



Essential Guide To
MICRONUTRIENTS

Vitamin A

Vitamin A is a fat-soluble vitamin found in animal sources as preformed vitamin A (retinol and retinyl ester) as well as yellow, orange and red fruits and vegetables as beta-carotene. It is important for the health of specialized tissues like the retina that maintain vision, the health of skin and mucous membranes, and development of teeth, soft and skeletal tissue. It is an essential vitamin and antioxidant that has also been shown to help slow the aging process.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
900mcg	700mcg	770mcg	1300mcg

Upper Limit Intake: 3000mcg/day



Vitamin A

Benefits of Vitamin A

- Maintains eyesight, prevents night blindness
- Supports immune system and development of tissues
- Antioxidant; cancer & disease prevention
- Slows the aging process



Sources

Pumpkin, canned - 1/2 cup	1010mcg
Carrots, cooked - 1/2 cup	650mcg
Sweet potato, boiled - 1/2 Med	600mcg
Bluefin Tuna - 75g	530mcg
Spinach, boiled - 1/2 cup	500mcg
Butternut squash - 1/2 cup	410mcg
Goat cheese, hard - 50g	240mcg
Eggs - 2 large	220mcg
Mackerel - 75g	190mcg

Vitamin B1 (Thiamin)

Vitamin B1, also known as Thiamin, is one of the water-soluble B vitamins found across cereals, rice, legumes and meats. It's important for the nervous system, cardiovascular function and metabolizing proteins, fats and carbs with the aid of other B vitamins.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
1.2mg	1.1mg	1.4mg	1.4mg



Vitamin B1

Benefits of Vitamin B1

- Helps with nerve conduction and function by supporting myelin sheath development
- Promotes normal muscle tone in digestive and cardiac muscles
- Encourages regular cardiac function through the neurotransmitter acetylcholine
- Strengthens the immune system and the bodily response to stress

Sources

Nutritional Yeast - 2 tablespoons	9.6mg
Seaweed - 1 cup	2mg
Sunflower Seeds - 1 cup	2mg
Macadamia Nuts - 1 cup	1.6mg
Black Beans - 1 cup cooked	0.58mg
Lentils - 1 cup cooked	0.53mg
Soybeans - 1 cup cooked	0.53mg
Navy Beans - 1 cup cooked	0.53mg
White Beans - 1 cup cooked	0.53mg
Green Split Peas- 1 cup cooked	0.48mg



Thiamin is contained in many foods that Americans consume on a daily basis. Some foods include: meats, grains (fortified and enriched), rice, wheat flour, legumes, peas, and wheat germ.

Vitamin B2 (Riboflavin)

Vitamin B2, also known as Riboflavin, is a water-soluble vitamin found across meats, oats and dairy. It is essential for the healthy metabolism of protein, fats and carbohydrates, along with acting as an antioxidant and managing proper function of the thyroid and adrenal glands. It works closely with Vitamin B3 to produce energy for the body.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
1.3mg	1.1mg	1.4mg	1.6mg



Benefits of Vitamin B2

- Slows down signs of aging through antioxidant properties
- Promotes growth and development of hair, skin and nails
- Maintains proper function of mucous membranes in the digestive system
- Associated with lower risk for colon cancer

Sources

Seaweed - 1 cup	4.1mg
Liver - 3 oz	3.9mg
Organ Meat - 3 oz	2.5mg
Mollusks/Cuttlefish - 3 oz	1.5mg
Feta Cheese - 1 cup	1.3mg
Almonds - 1 cup	1mg
Grass-Fed Beef - 3 oz	.73mg
Tempeh- 1 cup	.6mg
Mackerel Fish- 3 oz	.49mg
Eggs- 1 egg	.26mg





DNA Effects on Vitamin B2

The MTHFR gene (rs1801133, CT/TT variant) has an impact on the need for riboflavin requirements in the body. This gene is more widely known for the relationship between the polymorphism and folate requirements, but it influences riboflavin status as well. This gene assists with an important metabolic conversion in the body where homocysteine is converted to methionine. Studies have shown that individuals with the MTHFR 677T/T genotype see more effective results when supplemented with high riboflavin versus high folate.

