

Fat Soluble Vitamins can be stored in the body and need not be consumed daily. While it is difficult to "overdose" on them from ordinary sources, consuming mega doses of ~~fat soluble~~ vitamins, especially A and D, can lead to a dangerous buildup in the body.

Abbreviations: IU=International Units; mg=milligrams; mcg=micrograms.

Vitamin/Mineral	Sources	Indication	Symptoms	Claims
Vitamin A Retinol Men: 3 000 IU Women: 2 700 IU	Liver, fortified Milk (Retinol form - see below for Carotene sources.)	Essential for eyes, skin and the proper function of the immune system. Helps maintain hair, bones and teeth.	Deficiency: Night blindness; reduced hair growth in children; loss of appetite; dry, rough skin; lowered resistance to infection; dry eyes, hearing, smell, taste, nerve damage. Overdose: Headaches; blurred vision; fatigue; diarrhea; irregular periods; joint and bone pain; dry, cracked skin; rashes; loss of hair; vomiting, liver damage, insomnia.	
Beta Carotene (Pro-Vitamin A) (See Vitamin A)	Carrots, Squash, Broccoli, Green Leafy Vegetables	Antioxidant. Converted to Vitamin A in the body. (See Vitamin A)		The antioxidant properties of this nutrient may be a factor in reducing the risk of certain forms of cancer.
Vitamin D Men: 100 IU Women: 100 IU	Egg Yolk, Milk, Exposure to sun enables body to make its own Vitamin D.	Helps build and maintain teeth and bones. Enhances calcium absorption.	Deficiency: Rickets in children; bone softening in adults; osteoporosis. Overdose: Calcium deposits in organs; fragile bones; renal and cardiovascular damage.	
Vitamin E Men: 9-10 mg Women: 6-7 mg	Plant Oils, Butter, Brown Rice, Soybean Oil, Vegetable oils such as Corn, Soybean, Nuts, Wheat Germ, sunflower seeds.	Antioxidant. Helps form red blood cells, muscles and other tissues. Preserves fatty acids.	Deficiency: Rare, seen primarily in premature or low birth weight babies or children who do not absorb fat properly. Causes nerve abnormalities. Overdose: Unknown.	The antioxidant properties of this nutrient may be a factor in reducing the risk of certain forms of cancer.
Vitamin K None established. Estimated at 0.03 mcg/kg	Green Vegetables, Liver, oats, cheese, also made by intestinal bacteria.	Needed for normal blood clotting.	Deficiency: Defective blood coagulation. Overdose: Jaundice in infants.	

Water Soluble Vitamins are not stored or build up in the body and should therefore be consumed daily.				
Vitamin/Mineral	Sources	Indication	Symptoms	Claims
Thiamine Vitamin B1 Men: 0.8 - 1.3 mg Women: 0.8 mg	Sunflower Seeds, Pork, whole and enriched Grains, dried Beans.	Necessary for carbohydrate metabolism and muscle coordination. Promotes proper nerve function.	Deficiency: Anxiety; hysteria; depression; muscle cramps; loss of appetite; in extreme cases beriberi (mostly in alcoholics). Overdose: Unknown, although excess of one B vitamin may cause deficiency of others.	
Riboflavin Vitamin B2 Men: 1.3 - 1.6 mg Women: 1.1 mg	Liver, Milk, Spinach, enriched Noodles, Mushrooms.	Needed for metabolism of all foods and the release of energy to cells. Essential to the functioning of Vitamin B6 and Niacin.	Deficiency: Cracks and sores around the mouth and nose; visual problems. Overdose: See Vitamin B1.	
Niacin Vitamin B3 Men: 16-23 mg Women: 14-16 mg Niacin is converted to niacinamide in the body.	Mushrooms, Bran, Tuna, Chicken, Beef, Peanuts, enriched Grains.	Needed in many enzymes that convert food to energy. Helps maintain a healthy digestive tract and nervous system. In very large doses, lower cholesterol (large doses should only be taken under the advice of a physician).	Deficiency: In extreme cases, pellagra, a disease characterized by dermatitis, diarrhea and mouth sores. Overdose: Hot flashes; ulcers; liver disorders; high blood sugar and uric acid; cardiac arrhythmias.	
Pantothenic Acid Vitamin B5 Men: 2.5 mg Women: 2.5 mg	Abundant in animal tissues, whole grain cereals and legumes.	Converts food to molecular forms. Needed to manufacture adrenal hormones and chemicals that regulate nerve function.	Deficiency: Unclear in humans. Overdose: See Vitamin B1.	
Vitamin B6 Pyridoxine Men: 1.8 mg Women: 1.5 mg	Animal protein foods, Spinach, Broccoli, Bananas.	Needed for protein metabolism and absorption, carbohydrate metabolism. Helps form red blood cells. Promotes nerve and brain function.	Deficiency: Anemia, irritability, patches of itchy, scaling skin; convulsions. Overdose: Nerve damage.	
Vitamin B12 Cyanocobalamin Men: 2 mcg Women: 2 mcg	Found almost exclusively in animal products.	Builds genetic material. Helps form red blood cells.	Deficiency: Pernicious anemia; nerve damage. (Note: Deficiency rare except in strict vegetarians, the elderly or people with malabsorption disorders.) Overdose: See Vitamin B1.	
Biotin 60 mcg	Cheese, Egg, Yolk, Cauliflower, Peanut Butter	Needed for metabolism of glucose and formation of certain fatty acids. Essential for proper body chemistry.	Deficiency: Seborrheic dermatitis in infants. Rare in adults, but can be induced by consuming large amounts of egg whites - anorexia, nausea, vomiting, dry scaly skin. Overdose: See Vitamin B1.	
Folic Acid (Folacin) Men: 180-220 mg Women: 160-190 mg	Green, leafy vegetables, Orange Juice, organ Meats, Sprouts.	Essential for the manufacture of genetic material as well as protein metabolism and red blood cell formation.	Deficiency: Impaired cell division; anemia; diarrhea; gastrointestinal upsets. Overdose: Convulsions in epileptics. May mask pernicious anemia (see Vitamin B12 deficiency).	Adequate amounts of this nutrient in the first stage of pregnancy may reduce the risks of neural tube birth defects.
Vitamin C Ascorbic Acid Men: 40 mg Women: 30 mg	Citrus Fruits, Strawberries, Broccoli, Green Peppers	Antioxidant. Helps bind cells together and strengthens blood vessel walls. Helps maintain healthy gums. Aids in the absorption of iron.	Deficiency: Muscle weakness, bleeding gums; easy bruising. In extreme cases, scurvy. Overdose: Unknown.	The antioxidant properties of this nutrient may be a factor in reducing the risk of certain forms of cancer. May reduce the effects of the common cold.

