



VITAMIN'S AND THEIR BENEFITS

Vitamin (common names)	Benefits	Recommended amount (daily RDA* or daily AI**)	Upper limit (UL) per day	Good food sources	Did you know?
VITAMIN A (Retinol, retinal, and retinoic acid — three active forms of vitamin A in the body — are retinoids, "preformed" vitamin A. Beta carotene can easily be converted to vitamin A as needed.)	Essential for vision Lycopene may lower prostate cancer risk Keeps tissues and skin healthy Plays an important role in bone growth Diets rich in the carotenoids alpha carotene and lycopene seem to lower lung cancer risk Carotenoids act as antioxidants Foods rich in the carotenoids lutein and zeaxanthin may protect against cataracts	M: 900 mcg (3,000 IU) W: 700 mcg (2,333 IU) Some supplements report vitamin A in international units (IU's).	3,000 mcg (about 10,000 IU)	Sources of retinoids: beef, liver, eggs, shrimp, fish, fortified milk, cheddar cheese, Swiss cheese Sources of beta carotene: sweet potatoes, carrots, pumpkins, squash, spinach, mangoes, turnip greens	Many people get too much preformed vitamin A from food and supplements. Large amounts of supplemental vitamin A (but not beta carotene) can be harmful to bones.
THIAMIN (vitamin B ₁)	Helps convert food into energy Needed for healthy skin, hair, muscles, and brain	M: 1.2 mg, W: 1.1 mg	Not known	Pork chops, ham, soymilk, watermelons, acorn squash	Most nutritious foods have some thiamin.
RIBOFLAVIN (vitamin B ₂)	Helps convert food into energy Needed for healthy skin, hair, blood, and brain	M: 1.3 mg, W: 1.1 mg	Not known	Milk, yogurt, cheese, whole and enriched grains and cereals, liver	Most Americans get enough of this nutrient.
NIACIN (vitamin B ₃ , nicotinic acid)	Helps convert food into energy Essential for healthy skin, blood cells, brain, and nervous system	M: 16 mg, W: 14 mg	35 mg	Meat, poultry, fish, fortified and whole grains, mushrooms, potatoes, peanut butter	Niacin occurs naturally in food and can also be made by your body from the amino acid tryptophan, with the help of B ₆ .
PANTOTHENIC ACID (vitamin B ₅)	Helps convert food into energy Helps make lipids (fats), neurotransmitters, steroid hormones, and hemoglobin	M: 5 mg, W: 5 mg	Not known	Wide variety of nutritious foods, including chicken, whole grains, broccoli, mushrooms, avocados, tomato products	Deficiency causes burning feet and other neurologic symptoms.
VITAMIN B₆ (pyridoxal, pyridoxine, pyridoxamine)	Aids in lowering homocysteine levels and may reduce the risk of heart disease Helps convert tryptophan to niacin and serotonin, a neurotransmitter that plays key roles in sleep, appetite, and moods Helps make red blood cells Influences cognitive abilities and immune function	31–50: M: 1.3 mg, W: 1.3 mg 51+: M: 1.7 mg, W: 1.5 mg	100 mg	Meat, fish, poultry, legumes, tofu and other soy products, potatoes, noncitrus fruits such as bananas and watermelons	Many people don't get enough of this nutrient.
Vitamin B₁₂ (cobalamin)	Aids in lowering homocysteine levels and may lower the risk of heart disease Assists in making new cells and breaking down some fatty acids and amino acids Protects nerve cells and encourages their normal growth Helps make red blood cells	M: 2.4 mcg, W: 2.4 mcg	Not known	Meat, poultry, fish, milk, cheese, eggs, fortified cereals, fortified soymilk	Some people, particularly older adults, are deficient in vitamin B ₁₂ because they have trouble absorbing this vitamin from food. A lack of vitamin B ₁₂ can cause memory loss, dementia, and numbness in the arms and legs.
BIOTIN	Helps convert food into energy and synthesizes glucose Helps make and break down some fatty acids Needed for healthy bones and hair	M: 30 mcg, W: 30 mcg	Not known	Many foods, including whole grains, organ meats, egg yolks, soybeans, and fish	Your body needs very little biotin. Some is made by bacteria in the gastrointestinal tract. However, it's not clear how much of this the body absorbs.
VITAMIN C (ascorbic acid)	Foods rich in vitamin C may lower the risk for some cancers, including those of the mouth, esophagus, stomach, and breast Long-term use of supplemental vitamin C may protect against cataracts Helps make collagen, a connective tissue that knits together wounds and supports blood vessel walls Helps make the neurotransmitters serotonin and norepinephrine Acts as an antioxidant, neutralizing unstable molecules that can damage cells Bolsters the immune system	M: 90 mg, W: 75 mg Smokers: Add 35 mg	2,000 mg	Fruits and fruit juices (especially citrus), potatoes, broccoli, bell peppers, spinach, strawberries, tomatoes, Brussels sprouts	Evidence that vitamin C helps reduce colds has not been convincing.
CHOLINE	Helps make and release the neurotransmitter acetylcholine, which aids in many nerve and brain activities Plays a role in metabolizing and transporting fats	M: 550 mg, W: 425 mg	3,500 mg	Many foods, especially milk, eggs, liver, and peanuts	Normally the body makes small amounts of choline. But experts don't know whether this amount is enough at certain ages.
VITAMIN D (calciferol)	Helps maintain normal blood levels of calcium and phosphorus, which strengthen bones Helps form teeth and bones Supplements can reduce the number of non-spinal fractures	31–50: 5 mcg (200 IU) 51–70: 10 mcg (400 IU) 71+: 15 mcg (600 IU)	50 mcg (2,000 IU)	Fortified milk or margarine, fortified cereals, fatty fish	Many people don't get enough of this nutrient. While the body uses sunlight to make vitamin D, it cannot make enough if you live in northern climes or don't spend much time in the sun.