Vitamin B3 (Niacin)

Vitamin B3, also known as Niacin, is an essential water-soluble vitamin found across meats, seeds and spices. It plays an important role in breaking down carbohydrates, fats and protein into energy as well as detoxifying the liver of harmful chemicals. Niacin also plays a role in cell metabolism by making and restoring DNA.

Recommended Daily Allowance

Men
16mg

Women
14mg

Pregnant
18mg

Lactating
17mg



Vitamin B3

Benefits of Vitamin B3

- Creates energy from macronutrient metabolism
- Shown to reduce the risk of cardiovascular disease
- Supports mental health and serotonin levels by producing tryptophan



Sources

Beef Liver - 3 oz	14.2mg
Chicken Breast - 3 oz	12.3mg
Tuna - 1 can	11.3mg
Sunflower Seeds - 1 cup	9mg
Grass- Fed Beef - 3 oz	9mg
Lamb - 3 oz	6.9mg
Salmon - 3 oz	6.7mg
Split Green Peas - 1 cup	5.7mg
Sardines - 1 cup	5.7mg
Turkey - 3 oz	4mg

Vitamin B5 (Pantothenic Acid)

Vitamin B5 (Pantothenic Acid) is a water-soluble vitamin found across legumes, dairy, poultry, vegetables, and cereal grains. It's found in all cells and is required for the synthesis of essential fats, cholesterol, and steroid hormones. It's vital for the breakdown of fatty acids and proteins.

Recommended Daily Allowance

Men
5mg

Women
5mg

Pregnant
6mg

Lactating
7mg



Vitamin B5

Benefits of Vitamin B5

- Regulates adrenal hormone production to help reduce stress, anxiety and depression
- Helps control blood pressure and cholesterol to maintain heart health
- Increases stamina



Sources

Chicken Liver - 3 oz	8.3mg
Sunflower Seeds - 3 oz	6mg
Avocado - 1 whole	2mg
Portobello Mushroom - 1 cup sliced	1.9mg
Salmon - 3 oz	1.6mg
Lentils - 1 cup	1.3mg
Corn - 1 cup	1.2mg
Sun- Dried Tomatoes - 1 cup	1.1mg
Eggs - 3 oz	.9mg
Cauliflower - 1 cup	.7mg

Vitamin B6

Vitamin B6, also known as pyridoxine, is a water-soluble vitamin found naturally in meats, whole grains, vegetables and nuts. It's necessary for nearly 200 bodily functions, mostly related to protein metabolism. Vitamin B6 is also important for brain health, hormone production, red blood cell growth, the immune system and sodium and potassium balance amongst many others.

Recommended Daily Allowance

Men <50
1.3mg

Men >50
1.7mg

Women <50
1.3mg

Women >50
1.5mg

Pregnant
1.9mg

Lactating
2mg



Vitamin B6

Benefits of Vitamin B6

- Helps maintain normal homocysteine levels to prevent cardiovascular disease
- Boosts cognitive function and mood by helping produce serotonin and norepinephrine
- Aids in hemoglobin production to help prevent anemia, fatigue and chronic disease



Sources

Chickpeas, canned - 1 cup	1.1mg
Beef Liver, pan fried - 3 oz	0.9mg
Tuna, yellowfish, fresh, cooked - 3oz	0.9mg
Salmon, sockeye cooked - 3oz	0.6mg
Chicken Breast, roasted - 3 oz	0.5mg
Breakfast cereals - 1 cup	0.5mg
Potatoes, boiled - 1 cup	0.4mg
Turkey, meat only, roasted - 3oz	0.4mg
Banana - 1 medium	0.4mg



DNA Effects on Vitamin B6

The NBPF3 (rs4654748) gene risk variants are CT and CC. The risk variant of this gene has been found to be associated with decreased plasma vitamin B6 level.

