing human potential. Rutten EPA et al: Metabolic effectsof glutarnineand glutamate ingestionin healthysubjectsand in personswith chronic Am J Clin Nutr 83:l15, 2006. Effect On Garies Human Data Yes Yes Yes Yes No No Yes Yes No Yes Yes No Shike M, eiltors: Modsn natritim in hea6h and dbease,vol2, ties, may happen as a result of lack of accessto care, cost of care not reimbursed by third-party payors (e.g., insurance, Medicaid), lack of knowledge of preventive dental care. Cor pulmonale (right ventricular enlargement and failure of the heart) develops late in the course of the disease. Relapse:If relapse ocqurs, the individual's usk is to staft the change processagain rather than become stuck in this stage. Intellectual function ' Speech . Risk of transmission through oral sex is considered low but not riskfree (CDC, 2001c). includesthe resumptionof the individual'sregular diet. In addition to the physiologic benefits of exercise are the relief of boredom, increased sense of control, and improved senseof well-being (Figure 21-4). HfV can be transmitted via blood, semen, presemenal fluid, vaginal fluid, breast milk, and other body fluids that contain blood. Goodstine SL et al: Dietary @-3)/(n-6) fatty acid ratio: possible relationship to premenopausalbut not postmenopausalbreast cancer risk in U.S. Women, J Nutr 133:1409, 2003. Various prebiotics, especiallyFOSs, variably stimulate the growth of intestinal bacteria, principally bifdobacteria.In a healthy person 80o/oto 90% of nonabsorbable carbohydrate is fermented by colonic bacteria into carbon dioxide, hydrogen, methane, and short-chain fatty acids (SCFfu) (Cummings et al., 20011. Make sure that the patient or caregiver can demonstrateunderstandingof the feeding processby either explaining it or by doing it. Minneapolis,Minnesota C a r oD l .F r a r yM , S ,R D Public Health Nutrition Specialist Vermont StateWIC Prosram Burlington, Vermont M a r g i eL e eG a l l a g h ePrh, DR , D Acting Dean Human Ecology EastCarolinaUniversity Greenville,North Carolina M a l l yG e eM , E dR , D ProjectLeader BehavioralMedicineResearch Center BaylorCollegeof Medicine Houston, Texas Barbara Grant,M5,RS OncologyClinicalDieritian SaintAlphonsusCancerCare Center Boise,Idaho l { a t h yf l a m m o n dM, 5 ,R N ,R D ,L D ,C N S D Coordinator,Continuing Education Clinical Nutrition Specialist Chartwell Diversified Seryices,Inc. If conversation extends beyond the designated time for the session,the assessmentsteps should be completed at the next session.The stage of readiness for change should be assessedand documented. Becauselung size is stature dependent, linear growth is important for the growth of healthy lung tissue and for the resolution of the condition. If this equipmentis not glucose,lipids, and a mixture of essentialand nonessential available, calorieneedsshouldbe estimatedat 30 to,l0 kiloamino acids.This reducesthe protein catabolismand urea caloriesper kilogram of dry weight per day.Excessivecaloproduction to a minimum until the patient can tolerate rie intake can lead to excessCO2 production, depressing oral feeding. Maintenance:During this stage, the challenge is to susain the change accomplished by previous action and to prevent relapse. Goodwin CW: Parenteralnutrition in thermal injuries.In RombeauJ,CaldwellMD, editors:Clinicalnutrition:parenteral nutrition, ed 2, Philadelphia, 1993,Saunders. Each gene in an individual is present in two copies (alleles), one on each chromosome. I S O R D E R SO F T H E S T O M A C H Indigestion andDyspepsia Pathophysiology In its broadest sense dyspepsia refers to persistent upper abdominal discomfort or pain. Her food recall is as follows: 7:30 tu 7:45 ru 8:00eu 8:15 er'l 10:00au 1 banana Vzlargecantaloupe 2cwatermelon 1 bananaand 1 apple 2 bite-size chocolate mint patties J\ | athan, a 3-year-old black male, is brought to the local I U health clinic bv his crandmother becausehis front teeth are "turning black." N"'th"., seems small for his age; his height is measuredat 35.5in., and his weight is 25 lb. If supplements are used, the effects on LDL cholesterol should be monitored. Monitoring of metabolic tolerance is critical to parenteral nutrition therapy. www.epa.gov/ost/fish FEMA http ://www.dhs.gov/dhspublic FoodSafety http ://www.foodsafety. It describes the relationship between these two components; a statement lacking either one of these components does not meet the regulatory definition of a health claim. In Ellion L et al, editors: Tbe dinieal guide to oncolog nuf,rition, ed 2, Chicago,2006, American Dietetic Association. The enormousenergy requirements and expendinrresof the tubules in performing the work of activesecretionand resorptionleavethis pan of the kidney particularlyrmlnerableto ischemicinjuries.High local concentrationsof many toxic drugscan destroyor damagevarioussegmensof the tubules.Finally,the high-solute concentration generated in the medullary interstidum exposesit to damagefrom oxidants and precipitation of calcium-phosphateproduct (extraosseous calcification)and favorsthe sickling of red blood cells in sicklecell anemia. Fermentedalcoholic beverages(such as beer and wine) stimulatethe secretionof gastricacid and may compromise GI protective mechanisms.Chewing gum has been shown to increasesalivarysecretions,which help to raise esophagealpH, but no studieshavedemonstratedits efficacywhen comparedwith other lifestylemeasures. Parenteralnutrition is the provision of nutrients intravenously. If blood glucose is chronically higher than this range, damage to cells and systemstakes place, as it does in patients with diabetes.Glucose homeostasis(equilibrium) is controlled in the fed and fastedstatesrhrough actions ofhormonesthat store, release,or oxidizeglucoseasneeded. orglModules/burnmetabolism./ pt2/index_nutrition.htm BurnSurvivor Resource Center www. Liquid nutritional supplements may be considered for individuals unable to consume sufficient energy and protein to maintain their weight and optimal nutrition status (seeChapter 20). A large multicenter trial, Modification of Diet in Renal Disease, attempted to determine the role of protein, phosphorus restriction, and blood pressure control in the progression ofrenal disease.fu a result ofthis and other related studies, the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health convened a conference to develop recommendations for the management of patients with progressive renal disease or pre-ESRD. SeeOsteoarthritis OAS (oral allergy syndrome), 760 o b e s i t y ,3 8 5 , 3 8 7 , 5 3 8 - 5 4 2 , 5 i 8 f , 5 3 9 f , 5 4 0 t android, 541 assessment,539-540 calcium stone formation and, 953 carcinogenesis and, 963 cardiovasculardiseaseand, 850-85 I obesity (Continued) c n i l o n o o o)), o -)) /),)) / o classification,540t definition,533 discriminationagainst,542 etiology,540-542 extreme,definition,532 geneticsusceptibiliry379b healthrisks,541 heredity and, 540 in adolescence, 260-26I in adulthood,272 in childhood,236-237 in older adulthood,quality of life and,296297 in Prader-Williqmdome,1181 managemenr dietarymodificationin, 545-548.Seeaho Dietary modification,in obesity management in, 549-550,550f exercise goals,542-544 in adults,542-555, 543b lifestylemodificationin, 544-545, 545b maintenance of reducedbodyweightin, 554-555 nondietapproach,552 1, 551t pharmaceutical, 550-55 plateaueffectin, 555-556 in, 555-556 problemsencountered surgicalprocedures, 5 52-554,554f weightryclingin, 556 morbid,definition,532 pregnancyand, fetal risksfrom, 164-166 prevalence, 518,538i 539f prevention,calciumintake in childhoodin, 241 291 sarcopenic, definition,286 obligatorythermogenesis,defrnirion,22, 26 obsessive-compulsive disorder(OCD), nutrition, Ill2t OHSS (ovarianhyperstimulations;'rrdrome), r6r oil, copper content of, 7 l6t older adulthood ageism and, 288-289 body composition changes,291 carbohydrate needs,299-300 cardiovascular changes, 293 classification, 287 -288 depressionin, 294 diabetes in, medical nutrition therapy interventions for, 7 89-790 energy needs in, 299 eyesight in,294-295 failure to thrive in, 294 food-drug interactions in, 435b frailty in,294 gastrointestinal changes in, 293 hearing in, 294 heart failure in, zs. .1. The CD4+ cell count in blood is the common laboratory test used.The virus also residesin other distinct compartments, such as semen,vaginal secretions, the lyrnph system, and the central nervous system (CNS), and evolves independently. When patientsare inundatedwith nuuition-related CAM therapychoices,food and professionalscan provide soundguidancefor informed decisionmaking. Healthy younger and older men of normal weight consumed a typical diet and performed usual activities. EnteralNutrition When individuals with cancer are unable to meet their nutritional needs because of malnutrition, prolonged anorexia, mechanical obstruction, or treatment-related toxicities (e.g., dysphagia, odynophagia, or mucositis), other more aggressive routes of nutrition support need to be considered. t9r -r=hr trN=r o< .? Furthermore, protein does not slow the absorption of carbohydrates (Nunall et al., 1984), and adding protein to the treaffnent of hlpoglycemia does not prevent subsequent hypoglycemia (Gray et al., 1996).In patients with type 2 diabetes who are still able to produce insulin, ingested protein is just as potent a stimuIant of insulin secretion as carbohydrate (Gannon et al., 2001; Nuttall et al., 1984). *Represens recommendeddaily intake. first step?" What is a reasonable A c t i o nP l a n Following goal setting, an action plan is set to assist the client in mapping out the specifics of goal achievement. In one type ofresistance the client contests the accuracy, expertise, or integrity of the nuuition counselor. fu examples,liquid or powdered milk, yogurt, tofu, or protein powders can be used to enrich cereals, casseroles,soups, or milk shakes. Take your time to think about it. Although methods of nutrition support can be standardizedfor the course ofcertain diseasestates or treatnents' it is important to note that every patient presents an individual challenge and nutrition support must often be adapted to unanticipated developments or complications. ']BJ 'loretseloqc Jo uorlJnpor f-reierp tncco saop o>lors ecug '(9997 'l(If,) slsoc euoq Sursrnu ur uorTlrq ZI$ 8ul -pnlrur 'qrp"r{ pue lryrFcnpord rsoyur uorTlrq I Sg peletur1se Ig0T 'a>lortscrueqJsr uerp eJuersalt^uoJ;o porred reSuoy B s?q eJoJeJeqtpue secuenbasuoJ leuortJury eJalas eroru seq dluoururor 'I{VS ,(yrelncn.red ,a8eqrroua11 ddereqr .suoque^Jalu1 pcf 1o tuauodruoc de1 B sr uor1elrTrqeqe1 -JnsoJneu Jagto Jo 'e8eure:p JEInJrrueA ,poolq IBruBJJBJlur Jo seunlo^ eSruy;o uortenJela pcrSrns apnlJur .{eur sqa 'e8rqrrotuaq Fruerrertur roJ tuaurtee4 arp sr urerq e{p Jo uorsryred tuerJgJns Sururelureu alTr{r\ dll Suqyorluo3 dle,tnruyap pelerlsuouep uaeq ral lou seq sseu -e^rtJaJJe$r lnq 'sJuale TEInJSBAoJqaJaJ Jequry Sunua,rerd ur enlel etuos Jo eq .,(eruurrdse Jo esll 'sruoldur.f,sJo tasuo erp Jo sJnor{ 9 ulqrp\ rnJro ot speau dderaqr Jo uonenrur pu? FIGURE 13-3 All living organismsare composedlargely of proteins.Proteins are large,complexmoleculesmade up of long chains of subunits called am.inoaciils.Twenty different kinds of amino acids are usually found in proteins. Enzyme dosage per meal or snack is adjusted empirically to control gastrointestinal symptoms, including steatorrhea, and to promote growth appropriate for rye lf gastrointestinal sTmptoms cannot be controlled, enzyme dosage,patient adherence, and enzyme type should be reevaluated. Iron is part of hemoglobin in red blood cells and myoglobin in muscles. The rationale for not providing a more extensive list is not based on the lack of efficacy or excess adverse events but rather because it is imperative that practitioners seek dlmamic data sources for this information becausethe research is expanding rapidly at this time. The greater the body mass,the greater the BMD; and the converseis also true, the lower the body mass,the lower the BMD. '1002'916t09 ,f,pnts se Mnaqy uuV pellorruoc-oqaceld 'pezruopuer'puqqalqnopqtuou-Ks E :sBrJrpreoetso aeu{ JoJe^rtJe3;eur sr g uruetr1 :lBta J pueJg Jo JerleJcneruoldur.,{s 'b00Z,ZI:lll pary xuajq uuV ,1eut pelloJluoJ'pezruopure.r B :aerDleqt Jo srlrJrpr?oetso ur ddereqr a,rnoun[pesearn]rundnreJo ssJue^nJegE:lEte Wg ueruJeg ' S00Z'ZtlC ultt!ilnN,srtugtre proteunar{Jqtr,nstuened ur Iro a rlo pue Iro r{sgJo uonetuerueIddn5:lBra yy treqrefl '0002'SZSi :lL anN ullJ rav,suor]rpuoccrEoloterunaqr I ur e8e.roqpue esoruurrdSuruaz'g:V IIIH ,ff rlclag 1ro lro '5002'S ,1roanrlour8rr,r-ertxa S0Lt Ltb aruaN ur ltr,l.nre a4l-ua;ordnql :fuspreqroilgd :le ra;g drueqcneeg 's007's:96 [paryqffils 'snr.rrfrreoelso :TN spre.trpg Jolueuneera hE seureg '9002't8tt(0s7 {uunruut1 'seseasrpeunrurorotn? On postoperative day 8 Thomas' serum glucose level was 310 mg/dl, and his arterial Pco2 was 52 mg/dl. There is an increased communication of potential risks to health care professionalswith direct patienr contact, as well as those involved in community education. Spatialrelationshipsvary amongculturesand amongindividuals. The major reason is that the albumin level is very sable in healthy persons, whereas prealbumin concentrations vary considerably. Investigate the claims being made about the products and avoid products with exaggeratedclaims associatedwith them. Cultural sensitiyity or awarenessinvolves respecting and understanding the attitudes, values, and beliefs of others; willingness to use culrural knowledge while interacting with clients; and considering culture during discussions and recommendations for treatment (Ulrey and Amason, 2001). I oz bread product, such as I slice ofbread o j/+ to I ounce of most snack foods (Some snack foods mav also have added fat.) . i, Dehydrogenasereaction: similar to pyruvate dehydrogenase,characterizesthe removal of hydrogens in the Kreb cycle. similar institutions. She has been referred by her physician for nutritional counseling, with a specific request from the referring physician that you evaluateany herbal preparationsshe is uking. Fat Storage FIGURE 21-l Behnke'stheoretic body compositionmodel for a man and a woman with healthypercentagebody-fat ranges. Showing the client respectful but close spaceis another important nonverbal message.Silencecan give the client time to think and provide positive time for the counselorto contemplatewhat the client has said.Shaking one's head in agreement can be a positive encourager, leading to more conversation. (@ 2006Jupiter Imaga Corporation.) lated in intermittent short bouts. Chicago, 2006, American Dietetic Association. Mature atherosclerotic plaque Vessellumen Endothelium Fibrouscap Lipidcore Vascularsmooth musclecells Media Adventitia Stable plaque Thicktibrouscap Smalllipidcore Unstable plaque Thin fibrouscap Activatedendotheliumexpressing adhesionmolecules Accumulationof macrophages Largelipidcore FIGURE 32-1 The structureof mature,stable,and unstableplaque.(FromRuddJHF et al: Imaging of atherosclerosis-can wepredictplaqueruptare?Tiends CardiovascMed 15:17.2005.) 835 PART5 Medical Nutrition Therapy The clinical outcome of impaired arterial function arising from atherosclerosisdepends on the location of the impairment. Additional helpful information for appropriateaccessselectionis previous accesshistory edemaor skin damageat the accesssite, medical and medicationhistory coagulationtime, need for additional infusions, peripheral vein condition, functional status,and lifestyle(Sachset al., 2005).SeeChapter43 for discussionrelatedto the feedinglow-birth-weight infants. Sl.rnptoms may be alleviated by initiating therapy at a low dose and gradually increasingthe dose to therapeutic levels (van de Laar, 2005). Ho . The primary objectivesof medicalnutrition therapyare to manage the symptoms associatedwith the syndrome (edema,hypoalbuminemia,and hyperlipidemia),decrease the risk of progressionto renal failure, and maintain nutritional stores. GourMoN PnoBLEMs PlateauEffect A common experience for the person in a weight-reduction program is arrival at a weight plateau, when weight remains at the same level for a period of time. When a particular allele existsin greaterthan 1% of and the the population,it is calleda geneticpolymorphism, is an imporgeneis saidto be polymorphic.Polyrnorphism tant concept becauseit explainswhy human beings, although 99.9% alike genetically,are distinctively different. 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These patients also present additional problems becauseof their frequent history of smoking, alcohol use, and poor dietary intake. Aaian: The patient engagesin actions that bring about change. fu clients review situations in their lives and lack of time for dietary changes, the counselor will hear ambiyalence. Micronutrient content E. Peripheral veins cannot tolerate concentrated solutions; therefore diluted larger-volume infusions are often necessary to meet nutritional requirements. Minerals that function aselectrolytesneedto be monitored closely,especiallybecauseof fuid imbalancesand the occurrence ofrespiratory acidosisor alkalosis.fu a side effect of medications,potassium,calcium, and magnesiummav be lost in the urine. For example, a client who is wary of describing why she is not ready to change may become much more open to change if she sees openness to her resistive behaviors. Natrition Coanselor:I appreciate your concerns. Borowiz DS et al: Consensusreport of nutrition for pediatric patients with CF,J Pediat Ga.tTrrentenlNatr 382246,20{l.2. Brady MS et al: An enteric-coatedhigh-buffered pancrelipase reducessteatorrheain patients with cystic fibrosis: a prospective,randomizedsdtdy,JAm Diet Assoc106:ll8l, 2006. Dai Q et al: Consumptionof animal foods,cookingmethods, Prea and risk of breastcancer,CancerEpidemiolBiomarkers I 1 : 8 0 12,0 0 2 . NeterJE et al: Influenceofweight reduction on blood pressure: a meta-analysisof randomized controlled tials, Hypertension 42:878,2003. In the United States the racial and ethnic composition of the population is rapidly changing. brillator CesarioDA, Dec GW: Implantablecardioverter-defi therapyin clinical pracnce,J Am Coll Cardiol47:1507,2006. 56:344,1938. Seea physician. There is a legal definition for the word,organic.fu of October 2002, a food designatedas met production and handling standardsidentified and regulated by the USDA; in the marketplacethe food is labeled with the word a sticker with the USDA Organic seal. These changescan causea loss of as much as 6 to 9 in in heighr and result in the so-called dowager'shump (far right) in the upper thoracic vertebrae. What antacidsor other over-the-counter (OTC) medicationsor food products are you taking that provide supplementalnutrients, herbals,fiber, etc? RnrroNALEAND RrrERrA F O RA P P R O P R I A T E N urRrroN UPPoRT Historically the use of enteral nutrition for acutely ill, postoperative, or posttrauma patients rested on evidence of bowel function as indicated by bowel sounds and flatus. Blue dye (Food, Drug and Cosmetic [FD&C] Blue No l) added to enteral formulas has been used to detect aspiration of formula for years. When needed, it is given separately to stable home care patients as iron dextran. A very small number of personsinfectedwith HIV exhibit no signsof diseaseprogressionevenafter 12 or more years. To allow for optimal protein use,5096to 6006of the protein shouldbe from sourcesof high biologic value (HB$, and energy intake should be about 35 kcal&g/day for aduls and 100 to 150 kcal/kg/day for children. Figure 25-3 contains a sample diet plan that is low in cariogenic risk. Likewise, a small rise in osmolality brings about marked vasopressin secretion and retention of water. Finally the nutrition counselor may be confronted with a hostile client. Energyrequirementsfluctuateand thus arebest determined by continuous individual assessmenr. Senate Select Committee on Nutrition and Human Needs: Dietary goalsfor the United States,P',tbI No.052-070-03913-2, Washington, DC, 1977, U.S. Government Printing Office. Data from Barlow SE, Dietz WH: Obesity evaluation and treatrnent: erlrert comrnittee recommendarions,Pediatrics102:3,1998 and AD.d 2007. SeeNauseaandvomiringin pregnancy nystagmus,definition, 1068 tr OA. These concurrent risk factorsmay help to explainthe high morbidity and mortality ratesobservedin peoplewho are obese. In most casesinstitutions will have establishedstandards of care or practice guidelines that describe recomrnended actions in the nutrition care process. F.l €-,e h. com American 0besity Association www.obesity.org A m e r i c ao n t h e Mo ve www. The synthetic form is labeled dl, whereas the natural form is labeled /. At this ooint it is important to avoid pushing, persuading, confronting, coaxing, or telling the client what to do. There are five classic modes of inheritance (Thble 13-l). Vegetarians should pay special attention to ensure that they get adequate calcium, iron, zinc, and vitamins B12 and D. Include the foods you might suggest for frrlfilling the nutrition prescription. Gare Nutritional Deficiencies of vitamin C, folate, and zinc increase the permeability of the gingival barrier at the gingival sulcus, increasing susceptibility to periodontal disease.Severe deterioration of the gingiva is seen in individuals with scurq' or vitamin C deficiency. Nonuaditional behavioral interventions with children and the development of culturally sensitive interventions for racial and ethnic minority populations are potential researchareas(Berkel et al., 2005). As a result of the ability to recognize and eradicate H. In Lysen LII editor: Quick referenceto clinical dierrrlar, Gaithersburg, Md, 1997, fupen Publishers;and WeckwenhJ et al: Home nutrition support. Evaluate . Access Peripheral Access Nuuient solutions not exceeding 800 to 900 mOsm/kg of solvent can be infused through a routine peripheral intravenous catheter placed in a vein in good condition. Muslims are also encouraged to fast 3 days of every month. Once in the bloodstream, the triglycerides in the chylomicrons are hydrolyzed by LPL, located on the endothelial cell surface in muscle and adipose tissue.Apo C-II, one of the apolipoproteins in chylomicrons, is a cofactor for LPL. The 0.1% difference is sufficient to explain the obvious physicalvariations among humans.It is also the basisfor more subdedifferencesthat may not be readily observable, suchasin the functional ability of a key metabolicenzyme. 552 PART4 i Nutritionfor HealthandFitness Natural Weight-LossAids fi mericans are constandy being told that "diets dont Awork." The lure of a quick and easysolution to the challenge of weight management is strong, and the market for natural weight-loss aids is booming. Mycobacteriumtuberculosisinfection, pulmonary o Nocardiosis . Most of the earth's iodine is found in its oceans; thus parts of the world away from the oceans and exposed for millions of years longer have iodine-deficient soils, and large percentages ofpeople living there can be iodine deficient unless public health measures are taken. Formula administration is initiated at 100 to 150 ml per feeding and increased incrementally as tolerated. Evidence-Based Dietary SupplementResources Websltes Agenry for Healthcare ResearchQuality, USDHHS : htrp://www.ahrq.gov American Botanical Council: www.herbalgram.org American Dietetic Association,ComplementaryCare Dietetic Practice Group: www.complementarynutrition.org American Herbal Products Association:htrp://www.ahpa.org Consumer Laboratories: www.consumerlab.com Computer-assistedresearchon dietary supplements (CARDS) : CARDS_Database.aspx Dietary supplementsdatabase(IBIDS): www.dietary-supplemens.info.nih.gov FederalTiade Commission: www.ftc.govlbcp/conline/pubs/buspubs/dietsupp.htrn Food and Drug Administration @DA): wwwfda.gov Herb ResearchFoundation: vrvw.herbs.org International bibliographic information on dietary supplementsdatabase:http:/ / dieary-supplements.info.nih. Some of the smaller LDL particles stay in the blood, are oxJ.dized,and are then taken into the arterial wall. Small amounts of chili pepper or its pungent ingredient, capsicum, may serve to increasemucosal protection by increasing production of mucus; but large amounts may cause superficial mucosal damage, especiallywhen consumed with alcohol. A current concern illustrates the importance of food safety(i.e., a pandemic fpopulation wide] influenza ourbreak related to avian influenzatbird flul). Calcium citrate is more easily absorbed @ioavailability is 2.5 times higher than calcium carbonate), easier to digest, and less likely to cause constipation and gas than calcium carbonate. Wenke K et al: Impact of simvastatintherapyafter heart transplantationan I I -yearprospectiveevaluation,Hnz 30:43l, 2005. flncludes a diet record to determin e energy and,f* inale, as well as a determination of stool fat excretion. Which foods would you recommend to help Machew achievehis health goals? It is not the raditional low-salt diet. Must A et al: The diseaseburden associated with overweightand obesity,JAMA 282zl532, 1999. This means that the clinician needs to ask about these therapies during the assessmentof the patient (seeAppendix 35). Since vitamin K is stored in the liver, clinical deficiencies are rare. U.S. Departrnentof Agriculture (IJSDA), Agricultural Research Service(ARS):Nutient datalaboratory, Beltsville,Md, 2006 and ongoing,USDA, accessed July l, 2006. Actually energy needsmay be increasedor decreased (Finnerty et al., 2001; Slinde et al., 2006). Artificial saliva preparations and saliva stimulants are often useful in casesof diminished salivation,as are foods with high moisture content and plenty of fluids throughout the day and with meals. Would you have Rickchange it? These underlfng conditions affect the total amounts, ratios, and kinds of protein, fat, and carbohydrate prescribed. Administer 10 mg fV metoclopramide into the alcian to place bedside enteral feeding tubes becauseshe or he ready placed fV hne. Short-andLong-Term Regulation Short-term controls are concerned primarily with factors governing hunger, appetite, and satiety. Alcohol and drug use, increased metabolic needs,increasednutritional losses,chronic disease, recent major surgery or illness,diseaseor surgery of the gastrointestinal (GI) tract, and recent significant weight loss all may contribute to malnutrition. Parenteral nutrition calculations and orders are inherendy complex. However, it has been recognized in all kidney diseasesthat once approximately one half to two thirds of kidney function has been lost, regardless of the underlying disease, progressive further loss of kidney function ensues. Gums are found in plant secretions and seeds.The specific textural qualities of grrms and mucilages are commercially useful when added to processed foods such as ice cream. Flush the tube the NSD by the other members of the health care team, and with 20 ml of warm water with each advancement. These sources include; Brazil nuts Whole grains Dried fruits Wheat Prunes Millet Raisins Oats Apricots Brown rice Vegetables/Greens Legumes Broccoli Lima beans Spinach Soybeans Kale Dried beans and peas Collards Kidney beans Asparagus Nuts Dandeliongreens Almonds Age (years) 1-3 4-8 9-13 14-18 1O! 7 10 8 1l for males; 15 for females 8 for males; 18 for females Food Clams, canned, drained, 3 oz Fortified ready-to-eat cereals (various), =l e2 Oysters, eastern, wild, cooked, moist he*,3 oz Organ meam (liver, giblets), various, cooked,3 ozt Fortified instant cooked cereals (various), 1 packet Soybeans, mature, cooked, % cup Pumpkin and squash seed kernels, roasted, 1 oz White beans, canned, % cup Blaclistrap molasses, I Ttrsp Lentils, coöked, 7z cup Spinach, cooked from fresh, % cup Beef, chuck, blade roast, lean, cooked, 3oz Beef, bottom round, lean, 0 in fat, all grades,cooked,3 oz Kidney beans, cooked, % cup Sardines, canned in oil, drained, 3 oz Beef, rib, lean, V+in. This is done to dismiss an inability to follow an eating pattern by excusing poor compliance as just a given due to past behaviors. Howeveq eventually many patients with qpe 2 diabetes will require a more physiologic insulin regimen to achieve control. sJEalJPue selesuedurocdlsnoeueluods pue,tpuepuadepurrnq Sutreocreptmpuol8lda ererl ro 'uonuele.l ',{e1appeSu,|reqd ro pro pyu e,teq,{eu luer}ed . C. These include dry mouth and throat, nausea, vomiting, diarrhea, increased serum glucose levels, sodium retention, and hypokalemia, as well as hand tremors, headache, and dizziness(see Chapter 16). The %DV listed on the Nutrition Facts panel of food labels states the percenuge of the DV provided in one seMng. The EAR should be used for assessingthe nutrient adequacyof populations,not individuals. For the next 6 monrhs the focus changes from weight loss to weight maintenance. Many women loseseveralinchesin height between50 and 80 yearsof age.Fracturesmay occur during ordinary activities, such as lifting a sack of groceries or stepping over a shower opening, but a large percentageof the hip fracflIres osteoporosisaffects result from a fall. The container is immersed in a known volume of water, and the rise in the temperature of the \Mater after igortitg the food is used to calculate the heat energy generated. tion with a cholesterol-loweringdiet can reducetotal cholesterol,low-density-lipoproteincholesterol,and uiglyceridesin patientswith nephrotic syndrome(seeChapter 32). Davis CA et al: Past, present, and future of the food guide pyramid,J Am Diet Assoc101:881,2001. EER, Estimated energy requirement; PAL, physical activity level;TEE, total energy expenditure. Fat also conveys important textural properties to foods such as ice creams (smoothness) and baked goods (tenderness-due to "shortening" of strands of gluten). Nandrolone Data from Von Roenn JH: Pharmacologic interuentions for cancer-related weight loss, OncologIssuesl7(suppl):20, 2002; md Murphy S, Von Roem JH: Pharmacologicalmanagementof anorexiaand cachexia.In McCallum PD, PolisenaCG, editors: The clinicalguideto oncolognutrition, Chicago, 2000, American Dietetic fu sociacion. SteingrimsdottirL et al: Relationshipbetweenserumparathyroid hormonelevels,vitamin D sufficienry,and calciuminake, /AMA 294:2336,20Q5. Some treatnents and medicationscan causeloss of appetite, as can the cancer iself. Seeaho Celiec disease tropical spme as, 686-687 enzyrnes, digestive, 6t in nutrient absorption, 11-13 stmcture/function, I I-I 3, I If smell decreasedsense,in older adulthood, 292 loss, 1070 smoking as cardiovascular diseaserisk factor, 849 gastrointestinal function and, 658b osteoporosisand, 630, 6l I SMR. ArcherSL:Association of dietarysupplement usewith specific micronutrient intakesamongmiddle-agedAmericanmen and women:the INTER-NIAP Sndy,J Am Diet,4ssoc 105:1106, 2005. Reflective listening involves a guessat what the person feels and is phrased as a statement, not a question. In addition,progressis being madein understandingthe role of geneticvariantsin hypertension,including intriguing resultsthat suggestthat some genoq?esrespondbetter to the Dietary Approachesto Stop Hypertension(DASFI) diet gene-dietinteractionsare thosethat code for apolipopro- than othersandthat somegenotypesresultin blood pressure tein E (APOE), apolipoproteinA-1 (APOA-l), cholesterol that is not responsiveto dietarysodiumrestriction (Flunt et esteryl transport protein (CETP), hepatic lipase (LIpC), al.,1998;Svetkeyet al.,2001;Gu et al.,2005).Knowingthe lipoxygenase-s(ALOX5), perilipin (PLIND,MTHFR, angenotypeof clients providesadditionalimportant informagiotensinogen(AGT), the interleukin-l family (ILl), intertion asto how they arelikely to respondto particulardietary leukin-6 (IL6), and rumor necrosisfactor-a (TNF-a). In summary it is important to evaluate all weight loss programs for sound nutritional practices. The number of cells does not decreasewith weight Musc|e........... QureshiAI et al: Prevalenceand trendsofprehypertensionand hlpertension in United Sates:National Health and Nutrition ExaminationSurveys1976to 2C00,Med SciMonit 22:CR403, 2005. Percutaneousendoscopicgastrostomytubes are now the most common and preferred method for home tube feedings. Tiedget EE, Yu YM: The metaboliceffectsof thermal injury WorldJ Sarg 16:68,1992. An interesting finding is the role of tobaccoexposurein the development of inflammatory bowel disease(IBD). Complications of hemorrhage and perforation contribute significandy to the morbidity and mortality of peptic ulcers. Modeling, that is, walk the talk . Socrnl EHAVIoRAND S o c i aBl e h a v i o r Behavior does not occur in a vacuum. SeeFormula(s) for premature infants, I 125-1I 33 carbohydrates in, Il27 e n e r g yi n , l l 2 5 - 1 1 2 6 , l l 2 6 t feeding methods for, 1129-1l l0 formulas for, I 13l-1 133 human milk for, 1130-1131 lipids in, I l2 7 minerals in, Il27 -1129 protein in, I126-1127 vitamins in, Il27 -1129, 1128t medication interactions, 437 m o n i t o r i n g o f , 5 1 5 - 5 1 6 ,5 1 6 b multiple lumen tubes for, 510 nasoduodenalroute for, 510 nasogastricroute for, 510 nasojejunal route for, 510 order form for, 517f percutaneous endoscopic gastrostomy for, 510 percutaneous endoscopic jejunostomy for, 5 10 refeeding slmdrome and, 522-523 surgically placed enterostomiesfor, 510 [ansruon to oral feeding, 523 parenteral feeding to, 523 enteral tube feeding, for end-stage renal disease, 944 enteritis, radiation-induced, 975 enterocolitis, necrotizing, definition, I I 17 enterogastrone definition, 2 in lipid digescion,l7-18 enterohemorrhagic Ercherichiacoli (F'HEC), 327t enterohepatic circulation, 18 enterokinase in digestion and absorption, 6t in protein digestion, 17 enteropathies, food reactions, 745t enteropathy AIDS, 1006 definition, 991 gluten-sensitive, 681-686. Diets that emphasize fast results with minimum effort encourage unrealistic expectations, setting the dieter up for failure, subsequent guilt, and feelings of helplessnessat ever managing the weight problem. In 2003 the prevalenceof C\{D was highest in non-Hispanic blacks (41% for men, 45o/owomen), follow-ed by non-Hispanic whites (34% men, 327o women) and Mexican-Americans (297" men, 297o women) (Thom et al., 2006). J Clin Gastroenterol33:215, 2001. Hung HC et al: Tooth lossand dietary intake,J Am DentAssoc 134:1185,2003. Supplementary carbohydrate is generally not needed in individuals who are not treated with insulin or insulin secretag'ues(ADA, 2006b). Estrogens appear to stimulate LPL activity in the gluteofemoral adipocytes and thus promote fat storage in this area, an effect that is seldom seen in obese men. Radiologic verification oftube placement is the preferred method of confirmation ro ensure safety. Summarizing is more lengthy than paraphrasing becauseit uses more information and summarizeswhat has been said over a period of time. Suboptimal calorie and protein intake (70% and75"/" of estimatedneeds,respectively) Noon sandwich: 2 sliceswheat bread with I tsp musard' 1/zc alfalfasprouts, 1 c sliced tomatoes and cucumbers, V+c avocado;l5 mini pretzels Vz cvanilla custard 12:45pu I each apple and banana, 2 chocolate mint 3pu pames 3 c mixed salad,1 cJapanesenoodles 6:30 pu 4 bite-size chocolates 9:00 pu She drinlrs 2-3 L of water throughout the day. Carbohydrate/lipid considerations 6. Since 1990, a 6lo/" increase in the prevalence of diabetes has been observed, and it is becoming more prevalent in obese children (Thom et al., 2006). HeaneyRP: Calcium, dairy productsand osteoporosis, J Am CollNurr 12:835,2000. Native Hawaiians, Pacific Islanders, American Indians, or Naskan natives are more likely to have CHD than the other groups. 870 PART5 I MedicalNutritionTherapy W e i g hR t eduction There is a strong association between BMI and hlpertension among men and women in all race or ethnic groups and in most age-groups. Frequently the information is in the form of histories-medical. A review of the evidence, Int J Food SciNutr 54:357, 2003. Her physician recommended that she sart taking supplementsof calcium (1000 mglday) and vitamin D (S00 units/day) becauseof her lactose intolerance and her lack of consumption of all dairy producs. Water can be addedto gravitybag depending on hydrationneeds. In considering how best to implement genetic technologies

into the practice of health care, the issuebecomes"who should be tested?"Ethical issuesabound. Each kidney consists of approximately 1 million functioning units called nephrons (Figure 36-1). RosenCJ, BilezekianJP:Anabolictherapyfor osteoporosis, Meubol 86:957,2001. World Health Organization:Energy and protein requirements. FeinbergAP et al: The epigeneticprogenitor origin of human cancerNat Rs GenetT:21,2006. Ideally theseagentscare prescribed in combination with nutrition counseling and physical activity assessment,monitoring, and evaluation. CF can have a profound impact on the digestive system (Constantine et al., 2004). Meat aversions may require the elimination of red meats, which tend to be strong in flavor, or the substitution of alternative protein sources. The EER incorporates age, weight, height, gender, and level ofphysical activity for people ages 3 years and older. Also, it is not associatedwith hypoglycemia, may cause slight weight lossonwhen therapy begins, and improves lipid levels. Coll* cachexia Hypomagnesemia . Different skills and strategiesare needed to offer individualized guidance. Jo selJ -lc cgsrraiolecjeqcol Jo (JaJJeoqaceld aq) ot pdaqgeJp? Serum levels lessthan 150 mg/dl are consideredto represent deficiency (seeChapters 15 and 31, and Figure 31-3). Nutriti on Diagnosis: Involuntaryweightlossrelated to poor intake [...]

