

Foods Having Vitamin A

Unlike the other twelve vitamins, vitamin D is only conditionally essential in the diet, as with adequate skin exposure to the ultraviolet B (UVB) radiation component of sunlight there is synthesis of cholecalciferol in the deeper layers of the skin's epidermis. Vitamin D can also be obtained through diet, food fortification and dietary supplements. For most people, skin synthesis contributes more than dietary sources. In the United States, milk and plant-based milk substitutes are fortified with vitamin D3, as are many breakfast cereals. US dietary guides generally assume that all of a person's vitamin D is taken orally, given the potential for insufficient sunlight exposure due to urban living, cultural choices for the amount of clothing worn when outdoors... 1da39e19f5 Tocopherols and tocotrienols both occur in α (alpha), β (beta), γ (gamma), and δ (delta) forms, as determined by the number and position of methyl groups on the chromanol ring. All eight of these vitamers feature a chromane double ring, with a hydroxyl group that can donate a hydrogen atom to reduce free radicals, and a hydrophobic side chain that allows for penetration into biological membranes... 1da39e19f5 Vitamin K is used in the liver as the intermediate VKH2 to deprotonate a glutamate residue and then is reprocessed into vitamin K through a vitamin K oxide intermediate. The presence of uncarboxylated proteins indicates a vitamin K deficiency. Carboxylation allows them to bind (chelate) calcium ions, which they cannot do otherwise. Without vitamin K, blood coagulation is seriously impaired, and uncontrolled bleeding occurs. Research suggests that deficiency of vitamin K may also weaken bones, potentially contributing to osteoporosis, and may promote calcification of arteries and other soft tissues. 1da39e19f5 Vitamins have diverse biochemical functions. Vitamin A acts as a regulator of cell and tissue growth and differentiation. Vitamin D provides a hormone-like function, regulating mineral metabolism for bones and other organs. The B complex vitamins function as enzyme cofactors (coenzymes) or the precursors for them. Vitamins C and E function... 1da39e19f5 The other essential nutrients are minerals, essential fatty acids, essential amino acids, and choline. 1da39e19f5 == List of B vitamins == 1da39e19f5 Niacin (the nutrient) can be manufactured by plants and animals from the amino acid tryptophan. Niacin is obtained in the diet from a variety of whole and processed foods, with highest contents in fortified packaged foods, meat, poultry, red fish such as tuna and salmon, lesser amounts in nuts, legumes and seeds. Niacin as a dietary supplement is used to treat pellagra, a disease caused by niacin deficiency. Signs and symptoms of pellagra include skin and mouth lesions, anemia, headaches, and tiredness. Many countries mandate its addition to wheat flour or other food grains, thereby reducing the risk of pellagra. 1da39e19f5

B vitamins Each B vitamin is either a cofactor (generally a coenzyme) B vitamins are a class of water-soluble vitamins that play important roles in cell metabolism and synthesis of red blood cells. They are a chemically diverse class of compounds. Fortified foods, such as breakfast cereals, baked products, and infant formulas, may contain B vitamins 1da39e19f5

Chemically, the vitamin K family comprises 2-methyl-1,4-naphthoquinone derivatives... 1da39e19f5

Vitamin D The name Vitamin D is a misnomer; technically vitamin D is not a vitamin, but rather a fat-soluble Vitamin D is a group of structurally related, fat-soluble compounds responsible for increasing intestinal absorption of calcium and phosphate, along with numerous other biological functions. The name Vitamin D is a misnomer; technically vitamin D is not a vitamin, but rather a fat-soluble secosteroid hormone. In humans, the most important compounds within this group are vitamin D3 (cholecalciferol) and vitamin D2 (ergocalciferol). vitamin D3 (cholecalciferol) and vitamin D2 (ergocalciferol) 1da39e19f5

Vitamin Comparison of Vitamin Levels in Raw Foods vs. For example, vitamin C can be synthesized by some species but not by others; it is not considered a vitamin in the first instance but is in the second. These essential nutrients cannot be synthesized in the organism in sufficient quantities for survival, and therefore must be obtained through consumption. Most vitamins are not single molecules, but groups of related molecules called vitamers. Beyondveg Vitamins are organic molecules (or a set of closely related molecules called vitamers) that are essential to an organism in small quantities for proper metabolic function. Beyondveg. Cooked Foods. Effects of Cooking on Vitamins (Table). Retrieved on 3 August 2013. com. For example, there are eight vitamers of vitamin E: four tocopherols and four tocotrienols 1da39e19f5