Approximately 1 in 2 people in the population have been found to have this polymorphism which results in a lower Vitamin B6 concentrations. The individuals with this gene risk variant should try and prioritize foods that contain higher amount of vitamin B6.

Vitamin B9 (Folate)

Folate, along with folic acid found in fortified foods and supplements, are the two compounds that make up the water soluble Vitamin B9. Vitamin B9 plays a critical role in producing DNA, red blood cells, white blood cells and reducing homocysteine cells that can contribute to heart attack and stroke.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
400mcg	400mcg	600mcg	500mcg



Vitamin B9

Benefits of Vitamin B9

- Aids in the conversion of carbohydrates to energy
- Promotes the formation of red and white blood cells to support the immune system
- Regulates production of dopamine and serotonin to maintain optimal brain health
- Reduced likelihood of birth defects and fetal abnormalities for woman during pregnancy



Sources

Spinach - 1 cup cooked	262mcg
Beef Liver - 3 oz	215mcg
Black Eyed Peas - 1 cup cooked	210mcg
Asparagus - 8 spears	178mcg
Brussel Sprouts - 1 cup cooked	156mcg
Broccoli - 1 cup cooked	104mcg
Mustard Greens - 1 cup cooked	104mcg
Kidney Beans - 1 cup cooked	92mcg
Romaine Lettuce - 1 cup raw	64mcg
Avocado - 1/2 cup	59mcg

Some sources of folate in food include fortified foods, green vegetables, mushrooms, legumes, peanuts, fruit, and lentils. Cooked foods contain less folate than raw foods.



DNA Effects on Vitamin B9

The MTHFR genes, specifically marker rs1801133, displays research that some individuals may absorb dietary folate at an efficiency rate as low as 10%, putting them at a higher risk for deficiency.

Vitamin B12

Vitamin B12 is the only of eight B vitamins that is found almost exclusively in animal products such as meats, fish, eggs and milk. It plays an essential role in nerve health, cell metabolism and helps produce both DNA and red blood cells.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
2.4mcg	2.4mcg	2.6mcg	2.8mcg



Benefits of Vitamin B12

- Brain and nervous system function
- Red blood cell development
- DNA production
- Cell metabolism



Sources

Clams, boiled or steamed - 5 large	59.0mcg
Oysters, boiled or steamed - 6 med	14.7mcg
Atlantic Herring - 75g	14.0mcg
Nutritional Yeast - 1 tbsp	3.9mcg
Ground Beef, lean - 75g	2.2mcg
Fortified soy beverage - 1 cup	2.2mcg
Atlantic Salmon - 75g	2.1mcg
Lamb - 75g	1.7mcg
Soy 'burger' patty - 1	1.7mcg
Eggs, hard boiled - 2	1.1mcg

10-30% of people over 50 lose their ability to absorb food bound forms of B12 in the GI tract.



DNA Effects on Vitamin B12

The FUT2 (rs602662) gene risk variants are GG/GA. 1 in 2 people have this risk variant. Fucosyltransferase 2 gene is involved in vitamin B12 transportation between cells. The fucosyltransferase 2 gene encodes the FUT2 enzyme. Polymorphisms of the FUT2 has been linked to lower plasma levels of vitamin B12.

Vitamin C

Vitamin C is a water-soluble vitamin found in abundance across berries, citrus fruits and green vegetables with moderate amounts in all other fruits and vegetables. It has antioxidant properties needed for more than 300 functions related to tissue growth, cell repair, anti-stress hormones and immune system defense. It also aids in the healing process, protects against irregular blood clotting and increases iron absorption.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
90mg	75mg	85mg	120mg

Upper Limit Intake: 2g/day



Vitamin C

Benefits of Vitamin C

- Supports immune system with over 300 antioxidant & prooxidant qualities
- Increases collagen production to help prevent scarring and prevent wrinkles
- Promotes iron absorption