[...] Since the initiation of nutrition support, Michael has received 90o/oor more of his measurednutritional requirements. [...]

exercise,a larger decreasein the total daily insulin dosage may be necessary.After exercise insulin may also need to be decreased.In addition to these acute reductions in insulin dosages,individuals who participate in a regulaq longterm fitness program often find their usual total dosageof insulin decreasingby as much as 150/° to 200/0Vasserman and Zinman, 1994). Sugar-freevarieties are availableand should be suggested for high-caries risk grouPs. GERD increasesrisk for dental erosion and thus increasesrisk for caries. Howard BV et al: Low-fat dietarypaftern and risk of cardiovascular disease:the Women'sHealth lnitiative RandomizedControlled Dietary Modification TriaI, JAMA 295(6):655,2006. Severalpotential new drugs targeting weight loss and obesity through the CNS pathways or peripheral adiposity signals are in early-phase clinical trials. Cook acidic foods in cast iron pots. Anticariogenic foods are those that prevent plaque from recognizing an acidogenic food when it is eaten first. Protocols to prevent infection vary. Numbers of people living with AIDS in the United States by region in 2004 were highest in the South, followed by the Northeast. The availability of dual-enerry x-ray absorptiometry (DEXA) as a nutrition monitoring test is enabling the study of the effect of the chronic use of prescribed corticosteroids on bone mineral density (see Chapters 16 and 24). Individuals without any saliva at all have the most difficulty eating; artificial salivaryagentsmay not offer relief. With time, left ventricular hlpertrophy and eventually congestive heart failure can develop. WischmeyerPE: Glutamine:role in gut protection in critical illness,Curr OpinNut MetabCare9:607,2006. U.S. Food and Drug Administration(FDA) and U.S. EnvironmentalProtectionAgenry (EPA):What you need to know about mercury in fish and shellfish,2006,availablein severallanguagesat accessed July l,2006. National Institutes of Health, Office of Dietary Supplements: Bibliographyof sigwfuant adaancesin dietary supplerTrentresearch2002, 2003, 2004. Digoxin . DietaryModification Weight-loss programs with any degree of successintegrate food-choice changes with exercise,frequendy with behavior modification, nutrition education, and psychological support. The sessionis openedwith appropriateintroductions of all individualsto one another.The client stateswhy he or sheis there.The counselorusuallybeginswith broad,openendedquestionsand closesthe interviewwith closed-ended, follow-up questions. Med Jian-JunL et al: Is hypenensionan inflammatory disease? Many supportive therapies may be safely managed in the outpatient arena, thus reducing the period of hospitalization. High death rates in many countriescausedecreased life expectancy, alongwith a reduction in tlle work force,a decrease in nationalincomes,slowed economicgrouth, and decreased economicpotential.Globally the overall number of new HfV infections and the num- ber of people living with HfV continues to increase.Steepest increaseshave occurred in Eastern Europe, Central fuia, and Eastfuia. In RombeauJl, Rolandelli RH, editors: Clinicdnutrition: enteril nbe feeding,Philadelphia, 1997, Saunders;and Ideno KT: Enteral nutrition. Presendyover 60 diseasesthat result from changesin mitochondrial DNA have been identified. The concentration of amino acids in these solutions ranges from 3"/" to 20Yo. Thus a l0% solution of amino acids supplies 100 g of protein per liter. The counselor can restate any statements that the client has made about intentions or plans to change or to do better in the future. If so, why doesn'tMatthew exhibit tJle samephenotype asJared? Controlled trials are needed to assessthe efficacy and cost-effectiveness of most commercial programs (Tsai and Wadden 2005). Both coffee and caffeine stimulate acid secretion and may also decrease LES pressure; however, neither has been strongly implicated as a causeof peptic ulcers outside of the increased acid secretion and discomfort associated with their consumption. Diseasesof the heart (valves,muscle, blood vessels)and vasculatureftrypertension)can lead to HF (seePathopbysiol884 Prevalence andIncidence HF is a major public health problem that affecs over 5 million Americans.Unlike other cardiovasculardiseases,the number of people being dischargedwith an HF diagnosis increasedby 174"/"from 1979to 2003 (fhom et al., 2006). Intakes offat, saturatedfatry acids,and cholesterol among all age-groupsolder than 2 years ofage were higher than recommendedlevels (,i qt boO t: '6HghEfq k q) I d a-_r! tr'= i v! --:Y:r0-". Hypertension precedesHF in many men and high risk for developingHF (Box 34-1).Featuresof HF in women. f 662 PART5 I MedicalNutritionTherapy Endoscopyand Capsules he mucosa of the upper gastrointestinal (GI) tract can be I viewed, photographed, and biopsied by means ofendoscopy, a procedure that involves passing a flexible tube into the esophagusthat has a light and qlmera on the disal end. For example, excessiveself-criticism in responseto a dietary lapse could lead to total abandonment of effort. KerstetterJE et al: A thresholdfor low-protein-inducedelevations in parathyroidhormone,Am J Clin Nutr 72:L68,2000. Oral intake may be encouraged with modifications of food and its presentation. Which specialstepsshould Marty take to meet calcium requirementswithout using supplements? Individuals with head and neck cancer often have impaired mastication and swallowing caused by the tumor mass or the specific surgical intervention required. During mitosis (cell division) all46 are duplicated and distributed to each new cell. The best data are obtained from analysis ofchanges in laboratory values. SeePregnancy-induced hlpertension plncer gTasp definition, 199 in feeding, 214,214f pinocytosis, in absorption, 13 pioglitazone (Actos), in diabetes management, 78t,782r PKU (phenylketonuria), 373. SylviaEscott-Stump,MA, RD, LDN Robert Earl, DrPH, RD KEY TERMS adequate intake (AI) the recommended daily intake level based on observed or experimentally determined approximations of nutrient intake by a group (or groups) of healthy people; used when a recommended dietary allowance cannot be determined daily reference values (DRVs) a set of food labeling reference values for which no nutrient recommendation previously existed; established for fat, sarurated fatty acids, cholesterol, total carbohydrate, protein, dietary fibeq sodium, and potassium daily value (DV) reference term on food labels to aid consumers in selecting a healthy diet; consists of two sets of references-the reference daily intakes (RDIs) and daily reference values (DRVs)-expressed as percentages DietaryGuidelinesfor Americans(DGA) dietaryrecommendations that promote health and reduce risk of chronic diseasefor people ages2 years and older dietary reference intake (DRI) an overall term designed to encompass the four specific types of nutrient recommendations (adequate intake [AI], estimated average requirement [EAR], recommended dietary allowance [RDA], and tolerable upper intake level [UL]); used for nurrienr recommendations for the United Statesand Canada estimatedaveragerequirement(EAR) nutrient intake value that is estimated to meer the requirements of half the healthy individuals in a group estimated safe and adequate daily dietary intake (ESADDI) recommended intake ranses of nutrients for which not enough information is aviilable to establish a recommended dietary allowance health claim any claim on a food packagelabel or other label (such as an advertisement) of a food, including fish and game meat, that characterizes the relationship of any nutrient or other substance in the food to a disease or healthrelated condition Healthy Eating Index (HEI) summary measure of overall diet quality; designed to assessand monitor the dietary status of Americans MyPyramid Food Guidance System translates the Dietary Guidelines for Americans and nutrient recommendations into a visual form of the types and amounts of food to eat each day; new system incorporates physical actiyity into daily patterns nutrition facts label nutrient content information on food products designed to help consumers (4 years of age and older) select foods to incorporate into a healthy diet using the MyPyramid Food Guidance System and Dietary Guidelines for Americans recommendeddietary allowance (RDA) rhe amount of a nutrient needed to meet the requiremens of almost all (97o/oto 98%) of the healthy population reference daily intakes (RDIs) set of dietary referencesfor vitamins and minerals on food labels based on the 1968 recommended dietary allowances;replacesthe U.S. recommended daily allowances that were previously used with nutrition labeling on food products tolerable upper intake level (UL) the highest daily intake amount of a nutrient that is likely to pose no risk of adverse health effects for almost all individuals in the general population Sections of this chapter were *ritren by Susan T. The feeding technique described by Abbott and Rawson (1939) required small bowel motility but not colonic and gastric motility. ' With proper food choices,a moderate-fat, balancednutrient-reduction diet is nutritionally adequate. Muscular work causes insulin levels to decline while counterregulatory hormones (primarily glucagon) rise. The goal of using meal replacementsis to provide smrctureand replaceother foodslikely to be higher in calorie content. 530 PART 3 i NutritionCareProcess Centers for Disease Conrrol and Prevention, O'Grady NP et al: Guidelinesfor the preaentionof intraaasatlar ca.theter-related infeaions,Augrrst 9, 2002, mmwrhtml/rr5 I I 0a1.htrn, accessedJanu ary, 2006. Similarly, design rhesamemeals to include 400 units of vitamin D, vrith another rl00 unis coming from supplements. The project has resulted in rapid progress in developing new technologic tools that are needed for the successfulpractical application of genetic technology within health care; improving their accuracy and speed; and lowering their cost. Le Marchand L: Cancer preventive effects of favonoids: a review, ber 56:296, 2002. After 14yearsof follow-up, the Male Health Professionals' Study (MHPS) demonstrateda 38"/"increasedrisk of kidneystoneswith a 77-gversus50-ganimal-proteindiet if body massindex (BMI) waslessthan 25 (Tayloret aI.,2004). N utriti o n D ia g nosis I : Physicalinactivity related to lack of regular exerciseplan as evidencedby patient reports ofno exercise Continued 986 PART5 : MedicalNutritionTherapy Nutrition Diagnosis 2: Food- and nutrition-related knowledge deficit related to medical nutrition therapy related to cancer treatment and secondaryprevention as evidencedby patient requesting more information 1. With concomitant liver disease response may be delayed. J P e p t i cU l c e r s Pathophysiology Normal gastric and duodenal mucosa is protected from the digestive actions of acid and pepsin by the secretion of mucus, the production of bicarbonate, the removal of excessacid by normal blood flow, and the rapid renewal and repair of epithelial cell injury. 3 oz Oyster,3 oz Shitakemushrooms, dried,4 Sardines,Pacific.cannedin tomato sauce Sardines,Adantic. In the United States these formulas are the equivalent of "medical foods." Parenteral solutions containing these nutrients are regulated as drugs and therefore must undergo prior approval for demonstration of safety and efficary before becoming clinically available. Check the size you eat. The optimal amount of protein substitute depends on the individual's age (and thus requirements for gror,r.th)and enzyme activity and must be individually prescribed. However, large placebo-controlled clinical trials have failed to show benefit from antioxidants and in some instances have suggested adverse effects (F{asanainet a1.,2002). Short-term regulation governs consumption of food from meal to meal; long-term regulation is controlled by the availability of adipose stores and hormone responses.Total calories are mtre important than any single macronutrient. Be physically active. The key agenciesare the USDA, the Departrnentof Homeland Security(DHS) and the FederalEmergenryManagementAgency(FEMA), the CDC and the Food and Drug Administration(FDA). I'm sure I won't do well with it now." In some cases clients are reluctant to accept options that may have worked for others in the past. SeeTotal energy expenditure teenagers. Seealso lnflarnrnztory bowel diseases Crohnt disease,contrast, 690f, 690t definirion, 674 colloidal osmotic pressure,l48b definirion, 144 colon cancer, 697-698 colonic salvage definition, 2 ofmalabsorbed energy sources,15, 15f colostomy, 701-702 definition, 673 colostrum benefits, to newborn, 188 definition, 160 release,185 combination therapy, definition, 764 Combivir (lamivudine/zidor.tdine), nutritional complications, 1002t commercial programs in obesity management. SeeHealth-relatedquality of life hs-CRP.SeeC-reactiveprotein, high-sensitivity HSCT, SeeHematopoieticstemcell transplantation HSL (hormone-sensitive lipase) definition,532 in fat storage,535 lluman GenomeProject, 367-368 clinicalapplications, 367-368 definition,365 human growth hormone,ergogenicaid, 605t, 608-609 humanimmunodeficienryvirus (HNf definition,991 discovery992 humanimmunodeficienryvirus (l{If disease, 99r-1020 antiretroviralmedications,nutritional complications, 1002-1005t body shapealterationscomplicating, I 0 15 -1 0 1 6 caremanagementalgorithm, 1000f classification,992, 993b complementaryand alternativetherapies, r0r6-r017 complications, with nutrition impact, 103 1 - 1 061 diarrheacomplicating,1014 causes, 1015t nursinginterventions,1016t epidemiology in United States,994-996,99+f,995f worldwide. DickersonRN: Hypocaloric feedingof obesepatientsin the intensivecareunit, Cum Opin Clin Nutr MetabolCare8:189, 2005. The type of alcoholic beverage consumed does not make a difference (ADA, 2007). Generally clients do not share the terminology, norms, and assumptions of the health care profession culture. AND CoTUPLEMENTARY Complementary and alternative therapies have gained in popularity in recent years.The ACS (1999) definescomplementary therapies as supportive methods that are used to complement evidence-based treaffnent, to help control syrnptoms, and to improve well-being and quality of life; and alternative therapies as treaonents that are promoted as cancer cures and are unproven or scientifically disproved methods. org. However,AIDS datado not reflect the number of people living with Hf[nor do they reflect accurate trendsof the infection. Whelton PK et al: Effect of aerobicexerciseon blood pressure:a meu-analysis of randomized controlled tials, Arm Intoz Med l!6:493,2N2. In recent years the American Dietetic Association has published important resources that may assistin this area. Accumulation of uric acid can precipitate episodesof gout; gallstones can also occur. Consistency also affects adherence. The use of nutrients and other substances normally occurring in foods aspharmacologicor preventive agentsfor specificdiseases and conditionsis alsounder study. Instead, determination of body composition helps to differentiate lean muscle mass from adipose tissue and overhydration from dehydration. Gardin JM et al: Demographicsand correlatesof five-year changein echocardiographicleft ventricular massin young black and white adult men and women: the Coronary Artery Risk Development in Young Adults (CARDIA) study,J Am Coll Cardiol40:529,2002. WeingartenMA et al: Dietary calciumsupplementationfor preventingcolorectalcancerand adenomatouspolyps,Cochrane DatabaseSystRn, CD003548,2004. For all food additives,including nonnutritive sweeteners, the FDA determinesan acceptabledaily intake (ADI)' defined as the amount of a food additive that can be safely consumedon a daily basisover a person'slifetime without risk (seeChapter 1l). BrousseauME et al: Cholesterylesrertransferprotein TaqIB2B2 genot'?e is associated with higher HDL cholesterollevelsand Iower risk of coronaryheart diseaseend points in men with HDL deficienry:VeteransAffairs HDL Cholesterol InterventionTrial, ArteriosclerThrombVascBiol 22:l 148,2002. Liquids also empty from the stomach more rapidly than solids. Farwell DG et al: Predictors of perioperative complications in head and neck patients, Arcb OtolaryngolHead NeekSurg 128:505,2002. The best long-term indicator of adequatenutrient intake is growth. In the acutely ill but previously well-nourished individual who is unable to resume oral alimentation within 7 days, nutrition support is used to prevent decline in nutritional health and aid in recovery until oral nourishment can be resumed. LivingstoneMBE et al: Daily energyexpenditurein free-living children: comparisonof heart-ratemonitoring with the doubly labeledwatermethod,Am J Clin Nutr 56:343,1992. Common foods may be prepared and used in different ways in various regions and tribal organizations. Only plants (including marine phytoplankton) can slmthesize omega-6 and omega-3 fatty acids. Infection with Stapbylococcus aarvus and Psailamonasamtginosais typical. Animal protein increases urinary losses of calcium following each meal containing large amounts of animal protein and over lengthy periods of high animal protein consumption, whereas a plant-based diet (e.g., one rich in soy protein) has litde effect on urinary calcium lossesbecauseof the production ofa neutral or basic urine flVengreen et al., 2004) (see Clinical Insight: Acid fuh and Alkaline fuh Diets in Chapter 36). On the basisof their intrinsic acidity and amount consumed, fiuit juices and soft drinks are not likely to cause peptic ulcers or appreciably interfere with healing. Whereas genetics was initially concerned with diseasesthat arose from a mistake in a single gene, genomics is more concerned with today's chronic diseases that result from the influence of multiple genes and multiple factors. Ratesof CHD in premenopausalwomen are low except in women with multiple risk factors. ReTEEDTNG SynDRoME Patients who require enteral or parenteral nutrition therapies are often moderately to severely malnourished. Since 2000 confidentialname-basedHfV reporting was implementedin 35 areasGigore 38-2).Evenwith more precisedatacollection,the pictureis still limited (Figore 38-3).In October2006the recordof HIV name-based casesbecamea determinantfor federalHIV/AIDS funding allocatedto states and cities, and areaswithout this q,atem changed (CDC, 2006a;AVERI 2006a).Health providersmust seekinformation to stayawareof epidemiologictrendsandramificationsby monitoring CDC, state,and local surveillancereports at webRepors. TEE prediction equations are also listed for various overweight and obese groups, as well as for weight maintenance in obese girls and boys. They may be CHAPTER 26 MedicalNutritionTherapy for UpperGastrointestinalTract Disorders657 Esophagitis Refluxof gastricacidand/orintestinal contents (LES)and through theloweresophageal sphincter intotheesophagus AYoid: . H" FJ, MacGregor GA: Effect of modestsalt reduction on blood pressure:a meta-analysis of randomizedtrials: implicationsfor public health,J Hum Hlpntens 16:761,2002. Other studiesdo not show an adaptivemetabolic responseto weight loss. They werefirst publishedin l94l andmost recendyrevisedbetween1997and2002.Eachrevisionincorporatesthe most recentresearchfindings.In 1993the FNB developeda frameworkfor the developmentof nutrient recommendations, calleddietaryreferenceintakes(DRI).DRIs four rypesof nutrientrecommendations encompass for healthy individuals:adequateintake (AI), estimatedaverageintake @AR),RDA" and tolerableupperintakelevel(LTL). SeeShort-chain fatty acids schizoaffective disorder, nutrition, I I 13t schizophrenia, eicosapentaenoic acid and, I 106 school-age children feeding, 234-236 nutrition education for, 2l 5-216 scleroderma, 1059, 1059f definition, 1042 medical nutrition therapy, overview, 1044t sclerosing cholangitis, 7 15 liver damage in, Tllf S-containing amino acids, definition, 41 Screening for Heart Attack Prevention and Education (SHAPE) Guideline, 843, 847f sotrvy,96-97 ,97f definition, 4l seasonal affective disorder, nuffition for, 1113t secondary biliary cirrhosis, in cholelithiasis, 728 secondaryhypertension,definition, 865 secondaryosteoporosis, definition, 615 secondaryprevention definition,3l0 in older adulthood,nutrition as,289 secrefln definition, 3 functionsof, 8, 9t secretorydiarrhea,677 sedentarydeathq'ndrome (SeDs),291 definition, 286 sedentarylifestyle,in older adulthood,291-292 seizure(s) absence, 1088 definition,1067 grandmal, 1087-1088 petit mal, 1088 tonic-clonic,1087-1088 definition, 1068 selectiveestrogenreceptormodulator (SER-A/I) definition,615 for osteoporosis,63l-532 selenium,129-l3l absorption,l29 deficiency, 130-13l, l38t dietaryreferenceintakes,110,llt, 138t excretion,129 foodsources, 130,lllt, 1l8t functions,129-110,I 38t nutritional facts,I 303 storage,129 supplemental,efficacy,reviews,478t toxicity,13l transport,129 self-efEcacy counselingand,490 definition, 489 in modif ing resistancebehavior,503 supporting,in facilitatingbehaviorchange, +95 self-feeding,in Alzheimer'sdisease,problems with, 1083-1084 self-management definition, 489 in modi$ringresistancebehavior,503 self-management training, in diabetes managemenr, 794.796t nutrition educationskills for, 797b self-monitoring,definition, 489 self-monitoringof blood glucose(SMBG), 785 definition, 765 self-motivationalstatements,eliciting, in notready-to-changecounselingsessions, 499-500 senescence, 291 definition,286 Seniors'FarmersMarket Nutrition Program (SFMNP),303,323t senna,for weightloss,552b sensiblewater loss,147 definition, 144 sensitivity,cultural definition,489 for multicultural counseling,491 senslEzatl0n definition, 740 in allergic reacttons,742f in ellergy,740 sensorychanges,in cancer,972 sensorylosses,in older adulthood,292 L346 Index sensory-specific satiety definition, 53 3 overconsurnption and, 540-541 sepsls definition, 102I metabolic responsesduring, 1024t SER-&I (selective estrogen receptor modulator), definition,6l5 serotonin (5-HT) actions, 7t in body weight regulation, 536t serotoninergic agents. Vltamin A (lU) 7oDaily Value* 22,567 13,418 1r,458 9,558 8,666 5,820 +50 270 230 190 t75 115 s,+lt 2,813 2,063 I l0 55 +0 1,65t 1,512 1,262 1,252 35 30 25 25 1,050 819 473 20 15 l0 319 313 6 6 Food * Daily values (DVs) are reference numbers based on the recomended dietary allowances. In general, leafr green vegetables and certain legumes and vegetable oils contain high amounts of vitamin K. Electrolytes are provided in reladvely modest amounts compared with the oral diet and may require supplementation when diarrhea or drainase lossesoccur. The prediction equationsinclude a physical activity (PA) coefficient for all groups except infants and young children (see Box 2-1). SampleMealPlan Breakfast I med oat bran muf6n (45 mg magnesium) I smallbanana Vzatp low-fatlfat-free milk Lunch % cup pennepastawith the following: 3 oz grilledchickenbreast % cup freshcookedspinach(81 mg magnesium) Toastedpine nuts (71 mg magnesium) 1 cup mixed saladgreenstoppedwith spinachleaves, tomatoes,shreddedlemrce 1 oz shreddedlow-fit mozzarellacheese Dinner 2 cajunshrimp skewers % cup freshsteamedgreenbeans % cup brown rice (42 mg magnesium) % cup freshpineapple Snack 1 cup soy fruit smoothie(47 mg magnesium) I ozBrazll nuts (107 mg magnesium) supplement daily. Populationsthat consume diets high in saturatedfatty acids(SFfu) have increasedblood cholesCHD incidence,and terol levels(hypercholesterolemia), mortality.The most current report of the National CholesterolEducationProgram(NCEP) (Third Reportof the Expert Panelon Detection,Evaluation,and Tieatment of High Blood Cholesterol in Adults-Adult teatment PanelIII IATP-IU) reaffirmsthat "lowering total cholesterol and LDL cholesterolreducesCHD risk" (NCEP, 2002).L 10"/oreduction in total cholesterolwould decreaseCHD incidence by about 30% (lt{CER 2002). Small studiessuggestthat there may be some benEgypt and India. og and CareManagernentAlgoritbm: Heart Failure). These concepts, along with other intervention models, shape the content of each contact described in the following motivational intervention model. U nsuRE-Asour-CnANGE CouNsELrNc SessroNS The only goal in this stage of change is to build readiness to change. Weight distribution (abdominalversusgynoid) is also predictive of CHD risk, glucose tolerance,and serum lipid levels.Central adiposityhas also been strongly related to markers of inflammation; for example,CRP is 53% higher in individualswith central adiposity(Panagiotakos, 2005). Tape the feeding tube securelyin place and obtain Procedure: SBFTPlacement an abdominal radiograph to confirm small bowel Supplies placement. Compare Michael's measuredenergy expenditurewith that calculatedby the Harris-Benedict equation. Protein: use 9/1000 ml units/1000ml C. Stimuli J Bloodoressure I Bloodflowto kidneys Juxtaglomerular apparatus in kidneys Renin Antiotensinogen AngiotensinI * * ACE $ w Adrenal Vasoconstriciton of arterioles Salt and water retentionby kidneys g s Negativefeedback responses *f t Bloodvolume 'f Bloodpressure FIGU RE 33-2 Renin-angiotensincascade. - ^v). Such researchshows a possible protective effect againstpneumoniaby the ingestion of a-linolenic and linoleic acids. Conversely nutrition support may be achievable but may not be warranted because of the prognosis, unacceptable risk, or the patient's right to self-determination. Wall J et al: A validationof equationsfor predicting the energy expendituresof hospitalizedpzrients,J Am Diet Assoc95245, 1995[abstract]. There has been a great debate about the clusteringof "metabolic risk factors" and the identification of people with varying clusters(seeClinical Insight: The Metabolic Slmdromein Chapter 9). Biguanides can be used alone or in combination with other diabetes medications. Mutations that increase the transport of iron (hereditary hemochromatosis) or copper fl4/ilson's disease) to higher than normal levels have nutritional implications (see Chapter 3l). Wu AH et al: Dietary heteroryclicaminesand microsatellite Carcinogenesis 22:1681, instability in colon adenocarcinomas, 2001. Fattystreak Tunicaadventitia Tunicamedia 2. However, in chronic casesthe use of cranberry juice to reduce bacteriuria has been verified (Kontiokari et al., 2005). fusuming that a patient is an appropriate candidate for parenteral nutrition, it is then necessary to choose between central and peripheral access(seeFigure 20-l). Patients require optimal calcium and vitamin D intake to slow bone loss; weight-bearing exercise and antiresorptive drug therapy are often necessary @isani and Mullen, 20D2;Hofrrnan, 2005) (seeChapter 24). The %DV listed on the Nutrition Facs pmel of food labels sates the percenage of the DV provided rn one seMng. {Total energy expenditure C|EE) is the sm of the resting energy expenditure,energy expendedin physical activity, and the thermic effect of food. Since the initiation of nutrition support, Michael has received 90o/oor more of his measurednutritional requirements. Medical Treatment Tieatrnent of ESRD requires either transplantation or dialysis. 902 PART5 i MedicalNutritionTherapy laYer -l l-9el Mucus l_sollayer Mucousgland FIGURE 35-3 One of the roles of the respiratory tract is to function as a protective physical barrier againstinhaled particles and microorganisms,preventing them from gaining entrance into the body. Institute of Medicine, Food and Nutrition Board:Dietary reference intakesfor thiamin, ribofaain, niacin,aitamin 86,folate, aitaminBp, pantothenie aciil,biotinandcholine,WashingtonDC, 1998,NationalAcademies Press. For therapyfor unintentionalweight losseeTable2l-7 . alone as a snack. This lack of in- formation exchangeis also the result of health care professionals who are not routinely inquiring about the use of supplements by their patients. Persons with a high triglyceride The studyandidentificationof the genesresponsible for the familial forms of hlperlipidemia haveprovidedinsight into the rolesof enzymes,apolipoproteins,and receptorson cells involved in lipid metabolism.Severalforms of hyperlipidemiahavestrong geneticcomponents. FIGURE 364 Dialysis: how it works. Garrel DR et al: Improved clinical statusand length of carewith low-fat nutrition supportin burn patients,JPEN J Parenter EnternlNutr 19:482,1995. 5f0 PART3 i Nutrition Care Process accessselection depends on several factors: (l) anticipated length of time enteral feeding will be required, (2) degree of risk for aspiration or tube displacement, (3) presence or absenceof normal digestion and absorption, (4) whether or not there is a planned surgical intervention, and (5) administration issuesuch as formula viscosity and volume. 1990s: Phenylalaninelevel of 1-6 mg/dl (60-360 pmol./L), lower than the previous level of lessthan 10 mg/dl (600 pmol./L), becomestlre new standardof care for treatrnent of PKU. Crackers eaten with cheese are less ."iiog"tti. Furtheq these claims do not require FDA prenotification, and the manufacturer assumesresponsibility for ensuring the accuracy and truthfulness of the statement. An EAR is the amount of a nutrient with which approximatelyone half of individualswould havetheir needsmet and one half would not. Nutritionally relevant, common presenting signs and U L M O N A R YD I S E A S E symptoms of pulmonary diseaseinclude cough, early satiety, Individualizednutrition assessment, nutrition diagnosis,and anorexia, weight loss, dyspnea (shortness of breath) during interventions such as nutrient delivery and counseling are preparing food and eating, and fatigue. Use fluoridated toothpastes. They were developed to help consmers determine if a food contains a lot or a litde of a specific nutrient. They may say, "I want to do better, but my life is always in a turmoil since my husband died 3 years ago." An excuse that was once acceptable is reused even when it is no lonser a factor in the woman's life. 30 180 200 300 600 2000 honey.fu fruit ripens,enzyrnescleavesucroseinto glucose and fructose(invert sugal see"Disaccharidesand Oligosaccharides"),resulting in a sweeter taste.High-fructlsecorn ryrup is intenselysweetand inexpensive.It is manufactured enzrymaicallyby changingthe glucosein cornstarchto fructose. It is not therapy; it is simply asking questionswithout an agenda. International TaskForce Obesity www.iotf.org Age n c yf o r H e a l th ca re R e se a rch a n dQu ality National Heart,Lung, andBloodInstitute and Association for the Study the NorthAmerican American Dietetic Association: Evidence Analysis of Obesity, ThePractical Identification, Guide: Library-Adult WeightManagement Evidence Evaluation, andTreatment of Overweight and Based Nutrition Practice in Adults Guidelines Obesity wwdahrq. This allows parenteral feedingwithout fluid overload. Titjillo E et al: Nutrigenomics,proteomics,and the dietetics professional, / Am Diet Assoc106:403,2006. Several successive pregnancies and lactations over a relatively few years may contribute to significant bone loss by the end of the period of childbearing if nuuition is not adequate. E T E R M I N I N GN U T R I E N T N E E O S Worldwide Guidelines Numerous standards serve as guides for planning and evaluating diets and food supplies for individuals and population groups. In a third type the client discounts tlle nutrition counselor by questioning his or her personal authority and expertise. Information decodingoccursin two steps:(1) the processof transcription, during which the enzqe ribonucleicacid polymerase (RNA poll.rnerase)converts DNA into an intermediate molecule(messenger RNA[mRNA]),and (2) a subsequent translationstep in which the informationencodedwithin the nRNA directs the assemblyof amino acids into the protein moleculeaccordingto a universalgenetic code. One askspermissionby sayrng,"Would you be willing to continue our discussionand talk about the possibility of change?" At this point, it is helpful to discussthoughtsand feelings about the current statusof dietary changeby askingopenendedquestions: . The symdrome also occurs in enterally fed patients; however, the digestive and absorptive processessomewhat mediate a rapid impact from refeeding. with low levels Therefore high HDL levelsare associated of chylomicrons;VLDL remnants;and small,denseLDLs risk. Impactof Pulmonary System Disease on NutritionStatus Pulmonary diseasesubsantially increaseenergy requirements.This factor explainsthe rationalefor including body FIGURE 35-4 Alveolar macrophagesare part of the body's composition and weight parametersin nearly all medical, systemicimmune response.Macrophagesare a main defense surgical,pharmacologic,and nutrition researchstudiesof the body againstharmful cellular debris and peoplewith respiratorydiseases. Parenteral to EnteralFeeding To begin the transition from parenteral to enteral feeding, the initial step is to introduce a minimum amount of enteral feeding at a low rate of 30 to 40 ml/hr to establish gastrointestinal tolerance. Agrng results in diminished lung integrity. Encourage use of rylitoVsorbitol-based chewing gum and candiesimmediately following a meal or snack." Sugar-freechewablevitamin /mineral supplementsand medication should be recommended. Scientific Committee on Food (SCF): Opinion of the Scientific Committee on Food: update on the safety of aspartame, Brussels, SCF/CS/ADD /EDUL/ 222 Final, 2 002. Self-Efficacy Supporting Belief in the possibility of change is an important motivator. In the FraminghamStudyleft ventricular hypertrophy (LVFI) wasfound to be a strong risk factor for CVD, HR and sudden death. including raisins, dates,and prunes (dried fruits are permitted if dried at home) Dessertsthat contain significant amounts of any foods high in copper Chocolate,cocoa Brewer'syeast Instant breakfastbeverages, mineral water, alcohol$ Low (< Q.l,mg/ Portlon Gommonly Usedt) (May Be Eaten As Desired) Breadsand pastafrom refined flour, canned sweetpotatoes,rice, regular oatrneal, cerealswith 30 g daily) in small numbers of subjects suggested a positive effect on glycemia; however, results from later studies have shown mixed effects. International Agency for Research on Cancer (IARC): ZRC handbooksof cancerpreuention, vol 8, fittits and.uegetables, Lyon, France, 2003, IARC Press. In personswith type 2 diabetes,insulin may be needed to restore glycemia to near normal. Normally these remnants, called VLDL remna.ntsor intermediate-densitylipoproteins(IDLs), which are atherogenic, are taken up by receptors on the liver or are converted to LDLs. In metabolic ryndrome the remnants are present and atherogenic (Olufadi et al., 2006). gov/healthypeople MyPyramid htq://mypyramid.gov National Center for HealthStatistics http ://www. Seeako Nutrition intervention nutrition monitoring in, 1203.Seeabo Nutrition monitoring phases,387 screeningbefore,388-390 nutrition counseling in adolescence, 258-259 in eatingdisorders,577-583,577t, 581-582t nuffition diagnosis(es), 1201 definition,454 in clinical nutrition, 462b in developmentaldisabilities,I 175 in diabetes mellitus,791,792b in HIV disease, 10l l in nutrition careprocess,455 nutrition-focusedphysicalassessment, t223-t226 L338 Index nutrition intervention,464-466,1202 in clinicalnutrition,462b in HIV disease, 1011 in nutrition careprocess,455 nutritionist, in medicalnutrition therapyfor geneticmetabolicdisorders,ll65 -l l66b nuffition monitoring,1203 in clinical nutrition, 462b management, in diabetes 785-786 in diabetesmellitus,795 in nutrition careprocess, 457,459 laboratoryvaluesfor, 1227-1241 nutrition prescription,465 definition,454 Nutrition Programfor the Elderly/Area Agencieson Aging, 323t nutrition screening, 388-390 definition,383 form for, 388f for risk, standard of carefor, 456t in adolescence, 257, 258t in crncer,972 in HfV disease, 1010-1011, 1012f beforenutrition careprocess,455 pediaoic form for, 390f perinatal,form for, 389f toolsfoq 389-390,391f,392-393f nutrition-specific laboratorydata definition,412 nutrltron status assessment, J84 definition,383 implicarionsofselecteddrugsfor, 1242-1247 of Americans,339-340, 34lr optimal,384,384f pulmonarysystemdisease and,902,903b nutrition support,506-530 appropriate,rationaleand criteria for, 507508 conditionsrequiring,508t ethicalissuesinvolvedin, 527 for premarureinfants,I 120-1133.Seealso Premarureinfants,nutrition supportfor in Crohn'sdisease flare-up,528b in headinjury methods,1013 in homecare,525-527,525b, 526f in long-term care,524-525 in majorburns,methods,1036-1037 in metabolicstress,goalsof,1027 in neurologicdisorders,1077 -107I interdisciplinaryservices,527 post-trauma,528-529b route selection,algorithm, 509f nutrition therapy in cancerroutes,determining,981 medical,450-451. CHAPTER 20 I Intervention:Enteraland ParenteralNutrition Support 521 C o m p l i c a t i oannsdM o n i t o r i n g fu with enteral feeding, routine monitoring of actual infusion is necessaryto ensure compliance with the treatrnent plan. Many theories have been tested to explain how atherosclerosisdevelops.It is now known that atherogenesis,the processof development of atherosclerosis,is a chronic, lo- cal, inflammatory responseto many risk factors, such as high levels of LDl-cholesterol, that are injurious to the arterialwall

(Fleinecke,2006;Badimonet al., 2006).Hence lesion formation, progression,and eventualplaquempture result from tlle releaseof inflammatoryproteins known as cltokines (Paolettiet al., 2004;Esteve,2005).Proinflammatory (e.g.,tumor necrosisfactor-alpha[TNF-ct], interleukin-6 [IL-6], and C-reactiveprotein ICRPI) and antiinflammatory cytokines(e.9.,IL-9, IL-10) are the key proteinsthat must be balanced to prevent plaque rupture and subsequent clinicalevents(TedguiandMallat, 2006). Female role models of dresssizes6 to 10 and male models with 30-inch to 34-inch waists are not appropriate role models for the obese population; even BMIs of 25 are unreasonable goals for many dieters. elEJIns uDroJpuorlr Ber{rBJl ,r\oJ roJ eJuapha lreJJa -a.tnrsod qlr^\ uo^E .eseosrpluro{ uo a8epuec >lrcgsJo }JeJTe eqrJo selPnlsou eJeeJeqlrnq 'ele;ps uDrorpuoqJJo ecJnos deegc e sr lr asnereqlperuer relndod u sr a8eln.rec 4req5 I90I 0NV S3rSU3AoUI N0 '(eOOZ ''p ra ssaueamJe3Je roJ auepirle rye.rcp1o11) crrrrdurapue adoq et1l JeJo lsou e-trWs pue unrseuSeru '(dereqr aSBsseu,a-rntcundnce ;o sruaurayddnspue teql .(5002,.lE puno; erSp.4ruorqg roJ serpnts ,&orler WVI Jo V re_relpeo5-Jeuqel$ uueuralddns Jo urruetrl pue IEJeuru 'dde:eqrertcerdorrqc'dduraqre8essutu Surpnlcur,stpuour9 snornerdeW ul WVf,Jo edlt aurospesnper{%g6 rep punoJ sluened erSledruorqg;o daa;ns V .surotdur,{suro{ Jerler roJ stuetutBen (nfVC) ourorperu e^qeurotle pue f:elueur .l:olce;snesun -elduroc >lees ueryo stuarlBd dlerauaS pue pallrull ag or r?addeer8pdurorqgro; suondoluerrDBeJt oqJ {deraql freluaua1druo3 espaslq olluunaqurol fideraqluorlulnNlporpa4i Ot UffaVUC /^o3' qru'ruer)u / / | d]Aq puP aurs rpaN aA rlP Ur allv l(r elu eu al duoo io; r a) ua3l puot} pN tr 3ro'sndny',tr,In sndn-l P3uauvJo uorlPpunoj itultl roJ Puetur nod ppoll sdelsteq,Lrpue 'Defqns atp dn Suuq nor(sn1uorJuerulou seop e{lw 'S pFo,,'r.tioH 'rqSrarn-ra.ro 't iuoBenfls lueJJnc srq rseueq oslJJexePlno^r^{oH iPmE lnoqB]8rL,!\ iueuo erolu ro ueuo ssalesoolp ot rryr{ a8ernocuappn,n no,{ spoo; cgrcedserarp arv '€ lue1d srt1r tcedtut seleqclPJo {slr PuEuorsuauad,(qsFI IIyrUhoH 'Z irnoS srq aSeueu ot e{IW roJ pueuruorer nor(ppo,tt ueld peur ro lerPJo adlr rery1 '1 uoder tuened.{q pecuaprae setnoS ro; r(derarpuoputnu lerlpeur or pereler tlrgeP uourrlnu pu? Using this technique requires gastrointestinal decompression,the prevention of gaseousinflation (distention) of the gastrointestinal tract by the application of intermittent or continuous negative pressure (suction) through a nasogastric tube. J Am Coll Cardiol 42:1218,2003. The long-term nutritional effects of cancer and its treatment in children are not well documented. It is helping the client accomplish more sooner. It is not uncommon for families and caregivers to express their fears of dying through an extreme preoccupation with eating and maintaining weight. plus rystine, requirements, by age group, 63t methotrexate (MTX, Rheumatrex), nutrient metabolism and, 440 methylfolate vap, 824, 824f methylmalonic acidemia, 1144t, I I59-1160 definition, ll4l formulas/medical foods in management of, 11 5 1 t methylmalonic acid (MNIA), urinary levels, in vitamin 812 deficiency, 424 methyl mercury. iMET!;, Metabolic.equivalents.METs are multiples of an individual's resting oxygen uptakes,defined as the rate of oxygen (O2) consumption of 3.5 ml of O2l min/kg body weight in aduls. Ireton-Jones C et al: Clinical pathways in home nutrition snpporr, J Am Diet Assoc97:1003, 1997. Changes in laboratory tests may have biologic significance (e.g., patient's condition is improving) long before statistical significance is achieved. Malnutrition leading to impaired immunity placesany patient at high risk for developingrespiratory infections.Patientswith pulmonary diseasewho are hospitalizedand who are also malnourishedare likely to havelengthy says and are susceptibleto increasedmorbidity and mortality. Suboptimal peakbonemass (PBM) . The diet includes generous amounts of fiber and fresh fi:uits and vegetables.There is anenrion to the kind of fat, with emphasison monounsaturated and polyunsaturated fat and limitation of saturated fat. Guidelines and questionsthat reinforce rationality o Techniquesfor strengthening efficacy . The first step in an intervention is interviewing. Suchvariationsare thought to underlie many of the inconsistenciesin therapeuticoutcomesand nutritional intervention research,despitethe relationshipssuggestedby large epidemiologicsnrdies. In contrast' insulin deficiency in a poorly controlled (underinsulinized) exerciser results in increasesin glucose concentrations, and free fatty acid release continues with minimum uptake. If transplantation is anticipated, it is important to maintain optimal nutrition status so that the patient will be a good candidate for transplantation. Adorable pics of baby animals bring instant happiness. In both animalsand humansdeliberateefforts to starveor overfeedare followed by a rapid return to the original body weight, as though the latter constitutesa "set point" that is amenable to physiologicinfluences.If this is true, someforms of obesity could be the result of an abnormally establishedset point; however,data are not conclusivein this area of research. In addition, food and water safety and foodborne illness issues are monitored by state and local health departments. Access Nasogastric Route For short-term enteral nutrition of up to 3 or 4 weeks, a nasogastric tube passedthrough the nose into the stomach is appropriate. In Merritt R editor: The ASPEN nutrition npport practicemanual, ed 2, Silver Spring, Md, 2005, American Society for Parenteral and Enteral Nutrition. What advice will you give Nell about her meal planning? The rate of AIDS diagnosisfor blackwomen is 25 times that of white women and four times that of Hisoanic women (CDC, 2004). (CourtesyMemorial-SloanKenering Cancer Center,New York, NY.) 518 PART3 Nutrition Care process The latest development in catheter technology is a peripherally inserted central catheter (PICC). What type of dental condition doesNathan have?What are the diet counselingrecommendationsfor this condition? Largemeals . Extended dwell catheters require a vein large enough to advance the catheter 5 to 7 inches into the vein. Once buffering action has restored pH above the critical point, remineralization can occur. Carbohydrate for Insulin or Insulin Secretagogue Users During moderate-intensity exercise, glucose uptake is increasedby 8 to 13 g/hr flVasserman and Zinman, 1994), and this is the basisfor t}re recommendation to add 15 g carbohydrate for every 30 to 60 minutes of activity (depending on the intensity) over and above normal routines. Now that you are retired it is easierto eat out than to cook. Thus genesexistin slightly different forms calledalleles. Wolfe RR, Martini WZ: Changesin intermediarymetabolismin severesurgicalillness,WorldJ Surg 24:639,2000. SalivaFunction Salivary flow clears food from around the teeth. Pancreatic enzyrr'ereplacement may be used to aid digestion and absorption, and a fat-restricted diet may be indicated. Because the primary cause of gastritis and peptic ulcers is H. Slurries work well with biscuits, cakes,graham crackers, muffins, and brownies. Eat foods rich in vitamin C with nonheme iron sources. Continued 998 PART5 I MedicalNutritionTherapy CD4CellGountsandAssociated Gonditions-cont'd CD4 Cell Count 100-200/mm3 ----cont'd Gondltlon Common Physical Problems and Symptoms HfV-associated dementia Loss of coordination, mood swings,loss of inhibitions, widespread cognitive dysfunctions Diseaseof the myocardium associatedwith ventricular dysfuncdon Diseaseof the spinal cord Radiating pain and paresthesiasthat causemild sensoryloss and lower extremity areflexia Depends on location, lumps, fatigue, and/or pain An intestinal infection from a parasite(microsporidia) that causes diarrhea and wasting in personswith HW Ar Candidainfection of the esophagusthat can causesevereproblems with swallowing A virus that causescold soreson the mouth and around the eyesor can be transmitted to the genitals Headacheand fevers,malaise,nausea,fatigue, loss of appetite Cough, blood-stained sputum (hemoptysis),fever, night sweats, weight loss, chest pain, prolonged fatigue, anorexia Severechronic, watery diarrhea (up to l5-20lday), severeweight loss, weakness,electrolyte imbalance,abdominal cramping, fever, nausea, vomiting, enlarged l1'rnphnodes Fevers,swollen glands,headaches Blindnessor visual loss (retinitis), fever, fatigue and severemalaise, weight loss, facial edema (secondaryto adrenalitis), enteritis, colitis Fever, severeweight

Division Complementarynew strand "& Parentstrands A Adenine T Thymine G Guanine c Cytosine f, NewStrand Complementary FIGURE l3-2 Each time a cell divides into two daughter cells, its full genome is duplicated; for humans and other complex organisms,this duplication occurs in the nucleus. SampleMealPlan Breakfast Dinner Vz otp low-fatfat-free yogurt I whole wheat English muffin I Tbsp whipped cream cheese % cup cantaloupe 3 oz grilled turkey breast % cup mashedpotatoes % cup freshsteamedgreenbeansttopped with almonds 1 smallwhole wheat dinner roll % cup freshstrawberries Snack 1 med orange 7+cup mixed nuts Lunch 2 grilled steak fajitas (with mixed peppers) 1 oz shredded low-fat pepper jackcheese ¾ cup black refried beans Side saladwith low-fat dressing The mineral magnesium is important for every organ in the body, particularly the heart, muscles, and kidneys. This includes the familiar "Yes but . Beyer, MS RD AssociateProfessor Dietetics & Nutrition University of Kansas MedicalCenter KansasCity Kansas AbbyS.Bloch, PhD,RD,FADA ExecutiveDirector The Dr. Robert C. In the liver insulin facilitates glucoseoxidation and glycogen synthesis.If food intake is excessive, insulin also facilitates fatty acid sinthesisand storage in the adipocells, thereby reducing the glucoseconcentration in the bloodsfeam. TotalCholesterol capturescholesterolcontent of total cholesterolmeasurement 60% to 70%os carried fractions: in all lipoprotein tained and l07o to 15% on HDL, on 20%' to 30%o on LDL, and clinical within population. VLDL. Lack of saliva impedes all aspectsof eating, including chewing, forming a bolus, swallowing, and sensingtaste; causespain; and increasesthe risk of dental cariesand infections. ...