Vitamin E is classified as an essential nutrient for humans. Various government organizations recommend that adults consume between 3 and 15 mg per day, while a 2016 worldwide review reported a median dietary intake of 6.2 mg per day. Sources rich in vitamin E include seeds, nuts, seed oils, peanut butter, vitamin E-fortified foods, and dietary supplements. Symptomatic vitamin E deficiency is rare, usually caused by an underlying problem with digesting dietary fat rather than from a diet low in vitamin E. Deficiency can cause neurological disorders. 1da39e19f5 In healthy adults, vitamin B12 deficiency is not common, mainly because body stores of the vitamin are substantial and turnover is slow, with relatively low dietary requirements. However, B12 deficiency in the elderly is a significant concern, and is related to dementia... 1da39e19f5 Major health organizations list thirteen vitamins: 1da39e19f5 In pregnant women, VAD is associated with a high prevalence of night blindness and poor maternal health outcomes including an increased risk of maternal mortality and complications during pregnancy and lactation... 1da39e19f5

Vitamin A The term "vitamin A" encompasses a group of chemically related organic compounds that includes retinol, retinyl esters, and several provitamin (precursor) carotenoids, most notably β -carotene (beta-carotene). Vitamin A occurs as two principal forms in foods: 1) retinoids, found in animal-sourced foods, either as retinol or bound to a fatty acid to become a Vitamin A is a fat-soluble vitamin that is an essential nutrient. For aiding vision specifically, it combines with the protein opsin to form rhodopsin, the light-absorbing molecule necessary for both low-light (scotopic vision) and color vision. Vitamin A has multiple functions: growth during embryo development, maintaining the immune system, and healthy vision 1da39e19f5

Vitamin A occurs as two principal forms in foods: 1) retinoids, found in animal-sourced foods, either as retinol or bound to a fatty acid to become a retinyl ester, and 2) the carotenoids α -carotene (alpha-carotene), β -carotene, γ -carotene (gamma-carotene), and the xanthophyll beta-cryptoxanthin (all of which contain β -ionone rings) that function as provitamin A in herbivore and omnivore animals which possess the enzymes that cleave and convert provitamin carotenoids to retinol. Some carnivore species lack this enzyme. The other carotenoids do not have retinoid activity. 1da39e19f5 Plants synthesize pyridoxine as a means of protection from the UV-B radiation found in sunlight and for the role it plays in the synthesis of chlorophyll. Animals cannot synthesize any of the various forms of the vitamin, and hence must obtain it via diet, either of plants, or of other animals. There is some absorption of the vitamin produced by intestinal bacteria, but this is not sufficient to meet dietary needs. For adult humans, recommendations from various countries' food regulatory agencies are in the range of 1.0 to 2.0 milligrams (mg) per day. These same agencies also recognize ill effects from intakes that are too high, and so set safe upper limits, ranging from as low as 12 mg/day to as high as 100 mg/day depending on the country. Beef, pork, fowl and fish are generally good sources; dairy, eggs, mollusks and... 1da39e19f5 Dietary retinol is absorbed from the digestive tract... 1da39e19f5 Vitamin A deficiency is the leading cause of preventable childhood blindness worldwide and is a major cause of childhood mortality. Each year, approximately 250,000 to 500,000 malnourished children in the developing world go blind from a VAD, with about half of whom dying within a year of losing their sight. Addressing VAD has been a critical focus of global health initiatives, including Sustainable Development Goal 2: to end hunger, achieve food security and improved nutrition and promote sustainable

agriculture. 1da39e19f5

Vitamin B12 One of eight B vitamins, it serves as a vital cofactor in DNA synthesis and both fatty acid and amino acid metabolism. vitamin B12 naturally occurring in foods, those older than 50 years should meet their RDA mainly by consuming foods fortified with vitamin B12 or a supplement Vitamin B12, also known as cobalamin or extrinsic factor, is a water-soluble vitamin involved in metabolism. It plays an essential role in the nervous system by supporting myelin synthesis and is critical for the maturation of red blood cells in the bone marrow. Animals require B12 but plants do not, relying instead on alternative enzymatic pathways 1da39e19f5