Sources

Red Peppers - 1 Pepper	216mg
Strawberries - 1 Cup	96mg
Pineapples - 1 Cup	92mg
Brussels Sprouts - 1 Cup	90mg
Orange Juice - 1 Cup	86mg
Broccoli - 1 Cup	82mg
Grapefruit - 1 Fruit	78mg
Mango - 1 Fruit	75mg
Kiwi - 1 Fruit	70mg

Vitamin D

Vitamin D is an essential fat-soluble vitamin for bone health produced through select foods and exposure to short wave ultraviolet B rays. UVB rays are most active during the Spring and Summer months when the Earth is closer to the sun. Vitamin D plays a vital role in the absorption of calcium and phosphorus needed for bone health, providing protective immunity across many diseases and the maintenance of normal cell function in the body.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating	Over 70
15mg	15mg	15mcg	15mcg	20mcg



Vitamin D

Benefits of Vitamin D

- Regulation of calcium, phosphorus and magnesium absorption leading to overall bone health
- Supports the immune system with reduced risk of autoimmune and cardiovascular diseases
- Promotes balance, strength, muscle mass and even weight loss



Sources

Sunlight

Cod Liver Oil - 1 tsp

Salmon - 3 oz

Mackerel - 3 oz

Tuna - 3 oz

Sardines - 3 oz

Milk - 1 cup

Eggs - 1 large

Caviar - 1 oz

Mushrooms - 1 cup

440 IU

400 IU

400 IU

228 IU

164 IU

98 IU

41 IU

33 IU

2 IU

Vitamin D is hard to obtain naturally from foods. Cod liver oil, liver, beef, egg yolk, salt-water fish, and veal are all food sources of vitamin D. Vitamin D can also be synthesized in the skin from the sunlight. Synthesis of vitamin D from the sunlight in the skin is lowered by darker skin pigmentation, obesity, sunscreen, and in the elderly.



DNA Effects on Vitamin D

The GC gene helps transport vitamin D throughout the body. The GC risk variants are G/G or G/T (rs2282679). Those with the risk variant have issues with being predisposed to lower levels of vitamin D in the plasma levels, and so supplementation might be needed. The CYP2R1 gene polymorphism (rs12794714 AA/ rs2060793 AA) has also been associated with lower levels of circulating vitamin D in the body. This gene helps convert into the version of vitamin D that is eventually converted into the active steroid hormone. Vitamin D receptor (VDR) is a protein activating DNA segments that are specific by binding the active form of vitamin D. Gene polymorphism in VDR (rs17879735 AT, rs1544410 AG, rs731236 CT, and rs2228570/rs10735810 CT) have also shown to have an influence on vitamin D status in the body.

Vitamin E

Vitamin E is a fat-soluble vitamin made up of eight compounds with antioxidant qualities. It is known to help prevent the spread of reactive oxidative species (ROS) such as pesticides throughout the body that can lead to many diseases. In the North American diet, alpha and gamma-Tocopherol are the most common forms found across plant sources in nuts, seeds and oils.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
15mg	15mg	15mg	19mg



Vitamin E

Benefits of Vitamin E

- Antioxidant with enhanced immune response
- Reduces cancer and cardiovascular disease risk
- Protects against cataracts



Sources

Wheat Germ Oil - 1 tbsp	20.2mg
Sunflower Seeds - 1/4 cup	11.6mg
Almonds - 1 oz	7.3mg
Hazelnuts - 1 oz	4.2mg
Spinach - 1 cup cooked	3.7mg
Avocado - 1 cup	3.1mg
Turnip Greens - 1 cup cooked	2.7mg
Butternut Squash - 1 cup cooked	2.6mg
Pine Nuts - 1 oz	2.6mg
Palm Oil - 1 tbsp	2.2mg

Oil seeds are the biggest source of vitamin E in our food. Vitamin E is in many plant and animal foods. Some examples of food sources of vitamin E are: sunflower oil, safflower oil, palm oil, rice bran, wheat germ oils, corn oil, and soy bean oil. Some foods are also fortified with vitamin E such as: orange juice, breakfast cereals, milk, and tomato juice.