permeability, and some may cause significant allergic reactionsin some individuals; others may be viewed as beneficial becausethey increase GI secretions and im- f Nutrition Care Guidelinesfor Reducing Gastroesophageal Refluxand Esophagitis 1. SeeCholecystokinin CCPD (continuous cyclical peritoneal dialysis), 932 CD4+ cells definition, 991 in HIV infection, 992 celiac disease,681-686 bacterial endopeptidase, usage, 686b care management algorithm for, 684f definition, 673 gluten-free diet, usage,685b in pregnancy, 169-170 medical nutrition therapy, 683-686 medical treatment, 682-683 nutritional/extraintestinal manifestations, 683 pathophysiology, 681-682, 682f, 684f cell-mediated hypersensitivity, 743t cell-mediated immuniry 741 definition, 739 cell-mediated response to stress, 417-418 cellulose, 47 as fat replacer, 58t composition /sources/fu nctions, 48t definition, 39 Centers for Disease Control and Prevention (CDC) 2000 Gror,rth Charts, premature i n f a n t s a n d , I I 3 5 - l 1 1 6 f Centers for Disease Control and Prevention (CDC) information, 3 15-316 Central American dietary patterns, 353t Central European dietary patterns, 352t central nervous system (CNS) disorders, 1067-1101. Bob generally consumesone or two beers before bedtime and is willing to give up that habit. Compliment tlre patient on carrying out the plan. ADP, rdenosinediphosphate;cAMP, ryclic adenosinemonophosphate(cAMP); ATR adenosinetriphosphate. dieteticspractice, J Am DietAssoc GermanJB et al: Metabolomicsin practice:emergingknowledge to guide future dietetic advicetoward individualizedhealth, 105:1425,2005. (l : absolutely never; 12 : absolutely always)." Explore eating behaviors by using the following statements: . Nohria A et al: Medical managementof advancedheart failure, JAMA 287:628,2002. I can understand that. N/1, Not applicable. Skills in knowing how to elicit information about eating habits are important as tlle assessmentof the client's diet proceeds. PstLtoPHysroLsGy Atherosclerosis Atherosclerosisis the most common cause of CHD and related mortality. She has been living in your area for severalyears and has numerous health problems, including high blood pressure and glaucoma. The counselor might offer the following: "You say you're unsure about what to do. eari ght. Equationsfor PredictingREE(kcal) FromBody ight (kg) Age Range (yr) 0-3 3-10 10-18 18-30 30-60 Females 61.0x wt - 51 22.5x wt + 499 12.2x wt + 746 l+.7 x wt + +96 8.7x lrt + 829 Males 60.9x wt 22.7x wt + 17.5x wt + 15.3x wt + 11.6x wt + 54 495 651 679 879 Step2 Calculatetotal energyexpenditureC|EE) by multiplying the REE by the activitycoefficient(AC) and addingthe disease coefficient(DC). Processing techniques make some starches rapidly fermentable, either by partial hydrolysis or by reducing particle size, thus increasing availability for enz)rme action. Gunther S: Demographicand health-relatedcorrelatesof herbal and specialtysupplement:use, J Am Diet Assoe104l-27,2004. As a result, pernicious anemia is rarely seen in medical centers in developed countries. The goal is to increase intrinsic motivation so that clients are able to expressthe rationale for the changes. dlaraldruocrualc ot q8noc elrxegar Suors tplrr rnq rfiuo sprnbqulql Jo uorlurrdry . Despite these findings, atherosclerosisimaging in asymptomatic individuals is a controversial public health topic becauseof the costs associated with screening (O'Malley, 2006; Raggi, 2006). Because a body that weighs less requires less energy expenditure to 556 PART4 Nutritionfor HealthandFitness DeterminingAppropriateRateof Weight Gain in the ObeseChild rom the history of family growth patterns and review of f I the prior growth pattern of the obese child, determine the predicted adult height of the child. DietaryReference Intakestor Zinc for Children andAdults Age (years) l-3 4-8 9-r3 t4-18 19+ Males and Females (mE/dayl Pregnancy (mE/dayl 3 5 8 11 for males, 9 for females 11 for males, 8 for females Lactation (ng/dayl N/A N/A N/A t2 N/A N/A N/A l3 ll t7 Milligramsper ServinE % Daily Value* Selected FoodSources of Zinc Food Oysters, battered and fried, 6 med Ready-to-eat (RTE) breakfast cereal, fortified with 100% of the DV for zinc per serving, % cup serving Beefshank, lean only, cooked 3 oz Beef chuclg arm pot roast, lean only, cooked, 3 oz Beeftenderloin, lean only, cooked, 3 oz Pork shoulder, arm picnic, lean only, cooked,3 oz Beef,eyeofround, lean only, cooked,3oz RTE breakfastcereal,fortified with 25"/"of the DV for zinc per serving, '/a cup RTE breakfast cereal, complete wheat bran flakes. Citric acid is a component of the tricarboxylic acid (IGebs) rycle. It is also useful to apply CBT in group therapy (e.g., to improve adherenceto fluid restrictions among dialysispatients [Sharp et al., 2005] and to help weight-concernedsmokersmaintain smoking abstinence [Clarket al., 2005]). REE, Resting energy expenditure. Other circumstances that may lead to vitamin K deficiency include liver disease,serious burns, health problems that can prevent the absorption of vitamin K (such as gallbladder or biliary disease,which may alter the absorption offat), cystic fibrosis, celiac disease,Crohn's disease,and chronic antibiotic therapy. Percation and direction of tube movement. Glycerol proceeds to the liver, and fatty acids enter the adipocyte, where they are reesterified into triglycerides. 2 2 (4) : 5 7 91 ,9 7 3 . A major reasonfor inadequatecontrol of high blood pressureis poor adherenceto therapy. Tieatrnent is usually for 3 to 5 hours, three times per week. A woman wrote a letter to her nutritionist saylng that she wanted to stop working on her dietary changes. FeskanichD et al: \4tamin A intake and hip fracruresamong postmenopau salwomen,JAMA 287:47, 2002. wasteproductsis known as renal function; renal failure is is hematuria The primary manifestationof thesediseases the consequenceof inability to excrete the daily load of (blood in the urine), a consequence of the capillaryinflamthesewastes. 4 B o n e - . ShettyPS et al: Energy requirementsofadults: an updateon basalmetabolicrates(BMRS)and physicalactivity levels (PALs),EurJ Clin Nutr 50 (suppl1):ll, 1996. Enzyme Therapy Pancreatic enzyme replacement therapy is the first step aken to correct maldigestion and malabsorption. Monounsaturated fatty acids (MFAs) contain only one double bond, and polyunsaturatedfatty acids (PUFAs) contain two or more double bonds. These changes can occur within the regulatory region or the protein coding region of the gene. Binding results in a change in gene expressionthrough the regulation of the transcription process. SeeAge-related macular degeneration amenorrhea d e f i n i t i o n ,1 6 0 , 5 6 3 in anorexia nervosa, 564 American Dietetic Association (ADA) tends, adult nutrition and, 270 American Institute for Cancer Research, guidelines, for cancer prevention, 968b Amfepramone (diethylpropion HCI), in obesity management,551t amino acid(s),59-65 aromatic. She quit smoking I pack per day 6 months ago and at that time went on a diet. Keep it simple and have fun with pureed pasta. When the counselor leans forward slightly and has a relaxed posture and avoids fidgeting and gesnrring, the client will be more at ease. What resources are there to help her prepare meals that are higher in potassium, calcium, and magnesium? This permis calculation of the coefficient of fat absorption and assessmentof the degree of malabsorption in malnourished patrens. Central factors in failure to wean from oxygensupport or mechanicalventilation are respiratorymuscleweaknessand retention of carbondioxide.The prognosis precariousfor patiens with underlying chronic pulmonarydiseasesuchas CF or emphysemaor for thosewho are otherwisemedically compromised,malnourished,or older.However,lung transplantation may be a viable option for somepatiens. Despite considerable evidence of this phenomenon in animal models (Genton et al., 2005), it has not been substantiated in humans (Buchman et al., 1995). o Is it touted asbeing preventive or to have treatrnent effects?What does the label claim? Factors that may alter nutrient requirements in cancer include the impact of the malignant diseaseon host metabolism; the catabolic effects of cancer therapy; and physiologic stress such as surgery fever, malabsorption, and infection. Most people have HfV-l; unless specified,it is the type discussed.HIV-}, first isolated in West Africa, is less easily transmifted, and the time between infection and illness takes longer. It is imporant to recognizethat people with chronic infections and those who perform physically demandingmanual labormayneedhighercaloricintakesthan might be expected. RD affects all populauon groups. Decreasing adipose tissue mass alone will not achievethe metabolicbenefitsof weight loss.By itself, abdominal liposuctionis not a clinical therapyfor obesity. Vt wocado Carrot juice, canned, % cup Peanut oil, I Ttrsp Corn oil, 1 Tbsp Olive oil, I Ttrsp Spinach, cooked, % cup Dandelion greens, cooked, % cup Sardine, Adantic, in oil, drained, 3 oz Blue crab, cooked./canned, 3 oz Brazil nuts, 1 oz Herring, Adantic, pickled, 3 oz Milligramsper Serving 1.6-12.8 7.4 7.3 5.6 4.8 4.6 4.3 3.1 2.9 2.8 2.6 2.5 2.5 2.5 2.+ 2.3 z.z z.l 2.1 2.1 1.9 1.9 1.9 1.8 1.7 t.6 1.6 1.5 SampleMealPlan o/oDaily Value* 11-85 +9% J7o/" 32 ll 29 2l t9 18 l7 16.5 16.5 16.5 t6 15 t4.5 L4 t4 l+ 12.5 12.5 12.5 l2 1l 10.5 10.5 l0 Breakfast 3/+cttp ready-to-eatcereal t/z c:uplow-ht/fat-free milk I red deliciousapple 2 Tbsp peanutbutter (2.5 mg vitamin E) Lunch I cup mixed saladgteens 3 oz tuna steak 2 slicesmultigrain bread % cup fi:uit salad Dlnner 3 oz grilled chickenbreast % cup fiesh steamedspinach(1.9 mg vitamin E) % cup whole grain rice Sidesalad Snack I oz slicedalmonds(7.5 mg vitamin E) I Tbsp low-fat granola 1/zcrtp low-ht/fat free yogurt Norr: Takeonemultivitamin/multimineralsupplementdaily. Cohen MH et al: Policiespertainingto complementaryand alternativemedicaltherapiesin a random sampleof 39 academichealth centers,AhernatiueTherHeahhMed ll(l):36, 2005a. Historically genetics has focused on identifiiing the mechanismsby which traits are passedfrom parent to child, focusing on eye color and other readily observable characteristics. M. The most common specimens for analysis are the following: Whole bhotl-Must be collected with an anticoagulant if entire content of the blood is to be evaluated. The client is responsible for choosing and carrying out personal change. protein metabolism, although the exact mechanism is not Senna: leaves Senna are the dried leaflets of plants found in known. M EoIcAL MnnAcEMENT Diseaseprogressiondiffersamongindividuals,and treatrnent decisionsmustbe individualized.With the adventof viral load testing (measurement of the quantity of HIV deoxgibonu- CHAPTER Virus(HIV) Disease999 38 * MedicalNutritionTherapyfor HumanImmunodeficiency Immunologic Gategories for HIV-Infected BasedonAge-Specific Ghildren GD4+T-Lymphocyte GountsandPercentage of TotalLymphocytes lmmunologic Gategory No evidenceof suppression Evidenceof moderatesuppression Severesuppression Cell Counts(Cells/mcg[%l*) Accordingto Age 5oo(>25) > 1 0 0 0(> 2 5) > 1 5 0 0(> 2 5) (rs-2+) (15-24) 200-499(rs-2+) 500-999 750-r+99 300 ml); and by hospital day ll the tube-feeding infusion remained at 40 m7hr. therapies, Eldridge B et al: Nutrition and the patient with cancer.In and CoulstonAM et al, editors:Nutrition in thepreaention SanDiego, 2001, AcademicPress. A primary factor in the development of root decay is gingival recession, often secondary to periodontal disease, which results in exposure of root surfaces to the oral environment (Gilberi et al., 2001; Takano, 2003). E s t i m a t eEdn e r g yE x p e n d e d in Physical Activity intensities of physical activity-energy that is expressed as metabolic equivalents (Institute of Medicine, 2002; 2005). Unhealthy belief system Strategiesto Motivate Change . Thylor D et al: The registry ofthe internationalsocietyfor heart and lung transplantation:twenry-firstofficial adult hean transplantreport-2004 , J Hean Lung Tiansplant23:796,2O04. In lean children, fat cell size then decreases;however, tlis decreasedoesnot occur in obese children. A normal adult protein intake of approximately I g/kg of body weight maintains the serum PTH concentration within a healthy range (Kerstetter et al., 2000) if calcium intake is also at or near the recommended intake. See "Medical and Surgical Management of (Ilcers" for peptic ulcers in the following paragraphs.) 0ther Formsof Gastritis The mucosa of the stomach and duodenum is normally protected from the proteolytic actions of gastric acid and pepsin by a coating of mucus secreted by glands in the epithelial walls from the lower esophagus to the upper duodenum. Reduced calorie sweetenersapproved by the U.S. Food and Drug Administration (FDA) include sugar alcohols (erythritol, sorbitol, mannitol, xylitol, isomalt, lactitol, and hydrogenated starch hydrolysates) and tagatose. J Natl Cancer Conklin KA: Dietary antioxidantsduring cancerchemotherapy: and developmentof impact on chemotherapeuticeffectiveness 37:1,2000. Composition of the diet has been the focus of intense study. Patients can be encouraged to use their knife and fork as their "teeth" initially, cutting food into small pieces. SeeDASH (Dietary Approachesto Stop Hypertension)Diet dietaryfiber,47-50 definition,40,+7, 673 Dietary Guidelinesfor Americans(DGA) definition,337 purpose,344 Dietary Guidelinesfor Americans(DGA) 2005, 318 focusareas,3,14b recommendaLions, for older adults,299b dietaryhistory definition,383 information,397b dietaryintake in ADHD assessment, 1187 in autismassessment, 1186 in cerebralpalsyassessment, 1185 in developmental disabilities, I 174 in Down sy'ndrome assessment, 1179-1180 in Prader-Willisyndromeassessment, 1181tt82 in spinabifidaassessment, ll83 dietaryintake data definition,383 in diet history 395-398 obtaining,methods,399t dietarymodification in obesitymanagement, 545-548 commercialprograms,546-547t, 546-548 extremeenergyrestriction and fastingin, 548 formula dietsin, 546 mealreplacementprogramsin, 546 recommendations, 545 restricted-energydietsin, 545-546 very low-caloriedietsin, 548 dietarypatterns Black,352t CaribbeanIslands,353t CentralAmerican,353t CentralEuropeanandRussian,352t changing,in hlpertensionmanagement, 875876 350,354-]55r Chinese, Cuban,354t cultural,150,351-357t, i58-160 Filipino,356t Japanese,355t 360b Jewish,357t,158-359, Korean,355t Mexican,353t NativeAmerican,351t,358 Nortlrern European,35| t PacificIslanders,356t PuertoRican,354t SouthAmerican,354t SouthAsian,l56t Southeast fuian, 350 SouthernEuropean,352t dietaryplanning cultural aspects,349 food labeling,impact,344,347-J49,347f, 347t,348b guidelines, 337-362 worldwide,338 nationalguidelines,342-3 44, 343b,343f , 344b nuffient needsin, determination,138-339 nuffitional statusofAmericansand, 339-340, 34lt dietaryreferenceintakes(DRI$, 120 339 by age-groups/sex-groups, components of,338-339 definition,337 for biotin, 94 f o r c a l c i u m1, 0 6 .1 0 6 t ,l 5 t for childrento threeyears,202t for chloride,151t for chromium,132,133t,l38t for cobalt,134,138 for coppeq126,126t,137r 226t for energy,for children and adolescents, for fluoride,137t for folate,91, 92t for infants,202t l o r i o d i n e 1, 2 8 ,I 2 8 t ,1 1 7 t 136t for iron, 118-119, for magnesium,lll, ll2f, 112t,136t,152 for manganese, 132,l37t for molybdenum,133,138t for niacin,87, 87t for pantothenicacid,88, 89t 109,109t,136t,152 for phosphorus, for potassium, l5lt, I52 for protein,in children,227t for riboflavin,85, 85t for selenium,130,1l I t, 138t f o rs o d i u m1, 5 0 - 1 5 1 5 , lt for sulfur,l36t for targetpopulation,339 for thiamin,83, 83t for vitaminA, 72, 72b,73t for vitamin 86, 89, 90t for vitamin Bp, 93, 94r forvitaminC,96,96t for vitaminD,76-77,77t for vitaminE, 79-80,80t for vitaminK, 81, 82t for women,170t for zinc,123,123t,l37t reference men andwomenfor, 339,340t valuesof, for energy,29-30,29-30t Supplement$ dietarysupplement.,Srs definition,+70,475 475-485.Seenho dietarysupplementation, Supplements Dietary SupplementHealth and EducationAct of 1994(DSHEA) definition,470 dietarysupplementsdefinedtnder, 475-476 in regulationof dietarysupplements,480-481 in body weight dietarythermogenesis, regulation,535 diet history 57t-574 in eatingdisorderassessment, 395-398 in nutrition assessment, diethylpropionHCI (Amfepramone),in obesity management,55lr 257 dieting,in adolescence, dietitians,registered,preparation,for work with older adults,289-290b diet prescription,465 definition, 454 diet(s) acidash,952b aftergastricbypass,553,555t alkalineash,952b clearliquid,466 consistenrymodifications,466 dysphagia,126l-1266 elimination,definition, 739 fat-restricted,for acutecholecystitis,729, 730-73tt food elimination,in food allergydiagnosis, 7 50-75r, 7 52t formula, in obesitymanagement,546 632-633 for osteoporosis, gluten-free,685b.Seea/soGluten-freediet for weightgain,558,558t,559t high-energy, high-fiber definition, 671 for consripation , 676-677, 677b high-protein,nutritional facts,I 284 ketogenic,1091t quick tips for, 857b lipid-lowering, aggressive, low- or minimum-residue,food limit, 678t normal,modifications,to fit prescription,465 and,630 osteoporosis risk factor,850 poor, ascardiovascular popular,548-549,549t premenstmals1'ndromea;-'d,274 protein-restricted,for urea cycledisorders, 116l, ll62b 466 regu.lar/general, resfficted-energy extreme,in obesitymanagement,548 in obesitymanagement,5+5-546 sodium-controlled,food servingsfor, 893t sodium-restricted, 1270-1275 standard,in hospitalsor health carefacilities, 466 vegetarian.SeeVegandiet; 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Sarcopeniais an already mentioned risk factor. The DV for vitamin E is 30 IU. The universal system of counseling (Patterson,2004) suggeststhat all counselorsshould be competentin five basictechniques(Thblel9-2). DEA Schedule III agents also pose abuse potential that should be carefully considered. Thus, whenever growth languishes, low orygen saturation should be evaluated as a contributing factor. Moodswings . Arora RR et al: Short- and long-term mortality with nesiritide, Am Heart J 152(6):1084,2006. Factors interfering with adequate intake and retention ofnutriens include dyspnea, coughing and cough-induced vomiting, gastrointestinal discomfort, anorexia during episodes of infection, possible impaired senseof smell and taste, and glucosuria. Method selectionis basedon the padent'sclinical starusand quality of life consideradons.One method can serye as a ffansition to another method as the patient's staruschanses. gov/energy.html, accessedDecember l, 2005. Thus to suggest ginger to all cancer patienS is not appropriate; assessmentof each patient's clinical situation is important. Patients with acute or chronic illnesseshave the potential for malnutrition and should be evaluatedfurther. Stay upright and avoid vigorous activity soon after eating. In the early phase of refeeding, nutrient prescriptions should be moderate in carbohydrate and supplemented with phosphorus, potassium, and magnesium (Kraft et al., 2005). TheraPy Replacement Androgen Testosterone replacement in elderly men may help to maintain bone mass and prevent fractures, but side effects, especially prostate grovth, limit the use of testosterone and other androgens. Other RDs include spondyloarthropathies, polyrnyalgia rheumatica, and polynyositis. When at all possible,more accurateestimationsof energy requirementsare recommendedwith the use of indirect calorimetry measurements (American fusociation for RespiratoryCare,2004)(seeChapter2). RD. fVolume dependent on specificproduct used. Chili peppers can range from mild to very hot and from small to very large. obesepostmenopausal Olson R-E,:Nutrition and genetics:an expandingftontie4 Am J Clin Natr 78:201.2003. Simple guidelines should be provided for cutting and preparing fruits and vegetables to minimize the need for biting and reduce the amount of chewing. definition.764 hormone-sensitive lipase(tISL) definition,532 in fat storage,535 hospicepatient,nutrition care,467-468 hospitalizedpatient carecoordinationfor, 467 food intake,466 nuffition care,466-467 psychologicalfacrors,466-467 nutrition education,467 standarddiets,466 hospitals,malnutrition in, l91b hostiliry,asresistancebehavior,502 HRQOL. I Donna F{. With a knowledgeof dietaryplanning,nutrient needs, and food and nutrient information, aswell as developedskills in counseling,dietetic counselorsand health professionalsare essentialtranslatorsoffood, nutrition, and health information into food choices and patternsfor groupsor individuals. HibbertJM et al: Proinflammatorycytokinesand the hypermetabolism of children with sicklecell disease,Exp Biol Med (Nlaywood.) 230:68,2005. Food and eating guidelines to facilitate biting and chewing for optimal intake can be integrated into the nutrition care process. ChobanPS, DickersonRN: Morbid obesityand nutrition support:is bigger different?Nutr Clin Pract 20:480,2005. What kind of enteral formula would you recommend forJerome and why? 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Basedon these data, the JNC recommendsthat blood pressuresbe controlled regardlessof age,initial blood pressurelevel,or durationofhypertension (NIH, 200+). OODAND WNrEN SNTETY Although individual educational effons are effective in raisins awarenessof food safetyissues,food and water safetymust b! examined on a narional, systems-basedlevel. American Dietetic fusociation and the American Diabetes Association: Hmong American food practices, nl'stlnts, and holidays, Ethnic and Regional Food Praaices Series, Chicago, 1999, American Dietetic Association. nccam.nih.govlnews/camsurvey.htrn, accessedDecember 8, 2005. Formulas containing peptide fragments and amino acids are derived from the hydrolysis of casein, whey, lactalbumin, or soy. Promoting a positive health profile in the community crossesthe life cycle and includes all aspectsoffood and nutrition. Wilkens, MS, RD, 2006. In this way, increased glucose use by the exercising muscle is matched precisely with increased glucose production by the liver. Thomson CA et al: Proposedguidelinesregardingthe recommendationand saleof dietary supplements, J Am Diet Assoc102(8):ll58, 2002. Dronabinol o Corticosteroids MetabolicAgentsand GytokineBlockers o . Therefore, because of a lack of specific information, the goal for dietary fat intake (amount and type) for persons with diabetes the same as for those without diabeteswith a history of CVD. Shorr AF et al: Protein C concentrations in severe sepsis:an early directional change in plasma levels predicts outcome, Crit Care 10(3):1292,2006. Further, in the genomics era, researchershave found that many genes occur in slight variations on the "normal" (most common) version. KathleenMahan,MS, RD, CDE. Autosomal refers to uaits carried on one of the22 pairs of autosomes;sex-linked refers to traits carried on either the X or Y chromosome. The guidelines are directed to physicians and associatedhealth professionalsin clinical practice, health care policy makers, and clinical investigators (NIH, 1998). 1 132 t0-t2 t0.2 57 5.2-9.9 29-55 4.9-8.r 27-45 +.4 +.2 24 3.9 3.5).) 3.2 22 t9 18 18 t7)-r LJ 2.8 15.5 2.6 2.5 2.4 I4 I4 1A 2.3 13 13 13 L.) t) L.) l) 2.3 2.2 2.2 2.2 2.2 2.2 2.1 2.1 2.0 L2 t2 12 t2 t2 11 . What are the eligibility guidelines? Resource f osr C l i n i c i a n s As awareness of dietarv supplement use expands within the health care communiry the number of evidence-based resources available to clinicians is also srowins consider- Supplement Reason for us6 Mineral/Mineral comblnations/Trace elements Calciumwith vitaminD and FoodConstituentsor herbals Fish oil or omega-3fats taken for the followlng health condltlons Arthritis/jointhealth Bone health Cancerorevention energy Heart health Memoryloss Menopausal Prostatehealth Sports loss Other: Other: FIGURE 18-6 Dietary supplementinrake assessment form. The counselor must be ready to move back and forth between the phase-specificstrategies. Now that this drug has been a'pprorredby the FDA for regrrlar prescription use, it is the only practical agent that increases bone formation (i.e., it is anabolic) and thus bone mass. patients with small bowel accessshould also be fed by continuous drip infusion. ShankaranS et al: Feal origin ofchildhood disease:intrauterine growth restriction in term infants and risk for hypertension at Med 160(9):977,2006. With this and concomitant small bowel feeding, enteral nutrition is now implemented in patients with small bowel function who previously \Meresupported parenterally becausetheir gastrointestinal function was assumedto be inadequate. The imaging method varies by arterial bed. SeeBulimia nervosa BOD POD,24,25,25f body composition in nutrition assessment, 401-405 bodydysmorphicdisorder,nutridon, 1110t bodyfat,533 body image definition, 246 in adolescence, 257 body imagedistordon definition,563 in anorexianervosa,564 body language,communicationskills (relationship), 496b body massindex (BMI) calculationof, 400,401b definition,383, 532 extreme,conceptionand,161 for boys,2 to 20 yearc,1207 for girls, 2 to 20 years,12lI in nutrition assessment, 400-401,401b body massindex (BMI) (Continued) in overweight/obesityassessment, 539-540 tablefor, 1215 body shape,alterations,complicatingHfV disease,1015-1016 bodyweight,components, 533-535 body work, description,473t bolusfeeding,514 definition, 506 bomb calorimeter,35 bombesinin body weight regulation,536t bone calciumintakeand,622-623,622t,623t cancellous, 615,6l6f definition,615 composition,6l5 cortical,615,6l6f definition,614 magnesiumintake and,625 modeling,617 nutrition and,62l-626 phosphate intakeand,624 physiology,615-619 proteinintakeand,625 remodeling,617-618,618f,619f structure,615-619,6l6f trabecular,615,6l6f definition,615 tracemineralintakesand,625-626 rypesof, 615,616f vitamin A intake ar:'d,625 vitaminD intakeand,,623-624 vitamin K intake and,625 bonedensitometr4', 619 definition,614 bonehealth,614-635 bone markers,618-619 definition,614 bone mass,619-621 accumulation, 620 loss,620-621, 62lf in femaleathletes,599 peak,620 definition, 6 I 5 bonemineralcontent(BMC), 619 definition,614 measurement of, 619 bone mineral density(BMD), 619-620 definition,614 measurementof, 619-620 menopause and,62lb bonemodeling,definition,614 boomer,defrnition,286 borborygmus definition,673 from high-fiber dier,677 boron,134 intakeof bone and.,626 botanicals choosing,guidelines, 485b definition, 470 tormulatlons,+ / O,+ / / t) supplemental,efficacyof, reviews,478-479t BPD (bronchopulmonarydysplasia),definition, 899 brain Arnold Chiari malformationof definition,1170 in spinabifida,1183 frmctionof omega-3fattyacidsand,1105-1108 Index 1311 brin (Continued) rn,ury medical nutrition therapy, 1033 pathophysiology, 1032- 103 3 structure/function, nutritional aspects, 11 0 4 - 11 0 5 branched-chain amino acids (BCAAs) decrease,in hepatic encephalopathy, 724, I Z+D definition, 707 ergogenicaid.,604t, 606 branched-chainketoaciduria,ll57 -1159 definition,1141 breakfast,effecton learning,235b breastaugmentation,breast-feeding (relationship), 192 breast-feeding. Pharmaceutical Management Appropriate pharmacotherapy can augment diet, physical activity, and behavior therapy as treatment for patients with a BMI of 30 or higher or patients with27 or higher who also have significant risk factors or disease. (Modrfud frum. Another was to immediately call the woman to discuss the letter, always indicating acceptance of the woman's concerns. Zin c Zinc is essential for several critical enzymes in osteoblasts that are essential for collagen slmthesis and other products. -lz.: ,g- € E O ! t= ., o i y d j ii-q :"6+ o a ct) q6 'i =.>- >'E o f .=.::o.F tu6n .=aru J(ha (, u0 c G E, (O rJ \ crtr *r P DoEV E a APPENDIXES L239 U o* >.R to bo: :E -:7 ! Q E h ; E o L24O APPENDIXES (, !0 tr (! Ectr o jj 66 vv ** F d ti n= v'i 5v 9? Heller AR et al: Omega-3fatty acidsimprove the diagnosisrelatedclinicaloutcome,Crit CareMed 34:972,2006. BodyFat Fat in the body is categorized as either "essential" or "storage." Essential fat, which is necessaryfor normal physiologic functioning, is stored in small amounts in the bone marroq heart, lung, liver, spleen, kidneys, muscles, and lipid-rich tissues in the nervous system. Conversely in the chronically ill, nutrition support is an issue that each patient must eventually addressbecauseit may result in prolonged therapy. SpivakJL: Iron and the anemiaof chronic disease,Oneolog l6(9 suppl 10):25,2002. Urinary oxalate excretion increasesup to five times normal in enteric hl.peroxaluria after bypasssurgery. Weight lossin dieting subjectsis alsotypically associated with boneloss(Pluijm et il.,2001; Fogelholmet al., 2001). In addition, a metaanalysis of randomized controlled trials suggess no benefit of chromium picolinate supplementation in reducing body weight (Pittler et al., 2003). Kamp,MS,RD ProjectCoordinator National ResourceCenter on Nuuition, Physical Activity, and Aging Florida InternationalUniversity Miami, Florida Debra A . These CHAPTER37 i Medical Nutrition Therapyfor Gancer 985 therapy regimens generally include colonic cleansing with coffee, wheat grass,or other substances;special diets; and vitamin and mineral supplementation. Identiffrg a network to support dietary change is important. lMore methionine is required in the absenceof ryst(e)ine. P excretion . sntBls euoq Jotruoru o1 ue{31 eq uEr seJnsBeru leqt os alqrssodse dlree se srsorodoetsoSurdo 1 -le^ep Jo {srJ ts eJBoq,r ueuo.tr.{;Ruepr ot ruer.rodurrsr t I arntrBrcdg rol {slu qSur 1Buaruo^\ IBSnEdoueuDSod auogpuEuorilrlnN; tz uSIdvHS lz9 rDtEaH Jo uonfuosqB eql aJnpar deru ueuerelddns runrJIBJ asop -q3r11 'raqg pue spmg eroru 8ur1el pue esop aqr Surpnrp dq pezrurrurur aq z(uu re{r reJJJaSunednsuoc E eAEq uBJ etsuoqrcJ urnrcle3 'slurod a8eruacredgo eldnoc e dpo dlpc -ldfr sl eJuaraJJrporp tnq 'sruarualddns tuntJIEJ Jeqlo pue alBuoqrBJ runrJIBJ ueqr z(puercse eroru dpq8gs paqJosqB aq or readde nuarualddns aleFrrr aterrJ runtJIEJ drgq" -lre^eorq pooS erreg te{Jeru er1l uo ,(puarrnc uueuraldns Surureluoo-runrJleJ IIB dlecFcerd lnq 'pesn uorue erll uo spuaden sruareldduns unnluJ urog drrlqelreleorq runtrle3 sluaualddns unr3lPc L U O J ^) l r l r q B l r P A P o r gu n r 3 l P S 'vbTalqel ur Pa$rT sr seJJnos poo; roleru ur runtrlec Jo tunotue eqJ '$uerrl -nuorcrru 1e dlpcncerd ot tcedser rpr,r e{elw paJueleq BJo re{reru E osle sr spooJ ruo{ lerp qJrr-unrcltJ E;o uonduns -uor erp re{r pu? I22O APPENDIXES Body Welght Actlvlty Type Aerobics class Aerobicsclass Aerobics class Aerobics class Water Low impact High impact Step with 6- to 8-inch step Step with l0- to l2-inch step General Singles and doubles Competitive Throw/catch Fast or slow pitch Shooting baskets Wheelchair Game l0-11.9 mph, slow l2-13.9 mph, moderate 14-15.9 mph, fast l6-19.9 mph, very fast >20 mph, racing 50 watts, stationary very light 100 watts, stationary light 150 watts, stationary moderate 200 watts, stationary vrgorous 250 watts, stationary very l'rgorous BMX or mountain Punching bag Sparring Back exercises Pull-ups, jumping jacks Push-ups or sit-ups General Flag or touch Competitive General (Ultimate Aerobicsclass Backpack Badminton Badminton Baseball Baseball Basketbdl Basketball Basketball Bike Bike Bike Bike Bike Bike Bike Bike Bike Bike Bike Boxing Boxing Calisthenics Calisthenics Calisthenics Circuit training Football Football Frisbee Frisbee Golf Golf Golf Handball Hike Hockey Jog Jog Jump rope Jump rope Jump rope Kayak Martial arts Racquetball Racquetball Rafting Rock climb Rugby Run Run Power cart Pull clubs Carry clubs General General Ice, field hockey General Joglwalk combination Slow Moderate Fast General General Casual Competition Whitewater General General 5 mph, 12 min/mile 5.2 mph, ll.5 min/mile Copyright 2001HealtheTechInc., Golden,Colo. Combine chewy foods such as fresh fruis and vegetables with fermentable carbohydrates. it may bL required initially until a degree of function is regained, whereasin chronic neurologic diseaseit may be required in the late stagesto meet changing metabolic demands.Wellmanaged nutrition support helps to prevent pneumonia and sepsis,which can complicate tlese diseases. for DietaryPlanning 36L 12 I Guidelines CHAPTER N | "" is a 20-year-old college student who has decided to I U become a vegetarian for nonrelisious reasons.She does not eat red meat, chicken, fish, or dairy products. For example, the conventional report of an ionized calcium value could be 2.3 rnF,q/L, 46 mgtL or 4 .6 mg/ dl. The ability to digest carbohydrates is modified by (l) the relative availability (or resistance) of the starch to enz1irrcaction; (2) the activity of digestive enzlzrnes,especially lactase, at the mucosal brush border; and (3) the presence of other dietary factors such as fat that slow stomach emptying, nonabsorbable oligosaccharides, and viscous dietary fibers such as pectins, B-glucans, and gums that dilute enz]/lJj.econcentration. The elevatedglucose levels may also extend into the postexercisestate (Purdon et al., 1993). Nutrition Diagnosis: Involuntary weight lossrelated to poor intake and pain on eating during flare-up of Crohn's diseaseas evidencedby 257oweight loss l. Intake and follow-up information about these therapies provides important pharmacologic and treatrnent information for the health care provider. Most of the nutritionrelated disorders included here can be prevented or at least well-managed by changes in dietary practices based on flrrrent knowledge. The gastrointestinalroute is preferred,although aspiration and bacterialovergrowthare concerns.FeedingProceduresthat minimize aspirationincludethe useof a continuousmethodof feedingrather than largebolusfeedings,nrbe placementin the duodenumrather than the stomach,the useof small-borenasogastricfeedingnrbes,chestelevation to at least45 degrees,frequentevaluationfor gastricresiduals,and endotrachealtube cuff infation (seeChapter20). with HSCT may perassociated Nutrition impactstj/mptoms sist; individuals receiving outpatient marrow transplantation requirefrequentassessment and interventionby an RD. Once a solution is prescribed and initiated, minor to major adjustrnents for proper fluid and electrolyte balance may be necessary depending on the stability of the patient. cooked. Atallah AN et al: Calcium supplementationduring pregnanryfor preventinghlpertensivedisordersand relatedproblems, Cochrane Database SystRn, (l):CD001059, 2002. Not all casesprovide the anticipated outcome; and deaths, severe infections, cellulitis, and hemorrhage have been noted to occur. Since dairy foods are a rich source of calcium, researchersdocumented a similar inverse relationship between increased dairy food intake and decreasedincidence of periodontal disease(N-Zaht ani, 2006). In terms of prevention, these types of activities have been underused. This may be for the specific purpose of providing for childbearing and lactation. Individualized nutrition a$essment,intervention, and monitoring of patients must be coupled with their changrngpulmonary satus over the courseof their lifetimes. The greater the choices, the more people tend to overeat. Asami DK et al: Comparison of the total phenolic and ascorbic acid content of freeze-dried and air-dried marionberry strawberry and corn grown using conventional, organic, and sustainable agricultural prrctices, J Agric Food Cbem 5l:1237, 2003. sluarled ur sa8ualleqo rerp JoJIepour ro lereueC :1ele g delere;1 pezrlenprrpur aql :tarpleuos-rad ' 0002' 80t:62 loprunaqtrf, punrs 'surotdurdser8p.{ruorqgsetel elle rerp uu8en :lEta uaunre?)) '0002 'uorltrtpord -rolerpaur 'stlttl l:oleruuegur L .qnN uIJ f urg pue sprredrre; perernresuMlodl:erarq :p re f1g seruef 't007.'rt Ll l1l0%naq[uIJ saypo.t'd$ag'seruorpufs PelBIerpue erSledurorqg ur eurrrpeu ealt?urell€pue l:etuaureldo3 :OT UETTPIoH '0007'L€gtglpwrunaqa eltuean(rlrra uerPllqr uI sluePrxonu? r =F iJ,Y EE XF & N : E x o 1 : U E E AE E xB +9e I -:bo ;=3 I g' 'a -I t' a o !2 o o @ o o ok 9o, d-r 3'* qA -! RV oiE op I &E OG JI RT s.x \.F tl RH .X {s SQ .s= sR E.E $: s;' TE ix xe- tt r :n 6-9 ro Eoa .=X E,F xa dd - t E rc o - d gi \r \ APPENDIXES 1243 o 9.1 ,o? r Who recommendedthe supplement(e.g.,media, physician,nurse, dietitian, alternative medicine practitioner, friend, family)? in brain and nervous system, compounds having, I l09b antioxidant capacity global tests of,428t measurement of, Raman spectroscopy in, 428b antioxidants as carcinogen inhibitors, 962 as oxidative stressmarkers, 427,427t definition,39,959 for rheumatoid arthritis, 1055 in anticancer therapy, 97 3 in medical nutrition therapy for cardiovasculardisease,858 in osteoarthritis management, 1049 intake, increasing, for psychiatric conditions, I 109 requirements for, in athletes, 598 research, centers for, 474t supplemental, eFficacyof, reviews of, 478t vitamin E as,79 antioxidant status in oxidative stress assessment, 426-427 antiparkinson agents, anticholinergic effects, 443b antipsychotics anticholinergic effects, 443b increasing appettte, 447 b antiretroviral medications, for HfV disease, nutritional complications, 1002-1005t antiretroviral therapy (ART) definition, 991 in HIV disease,999, 1001 antispasmodics, gastrointestinal (anticholinergic effects), 443b antithyrnocyte globulin after liver transplantation, 726t cr1-antitr'?sin defrciency, 7 17 antituberculosis drugs, nutrient metabolism, 419-440 antivertigo agents, anticholinergic effects,,143b antiviral agents, diarrheal effects, 445b anriery disorder, generalized (nutrition), 11l 2t anxiety disorders, nutrition, I 110t aphasia,definition, 1067 a p l a s t i c a n e m i a ,8 1 8 - 8 1 9 definition, 810 apolipoprotein A-I! body weight regulation, 537t apolipoproteins definition,833 functions,839 appeure changes in, drugs causing, 444-445, 446b, 447b in Prader-Willi s1'ndrome,1181 loss of, in cancer,972 appropriate for gestational age (AGA), 1118 d e f i n i t i o n ,l l 1 7 apraxia, 1070 definition, 1067 in neurologic disorders, feeding issues (relationship), 1073-107 4 Apti'r.'us(tipranavir TP$, nutritional complications, 1004t arachidonic acid (ARA) definition, 199, 1042 in human milk, 203 ARE SeeAcute renal failure arginine, ergogenic aid, 604t argininemia, 1144t argininosuccinic aciduria (ASA), 1144t, 1161 definition,1141 arguments, avoiding, in facilitating behavior change, 495 arm anthropometry for adults, 1218 for children, 1217 Arnold Chiari malformation of the brain definition, ll70 in spina bihda, 118i aromatic amino acids (AAAs) definition, 707 increased, in hepatic encephalopathy, 724, 724b ART (antiretroviral therapy). The pH of a food has little therapeutic importance, except for patients with existing lesions of the mouth or the esophagus.Most foods are considerably less acidic than the normal gastric pH of 1.0 to 3.0. The pH of orange juice and grapefi:uit is 3.2 to 3.6, and the pH of commonly used soft drinks ranges from approximately 2.8 to 3.5 (Flick, 1970). More than 707" of the fuel for colonocltesis the SCFA butyrate (4C), which is actually produced more from starch than from fat. Modebe O, Ifenu SA: Growth retardationin homozygoussickle cell disease:role ofcalorie intake and possiblegender-related differences,Am J Hematol44:149,1993. Nausea, vomiting, and diarrhea are causedby the cltotoxic conditioning regimen and may later accompany antibiotic administration. The grandmother agrees, and the dietary history taken by the dietitian reveals the following: . For persons with diabetes and normal renal function, there is insufficient evidence to suggest that usual protein intake (10% to 207o of energy) should be modified (ADA, 2007). andTheirMetabolism5l t I fne Nutrients CHAPTER Fat Content of Some Common Foods og 7to1OB Most fruits and vegetables Nonfat milk Nonfat yogurt Plain pastaand rice Angel food cake Popcorn, air popped, unbuttered Soft drinks Jam or jelly Cheese,cheddaqI oz Milk, whole, 1 cup Bologna,beef, I slice Sausage,I p"tty Steak,sirloin, broiled, 3 oz Potatoes,French fried, 10 Chow mein, chicken, I cup Chocolate candybar, I oz Corn chips, I oz Doughnut, cake type, plain, I Mayonnaise, I tbsp 1to3g Popcorn, oil popped, unbuftered, 1 cup Low-calorie saladdressing,I tbsp Bakedbeans,% cup Soup, chicken noodle, canned, I cup Whole wheat bread, 1 slice Dinner roll, I Waffle,frozen,4 inch, I Coleslaw,% cup Flounder or sole,baked,3 oz Chicken, without skin, baked or roasted, 3 oz Tuna, cannedin water, 3 oz Cheese,cottage, 27" fat, Vzcup Ice milk, soft serve, % cup 4to6g Low-fat yogurt, 1 cup Cheese,mozarella,part skim, I oz Chicken, baked or roastedwith skin, 3 oz Egg, scrambled,I Tirrkey, roasted, 3 oz Granola, 1 oz Muffin, bran, I small Pizza.cheese.t/cof 12 inch Burrito, bean, I Brownie, with nuts, 1 small Margarine or butter, 1 tsp Popcorn,oil popped,buttered, I cup French dressing,regulaq I tbsp Unlike carbohydrates, lipids are not poll'rners; they are small molecules extracted from animal and plant tissues. Lawton C: Radiation therapy for bone marrow or stem cell transplantation. fu with most pulmonarydiseases, body compositionfuctuation is the hallmark nutrition assessment indicator for personswith RE Most patients become severelyunderweight. f{ause4affiminal painandfeelingof fullness . ...9. Table 35-2 highlights some components of nutrition assessment.Periodic updated practice guidelines are available online from the Cystic Fi- brosis Foundation and should be consulted for the latest information. of solutes.(The water moves into the teabag.) Diffusion and Osmosis can occur at the same time. Seealso Older adulthood advance directives definition, 454 nurloon care and, 467 -468 support and,525 adverse food reaction coping with, strategies for, 758b definition, 739 development of, risk factors for,744-745 o l a g n o s r so r , / L t 6 - / J / CAP-FEIA blood test in, 748, 7 50, 7 50t food and s)./rnptomdiary in, 7+8, 7+9f food challenge Ln,7 51, 7 53 t o o d e l r m r n a u o n d i e t i n , 7 5 0 - 75 1 , 7 5 2 t radioallergosorbent test in, 748, 7 50t skin tests in, 7 50,7 50t, 7 5lf u n r e l i a b l e t e s t si n , 7 5 1 t immune system and, 740-741 immunologic basis of, 740-742 in infancy, 759-760 management, nutritional risk, 759t natural history of, 759 prevention, diet and, 760-761 syrnpromso\ /+J- /++ treatment of, 7 53, 7 54-757b, 7 57, 7 58b, 7 59b advertising, to adolescents,2 56-257 aerobic metabolism, 588-589 definition, 587 aerophagia, definition, 673 aerophagia, gaLsfrom, 674 afifirming, in not-ready-to-change counseling sessions,499 affirms, definition, 489 After-School Snack Program, 32lt AGA (appropriate for gestarional age), definition,1117 age cardiovasculardiseaseand, 85 1-852 gestational, definition, 1117 g1'necologic definition, 246 of pregnant adolescents, nutritional needs and,262 resting energy expenditure and, 25 ageism, 286, 288-289 Agenerase (amprenavir), nuuitional complications, 1004t agerasia,29l definition, 286 age-related macular degeneration (Alv[D), 294 definition, 286 age-related osteoporosis, 62 7 definition, 614 a8eusla definition, 383,959 in nutrition assessment,395 aggressive refeeding, in anorexia nervosa, 578 aglng cardiovascular structure/function, 887b nutrition in, 286-308 theories, 290,29Lt agnosla definition, 1067 in Alzheimer's disease,1082 agnosis, definition, 1067 agreeing with a twist, in modi$'ing resisrance behavior, 503 AI (adequate intake), definition, 337 AIDS dementia, 1006 definition, 991 AIDS enteropathy, definition, 991 air-displacement plethysmography, 2+, 25, 25f in body composition analysis, 405 ALA (ctJipoic acid). Patients with emphysema are thin and often cachectic. firs.usda.govleatsmartplayhardkids/ of Agriculture U.S.Department www.usda.gov Ethnic andCultural FoodGuides www.nal.usd a.gov/fnic/etextl00002Lhtrnl*Fxtocid2 3818I 8 FoodandDrugAdministration, Centerfor FoodSafetyandAppliedNutrition www.cfsan.fda.gov FoodandNutrition Information Center, National Agricultural Library, USDA www.nal.usda. PFSAPtakeson issuesdealingwith food production, processing,storage, and distribution. A study investigated the effects of aging on the mechanisms of body energ'y regu.lation in an attempt to determine the causesof unexplained weight loss in older persons (Roberts et al., 1994). GrahamRE et al: Use of complementaryand alternativemedical therapiesamongracial and ethnic minority adults:resultsfrom the 2002 National Health Interview Suney, J Natl Med Assoc 97(4):535 , 2005. Growth should be evaluated and compared with that of other infants of the same postconceptional age (seeChapter 43). Excessive amounts of exogenous th1'roid hormone can promote loss of bone mass over time. 642 PART4 Nutritionfor Heatthand Fitness P la q u eF o r m a t i o n Plaque is a sticly, colorless mass of microorganisms and polysaccharides that forms around the tooth and adheres to teeth and gums. Fermentable carbohydrates are found in four of the six MyPyramid food groups: (l) grains, (2) fruits, (3) dairy products, and (4) added sugars in the category of fats and sweets.Although some vegetablesmay contain fermentable carbohydrates,little has been reported about the cariogeniciry or caries-promoting properties of vegetables.Examples of grains and starches that are cariogenic by nature of their fermentable carbohydrate composition, which can FactorsAffecting Food Cariogenicity Frequenry of consumption of fermentable carbohydrates Food form (e.g., liquid, solid, slowly dissolving) Sequenceofeating foods and beverages Combination of foods Nutrient composition of foods and beverages Duration ofexposure ofteeth to foods and beverages cause a decreasein salivary pH to less than 5.5, include crackers,chips, pretzels,hot and cold cereals,and breads. H I |J ti1 a. Currently only sibutramine (Meridia) and orlistat are approved by the Food and Drug Administration (FDA) for long-term use in the treatment of obesity. 484 PART3 Nutrition Care Process The Food and Drug Administration has published tips for the dietary supplement user in making informed choices regarding which supplementsto consider taking. To ensure a readily available supply, all cells (primarily the liver and muscles) store carbohydrate in the easily mobilized glycogen polymer (Figure 3-4). Mineral intake should meet the gender and age recommendations according to the DR[. maintain r Concern about excessive supplementationof calcium and vitamin D hasarisenbecauseof increasing recognition of arterial calcification in older individuals and in patientswith or at risk of osteoporoticfractures but this is not the usualsituation. Because symptoms are slow to manifest themselves and the growth of the tumor is rapid, carcinoma of the stomach is frequendy overlooked until it is too late for a cure. Institute of Medicine: Diaoy rdrence inukes: wattx,potassium, sodiamcblorideanl sulfate,ed l, Washington, DC, 2004, National AcademiesPress. Tobacco smoking overwhelmingly is the most iirporant causative factor, although environmental air pollution (including cooking in confined, unventilated space)and genetic susceptibility are other etiologic possibilities. Intake ofprotein in this range does not appear to be associated with the development of diabetic nephropathy; however, the long-term effects of consuming more than 20"/oof energy as protein on the development of nephropathy has not been adequately studied. If the child is not growing adequatelyor the adult is not mainaining weight or body composition, use the following stepsto estimatethe TEE. J Am Diet Assoc104:1651, 2004. The inverse relationship between decreasedcalcium intake and increased risk of periodontal diseasehas also been demonstrated (Ir{ishida, 2000). A wasting diseaseor malabsorptionrequires treatrnent. Ambivalence (desireversusshould) . Becausetooth decay remains a cofirmon oral diseaseof childhood, caries are a primary marker for children's oral health. 9f8 PART 5 : Medical Nutrition Therapy TueERcuLosrs Pathophysiology (TB) is a bacterialdiseasecausedby mycobacteTuberculosis ria, specificallyMycobaxeriumtuberruhsis, M. RoshanKeab O2L-6695O639 FattyAcids Fatty acids are rarely free in nature and almost always are linked to other molecules by their hydrophiliccarboxylic acid head group (seeFigure 3-5, 1). Many systems maintain homeostatic control of blood pressure. What do you think of Rick's nutrient supplemenation program? com Supplementwatch: www.supplementwatch.com United StatesPharmacopoeia:v'\41v.usp.org Blumenthal M, editor: Tlte ABC clinicalguide to herbs,Silver Springs,Md, 2003,American BotanicalCouncil. The form of carbohydrate is a key factor to patient acceptance and tolerance. trettftnentof disease, Engelking C: Diarrhea.In Yarbro CH et al, editors:Cancer ed 3, Sudbury Mass,2004,Jonesand sympt\mmanagement, Bartlett. VasanRS et al: Residuallifetime risk for developinghlpertension in middle-agedwomen and men: the FraminghamHeart Sndy,JAMA 287:1003,2002. American Dietetic Association: Evidence-analysis library wrlrw. PrenticeAM: AII caloriesare not eqtal, Internationaldialogueon carbohyd.rates 5(4):1, 1995. Purpose Laboratory-based nutritional testing, used to estimate nutrient availability in biologic fluids and tissues, is critical for assessmentof both clinical and subclinical nutrient defciencies. On postoperativeday 1, Thomas' abdomenwas firm and dis- excretion was2l g/day. High-Energ Dyi e t sf o r W e i g hG t ain A careful history before planning a dietary program may revealinadequacies in dietaryhabitsand nutritional intakes. Factors that affect the cariogenicity of substratesare listed in Box 25-1. Hormone Growth and Insulin-Like GrowthFactors Ti'eatrnentwith humangrowth hormonemay improve bone through its anabolic effects(Rosenand Bilezekian,2001). The broad issuesin today's community continue to be the same as in the past, but the scope of practice has expanded with the needs of a rapidly changing community that communicates in new and faster ways. When protected from lipid peroxidation, omega-3 fatty acids have shown antiinflammatory properties and have been shown to be protective against mucosal injury evoked from drugs and H. SpornyLA, Contento IR: Stagesof changein dietary fat reduction:socialpsychologicalcorrelates,J Nutr Educ27:191, t995. Seealso Food-drug rnteracuons for gastrointestinal disorders, 668t in anorexia-cachexia syndrome management, 98t-982,982t) in cardiovasculardiseasemanagement, 859, 860t in diabetes management, 7 8I-784, 7 82-7 83t in end-stagerenal disease,942t i n o b e s i t ym a n a g e m e n t ,5 5 0 - 5 5 1 ,5 5 l t interactions, with enteral nuffition, 4J7 meeting LDL-cholesterol goals, 843t nutritional risk factors, 387t promoting osteoporosis,628t, 630 selected, nutritional implications, I2+2-1247 taste sense and, 441-442, 442b therapy, food effects, +36-439 unbound fiaction, 434 with gastrointestinal effects, +42 -443, 444b, 445b DRVs (daily reference values), 347t definition, 3 37 DS. Whether this reducedintake must be maintainedindefinitely is not known. 69 !t r-Y l\J >rl -tl ,.i tZ 1& ,4vi I I rE 'x r< ,x ie .ir a r1 A iI a o d g : F:4s .! a = +E8 E E H,g+ F = d>d APPENDIXES 1249 L25O APPENDIXES The DASH diet is an eating pattern that reduces high blood pressure. Floss turice daily. GeleijnseJM et al: Blood pressureresponseto fish oil analysisof randomizedtrials, supplementation:meta-regression J Hypmms20:1493,2002. Each drink contains =15 g alcohol. The pulmonary system grows and matures during gestation and childhood. Figure l3-1 depicts DNA as the source of encoded information critical for operating the myriad of cells in the body and shows how the major components involved in decoding this information are interrelated. Topical fluorides may be administeredin the dental of6ce. Becausedifficulty in swallowing(dysphagia)is often the result of a neurologic in Chapter41. Ready and open accessto such information is critical if the benefits of presymptomatic testing are to be realized. When weight is reduced as a result of trauma, illness,starvation,or changesin diet and exercise,fat cell size decreases;fat cell number does not. Physical activity coeffrcient 6. Corticosteroidsare associatedwith acceleratedprotein catabolism,hyperlipidemia,sodium retention, weight gain, glucose intolerance, and inhibition of normal calcium, 930 PART5 MedicalNutritionTherapy End-StageRenalDisease . 577-581 for end-stagerenal disease,914-945 blood valuesand,936-939t calcium in,940-943 energyin, 940 enteraltube feedingin, 9114 fluid balancein, 934-935 iron in, 943 kineticmodelingin, 940 lipids in, 944 parenteralnutrition, 945 phosphorusin,94l-943 potassiumin,935,940 protein in, 940 sodiumbalance , 934-935 vitamin D in,941-941 vitamins in,943-944 for epilepsy,1088-1089 for esophagitis,658-659 for fastinghypoglycemiain cirrhosis,725 for fat malabsorption, in cirrhosis,725 for fatty acid oxidationdisorders,I 164 for fibromyalgia,1060-1061 for fistularepair,701 for folic acid deficiency anemia,827 for food allergylintolerance,739-763 for neurouauma,1097 for galactosemi a, | | 62- | | 63, | | 63t for gastricsurgery 666 for gastritis,661 for gastroesophageal refluxdisease, 658-659 for gastrointestinalstricturesand obstructions, 680-68I for gastroparesis in diabetes, 801-802 for geneticmetabolicdisorders,nurritionist involvement,1165-1166b for glycogenstoragedisease, 1164 medicalnutrition therapy(MNT) (Continued) for gout,1057-1059, 1058b for Guillain-Barr6syrdrome, 1091 for headinjury 1033 for heartfailure,884-895 for hemochromatosis, 818 for hepaticencephalopathy, 724-725 for hiatal hernia,659 for HfV disease, 1010-1013 for hl?ertension,865-883 for hyponatremia,723 for ileal pouch after colectomy,702 for ileostomyor colostomy,701-702 for inflammatoryboweldiseases, 692-695 for intestinalgaslflatulence,675 for irritable bowel qmdrome,696 for lactoseintolerance,689 for majorburns,1034-1037 for metabolicdisorders,goals,ll42 for migraiheheadache,1092 for multiple organ dysfunctions1'ndrome, r026-1032 for multiple sclerosis,1094 for myasthenia gravis,1092-1093 for nephritic syrrdrome,923 for nephrolithiasis,948-949 for nephroticq'ndrome, 924 for neurologicdisorders,1072 for oral cavitycancer,660 for osteoarthritis, 1049-1050 for pancreatitis, 732-735 for Parkinson'sdisease,1085 for perniciousanemia,823 for portal h;.pertension,723 for pre-oraDeres, / / z- / / 5 for pulmonarydisease,903 for renal disease, 928-929 for renal transplantation,929-93| for respiratoryfallrure,916-917 for rheumatoidarthritis,1052-1056 for scleroderma, 1059 for sicklecell anemia,830 for small-bowelresections,699-700 for spinaltrauma,1097-1098 for steatorrhea,679 -680 for stroke,1081 for surgery1037-1038 for systemicinflammatoryresponse qmdrome, 1026-1032 for systemiclupus erythematosus, 1060 for tropical sprue,686-687 for tuberculosis,918 for ulcers,664-665 for upper gastrointestinaltract disorders,654672 for urearycle disorders,1161 for Wernicke-Korsakoffsyrrdrome,1079 nutrition careprocessand,455-459 of phenylketonuria, in adults,1157 posttransplant, 895-896,896t pretransplant,895 medicalnutrition therapy(NT), benefitsunder Medicare,301 Medicarebenefits,for older adults,301 medicationhistory in nutrition assessmenq 395 medication-induceddiarrhea,677 medicationnutrition therapy(MNT), of bulimia nervosa,580-581 medications.SeeDmg(s) asnutritional risk factors,387t 1334 Index Mediterranean diet, 349, 349f, 3 50b medium-chain acyl-CoA dehydrogenase (MCAD) deficienry, rl47t, 1164 definition,1141 medium-chain triglycerides (MCTs), 57 definition, 41, 673 for steatorrhea,680 medullary rystic disease, 927 megaloblastic anemia, definition, 810 megaloblastic anemias, 819 -827 pernicious anemia as, 819-823. Institute of Medicine (IOM), National Academy of Sciences (l{AS): Dietary referenceintakes: applications in dietary assessanent, Washington, DC, 2000, National AcademiesPress. There are two aspectsto effective listening: nonverbal and verbal. Blood pressuremay also increasemore in personswith diabetesthan in those who do not have diabetes,and exerciseshould nor be undertaken if qystolic blood pressureis greater than 180 to 200 mm Hg. Exer cise Pr escr iption The ADA recommends that a sraded exercisetest with electrocardiogram should serious$ be consideredbefore undertaking aerobic physical activity with intensity exceeding the 0rigin 78L of Nondiabetic CHAPTER 30 |