MINERALS inorganic products essential for body functions. Major elements:			
Vitamin/Mineral	Sources	Indication	Symptoms
Calcium Men: 800 - 1000 mg Women: 700-800 mg	Milk, Yogurt, Cheese, Sardines, Broccoli, Turnip Greens.	Helps build strong bones and teeth. Promotes muscle and nerve function. Helps blood to clot. Helps activate enzymes needed to convert food to energy.	Deficiency: Rickets in children; <u>osteomalacia</u> (soft bones) and osteoporosis in adults. Overdose: Constipation, Kidney Stones, calcium deposits in body tissues. Hinders absorption of iron and other minerals.
Chlorine Adult: 1.8-5.1 gms	Salt, sea salt, vegetables, celery, tomatoes, olives, lettuce, salt substitutes (KCl).	Used to make stomach acid (hydrochloric acid), It is necessary for protein digestion (pepsin), B12 absorption (intrinsic factor) and absorption of metallic minerals. Being one of the electrolytes, chloride works closely with sodium and potassium and is part of the controlled regulation of acid-alkaline balance.	Deficiency: Metabolic alkalosis, apathy, <u>dehydration</u> . In children: slowed growth, delayed speech. Overdose: Edema / fluid retention, hypertension / high blood pressure, greater risk of some cancers, Chlorine inhalation: Coughing, choking, chest pains, pulmonary edema, asthma, headache, blue discoloration of skin, nausea, vomiting
Magnesium Men: 230 - 250 mg Women: 200 - 210 mg	Spinach, Beef Greens, Broccoli, Tofu, Popcorn, Cashews, Wheat Bran	Activates enzymes needed to release energy in body. Needed by cells for genetic material and bone growth.	Deficiency: Nausea, irritability, muscle weakness; twitching; cramps, cardiac arrhythmias. Overdose: Nausea, vomiting, low blood pressure, nervous system disorders. Warning: Overdose can be fatal to people with kidney disease.
Phosphorus Men: 1000 mg Women: 850 mg (3-6 g)	Chicken Breast, Milk, Lentils, Egg Yolks, Nuts, Cheese	With calcium builds bones and teeth. Needed for metabolism, body chemistry, <u>nerve</u> and muscle function.	Deficiency: (Rare) Weakness; bone pain; Anorexia. Overdose: Hinders body's absorption of calcium.
Potassium Men: 40-80 mmol Women: 40-80 mmol (3-6 g)	Peanuts, Bananas, Orange Juice, Green Beans, Mushrooms, Oranges, Broccoli, Sunflower Seeds.	Helps maintain regular fluid balance. Needed for nerve and muscle function.	Deficiency: Nausea, anorexia, muscle weakness, irritability. (Occurs most often in persons with prolonged diarrhea.) Overdose: Rare. Irregular / rapid heart beat, low blood pressure,
Sodium Adults: 1.5 gms	Meat, fish, dairy products, celery, table salt, canned foods and soups, baking soda, MSG	Adequate sodium balance Is necessary for transmitting nerve impulses and proper muscle function.	Deficiency: Fatigue, depression, mental apathy, low blood pressure, (occasionally high blood pressure), headaches, <u>dehydration</u> , dizziness, arthritis, kidney stones, seizures, confusion. Overdose: Edema, hypertension, stroke, dizziness, gout, headaches, kidney damage, kidney stones, <u>stomach</u> problems, nausea, vomiting, coma