DNA Effects on Vitamin E

The F5 (rs6025) gene risk variants are CT/TT. 1 in 20 people have this risk variant. A protein is produced called coagulation factor 5, this is done by the F5 gene. This influences the clotting of blood. VTE has been shown to be increased when there are variations in the F5 gene.

Vitamin K

Vitamin K is a fat-soluble vitamin essential for the production of prothrombin to prevent excessive bleeding. It's made up of several compounds such as phylloquinone (vitamin K1) found across leafy green vegetables and a series of menaquinones (vitamin K2) found in meats, cheeses and eggs.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
120mcg	90mcg	90mcg	90mcg



Vitamin K

Benefits of Vitamin K

- Promotes blood clotting and overall skin healing
- Activates bone metabolism and development by maintaining proper calcium levels
- Converts glucose into glycogen for storage in the liver to maintain healthy blood sugar

Sources

Natto (Fermented Soy) - 2 oz	500mcg
Green Leafy Vegetables - 1/2 cup	444mcg
Spring Onions - 1/2 cup	103mcg
Cabbage - 1/2 cup	82mcg
Brussels Sprouts - 1/2 cup	78mcg
Prunes - 1/2 cup	52mcg
Cucumbers - 1 medium	49mcg
Broccoli - 1/2 cup	46mcg
Dried Basil - 1 tbs	36mcg
Dairy (Fermented) - 1/2 cup	10mcg





DNA Effects on Vitamin K

The ApoE4 gene has shown to have an influence on vitamin K in individuals. This is vital in the body for the transportation and absorption of vitamin K. Another polymorphism that has been shown to be involved with vitamin K in the body is VKORC1 gene. Those with the variant that cause high activity of the VKORC1 gene may cause a need for higher doses of blood thinners than those without this variant. Knowing a person's genes prior to starting a blood thinning medication could reduce risk and save time on trying to find the perfect dose.

Calcium

Calcium is an essential mineral that is commonly known for its crucial role in the health of bones and teeth; however, it is also important for many other bodily functions. The body can access calcium stores in the bones when more is needed. Many foods in a typical American diet contain ample amounts of calcium but age, fiber, and low zinc and vitamin D levels can decrease calcium absorption.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating	Women 51+
1000mg	1000mg	1000mg	1000mg	1200mg



Calcium

Benefits of Calcium

- Regulates various enzymes
- Aids blood clotting systems
- Important for muscle contraction and nerve activity
- Enhanced mineralization of bones and teeth
- Regulates blood pressure



Sources

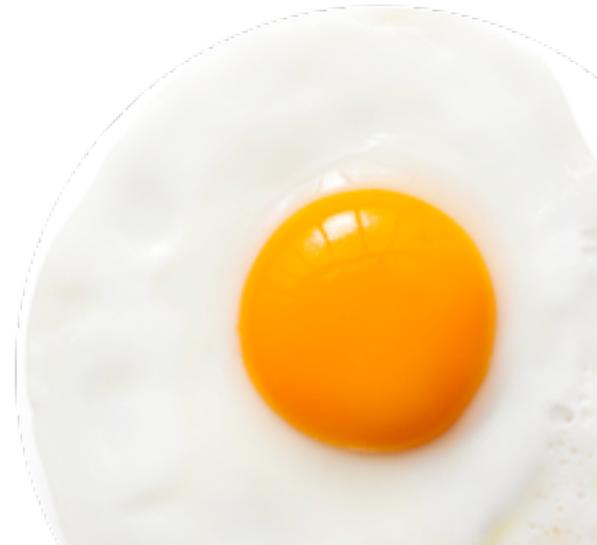
Sardines - 1 cup	569mg
Yogurt or Kefir - 1 cup	488mg
Milk - 1 cup	300mg
Cheese - 1 oz	202mg
Kale, raw - 1 cup	90.5mg
Okra, raw - 1 cup	81mg
Bok Choy - 1 cup	74mg
Almonds - 1 oz	73.9mg
Broccoli, raw - 1 cup	42.8mg
Watercress - 1 cup	41mg