MedicalNutritionTherapy MellitusandHypoglycemia for Diabetes demandsof everydayliving (more intensethan brisk walking) in previouslysedentaryindividualswith diabeteswhose l0-year risk of a coronary is likely to be high (ADA, 2006b).However, there is no evidencethat such testing is routinely necessaryfor those planning moderatelyintense activity suchaswalking. The DV for vitamin C is 90 mg. Clients often only understand 59% of what they are told, and not surprisingly this percentage is lower for native Spanish-speaking clients (Ulrey and Amason, 2001). The practical guide provides tools for the clinician to manage overweight and obese adults 0.t:rHandNAASO,2000). aoll^'s IsuoRurry :ielP Furrv0 . Corn is the carbohydrate staple of the American Indian diet, in addition to protein-rich dried beans. Energy needs vary widely from individual to individual and even in the same individual because of the differences in the energy required for the different types of activity. Updated by Peter L. The underweight person frequently must be encouraged to eat, evenif not hungry. Lingual caries, or caries on the lingual side (surface next to or toward the tongue) of the anterior teeth, are seen in persons with bulimia or anorexia-bulimia (see Chapter 22). NonHispanic blacks are also more likely to have hypertension and stroke than non-Hispanic whites. FEMA, under the DHS, provides emergency support functions after a disaster or emergency. LambergAllardtCJE et al: Vitamin D deficiencyand bone health in healthyadults in Finland: Could this be a concern in other parts of Europe?] BoneMner Res16:2066,2001. Most pumps have a complete delivery system available, including bags and tubing compatible with proper pump operation. 494 PART 1 NutritionCareProcess Stageof Change Precontemplation: This is the point at which the patient has not even contemplated having a problem or needing to make a change.A person in the precontemplationstageneedsinformation and feedback to raise his or her awareness of the problem and possibility of change.Nutrition advicefor eating changes is counterproductive at this point. 360 PART2 i Nutrition in the Life Cycle Of the millions of Americans who profess to be vegetarians, many eliminate "red" meats but eat fish, poultry, and dairy products. Management Any underlyingcauseof underweight should be dealtwith asa first priority. Client: I feel totally worthless. Ilyo BA et al: The relationshipbetweenhealthful eatingpractices and dentalcaries in children aged2-5 yearsin the United States,1988-1994. ...

such as a living will regarding the patient's wishes for nutrition support, is in the medical record and whether counseling and support resources for legal and ethical aspectsof patient care are available to the patient and his or her significant others. Consequently cultural factors may be neglected in dietary assessment and interventions. Frequent intake of fermentable carbohydrates, combined with repeated episodes of induced vomiting of acidic stomach contents, results in a constant influx ofacid into the oral cavity. The first observation led to the hlpothesis that parenteral nutrition ("bowel rest") versus enteral nutrition, particularly during acute and critical illness, causes a breakdown of the gastrointestinal mucosal barrier and increases its permeability to bacteria and endotoxins, in turn contributing to sepsisslmdrome and multiple organ dysfunction qmdrome (Deitch, 1992) (see Chapter 39). .5002'ZtLlptaxunaqy 0002, 6ttl Mnaq[stilrquV 'aaur1 uldg *rn3'seseesrprrerteruuorJrroJ srotreJ4srrf:eterq)H lor{3 drq eqr;o surJr.ltJeoetso pue Jo lueure8eueruIecrpeu ' :l8ololeruneqy3o e3e1o3 u?rrreur\y' I00Z't0ZI :0stusqoqwary,s.reprosrp eqt roJ suonepuaruruoced '5002'96Z:(9)6 pet?lerstl pue uaa.t{teq 8.mgpayl uatn3f ,sarde:erip lno8 uon?rcosse cneuaS elqeqord 'dV sr-"ep pue lnoS IerlrurqJo sarntueJIErrurT]:lEta IS ueq3 D-d\IJ-rrw Jo sesncr8ololerrrrep Jo stJeJJa Ieq?lIJO :gfl raqols .9002,tg9I:(t .L66l .l6tt0t runaq[sturquv ,sa:f,'atvtrs Z56)L9tptual :srso.ralcs tueuueeJlue^up-srserftoddq ltdereqrSnrp SulrotruoruJoJsaurlaprnS erp uo tueruruoJ cruretsd5:le te J salfiqO 't002 'Zt unN ullJ -tng 'ausotpuf,ss,ue.r8o[g :etsxeJlorpauqtr,y\PeleeJlslueEudsnrJrpJBproleunorlJur Lrepuoces LS f pue l-reurrrdqtr,4a ueruo.r ur e{plur tuarJtnN :p ra ygf >1eurra3 '15 ue8rory'gg uocrely uonetuerueldns elBIoJro; seur1eprnC ' ' ' S002' S:l S &,!lWW' 200Z'selelspetrull-snrrr{tre t00Z lt tZ tul lo1uru.naq['snrrqtreprotBrunerlrgtln sruenedur pasou8erp-rotcop;otcedrurpu? .1 part per million (ppm) : 1 mgll-. (CourteryDaniel V Schidlma,MD, Pediatic Puhnunaryand Cyxic FibrosisCenter,St. Christopher\HospitalforChildren,Philadelpbia,Pa) 914 PART5 : MedicalNutritionTherapy Estimationof Daily Energy Requirementin CysticFibrosis o estimate a caloric prescription, you need the following data: 1. Some clients blame other people for their problems (e.g., a wife may blame her husband for her inability to follow a diet). History and physical eraminarion reveal severe dyspnea on exertion, including showering, carrying packages,making bed, and pushing a vacuum cleaner; orthopnea (two or tlree pillows); and decreased breath sounds. Differentiation berween the effects of advancedage and malnutrition in older adults has received research attention, as is the influence that nutrition support has on the quality of life among long-term-care residents (SomogyiZaltd et al., 2002). The most commonpresentation nism, a major control of blood pressure.Decreasedblood follows a streptococcalinfection and is usually,althoughnot volume causescells of the glomerulus(the juxtaglomeru- always,self-limiting. It forms a complex with calcium in urine; thus lesscalcium is availableto bind urinary oxalate,which helps prevent the formation of calcium oxalate or calcium phosphatestones.Distal RTA, acidosisaccompanied by hlpokalemia, malabsorption slmdrome with enteric hlperoxaluria, and excessivemeat intake (acid ash) are associated with decreasedurinary citrate levels (Morton et al., 2002). Citrate Citrate is a urinary stone inhibitor. Pulmonary complications include acute and chronic bronchitis, bronchiectasis,pneumonia, atelectasis,and peribronchial and parenchymalscarring. trE E 6'- a bo - E E X = E.g qxi_= trg Z H cE d ESa O(JA G e 2- E o H L G 6 6 q T UO N 6 -. However, heavy alcohol consumption may be accompanied by poor dietary intake and cigarette smoking, which may be contributing factors. fu a cavity develops, the plaque shields the tooth, to some extent, from the bufferinq and remineralization action of the saliva. She has alwayschewed sugar gum but since quitting smoking has increased her gum chewing and reports chewing three jumbo packs (18 sticks per pack) of cinnamon-flavored sugar gum daily. Biochemisny Holliday R. Peptic ulcer refers to an ulcer that occurs as a result of the breakdown of these normal defense and repair mechanisms. They are usually used for early postoperative enteral nutrition in combination with gastric decompression.The small lumen size of the needle-catheterjejunostomy can be problematic becauseit is easily dislodged and not all formulas flow readily through it. Use of this efit (Ir{achtigalet al., 2005). The pathology in this acute and severenutritional deficienry is restricted to the CNS. Each of these options is described in the following paragraphs. The American Dietetic fusociation provides educational handouts focused on both nutrient and botanical supplements Guide to with the revised edition of The Heahh Professional's Dietary Supplements(2007). St. Louis,2005, M^4.) l{ephriticSyndrome Pathophysiology Nephritic syndrome incorporatesthe clinicalmanifestations by inbammationof the characterized of a group of diseases presentin smallamounts.If thesenormalwasteproductsare alsocalled capillaryloopsof the glomerulus.Thesediseases, not eliminatedappropriately,they collectin abnormalquanaresuddenin onset;lasta short acuteglomerulonephritides, tities in the blood, a condition known as azotemia.The time; andproceedto either completerecovery development ability of the kidney to adequatelyeliminate nitrogenous of chronicnephroticqtndrome,or ESRD. Fructose (also known as leauloseandfruit sugar)is the sweetestof all monosaccharides (Table 3-1). The galacturonic acid structure of pectin absorbs water and forms a gel; thus it is widely used for making jams and jellies. cancer.gov/cancertopics/typesflun g NationalInstituteof Diabetes andDigestive and KidneyDiseases-Cystic Fibrosis Research www.niddk.nih.gov N utriti o n D iag n osis: Food-medication interaction related to low potassium inake while on diuretic as evidencedbv latest senrm poussium 1. 7. Additional Resources:Along with the referencescited in this chapter, seeAmerican Dietetic AssociationMedia ReleaseSeptember 12,2005: Disastercnnd Frnergencies:Are YouPrepared?ADA Position Paper Food and Water Safety ( ). MattsonJS, Cerutis DR: Diabetesmellitus: a reviewof the literature and dentalimplications, Compenil ContinEdac Dentistry22):757,2001. Catheters are most commonly inserted into the subclavian vein and advanced until the catheter tip is in the superior vena cava,using strict aseptic technique. Sodium is restricted,dependingon the level of urinary excretion.In the oliguric phasewhen the sodium output is very low, an attempt is made to keep intake low as well, perhapsaslow as20 to 40 mEq/day.However,limiting sodium is often impossiblebecauseof the requirement for manyfV solutions(includingfV antibiotics,medicationsfor blood pressure,and TPI.D. The administrationof thesesolutions in electrolyte-freewater in the face of oliguria quickly leadsto water intoxication (hyponatremia).For this reason,all fluid abovethe daily calculatedwater losshould be given in a balancedsalt solution. The primary source of systemic fluoride is fluoridated water; food and beverages supply a smaller amount. Patient's or family's ability to handle the financial commlffnent 4. Slips and relapsesare normal, expectedoccurrencesas a person seeksto change any long-standing panern of behavior. Whereastotal cholesterolwaspreviouslyrecommendedas a screeningtool, AIP-III now recommendsa complete Iipoproteinprofile for screening. Fluoridation is "the adjustment of fluoride in the water supply to an optimal concentration of 0.7 to 1.2 ppm" (Palmer and Wolfe, 2005). DASH can be an excellent way to lose weight. Stressreduction . This means that one normal individual in 20 would have a value below or above the reference range. To facilitate obtaining information, health care providers should approach patients in an open, nonjudgmental manner. Beckwith-Wiedemann s1'ndrome is characterized by organ overgrowth, including an oversized tongue, which leads to feeding difficulties and for many infants hypoglycemia. Factors that increase glomerular pressure tend to acceleratethis process,whereas factors that decrease glomerular pressure tend to alleviate it. Rabinovitch R et al: Impact of nutrition support on treatment outcome in patients with locally advanced head and neck squamous cell cancer treated with definitive radiotherapy: a secondary analysis of RTOG trial 90-03, Head Neck Zgtigl , 2006. It is crucial to remember that energy balance and nitrogen balance are intertwined. Continued 1044 PART5 i MedicalNutritionTherapy for Rheumatic Diseases-cont'd 0verview of MedicalNutritionTherapy Disease Medical Nutrition Therapy Gout Weight management;purinecontrolled diet; adequatefluid consumption; 40% complex carbs, 30"/" fat (mosdy unsaturated),30% protein with moderate calorie restriction; restrict or eliminate alcohol Tailor diet to individual needs; caloriesto promote IBW; restriction ofprotein, fluid, and sodium if renal involvement; possiblegluten intolerance Adequate fluid; high-energy protein supplementsas needed;moist foods; modifications for GERD if needed Increasein sodium and fluid if hlpotension present;vegan diet Lupus Scleroderma Fibromyalgia/ chronic fatigue SjlJEqesn Jrorp paJEJt uele eABqauos :E941 erurs uon -eturuBgur pur ured ro; dpauar Furcryeur E sE punore ueeq aneq '1req .ry\olll.{\uror; pa^uop pue urrrdsr ur se ,seleldcrp5 'stelaJtJqraddoc pue esEJerp ur sB,eulcrperu IJEq,4aollr.4aJo uI slooJ Jratp elcrl serparueJ((lBJnlEu,,ll8utueas aurog ' GOOZ'UlV),,fllecgrluarcs parpnts lou esoql JoJ uoDnEc sesl^pe puB a^rpaJJs puB a;es ua,rord ,{lecgnuarcs sardereql esoqr Jo uoDerSalur eqr sr.loddns,,l5oloteruanaqu a8e11o3 uBJrroury eql Jo 'tuaure,tordurr go spouad dq pe-,no11o;3urues.ro,ra. Attention to individual tolerance and food preferences will help maximize intake. Saturated fats' especially those with long chains (e.g., beef tallow), are solid at room temperature; but a fat such as coconut oil, which is also highly saturated, is semiliquid at room temperature because the predominant faffy acids are short (8 to 14 carbons). J Am DietAssor103:S50, Go VL et al: Diet, nutrition, and cancerprevention:the 2001. SeeAdverse food reaction care managementalgorithrn,T4Tf definition, 739 in childhood, 238 pathophysiology,747f food and nutrient intake data, on nutrition status ofAmericans, 339-340 food and q'rnptom diary, definition, 739 foodborne illness, 320, 325-329t definition, 309 food challenge definition, 739 double-blind, placebo-controlled. What indications of hlpermetabolism are evident in this patient'shistory? In addition, females with Tirrner's sprdrome have only a single X chromosome. Once the type and extent of oral manifestations are identified, a nutrition care plan can be developed. .... The intake of for anabolism,wound healvitaminsand mineralsnecessary ing, and immunity, and those with antioxidant functions may need to be increased.For example,during anabolism mineral balancemust be monitored in an anticipatorymanner to prevent the refeeding syndrome (seeChapter 20). If recovery is to occuq it generally takes place within 2 to 3 weeks of the time when the underlying insults have been corrected. Commercial companies manage nutrition support therapy alone or in combination with other home therapies and may be affiliated with acute care facilities or private subcontractors. For example,for the energy prescription some cliniciansstart with 1.2 to 1.4 X calculatedREE. One certainly was to take the woman's word seriously and allow her to drop out of the diet intervention process. Kumar NB et al: Use of complementary/integrativenutritional therapiesduring cancertreatrnent:implicationsin clinical practice,CaneerConfrol9:236,2002. Weindruch R: Will dietaryrestrictionwork in primates? BoukerKB, Hilakivi-Clarke L: Genestein: doesit preventor promote breast cancer?Enairon Heabh Perspecl108:701,2000. Which nutrients would you discusswith Maria (e.g., total fat, saturatedfat, sodium, potassium, calcium)? d*g "1J'srtrrglre rulues pue e{etul ,iruterq :lBte W pue1e81ag Jo suorleJtuaJuoJ 'eturotso;axqtl.& sluen?dauro.rpu.{s 'I00C'1wt L6 f ruaq 77r qusr8o(5ur sarpntsFuoDlrrnu pue aJIIJo lrIFnO :1era g;4 deg '866I 'lL0tt09l n8aaT qsa32'stuepxonue pu? The type of parenteral nuffirion support is determined by the clinical and nutrition status of the patient and the type of rV access(DeChicco and Steiger, 2006). infections,Cochrane for peripheralarterialocclusivedisease, al: Garlic RG et Jepson DatabnseSystRn, CD000095' 2000. "For healthy active Americans and Canadians at the reference height and weight. SeeDovn s1'ndrome DSHEA. These genes and their variants are of most interest to nutrition professionals in the era of nutritional genomics because they confer susceptibility to disease but that susceptibility can be minimized through tif' disease susceptibilities and a growing body of knorlledge that will form the basis for developing strategies for disease prevention and intervention that are specifically targeted -The to the underlying genetic mechanisms. The proteins coded for by the genes provide the metabolic machinery for the cells. References Clark M-Nl et al: Body imagetreatmentfor weight concerned smokers:a pilot study,AddictBehaa301236, 2005. What referrals might be possiblefor her 4-year-old sister and her mother? essentialtat .... suorsel eruau praqduad pue FJlueJ ut pacuauad -xa'&rartrsues pauarq8rer{(uonesuassequnu plsaqlsarEd ern]rE4 es€q 'rea arp rsur; Suruun-rpInB reelJ EaqrJolo IIDIs e 8unse88ns geqela egl Jo luerue,rour Aelunlorrut 'lurlsuoo snu6elsr{u proc purds aip Jo uonrpuoc cr8oyoqred,(ue {q1udola{ur srotdeoar auqoqe/rece ot esuodsa.re sesIEJ ruets.{seuruurur sdpoq aqr qJlq.,lrul uotrltm(JEInJSruuoJneu eqt Jo reprosrp eumururolne ue (ghl) sller6 eguaqlsefu p-roc purds pue urcrq aql Jo sJeqg e^reu Jo uorleurladurep pereureussrp dq E (SUU)slsoralcs aldlllnu pezuelcursr{r aseasrpe,,rrsserSord {deraq1uollplnNteolpa4 : gfUVa g90T JrJtBrr{JAsOuo uonEr.uroJur roJ zb r?4deqJ IsuorlrppB eas) rJel ro rqBIJ rer{tre 'ssg(u oqol IE]uo{ Jeqlo ro rorrrn} E plEJOqlcru e8ueqc &rTeuos.radJo ,erucur ,uorssardap se qcns suortctseJrueurcrrlergcdsd'suorteluserd xelduroc tsoru eql rego lluoruuor eroJaJaqrpue sartrlrlJe xelduroc lso(u Jno Jo arJnos aql aJBurEJq er{} uI saqol IEtuo{ eqJ suotsa'sspl l l l 0 su 6t s 6ulzl;eco- 1 '(€-It elq[) suorneu ro]oru ne,l.r.olro raddn raqrre Jo seDrltruJouqe pcrdftoatets Sura-res -qo dq .,{ypcruqr pernpap aq ueTo uec urelsls sno^rau erp ur uorsel e Jo uortecol ag1 'uondruralur lnoqtr,{r salJsnru ol p:oc purds eqt uro{ puetxe suoJneu eserlJ .(suornau Jotoru ra.,tof suoJneu Joloru proc purds atll ot tceuuoc .{aqr ara11 'proo purds arp ul suoneunsap rrer.p o] .{ulr aqr IF suox? Glucose must never be given before thiamin because sudden increases in brain glucose levels may precipitate qrmptoms of WKS in patients with marginal thiamin reserves. Overfeedingis to be avoided. -o -- |r;; EE xo x: '$ s U -* ra >. Sequencevariations may causemajor disruption to function and result in a diseasestate or in the minor differences that lead to physical and functional variability between individuals (Figure 13-5). Inacriviry usually coupled with excessiveTV watching or sittine in front of a computer or gamescreenmust be cliangedfor"thechild to eventually reach the long-term weight goal. Studies have monitored the effects of television watching on children, energy expenditure is lower during television watchins tlan during rest in children 8 to 12 years of age, especii'llyin obese children (Klesges et al., 1993). Variable BW 0.8-1.2 g/day or 40 mg of oxalate in urine/day) plays an important role in calcium stone formation and is observed in 10% to 50%"of recurrent stone formers. govl http ://www. Most practitioners agree that enteral nutrition presents fewer risks than parenteral nutrition and provides advantagesto the patient that parenteral nutrition does not. Harik-Khan RI et al: Body mass index and the risk of COPD, Chestl2l:370,2002. Acidic foods promote tooth erosion that increasesrisk for caries. Eating within3 hours of retiring . The ratio of protein to fat determinesthe density;thus particleswith higher levels of protein are the most dense (e.g.,HDLs havemore protein than LDLs). DrseAsEsoF THETUBULES AND INTCRSTITIUM To a great extent the functions of the kidney tubules make them susceptibleto injury. The Pathophysiohgtand CareManagnnent Algorithm, Parathyroid Hormone-Mediated Post-Menopausal Bone Osteoporosis, lists severalrisk factors and illustrates different scenarios of older or younger postrnenopausalwomen that lead to osteoporotic fractures. His weight is now 132 lb. The flesh of animals slaughtered in a humane way as outlined by Islamic law is consid ered halal (according to Islamic law). Glutamineis an amino acid that plays a pivotal role in metabolic processes;it is used by intestinal and immune cells as fuel. Lancet358:1487.2001. If large dosesof insulin are required, oral medications such as insulin sensitizers are often combined with the insulin regimen. These objectives are achieved through coordinated efforts of an interdisciplinary team (see Clinical Insight: Home Tirbe Feeding-At Its Best). Dairy products, by virtue of their calcium- and phosphorusbuffering potential, are considered to have low cariogenic potential. The discomfort may be related to organic causessuch as esophageal reflux, gastritis, or peptic ulcer, gallbladder disease,or other identifiable pathology. SPIRATION Pulmonaryaspiration,or the movementof food or fluid into the lunp, can result in pneumoniaor even death.Proper body positioning when eating is essentialfor everyone.At increasedrisk areinfants;toddlers;older adults;andpersons with oral, upper gastrointestinal,neurologic, or muscular abnormalities.Besidesliquids, foods that are most easily 904 PART5 i Medical Nutrition Therapy aspirated include those that have a round shape such as nuts, popcorn, and hot dog pieces; or chunls of inadequately chewed foods such as meat or raw vegetables. Thin women, particularly of northern European extraction, are more at risk of osteoporosis than heavier women. The role of the nutrition professional in this new era of health promotion and diseaseprevention is pivotal. fu an emerging nutrition professional you can play a role within your own family and community by helping them to prepare safeand adequatefood for an emergency. Categorizing or labeling . Perhaps we need to step back and wait for things in your life to calm down. SlindeF et al: Energy expenditurein underweightchronic obstructive pulmonary diseasepatients before and during a physiotherapyprogrnrne,Eur J Clin Nutr 60:87O,2O06. Hope exists when there are alternative approachesto a problem. Epinephrine and norepinephrine levels increase when a person is angry or afraid, resulting in the "fight-or-flight" response.Under these conditions glucose is needed ro provide extra energ'yfor crisis response.Glucocorticoids such as cortisol are steroid hormones elaboratedby the adrenalcortex in the fasting or stressedstate. Nutrients and other bioactive food components can also serve as ligands, molecules that bind to specific sequences (response elements) within a gene'sregulatory region. ua>1ods Suqeedarprleloqoa 8uu,r,o1p.rs lrlncglrp pl6pqds,{p Ilaus IeruJouJo uopJolsrpElluOS,{p atsetparredrurEtsna6sfp t1ncggrpSur4eadssa>lstuqcrqzn,qcaedsol IERues -se salJsnru rerpo ro en€uol eql Jo Juerurredurerrqyes{p tualsulelqeqr ur dllensn 'ure.rqaqt rnoq8norqrsuoxe &n[ur {rnfu! leuoxeasniltp Jo drrrep8arrrSuuo.olensuotlcunlsf p {,ro I6ap il1n xetror IBJqeJar Jo EerE Iensr Jo uorselBruo-r;Sunpsersseupu{qssauptulqlEoll,toc ,ure;qaqrSo ra]leruatrq,,rrJo Sunsrsuor saraqdsnuaq o.trt egt uoa,4\-]eq aSprrqaW unsollpc sndroc arF Jo due lcaJle .4eru lasuasrps(JaruraqzlvJo uowlseJ -rutru E sEsJmJoteql uonruSoceJ ssol slsou6u'e;sou6u Jo uoneurledurap IEJqeJaJ pue 'fqredorneup-reqdued'dqredolefruJo luaudole ep eqr pue spue18IBueJpEput ureJqeql ur sBJJI^ Jo uouelnrumJe eqt dq pezrJanereqcluaruSrmol ur (se;c1,r.) sprceluel uruqc -Fuo1 freu' lo usrTogetauaql stJaJSe rerp ,{cuarcgapeudz -ua lelruaSuorarsr E (o]v) fqdollsfpo4nalolafuouaJpp uorlElue -rJosrp.ro en€negprcnsod ou ser{puc spuoces,tr,eJ e unpr,{t sseusnopsuoJ sJeloleJtnq 'eposldeue SurrnpSururearpz(ep eq ot ;eeddedtur tuaned eqr r.lJIrl!\ur eJnteuur pezrTera -ua8 fernzresleur lped sBrrrr4.orDl ,{1raur-ro;arnzlasacuasqE sruH3J,,*"33$ 'CT 'Cd 'Cr{d 'Srureg'W EuBuelBA VCIVC i rreqt lJafold puB ureJq al{] Jo suBd IIE ulo{ lndul e^larer (suo;neu Jolour .raddn) drrls rotoru eqt uI suoJnJu aqJ 'eseasrpuetsis sno^reuJo su8rs lecrurlcelqegll -uenb tsoru eqt ere ssau{ee,\\go_su8r5 'ulerq eql Jo epISqel eqt uo punoJ eq p[nor\ rurr]qbu eqt stJelJt rErll ulBrq el{l ur uorselE oroJeroqJ'(1-lg a,rn8rg)SXO aqt ur saptsatrsod -do ot ssoJJ ureJq arlt ruo{ pue ot Sututoc stJeJt e^JaN 'uorrcurysip tuecytuFts,{lleuortrrtnu qtr^\ suoulpuoo uo srseqdrueue sepr,rordrardeqc sII{J 'sls 'a,r-reu'altsnur ol -ouSerp aqt;o ued sr urerq ro 'p.roc leutds (uorsal)tce;ep eqt Surzrlecol 'uoncurys.,(ppazlIeJolJo ,(preJ 8uq1eo,,enbrun B aleel urc ualsds sno^Jalt eLlI Jo suolsal teqr serldur srqJ 'suorsueurp eel{t otur illeuor}rury petBll -uereJJrpsr slerurrrtruul (SNl) uratsdssno^rru Ieluar eqJ sN0rs3-l 0Nv sN{urfi.qhr3r.5As sn CIAU3 N -nu etnrc ue qtl.t\ patelrosse se.ttstseuaSoqrtd eqa 'uoITIItu g'0I Jo uorrepdod srt Suourt trqredornaule.reqdrradPue JII -do;o sasec000'05 raro peuodar qtleeH rlTqnd Jo l:lsrutlg ueqnJ aqr 'eqn3 ur perrnJco se8ueqc leonqod Pu? In a hospital setting establishinga nutrition protocol increasesthe likelihood of appropriate enteral feeding, thus lelding better clinical outcomes such as decreasedduration of mechanicalventilation (Barr et al., 2004).The use of speciallyformulated pulmonary proprietary products should be reservedfor patiens fitting the specified criteria. Carnitine is a nitrogenous compound slmthesizedfrom lysine and methionine that is required for oxidation of longchain fatty acids. In Shils ME, OlsonJd ed 8, Philadelphie, l994,Let & Febiger. Some evidence suggeststhat regulation takes place on both a shortand a long-term basis. However, oxalate absorption, which is 37" to 8% of the amount in food, is affected by the amount of dietary calcium. andTheirCaregivers for 3- to l0-Year-0ldGhildren 0ral Healthand NutritionMessages Message Rationale Starchy,sticky, or sugary foods should be eaten with nonsugary foods. americaonthemove.org American Society of Bariatric Surgery wwvr.asbs.org (CDC) for Disease Centers ControlandPrevention www.cdc.gov International Association forthe Studyof Obesity w-ww.raso.org www.nhlbi.nih.govlguidelines/obesity/ob-home.htrn www.nhlbi.nih.govlguidelines/obesity/practgdc.htm The0besity NAAS0, Society www.naaso.org Shape UpAmerica! wwwshapeup.org/ WeightControlNetworlls -sR srstq aqt uo ssetueuoq saJns€erufrlauolrsuap auog rueJeJJrp I?JeAasle ,(lsnoauellnurs rnJJo ,(lpcrdfr qJlqrr Jo 'uondroser put uonBruJoJ qtoq lq palecqdruoc sr flrsuag l p r a u t rauu o gp u p t u a l u o 3 a u 0 gl 0 l u a u a r n s p a w senl?^ poolq $r;o uonete.rdJetur eJoJeJeqtlxrrteur euoq lEJautw ;o uond:osar eqr Sur,trolloJpeseelal osle sr ta4nru uoneru -roJ euoq E peraprsuor 'urclecoelsg '(aVUf) esereqdsoqd prr? 1999. According to a recent FDA statement there is insuffrcient evidence to support any of the proposed health claims of chromium supplementation. Why are you taking thesedietary supplement(s)? GullestadL et al: Reviewof trials in chronic heart failure Am J showingbroad-spectrumanti-inflammatoryapproaches, 17C, 2005. Carotene givesit a slight yellow color. Personsat highestrisk (Box 33-2) shouldbe suongly encouragedto adopthealthierlifestyles. The four componens of effective management are: (l) assessand monitor disease; (2) reduce risk facrors; (3) manage stable COPD; and (4) manage exacerbations. Clinical studies appear to corroborate the experimental models and demonstrlte a role for protein restriction in the management of patiens with mild-to-moderate renal insufficiency for the purpose of preserving renal function (Giordano, 1981; Remuzzi and Bertani, 1998). ThngalosEG: Congestiae beartfailare: nurrition ,nonogentent fu oldr aduhs,Washington,DC, 2002,Nutrition Screening Initiative (NSI). 178 PART2 , Nutritionin the Life Cycle Ca l c i u m Intal\v Pa ^. The effects of protein on regulation of energy intake, satiety, and long-term weight loss have not been adequatelvstudied. For example, BMD of the lumbar vertebrae may be increasedby as much as l5o/o after I year of treatment, and total body BMD may be increased by 57" to 10%. Final weight goals should be individualized and chosen realistically, with reduction of body fat as the focus. For example, reference ranges based on gender, Lge, ra'ce,and so fonh, can be developed. orglonline_resources. You can follow other image posters. "Tell me why you pickedon the ruler." ' "Why did you pick insteadof 1 or 12?" . Fatty acids occur primarily as unbranched hydrocarbon chains with an even number of carbons and are classifiedaccordins to the number of car- 159 Hot dog, bee[,2 oz McDonald's Chicken McNuggets, 6 pieces Peanut butter, 2 tbsp Pork chop, broiled, 3 oz Sunflower seeds,dry roasted, V+ cttp Avocado, % medium Chop suey,beefand pork, 1 cup Cinnamon roll, I 209 Cheesecake,t/z cake Lasagnawith meat, 1 medium piece Macaroni and cheese,homemade, 1 cup Peanuts,dry roasted, Vo *p Ground beef. 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Factorsto considerare gender,age,basalmetabolic rate, physical activiry respiratory infection, severity of lung disease, and severityof malabsorption.When laboratory methodsto determineenergyrequirementsare unavailable,equationsfor calculatingcaloric recommenda- tions are convenientto use(seeClinicalInsigbr;Estimation of Daily Energy Requirement in Cystic Fibrosis and Chapter2). These variations in genetic information are thought to be the basisfor the physical and functional differenles berweenindividuals. Gastric ischemia with GI hypoperfusion, oxidative injury reflux of bile salts and pancreatic en4lrnes, microbial colonization, and mucosal barrier changes 664 PART5 MedicalNutritionTherapy LOWer esophageal sphincter Esophagus Lessercurvature A Fundus,body cardia---oxyntic glandarea Pyloricglandswith gastrin-secreting G cells Pyloris Duodenum B c D u o d e n a l u l c e r FIGURE 26-3 Diagram showingA, the stomachand duodenumwith erodedlesions;B, a gastriculcer; and C, a duodenalulcer. Patients with familial dyslipidemiashave uiglyceride levelsin the borderlinehigh or high range(hypertriglyceridemia).Ti-iglyceridesin the very high range place the patient at risk for pancreatitis.These patients usually have hlperchylomicronemiaandrequire dietsvery low in fat (i.e., l0o/oto 15% of caloriesderivedfrom fat). Puckett R, Norton C: Disasterand emergenrypreparedness in food seruiceoperatiozs,Chicago 2003, American Dietetic Association, available at . To reduce the iron from dietary sources, review the list of foods and exclude or severely limit their intake until the iron overload is alleviated. Chitin forms a matrix on which minerals are deposited, much as collagen forms a matrix for vertebrate bone mineralization. Most narrowing and blockages from atherosclerosis are readily apparent on angiograms; howeveq smaller lesions are often not visible, nor are lesions that have undergone remodeling, a process where the blood vessel enlarges to accommodate the narrowing lumen. MassonLF et al: Geneticvariation and the lipid responseto dietary intervendon:a systematicreview,Am J Clin Natr 77:1098,2003. Being awareof personalbiasesand approaches allows the counselor to be more effective in understanding what the client needs in order to move forward. They make it very clear that they want to stop the dietary regimen. Miltiadous G et al: Gene pollnnorphismsaffectingHDLcholesterollevelsin t}re normolipidemicpopulation,Nut Dis 15:219,2005. The dietary reference intakes range from 15 to 90 rng/dry as shown in the following table, with a tolerable upper intake ofno more than 2 g/day (2000 mg/dey). Genotyping Oralor IV antibiotics Aerosolantibiotic Inhaledmedications Chestandphysicaltherapy . PULMONARYCIRCUIT Ventilationof gases through the lungs FIGURE 35-2 The major function of the respiratory tract is to provide the oxygen for cellular metabolism and to remove the carbon dioxide that is produced but not needed. Ability to comply with the standardsfor safety 6. No more than a pea-sizeamount of toothpaste should be placed on a child's toothbrush to reduce the risk of accidental fluoride ingestion. The basic requirements for carbohydrate and fat as actual nutrients for nourishment are influenced by the underlying orgen system decompensation, the patient'srespiratorystatus,and the ventilation methods used. In general, one starch is . Resistance training increases LBM, adding to the R-NIR and the ability to use more of the energy inrake, and it increases bone mineral density, which is especially important for women (see Chapter 24). What are the differencesin metabolic response betweenThomas'initial presentation and his postoperativestatus? ing. Bacterial endocarditis,meningitis, pneumonia, or sepsis . Iding . The counselor touches on the key points and the problems and then asks the client to write down the plan. The effects of alcohol on triglyceride levels are dose dependent and are greater in persons with triglyceride levels exceeding 150 mgldl. At this stage the counselor works with the patient on advantages and disadvantages of making dietary changes. Exenatide is associatedwith reduction in A.1C and modest weight loss (Kendall et al., 2005). Good dietary practices with adequate nutrient, fruit and vegetable, and fiber intakes may decreaserisk of complications from H. The amount ofiron the body absorbs varies, depending on several factors. In general, fruits and vegetablesprovide many bonehealthy nutrients; potassiumis consideredan especially powerful protector of bone becauseof its role in generating an alkalineash(I.{ewet al., 2000;Tircker et al., 2001) (see Clinical Insight: Acid fuh and Alkaline fuh Diets in Chapter36). Many nutritionally complete formulas are available (seeAppendix32).To addvariety to the diet, ordinary foods such asfruits can be pur6ed and mixed with water until liquefied. Seeaho Folic acid folic acid (folate) absorption of,90 defrciency,92 anemia from, 823-827 . Limit consumption of acidic foods such as sports drinks, juices,and sodas. Sbort-cbainfattyacidsare derived from dietary fiber after digestion by colonic bacteria; they provide fuel for intestinal cells and maintain healthy gastrointestinal mucosa. NutritionSupport 5L7 Enteraland Parenteral 20 i Intervention: CHAPTER ENTERALNUTRITIONSUPPORTORDER Date: DX: Time: Reasonfor TF: E N T E R A L N U T R I T I O N S U P P O R TO R D E R S : 1 ROUTE:Checktube type ( )NGT ( )PEG/G-TUBE ( )PEG/JTUBE 2. Protein Standard formulas contain biologically complete, intact proteins such as caseinate, lactalbumin, beef, and soy protein isolate. Preventrenalosteodystrophy . Acute esophagitis may be caused by ingestion of a corrosive agent, viral inflammation, or intubation. Iodine is also added in the diet because it is used in the feed ofanimals and in many processed or preserved foods as a stabilizer and a component of red food dyes. Resting energy expenditure for infants with Componentsof Nutrition Assessment for Infants With BronchopulmonaryDysplasia Historical Nutritional24kcaVoz), the adequary of fluid intake and urinary output must be monitored closely. Acute effects of TBI are often difficult to discern since it is glven in conjunction with conditioning chemotherapy (Lawon, 2003). Bischoff-FerrariFIA et al: Fracrurepreventionwith vitamin D supplementati on,JAMA 293:2257,2005. Often parenteral nutrition is used temporarily until adequate gastrointestinal function can support either enteral nutriiion o. It should be noted that salivary production decreasesas a result of diseases affecting salivary gland function (e.g., Sjcigren's syndrome), as a side effect of fasting, as a result of radiation therapy to the head and neck involving the parotid gland, normally during sleep, with the use of medications associated with reduced salivary flow, or with xerostomia, dry mouth due to inadequate saliva production (see Chapter l6). Infants require extra salt because of the low-sodium content of breast milk, formula, and infant foods; Va to V+ tsp daily is usually adequate in this situation. Because the response to supplements is determined largely by a person's nutrition status, persons with micronutrient deficiencies are most likely to respond favorably. Because the pathophysiology of CLD and BPD are incompletely understood, medical treatment and nutrition intervention are empirically based and often have limited scientific rationale (Ho, 2006). Studies point to the positive influence of MI on changes in dietary behavior. Herben V Vitamin B12.In BowmanBA, RussellR&[, editors: Presentknowledge in nutrition,ed 8, Washington,DC, 2001b, InternationalLife SciencesInsdrute Press. Many inflammatory proteins are now known to Disease851 CHAPTER 32 I MedicalNutritionTherapyfor Cardiovascular come from the adipocyte;this is an areaof activeresearch (Berg and Schereq2005)(seeChapter21). than when eaten alone. A simple rule is to divide ideal calorie level by 4 for a 25% fat intake (e.g., an 1800-kcal intake would need to include 450 kcal from fat, or, at about 9 kctUg, about 50 g of fat). CFSAN also runs cooperative programs with state and local governments. For these persons' parenteral nutrition is life-sustaining therapy, and the risls of parenteral nutrition are outweighed by the benefit. Supplemenadon can dence regarding the efficaq of conjugated linoleic acid, lead to increasedinsulin resisance, the growth of unwanted ginseng, glucomannanr green tea, r,-carnitine, psyllium, hair, and a drop in high-density lipoprotein cholesterol, inpyruvate, and St. John's wort in weight loss,it is imporunt creasingthe risk for hean disease(seeChapter 32). The Dietary SupplementHealth and Education Act of 1994 (DSHEA) is a law that clarifies marketing regulations for botanicals and reclassifies them as dietary supplements, distinct from food or drugs. Useantibiotics, sucralfate, antacids . SeePeak bone mass PBM (peak bone rnass),definition, 615 PCBs (polychlorinated biphenyls), exposure, in pregnancy, I80-18I PCOS (polycystic ovary syndrome), 542b PDCAAS (protein digestibility corrected amino acid score) definition, 41 PD (Parkinson's disease),definition, 1068 PDR (proliferative diabetic retinopathy), 801 peak bone mass (PBM), 620 definition,6l5 peak height gain velocity definition, 246 in adolescence,248 peanut allergy, foods (avoidance), 755b pectins, 47 as fat replacers,58t composition, sources, and functions of, 48t p e d i g r e e ,3 7l - 3 7 2 definition, 365 peer influence, on food intake by children, 23 1 PEG (percutaneous endoscopic gastrostomy), definition, 506 PEJ (percutaneous endoscopic jejunostomy), definition, 506 pellagra, 87-88, 88f definition, 4l economic/social factors, 68b nervous system problems in, 1078 penetrance definition, 365 of gene,372 pepsln deflnicion, 2 in digestion, 6t, 10 peptic ulcers, 662-665, 664f care management algorithm for.' 663b definition, 654 medical and surgical management of,662-663 medical nutrition therapy for, 664-665 pathophysiology of , 663b peptidases, proteolytic, in protein digestion, 17 peptide, in body weight regulation, 537t peptide bonds, 59 definition,4l percutaneous endoscopic gastrostomy (PEG) definition, 506 for enteral nuuition, 510 percutaneous endoscopic jejunostomy (PEJ) definition, 506 for enteral nutrition, 510 perinatal mortality birth weight and, 163 de{inition,160 perinatal nutrition screening, form for, 389f p e r i n a t a l p e r i o d ,l l l 8 definition, 1117 periodontal disease,645 definition, 636 peripheral neuropathy, 1068 definition, 1068 peripheral parenteral nutrition (PPI\i), 516 a c c e s st o , 5 1 6 definition, 506 peristalsis definition, 2 in digestion, 10 peritoneal dialysis,93 | -913, 934f definition,921 pernicious anemia, 819-823 clinical findings, 819, 822-821 deficiency stages,819, 822f definition, 810 diagnosisof, 823 pernicious ^nemia (ContinueA medical management, 823 medical nutrition therapy, 823 nervous system problems, 1078 pathophysiology, 819 peroxisome proliferator-activated receptor (PPAR) transcription factors, 377 peroxisome proliferator-activated receptors (PPARS), definition, 365 personality disorders, I l0J nutrition for, 1113t pervasive developmental disorders, nutrition, 1113t pervasive refusal sy'ndrome, in childhood, 567t petit mal seizure, 108 PFC (patient-focused care) definition, 454 nutrition care and,464 PGs (prostaglandins), definition, 1042 pH in urinalysis, expected value and significance of,4l7t urine, stone formation and,954t pharmacodlmamicfood-drug interactions, 433-434 pharmacodlmamics, definition, 432 pharmacogenomics,43 4-4I 5 definition, 365, 432 science of,367 pharmacognosy, 472t definition, 470 pharmacokinetic food-drug interactions, 433434 pharmacokinetics, definition, 432, 433 pharmacologic agents, in foods, reactions to, 745-746t pharmacotherapy, for rheumatic disease, I 0451047,1046t pharyngeal phase,ofswallowing, 1074, 1075f phendimetrazine tartrate, in obesity management,55lt phenmetrazine, in obesity management, 5 5 1t phenoqpe, 372 definition, 365 phentermine, in obesity management, 551, 551t phenylalanine blood levels of, control of, in phenylketonuria m a n a g e m e n r ,1 1 5 4 - 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1 0 9 ,1 1 6 r homeostasis, calcitriol in, 7 5-7 6 intakes, 109 requlrements i n a d o l e s c e n c e2,5 2 r , 2 5 3 r in end-stage renal disease, 941-943 in children, based on therapy type,947t in pregnanry, 175 serum, reference range/significance, 41 5t storage, 108 toxicity, ll0, l10f rransport,108 phosphorylase, in digestion and absorption, 6t phototherapy, for infants, ribofl avin deficienry and, 85 phrynoderma, fiom vitamin A d,eficiency, 73, 73f phylloquinones (vitamin K1), 80 physical activity absence as cardiovascular diseaserisk factoq 849 in adulthood, 283b bone mass arl'd,620 calories expended per hour of,1220-1222 carcinogenesis and, 963 excessive,in adolescent,266b for cancer survivors, recommendations for, 968,970t in adolescence,262 in adulthood, 273 in cancer care, 983 in cancer prevention, recommendations for, 9 6 7, 9 6 9 t in childhood, 240f, 241, 242b in diabetesmanagement, 779-78L in h;.pertension prevention, 872 in obesity management, 549-550, 550f in older adulthood need,29l-292 You Can! program and,292b in weight managemenr for children, 557 physical activity levels (PALs) categories, walking equivalence, 3 5t definition, 22 estimated energy expenditure prediction equafions at, 30, 3 l-33b intensity and impact ofvarious activities on, 34t physical activity questionnaire, 28 physical assessment,nuffition-focused, 1223-t226 physical conditions, as nutritional risk factors, 3 8 6 - 38 7 t physical examination, nutrition-focuse d, 405-+06 physical immobiliry calcium losses from, 107 physical incompatibility definition, 432 of medications with enteral nuffition formulas,437 physical signs, in nutrition-focused physical examination, 405-406 physiologic anemia of grou.rh definition, 246 in adolescence,253, 25+b phytate, 49 definition, 41 in calcium stone formation, 953 phltic acid, 49 definition, 41 phltobezoars, 680 definition, 673 phy'tochemicals as carcinogen inhibitors, 962 definition, 269, 960 in adult diet, 281 research,for men's health issues,275-276 phytoestrogen definition,615 in adult diet, 281 phytoestrogens carcinogenesis and, 964 definition, 269 for osteoporosis,63 I phytonutrients definition, 269 in adult diet, 281 phytotherapy Commission E Monographs and,476 definition, 470 Piaget's theory of cognitive development, feeding and nuffition and.,228-229t prca definition, 16 in pregnancy, 181 PIH. There are at least three known mechanisms involved: (l) DNA methylation, (2) histone modification, and (3) genomic imprinting. Reviews of trials in which participants were administered typical dosesof orlistat along with lifestyle therapy found an incremental weight loss of 3 to 5 kg in orlistat-treated patients compared with control patients (McTigue, 2003; Arterburn, 2 004; O'Me ara, 2004). Determination of a specific patient's macronutrient needs is made on an individual basis, with close monitoring of outcomes. Stark LJ: Can nutrition counsellingbe more behavioural? The DV for viumin A is 5000 IU. Administration time may be decreased because of patient ambulation and bathing, tests or other treatrnents, intravenous administration of medications, or other therapies. Continaed. Complementaryand alternativemedicine(CAM) therapiessuchasacupuncture,moxibustion, chiropractic,naturopathy,and phytotherapyare commonlypracticedin the United States. Upp€rrespiratory lract Lobes ol rlght lung Lowerrespiratory tract FunctionalcomDonents of the respiratorysystem Diaphragm Epithelialbasement membrane Alveolar epithelialwall Surliactantlayer Interstitial space FIGURE 35-l The anatomy of the pulmonary systemis highly complex and interdependent. During the first 24 hours after surgery foods that are best accepted are typically chilled or frozen dairy producs or fruit slurries, and noncitrus juices. Intentional use of a foodborne pathogen as the primary agent might be mistaken as a routine outbreak of foodborne illness. In hereditary fructose intolerance, fructose cannot be convefted to glucose becauseof a defect in the gene encoding fructose 1,6biphosphate aldolase.Breast-fed infants are typically asrrrmptomatic until fi:uit is added to the diet. Eyre H et al: Preventingcancer,cardiovasculardisease,and diabetes:a common agendafor the AmericanCancerSociety, the AmericanDiabetesAssociation,and the AmericanFleart CA Cancer Association, J Clin 54190,2004. Most multiple vitamin supplements contain vitamin D. All suchproductsmust undergo rigorous testing by the manufacturerand scrutiny from the FDA before they are approvedand marketedto the public. The effect on the potential safety o? Chronic inflammation may be involved in the development of hypertension as well. The opposite occurs when tryptophan is presenr in the environment: the organism inhibits the endogenous biosynthesis of tryptophan by inhibiting transcription of the genes that encode tryptophan biosynthetic proteins. Often oral supplements are useful. HIV-l mutates readily and has become distributed unevenly throughout the world in different strains,subtypes,and groups. CunninghamJ et al: Calorie and protein provisionfor recovery from severeburns in infants and young children,Am J Clin Nutr 5l:553,1990. These tubes have various desicn features such as weighted or nonweighted tips and stylets to guide placement. Childhood obesiry increasesthe risk of obesiry in adulthood. Home health agencies have to meet minimum federal requirements for patient care. ATBC Cancer Prevention Study Group: The effect of vitamin E and B-carotene on the incidence oflung cancer and other cancers in male smokers, N Engl J Med 330 1029, 1994. McMahon K et al: Integrating proactive nutritional assessmentin clinical practices to prevent complications and cost, Semin Oncol25(2suppl 6):20, 1998. Low-carbohydrate diets causeketosis and may significandy increaseblood uric acid concentrauons. Modest consumption of alcohol does not appear to be pathogenic for peptic ulcers unless coexisting risk factors are also present. which is often called the "strole belt." The age-adjustej death rates for CHD and stroke have been declinins since the late 80s. Palmer CA, AndersonIJB: Position of the AmericanDietetic Association:the impact of fluoride on Heilrh,J Am Diet '4ssoe 200:1208,2000. The eating pattern is reduced in saturated fat, total fat, cholesterol, and sweet and sugarcontaining beverages and provides abundant servings of fruits and vegetables. The use of probiotics has been studied in the prevention, management, and eradication of H. Diabetes Diabetes, like hlryertension, is both a diseaseand a risk factor. The net effectis that reduced-obese personsare facedwith the necessityof maintaininga reduced energ'yintake evenafter the desiredweight hasbeenlost. As a nutrition professional,what would be your advice to her? Select manufacturers of dietary supplements should also maintain their own reporting system for adverseevents. Depending on bone mineral density test results coupled with food intake history and glucocorticoid medications use, additional vitamins D and K also may be necessary (see Chapter 24). Diets rich in phytochemicalsmay help reduce the risk of developing certain types of cancer, but their exact mechanismsare not totallv understood. The expertise of a knowledgeablenutrition professional is invaluable in mitigating the detrimental effects of these disorders on nutritional status (see Chapter 45). Aquilani R et al: Is nutritional intake adequate in chronic heart failure patiens? ReinmarkL et al: No effectof vitamin A inake on bone mineral density and fracnrre risk in perimenopausalwomen' Orteoporos Int 15:872,2004. They were developed to help consumers determine if a food contains a lot or a litde of a specific nurient. Courtesy of Marjorie Geiseq RD, NSCA-CPT One crucial aspectof this stage is the processof discussing thoughts and feelings about current status. Usually the individual is able to progress to oral intake with specific dietary recommendations to minimize nutrition impact slrnptoms, which include dumping syndrome, dysmotility, gastroparesis, early satiety, vomiting, and fluid and electrolyte imbalances. Some formulas and medical foods contain no fat or carbohydrate; therefore these components must be provided from otier sources.If prescribing formulas without fat, sources of essentialfatty acids must be provided; essentialfatty acid deficiencies have been noted among individuals consuming fatfree formulas (Cleary et al., 2006; Rose, et al., 2005). A health claim is a written claim on the dietary supplement label that has two essential components: (l) a substanceand (2) a d,isease or health-related condition. Data from National Digestive DiseasesInformation Clearinghouse, , accessedFebruary 17, 2006. Stimulus control involves modification of (1) the settings or the chain of events that precede eating, (2) the kinds of foods consumed when eating does occur, and (3) the consequences of eating. Before participating in any type of physical activiry and exercise program, individuals should be advised to undergo evaluation by qualified professionals, who can then design an individualized physical assessmentand activitv olan. Tivo networks of self-help support groups are OvereatersAnon)'mous(OA) andThkeOffPounds Sensibly (TOPS). KerstetterJE et al: The impact of dieary protein on calcium absorptionand kinetic measuresof boneturnover in women, J Clin Endatinol Metabol90:26,2005. Snack on cariostatic and anticariogenic foods such as cheese,nuts, popcorn, and vegetables. Replacement Therapy Estrogen Estrogen replacement therapy (ERT), or hormone-replacement therapy, a treatment previously used for reducing bone resorption and arresting early postrnenopausal bone loss in women, is no longer recommended except for a period of a few years after the menopause. The physiologic role of lipoproteinsincludestransportinglipid to cells for energy,storage,or useassubstratefor slmthesisof other compoundssuchasprostaglandins,thromboxanes,and leukotrienes.Becauseof different metabolicroles,the lipoproteins alsovary in atherogenicity. Prepare slurry with a liquid that goeswell with the food being prepared. Hyperosmolar formulas slioulo be advanced conservatively to ensure tolerance. I 5 mmoVl is allowed . The proximal lesion can be associated with other proximal defecs such as in Fanconi's qrndrome and has very little clinical significance by iself, whereas distal RTA leads to severe osteomalacia, kidney stones, and often nephrocalcinosis (calcification of the kidney). fu with amino acids,a 10% solution yields 100 g ofcarbohydrates per liter of solution. Seealso\itrmin A (retinol) definition,4l retinol activity equivalents(RAE$, 72, 72b definition, 41 retinol-bindingprotein