Some writers include choline as a vitamin. 1da39e19f5

Vitamin A deficiency Vitamin A plays a major role in phototransduction, so this deficiency impairs vision, often presenting with nyctalopia (night blindness). In more severe VAD cases, it can progress to xerophthalmia, keratomalacia, and complete blindness. It is common in poorer countries, especially among children Vitamin A deficiency (VAD) or hypovitaminosis A is a lack of vitamin A in blood and tissues. It is common in poorer countries, especially among children and women of reproductive age, but is rarely seen in more developed countries. Vitamin A deficiency (VAD) or hypovitaminosis A is a lack of vitamin A in blood and tissues 1da39e19f5

Vitamin E Symptomatic vitamin E deficiency is rare, usually caused by Vitamin E is a group of eight compounds related in molecular structure that includes four tocopherols and four tocotrienols. The tocopherols function as fat-soluble antioxidants which may help protect cell membranes from reactive oxygen species. seeds, nuts, seed oils, peanut butter, vitamin E-fortified foods, and dietary supplements 1da39e19f5

Vitamin K The human body requires vitamin K for post-synthesis modification of certain proteins that are required for blood coagulation ("K" from Danish koagulation, for "coagulation") and for controlling binding of calcium in bones and other tissues. The complete synthesis involves final modification of these so-called "Gla proteins" by the enzyme gamma-glutamyl carboxylase that uses vitamin K as a cofactor. Vitamin K is a family of structurally similar, fat-soluble vitamers found in foods and marketed as dietary supplements. The human body requires vitamin K Vitamin K is a family of structurally similar, fat-soluble vitamers found in foods and marketed as dietary supplements 1da39e19f5

Vitamin B6 Vitamin B6 is found in a wide variety of foods. Its active form, pyridoxal 5'-phosphate, serves as a coenzyme in more than 140 enzyme reactions in amino acid, glucose, and lipid metabolism. In general, meat, fish and fowl are good sources, but dairy foods and eggs are not (table) Vitamin B6 is one of the B vitamins, and is an essential nutrient for humans. e. The term essential nutrient refers to a group of six chemically similar compounds, i. , "vitamers", which can be interconverted in biological systems. non-synthesizing bacteria 1da39e19f5

Dietary supplements containing all eight are referred to as a vitamin B complex. Individual B vitamins are referred to by B-number or by chemical name, such as B1 for thiamine, B2 for riboflavin, and B3 for niacin, while some are more commonly recognized by name than by number, such as pantothenic acid (B5), biotin (B7), and folate (B9). B vitamins are present in protein-rich foods, such as fish, poultry, meat, dairy products, and eggs; they are also found in leafy green vegetables, beans, and peas. Fortified foods, such as breakfast cereals, baked products, and infant formulas, may contain B vitamins. 1da39e19f5 Vitamin B12 is the most chemically complex of all vitamins, and is synthesized exclusively by certain archaea and bacteria. Natural food sources include meat, shellfish, liver, fish, poultry, eggs, and dairy products. It is also added to many breakfast cereals through food fortification and is available in dietary supplement and pharmaceutical forms. Supplements are commonly taken orally but may be administered via intramuscular injection to treat deficiencies. 1da39e19f5 Each B vitamin is either a

cofactor (generally a coenzyme) for key metabolic processes or is a precursor needed to make one. 1da39e19f5 The amide nicotinamide is a component of the coenzymes nicotinamide adenine dinucleotide (NAD... 1da39e19f5

Vitamin B3 is obtained in the diet from a variety of whole and processed foods, with highest contents in fortified packaged foods, meat, poultry, red fish such Vitamin B3, colloquially referred to as niacin, is a vitamin family that includes three forms, or vitamers: nicotinic acid (niacin), nicotinamide (niacinamide), and nicotinamide riboside. NAD is required for human life and people are unable to make it within their bodies without either vitamin B3 or tryptophan. Nicotinamide riboside was identified as a form of vitamin B3 in 2004. All three forms of vitamin B3 are converted within the body to nicotinamide adenine dinucleotide (NAD) 1da39e19f5

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