Choline

90% of the population consumes a diet that is deficient in choline. This can lead to a wide range of problems, most notably cardiovascular disease, Alzheimer's, and a liver prone to nonalcoholic fatty liver disease. Eggs, lean meats, broccoli, and cauliflower are a few of the best dietary sources to help increase choline in the body.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
550mcg	425mcg	450mcg	550mcg



Choline

Benefits of Choline

- Supports brain and energy function
- Important for liver function, movement of muscles, and metabolism
- Promotes detoxification
- Vital component of neurons
- Precursor of acetylcholine, a neurotransmitter



Sources

Beef Liver - 3 oz	283mcg
Salmon - 1 fillet	242mcg
Chickpeas - 1 cup uncooked	198mcg
Split peas - 1 cup uncooked	188mcg
Navy Beans - 1 cup raw	181mcg
Eggs - 1 large	147mcg
Grass-Fed Beef - 3 oz	78mcg
Turkey - 3 oz	57mcg
Chicken Breast - 3 oz	50mcg
Cauliflower - 1 cup raw	47mcg

Eggs, liver, peanuts, wheat germ, cauliflower, milk, and legumes contain choline. The body in small amounts can make choline, but it is not enough to meet needs.



DNA Effects on Choline

Choline requirements are affected by several genes. The MTHFD1 1958A (rs 2236225) variant in men can cause dietary choline requirements to double in those with one or two of the 1958A variant. The PEMT gene is another polymorphism that can cause the need for external choline to increase. The PEMT V175M decreases the genes function. Those with two variants of the 175M PEMT gene are two times more likely to have nonalcoholic fatty liver disease than those without the gene variant.

Copper

Copper is an important transition metal in the body for metabolism on a cellular level. There are many different foods that contain copper. Some ways to increase copper in the body are by consuming organ meats, legumes, potatoes, shellfish, nuts, seeds, mushrooms, bananas, and dried fruit. Copper is a cofactor in many different enzymes, like many other micronutrients. Antioxidant defense, generation of energy, iron metabolism, synthesis of hormones, and blood coagulation being some of the enzymes that copper is a cofactor in.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
900mcg	900mcg	1000mcg	1300mcg



Copper

Benefits of Copper

- Bone formation is assisted by copper
- Assists with the metabolism of iron
- Influences cardiac and immune function
- High blood pressure and high cholesterol have been linked to low copper in the body



Sources

Beef Liver - 1 oz	4.0mg
Dark Chocolate - 1 bar	1.8mg
Sunflower Seeds - 1 cup	0.8mg
Cashews - 1 oz	0.6mg
Chickpeas - 1 cup	0.6mg
Raisins - 1 cup	0.5mg
Lentils - 1 cup	0.5mg
Hazelnuts - 1 cup	0.5mg
Dried Apricot - 1 cup	0.4mg
Avocado - 1 whole	0.4mg

Magnesium

Every cell in the body requires magnesium to function properly and it plays a vital role in hundreds of biological processes. Despite its availability in a variety of foods, magnesium deficiency is the sixth most common among the essential nutrients. Since it plays so many roles in the body and is generally found in bones and soft tissue, determining deficiency can be difficult.