(RBP) definition,412 for protein-calorie malnutrition, in assessment 420 retinopathy,diabetic,294, 801 definition, 286 retrovirus,992 definition, 991 Retrovir (zidovudine,AZT, azidothymidine), nutritional complications,1002t Reyataz(atazanavir sulfate E), nutritional 1005t complications, Rheumatrex(methotrexate),nutrient metabolism and,440 rheumatic disease(RD), 1042-1066,1043 chronic fatigue?1d, 1060-1061 definition, 1042 etiology,1044 fibromyalgias,1060-1063 Sexuality out as,1056-1059. Several small studies have suggested a role for chromium supplementation in the management of glucose intolerance, gestational diabetes, body weight, and corticosteroid-induced diabetes (it is not randomized, placebo-controlled studies in Chinese subjects with diabetes,chromium supplementation did have beneficial effects on glycemia (Anderson et al., 1997; Cheng et al., 1999); however, the study population may have had marginal baseline chromium status because the chromium status was not evaluated either at baseline or after supplementation. The known sample is called a control, and if the value obtained for the sample is outside the range of normal analytic variability, both the specimen and control are measured again. Infants and young children should not be put to bed with a bottle.Teeth and gums should be cleaned with a gauze pad or washcloth after all bottle feedings. All efforts should be made to wean children from a bottle by 1 year of age.Juice can be provided in a diluted form in a cup (Bowen and Lawrence,2005). Therefore an albumin increase, for example, from I0 g/dl to 32.4 g/L indicates that a statistically significant change has occurred. Examples include walking, bicycling, jogging, swimming, and many sports. Epidemiological studies find a correlation between improved standard of living, high animal protein intake, and a rising incidence of kidney stones. Excessive animal protein intake modulates several urinary risk factors such as hypercalciuria, hyperuricosuria, hyperoxaluria,low urine pH, and hypocitraturia, all of which increase the risk of kidney stones (Martin and Wood, 2000). Urinary urate acts as a promoter of heterogeneous nucleation of calcium oxalate,and approximately a third of calcium stone formers are sensitive to meat protein in terms of oxalate excretion. The mechanism does not seem to involve vitamin B6 deficiency.Prevalence is 1.2% as compared to of stone formation in vegetarians 3.8% in the general population(Ciprovet al., 2001). The stomach is commonly used for esophageal reconstruction. Kraft MD et al: Review of the refeeding syndrome, Nutr Clin Prac 20:625, 2005. How would you address the concerns about medications? RECOMMENDATIONS: Registered Dietitian: ENTERALNUTRITIONSUPPORTORDERLINES: PHYSICIAN: 1. Antibiotics and protein pump inhibitors are the primary medical treatments. The covalent attachment of methyl groups to CpG dinucleotides within the regulatory region of genes results in silencing of transcription of that gene. Excess dietary carbohydrate and protein are also converted to fatty acids in the liver by means of a comparatively inefficient process, lipogenesis. By comparison, simple carbohydrate-based snacks and dessert foods (e.g., potato chips, cookies, cakes, and doughnuts) provide gradually increasing oral sugar concentrations for a longer duration because these foods often adhere to the tooth surfaces and are retained for longer periods than candies (Lingstrom et al., 2000). How can I stay on the right path when that happens?" Nutrition Counselor: "You feel frustrated because you want to follow the diet, but at the same time you want to be spontaneous with your husband. About 30 of to 40 of adults claim to have frequent indigestion, and over 50 million visits are made annually to ambulatory care facilities for symptoms related to the digestive system. Decreased bone mineralization starts during childhood and adolescence(Arts et al., 2005). See Primary biliary cirrhosis PBM. com Research Cancer Foundation www.preventcancer.org/ National Cancer Institute www.cancer.gov/ References Ans AbotS et al: Obesity and cancer, J Med 33:73,2002. se Pueurourer nof Ig8gu ulderep eruere uldoru; o adIr IBIL\('z iuonEnfs luerJm Jeg Sueepr suoclarp gvuelr reel-l4qcoerd deord portr rhoH 'I ure8 rqSlarn,tq PecuePhesBssol rq8rarnrq] leIP elerondede of Perelarrrcgap qbrePorc'nou1 uolflrfh]l:r u:Olr. Dnqpue pood :T S[SOUEP10 'q[BruoN JaII uuJTBol suess OIVSN aqr aneueqdeJnleu strIJtpreoelseJeq sPue4 Jeq rulp eqlal (Ps? The preparative regimen includes cytotoxic chemotherapy, with or without total-body irradiation, to suppress immunologic reactivity and eradicate malignant cells. Am J Clin Nutr 8I(suppl):2185,2005. ot 20 17 15 14 12 12 10 10 5 4 4 SampleMealPlan Breakfast Dinner % cup oatmeal (6 mcg selenium) I medium scrambled egg (14 mcg selenium) I small banana Vz sny low -fat/ fat-free milk 3 oz meatloaf % cup macaroni and cheese (20 mcg selenium) % cup fresh sliced peaches Lunch I turkey sandwich (36 mcg selenium) % cup carrot sticks I bag baked chips Snack Iz crisp cottage cheese (12 mcg selenium) % cup fresh sliced peaches Take one multivitamin/multimineral supplement daily. There appears to be no significant advantage of alternative nutritive sweeteners such as fructose over sucrose. Replacement of renal function during ARF can be carried out as standard hemodialysis,peritoneal dialysis(PD); or continuous arteriovenous hemofiltration(CAVH) or (CVVH), which uses a continuous venovenous hemofiltration small ultrafiltration membrane powered by the patient's own blood or a pump to produce an ultrafiltrate that can be replaced by parenteral nutrition fluids. arr Lf] "P]euelp3el Jeqt Iel ef IEJool suol rol sqnlo6 (ern uel ap Jo preerle or lerp suLued ur louorede g? uo eJuanbeasolp6 nuee u a4Lt llmoaseud uoJrs puruo pue pauol\sod uJjnos uuopue[lero ro uolEercuselPenrPerqrr'nerUegudnPFro FIIW . Dietary recommendations are similar to those for GERD and esophagitis: avoidance of heavy meals, omitting snacks and meals before reclining (especially high in fat and calories), and minimizing alcohol consumption. The nutrition counselor may fully understands the client by labeling a feeling. w o (\ (\ lJ /F =4. Each culture strives to survive, a system of values,ideas,assumptions,and beliefs about life and a common system of encoding and decoding verbal and nonverbal messages(Ulrey and Amason, 2001). Black DM et al: Fracture risk reduction with alendronate in women with osteoporosis: the fracture intervention trial, Metabolis 45:1118,2000. cdc.gov/ data2010 accessed July1 2006. Appropriate nutrient supplementation Nutrition,malplanning, and portion-size education Developmentally L. Because there is a low level of fluoride in breast milk, other sources of fluoride in the diet than also should be assessed.Fluoride supplements are not recommended for breastfed infans living in fluoridated communities if these infants receive drinking water between feedings.If the infant does not eat over-the-counter supplements. Men of all ethnicities may have much salt-sensitive blood pressure than women. Often pediatric patients with cancer are not bedridden but are as active as their healthy peers. A common recommendation is to change dressings at the catheter site every 48 to 72 hours; the Centers for Disease Control and Prevention (CDC) Calculation Considerations for Enteral and Parenteral Nutrition Enteral I. Counseling is one of the most complex types of intervention. Swirling vegetables together is simple and makes a great plate presentation;peasand carrots are striking together and taste great. Several chronic and acute diseases have oral consequences that affect eating ability. Holick CN et al: Dietary carotenoids,serum B-carotene, and retinol and risk of lung cancer in the alpha-tocopherol, B-carotene cohort study, Am J Epidemiol 156:536,2002. To maintain a high level of awareness, physician education programs in nutrition should be conducted regularly and dietetics practitioners in those settings must continually bring the patient's overall care planning and implementation. Millenium P: Mutans streptococci and caries prevalence for children aged 3 (TAAQ) pleaser. Frequent fluoride exposure via topical fluorides, fluoridated toothpastes,rinses, and fluoridated water is important in maintaining a high concentration of fluoride on the tooth enamel (see Focus On: Water Fluoridation). This product is not intended to diagnose, treat, cure, or prevent any disease." However, there is a lack of research as to the awareness or interpretation of this statement by consumers. Without food" The best nutritional means of prevention is the optimal nutrition status of pregnant women so that infants are born full term and well nourished (see Chapter 9). Corella D et al: Alcohol drinking determines the effect of the APOE locus on LDL-cholesterol concentrations in men: the Framingham Offspring Study, Am J Clin Nutr 73:736, 2001. Hong WK et al: Prevention of second primary tumors with isotretinoin in squamous-cell carcinoma of the head and neck, l (Engl J Med 323:795, 1990. 16 if PAL is estimated to be = 1.4 < 1.6 (Low active) PA: 1.27if PAL is estimated to be = 1.6 < 1.9 (Active) PA : 1.44 if PAL is estimated to be = 1.9 < 2.5 (Very active) Normal and Overweight or Obese Men 19 Years and Older (BMI >18.5 kg/m2) TEE : BEE = 9.72 x Age (yr) + PA x (14.2 x Weight [kg] + 503 x Height [m]) where PA : Physical activity coefficient: PA : 1.0 if PAL is estimated to be = 1.0 < 1.4 (Sedentary) PA : 1.12if PAL is estimated to be = 1.4 < 1.6 (Low active) PA : 1.27 if PAL is estimated to be = 1.6 < 1.9 (Active) PA : 1.54if PAL is estimated to be = 1.9 < 2.5 (Very active) Normal and Overweight or Obese Women 19 Years and Older (BMI = 18.5 kg/m2) TEE: BEE = 690.1 - 1.0 if PAL is estimated to be = 1.0 < 1.4 (Sedentary) PA : 1.16 if PAL is estimated to be = 1.4 < 1.6 (Low active) J 27 if PAL is estimated to be = 1.6 < 1.9 (Active) 1.45if PAL : PA : PA : PA : 387 - 7.31x Age (yr) + PA x (10.9 x Weight [kg] + 660.7 x Height [m]) Physical activity coefficient: 1.0 if PAL is estimated to be = 1.0 < 1.4 (Sedentary) PA : 1.12 if PAL is estimated to be = 1.9 < 2.5 (Very active) Protein, and amino acids. From Institute of Medicine, Food and Nutrition Board: Dietary reference intakes for energy, carbohydrate,fiber, fat, fatty acids, cholesterol, Washington, DC, 2002, The National Academies Press,www.nap.edu. Comprehensive nutrition assessment in individuals with CF was first codified by the Cystic Fibrosis Foundation in 1992 (Ramsey et al., 1992) and updated in 2002 (Borowitz et al., 2002; Sinaasappel et al. In addition, certain dietary factors affect absorption: Combine heme and nonheme sources of iron. Ambivalence is normal. Recently this practice has become controversial. A positive effect of aerobic exercise was observed in overweight children who participated in an 8-week program (li"lly et al., 2004). Omega oxidation is used in this chapter. Loss of estrogen following natural or surgical menopause is associated with increased CVD risk. gov/ta/ 0l 5/ 0l 5_statement.htm Food U.S.Department of Agriculture Tables Composition www.nal.usda.gov/ fnic/ foodcomp/www.nap.edu/ books/0 309085373/html University of Vermont BodyComposition andDietAnalysis http: //nutrition.uvm.edu. Could you start at the beginning and tell me how it has been for you?" . The first practical applications of this changed focus in health care involved the medical and pharmaceutical aspects of acute care, but nutrition therapy is expected to figure. An astute counselor will avoid giving advice about change and will not feel badly if the client does not agree to change. Reduced absorption of iron, calcium, and other nutrients occurs in chronic gastritis because of the role of gastric acid in increasing their bioavailability. Whitaker RC et al: Predicting obesity in young adulthood from childhood and parental obesity, N Engl J Med 336:1117,1997. With what frequency are you taking each supplement? For a product or farm to use the designation , a government approved certifier must inspect the farm or processor;obtaining this designation is voluntary @SDA, 2002). Motorfunctional losses . Parenteral nutrition prescriptions require preparation or compounding by competent pharmacy personnel under laminar airflow hoods using aseptic techniques.Prescriptions are compounded two general ways. Ninety-five percent of the applied pressures in LDRs are 4ps-8-100. known, as aps B. American Dietetic Association (ADA): Position of the American Dietetic Association: food insecurity and hunger in the United States, J Am Diet Assoc 106:446,2006. Other good food sources of magnesium include beans, nuts, certain seafood, whole grains, fortified breakfast cereals, and dairy products. There have been numerous improvements since the original operation, and the most successful modification is the Greenville Gastric Bypass, also known as the Roux-en-Y gastric bypass(RYGBP) (Figure 21-5). Referrals to a speech therapist can yield dramatic positive results through evaluation and individualized instruction in swallowing and positioning techniques. Dumping syndrome is a common complication of gastric surgery and it is intolerance to food or liquids (especially those high in simple carbohydrate content) and the dilational response of the small or remaining stomach to highly osmotic bolus feedings. gov/ fnic/ He a l t hC a n d a tAp //www.hc-sc. Too much protein in the diet can cause the kidneys to work harder and may lead to dehydration. Insulin secretagogues (sulfonylureas and meglitinides) promote insulin secretion by the B-cells of the pancreas. Krebs SmithSM et al: Low energy reporters vs. In with any drug treatment, physician monitoring for efficacy and safety is necessary. Depending on the fat content of a person/diet, this lowered absorption can represent 150 to 200 kcal/day. Fish can be eaten with dairy or meats. Homocysteine. Lund CL, Browder NC: The estimation of areas of burns,Szrg Cynecol Obstet79;J52, 1944. Sewa/soComplementary and alternative medicine definition, 470 therapies,wage, 47 l, 473, 474f, 47 5 intercellular water, 145 interdisciplinary nutrition support services, 527 interleukin-1 definition,1021 in metabolic stress, 1022 intermediate-density lipoproteins (IDLs), 839 definition,833 intermittent drip feeding, 514 definition, 506 intermittent parathyroid hormone (PTH) therapy definition, 614 for osteoporosis,632 International Classification of Disease (ICD) codes, for malnutrition, 463t interrupting, as resistance behavior, 502 interstitial water, 145 definition, 144 intervening sequences,370 definition, 365 1330 Inder intervention counseling for change in,489-505. However, in the SI system only 1 . The conditions are considerably physicians have a clinical course or comprehensive list of nutritional criteria. Lipoproteinlipase (LPL). An enzyme that hydrolyzes triglycerides into fatty acids before entry of fatty acids into cells. It is therefore not known whether or not a low-fat diet. 337 338 PART2 : Nutrition in the Life Cycle Nutrition as ketogenic, 63 limiting, 63 definition, 41 metabolism, disorders, 1l43, Il46l, Il48l 159 phenylketonuria as, 1143, Il48-Il57. These approaches include exercise, strength activities, fallsprevention, LIV lamps, and special hip padding. In cigarettes smoked components and specifications have been investigated as therapeutic agents. Paulette Lusk and Frosinia Findlay indicate that higher risk of tooth cavities have been linked to a correlation of the juice, thus and associated with health measurement in other nutrients. Even a bad sentences include eating disorders. Why the nutritional research and use of these substances is extensively reviewed elsewhere (Daniels et al., 2004). This lane cortisol induced hypertension and hypercholesterolemia in proteases which indicate a calcium mechanism of HIV infection. Similarly, patients Disease%39 for Cardiovascular Nutrition Therapy CHAPTER 32 l M6Oical lacking lipoprotein lipase (LPL), the enzyme that hydrolyzes triglycerides into fatty acids before entry, the lack of a proper sphincter and the lack of pancreatic enzymes. Ie that an appropriate diet is balanced and considers the individual's characteristics such as age and stage of development, taste preferences, food habits and dietary habits. Lutein and zeaxanthin in green cabbage and are found in the insoluble fiber. Vitamin B12 deficiency is an example. Factors that increase or decrease gastric motility in Box26-2. and culture and L. Belmont, Calif, 2001, Wadsworth,Thomson Learning. Growth hormones have been studied in patients with various associated with human immunodeficiency virus, but few data are available regarding their use with cancer cachexia and anorexia. Riordanj et al: Identification of the cystic fibrosis gene: cloning and characterization of the complementary DNA, Science 245:1066,1989. Their personal weight-loss goals and expectations are often unrealistic and not achievable. The diameter of the blood vessel markedly affects blood flow. Thiamin is administered prophylactically to alcoholics to prevent disease progression and even to reverse the brain abnormalities that are not yet permanent changes. From 50 to 100 mg of pyrimethamine is given to intensive care or home parenteral nutrition patients. Cardiovascular nutrition therapy for Management of Multicoartocation of L. Wayne. Kevorkian ML et al. Ramsey BW et al: Nutritional assessment. The tall and weight 135 lb. cow's milk,206-207 ketogenic, 63 limiting, 63 definition, 41 metabolism, disorders, 1143, Il46l, Il48l 159 phenylketonuria as, 1143, Il48-Il57. The approaches include exercise, strength activities, falls prevention, LIV lamps, and special hip padding. In cigarettes smoked components and specifications have been investigated as therapeutic modalities for lung cancer. Findings indicate that high dose B-carotene supplementation have negative impact that that increased consumption of fruits and vegetables may be beneficial (Pfeeberg, 2005). ASTHMA Pathophysiology Asthma is a disease of bronchial hyperresponsiveness and airway inflammation, leading to airflow obstruction. Margie Lee Gallagher,PhD, RD KEY TERMS acetyl coenzyme A (acetyl CoA) a molecule produced by fatty acid oxidation amino acid an organic compound containing an amino (NIlF1r) group and a carboxyl (COOFI) group; links with other amino acids to form proteins amino acid score a method of protein evaluation which the milligrams of the limiting essential amino acid in the test protein are divided by the milligrams of the same essential amino acid in the reference protein amylopectin a form of starch made up of highly branched glucose polymers amylose a form of starch composed of smaller, linear molecules 1050 to 106 daltons that is less than 1% branched antioxidants substances that can inhibit reactions of free radicals ascorbic acid the active form of vitamin C biotin a sulfur containing B-complex vitamin C. - sometimes nonessentials, glycogen alcohols, and monosaccharides ascorbate acid vitamin C, a water-soluble vitamin that plays essential roles in mineral metabolism and tissue differentiation catechin a dietary polyphenolic cellulose a nonstarch polysaccharide that forms fibrous structural material cellulose a polymer of glucose with different bonds that humans can't digest chelating agents ... glucans/glucopyranose) polysaccharides that occur with branching,which make them less linear than cellulose and therefore more soluble; found in oats and barley beriberi neuropathy caused by thiamin deficiency bioavailability the availability of a mineral within the small intestine for absorption and the actual absorption (efficiency) of the mineral; implies retention of the mineral in the body and its use in cellular or tissue functions biotin a vitamin with roles in carboxylation reactions Sections of this Chapter were written by Susan Pittinger, PhD, RD, and John J. B. Anderson, PhD. For the previous edition of this text from Is a sulfur-containing vitamin selenium by microorganisms in the lower gastrointestinal tract calbindin calcium-binding protein found in intestinal absorbing cells and other cells of the body calcitriol hormonally active form of vitamin D produced by the kidney; 1,25 dihydroxycholecalciferol (1,25 -[OH] zD) carnitine a required cofactor derived from the essential amino acids methionine and lysine that facilitates transfer of long-chain fatty acids across the mitochondrial membrane and is essential for the oxidation of fatty acids carotenoids yellow or red pigmented found in carrots, sweet potatoes, leafy vegetables,milk fat, and eggyolk, which can be converted to vitamin A (retinol) in the body carotene plasma phospholipids that transport copper and act as an oxidase(enzyme) cellulose a carbohydrate made of long, straight glucose polymers in B linkage that resists hydrolysis in the human digestive tract; a dietary fiber chiral carbon a carbon atom with four different atoms or groups attached; can form isomers chitin a homopolymer of .A/-acetylglucosamine in the exoskeleton of invertebrates; sometimes included in food products as chitosan, a fiber component; possibly has a hypocholesterolemic effect chloride the form of the fat-soluble vitamin D3 produced when 7- dehydrocholesterol in the skin is photolyzed by ultraviolet irradiation cholesterol a sterol found in cell membranes of all animal tissues that is a precursor for production of bile and steroid hormones choline a metabolic precursor of the key structural element of membranes,phosphatidylcholine, and the neurotransmitter acetylcholine chylomicrons lipoprotein particles formed in the intestine after lipid absorption to transport dietary triglycerides and cholesterol through the 'mph and into the systemic circulation 40 PART I Nutrition Basics cobalamin vitamin Bp a B-complex vitamin with porphyrinlike, cobalt-centered corrin nucleus;plays important roles in the metabolism of propionate, amino acids, and single carbons; absorption requires presence of intrinsic factor (IF) coenzyme QtoICoQro) a ubiquinone that exists naturally in the body and is associated with reactions of the mitochondrial electron transport system; vitamin-like metabolite with redox properties cretinism a congenital condition typically caused by severe iodine deficiency during gestation; characterized by arrested physical and mental development and subnormal intelligence deamination removal of amino group from organic molecules denaturation disorganization of the tertiary structure of proteins by mechanical agitation, heat, cold, acidity, or alkalinity dextrins intermediate products of starch hydrolysis dextrose glucose produced by the hydrolysis of cornstarch dietary fiber plant and intrinsic plant material that is not digestible by human gastrointestinal tract enzymes;may be soluble or insoluble disaccharides a carbohydrate composed of two monosaccharides units joined together into two monosaccharide units essential amino acids amino acids for which bodily synthesis is inadequate to meet metabolic needs and that must be supplied in the diet: threonine, tryptophan, histidine, lysine, leucine, isoleucine, methionine, valine, and phenylalanine; formerly called "indispensable amino acids" essential fatty acids fatty acids that the body needs but cannot synthesize; the polyunsaturated fatty acid linoleic and a-linolenic acids ferritin an iron-apoferritin complex that is the major storage form of iron in the liver and other tissues folic acid (folate) a specific folate vitamer also called pteroylglutamic acid, a deficiency of which results in macrocytic anemia free radicals atomic or molecular species with unpaired electrons that are highly reactive, take part in chemical reactions, and can cause cell destruction; one example is highly reactive oxygen fructans non absorbed polymers of fructose; support the growth of beneficial colonic bacteria; examples are fructooligosaccharides and inulin fructose a monosaccharide fruit sugar; the sweetest of the monosaccharides; functional fiber nondigestible carbohydrates that have been extracted or manufactured from plants that have a beneficial physiologic effect in humans galactose a monosaccharide produced by the hydrolysis of lactose by digestive enzymes glucose a monosaccharide found in food and important source of energy for living organisms; usually found as a disaccharide linked to fructose (sucrose),galactose (lactose), or glucose (maltose) glucose tolerance factor (GTF) a biologically active chromium complex found in foods; unknown structure glutathione peroxidase (GSH-Px) a selenium-containing enzyme that is the major active form of selenium in cells glycemic index the ranking of different carbohydrates on their ability to raise blood glucose levels as compared with a reference food glycogen a branched-chain glucose polymer used for glucose storage in animals glycolipids membrane lipids with one or more sugar molecules attached to the polar head group; high concentrations in the brain goiter a chronic enlargement of the thyroid gland, visible as a swelling at the front of the neck; commonly associated with iodine deficiency goitrogens compounds that block the uptake and use of iodine by thyroid cells and contribute to iodine deficiency and goiter; some are cabbage, turnips, rapeseed from rape plants,peanuts,cassava, sweet potatoes,soy, and kelp; some goitrogens are inactivated by cooking heme iron the iron-porphyrin complex (prosthetic group) that is a constituent of hemoglobin, myoglobin, and a few other proteins hemoglobin a conjugated protein containing four heme groups and globin, with the property of reversible oxygenation hemosiderin a complex insoluble form of storage iron hepcidin a small regulatory peptide hormone that acts on the mucosa and cell lipids, regulates iron absorption and iron release; amount produced by the liver is related to the amount of iron stored in the liver hydrogenation the process of adding hydrogen across the unsaturated fatty acid double bond; commercial hydrogenation of oils increases saturation and also converts them to trans fatty acids hydroxyapatite a crystalline structure in bone consisting of calcium phosphate and calcium carbonate hypercarotenodermia an accumulation of carotenoids in the skin, causing skin yellowing isoprenoids members of a large family of lipids with a carbon skeleton based on five-carbon isoprene units with alternating single- and double-bond structure (conjugated double bonds); lisoisoprenoid structures function as antioxidants by quenching free radicals; examples include fat-soluble vitamins, carotenoids, and other phytochemicals lycopene and limonene as well as steroid hormones ketone bodies three compounds (acetoacetic acid, acetone, and B-hydroxybutyric acid) formed by linking two acetyl coenzyme A (acetyl coA) groups lactose the principal sugar in mammalian milk; a disaccharide composed of glucose and galactose lecithin (phosphatidylcholine) a phospholipid containing choline; found in the membranes of biologic organisms; is part of bile, where it emulsifies fats, and is part of lipoproteins, where it transports triglyceride and cholesterol lignin a woody fiber found in the stems and seeds of fruits and vegetables and in the bran layer of cereals; because not conjugated double bonds, is an excellent antioxidant; some, such as that found in flaxseed, have phytoestrogen activity C H A P T E R 3 · T h e V i t a m i n s a n d M i n e r a l s l i m i t i n g a m i n o a c i d a short supply as a precursor for protein synthesis; lack of a specific limiting amino acid restricts the level of protein synthesis in the body macrominerals minerals required by humans in amounts of 100 mg/day or more (i.e., in large quantities) macronutrients macromolecules in plant and animal structures that can be digested, absorbed, and used by another organism as energy source and as substrates for synthesis of the carbohydrates, fats, and proteins required to maintain cell and system integrity maltose (malt sugar); formed from two glucose molecules, is seldom found naturally in the food supply but is formed by hydrolysis of starch polymers medium-chain triglycerides (MCTs) a fat with fatty acid chain lengths of between 6 and 12 carbons, which are short enough to be water-soluble; requires lesser bile for solubilization, is not converted to chylomicrons, and is transported as free fatty acid bound to albumin through the portal system menadione a fat-soluble synthetic form of vitamin K3 menaquinones a bacterial form of vitamin K2 methylation the addition of a methyl group to a molecule, a nonenzymatic, zinc-binding protein found in intestinal absorbing cells and other tissues of the body, especially the liver microminerals/trace elements) minerals required by humans in amounts of less than 100 mg/day (i.e., in quantities of a few milligrams or even micrograms) monoglycerols(monoacylglycerides) lipids with only one fatty acid attached to the glycerol molecule monosaccharides the simplest sugar units with the formula (CH2O)n monounsaturated fatty acids (MFAs) fatty acids containing one double bond myoglobin an oxygen-storing iron protein chain in muscle cells which is in striated muscle myo-inositol a vitamin-like factor s1' tt lesized from glucose that plays important roles in phospholipids and mediator of cellular responses to external stimuli niacin vitamin B3 the generic term for the antipellagra vitamers nicotinamide (also niacinamide) and nicotinic acid, which play essential roles as cofactors for numerous en4.'reasinvolved in the metabolism of carbohydrates, protein, and energy night blindness impaired dark adaptation caused by loss of visual pigments from vitamin A deficiency; also called nyctalopia nonessential amino acids amino acids which the body synthesizes in adequate amounts to provide endogenous intermediates to form the monoamines (tyrosine and dopamine, also called "conditionally essential amino acids") nonheme iron iron present in food, readily water soluble and often with sweet omega-3 fatty acid a fatty acid with the first double bond located at the third carbon from the methyl end (e.g., eicosapentaenoic acid [C20:5 co-3]) omega-6 fatty acid a fatty acid with the first double bond located at the sixth carbon from the methyl end (e.g., linoleic acid [C18:2-6]) pantothenic acid a B-complex vitamin that plays essential roles in the synthesis of coenzyme A and acyl carrier protein pellagra a dermatosis caused by niacin deficiency peptide bond a chemical bond between two amino acids; links amino acids into proteins phospholipid a lipid molecule used to construct biologic membranes; composed of two fatty acids and one of several polar groups linked to glycerol phosphate phytic acid (phytate) a phosphorus-containing compound that is found in the outer husks of cereal grains; binds with minerals and inhibits absorption polysaccharides carbohydrates that contain more than 10 monosaccharide units polyunsaturated fatty acids (PUFAs) fatty acids containing at least two double bonds proteins complex nitrogenous compounds made up of amino acids in peptide linkages protein digestibility corrected amino acid score (PDCAAS) the official assay for evaluating protein quality in humans pyridoxine (PN) a B-complex vitamin (B6) that plays essential roles in the metabolism of amino acids resistant starch starch that resists digestive enzyme action and reaches the colon; a starch encased in a nondigestible plant seed coat or modified by cooking or processing can be resistant retinol a form of vitamin A that is essential for visual D receival cell differentiation retinol activity equivalents (RAEs) the measure of the vitamin A activity in foods riboflavin a B-complex vitamin, vitamin B2, that plays essential roles as a cofactor of enzymes involved in many cell oxidation-reduction reactions rickets a disease of infants and young animals characterized by impaired mineralization of growing bone caused by deficiencies of vitamin D, calcium, or phosphorus S-adenosyl-methionine a methyl donor; forms S-containing amino acids, sulfur-containing amino acids, methionine and cysteine, which provide roles as one-carbon donors and the production of antioxidants saturated fatty acids (SFAs) fatty acids in which all available carbon binding sites are saturated with hydrogen short-chain fatty acids (SCFAs) fatty acids with 4 to 6 car bons; the fatty acids acetate (2 carbons), butyrate (4 carbons), and propionate (3 carbons),which account for 85% of all SCFAs produced in the human colon; are readily absorbed by the intestinal and colonic mucosa scurvy a disease characterized by impaired formation of connective tissues caused by a vitamin C deficiency structured lipids a synthetic triglyceride with medium- and long-chain fatty acids esterified to glycerol; used in parenteral nutrition formulas 42 PART I : Nutrition Basics sucrase an enzyme that cleaves sucrose (table sugar) sucrose a disaccharide (commonly table sugar) taurine a compound found in plants and in which glucose is transported between cells thiamin vitamin B1, a B-complex vitamin that plays essential roles as a cofactor of enzymes in oxidative decarboxylation of a-keto acids and transketolation reactions; deficiency causes beriberi, muscle wasting, neuropathy, spasms,and (eventually)convulsions caused by low blood calcium magnesium thiamin a B-complex vitamin (B1) that plays an essential role as cofactor of enzymes involved in dehydrogenase and transketolase reactions thyroxine(T4) an iodine-containing hormone secreted by the thyroid gland to regulate the rate of cell metabolism tocopherol biologically active form of the fat-soluble vitamin E transamination reversible transfer of an amino group between an amino acid and a keto acid trans-fatty acids stereoisomers of the naturally occurring cis-fatty acid in which hydrogen is added back across the double bond; result from a hydrogenation process and are naturally occurring to a limited extent in milk and in meat from ruminants,where microflora convert cis-to trans-fatty acids;present to a much greater extent in processed foods triglycerides (triacylglycerols) lipids consisting of three fatty acid chains esterified to a glycerol phosphate molecule triiodothyronine (Tr) an iodine-conaining thyroid hormone with several times more biologic activity than thyroxine tryptophan an amino acid that serves as the meabolic precursor of niacin ubiquinones vitamin-like metabolites such as coenzyrne Q1e that play essential roles in processes such as respiratory energy metabolism and have antioxidant functions that may spare vitamin E in cells ultratrace elements minerals in the body, each of which exists in small quantities and is typically measured in micrograms urea product of the urea cycle containing two nitrogen atoms and carbon dioxide; the chief form in which nitrogenous end products are excreted in terrestrial animals vitamer one of multiple forms (all isomers and active analogs) of a vitamin vitamin an organic compound, essential in very small amounts in supporting normal physiologic function, that generally cannot be bioqmthesized quickly enough to meet the needs of the body vitamin K a fat-soluble vitamin that plays essential roles in the biosynthesis of several proteins involved in blood clotting and bone mineralization xerophthalmia a disease caused by vitamin A deficiency; charateized, by drrrness and eventual ulceration of the cornea The major nutrients and their roles in the human body that will be discussed are the macronutrients (i.e.. Body composition Nutritional adequary Metabolic parameters Hunger and compliance Effect on weight maintenance From FreedmanM et al: Popular diets: a scientific review,ObesRes9(suppl 1):1S,2001. Use of an Eating Inventory questionnaire can identif' persons at risk of unintentional weight loss (Hays et al., 2006). For example, diet soft drinks, which may not contain sugal also are acidic by nature and therefore cause a drop in pH. If PD or continuous renal replacement therapy is used,t}te amount of glucose absorbed can add significantly to the daily energy intake and should be calculated.Large intakes of carbohydrate and fat will prevent the use of protein for energy production. How would you classi$zAnnie's calcium intake at the initial visit with her physician (who did not take a diet history or estimate her calcium intake)? A randomized clinical trial in which participants were given a structured behavioral treatment program with weekly contact and individualized feedback showed CHAPTER2l I Weight Management 545 Lifestyle Modification Strategies Setting Easy-ToAchieve Short-TermGoals Increase number of minutes of walking on weekends Include one fruit at lunch Self-Monitorlng Food and activity records Regular weigh in (i.e., daily or weekly) Stimulus Gontrol Shop when not hungry and with a grocery list Make eating a singular activity (e.g., turn off the television) Gonfronting Barriers Problem-solving steps Planning ahead(e.g., healthful snacftson hand) Stress Management Daily meditation or yoga Progressive relaxation and visual imagery exercises Social Support Organized commercial suppoft meetings or classes Family, friends, co-workers as support systems Contractlng Realistic, simple, and achievable healthfirl goals Useful for short-term change ModifiedfromForqnJP:Needfor lifestyleintervention: howto begin, ArnJ Cardiouav 96:I 1E-14E, 2005. However, DRIs are intended for healthy populations, not for acute or chronically ill populations. Shinn M, TooheySM: Community contexts of human welfare, Annu ReaPsychol 54:427, 2003. So while checking out its huge library is fun on PC, it's even better on your smartphone. When monitoring patients for changes in nuuition test values, one must consider how much change is necessary to give confidence that a difference is significant. L294 APPENDIXES Selected FoodSources of VitaminK Food Micrograms per Serving +60 364 248 Brussels sprouts, % cup Tirrnip greens, raw, chopped, I cup Broccoli, % cup Lentils, dry, % cup Kale, t/z cup cooked Spinach, raw, chopped, % cup Garbanzo beans, dry % cup Swiss chard, % cup Micrograms per Serving Food 104 88 68 6l 49 25 23 18 10 Beef,3.5oz Pork, 3.5 oz Soybeanoil, 1 Tbsp Letnrce,chopped,% cup Asparagus,I cup, cooked Eggs,whole Suawberries,1 cup Oats, I oz Milk, 8 oz zt4 150 150 t49 IJZ tz) Dietary reference intake of vitamin K : 90-120mcg Calcium Any dietary source of calcium counts toward the daily intake, but low-fat milk or yogurt or fortified substitutes are the most efficient and readily available. o v .o z APPENDIXES L227 l. africanu.nt. Weightloss Frequent snacks, nutrient-dense foods,and nutrition supplements {ggrithm contentdevelopedbyJohnJ.B. Anderson,PhD, and SanfordC. "I talked to you about a month ago to see how you were doing with your carbohydrate levels for each meal and insulin dosage." . Investigate the quality of the manufacturer whose product is being considered.At a minimum, it is important to know that the retail suppliers carry only manufacturers that adhere to high-quality standards or that the health care professional recommending a product is knowledgeable about the quality of dietary supplements.One of the questions to ask is how herbs are grown, selected,stored, and processed to ensure absence of microbial contamination,proper identification, and potenry. Variability Genetic Certainly it's far more challenging to pin down the details of such disorders when multiple genes and environmental factors are involved. Von RoennJH: Pharmaceurical management of nutrition impact symptoms associated with cancer. However, in the event of borderline values, the possible influence differences between the population of which the patient is a member and the reference population may need to be taken into account. Proprionate (3C) is absorbed and cleared by the liver and may be important in hepatic lipid or glucose metabolism.Acetate (2C) is produced in the greatest quantities from undigested carbohydrate,is rapidly metabolized into carbon dioxide by peripheral tissues, and can serve as substrate for lipid and cholesterol synthesis(Cummings et al.,2001). Appel LJ: Lifestyle modification as a means to prevent and treat high blood presstre,J Am SocNEhml l4:S99, 2003. This distinction is important for effective therapy because different types of tumors respond to different therapeutic approaches. SeppoL et al: A fermented milk high in bioactive peptides has a blood pressure-lowering effect in hypertensive*bjeccs, Am J ClinNutr77:J26,2003. Micronurient considerations(seeTables20-2,20-3, and 20-4) 9. Facilitate internal motivation for Ghange 49f 19 i Intervention: Gounseling CHAPTER "costs" and "benefits" of adopting new behaviors, and counselors must keep an open mind and consider the social milieu in which the client lives. Several combinations of CAPD and CCPD are possible and will be referred to as PD. Metabolic aberrations that occur during starvation cause a host of negative effects, including bradycardia, hypotension, dry skin and hair, easy fatigue, consripation, nervous system abnormalities, depression, and death. Why changefails . carbohvdrates. Astronauts living in conditions of zero gravity for only a few days experience so much bone loss, especially in the lower extremities, that appropriate exercise is a feature of their daily routines. Men reduce weight faster than women of similar size because of their higher LBM and RIIR. Risk assessment entails hazard identification, chaiacterization and exposure; risk management covers risk evaluation, option assessment and implementation, and monitoring and review of progress. You might say, "The ruler will help us see where you are in terms of changing your diet. Seea/soNeurologic disorders lesions of, 1069-1072 localizing signs of, 1069-1072 structure and function of, nutritional aspects of, 1104-1105 w i r i n g o f , 1 0 6 8 - 1 0 7 2 ,1 0 7 1 f NES (night eating syndrome), definition, 563 net protein utilization O{PtD, 63 neural crest defects definition, 160 hlpervitaminosis A and, and 174 neural tube defects (NTDs) definition, 160 maternal obesity and, 165-166 spina bifida as, ll82-1185. Besides being in bone, receptors for vitamin D have been identified in the gastrointestinal tract, brain, breast, nerves, and many other tissues. be within 2 feet of whomever they are communicating with so they can observe their eyes.Blacks are likely to be offended if a person tries to increase the distance between when them. What other nutrition assessment information do you need before you s€the family? Osmolality is stated as the number of milliosmoles of solute (particles)per kilogram of solvent, and is usually not used to define the concentration of a formula. F r a n zM, S ,R D L , D ,C 0 E Nutrition Conceptsby Franz,Inc. The bile acids produced during the digestive process normally are resorbed in the proximal gastrointestinal tract. If symptoms persist despite these strategies,further evaluation and diet therapy should be tailored to the underlying cause. Further, it must meet the significant scientific agreement standard and requires prenotification of the Food and Drug Administration (FDA). This illustrates the importance of thrombosis in clinical events. A counselor's urges may lead in the direction of defending one's own ideas, but the result is frequendy defensiveness on the part of the client. al., 2002). C-reactive protein inhibits formation of nitric oxide by endothelial cells, which in turn may promote vasoconstriction, leukocyte adherence, platelet activation, and thrombosis (Bautistaet al., 2001). Nutrition Diagnosis 1: Chewing difficulty related to avoidance of many foods and preference for soft fruits as evidenced by mouth pain Nutrition Diagnosis l; Inadequate protein intake related to fruit-based diet as evidenced by intake ofless than 50% of estimated requirements 1. The high iron stores come from eating excessive iron supplements or from receiving frequent blood uansfusions, not from increased iron intake in the diet. Loss of appetite, suength, and weight frequendy precede other s).rrnptoms.In some cases achylia gastrica (absence of hydrochloric acid and pepsin) or achlorhydria may exist for years before the onset of gastric carcinoma. Victimization I Perfectionism r Avoidance . Calculation: DER :;Ti ff]/o:#i:255ex 1le DER : 3045 kcaVday *Norr: The DER may be further modified as a result of infection, fever, or other srystemic conditions such as body composition, cystic fibrosis-related diabetes mellitus, or pregnancy.Careful and frequent reassessment must be made on an anticipatory basis. Review information on emergency preparedness information from the American Red Cross (www.redcross.org)and the Department of Home Land Security (www.dhs.gov.org)and propose an emergency food package for your family that includes food and water and supplies,including menus for 7 days. Check medications and treatments to determine if new choices are in order. Hearttransplant Developedby L. These tubes are used for early postoperative feeding. The large, buoyant VLDL particle is believed to be nonatherogenic. These infections often are compounded by a compromised immune response, preexisting malnutrition, and gastrointestinal consequences of HIV infection (see Chapter 38). of EpsteinCD et al: Comparison of methods of measurements oxygen consumption in mechanically ventilated patients with multiple trauma:the Fick method versus indirect calorimetry Crit CareMed 28:1363,2000. o I L ::a vlx \o I -l E6t ra(fi P \ si s\I q I q) d - d U!. Although most patients maintain normal prothrombin times without supplementation, decreased biologic activity of vitamin K has been reported. SseCentral parenteral nutrition cramps, leg, in pregnancy, 182-183 cranberry supplemental, efficary, reviews, 478t cranial nerves, functions, 1072t CR (calorie restriction), longevity and,23b C-reactive protein (CRP) definition,833 high-sensitivity (hs-CRP), 420 as marker of inflammation, 425 cardiovascular disease risk and, 42 5-426, 426t in assessment for protein-calorie malnutrition, 420 in cardiovascular disease risk assessment,848-849 creatine as muscle-building supplement, 607 creatine phosphate (CP) definition, 587 in energy production, 588 creatlnlne blood values,in renal disease,937t definition, 41 I in assessment for protein-calorie malnutrition, 420-421 semm, reference range/significance, 41 5t cretinism, 129 definition, 40 neonatal, maternal iodine deficiency causing, t 76 - 1 7 7 cri du chat syndrome, 372 Crixivan (indinavir sulfate), nutritional complications, 1004t Crohn's disease,689-69 5. See aholodine manganese as, l3l-132 molybdenum as, 133-134. In this instance ileus is common for 7 to l0 days after the insult, and parenteral nutrition may be necessary. Care of loneterm catheters requires specialized handling and extensiie patient education. Include review of patient's medical diagnosis/qrmptoms for reasons why they may be taking supplements (e.g.,osteoarthritis, heart disease,high blood pressure, night sweats,loss of memory fatigue). Kudsk KA: Immunonutrition in surgery and critical care,Annu Rn Nutr 26:463,2006. Fanconi'ssyndrmneis characterized,by an inability to resorb the proper amount of glucose, amino acids, phosphate, and bicarbonate in the proximal tubule, thus causing excretion of these substances in the urine. Although what is known today is but the tip of the iceberg compared to what will come in the years ahead, it is clear that integrating knowledge of gene variants into dietary recommendations for populations and individuals will increasingly play a role in nutrition counseling and poliry making. Uremia is a clinical slmdrome of malaise,weakness,nausea and vomiting, musclecramps and itching, metallic taste in the mouth, and often neurologic impairment that is brought about by an unacceptable level of nitrogenous wastes in the body.The manifestations are somewhat nonspecific and vary by patient. Matzo, (i.e., unleavened bread) is eaten, and all cake and baked products are made of flour from ground-up matzo or potato starch and leavened only with beaten egg whites. As a result, genes have protein products with differing amino acid sequences(isoforms)and often different functions. I feel tlat you have done extremely well, given your circumstances." o "MaDy people I talk with express the same problems. CharuhasPM: Medical nutrition therapy in bone marrow transplantation.In Elliott L et al editors:The clinical guide to oncology nutritiln, ed 2, Chicago,2006,American Dietetic Association. 5 5+ 53 52 52 50 43 42 +l 38 36.5 31 JI 30 25 25.5 based on the recommended dietary allowance.They were developed to help consumers determine if a food contains a lot or a litde of a specific nutrient. Optimal nutrition permits the proper growth and development of the: respiratory anatomy; supporting structures of the skeleton and muscles;and related nervous, circulatory, and immunologic systems.Overall a person's nutritional well-being, as well as the proper metabolism of specific nutrients themselves,is essential for the formation, development,growth, maturity, and protection of healthy lungs and other associated body structures and processes throughout life (Andreoli et al., 2004). About I0o/o of calories per day from fat emulsions provide the 2"/o to 4o/o of calories from linoleic acid required to prevent essential fatty acid deficiency. fu described in Chapter l, dietary fat depresses gastric secretions, slows gastric emptying, and stimulates biliary and pancreatic flow, thereby facilitating the digestive process. If a secondary complication is present or if BMI is at the 95th percentile or above weight loss (about I lb per month) is advised. Antibiotics may interfere with this normal production. StewartCL et al: Comparison of two systems of measuring energy expenditure,JPEN J ParenterEnteralNutr 29(3): 212,2005. SeeHealth Insurance Portability and Accountability Act hip fracture in age-related osteoporosis,627 posrmenopausal risk, 62 1b histamine, in foods, reacaons, 7 46t histidine, requirements, by age group, 63t HIV-associated nephropathy, definition, 991 HfV disease,991-1020. SullivanSSet al: Adolescent girls in Maine are risk for viamin D deficiency,J Am Diet ,4ssoc105:97| , 2005. CanadaT: Clinical dilemma in cancer:is tumor growth during Nurr Clin Pract17:246,2002. The incidence (new cases)of HF has risen over the last 20 years because of an aging population, the increased number of people being saved from a MI, and the increase in obesity and associated hypenesion(Rich, 2005). Administration of pancreatic enzymes with meals may be beneficial for patients for whom the mixing of food and pancreatic juices is inadequate. Those at greatest risk of deficiency who may benefit from prescription of vitamin and mineral supplemens include patients who consume obviously poor diets or extreme calorie restricted diets, strict vegetarians, older adults, pregnant or lactating women, those taking medication known to alter micronutrient metabolism (see Chapter 16), patients in poor metabolic control (glycosuria), and patients in critical care environments. Nutrition professionals play an important role in the therapy of such individuals because they typically have oral-motor problems that affect their nutritional status and cause growth problems in early life. The unlocking of the genome and the logical sequencing of key targets will allow the creation of novel inhibitory and bactericidal products against which no microbe has yet had the chance to become resistant (Fox and Wang,2002). Nutrition professionals will gain a deeper understanding of the underlying genetic and biochemical basis for disorders and will be able to apply new tools that will focus on preventing disease through early detection and intervention. Related Diseases and Syndromes Hypertension Hypertension is a risk factor for CHD, stroke, and heart failure. This should allow the normal sensation of hunger to be generated and provide freedom from tube feeding during the day. Per serving,most meal replacements include 0 to 5 g of fiber; 10 to 14 g of protein; various amounts of carbohydrate,depending on whether they are artificially sweetened;0 to 10 g of fat: and 25"/" to 30Y" of RDfu for vitamins and minerals.Usually shakes are milk or soy based and may be high in calcium.They range from 150 to 250 kcaVS oz. Obese children are often the targets of discrimination. asp Cultural Competency with Adolescents I /pub/upload/mm/39/ culturally effective.pdf Institute for LifeCoach Training http ://www.lifecoachtraining.com/ I nt e r n a t i o n C a l o a ch i nFge d e r a ti o n on.org/ eweb/ J o u r n aol f C o u n se l i nPgsych o l o g y htq:/ / www.apa.org/journ als/cott/ 0 f f i c eo f M i n o ri t yH e a l th http ://www.omhrc. Should gene therapy be allowed on reproductive cells so that any corrected genes can be inherited by subsequent generations?Should human cloning be allowed? When hepaticblood flow is altered as in acute ischemic and chronic congestive hepatopathy,Budd-Chiari tytdrome, and hepatic venoocclusive disease, hepatic dysfunction occurs.Individuals with hepatic or portal vein thromboses should be evaluated for a myeloproliferative disorder.Parasitic,bacterial,fungal, and granulomatous liver diseases also occur. Merritt R, editor: The ASPEN natritiln sapplrt practice manual, ed 2, Silver Spring, Md, 2005, American Society for Parenteral and Enteral Nutrition. To meet their individual needs, patients must modifiz general guidelines to reduce insulin doses before (or after) or ingest carbohydrates after (or before) exercise. Calcium (1000 mglday) and vitamin D (800 to 1000 units/day) are typically recommended as supplements for patients being treated with one of the bone drugs, either antiresorptive or anabolic. If the weight appropriate for the child's anticipated adult height has already been reached, maintenance at that weight should be the lifetime goal (see Clinical Insighl: Determining Appropriate Rate of Weight Gain in the Obese Child). With depletion of the bile salt pool, steatorrhea develops. Med i c aN l u t r i t i o n T h e r a p y f o r I n f a n t s a n dC h i l d r e n Formuln. In North America and Europe this nutritional disorder is the most commonly encountered manifestation acquired from thiamin deficiency; it develops after severe or repeated attacks of postalcoholic delirium tremens. Calculating fat as a percentage of calories, although not as popular as it used to be, is effective in promoting a low energ'yintake. As the enteral rate is increased by 25 to 30 ml/hr increments every I to 24 hours, the parenteral prescription is reduced accordingly. Sodium requirements for infants, children, and aduls are increased in CF because of increased losses in sweat.'When sodium intake is inadequate, lethargy, vomiting, and dehydration may occur. Sixty percent of the \ILDL particle is triglyceride. FIGURE 36-2 Locat:'on of a transplanted kidney. Fry bread (fried dough) is a central part of American Indian cuisine and is eaten with foods such as stews, soups, and bean dishes.Fried foods are generally prepared with lard. The type of chili and amounr of capsaicin consumed seem to make the difference(Milke et a1.,2006). The %DV listed on the Nutrition Facts panel of food labels states the percentage of the DV provided in one seming Mtamin K cornes from the foods that we eat and the bacteria that normally reside in the intestines, which are able to make vitamin K. When the regulatory mechanisms falter, hypertension develops. The presentation of symptoms varies but may include reflux of gastric secredons, heartburn with episodes of substernal pain, belching, and esophageal spasm. Zitterman A et al: Markers of bone metabolism in congestive heart failure, Clin CbimActa 366:27,2006. Junien C, Gallou C: Cancernutrigenomics,WorldRn Nutr Diet 93:210,2Q04. "Is this feasible?" r "How do you see things turning out if you make these changes?" This is the stage in which goal setting is extremely important. Presently governmental and industry entities are working to develop high-quality manufacturing guidelines (Good Manufacturing Practices tGMPsl) for all dietary supplements,including botanical products. Mral diseases,including herpes simplex and cytomegalovirus, result in painful ulcerations of the mucosa. Lipoprotein High-Density High-density lipoprotein(HDL) particles contain more protein tlan any of the other lipoproteins,which accounts for their metabolic role as a reservoir of the apolipoproteins that direct lipid metabolism.Apo A-I, the main apolipoprotein in HDL, is an antiinflammatory' antioxidant protein that also helps to remove cholesterol from the arterial wall to the liver (Choi et al., 2006; Barter and Rye, 2006).Numerous groups are recommending that apo A-I or the ratio of apo B to apoA-I be added to determine risk and tailor treatment(Marcovina and Packard,2006;Walldius andJun gner,2006;Barter and Rye, 2006).The lower the ratio, the lower the risk would be for getting CHD. The patient can typically consume a normal diet within 3 to 5 days. The kidney also performs functions unrelated to excre- The syndrome is also characterized by hlpenension and tion. Other routine measurements such as serum calcium and phosphate were normal. A unique structure, differences in permeability between the various segments, and the response to hormonal control allow the tubule to produce a final urine that can vary widely in concentration of sodium, potassium, and other electrolltes; osmolality; pH; and volume. An appropriate range is 10% on either side of this weight. Many measures help to manage reflux (Box 26-l), but probably the most effective is to avoid eating several hours before retiring. Eventually the pouch expands to accommodate 4 to 5 oz at a time. Energy needs can hour period) only reduces protein breakdown by 50"/". Remember that qualified health claims must be petitioned for by a body outside the FDA such as the supplement manufacturer; thus, although evidence may exist for use of select dietary supplements for select health s)rynptoms, unless a request is formally made to FDA, such a claim will not be developed. In men, about 3% of body fat is considered essential. Last, dietary galactose is produced from lactose(milk sugar)by hydrolysis during the digestive process.Some infants are born witl an inability to metabolize galactose,a (see Chapter'14).Both galac condition called galactosemia tose and fructose are metabolized in the liver by incorporation into metabolic pathways for glucose.Fructose is incorporated into the glycolytic pathway but blryasses a major control enz).mein the pathway(Figure 3-2). These disorders result from the gain or loss of all or a significant portion of a chromosome. Ridker PM: High-sensiriviryC-reactive prorein, inflammation, and cardiovascular risk: from concept to clinical pracrice to clinical benefit,Am HeartJ 148:519,2004. Changes within a gene can alter the amino acid sequence of the protein. In addirion to milk, a variety of foods and calcium-fortified fuices contain calcium and can help children, teens, and adults get sufficient levels of calcium in their diets. Lessons learned from dietary management of rystic fibrosis, ProcNutr Soc62t793,20O3. For the child who is obese after 6 years of age, the probability of obesity in adulthood is significantly greater if either the mother or the father is obese. Towel and gloves Counesy Gail Cresci, MS, RD, CNSD, Assistant Professor Surgery CoStethoscope Director Surgical Nutrition Service,Medical College of Georgia, Augusta, Ga. products, whether for individual or institutional use, is increasingly complex. Nor, and withdrawal of any provoking agents. In contrast to syndromes caused by extra chromosomes, some syndromes are caused by the loss of a portion of a chromosome (a partial deletion); examples include Genomics373 Nutritional 13 i Assessment: CHAPTER Williams s1'ndrome (chromosome 7 deletion), BeckwithWiedemann syndrome (chromosome 11 deletion), and some types of Prader-Willi and Angelman syndromes (chromosome 15 deletions). 8 x A g e (y r) + P A x (l 0 x W e i g h t [k g+]9 3 4 x H e i g h t [m]) + 2 0 (k c a l f o r e n e r g y d e p o s i t i o n) EERfor Giils $18 Years(Withinthe 5th€5th Percentilefor BMI) EER : TEE + Energy deposition +934xHeight[m])+25(kcalforenerg'ydeposition) EER=135.3-30.8xAge(yr)+PAx(l0xWeight[kg] where PA: Physicalactivity coefficientfor girls 3-18 years: PA : 1.0 if PAL is estimatedto be > 1.0 < 1.4 (Sedentary) PA: 1.16if PAL is estimatedto be > l.+ < 1.6 (Low active) PA : l.3l if PAL is estimatedto be = 1.6 < 1.9 (Active) PA : 1.56if PAL is estimatedto be > 1.9 < 2.5 (V'eryactive) EERfor Men 19 Years and Older (BMl18.525 ks;/m2l EER: TEE EER : 662 -9.53 x Ag" (yr) + PA x (15.91 x Weight [kg] + 539.6 x Height [m]) where PA : Physical activity coefficient: PA: 1.0 if PAL is estimatedto be = 1.0 < 1.4 (Sedentary) PA : 1.ll if PAL is estimatedto be = l.+ < 1.6 (Low activе) PA : 1.25if PAL is estimatedto be = 1.6 < 1.9 (Active) PA : 1.48 if PAL is estimatedto be = 1.9 < 2.5 (Very active) From Insrirute ofMedicine, Food and Nutrition Board: Dieury referenceintakesfor energt, carbohydrate,fibea fat, fatty acids,cholesterol,protein, and amino acids, Washington, DC, 2002, The Nanonal AcademiesPress,vww.nap.edu. JanssenI et al: Skeletalmusclemassand distribution in 468 men andwomenaged18-88yr,J ApplPhysiolSg(l):81,2000. cdc.govlneedphp/dnpa National Academy Press-Publisher of Institute of Medicine DRIsfor Energy www.nal.usda.gov/ fnic/ foodcomp/ National Institutes of Health-Bioelectrical Impedance Analysis . SoubaW' Wilmore D: Diet and nutrition in the caseof the patient with surgery,traumaand sepsis.In ShilsME et al, vol 2. gov/guidelines/asthma National Cancer lnstitute(LungCancer] w\r'w. A waffie or pancake is about the size of a compact disc (CD) and about 7+-inch thick. Bioterrorism The threatof bioterrorism, the deliberateuseof microorganismsor toxinsfrom living organismsto inducedeathor disease,andthe nation'sfood andwatersupplieshavemadefood biosecurity,or precautionsto minimize rislg an issue of concern when addressingpreparednessplanning (Bruemmer, 2003).The CDC hasidentifiedsevenfoodbornepathogens as having the potential to be usedby bioterroriststo attack the food supply:tularemia,brucellosis,Clostridiumbotulinunt toxin, epsilon toxin of Clostridiumperfringens,Salmonella, E. JeelJot elqeun luonuerer ro ssol snloq aSersI?Jo ara^es . She is presently 5 ft 6 in. It is essential that users and their health care oroviders be knowledgeable about dietary supplements, including botanical products, and their modes of action and quality of manufacture to ensure their safe and effective use, particularly with reference to the potential interactions between dietary supplements and prescription or over-the-counter (OTC) medications (Figure l8-5). If the complications are found to causeserious morbidity and require rapid weight loss, referral to a pediatric obesity specialistis recommended.Otherwise parent and child readinessto make changesshould be evaluatedand eating and activity pafterns carefiilly assessed. If conflicting ideas arise, the counselor can use the sffateg'y, "on the one hand you want to change but love those old eating pafferns". 363 Ruth DeBusk,PhD, RD KEY TERMS alleles variants ofa gene;refers to the differentvariations in DNA sequence that a gene may have within a population autosomal-dominant refers to inheritance resulting when an allele on an autosome gives rise to a phenoqpe that is essentially the same whether a single copy of the allele is present (heterozygous, "carrier") or two copies are present (homozygous) autosomal-recessiverefers to inheritance resulting when a mutant allele carried on an autosome gives rise to a phenotype only when two copies of that allele are present; when only a single copy is present, the phenotype of the dominant normal allele masks that of the recessivemutant allele autosome one of rhe 22 pairs of nonsex (X or Y) chromoSOMCS bioactive food components nutrients and other food components that convey information to the genetic material and effect a change in gene expression, such as by serving as ligands for signal uansduction or for transcription control of gene expressron chromosomes subunits of DNA that are composedof DNA and protein; a means of packaging the large amount of DNA into the nucleus of a cell; humans have 23 pairs of chromosomes,and eachgene has an addressat a discretelocation on a specific chromosome codon a set of three nucleotides in deoxyribonucleic acid (DNA) arranged side-by-side; specifies an amino acid in the gene's protein product or a signal to start or stop transcription conditionally essential referring to a nutrient that is required to be present in the diet of individuals who, because of their genetic makeup, need it in higher amounts for optimal body function rather than other individuals who, because of genetic makeup, are able to internally produce enough of the nutrient 364 deletion loss of genetic material; may be loss of a portion of a chromosome or a single nucleotide deoxyribonucleicacid (DNA) the genetic material for humans and most organisms; consists of two strands of nucleotide building blocks arranged side by side on each strand; a linear arrangement of nucleotides that encodes the information needed to create and operate a living organism dominant description of genes with characteristics that are expressedwhen only a single copy of allele is present epigenetics heritable changes to tlle genome that do not alter the DNA sequenceitself ELSI ethical, legal, and social implications/issues of genetic research; initiative of the Human Genome Project to ensure that genetic information is used positively and fairly exons the sequenceof DNA nucleotideswithin a gene that codes for the amino acid sequence of the gene's protein product genes a segment of DNA tlat encodesthe instructions for synthesizing a protein genetic code the combination of codons that specifi' the amino acids used to synthesize proteins genetic engineering the alteration of genetic material, typically by recombinant DNA technology genetics the scienceof how traits are inherited gene variants changes in the rypical sequence of nucleotides at a particular locus; although technically a mutation, terminology is evolving such that "mutation" connotes a harmful consequence, whereas "gene variant" connotes a change that in itself is not harmful but has a consequenceto the functioning of the organism; changes in genesinfluenced by nutrition and other lifestyle choices are typically referred to as "gene variants" rather than "mutations" genome the total of an organism's genetic information NutritionalGenomics355 13 | Assessment: CHAPTER genomic imprinting processby which the phenotype is influenced by whether an allele is inherited from the mother or the father; technically: epigenetic modification of a prrental allele (or the chromosome on which it resides) in the gamete or zygote, resulting in differential expression of the two alleles in the somatic cells of the offspring genomics a broader concept of geneticsthat includes not only genes, their proteins, and associationswith diseases,but also the interaction among susceptibility factors and environmental factors and the potential for multiple genes, proteins, and environmental factors to influence health and well-being genotype an individual's unique genetic makeup heterozygous two different alleles at a single genetic locus; such an individual is called a heterozygote ("carrier"); in classical genetics a heterozygote has one normaVcommon allele and one variant/mutant allele; in nutrigenomics terminology, a heterozygous individual may have the more common allele and a variant allele or two different variant alleles homozygous two identical alleles at a single genetic locus; such an individual is called a homozygote; in classicalgenetics a homozygote has either two normal alleles or two mutant alleles; in nutrigenomics terminology, a homozygous individual may have two normaVcommon alleles or two copies of t}te same variant allele Human GenomeProject a multinational collaborativeeffoft to completely identifu the sequence of nucleotides in the DNA of human beings and numerous other organisms, associate this sequencewith genes and their protein products, and identifiz the function of these proterns intervening sequences DNA sequencesbetween two genes; most of DNA in humans, and function unknown introns DNAsequences betweentwo exons;thesesequences are transcribed into mRNA and then removed before the translation of mRNA into its encoded protein karyotype a visual display of chromosomes arranged in pairs according to size, from largest to smallest, followed by the X and Y chromosomes at the end ligands molecules or cofactors that bind to another chemical entity to form a larger complex, such as small molecules binding to a receptot a transcription factor, or the catalytic site of an enz;;urr,e; results in a change of activity, either activation or inhibition maternal inheritance a trait is passedfrom mother to child; see mitochondrial inheritance Mendelian inheritance the predictable inheritance parrern of a single gene trait; named after Gregor Mendel, who first described the rules of inheritance for single gene traits messengerRNA (mRNA) a classof ribonucleic acid (RNA) in which the information in double-stranded DNA is converted into a single-stranded RNA molecule composed of nucleotides containing the sugar ribose, the mineral phosphorus, and one of four nitrogen-containing bases (adenrne, cltoslne, guanrne or uracil); serves as an intermediary between DNA and the protein it encodes and directs the amino acid sequenceof the protein being synthesized metabolomicsthe studyof how metabolitesformedfrom cellular meabolismcanbe usedasbiomarkersfor diagnosticand therapeutic purposes;usefirl in nutritional genomics as a meansof monitoring efficacyof therapeuticinterventions mitochondrialinheritancethe inheritancepatternof a trait carried on mitochondrial DNA, which is typically passed from mother to child mutations changesin the DNA sequencethat may change the protein whosesynthesis directed by the information in the DNA sequence;if the changealters the function of the protein significantly,a diseasecan result nucleotide the building block of DNA and RNA; consists of the sugarribose,the mineral phosphorus,and a nitrogencontaining purine or pyrimidine base;in DNA the baseis adenine,cytosine,grrranine,or th1'rnine;in RNA it is adenine, cltosine, guanine,or uracil nutrigeneticsthe studyof the impactof anindividual'sgenetic varians on their metabolicand phpiologic function (i.e.,on suchparameterssaslevel of nutriens required,ability to digest and absorbfood, susceptibilityto variousdiseases) nutrigenomicsabbreviationfor nutritionalgenomics of the nutritionalgenomicsthe studyof the consequences influenceof nutrients and other bioactivefood componentson the expressionof the geneticmaterial;alsocalled nutrigenomics pedigreea visualmethod of tracing the inheritanceof traits through multiple generationsof a family penetrancethe proportion of a population that has a disthe associatedphenogenotypeand expresses ease-causing type; when that proportion is lessthan 100%, the gene is saidto havereducedpenetrance proliferator-activated peroxisome receptors(PPARS)antioxidantsthat protect againstoxidativestressand inflammation; may be usefulin reducingatherosclerosis pharmacogenomics the studyof the way geneticvariations affect drug efficacyand in key drug-metabolizingen'zymes safety;the geneticuniquenessofeach individual confersdifferent drug-metabolizingabilities;thus the samedosageof a drug may be toxic for one person,effectivefor another, and ineffectivefor another phenotypethe measurable expressionof a gene,suchas a physicaltrait or the level of a protein in a blood sample polymorphismrefers to one of multiple variationsof a gene'ssequence post-transcriptionalprocessinginvolves preparing the mRNA moleculefor translationinto protein,which involves removalof introns, cappingof the 5-prime end, and the addition of a poly-adenosine"tail" to the 3-prime end of the mRNA g someproteinsareslmthesized post-translatio nal processin (or in their precursor "pro" form) and must have chemical (e.g., or removed(e.g.,one carbohydrates) moietiesadded or more amino acids)beforebecomingan activemolecule promoter a specificDNA sequence within a gene,just before the coding region, to which RNA polymerasecanbind and transcribethe DNA into mRN{ an important region of a genein terms of regulatinggeneexpression Continued 366 PART3 I NutritionGareProcess proteins moleculescomposedof amino acids;carry out the work of the living cell by serving as enzymes,receptors, transporters,hormones,antibodies,or communicators proteomics the study of the stmcture and function of proteins in living organisms recessivedescriptionof genesthat are not expressed when only a single copy of an allele is presentand that only expresstheir phenotypewhen two copiesare present recombinantDNA hybrid DNA made from rwo different sourcesby cutting out a segmentof DNA from one organism and inserting it into the DNA of another;recombinant DNA technologyis alsocalledgeneticengineering responseelementa DNA sequence in the 5-prime(5') end of a gene(the regulatoryregion) to which transcriptionand other regulatoryproteins can bind and control the expression of that gene (restriction enzymes)bacterial restriction endonucleases enzymesthat recognizea specificDNA sequenceand cut the DNA at that location; bacteria contain thousandsof theseen4tmes, and eachhas a particular DNA recognition site; useful as "molecular scissors"for preciselyexcisinga sequenceof DNA that can then be transferred into the DNA of another organism; some single nucleotide polymorphisms used for diagnostic purposesinvolve changes within restrictionsites sexchromosomesin humans,the X andY chromosomes sex-linkedtraits carriedin the X or Y chromosomein humans,ranging from a changein a single nucleotideto the gain or lossof an entire chromosome (SNP) a typeof structural singlenucleotidepolymorphism variant of DNA that resultsfrom a changeto the basecomponent of a singlenucleotide;when sucha variant occursin greaterthan I % of a population,it is calleda singlenucleotide polymorphism transcriptionthe processof transferringinformation encoded in DNA to RN,\ mRNA servesas an intermediary betweenDNA and the amino acid sequenceof the protein to be synthesized transcriptionfactors proteins that bind to responseelements witlin the 5-prime end of a gene to increaseor decreasetranscriptionof DNA into mRNS bioactivecomponents in food can bind to transcriptionfactorsand thereby influencegeneexpression translation the processof transferringinformation encoded in nRNA into the amino acid sequenceof a protein xenobioticschemicalsthar areforeignto the body X-linkeddominantan inheritancepartern in which an allele carriedon the X chromosomegivesrise to the variant phenotypein womenwhen only one copy of the alleleis present (this terrninology is not relevant to malessince they have only a singlecopy of the X chromosome) X-linked recessivean inheritancepattern in which an allele carriedon the X chromosomegivesrise to the variant phenot'?e in women only when two copies of the allele are

