

Key: **red – essential amino acid**

blue – water soluble

Amino Acids	Needed for assimilation/Function and role in the body
Alanine	Metabolizes tryptophan and vitamin B6 (pyridoxine); constituent of vitamin B5 and coenzyme A.
Arginine	Aids in creation of t-4 cells; makes up collagen.
Asparagine	Made from aspartic acid; helps the process from which one amino acid is made into another in the liver.
Aspartic Acid	Helps make asparagine, arginine, lysine, methionine, threonine, isoleucine and many nucleotides
Carnitine	Enhances the antioxidant effects of vitamins A and C; sufficient amounts of iron, vitamin B1 (thiamine), vitamin B6 (pyridoxine); lysine and methionine are needed to create
Citrulline*	Made from ornithine; metabolized to form L-arginine; detoxifies ammonia
Cysteine	Vitamins B6, B12, folate, selenium and vitamin E; vital to make taurine and to metabolize coenzyme A, heparin, biotin, lipid acid and glutathione; formed from methionine
Cystine	Required for proper vitamin B6 utilization; increases the levels of glutathione in the lungs
Gamma-Aminobutyric Acid	Formed from glutamic acid; together with niacinamide and inositol helps with anxiety and stress
Glutamic Acid	Aids moving potassium into spinal fluid across blood-brain barriers; converted into glutamine or GABA
Glutamine*	Helps clear ammonia from body and transport nitrogen; converted into glutamic acid in the brain
Glutathione	Formed from cysteine, glutamic acid and glycine – to raise glutathione use one (or all) of these three
Glycine	Useful in helping body absorb calcium; very few people are glycine deficient; constituent of glutathione
Histidine	Methionine lowers; vitamins B3 and B6 are necessary for transforming histidine into histamine
Homocysteine	Vitamins B6 and B12 help to quickly break this down into compounds such as ATP, SAME and cysteine
Isoleucine	Needs to have leucine and valine present in right combinations to work
Leucine	Too much can mask as hypoglycemia and contribute to pellagra; must be balanced with isoleucine and valine to work properly
Lysine	Helps calcium absorption and nitrogen balance
Methionine	Helps make cysteine and taurine; reduces the levels of histamine; take with choline and inositol
Ornithine*	Made from arginine; precursor of citrulline, proline and glutamic acid; helps release growth hormone
Phenylalanine	Converted to tyrosine to help make dopamine and norepinephrine; has a direct effect on brain chemistry
Proline	Works with vitamin C for healthy connective tissue; aids in the production of collagen; heals cartilage
Serine	Can be made from glycine but only with sufficient amounts of vitamins B3, B6 and folic acid
Taurine	Vital to the utilization of Na, K, Ca, Mg; made from cysteine if the body has enough vitamin B6: Zinc
Threonine	Precursor of glycine and serine; with vitamin C and methionine aids liver and lipotropic function
Tryptophan	Necessary for the production of vitamin B3 (niacin); with sufficient amounts of vitamins B6 and C, folate, and magnesium helps make serotonin; not available as a supplement in US
Tyrosine	Metabolizes phenylalanine; attaches to iodine to form thyroid hormones; precursor of adrenaline, norepinephrine, and dopamine; take with carbohydrates, folic acid, copper and vitamin B6.
Valine*	Helps maintain nitrogen balance; must be balanced with leucine and isoleucine
Vitamins	Needed for assimilation/Function and role in the body
Vitamin A	Vitamins C, D, E, B- groups, choline, essential fatty acids together with calcium, phosphorus and zinc; carotenoids act as a precursor to vitamin A; hard for low thyroids to turn beta-carotene into vitamin A
Vitamin B complex	B-vitamins usually work as a team—if one is out, chances are another is as well
Vitamin B1 (Thiamine)	B-group vitamins and manganese
Vitamin B2 (Riboflavin)	B-group vitamins, vitamin C, vitamin A to maintain mucus membranes in the digestive tract; helps metabolize tryptophan into niacin; helps the absorption of vitamin B6 and iron
Vitamin B3 (Niacin)	B-group vitamins, vitamin C, serine, and tryptophan; helps to produce HCL, bile and stomach fluids
Vitamin B5 (Pantothenic Acid)	B-group vitamins; vitamins C, A and E; essential element of coenzyme A; helps adrenal glands function
Vitamin B6 (Pyridoxine)	B-group vitamins, vitamin C, magnesium, sodium, potassium, zinc, linoleic acid and fatty acids; activates many enzymes; aids in B12 absorption; inhibits homocysteine; needed to manufacture B3
Vitamin B12 (Cyanocobalamin)	Iron, calcium, sodium, potassium and vitamin C; intrinsic factor is necessary for absorption; helps produce acetylcholine; helps utilize iron; deficiency may raise homocysteine levels
Vitamin H (Biotin)	B-group vitamins, vitamins C, B5, B12 and sulfur; raw egg whites and saccharin hurt absorption
Folate	Vitamins B12 and C; with vitamins B6 and B12 help to convert homocysteine into non-harmful amino acids; therefore the lower the levels of these three vitamins, the higher homocysteine
Inositol	B-group vitamins, E, C, folic acid and linoleic acid; helps form lecithin; take same amount as choline
Para-Aminobenzoic Acid (PABA)	B-group vitamins, C, folic acid; Basic constituent of folate; helps in assimilation of pantothenic acid
Vitamin C (Ascorbic Acid)	Bioflavonoids, calcium and magnesium; helps metabolism of folic acid, tyrosine and phenylalanine; helps absorption of iron and calcium; greatest effect when taken with vitamin E and beta-carotene
Vitamin D (Calciferol)	Must be taken with calcium, and phosphorus (aids their absorption) and vitamin A
Vitamin E	Zinc, other antioxidants (vitamin C, beta-carotene, selenium), B-group vitamins, inositol and manganese