Recommended Daily Allowance

Men 19-30
400mg

Women 19-30
310mg

Pregnant >18
400mg

Pregnant 19-30
350mg

Pregnant 31-50
360mg

Men 31-71+
420mg

Women 31-71+
320mg

Lactating >18
360mg

Lactating 19-30
310mg

Lactating 31-50
320mg

Magnesium

Benefits of Magnesium

- Regulates blood pressure and heart rhythm
- Aids in protein utilization
- Utilized for muscle contractions and energy usage
- Important for nerve function
- Important for vitamin D utilization



Sources

Spinach - 1 cup cooked	157mg
Swiss Chard - 1 cup cooked	150mg
Dark Chocolate - 1 square	95mg
Pumpkin Seeds - 1/4 cup	92mg
Almonds - 1 oz	75mg
Black Beans - 1/2 cup	60mg
Avocado - 1 medium	58mg
Figs, dried - 1/2 cup	50mg
Yogurt or Kefir - 1 cup	46.5mg
Banana - 1 medium	32mg

Manganese

Manganese is an influential antioxidant in the body. It is important to consume food sources of manganese rather than supplements. Different ways to incorporate manganese into your diet are by consuming leafy vegetables, whole grains, tea, and nuts. Manganese is an essential nutrient that has different functions in the body. Manganese is involved in many different chemical reactions in the body. Some of these reactions deal with cholesterol, protein, and carbohydrates. Manganese also helps with bone and tissue formation in the body.

Recommended Daily Allowance

Men
2.3mg

Women
1.8mg

Pregnant
2.0mg

Lactating
2.6mg



Manganese

Benefits of Manganese

- Has a role in carbohydrate and fat metabolism, helps regulate blood sugar levels in the body, and absorption of calcium
- Component of antioxidant, functions in blood clotting, and tissues and bones formation in the body
- Promotes brain and nerve function can't function

Sources

Teff - 1 cup cooked	7.2mg
Rye - 1 cup cooked	4.3mg
Brown Rice - 1 cup cooked	2.1mg
Amaranth - 1 cup cooked	2.1mg
Hazelnuts - 1 oz	1.5mg
Adzuki Beans - 1 cup cooked	1.3mg
Chickpeas - 1 cup cooked	1.2mg
Macadamia Nuts - 1 oz	1.1mg
White Beans - 1 cup cooked	1.1mg
Oats - 1 cup cooked	0.98mg



Phosphorous

After calcium, phosphorous is the most abundant mineral in the human body. Just like many of the other essential minerals, phosphorus is important for bone health but it also is utilized in a variety of processes like nerve function, muscle contraction, and energy usage. Phosphorus can be found in many protein rich foods and even in some low protein foods, so it rare to have deficiencies. Some individuals with trouble regulating calcium or with kidney disease could have too much phosphorus in their body.

Recommended Daily Allowance

Men
700mg

Women
700mg

Pregnant
700mg

Lactating
700mg



Phosphorous

Benefits of Phosphorous

- Enhances oxygen availability in the body
- Helps with structural components in cells
- Important for mineralization of bone
- Assists in energy usage



Sources

Sunflower Seeds - 1/4 cup	369mg
Milk - 1 cup	212mg
White Beans - 1 cup, cooked	202mg
Mung Beans - 1 cup, cooked	200mg
Tuna - 3 oz	184mg
Turkey Breast - 3 oz	182mg
Grass-Fed Beef - 3 oz	173mg
Almonds - 1/4 cup	162mg
Brown Rice - 1 cup, cooked	150mg
Potatoes - 1 medium	121mg

Potassium

Potassium is an electrolyte essential to all of the body's cells. It influences the function of muscles and nerves through electrical impulses along with maintaining a healthy balance of the body's fluids. Combined with sodium, it also works to regulate blood pressure.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
4700mg	4700mg	4700mg	4700mg



Potassium

Benefits of Potassium

- Assists with pH and electrolyte balance in the body
- Important influencer on muscles in the body and excitability and contracting
- Diets low in sodium and higher in potassium have been shown to reduce stroke risk and high blood pressure



Sources

White Beans - 1 cup cooked	1004mg
Lima Beans - 1 cup cooked	955mg
Avocado - 1 whole	690mg
Broccoli - 1 cup cooked	458mg
Sweet Potato - 1 medium	438mg
Bananas - 1 medium	422mg
Salmon - 3 oz	416mg
Peas - 1 cup cooked	384mg
Sardines - 3.75g	365mg
Grapefruit - 1 whole	354mg

Selenium

Selenium is an essential mineral with antioxidant properties that plays a vital role in metabolism. It occurs naturally in soil and dietary sources include seafood, meat, grains, and some nuts. Selenium deficiencies are rare, but research suggests that individuals with certain health conditions may be at risk for deficiency and could benefit from supplementation.