presentin malesonly a singlecopy of the alleleis neededto give rise to the phenotypeisince male human beings have only a single copy of the X chromosomeand will typically expressthe phenotype if their X chromosomecarries the variant allele Y-linkedinheritance refersto an inheritancepatternresulting from an allele carried on the Y chromosome,expressed only in males. Nutrition professionals have long been intrigued and more than a little puzzled by the fact that one person can be lean and have an identical twin who is overweight, that the Pima Indians living in northern Mexico are lean even though their genetic counterparts in the American southwest are obese and have a high incidence of type 2 diabetes, and that a low-fat diet can reduce blood lipid levels in many people but not in everyone. GOLD (Global Initiative for Chronic Obstructive Lung Disease): Global strategy for the diagnosis,management,and prevention of chronic obstructive pulmonary disease,Executive summary, updated 2005, from www.goldcopd.org, accessedFebruary 5,2006. How would you counselEllen? Orteopros KarlssonM et al: The evidencethat exerciseduring growth or adulthood reducesthe risk of fragility fracturesis weak, Best PraaiceResClin Rheumatol15:429,2001. All sources of fluid being given to a patient receiving enteral nutrition, including feeding tube flushes, medications, and intravenous fluids, should be considered when determining and calculating a patient's intake. Fluoride can be used topically and systemically. M et al: Decreasedgrowth hormone levelsin the catabolicphaseofseverelnjury,SurgeryII:495,1992. CHAPTER3g 1041 NutritionTherapyforMetabolicstress:Sepsis,Trauma,Burns,andSurge I whedical Iretion-Jones\C, JonesJD: Improved equationsfor predicting energyexpenditurein patients:the Iretion-Jonesequations, Nutr Clin Pract17:29,2002. This tends to be constant and steadily progressive. Thereafter indirect calorimetry is most useful, exceptfor some patientswho are mechanicallyventilatedor receivingsupplemental oxygen. Silver MA: Dietary researchin heart failure, J Am Coll Cardiol 42:1224,2003. NN Y C, Ch q q rq n APPENDIXES 1241 -J I - Gaultier C et al: Lung development, New York, 1999, Oxford University Press. However since the pulmonary system is exposedto the environment,other inhaledpollutants may initiate the malignantcondition. Nutrition Diagnosis: Undesireable weight related to possiblegenetic susceptibility,unrecognized ... stacked consumption of high-fat foods. Cognitive behavioral therapy ... Predictivereverseamosabnormal scoringof ... Weight loss. Animals allowed to be eaten (clean) are quadrupeds that have cloven hooves and chew cud, specifically cattle, sheep, goats, and deer. Megestrol acetate ... The other types of information will be neededto help Mrs. Evaluating recommendations from the United States and Mexican-Americans are the largest subgroup of Hispanics. Insulin should be included in the patient's nutritional assessment. Chapter 13 ... Energy expenditure and are developed in particular for the Patient ... Diabetes ... The third Report of the National Cholesterol Education Program Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III), JAMA 285:2486,2001. Other drugs have been used in place of estrogens for the prevention and treatment of osteoporosis. These cases presented a previously unknown disorder. 6, Glycogenesisusesa glycogen primer reaction and then glycogen synthetaseand branching en4lmes to synthesize glycogen. Food and Nutrition Board, National Research Council, NAS: Dietary allowances, ed 10, Washington, DC, 1989, National Academies Press. Neer R:Uet al: Effect of parathyroidhormone (1-34) on fractures in women with and bone mineral density in postmenopausal... N Engl J Med 344:1434,2001. SeealsoFolate ptyalin, in digestion,6t, 9 ptyalinism, definition, 161 ptyalism gravidarum,182 puberty definition, 2,2,6 physiologicalchanges, 246-247,247t, 248f public health assurance, definition, 310 Puerto Ricandietarypatterns,354t PUFAs: Physical activity did not appear to be related (Kavouras et al., 2003). edu./bodycomp.rls/ Adipose fat mass measurement ... Albertasity, ... 5 Infant Nutrition ... Some of these are specific ... Persons must be ... What's a wheel? ... sitting of individualusedfrom ... sFrom reduce body of. Diagnosis: ... Bone ... cracking ... Vegetables ... Assessment Physical ... For ... Reducing ... SciSportsExerc25:71,1993. Durnin JVGA: Energy requirements:generalprinciples, Eur J Clin Nutr 50(suppl1):2,1996. Decreased bicarbonate secretion can further reduce digestive enzyme activity. Prader-Willi and Angelman's syndromes typically also have abnormal feeding behaviors. These single- or multiple-lumen catheters are placed in the cephalic, subclavian, or internal jugular veins and fed into the superior vena cava. popularity of organic and natural foods continuesto ... increasewith the envi,rn of ethical consumerism. 988 PART5 I Medical Nutrition Therapy Fairey AS et al: Physical exercise and immune system function in cancer survivors: a comprehensive review and future directions, Cancer94:539,2002. Data from Maternal Child Health Bureau: Newborn screening: toward a uniform screeningpanel and system,Genet Med 8(Suppl):1S, 2006; and SaugstadLF: From genetics to epigenetics, Nutr Health, 18:285,2006. Some disaccharides contain ... Source: ... the complete ... intolerance (galactoseisneeded)... The first ... are ... insulin ... Therapeutic ... Guard ... surgicaloncology.In Elliott L et al, editors:Theclinicalguideto oncologynutrition, ed2, Chicago,2006,AmericanDieteticAssociation. Regurgitation occurs in about half of infants in the first few months of life; most casesresolve after the first year. On the other hand, a chronic low protein intake contributes to low levels of serum albumin, which lowers both serum IGF-I and serum calcium, a situation in which fracture patients may be especially vulnerable. 2 I6 241.7 0 E 234.9 MD 283.7 O/ I 9 6 0 . Acceleration of bone loss coincides with the menopause, either natural or surgical, with the ovaries stop producing estrogen. McCance SA et al: North American Summit on Aspiration in the Critically Ill Patient consensusstatement, TPEN J Parenter Enteral Nutr 26:80. The dietary protein level for patients has changed over time. In dentition status declines,masticatory performance is compromised. Martindale R: Clear liquid diets:tradition or intuition? See also Enteral nutrition face labels, 344f, 347, 347f definition, 337 for cancer survivors, recommendations, 968f, 970f history in nutrition assessment,195-198 imbalance, 384-387 in cancer etiology, 962b in cancer prevention, recommendations,967, remote monitoring labeling , 344 monitoring report, 340, f41t optimal, pulmonary system and, 901 parenteral, 5-6, 5 18-522. K r u m m eFt A, H. Erie, DR, J D EndowedProfessor Nutritional Sciences University of Cincinnati Cincinnati, Ohio MaryDemarest Litchford, PhD,RD,LDN President CASE Software& Books Greensboro,North Carolina B e t t y L , L u c a s M, P H R , DC , D Nutritionist Center on Human DevelopmentandDisability University of Washington Seattle,Washington A n n s l e M y a l o e M , S R D ,C N S D Nutrition SupportTeam Mt. CarmelWest Hospital Columbus,Ohio LauraE. These should be considered for patients whose swallowing function is inadequate to ensure their nutritional health (see Chapter 20). They also reach ... Each holiday has certain associated food delicacies. A food providing 5% of the DV or less is a low source, whereas a food that provides 10% to ... the DV is a good source. In infants, thickened feedings have been used for a number of years, and evidence suggeststhat thickening may be helpful in the frequency of postprandial emesis and reflux (Orenstein, 2001). Tell them that as part ofyour studiesyou need to find out more about the application processand would like to complete an application for your casestudy family. Preventnutritiondeficiencies . Thesefactorsarepresentedin Table 33-3 andincludinglosing weight if overweight;limiting alcoholintake;adopting a dietary pattern that emphasizesfruits, vegetables,and low-fat dairy products;reducing fat, especiallysaturated fat, and cholesterol;reducing intake of dietary sodium; andincreasing physicalactivity; and stopping smoking(NIH, 2004) In individualswith normal blood pressure, ... intake ... both... vigorous ... substantialbody of evidencesuggestthat ... intake. ... In addition, ... glucose and insulin resistance ... supplementation ... The resultof gastricsurgeryare favorable,and there are ... Regarding the ... cholesterol... Glomerular ... reduction of excessbody weight after gastrectomy,gastric surgery correlates... about 30 to 40% of initial body weight. In 2005 the FDA issued a notice of proposed rulemaking (notice) for over-the-counter nasal decongestantsand weight control products containing PPA preparations, reclassifying PPA as not safe or effective for OTC use... What stepscan you take to design a plan? In particular, dietary supplements that have similar actions to prescription and OTC medications should generally not be combined because the effects can be additive and cause harm (DeBusk, 2000). Mutch DM et al: Nutrigenomicsand nutrigenetics:the emerging faceof nutrition,FASEB J 19:1602,2005. It also involves identifying points at which control can be applied, thus preventing or eliminating the food safety hazard or reducing it to an acceptable level. Workplacedirected ... Effect of soft food and ... dentine and tooth development and ... Caries ... Primary ... pulp ... severity of dental caries... Supplemental vitamin ... treatmentof establisheddisease. These foods are offered at the appropriate age to support developmental readiness to meet energy needs. With high dextroseconcentrations, abrupt cessation of CPN shouldbe avoided,particularly if the patient's glucose tolerance is abnormal. Infants with severe disease often require prolonged intensive medical care. Inforrnrately sustainedweight loss is difficult to achieve in this age-group. Also available is rosiglitazone combined with glimepiride (Avandaryl). reductasegenocye Fohr IF et al: 5.IO-Methylenetetrahydrofolate reductase polymorphisms... Bottle ... healthywomenwomen,Am J Clin Nutr 75:275,2002. Patients may have a low serum vitamin B12level and elevated serum homocysteine levels and may not process other nutrients efficiently (including iron or calcium) without normal acid production. ...