Vitamin P (Bioflavonoids)	Calcium and vitamin C; essential for absorption of vitamin C
Coenzyme Q ₁₀ (Ubiquinone)	Fats; has the ability to counter histamine; vitamin E helps preserve; can be synthesized from tyrosine
Choline	B complex, B12, folic acid, inositol; Assists in lecithin formation, works on the cell membranes, improves nerve transmission and brain function, assists with hormone production.

*deals with nitrogen/ammonia imbalance

Minerals	Needed for assimilation/Function and role in the body
Boron	Manganese, calcium and vitamin B2; aids the body's use of calcium, phosphorus, magnesium and vitamin D
Calcium	Vitamin D, A, phosphorus, magnesium, essential fatty acids and chelated amino acids; activates several enzymes, namely lipase; helps protect against lead; lysine is needed for calcium absorption; excessive amounts of phosphorus, magnesium, oxalic acid and high fiber inhibit absorption; watch taking with zinc or iron
Chromium	Vitamin B3, glycine, cysteine and glutamic acid; high carbohydrate diets deplete the body's levels of chromium
Copper	Cobalt; iron, zinc and folic acid; copper levels are reduced with large amounts of zinc or vitamin C and vice-versa
Germanium	Helps improve cellular oxygenation; found in all organic material; best obtained through the diet
Iodine	Used in the production of thyroid hormones; people with under active thyroids should watch their iodine levels
Iron	Vitamin C, A, B-group, manganese, copper, molybdenum; essential for many enzymes, namely catalase; low levels of B6 or B12 can cause anemia; too much iron increases the need for vitamin E; must be sufficient HCl in stomach for iron to be absorbed; calcium, zinc and vitamin E can inhibit absorption
Magnesium	Calcium, iron, B-group, vitamin E; assists calcium and potassium uptake; with B6 helps to reduce and prevent kidney stones; high levels of zinc, calcium, vitamin D and other fat soluble vitamins increase need
Manganese	Vitamin B1, E, calcium and phosphorus; vital for people with iron deficiencies; needed for utilization of E and B1
Molybdenum	Required for nitrogen metabolism; copper supplements may increase need; high doses may cause gout
Phosphorus	Vitamin D, A, iron, and manganese; must be balanced with calcium and phosphorus levels
Potassium	Vitamin B6; calcium; take twice as much potassium as sodium; stress increases the body's potassium needs
Selenium	Always take with vitamins A, E and beta-carotene; men generally need more than women
Silicon	Boron, calcium, magnesium, manganese, and potassium; counteracts the effects of aluminum
Sodium	Vitamin D, calcium, magnesium; take two times as much potassium as sodium intake for a proper balance
Sulfur	B-group vitamins; part of the chemical structures of methionine, cysteine, taurine and glutathione
Vanadium	Do not take vanadium supplements the same time as chromium; athletes may need more
Zinc	Adequate levels of copper; calcium, phosphorus; selenium, vitamin A, B6 and E; needed to maintain levels of vitamin E; increases absorption of vitamin A; take at different times from iron supplement