THE CENTER for PHYSICAL MEDICINE & PAIN MANAGEMENT

RACHELLE JANUSH, D.O.

2227 Taylor Road
Montgomery, Alabama 36117
334-260-8988 office
334-260-8225 fax

VITAMIN E (alpha-tocopherol)	Acts as an antioxidant, neutralizing unstable molecules that can damage cellsProtects vitamin A and certain lipids from damageDiets rich in vitamin E may help prevent Alzheimer's diseaseSupplements may protect against prostate cancer	M: 15 mg, W: 15 mg (15 mg equals about 22 IU from natural sources of vitamin E and 33 IU from synthetic vitamin E)	1,000 mg (nearly 1,500 IU natural vitamin E; 2,200 IU synthetic)	Wide variety of foods, including vegetable oils, salad dressings and margarines made with vegetable oils, wheat germ, leafy green vegetables, whole grains, nuts	Vitamin E does not prevent wrinkles or slow other aging processes.
FOLIC ACID (folate, folacin)	Vital for new cell creationHelps prevent brain and spine birth defects when taken early in pregnancy; should be taken regularly by all women of child-bearing age since women may not know they are pregnant in the first weeks of pregnancyCan lower levels of homocysteine and may reduce heart disease risk May reduce risk for colon cancerOffsets breast cancer risk among women who consume alcohol	M: 400 mcg, W: 400 mcg	1,000 mcg	Fortified grains and cereals, asparagus, okra, spinach, turnip greens, broccoli, legumes like black-eyed peas and chickpeas, orange juice, tomato juice	Many people don't get enough of this nutrient.Occasionally, folic acid masks a B ₁₂ deficiency, which can lead to severe neurological complications. That's not a reason to avoid folic acid; just be sure to get enough B ₁₂ .
VITAMIN K (phyloquinone, menadiene)	Activates proteins and calcium essential to blood clottingMay help prevent hip fractures	M: 120 mcg, W: 90 mcg	Not known	Cabbage, liver, eggs, milk, spinach, broccoli, sprouts, kale, collards, and other green vegetables	Intestinal bacteria make a form of vitamin K that accounts for half your requirements.If you take an anticoagulant, keep your vitamin K intake consistent.
Mineral (common names)	Benefits	Recommended amount (daily RDA* or daily AI**)	Upper limit (UL) per day	Good food sources	Did you know?
CALCIUM	Builds and protects bones and teethHelps with muscle contractions and relaxation, blood clotting, and nerve impulse transmissionPlays a role in hormone secretion and enzyme activationHelps maintain healthy blood pressure	31–50: M: 1,000 mg, W: 1,000 mg 51+: M: 1,200 mg, W: 1,200 mg	2,500 mg	Yogurt, cheese, milk, tofu, sardines, salmon, fortified juices, leafy green vegetables, such as broccoli and kale (but not spinach or Swiss chard, which have binders that lessen absorption)	Adults absorb roughly 30% of calcium ingested, but this can vary depending on the source.Diets very high in calcium may increase the risk of prostate cancer.
CHLORIDE	Balances fluids in the bodyA component of stomach acid, essential to digestion	Food and Nutrition Board 1989 guidelines: M: 750 mg, W: 750 mg	Not known	Salt (sodium chloride), soy sauce, processed foods	New recommendations (DRIs) for chloride are under development by the Institute of Medicine.
CHROMIUM	Enhances the activity of insulin, helps maintain normal blood glucose levels, and is needed to free energy from glucose	31–50: M: 35 mcg, W: 25 mcg 51+: M: 30 mcg, W: 20 mcg	Not known	Meat, poultry, fish, some cereals, nuts, cheese	Unrefined foods such as brewer's yeast, nuts, and cheeses are the best sources of chromium.
COPPER	Plays an important role in iron metabolismHelps make red blood cells	M: 900 mcg, W: 900 mcg	10,000 mcg	Liver, shellfish, nuts, seeds, whole-grain products, beans, prunes	More than half of the copper in foods is absorbed.
FLUORIDE	Encourages strong bone formationKeeps dental cavities from starting or worsening	M: 4 mg, W: 3 mg	10 mg	Water that is fluoridated, toothpaste with fluoride, marine fish, teas	Harmful to children in excessive amounts.
IODINE	Part of thyroid hormone, which helps set body temperature and influences nerve and muscle function, reproduction, and growthPrevents goiter and a congenital thyroid disorder	M: 150 mcg, W: 150 mcg	1,100 mcg	Iodized salt, processed foods, seafood	To prevent iodine deficiencies, some countries add iodine to salt, bread, or drinking water.
IRON	Helps hemoglobin in red blood cells and myoglobin in muscle cells ferry oxygen throughout the bodyNeeded for chemical reactions in the body and for making amino acids, collagen, neurotransmitters, and hormones	31–50: M: 8 mg, W: 18 mg 51+: M: 8 mg, W: 8 mg	45 mg	Red meat, poultry, eggs, fruits, green vegetables, fortified bread and grain products	Many women of childbearing age don't get enough iron.Women who do not menstruate probably need the same amount of iron as men.Because iron is harder to absorb from plants, experts suggest vegetarians get twice the recommended amount (assuming the source is food).
MAGNESIUM	Needed for many chemical reactions in the body Works with calcium in muscle contraction, blood clotting, and regulation of blood pressureHelps build bones and teeth	31+: M: 420 mg, W: 320 mg	350 mg (Note: This upper limit applies to supplements and medicines, such as laxatives, not to dietary magnesium.)	Green vegetables such as spinach and broccoli, legumes, cashews, sunflower seeds and other seeds, halibut, whole-wheat bread, milk	The majority of magnesium in the body is found in bones. If your blood levels are low, your body may tap into these reserves to correct the problem.
MANGANESE	Helps form bonesHelps metabolize amino acids, cholesterol, and carbohydrates	M: 2.3 mg, W: 1.8 mg	11 mg	Nuts, legumes, whole grains, tea	If you take supplements or have manganese in your drinking water, be careful not to exceed the upper limit. Those with liver damage or whose diets supply abundant manganese should be especially vigilant.
MOLYBDENUM	Part of several enzymes, one of which helps ward off a form of severe neurological damage	M: 45 mcg, W: 45 mcg	2,000 mcg	Legumes, nuts, grain products, milk	Molybdenum deficiencies are rare.