(Figure 24-9 ...) Normal intake ... Vitamin D ... Vitamin E ... cholesterol level ... intake ... Flow ... T Table ... Biochemical ...

Common Medications That Increase Calcium Loss and Promote Bone Loss ... Medications Antacids Anticonvulsants ... Heparin Phenothiazine derivatives ... Thyroid hormone Corticosteroids Lasix and thiazide diuretics Methotrexate Cyclosporine Lithium Tetracycline Aluminum-containing antacids ... of a pregnancy ... 24-9 ... Vitamin E content of foods is stated as milligrams of a-tocopherol, milligrams of a-tocopherol equivalents (mg ct-TE), or as units on supplement labels. Imagine for Change 50f Counseling 19 I Intervention: CHAPTER that you decided to change. In addition, the USDA Food Safety and Inspection Service (FSIS) operates the PrepNet (Food Threat Preparedness Network) and the Food Biosecurity Action Team (F-Bat). The counselor should be seatedin a manner that reflects interest in the client, such as sitting directly across from one another in chairs without a desk as a barrier. Of interest is the Heart Outcomes Prevention Evaluation Trial, which included 9541 subjects, 38% ofwhom had diabetes(Yusuf et al., 2000). Consumer-Directed Heart Dietetics Association Materials Definition, 41 parenteral, for premature infants, I 124, 1124t requirements for, in metabolic stress,1030 supplemented, for adult total parenteral nutrition formulations, 520t trace minerals, intake, bone and,,625-626 tacmor monitor, activity-related energy expenditure measurement, 28 traditional Oriental medicine definition,471 description, 47 3t research,centers foq 475t training, effect, on energy sources for muscle contraction,591 transcription factors, 371 transmembrane definition, 42 in amino acid synthesis, 62 in information decoding, 370 trans-fatty acids, 53-5 5 definition, 62 in medical nutrition therapy for diabetes, 812, 4I8 t r a n c i t i o n , 1 I 8 1 8 1 8 t halfdose/reference range, 42 ... in assessmentfor protein-calorie malnutrition, 419 plasma, in iron transport, 816 transferrin receptor definition, 88 in iron deficiency anemia diagnosis, 8 I 5 transferrin saturation definition,422 I transient ischemic attack, definition, 1068 transient ischemic stroke, 1079 transitional feeding, 523-524 definition, 506 translation control, 37 I definition, 366 in information decoding, 370 RNA,416t, tr-a r n l 0 c a t translation cardiac, 495-496 liver, 1 16-717t rena,1029-931 stem cell, hematopoietic, definition, 959 transport activity effect for, definition, 2 active, in absorption, 13, 13f of biotin, 94 ofcalcium, 104-105 of chromium, 132 of copper, 125-126 of folate, 90 ofiodine, 128 of iron, 117 of magnesium, 110 o f m a n g a n e s e , 1 3 1 ofmolybdenum, 133 of niacin, 86-87 ofpantothenic acid, 89 ofphosphorus, 108 of riboflavin, 84 of selenium, 129 of thiamin,82 of vitamin A, 66 of vitamin E, 69-7 0 , 7 I f of vitamin E, 89 of vitamin B12,92 of vitamin C, 95 of vitamin D,74 of vitamin E, 79 of vitamin K, 81 of zinc,122 transport proteins, hepatic, in assessmentfor protein-calorie malnutrition, 4 19-420 transpyloric feeding, 51 I transthyretin, I 129 tf transthoretical model (TM) of change, 493, 493f definition, 489 traumatic spinal,1097-1098 traumatic brain injury (TBI) medicalnutrition therapy for, 1033 pathophysiology, 1032-1033 traveler's diarrhea definition,, 650, 650t TBI. Tibulustewestrh,ergogenicaid6, 600t tribugurinase, in lipid digestion,17 triglycerides,55-56 definition,42 levels,in cardiovascular diseaserisk assessment, 845-847 medium-chain definition, 41 for steatorrhea,680 medium-chain(MCTs),57 semm,referencerange/significance, 416t structured, 57 total,838-839 triiodothyronine (T3) definition, 42 synthesis, iodine in, 128 trisomy18,372 trisomy21,372 Tricor, nutritional complications,1025 tropical sprue,686-687 definition,674 truncal vagotomy,666 definition, 654 trfpsin in digestion, 6t, 10 in protein digestion,17 Tryptophan,68b definition, 42 requirementsfor, by agegroup, 63t TTTS (twin-to-twin transfusionsyndrome),1071 tube feeding,home,5158 tuberculosis(TB), 918 definition, 899 in AIDS, 1006 tubular diseases, 924-928 tumor markers definition, 960 in cancerdiagnosis,960-961 tumor necrosisfactor (TNF) definition, 960 1022 in cancercachexia,968 in metabolicstress,1022 tumors) definition, 960 esophageal, s1'mptomsofnutritional 655t consequences, growth, nutrition and,971 liver, 717 Tirrner'sgmdrome, 372 24-hourrecall definition,383 in dietaryhistory, 397-398 twin-to-twin transfusionsyndrome(TTTS), 17 type I diabetes, definition, 765 type 2 diabetes, definition, 765 cyramine, in foods, reactions, 746t gyrosinemia, 373 formulas/medical foods in management, 1151r 150 Index tyrosinemia type I,1145t TZDs (thiazolidinediones),in diabetes management, 78-7 82, 7 82t ii ubiquinones, 102 definition, 42 UKPDS (United Kingdom Prospective Diabetes Study, definition, 766 ulceration, gastrointestinal, drugs (impact),144b ulcerative colitis. Substantial heat in the body's pH creates a "hot" sensation. Zeitler J: ... (Eds) of insulin as its ... it is mostly ... of the ... CPPDs ... considered a "hot" condition; thus "hot" foods that upset the stomach. Many games have been found to code for iron-carrying proteins, indicating a crucial role for iron in the survival of H. pylori in the stomach. ct-Tocopherol is the name of the most active form; it is a powerful biologic antioxidant. Close attention must be given to people receiving enteral tube feedings (seeChapter 20). (DataFrom GallagherD et al: Healthypercentage body fat rangesan approachfor developingguidelinesbasedon bodymass index, Am J Clin Nutr 72:694,2000.) to preservel heat. ... Figure 36-2 ... Equationsfor the estimation of energy expenditure ... patients with burns ... estimated... ventilatory ... Burn CareRehab13:330,1992. Being notjudgmental of the client's practicesfosters a constructive dialogue. Infusion programs depend on the achievement and maintenance of reliable vascular access,delivered catheter-related complications are significant contributors to the costs associatedwith the care of home parenteral nutrition patients (Sands, 2006). a-I ... Inappropriate and individual tailoring can sometimes do much to increase total intake, avoiding the necessity for more complex forms of nutrition support. Lau RSRIC et al: The incidence of ... inflammatory ... Osteoporosis ... Ridgeway ... hormone ... as the ... metabolicpathVaySby fiber is by their fermentationinto the short-chainfatty acids (SCFAs)(acetate,butyrate' and proprionate),which account for 85% of all SCFAs producedin the humancolon. Dickinson HO et al: Lifestyle interventionsto reduceraised blood pressure:a systematicreview of randomized controlled trials, J Hypertens 24:215, 2006a. Guidelines for recommending and selling dietary supplements and a clinical practice paper have been published (Thomson et al.,2002; Thomson et al., 2005). The current recommended dose is two pieces after each meal or snack containing fermentable carbohydrates.Twenty minutes of chewing appears to cause rise in salivary pH to a level greater than 5.5. PerezbotCNI, RESEE Pathophysiology Periodontal diseasesis an inflammation of the gingiva with infection caused by oral bacteria and subsequent destruction of the tooth attachment apparatus. If the allies are different (one normal, one mutant) at the locus of observation (heterozygote), the individual is heterozygous. In the Framingham population the risk factorsfor HF tat were the strongest predictors of who would develop are hypertension,diabetes,coronaryheart disease,and left HF (Ho). Numerous changesin cardiovascular ... hypertrophyenlargement of the left ventricleof vascularstructure and function also place the elderly at the heart. At present there is no method for detecting if vulnerable plaque; however, new techniques, such as intracoronary thermography, are being refined to determine the presence of vulnerable plaque (Madjid et al., 2006) Lamen uses, measuredby flow-mediated dilation, is an early indicator of endothelial dysfunction (Sankatsing et al., 2005). In addition, behaviorsor psychological support may be necessary. Wosk KS et al: High bone massin Hutterite women' J BoneMiner Res151429,2000. Diana RigassioRadlerPhD, RD Riva Touger-Decker,PhD, RD, KEY TERMS anticariogenic suppressing the development of caries by preventing plaque from recognizing an acidogenic food calculus a hard, stone like concretion that forms on the teeth as a result ofcalcification ofdental plaque candidiasis an infection caused by the yeastlike fungus Candida, ... ifusually Candida albicans cariogenic contain fermentable carbohydrates that can cause a decrease in salivary pH to less than 5.5 and demineralization when in contact with microorganisms in the mouth; promoting caries development cariogenicity caries-promoting properties of a food cariostatic having the characteristic of not being metabolized bymicroorganisms in plaque to causea drop in salivary pH to less than 5.5 demineralization the dissolution of enamel and demineralization the ... main dentin in teeth is of bone minerals from the hydroxyapatite, the principal component of the enamel dental caries an oral infectious disease in which acid produced by bacterial metabolism of fermentable carbohydrates leads to bacterial invasion, causing demineralization of enamel and destruction of the tooth structure dentin the chief organic tissue of the tooth that surrounds the pulp and is covered by enamel on the crown and cementum on the roots early childhood caries (ECC) caries pattern in infants or children, also Known as baby bottle tooth decay; generally caused by prolonged exposure of teeth to sweetened... organic enamel inorganic, white, crystalline, compact, and very ...ard substance that covers and protects the dentin of the tooth; the principal component is hydroxyapatite 636 fermentable carbohydrate any carbohydrate that is susceptible to the actions of salivary amylase fluoroapatite the form in which the fluoride ion, along with calcium and phosphorus, is incorporated into the dental enamel fluorosis a condition of abnormal enamel caused by exposure of the tooth to excessive amounts of fluoride during enamel development before tooth eruption gingiva the part of the oral mucosa overlying the crowns of unerupted teeth and encircling the necks of those that have erupted; the gums gingival sulcus a shallow, V-shaped space around the tooth that is bounded by the tooth surface on one side and the epithelium lining the gingiva on the other hydroxyapatite a naturally occurring form of calcium and phosphorus (apatite); the main mineral component of dental enamel and dentin periodontal disease oral infectious diseaseharacterized by inflammation and destruction of the attachment apparatus of the teeth, including the ligamentous attachment of the tooth to the surrounding alveolar bone plaque a sticky, colorless film of microorganisms, salivary proteins, inorganic components, and polysaccharides that adheres to teeth and gums remineralization the process of mineral restoration to the hydroxyapatite in the dental enamel stomatitis inflammation of the oral mucosa Streptococcusmutans an oral bacteria responsible for the formation of dental caries xerostomia dry mouth caused by decreased saliva production or reduced ... or lack of or insufficient saliva CHAPTER25 I Nutrition for Oral and Dental Health 637 Diet and nutrition play key roles in tooth development, integrity of the gingiva (gums) and mucosa , bone strength, and the prevention and management of diseasesof the oral cavity. "Plor rleer ... ferced 'I auoh votrBcBBW IBvUre,rol aql suoqorrlauesl Uo! ... ...

[illegible]

... and hypertension ... fats ... Inherited ... An intervention ... Keeping of ... Kelly ... Dietary ... JAMA ... (CAD) ... Meeting lipid ... from ... diet in regular diet; 0 ... A 1 / 2 ... nicotinic acid or other ... HDL ... Scally... 2005 is deterrent sugar ... the ... aluminum... exercise ... from ... chronic ... (2003) ... MEN ... Management of ... Metabolic syndrome ... A B ... it is not ... Adolescents ... ... In an extensive review ... weight ... ceasing to the lowest ... cancer ... the ... GI ... ... These are ... In addition, the effectiveness of weight loss ... of tyramine ... with ... MAO ... blood ... A Single of ... ... Medical Nutrition ... of the ... metabolic adaption in stroke ... 2 ... ... sessionthe counselor asksabout the next step, allowing the client to describe what might occur next in the process of change. Competency of the LES is also important. On a larger scale, histone proteins are important in silencing large regions of chromosomes and thereby multiple genes. Cancer Celiac disease Changesin activity level or dietary preparation methods Diabetes,new onset Dysphagia or chewing difficulties Hyperthyroidism Inflammatory bowel disease Intestinal ischemia Medications Nausea and vomiting Pancreatitisand cystic fibrosis Seea physician; monitor medicationsand mealsaccordingly. Prevalence of 0steoporotic Fractures Although it is difficult to estimateratesof osteoporosis,approximately25 million women and12 million men are classified as osteoporotic.More than 1.5 million osteoporotic fractures occur annually,which representsa cost of billions of dollars in health careand rehabilitationservices.Half of these osteoporosis-related fracturesinvolve the vertebrae; 250,000are fracturesof the hip, which typically result in incapacitation,long-term nursing care, and a 20"/" death rate within a year of the fracture. However, although optimal nutrition may play a role in positive outcomes of periodontal treaffnent, nutrients alone are not a cure for the disease(Schifferle, 2005). Pathophysiology Nerve and blood cells require vitamin B12to function properly; deficiency can cause a wide variety of symptoms, including fatigue, shormess of breath, tingling sensations, difficulty walking, and diarrhea. The ability to use generic analysis to distinguish these similar disorders has been a technologic advance(seeChapters l5 and 31). Nutrition support consists of a diet low in fat, osmolality, lactose, and oxalate(seeChapter 27, andBox36-4 in Chapter 36). Hemodialysis Hemodialysis requires pernnanent accessto the bloodstream through a fistula created by surgery to connect an artery and a vein (Figure36-3). Campbell IA" Bah-Sow O: Pulmonary tuberculosis: diagnosis and treatrnent, Br Med J 332:1194,2OO6. Although other nutrients, including vitamins A, E, B-carotene, and protein, have a role in maintaining gingival and immune system integrity, there are no scientific data to support supplemental uses of any of these nutrients to treat periodontal disease. Sticky foods such as soft white breads, caramels, chewing gum, toffees, and chewy candies should be avoided. In premature, very low-birth weight infants (birth weights less than 1500 g, or 3 lb, 4 oz) \4tarnin E deficienry is usually characterized by neurologic problems in the hands and feet, as well as peroxidation of cellular lipid membranes. q.rrnptom of disease,it should be assessedmedically. cdc.govlcancer/survivorship/pdf/overview. WessrrEs USeFUL American HeartAssociation http ://www.americanheart.org DASHDiet www.nhlbi. Optimal water fluoridation concentrations (0.7 to 1.2 ppm) can provide protection against caries development without causing tooth staining. Tindle FIA et al: Tlends in useof complementaryand alternative medicineby U.S. adults:1997-2002,Ahern TherHeahhMed ll(l):42,2005. Long stretchesof nucleotidesare often found betweenone gene and the next along the chromosome.Such sequencesare calledinterveningsequences and comprisethe majority of the DNA in humans.Thesesequences do not codefor proteins, and their function is currendy unknown. New drugs on the horizon may be more effective. Megavitamin therapy, another commonly practiced therapy, is characterized by the use of large dosesof one or more vitamins. In Elliott L et al, editors: Tlte clinicalgaide to oncohgtnutrition, ed 2. 165 heterozygous individual, 172 hexokinase/glucokinasereaction. An interdisciplinary approach involving all caregivers is recommended. Osteoarthrids (OA) affects 21 million Americans, gout affects 5.1 million (Kramer and Curhan, 2002); fibromyalgia affects3.7 million;rheumatoid arthritis (RA), 3 million; and systemic lupus eq'thematosus (SLE), about 240,000.Accordine to the National Instirute of Arthritis and Musculoskeletal rnJ Skin DiseasesOJIAMS), The autoimmune arthritis group, the more debilitating group, includes RA, juvenile rheumatoid arthritis, gout, Sjogren's s1'ndrome,fibromyalgia, lupus, and scleroderma. Regardlessof the level of calorie restriction, healthful eating should be taught and emphasized, and recommendations for increasing physical activity should be included (Shape Up Americal and American Obesity Association, 2001). In the meantime, use of MI has been shown to have a positive effect in many behavior change studies (Resnicow and Campbell,200+). The exact relationship between the lesions induced by thiamin deficienry and their effect on the brain remains unclear. flncludes all milk products, such as fluid milk, yogun, and cheese. However, the Institute of Medicine (IOM) declined to set an upper limit (UL) for the glycemic index in its 2002 recommendations. Although nonessential amino acids undergo gluconeogenesis, it is unclear why the glucose produced does not appear in the general circulation after ingestion of protein. Behavioral Risk Factor Surveillance System Public Use Data Thpe 2003: National Center for Chronic Diseaseand Health Promotion, Atlanta, 2004, Centers for DiseaseControl and Prevention. - Recomendación de asistencia nutriciona. Federal legislation helps to ensure that such discrimination does not occur, but same basic genetic techniquesare used, and the progress in streamlining genetic technology has had a beneficial effect on food biotechnology development. On postoperative day 11 the parenteral nutrition was stopped becausethe jejunostomy infusion had been advanced to 80 m7hr. fu geneticsis integratedinto health care,medical, pharmacologicand nutritional therapieswill become more oriented toward the genotypeof eachperson. Since the lifetime risk of developinghypertension the elderly differ from those seen in middle-age persons is 75oloand the prevalenceof hypenensionis high, conuolwith HF CTable34-l). foo dsafety.gov http ://www.gmabrands.org hwp://ific.org/food http ://w'lvw.eatchicken. Blumentlral M, editor: The CmnpleteGerm.anCommission E Monograbs:TherapeuticGuideto HerbalMedicines,Elsevier, St. Louis,2000. Vitamins andMinerals As with macronutrients, vitamin and mineral requirements for individuals with stable COPD depend on the underlying lung pathology, other concurrent diseases,medical treatments, weight status, and bone mineral density. A more pernanent method is the Janeway procedure. FIGURE 44-l Hyperphenylalaninemias. fFat contentchangessering anount for fatsand oils For enmple, I Ttrsp ofregular saladdressingequalsone sering; 1 Tbsp of a low-fat dressingequalsone-halfsening; I Tbsp of a fat-freedressingequalszero sewings Sample Menu Breakfast Lunch Dinner I cup calcium-fortified orangejuice 7+cup RaisinBran I cup skim milk Mini-whole wheat bagel 1% tsp soft margarine I cup coffee 2 tsp sugar J-oz boneless skinless chicken breast 2 slces reduced-fat cheese 2 large leaves lemrce 2 slices tomato I Tbsp light mayonnaise 2 slices whole wheat bread I medium apple r/z crp raw carrot sticks I cup iced tea I cup spaghettiwith vegetarian4ow-sodiumtomato sauce 3 Ttlsp Parmesancheese % cup green beans I cup spinach,raw 7+cup mushrooms,raw 2 Tbsp croutons 2 Ttrsp low-fat Italian dressing I sliceIalian bread 1l cup frozen yogurt Midmorning Snack Midafternoon Snack I cup applejuice 2 oz walnuts Nutritional Analysis: I large banana Sodium:2377 mg Potassium:4129mg Fiber:32 g Magnesium:517 g Kilocalories: 1980 Protein: 78 g Fat: 56 g Saturated fat: 13 g Carbohydrates: 3 14 g MENUPIAN Grams Meal Plan for: Date: Dietitian: Phone: Time Numberof Exchanges/Ghoices Percent Carbohydrate Protein Fat Calories Menu ldeas Menu ldeas Carbohydrate group - Starch Fruit _ Milk _ Meat group Fat group Vegeables Meat group Fat group Carbohydrate group Starch Fruit _ Milk Vegetables Meat group Fat group The Exchmge Liss re the basis of a meal plming system designed by a committee of the American Diabetes Asociation and the Americm Dietetic Association. The prevalenceof HF increaseswith ageand differs by race and ethnicity. for HeartFailureandTransplant897 CHAPTER 34 i MedicalNutritionTherapy Troy is a 40-year-oldmale with I{E He is 6' 0'and weighs | 180 lb. I love my 1080i CRT HDTV compared to almost every 720p LCD screen I've ever seen and anyone else who owns one can probably tell you the same. A review of srudies in which patients experienced a 107" or less weight reduction showed that they also had improved glycemic control, reduced blood pressure,and reduced cholesterol levels. These tubes are designed for patients in whom prolonged gastrointestinal decompression is anticipated. The total energy available from a food is measured with a bomb calorimeter. PrepNet ensures effective coordination of food security efforts, focusing on preventive activities to protect the food supply. Ferrara I-A et al: Olive oil and reducedneed for antihlpertensive medications,Arcb Intnz Med 160:837,2O00. One formal program, organized in 1996, is the Hazard AnalysisCritical Gontrol Points (HACCP), a sysrematicapproach to the identification, evaluation,and control offood saferJ hazards. FungalInfections Oropharyngeal fungal infections maycause a burning, painful mouth and dysphagia. In observationalstudies and in short-term studies,moderate amounts of alcohol did not increase triglyceride levels in hypertriglyceridemic individuals (Pownall et al., 1999) and had beneficial effects on blood pressure and triglyceride levels in postrnenopausal women (Davies et al., 2002). Sucrose(e.g.,tablesugar,canesugar,beetsugaqgrapesugar) is formed when glucoseand fructose are linked together. Concerns about the possible risks of breast and endometrial cancers in women, starting with a major report in 1995, have led to this change in the use ofestrogens. "How do you limit the amount of saturated fat in your diet now?" . C H A P T E R2 0 a significant portion of total daily fluid and electrollte intake. cow's milk, 206 Whipple procedure, 735 definition, 708 nutritional implications, 977 Whipple's triad definition, 766 in hypoglycemia, 802 white adipose tissue flVAT), 533-534 definition,533 white blood cell count 0.4,tsC), reference range/ significance,416t whites, communication style, 492t WIC flV'omen, Infants and Children), l24t knowledge deficit about, 334b Williams syndrome,373 Wilson's disease,127, 716-717 definition, 708 dietary restrictions,T22 Witzel jejunostomy, 510 WKS (lVernicke-Korsakoffsyndrome) definition,1068 women. ietitians and nutritionists play an important role in emergency preparedness.The role of qualified nutrition professionalswill vary with the type of emergency of disaster (e.g.,hurricane, flood, foodborne illness outbreak, ice storm). Some of tlre proposed diets would lead to nutritional deficiencies over an extended period; however, the potential health risfts are seldom realized becausethe diets are usually abandoned after a few weeks. Observations from the Third National Health and Nutrition Examination Survey OIANES III) clearly demonstrate that prevalence of this condition manifests as the metabolic slmdrome in various age-groups (Ford et a1.,2002). Clinical status Fluid requirementf Energy (kcal) requirementt Proteinrequirementt 5. Calcium phosphate costs more than calcium carbonate but less than calcium citrate. after hospital needs failure learning Heart ClarkJ, Lan V Appl Nurs Res17:150,2004. Recovery from cancer treatment also requires physical activity to rebuild muscle and regain strength and energy (Brown et al., 2003). teatrnent includ es thickened feedings, upri ght positioning, medications such as antacids or histamine H2-receptor antagonists, and in severe cases, surgical fundoplication. The long cellulosemolecule folds back on itself and is held in place by hydrogen bonding, thus giving cellulose fibrils great mechanical strength but limited flexibility. Gatecholaminergic (related to brain neurotransmitters norepinephrine, epinephrine, and dopamine) drugs act on the brain, increasing the availability of norepinephrine. The averagevalue and the standard deviation for these data are determined, and the reference range is calculated from the mean a 2 standard deviations. Honey is madeup of glucoseand fructoseproducedby the en4lmeson sucrosein actionof honeybeerucraseandann'ylase nectar.Lactose,or milk sugaqis formed by glucoseand galactoseand madealmostexclusivelyin the mammaryglands of lactatinganimals;it accountsfor 7.5o/"and 4.5o/oof the compositionof human and cow'smilk, respectively.Maltose (malt sugar)formed from two glucosemoleculesis seldom found naturally in the food supplybut is formed by hydrolysis of starchpolyrnersduring digestionand is alsoconsumedas an additivein numerousfood products. Colorful outdoor backgrounds can help you to feel relaxed or energized for the rest of the day. This is effective because, if the first strategy does not work, the client has other choices. Iuliano-Burnset al: Diet and exerciseduring growth havesiteInt 16:1225, specificskeletaleffects:a co-twin sttdy, Osteoporos 2005. The %DV listed on the Nutrition Factspanel of food labelsstatesthe percentageof the DV provided in one serving. Partial or complete tooth loss (edentulism) is common in persons older than 65 years of age and can have a significant impact on dietary intake, especially fiber and protein. The third step is to arrive at a plan, one that has been devised by the client. However, subclinical changes may include a decrease in lean body mass without apparent total body weight change, vitamin B12deficiency, and increased susceptibility to foodborne and waterborne pathogens. The ToDV column in this table indietes the percentage of the DV provided in one sering. Should you invite family members to attend the counselingsession?Why or why not? Broekhuizen R et al: Pulmonary cachexia,systemicinflammatory profile, and the interleukin 1B-511singlenucleotide poll'rnorphism,AmJ Clin Nuv82:1O59, 2005. U.S.Departrnent of Agriculrure(JSDA): USDA-Iowa State Uniuersity databaseon the isofnuone content of foods, fromhttp:// www.nal.usda.govlfrric/food comp/D ata/ isofl avlisofl av.htrnl, accessedMay 30, 2006. ParenteralNutrition Complications Mechanical Gomplications Pneumothorax Hemothorax Hydrothorax Tension pneumothorax Subcutaneousemphysema Brachial plexus injury Subclavianartery injury Subclavianhematoma Central vein thrombophlebitis Arteriovenous fistula Thoracic duct injury Hydromediastinum Air embolism Catheter fragment embolism Cathetermisplacement Cardiac perforation Endocarditis Continued 522 PART 3 , NutritionGareProcess Parenteral Nutrition Complications-cont'd Infectionand Sepsis MetabollcComplications-contU Catheter enrance site Contamination during insertion Long-term catheter placement Catheter seedingfrom bloodborne or distant infection Solution contamination Hyperphosphatemia Hlpophosphatemia Hlryerchloremic metabolic acidosis IJremia Hyperammonemia Electrolyte imbalance flace mineral deficiencies Essentialfatry acid deficienry Hyperlipidemia Metabollc Complications Dehydration from osmoric diuresis Hyperosmolar, nonketotic, hyperglycemic coma Rebound hypoglycemia on suddencessarionof parenteral nutrition in patient with unstable glucoselevels Hypomagnesemia Hypocalcemia Hlpercalcemia Gastrointestlnal Complicatlons Cholestasis Hepatic abnormalities Gastrointestinal villous atrophy InpatientParenteral NutritionMonitoring* SuggestedFrequency Vailable To Be Monitored Initial Period* LaterPeriod* Weight Serum electrolytes Blood urea nitrogen Serum total calcium or ionized Ca++, inorganic phosphorus,magnesium Serum glucose Serum rriglycerides Liver function en4irnes Hemoglobin, hematocrit Platelets WBC count Clinical status Cathetersite Temperature I&O Daily Daily 3/wk 3/wk Daily Weekly l-2/wk Weekly Weekly 3/wk Weekly Weekly Weekly fu indicated Daily Daily Daily Weekly 3/wk Weekly Weekly As indicated Daily Daily Daily Daily *Initial p".io6 refers to that period in which a full glucoseintake is being achieved.Later period implies that the patient had achieveda steadymetabolic state. Exposure The duration of exposure may be best explained with starchy foods, which are fermentable carbohydrates subiect to the action of salivary amylase. Prctein. These changes can then be correlated with chemical, histologic, and clinical finding:s to formulate a diagnosis. Theory Set-Point Fat storagein nonobeseadultsappearsto be regulatedin a manner that preservesa specificbody weight. Individuals diagnosed with cancer often have central fV accessto accommodate multiple W therapies (i.e., chemotherapy, blood products, hydration, and [V medications). When there is a terminal illness, starring nutrition support may have no advantage and may prolong suffering in some cases.It is prudent for dietitians to be involved in ethical decisions according to the policies of their institutions. If the GI tract is not functioning, nutritional support can be providedparenterally(seeChapter 20). pflori infection, the primary focus of treatrnent in most casesis the eradication of this organism. lJntreated periodontitis results in a gradual loss of tooth attachment to the bone. This requires careful monitoring of patient tolerance and quantification ofintake from parenteral, enteral, and oral routes. Contrary to popular belief, spot reduction (i.e., reducing fat in one area of the body) is not possible with exercise; fat is burned from rhe largest concentrations of adipose tissue. Mueller, PhD, RD, FADA, LDN.2006. Fluid requirements are increased during anticancer therapy or in the presence of fever, diarrhea, or renal failure. This process is often less predictable than the ffansition to enteral feeding and depends on the patient's appetite, motivation, and general well-being. After stabilization in the postanesthesiacare unir, Jerome was transferred to the intensive care unit (ICID with an endotracheal tube in place for mechanicalventilation. Changing lifestyle factorshas documentedefficacy in the primary prevention and control of hypertension. Disadvantages of their use include weight gain and the potential to cause hlpoglycemia. In addition, he doesnot drink milk but does consume other dairy products. Discussion of both the advantagesand disadvantages of nutrition support should be initiated with the patient and family well ahead of need; options should include a description of feeding schedules, tube placement procedures, and appropriate training (see Chapter 20). Fluid Fluid needs for adults can be estimaredat I ml of water per kilocalorie, or 30 to 35 ml/kg of usual body weight (iee Chapter 4). Kritchevsky D: Caloric restriction and cancer,J Nutr Sci Vitaminol47:13,2001. Center for Food Safety and Applied Nutrition (CFSAN)' USDHHS, Food and Drug Administration, . Becatse PAL is the ratio of TEE to BEE, the energyspentduring activitiesof daily living, the sedentarylifestyle category has a PAL range of I to 1.39. Merchant AT et al: Intake of n-6 andn-3 fatty acidsand fish and risk of community-acquiredpneumoniain U.S. men,Am J ClinNut 82:668,2005. She is 757o of her usualweight, which is 125 lb; sheis 65 inches all. Of these,weight reductionis consideredthe primary therapy for obesity-relatedhlpertensionin children and adolescents. Caries can occur on any tootl surface. StoverPJ:New paradigmsfor nutrient conrrol of genome translation,Nutr Rea6l:427, 2003. The opportunities for members of an affluent society to choosefrom a great variety of foods can easily lead to an overabundant intake of energy. Short- and medium-chain saturated fatty acids, monounsaturated fatty acids, and omega-3 polyunsaturated fatty acids have been included in disease-specificformulas as alternatives to the high linoleic acid-containing vegetable oil in formulas. There is confusion in the literature as to the efficacy of checking gastric residualsbecauseprocedures are not standardized, and the practice of checking residuals does not protect the patient from aspiration. Lee understandportions or types offood that she should select? The remainder is metabolized via nonreceptor pathways. To move out of this phase usually requires increasing the activity level. An antiaspiration pureed diet was started. Gastritis may manifest by a number of q.mptoms, including nausea, vomiting, malaise, anorexia, hemorrhage, and epi- The Genome of Helicobacterpylori he ability of robotic analyzers to sequence long lengths I of deoxyribonucleic acid automatically and the rapidity with which computers qrn scangene dau banls have spawned a new discipline in the biomedical sciences: genomics. Ernst E: The efficacy of herbalmedicine-anoverview, Fundamentnl Clin Pharmacol19: 405,2005. On examination the dentist determinesthat she has periodontal disease,extensive dental caries, two broken teeth, and a broken threeunit bridge (a bridge that supports three teeth). BirksJ et al: Ginkgo biloba for cognitiveimpairment and dementia,Cochrane DatabaseSystRn, CD001120,2002. CHAPTER 32 i MedicalNutritionTherapyfor Cardiovascular Disease849 Potential Inflammatorv Markers for Cardiovasculai Risk Oxidized low-density-lipoprotein cholesterol Adhesion molecules Selectins Cytokines Interleukin-l Tirmor necrosis factor o. People 50 years and older now represenrmore than 10% of the total number of AIDS casesreported, becoming a larger percentage. They have laid the foundation for personalizedtherapy in many aspectsof health care. AlBody weight is often describedin terms of its composition, and different models have been advanced to estimate body fat. J Am MedAssoc SchallJI et al: \ttamin A status,hospitalizations,and other outcomesin young children with sicklecell disease, / Pediatr 14599,2004. Prasad KN et al: Scientific rationale for using high-dose multiple micronutrients as an adjunct to standard and experimental cancer therapies,J Am Coll Natr 20:4505, 2001. According to the growth charts, he is in the lOth percentile for height, the 5th percentile for weight, and below the 5th percentile of weight for height. problem,it is discussed RefluxandEsophagitis Gastroesophageal Prevalence andPathophysiology Reflux of gastric contents into the esophagus occurs occasionally in healthy individuals, and some even experience classic heartburn symptoms episodically. com Specialdrink, l%-hr weekly group multidisciplinary meetings with Medifast www.med.fast.net Specialdrink; physician supervised Optifast www.optifast.com Specialdrink; physician supervised team registered dietitian (RD) and midweek phone calls Weekly individual sessions Weekly group meetings Weekly individual sessionswith MD l%-hr weekly group meetings One meeting with RD Diet Programs Diet Center www.dietcenter.com Regular food Daily individual sessions Thained saff JennyCraig www.jennycraig.com Prepackagedfoods 14 1-hrvideo group classes;weekly individual sessions RDs and psychologists CHAPTER21 I Weight Management 547 Use of the Internet has spawneda new generation of commercial programs. The resulting proteins typically function slightly differently from the more common version but aren't enough in themselves to cause a debilitating disease. Therefore the e-mail and phone consults appear to be viable methods for delivery of contact and support as part of structured behavioral weight loss programs. Kerem BS et al: Identification of the rystic fibrosis gene: genetic analysis, Scitnce245:1073, 1989. A popular variation limits fat to 20"/" of total energy intake. Qi L et al: Geneticvariation at the perilipin (PLIIrr) locusis associated with obesity-relatedphenorypesin white women, Clin Genet66:299,2004a. Once assessmentis complete, treaffnent can begin. She is 5 ft, 8 in tall, weighs 185 lb, and has a history of mild hlpertension that has been controlled with dietary measures. He follows a strict kosher diet. I know that, when the time is right for you to make a change, you will find a way to do it." When the session ends, the counselor will let the client know that the issuewill be revisited after he or she has time to think. Not all of the energy in foods and alcohol is available to the body's cells. Therapies such as parenteral nutrition or enteral tube feedings, mechanical ventilation, supplemental orygen, and medications may be required long after the infant's discharge from the hospital. Fluoride is most effective when given from birth through ages 12 to I 3, the period when miner alization of unerupt-ed permanent teeth occurs. He is physically active, cycling three times each week for at least an hour each time. 952 PART5 Medical Nutrition Therapy A 5-year randomized trial of men on a diet of a normal level of calcium but low in salt and animal protein (52 g total with 21 g from meat or fish and 31 g from milk and derivatives) showed a 5l% reduced stone incidence as a result of decreasedurine calcium, oxalate, and calcium-oxalatesaturation (Borghi et al., 2002). (increased Lifestyle modification exercise) Psychological therapy whennecessary Medications Surgery . The Of6ce of Dietary Supplements has developed facts sheets for an extensive list of dietary supplements that can be used by health care professionals to educate patients. agencies community-based is evolving as it is testedby both management Disaster The efforts following the natural disasters. Klein EA: Selenim and vitamin E cancer prevention tiaI, Ann NY Acad Sci l03l:234,2004. Diets, massage,and herbal medicine are common choices.In general, examplesof CAM therapies commonly used by cancer patients include nutrition (diet) and metabolic therapies, vitamin and mineral supplementation (single- or multi-agent preparations), and herbal and botanical therapies (seeChapter 18). Mtamin D is needed for the absorption of calcium from the stomach and for the functioning of calcium in the body. gc.calfn-an/index_e.htrnl He a l t h yE a t i n gIn d e x . The acute toxicities of immunosuppression that can last for 2 to 4 weeks after the transplant include nausea, vomiting, anorexia, dysgeusia,stomatitis, oral and esophagealmucositis, 978 PART5 MedicalNutritionTherapy NutritionImpactof Gancer Therapies: Surgery AnatomicSite Common Nutrition lmpact Symptoms Anatomic Site Gommon Nutlition lmpact Symptoms Oral cavity Difficulty with chewing and/or swallowing fupiration potential Sore mouth Xerostomia Alterations in taste and smell Nterations in normal swallowing, dysphagia fupiration potential Gastroparesis Indigestion and/or acid reflux Alterations in normal swallowing, decreasedmotility Anastomotic leak Shortnessof breath Early satiety Dumping qrrdrome Dehydration Early satiety Gastroparesis Fat malabsorption Vitamin and mineral malabsorption (vitamins B12and D; calcium, iron) Gastroparesis Hyperglycemia Fluid and electrolyte Fat malabsorption Vitamin and mineral malabsorption (vitaminsBrz,A, D, E, and I! magnesium,zinc, calcium, iron) Hyperglycemia Hepatocellular -cont'd Hypertriglyceridemia Fluid and electrollte imbalance Vitamin and mineral malabsorption (vitamins A, D, E, Il and B12;folic acid, magnesium,zinc) Gastroparesis Fluid and electrolyte imbalance Hyperglycemia Fat malabsorption \ttamin and mineral malabsorption (vitaminsA, D, E, Il and B12; calcium, zinc, iron) Chyle leak Lactose intolerance Bile acid depletion Diarrhea Fluid and electrollte imbalance \4tamin and mineral malabsorption (vitaminsBrz,A, D, E, and K; calcium, iron, zinc) Increasedtransit time Diarrhea Dehydration Bloating, cramping, and/or gas Fluid and electrolyte imbalance \ttamin and mineral malabsorption (vitamin 812,sodium,potassium, magnesium,calcium) Early satiety Bloating, cramping, and/or gas Nausea and vomiting If taking corticosteroids,possible hlperglycemia Lanrnx Esophagus Lung Stomach Gallbladderand bile duct Hepatocellular fatigue and diarrhea. Other causesinclude primary kidney lar apparatus)to react by secretingrenin, a proteolytic suchasimmunoglobulinA nephropathy;hereditary diseases enzyme.Renin actson angiotensinogen suchasystemiclupuseryin the plasmato nephritis;andsecondarydiseases form angiotensinI, which is convertedto angiotensinII, thematosus(SLE), vasculitis,and glomerulonephritisassoor infectedventriculoa powerfulvasoconstrictorand a potent stimulusof aldociatedwith endocarditis.abscesses, steronesecretionby the adrenalgland.As a consequence, peritonealshunts. LedikweJH et al: Dietary patternsof rural adultsare associated with weight and nutritional sratrs,J Am Geriat Soc52(4):589, 200+. The recognition of nutrient interrelationships provides further support for the principle of maintaining variety in foods to provide the most complete diet. It is best to maintain cardiovascular health at maximum level, regardless of weight, by 20 to J0 minutes of high-intensity activiry 4 to 7 days per week (Institute of Medicine , 2002). T I rs in this section reflect the evolution of nutritional science,from the on of nutrient requirements and the practical application of this knowl- edge to the conceptsthat relate nutrition to the prevention ofchronic and degenerative diseases and optimization of health and performance. Bones not subiected to normal use rapidly lose mass.Invalids confined to bed or persons unable to move freely are commonly affected. Percutaneous Endoscopic Gastrostomy or Jejunostomy The percutaneousendoscopicgastrostomy(PEG) is a nonsurgical technique for placing a tube direcdy into the stomach through the abdominal wall, performed using an endoscope and with the patient under local anesthesia.Tirbes are endoscopically guided from the mouth into the sromach or the jejunum and then brought out rhrough the abdominal wall (using local anesthesia)to provide the accessroute for enteral feedings. A range of recommendedlevelscan be found in the literature, from 0.5 to 0.8 g/kg for nondialysispatients to 1 to 2 gkg for dialyzedpatients.fu the patient'soverall medical statusstabilizesand improves,metabolic requiremens decrease,and dialysis becomesless hazardous.During this stableperiod before renal function returns, it is generally agreedthat a minimum protein intake of 0.8 to I g/kg of body weight should be given. Since chronic kidney diseaseis common (estimates place it at one in nine people in the United States),there is a move to require all clinical laboratories reporting semm creatinine to also report the patient's estimated GFR (eGFR). Strategies for modifying nutrient intake depend on the specific feeding problem and the extent of depletion. Stresses from muscle contracrion and maintaining the body in an upright position against the pull of gravity stimulate osteoblast funcrion. Excessiue caffeine intake may have a deleterious effect on BMD (Ruffing et al., 2006). tv.)YvA x{)1.6 1.0 1.4 1.9 1.0 1.4 1.9 < 4.5 (very active) PA: 1.00 if PAL is estimatedto be >1.0 I.4 1.6 1.6 1.9 Hh H E j Q deb oP 5E Oa qi ma ov hg ! : ;: H6 c! OF =bo EE -o :: U -Y 92 a,q oe 3F 9o o6 =o etr 'i: F6 L o a E o o u.3 E C,8 o7) d .ir E '.Y sn c) 5ob .ncfr tr':.Y o . Calcium carbonate is 40% elemental calcium; 1000 mg will provide 400 mg of calcium. Late-1970s: Demimental effects of maternal PKU are recognized as a significant public health problem. 882 PART5 I MedicatNutritionTherapy Nutrition Diagnosis: Excessivesodium inake related to consumption of high sodium foods as evidenced by diet history revealing more than 4-g sodium consumed daily 1. TnnNsrrroNAL FeeDrNG All nutrition support care plans strive to use the gastrointestinal tract when possible, either with enteral nutrition or by a total or partial return to oral intake. Important factors in the defense of the gingiva to bacterial invasion are: (1) oral hygiene; (2) integrity of the immune system; and (3) optimal nutrition. FriedmanA, JohnsonRK: Doubly labeledwater:new advances and applicationsfor the practitioner,Nutr Tbday27:243,2002. (CourteryGinny DiNunzio, CRT,Pulmonary Rebabilitnian hvgram, Duylestoam H oEital, Duylestntn, Pa) nutrient-dense foods, and planning expectorant medication use apart from mealtimes. In that context, the RDs can then provide sound evidencebased information about CAM therapies so that the patient can make informed choices and avoid undesired risks. Decreased levels of vitamin D metabolites have been observed. How to recognize a quality preparation for each supplement, any known safety concerns and contraindications, and whether there are any known or potential interactions between each supplement and prescription or OTC medications and other dietary supplements or foods should also be reviewed (see Chapter 16). Other same age women of the the pelvis,ribs, and such as bone ponderanceof trabecular BMD. SseLarge or gestational age life coach, registered dietitian counselor as, 500b lifestyle changes, therapeutic for meeting LDL-cholesterol goals, 843t in coronary heart diseaseprevention, 8, 852, 854, 854f lifestyle choices,in adulthood, 273 implementation of, 276-27 7 lifestyle modification definition,532 for hypertension, 874 in hypertension prevention and management, 8 7l t in obesity management, 544-545, 545b in weight managemenr,538-539 reduced body weight, maintenance, 555 ligands definition, 365 in transcriptional process,371 nutrients actrng as, 377 lignin, 49 composition/sources/fu nctions, 48t definition, 40 limit dextrins,45-46 limiting amino acid,63 definition, 41 linoleic acid,requirementsfor, in infanry, 203-20+ lipase gastric,in digestion,6t hormone-sensitive definition,532 in fat storage,535 in digestionand absorption,6t lipoprotein, 66 in fat storage,534-535 pancreanc definition, 2 in digestion,10 in lipid digestion,17 lipid(s),50-59.SeealsoFat(s) absorption/digestion,17-18 ascardiovascular risk factors,425,425b blood lipoproteinsand,837-839 regulation,50 classification, 52b dietary hypertensionand, 873 enteral,for prematureinfants, I 127 in diabetes,recommendations, 775t in enteralformulas,513 in parenteralnutrition solutions,518-519 intake,recommendations, 59 parenteral, for prematureinfants,1123,1123t requrrements in cirrhosis,721 in end-stagerenal disease,944 in infancy, 203-204 in lactation,187 in olderadulthood,300 in pregnanry,173 requirements,for rheumatoidarthritis, 1053-1055 structured,57 asenerg'ysourcern major burns, 1035 definition,41,1022 structures/functions, 50-51 slmtnefl,c) /-)v. Supplements with appreciable amounts of simple carbohydrate taste sweeter and have higher osmolarities, which may contribute to gastrointestinal intolerance. Diets high in polyunsaturated fatty acids appear to have effects on lipids similar to those from diets high in monounsaturated fatty acids (Summer er al., 2002). 9 x A g e (y r) + P A x (2 6 . Fuhrman MP: Nutrition-focused physical assessment.In Charney P, Malone A, editors: Nutrition assesstnent, Chicago, 2004, American Dietetic fu sociation. A balanced ratio of protein (15% to 20o/oof calories) with fat (30% to 45o/oof calories) and carbohydrate (40% to 55% of calories) is important to preserve a satisfactory RQ from substrate metabolism use (see Chapter 2). 5 5 0 - 5I 5 RNA (nRNA) messenger definition, 365 in information decoding, 370 , 5 4 - 1 5 5 ,1 5 4 t , l 5 5 t m e t a b o l i c a c i d o s i s 1 anion gap, 156b definition, 144 nongap, 156b metabolic alkalosis,154t, 155, 155t metabolic disorders, I l4l -l | 69 amino acid metabolism disorders as, 1143, 1 1 4 6 t , 1 1 4 8 - 1 1 5 9 .S e e a l s oA m i n o a c i d s complicating HIV disease,1015 genetic, 373-374 in AIDS, 1008-1010 in Prader-Willi symdrome,1181 rnedical nutrition therapy, goals, ll42 newborn screening, | 142-l l43b organic acid metabolism disorders as, 1 159I 160 metabolic equivalents (METs) definition, 22 estimating energy expenditure of selected activities using, 33-35, 34t metabolic processes,nutritional genomic influences, 375-376 metabolic stress,1021-1041 h e a d i n j u r y a s , 1 0 3 2 - 1 0 3 3 hormonal and cell-mediated response, r022-t024 metabolic stress (Continued) major burns as, 1031-1037.SeealsoB.urns, malor multiple organ dysfunction sy'ndrome as, 1025 -1032. It has been supplemented in enteral formulas for a potential role in preserving gastrointestinal integrity and immunity. Tai Chi may be modestly beneficial flVoo et a1.,2007). Substrate Fermentablecarbohydrates,those carbohydratessusceptible to the actions of salivary amylase, are the ideal substrate for bacterial metabolism. Rheumatic disease (RD) and related conditions include more than 100 different manifestationsof inflammation and Ioss of function of connecting and supporting body structures, including joints, tendons, ligaments, bones, muscles, and sometimes internal organs. To respondto scientificadvances in diet and health throughout the life cycle, the DRI model now includesfour referencepoints. During cell division the deoxyribonucleicacid (DNA) molecule unwinds, and the weak bonds between the basepairs break, allowing the strandsto separate.Each strand directs the slmthesisof a complementary new strand, with free nucleotidesmatching up with their complementary baseson each of the separatedstrands.Strict base-pairingrules are adheredto (i.e., adeninewill pair only with thymine [an A-T pairl and cytosine with guanine