Cell Salts	Function and role in the body
Calcium Fluoride	Calc Fluor; necessary to retain elasticity of tissues; used for ailments of bone and teeth, skin and blood vessels
Calcium Phosphate	Calc Phos; good for nutrition and digestion assimilation; has restorative features for post-disease infected bodies
Calcium Sulphate	Calc Sulph; blood purifier and healer; used for cleaning bloodstream and preventing future infections
Ferrum Phosphate	Ferr Phos; carries oxygen to cells in energy conversion; may be used for absorption and proper utilization of iron
Potassium Chloride	Kali Mur; often used with ferrum phosphate; may help release mucus congestion during colds and sinusitis
Potassium Phosphate	Kali Phos; a constituent of nerve and brain cells; may help nerve related illnesses, tension headaches and brain fog
Potassium Sulphate	Kali Sulph; used with Ferr Phos as an oxygen carrier; respiratory and circulatory benefits; antifriction/lubricator
Magnesium Phosphate	Mag Phos; mineral element of bones, teeth, brain, nerves and muscles cells; helps with cramping; works well with Calc Phos
Sodium Chloride	Nat Mur; regulator of moisture in cells; excessive bodily dryness or moisture generally shows an imbalance
Sodium Phosphate	Nat Phos; maintains the alkalinity of the blood; biochemical antacid; also helps with fat assimilation
Sodium Sulphate	Nat Sulph; helps to balance the body's overall water content; removes wastes from cells; controls healthy function of liver
Silic Oxide	Silica; helps eliminate wastes in the form of nonfunctional organic material; known as the homeopathic surgeon

(other) Antioxidants	Function and role in the body
Alpha-Lipoic Acid	Can restore antioxidant functions of vitamins A and E; stimulates production of glutathione and aids in absorption of coenzyme Q ₁₀ ; soluble in water and fat
Bilberry (herb)	Helps keep capillary walls strong and maintains the flexibility of red blood cells
Burdock (herb)	Scavenges hydrogen peroxide and superoxide radicals; works better with vitamin E
Curcumin (Turmeric)	Eliminates old and prevents new free radicals; stops precancerous DNA changes and the oxidation of cholesterol
Flavonoids	Chemical compounds in plants; antioxidants and metal chelators
Garlic (herb)	Contains vitamins A and C, selenium; chelates toxic heavy metals; detoxifies peroxides
Ginkgo Biloba (herb)	Oxidizes brain, retina and cardiovascular system; enhances circulation
Green Tea	Protects against cancer, lowers cholesterol levels and reduces blood clotting tendencies
Melatonin	Free radical scavenger and singlet oxygen quencher; can penetrate and protect mitochondria

Nicotinamide Adenine Dinucleotide (NADH)	Works in DNA repair and maintenance and cellular immune defense; also inhibits auto-oxidation of dopamine which may release toxic chemicals that damage the brain
Oligomeric Proanthocyanidins	Highly water soluble antioxidants; can cross blood-brain barrier so they help prevent free radical damage in brain and spinal nerves; protect liver from toxic doses of acetaminophen; e.g. grape seed extract
Silymarin	Extracted from milk thistle; guards the liver against oxidative damage; increases levels of glutathione
Superoxide Dismutase	SOD; revitalizes cells and reduces the rate of destruction; neutralizes superoxide radicals which are the most common and prevalent type; helps the body use zinc, copper and manganese; works synergistically with catalase