	in infants that can lead to early death				
PHOSPHORUS	Helps build and protect bones and teethPart of DNA and RNAHelps convert food into energyPart of phospholipids, which carry lipids in blood and help shuttle nutrients into and out of cells	M: 700 mg, W: 700 mg	31–70: 4,000 mg 71+: 3,000 mg	Wide variety of foods, including milk and dairy products, meat, fish, poultry, eggs, liver, green peas, broccoli, potatoes, almonds	Certain drugs bind with phosphorus, making it unavailable and causing bone loss, weakness, and pain.
POTASSIUM	Balances fluids in the bodyHelps maintain steady heartbeat and send nerve impulses Needed for muscle contractions A diet rich in potassium seems to lower blood pressureGetting enough potassium from your diet may benefit bones	Food and Nutrition Board 1989 guidelines: M: 2,000 mg, W: 2,000 mg	Not known	Meat, milk, fruits, vegetables, grains, legumes	New recommendations (DRIs) for potassium are under development by the Institute of Medicine. Food sources do not cause toxicity, but high-dose supplements might.
< b> SELENIUM	Acts as an antioxidant, neutralizing unstable molecules that can damage cellsHelps regulate thyroid hormone activity	M: 55 mcg, W: 55 mcg	400 mcg	Organ meats, seafood, walnuts, sometimes plants (depends on soil content), grain products	Researchers are investigating whether selenium may help reduce the risk of developing cancer.
SODIUM	Balances fluids in the bodyHelps send nerve impulses Needed for muscle contractionsImpacts blood pressure; even modest reductions in salt consumption can lower blood pressure	Food and Nutrition Board 1989 guidelines: M: 500 mg, W: 500 mg	Not determined	Salt, soy sauce, processed foods, vegetables	While experts recommend that people limit sodium intake to 2,400 mg, most Americans consume 4,000–6,000 mg a day. New recommendations (DRIs) for sodium are being developed by the Institute of Medicine.
SULFUR	Helps form bridges that shape and stabilize some protein structuresNeeded for healthy hair, skin, and nails	Unknown	Unknown	Protein-rich foods, such as meats, fish, poultry, nuts, legumes	Sulfur is a component of thiamin and certain amino acids. There is no recommended amount for sulfur. Deficiencies occur only with a severe lack of protein.
ZINC	Helps form many enzymes and proteins and create new cellsFrees vitamin A from storage in the liverNeeded for immune system, taste, smell, and wound healingWhen taken with certain antioxidants, zinc may delay the progression of age-related macular degeneration	M: 11 mg, W: 8 mg	40 mg	Red meat, poultry, oysters and some other seafood, fortified cereals, beans, nuts	Because vegetarians absorb less zinc, experts suggest that they get twice the recommended requirement of zinc from plant foods.
*Recommended dietary allowance **Adequate intake					