MINERALS inorganic products essential for body functions. Trace elements:			
Vitamin/Mineral	Sources	Indication	Symptoms
Chromium Adults: 200 mcg	Brewer's yeast, beef, liver, chicken, dairy products, eggs, potatoes, whole-grain products, fish / seafood, green peppers, bananas, beer, drinking water	The most important nutrients next to calcium and magnesium for anti-inflammatory properties. Essential in the uptake of glucose into the cells so it can produce energy (ATP).	Deficiency: Reduced glucose tolerance / impaired glucose metabolism, high cholesterol, inflammatory joint disease Overdose: Spinal / joint degeneration, lymphatic swelling.
Copper 2-3 mg	The richest sources of copper in the diet are Liver and other organ Meats, Seafoods, Nuts and Seeds.	Component of several enzymes, including one needed to make skin, hair and other pigments. Stimulates iron absorption. Needed to make red blood cells, connective tissue and nerve fibers. Has anti-inflammatory properties	Deficiency: Rare in adults. Infants may develop a type of anemia marked by abnormal development of bones, nerve tissue and lungs. Overdose: Liver disease; vomiting; diarrhea.
Fluorine Adult: 2-3.5 mg	Seafood, gelatin, black tea, tap water (some cities), some mineral waters, most toothpastes, pesticides, chewing tobacco, some wines	Is an essential hardening component of bone and it is present at about 4% as calcium fluoride, however while too little fluoride has a weakening effect on bone, too much fluoride causes brittleness of bone and thus increases fracture rates.	Deficiency: Weakened bone, dental caries Overdose: Increased bone fractures, fluorosis (discoloration / mottling, pitting of teeth), osteosclerosis, tinnitus, hearing loss, stomach ulcers, skin rash, tremors, delayed brain development, bone / arthritic pains, greater risk of some cancers, convulsions, death.
Iodine Adults: 150 mcg	Seafood, shellfish, fish liver oils, seaweed, sunflower seeds, iodized table salt.	Iodine supports the thyroid which in turn supports cardiac function	Deficiency: Fatigue, depression, low cardiac output, goiter, edema (water retention), hair loss, inability to think, memory loss, hypothyroid, weight gain, Overdose: Palpitations / irregular heartbeat, tachycardia, throat tightness, insomnia, skin rash, sweating
Iron (Elemental) Men: 8-10 mg Women: 8-13 mg	Liver, lean Meats, Kidney beans, enriched Bread, Raisins. Note: Oxalic acid in spinach hinders iron absorption.	Essential for making hemoglobin, the red substance in blood that carries oxygen to body cells.	Deficiency: Skin pallor; weakness; fatigue; headaches; shortness of breath (all signs of iron-deficiency anemia) Overdose: Toxic buildup in liver and in rare instances the heart.
Manganese 2-5 mg	Tea, whole Grains and Cereal products are the richest dietary sources. Fruits and Vegetables.	Needed for normal tendon and bone structure. Component of some enzymes important in metabolism.	Deficiency: Unknown in humans. Overdose: Generally results from inhalation of manganese containing dust or fumes, not dietary ingestion.
Molybdenum 0.15-0.3 mg	The concentration in food varies depending on the environment in which the food was grown. Milk, Beans, Breads and Cereals	Component of enzymes needed in metabolism. Helps regulate iron storage.	Deficiency: Unknown in humans. Overdose: Gout-like joint pain.
Selenium 0.05-0.2 mg	Adequate amounts are found in Seafood, Kidney, Liver and other meats. Grains and other Seeds	Antioxidant. Interacts with Vitamin E to prevent breakdown of fats and body chemicals.	Deficiency: Unknown in humans. Overdose: Finger nail changes, hair loss.
Zinc Men: 12 mg Women: 9 mg	Oysters, Shrimp, Crab, Beef, Turkey, whole Grains, Peanuts, Beans.	Necessary element in more than 100 enzymes that are essential to digestion and metabolism.	Deficiency: Slow healing of wounds; loss of taste; retarded growth and delayed sexual development in children. Overdose: Nausea, vomiting; diarrhea; abdominal pain; gastric bleeding.