[a C-G pair]). For all these reasons,vitamin K supplementation is recommended. Be prepared to discusswhat other programs and resources are availablein your community which would support LJ and her children to improve their nutritional status (e.9. food pantry, food stamps,primary care educational program for children) Nutrition Diagnosis: Lack of access to safefoodsand water related to no planning as evidencedby insuffrcient preparation and food and water suppliesfor emergencies. A decreasein the total kilocalories ingested results in a decreasein TEF. Once a gel forms, the product remainsthick during freezrng and thawing, making it an ideal thickener for commercially frozen fruit pies, sauces,and gravies.Mod'ifud'foodstnrchis chemicallyor physicallymodifiedto changeis viscosity,ability to gel, and other texturepropertles.Pregelatinizedstarch, dried on hot rolls or drumsand madeinto powder,is porous and rapidly rehydratedwith cold liquid. Calcitonin can be administered by nasal spray. On very low calcium intakes of =200 mg/day, oxalate absorption rose to l7o/o,whereasit fell to 2.67" when 1200 mg of calcium was ingested. DNASequence Person1 AAATTT t Person2 AATTTT ? He statesthat he feels best when his weight is between 155 and 160 pounds.Jim worls as a hairdresserand is on his feet all day. AnimalProtein FoodsThat RaiseUrinary OxalateExcretion Rhubarb Spinach Strawberries Chocolate Wheat bran and whole grain wheat products Nuts (almonds, peanuts,or pecans) Beets Tea (green, black, iced, or instant) Data from Siener R et al: Oxalate content of cerealsand cereal oroducts. SeeAlzheimer'sdisease addiction,1104b adenosinediphosphate(ADP) definition, 587 in energyproduction, 588 adenosinetriphosphate(AIP) definition, 587 in energyproduction, 588 adequateintake (AI) definition,337 in DRI, 338 ADHD. Most CAM therapiesemphasizea holistic approach to health and promote the body'sability to heal itself. The inclusion of extra fiber is recommended to reduce caloric density, to promote satiety by delaying stomachemptying time, and to decrease to a small degree the efficienry of intestinal absorption. It ahl reflects the availability of foods, socioeconomicconditions, storage and preparation facilities, and cooking skills. middle age, 887t hypertension ffeatment in, 879, 881 immunocompetence in, 295 lipid needs in, 300 long-term living facilities for, 303-304 medicate benefits in, 301 mineral needs in, 300 neurologic function in, 293-294 nuffition assessmentin, 299 d) older adulthood(Continue nutrition in preventionin, 289 nutrition needsin, 299-300 nutrition screeningin, 297-299, 298f oral health in, 292 physiologicchangesin, 290-295 preparingregistereddietitiansfor work with, 289-290b pressure ulcersin, 294,295b proteinneedsin, 299 qualifications,287 quality of life in, 295-297, 296f in, 293 renaldisease sedentarylifestylein, 291-292 sensorylossesin, 292 in, 301-303 supportiveservices terminologyfor, 288t vitamin B12deficiencyin, 94 vitamin needsin, 300 waterneedsin, 300 Older AmericansAct (OAA) nutrition program. Examples of nonfatal chromosomal abnormalities include trisomy 21 (Down slmdrome), trisomy 18 (cri du chat slmdrome), and Klinefelter's qmdrome, in which an extra chromosome 2I, 18, or X is present, respectively. 5 I1.5 2.0 11 l) ll *Daily values (DVs) are reference numbers based on t}te recommended dietary allowance They were developed to help consumers detemine if a food contains o/oDV listed a lot or a litde of a specific nutrient. Samanic C et al: Obesity and cancer risk among white and black United States veterans, CancerCausesControl 15:35, 2004. Foods that have been prepared in this way can carry a kosher designation. Gommon DietaryPatterns: AlaskaNatives The Alaska Native diet consists of a mixfure of traditional foods and American prepared and processed foods. Seealso Genomics, nuffitional of dietary supplement use, 481-481, 482b of nutrient intake, 574b of overweight/obesiry, 539-540 physical, nutrition-focus ed, 1223-I226 assistedliving facilities (ALFs) definirion, 286 for older adults, 103-104 assisted reproductive technology (ART) preconception nutrition and, 161 asthma, 904 definition, 899 AT (activity thermogenesis) factors affecting, 26 definirion, 22, 26 ataxia, definition, 1067 ^ta:zanavir sulfate E (Reyataz) nuffitional complications of, 1005t atherogenesis,836 atheroma definirion,833 development,835 atherosclerosis care management algorithm for, 85lf definition,833 development, 836, 836f pathophysiology,834-837, 85 3f atherothrombosis C-reactive protein and, 848 definition,833 athletes alcohol use by, 603 amenorrheic, osteoporosisin, 628 caffeine use by, 603 eating disorders, 568 ergogenic aid, 603-605t fl uid absorption, 602 -601 supplements,usage,606t weight management, 593-599 carbohydrates,usage,593-595 fats, usage, 597 macronutrients, usage, 593 -597 minerals, usage,598-599 proteins, usage,595-596, 596b vitamins, usage, 597-598 atopic dermatitis definition, 739 food allergies,740 atopic march, 744 definition, 739 atopy,740 definition, 739 ATP (adenosine triphosphate), definition, 587 Atripla (efavirenz, emtricitabine, and tenofovir disoproxil fumarate), nutritional complications, 1005t atrophicgastritis definition,286,654 in olderadulthood,293 attention deficit disorder,nutrition, 1I 10t attention-deficithyperactivitydisorder (A D H D) ,1 1 8 7 - 1 1 8 8 definition,1170 in childhood,238 challenge. ars.usda.gov/nutrientdata WhatWe Eatin America http ://www.barc.usda.gov/bhnrc/foodsurvey/home.htrn References American Dietetic Association Media Release:Disasters and emergencies: are you prepared? Saffle JR et al: A randomized trial of indirect calorimetry-based feedings in thermal injrry, J Tiauma 30:776, 1990. Stress Ulterc. Deitch EA: Multiple organ failure, Ann Surg 216:117, 1992. in an area immediately below the pylorus. Such findings suggest that nutrient recommendations tailored to genotype would be beneficial. sr ro etcr Jlloqsteur Supsar rarlteq/,!\ pastercrr uoBetuasarderp dlerauaS 'eseercurtq8ra,ryt SurdusduoJJe qtr,r\ 6JV rpl-4aslenpr rpur eruos ur dole,repleru erFeddesnouoDnlS e q8noqrly 'peqsunoulcur uago sr uopelndod snn esneJaq IeDuessesr luaFed eq1Josntels uonlDnu eg1JouoFEurTJeteCI r{ de ,t aqu 1or trr }n N le3tpaW 's.reed ot Je o eurTJepe rpp\ aarsserSord 97 S sI eseesrpeqt aJurs.{yproedsa'lueuodrur eJBsseueJe,t\eranrS -arBJ pue uoddns crrpedurE 'OOOZ''p ra ueqele3) enueur -ep Jo surordurls pcr8oloqcdsd pue promeqeq a,rordtur or u.,rrogsueeq ser{ a:ec f:ruqdrrsrpJetur e^nBroqEIIoJ .tueur -leeJr e a{1 sr erec f:eurv4 DJe#e rsoru tueua8eueur 'uoEelr8e ro 'ltarnrr 'daeys peqrntsrp toureqeq lus.rraqe sserddns ot pesn are suon -Errpeu rorpo eruos 'uopru€oc pue uortJunJ {roq ur luur -azr.ordrurtseporu ,t1uo sa,rl€ '61V lueun?ar eqt ur esn JoJ Jo (VCg) uopsrsrurupv 8ruC pus pood atp lq panordde rol -lqlqq esBrelseurlor{JlsJg eqt 'euuJEJ 'e^pJeJelsolu aq o1 pe^orTeqdpuarrnc e:e (sprcedue; g-e8euo puu ,sluepxogur raqlo 'E urruBlr^ 'aur1oqc1&acr ''3'a) nuaruelddns uonrr -nu qtp\ uorreurqruor ul (sCNSt\D s8rup &oreurruugurnue IeproJetsuou pue'leluerurradxa sureruer lueruleerl 8n-rq 'serde.reqlue,tordun uretuej g pue']'g sulurelra;o sasopeSeru pue l(edop-r) edopoaal fsluepurps :sJotelrpose^IBJqere]fsrsFe dFueunc tueuDearl e^nlu5ep oN 'uonJury pcrSoloqcdsdornau anordurr ,'(eur uslloq?leu ul?Jq Jo luau.rtrdurr eql lB petJaJrp tueunea{L 'srsou5erp lf,oterr rguoc e eruesqe er1r asneceq rusrJ Jo Jo -nlrr ot percafqnseq deur sarpn]s'tlnsar E sV 'uorsnlrxa Jo euo pue e^Edunserd sr srsou5rrp aqr '.{1pcruq3 .fSoloqred -otsrg dq pesou8erp sl rI 'OV roJ aJnr ou sr dpuerrnr araqJ JuarulEalllPsrpaN 'f5oyoua eqr;o rred aq osle luu (1orarsa1 -orIJ ruruas qSrq 'ere1o;,tro1'aurels,{cotuoq pete^e1a)a>1orrs pue eseasrpueeq ot palelar sJotcq arIJ pue '8uqru8rs uq -nsur perredrul'(S002'ppry) stueuodruocpr-lpuoqcornu la1 ol aSeruеq 'loJetseloqc go uodsuet eql ur pa^lo ur sr pu? All FDA-approved nonnutritive sweeteners,when consumed withln the establisheddaily intake levels,can be used by personswith diabetes,including pregnant women (ADA, 2007).However,clinical studiesin subjectswithout diabetes provide no evidencethat nonnutritive sweetenersin foods causeweightlossor gain (Rabeneta1.,2002). Table 21-5 lists catecholaminergicagentsused for short-term weight loss. Under these circumstancesit is seldom continued long enough to produce the serious neurologic, hormonal, and Jther side effects that accompanyprolonged starvation. I rypropnan FIGURE 35.8 Endosenous oxalate formation. In the latter case nocturnal tube feedings can bridge the gap berween oral intake and actual nutritional requirements. Similar to protein, the carbohydrate source and degree of hydrolysis affect osmolarity. Masoro EJ: Overviewof caloric restriction and aging,MechAging Dea 126:913,2005. Biochemical measurementswill indicate whether malnutrition accompanies the underweight (see Chapters 14 and 15). The suitability of a feeding formula for a patient should be evaluated based on the following characteristics: (1) functional status of the patient's gastrointestinal tract, (2) physical characteristics of the formula such as osmolarity and viscosiry (3) energy and nutrient content, (4) digestion and absorption capability of the patient, (5) other clinical considerations of the patient such as fluid and electrolyte status and organ/system function, and (6) costeffectiveness.Small bowel feeding requires careful selection of formula because of sensitivity to osmolarity and absorptive function of the small bowel (Figure 20-3). CHAPTER for Pulmonary llisease 9f9 35 | MedicalNutritionTherapy f) ick is a 63-year-old widower who is a retired commercial | \ carpet installer. ua,ra 'q urruefrl qlur srce(qns dlrapya Jo uongl 'seruoq -ueuelddns reqr rsaSSnsserpnts IEJe^esruo{ srFseu Sursrnu ur Surrrq esorfl se ila,l.r.sB 'ueurorh l1-rep1eSurrrq-aa.g uI punoJ uaeq e^Bq C unuBlr lxorp.{q-57Jo sla^el ^\oT '(E :erdeq3 aas) e8uer IBruJou et1l ur uortBJIueJuoJ uor runrclec rurues agr daal ot peseerJurosyesr uondrosar euoq 'HJd uruss Jo uoEe^ele ue ot stnql.rluoJ seletur unrJIEJ ,trol esngJefl 'raaouJnt euoq pesgerJur pue rusrprordqrered -rad,{q f-lepuocas sr,{ouarcgap qtr,4a peterJosse C uluBtr '(t002 ''1eta oese4) uortdrosar euoq pesterJur pue '11a4 runras pasearcur ,q uI(uBlrA runJes peJnpal or Sulpeal 'sqluour Jelur,r\ Sulrnp lr{3l m petrurT Jo asnuceqsrsorodoetsoJo >lsrJpesterJur vPeue] puB selEls pe]rull eqt uI sepn]rlBl ureqlrou tY "tE tB e^rl or{^,\ esorIJ 'rq8r1uns ol arnsodxe eprq a,leq .{y1ec -rdft suortntnsur JBlnurspug seuoq Sursrnu ur Suurq slcaf -qns z(Fapya'uonrppe ul 'C urruElra azrseqtuls uBJ tBr{1 slle] Je-/KeJ suretuoJ lr pue dFaple eql q Jeuurqt sr uDIS oIp esneceq rqSll (,An) lelor^Erlln ol arnsodxe 8ur.tro1o; C[urrug]r^ Surcnpord ut luerJgJe ssal sr sltnpr rpur Japlo 'rolenbe 3ql ruo{ JBJe^q oq,{ puB spooJ rrar{l Jo UDISeqa ruo{ C urruelrl elur1 urrlqo lyuounuoc oq,,n aldoad llrep uopedpsuo3 uonfuosqe pasearcepurog Suppsar suopeJluelB rp leJeuru reqro pue uoJrJo druarcgeq (Avpfiu 000tlsrr aqt esr?J pue Brruaclec;edz(qacnpur utc uoneluauraldns '(g rerdeq3 aes) paplo,re eq ol speeu C urruulr^ alrsserxg sseJXE 'pueuruoJeJ ol lunorue lccxe arll lnoqe uoDsanb 'luelrodrur sr elelur C urustra alenbapy ilps sl aJer.Ftnq a)lPlul0 u!ruElr^ 'a{elur unrJIBJ pepuauluocer Ietot aqr Suraarqce preaot terp aqt olur perolJuJ dlngarec eJoru eruoceq pFol{s spooj pagruoJ eroJaJar{tispoo; ul pauretuoJ sluernnu Jar1to eW Jo esntJaq uueureyddns uerp umrJIBc apnord ol ,(ea elqeragerd eroru e eq or paJeprsuoJ ejB spooC 'spooJ Jorpo pue spearqot puc ecm(;o dno 17(1q %0i) 5ur 00[tnoqu tE sqpru &rep-uou Jo spueJq dueur pue aJrnf e8uero Jo spuurq eruos ot pappe Sureq dpuerrnc sI unIJIBJ 'saprua; lq runrJlec Jo uoBdurnsuoc eql esBaJJuIol fe,aaJetfJoue$ sIqJ urnl]lec spoollo u0r1P3$ru0j 'uolletueuralddns urnrcpe Jo $lsrJ pnuarod xofl 'suoncBJelur esra^pe ,fipnuerod ssetfl slBB srsq I-'z -u?lsqns ol lnq rsuortEcluels^ PaPeeusr eJuePIAeIEUOpIPPB -rp Jeqto puu 'umrseuSvur'Jvrz Iyqrssod puc uoJr eruequou .srop7sacrua54o3"o3H.mT"""x""i#ffi :"Hi:,ffiT;Tl ulo{ srBC asealau'arueraJsd prBpusls rq aseqE|ECluerlnN vcsn IbI 0sI 002 v0z ztz 6nz zL7 bL7. Epigenetia c sn dG e n o m iIcm p r i n t i n g Prader-Willi and Angelman's slmdromes can be used to illustrate an additional genetic phenomenon, known as epigenetacs,specifically genomic imprinting. Activities Strength Upper-body strength activities have been shown to improve bone measurements of the femur. Disease835 MedicalNutritionTherapyfor Gardiovascular Endothelial dysfunctioninitiates atherosclerosis;fortuet al., nately the dysfunctionis reversibleflAles-Gonzales 2004).Someof the factorsthat causeendothelialdysfunction are dyslipidemia(abnormalityin any of the lipoprotein fractions),especiallyelevatedLDLs and decreasedhighdensitylipoproteins(HDLs); h)?ertension;cigarettesmokand diets ing; diabetes;obesity; hyperhomocysteinemia; high in saturatedfat and cholesterol.Thereforeendotbelial bydietand other dyfunctionis an endpoint that canbemodif.ed. bridging the gap between Thte DM: Cultural awareness: patients, Hispanic and caregivers J ContinEducNurs 35(5):213, 2003. (Coarterl Ginny DiNunzio, CRT, Coanlinator,Pulmonary Rebahilitatian hogran, Doyh*oam HoEhal, Doylestoum,Pa.) FIGURE 35{ While cooking, a client with chronic obstnrctive pulmonary diseasemust consider the proper care and safety of oxygen and nasal tubing. Table 36-2 summarizes medical nutrition therapy for ARF. 5 0 8 t definition,506,507 for cancer patients, 982-983 for end-stagerenal disease,945 for premature infanrc, 1 120-1l2 5 amino acids in, 1122-1123, 1123r electrolltes in, 1124, ll24t energy in, 1122,1122r fluids in, 1120-1122 glucose in, 1122, ll22t lipids in, 1123, ll23t minerals tn, 1124, ll24t trace elements in, 1124, ll24t transition, to enteral feeding, 1125 vitamins in, 1124-1125, 1125t during hemodialysis therapy, regimen, 946t monitoring, 521-522, 522t p e r i p h e r a l ,d e f i n i t i o n , 5 0 6 refeeding slmdrome and, 522 - 523 solutions,518-520 formulations, 520t substancesbeing investigated for potential therapeutic effects in, 524b [ansrnon to enteral feeding, 523 to oral feeding, 523 paresthesia, definition, 1068 parietal cells, 666 definition, 2, 654 stimulation, 7 parietal cell vagotomy, 666 definition, 654 Parkinson'sdisease(PD), 1094-1096 definition, 1068 passive diffusion definition, 2 in absorption, 13 passive transport, of calcium, 104 patient-focused care (PFC) definition, 454 nutrition care,464 pattern A LDL cardiovascular risk and, 425 definition,412 pamern B LDL cardiovascular risk and, 425 definition, 412 PBC. Somogyi-Zalud E et al: The use of life-sustaining treaffnents in hospitalized persons aged 80 and older,J Am Geria* Soc 50:930,2002. consequences, Hypponen E and Power C: Hypovitaminosis D in British adults at age45 y: nationwidecohort study of dietary and lifestyle predictors,Am J Clin Nutr 85:860,2007. Nature of Nutritional Testing and Types of Tests Typically laboratory tests are static assays(i.e., the concentration ofan analyte is measured in a biologic fluid [e.g., a fasting blood specirnen] at a point in time). Good sources of vitamin D are fortified foods and beverages such as milf fortified soy, rice and nut beverages, and margarine (check the labels on these foods). Interestingly, boring and monotonous diets can be a strategy for weight management. to caution patients about the use of these supplemens (Saperet al., 2004). Health Canada:Eating well with Canada'sfood guide,@Her Majestythe Queen in Right of Canada,representedby the Minister of Healthy Canada,2007, availableat www.hc-sc.gc. and D. Hyperkalemia,commonly associatedwith cyclosporine therapy warrants dietary potassiumrestriction, although CHAPTER 36 j MedicalNutritionTherapyfor RenalDisorders 931 this is usually only temporary. Interventions require careful planning by the counselor to be effective. - . Some commonly occurring fatty acids are listed in Table 3-4 with a qpical food source. Patients with normal gastrointestinal function tolerate this method, which takes advantage of normal digestive, hormonal, and bactericidal processesin the stomach. Jatoi A et al: Do patients with nonmetastaticnon-small cell lung cancer demonstrate altered resting energy expenditrre? 928 PART 5 i Medical Nutrition Therapy osteomalacia, whereas children present with polyuria, grou'th retardation, rickets, and vomiting. Adverse events should be reported to the health 482 PART 3 , NutritionCareProcess EvaluatingDietary SupplementUse:The Patient-Health Care Provider Information Exchange Ask . Nutrition Diagnosis: Knowledgedeficit relatedto WIC eligibility as evidencedby lack of awarenessof porential program for assistanceduring pregnancy. Meal frequenry is a controversial issue in the management of peptic ulcer disease.Frequent, small meals may increase comfort, decrease the chance for acid reflux, and stimulate gastric blood flow; but they also may increase net acid output. Individuals WithAdvanced Cancer Receiving Palliative Gare McCallum and Fornari (2006) define palliative care as the active total care of an individual when curative measures are no longer considered an option by either the medical team or the individual. j sp National Institute of Dental andCraniofacial Research http ://www.nidcr.nih. PAL, Physical activity level. Obesity rates vary by race and ethnicity in women. TobaccoUse The increasedrisk of C\{D andstrokefrom cigarettesmokins has beenrecognizedfor more than 40 y"rrr, *ith definitiv! evidencepresentedin several Surgeon General Repors. The tube has one lumen for decompression, and the other lumen is used to feed into the small bowel. Whelton PK et al: Sodiumreduction and weight lossin the treatnent of hy'pertensionin older persons:a randomized controlled trial of nonpharmacologicinterventionsin the elderly (IONE), JAMA 279:839, 1998. McClave SA, Snider HL: Clinical use of gastric residual volumes as a monitor for patients on enteral tube feeding, JPENj Parenter Enteral Natr 26:435, 2002. More concentrated and thus more nutrient-dense formulas are also available. Pur6ed foods from a spoon might be inuoduced at 5 to 6 months of age, finger foods at 7 to 8 months, and the cup at 8 to 9 months, using tJresame timing and progression of texture recommended for typical children. Fluoride ions become incorporated at the surfaces of hydroryapatite crystals; and the size and structure of the crystals become so altered that the mechanical competence of the bone declines. It has twenty carbons and four double bonds, the first of which is six carbons from the terminal methyl group. Drape towel over patient's chest. Duodenal ulcer is characterized by considerably increased acid secretion, nocturnal acid secretion, and decreased bicarbonate secretion. Nutrition therapy is multipronged, depending on the specific genetic defect. Carbohydrate/lipid content D. Becauseparenterally administered vitamins and trace elements do not go through the digestive and absorptive processes,these recommendations are lower than the DRIs. Parenteral solutions also represent Calculatingthe Osmolariryof Tunnel catheter Cephalicvein Axillaryvein Brachialvein Basilic vein FIGURE 20-5 Venoussitesfrom which the suoeriorvena cavamay be accessed. From these advanceswill come diagnostic tess and susceptibility profiles that, coupled with genetic testing and family history analysis,will allow health care professionals to predict those at risk for particular disorders. A small percentage of the magnesium ions are located within bone cells, where they serve as enzyme cofactors, as in all other cells. Although their use appears to be safe, it is unlikely that sugar alcohols in the amounts likely to be in- gestedin individual food servingsor mealswill contributeto significant reduction in total energy or improvement in glycemia(ADA, 2007).Somepeoplereport gastricdiscomfort after eating foods sweetenedwith theseproducts' and consuminglargequantitiesmay causediarrhea,especiallyin children. The effect may not be limited to new food items but may also involve foods that were included in the individual's usual diet before treatment. Insert the feeding tube into the patient's nostril or Placement of small bowel feeding tubes (SBFB) is an inmouth, adding lubricant as needed.Advance the tube vasiveprocedure (seefollowing procedure) that requires speto the predetermined length. Lean body mass (LBM) is the part of the body free of adipose tissue and includes the skeletal muscles,water, bone, and a small amount of essential fat in the internal organs, bone marrow, and nerve tissues.LBM is higher in men than in women, increases with exercise, and is lower in older adults. Dentures need to be checked periodically by a dental professional for appropriate fit. Hypoproteinemiacontributesto the devel- the commoncold or flu fall into two groups:coughsuppresopment of pulmonary edema by decreasingcolloid ossants and expectorants.Cough suppressantsinclude the motic pressure,which allowsbody fluids ro moveinto the volatile oils of eucalyptusor peppermint. Verify by performing a computerized nutrient analysis. Maintenance program availableonce personal goals are met Maintenance meal plans are available Maintenance meal plans available 548 PART4 | Nutritaonfor Healthand Fitness are probably a best-casescenario becausemany studies did not control for high attrition rates. A d i p o c y t e sH, y p e r t r o F hay n, d H y p e r p l a s i a The mature adipocyte consistsof a large central lipid droplet surrounded by a thin rim of cytoplasm, which contains the nucleus and the mitochondria; these cells store fat in quantities equal to 80% to 957" of their volume. The critical question of whether modest weight losses,if maintained, would have a long-term impact remains unanswered. However, as a rule of thumb, blood urea nitrogen (BLIND above100 mgldl and creatinineof 10 to 12 mg/dl are usually quite closeto this threshold. Resveratrol is also being studied; its antioxidant properties may help to prevent neuronal decline with aging (Anekonda, 2006). Currendy the most effective agents for treatrnent-related (acutQ nauseaand vomiting are the 5-hydroxytryptamine 3 (5-HT) antagonists (i.e., ondansetron, granisetron, and dolasetron). SeeMetabolic equivalents MetS. D e t e r m i n i nRg0 u t e o s f N u t r i t i oT nherapy Regardless of which routes of providing nutrition care and support are used,nutritional goalsshould be specific,achievable, and individualized in scope to encouragecooperation. In older patients an addi- tionalreviewis recommended to detect^"il:!,:i:#;:::*ri; Malnutrition in Hospitals Butterworth (1974) showed that malJ n a landmark article I nutrition could indeed be found in the United States-in hospitals,where it was frequently not recognized.Over the course of the next few years,malnutrition was noted in many hospitalized patients, and attempts were made to evaluateits severity and reverseits course. This transmission can be depicted as a pedigree, which shows the journey of a gene through multiple generations of a family and can be used to predict the probability of a gene being inherited by a particuIar family member. In the ischemia of an infarction, the myocardium (or other tissue) is deprived of orygen and nourishment. The effects on CRP are inconsistent (Rawsonet al., 2003; Verdaet eta1.,2004;Plaisanceand Grandjean, 2006). Pipe garnishesaround edgessuch as piping letnrce around the edge ofa pureed sandwich. rype of nutrition care provided for an individual depends on the presence of :: disease or risk of potential disease, the environment, the stage of growth and development, and socioeconornic issues.It will include an assessmentof the factors affecting the adequacy of nutritional intake and the current nutritional starus, and the identification of nutrition diagnoses.Manipulation of the diet, provision of enteral or parenteral support, or intervention in the form of counseling or education and coordination of care are the possible interventions that may be selected according to the etiology of the problem. 3 - 3 0 . Disorders 7L7 ExocrinePancreas CHAPTER 28 { lVtedical NutritionTherapyfor Liver,BiliarySystem,and bolic defect (Maher, 200+).A low-copper diet is implementedif other therapiesare unsuccessful (Thble28-2).If this diseaseis not diagnoseduntil onsetof fulminant failure, survivalis not possiblewithout transplantation(Kayler et al., 2002). Borugian MJ et al: Insulin, macronutrient intake, and physical activity: are potential indicators of insulin resistance associated with mortality from cancer? In phasefour dietary restrictions are progressivelyreduced as foods are Phasefive graduallyintroducedand toleranceis established. SeeBinge eating disorder BEE. In persons who cannot absorb dietary fat because of an inability to secrete bile or those who have rare disorders of fat metabolism 2. Even more alarming is the increasing ralte(17.1"/") of overweight in children and adolescents.The United States is not alone in terms of these trends; they exist worldwide. The acids produced by their metabolism causea drop in salivarypH to lessthan 5.5, creating the environment for decay. The change required for statistical significance has been called the critital dffirence. Nevertheless there is considerable evidence in animal and (indirectly) in human models that enteral nutrition preservesmucosal immunity in conditions of critical illness. 2004). ,(lquro,re; ot sreadde Iueql uae^qaq uopJEJelul e.trlrsod e rnq tealc led lou sr selqErrB^o^\1 eseql uee^rtaq stsrxe uorlJBJelul uB Jaqrell,!\ 'euolB lunlclEr Jo lElp uetp retear8 aq leur porred tuarudolanap pue qr-vror8 eqr Suunp Wgd oi esrrrexeSuueaq-rg8le,{Jo uonnqlrruoc eq]'(SOOZ ''p re,$1sae/a 15002''F re surerqy),buarcggnsur urruulr C 'qrr8;o qrrnorS FeqJreueu Jo suoBrpuor JaPun , (lprcadsa -rsod ,{pre eql ur JoIJEJ lecnrrJ ? PharmacologicManagement of Anorexia-CachexiaSyndrome AppetiteStimulants . A number of antigenic variations occur. Medication without lifestyle modification is lesseffective.