Recommended Daily Allowance

Men	Women	Pregnant	Lactating
55mcg	55mcg	60mcg	70mcg



Selenium

Benefits of Selenium

- Iodine Metabolism (thyroid support)
- Defends against oxidative stress
- Slows and prevents cell damage
- Helps with metal detoxification
- Low selenium has shown a correlation with increased cancer risk



Sources

Brazil Nut - 1 kernel	95.9mcg
Sunflower Seed - 1 cup	74mcg
Pinto Beans - 1 cup raw	53.8mcg
Halibut - 3 oz cooked	47mcg
Sardines - 3 oz	45mcg
Grass-Fed Beef - one lean strip	45mcg
Skipjack Tuna - 3 oz cooked	39.8mcg
Wild-cooked salmon - 3 oz cooked	35.2mcg
Beef Liver - 3 oz	30.1mcg
Oats, old-fashioned - 1 cup	23.4mcg

Selenium content in plants varies based on soil.



DNA Effects on Selenium

The glutathione peroxidase gene 1 (GPX1) has been found to have an influence on the selenium concentration in individuals. Those with two copies of the variant 679T of the GPX1 gene have lower selenium concentrations in the blood. Research has shown that individuals with this variant can achieve similar selenium concentration in the blood when consuming enough selenium from food.

Zinc

Zinc is a micronutrient that is extremely beneficial and necessary in the body for numerous reasons. It is a part of the insulin molecule and also functions with hundreds of enzymes. Zinc can be found in plant and animal sources, but is better utilized from animal sources. It is very important for immune function in the body, and zinc deficiency impairs immune function.

Recommended Daily Allowance

Men
11g

Women
8g

Pregnant
11g

Lactating
12g



Zinc

Benefits of Zinc

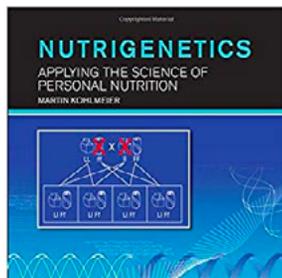
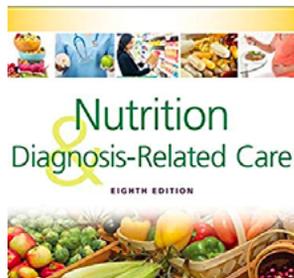
- Functions in hundreds of enzymes, as well as being a part of the insulin molecule
- Affects fatty acids, carbohydrate, protein, and nucleic acid metabolism
- Benefits immunity and wound healing
- Helps maintain vision



Sources

Lamb - 3 oz	6.7g
Pumpkin Seeds - 1 cup	6.6g
Grass-Fed Beef - 100g	4.5g
Chickpeas - 1 cup	2.5g
Cocoa Powder - 1 oz	1.9g
Cashews - 1 oz	1.6g
Kefir or Yogurt - 1 cup	1.4g
Mushroom - 1 cup	1.4g
Spinach - 1 cup	1.4g
Chicken - 100g	1g

Sources



Sources

- Textbook: Nutrition & Diagnosis- Related Care 8th edition
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- Review: Genetic Variations involved in Vitamin E status
- Genome-wide association Study of Vitamin B6, Vitamin B12, Folate, and homocystenine Blood Concentration
- Association of Vitamin D receptor gene polymorphism (VDR) with vitamin D deficiency. metabolic and inflammation markers in Egyptian obese women
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