

Vital Substances

The Vital Substances Healy Database contains programs that correlate to amino acids, fatty acids, minerals and vitamins. Amino acids are the building blocks of proteins and are crucial to many different functions within the body. The same importance to functions within the body is true for fatty acids, minerals and vitamins as well. Many of these crucial nutrients are obtained through our diets, but given the way eating patterns have changed over the last 100-200 years (fast food, GMOs, etc.), many of us are deficient in some of these nutrients and the Healy can help.

There are nine essential amino acids (need to be ingested from food), and eleven non-essential amino acids (which your body can make). They prevent the loss of muscle, decrease mental fatigue, increase exercise performance, burn more fat, reduce muscle soreness, build muscle and other vital functions of the body. Vital Substances work well with Digital Nutrition (DN) and the connections are shown under each substance.

ALPHA-LINOLENIC ACID

Lowers cholesterol. Anti-asthmatic properties. Anti-inflammatory effects. Protection against breast cancer. Supports bone health. Benefits for pregnant women including a longer duration of gestation and greater birth weight.

Plant Sources

Seed Oils: Flaxseed Oil: One of the richest sources, containing about 55% ALA. Hempseed Oil: Contains approximately 20% ALA.

Seeds: Flaxseeds: Extremely high in ALA, providing about 64% of their oil content. Chia Seeds: Also very high, with about 64% ALA. Hemp Seeds: Contain around 20% ALA.

Nuts: Walnuts: Provide about 10.4% ALA. Brazil Nuts: Contain smaller amounts of ALA.

Vegetables: Certain leafy greens and cruciferous vegetables can provide small amounts of ALA, though they are not as concentrated as seeds and oils.

Legumes: Some legumes, such as soybeans, also contain ALA, contributing to dietary intake.

Whole Grains: Whole grains like oats and quinoa provide minor amounts of ALA

ARACHIDONIC ACID

The endocannabinoids are created through arachidonic acids. They are the very important neurotransmitters that signal within the Endocannabinoid system. Improves intelligence in early neurological development. Shown to lower symptoms and slow progression of Alzheimer's disease. Aids in the development of infants. Supports muscle health, liver health, and brain health. Treats parasites. Regulates glucose.

Animal Sources

Meat: Pork: Particularly high in arachidonic acid, especially in fatty cuts. Beef: Contains significant amounts, particularly in marbled cuts.

Poultry: Chicken: Especially the skin and dark meat, which have higher fat content.

Fish: Certain fish, such as salmon, also contain arachidonic acid, although in smaller amounts compared to meat.

Eggs: Egg yolks are a notable source of arachidonic acid.

Dairy Products: Whole milk and full-fat dairy products contain arachidonic acid, though in smaller quantities compared to meat and eggs.

Organ Meats: Foods like liver and other organ meats are particularly rich in arachidonic acid.

ARSENIC OR ARSENICUM ALBUM

Despite serious safety concerns, arsenic is often used as a part of extremely diluted homeopathic remedies that are used for digestive disorders, food poisoning, sleep problems (insomnia), allergies, anxiety, depression, and obsessive-compulsive disorder (OCD). Arsenic is also contained in traditional Chinese medicine formulas and used for psoriasis; syphilis; asthma; joint pain (rheumatism); hemorrhoids; cough; itchiness; cancer; to reduce swelling (as an anti-inflammatory agent); and as a general tonic and pain-killer. In leukemia, arsenic trioxide increases death of cancer cells.

Toxicity: Exposure to high levels of arsenic can lead to acute poisoning, causing symptoms such as nausea, vomiting, abdominal pain, diarrhea, and even death in severe cases. Long-term exposure to lower levels can result in chronic health issues. **Carcinogenicity:** Arsenic is classified as a human carcinogen, linked to increased risks of cancers such as skin, lung, bladder, liver, kidney, and prostate cancers. Chronic exposure can also lead to skin changes and damage to organs like the liver and kidneys.

Neurological and Developmental Effects: Long-term exposure has been associated with neurological effects such as learning disabilities in children and may affect fetal development during pregnancy.

Animal Sources

Poultry: Chicken and Turkey: Poultry can contain arsenic due to the use of arsenic-based compounds in animal feed, although regulations have reduced this practice in recent years.

Seafood: Fish and Shellfish: Seafood can contain organic forms of arsenic, which are generally considered less harmful. However, certain fish, especially dark-meat varieties like tuna and mackerel, may have higher levels of arsenic.

Plant Sources

Rice and Rice Products: Rice: Particularly brown rice and rice products (like rice cereals), are significant sources of inorganic arsenic, which poses health risks. Rice tends to absorb more arsenic from the soil compared to other grains.

Mushrooms: Certain types of mushrooms can accumulate arsenic from the soil, making them another potential source.

Fruit Juices: Apple Juice: Some fruit juices, particularly apple juice, have been found to contain low levels of arsenic.

Vegetables: Certain vegetables, especially leafy greens like lettuce and cruciferous vegetables (such as broccoli and Brussels sprouts), can also contain trace amounts of arsenic from soil absorption.

Processed Foods: Foods that are made with rice flour or rice products may also carry arsenic levels depending on their ingredients.

BORON

Relieves menstrual pain. Aids in wound healing. Supports bone health and helps to prevent arthritis. Enhances testosterone levels. Lowers plasma lipid levels. Can reduce fungal infections. Improves cognition.

DN

Men / Alcohol Intake

Animal Sources

Milk and Dairy Products: Whole milk contains around 0.04 mg of boron.

Plant Sources

Fruits: Prune Juice: One of the richest sources, offering about 1.43 mg of boron per cup. Avocado: Contains approximately 1.07 mg of boron per half-cup serving. Raisins: Provide about 0.95 mg of boron per 1.5 ounces. Peaches: A medium-sized peach contains around 0.80 mg of boron. Apples: A medium apple has about 0.66 mg of boron.

Vegetables: Broccoli: Offers about 0.40 mg of boron per cup when boiled. Leafy Greens: Such as kale and spinach, are also good sources.

Nuts and Legumes: Peanuts: Contain about 0.48 mg of boron per ounce. Beans: Various types, including refried beans,

provide boron as well.

Coffee: A cup contains approximately 0.07 mg of boron, contributing to daily intake for many people.

CALCIUM

Bone and teeth development, growth, maintenance and health. Calcium helps regulate muscle contraction and maintains strength. Assists nerves to carry messages between the brain and other body parts. Helps blood clot, relaxes smooth muscle that surrounds the blood vessels. Assists vitamin D absorption. Helps blood vessels relax and constrict (which moves blood throughout the body), can lower blood pressure. Releases hormones and enzymes that help with various bodily functions.

Bone and Teeth Formation: Approximately 99% of the body's calcium is stored in bones and teeth, where it provides structural strength and density. Adequate calcium intake is crucial during childhood and adolescence for developing peak bone mass, which helps prevent osteoporosis later in life.

Muscle Function: Calcium is essential for muscle contraction. When a nerve stimulates a muscle, calcium ions are released, enabling the proteins within muscle fibers to contract. The removal of calcium from the muscle cells allows for relaxation.

Blood Clotting: Calcium plays a critical role in the blood coagulation process. It is necessary for various steps in the cascade that leads to clot formation, helping to prevent excessive bleeding when injuries occur.

Nerve Transmission: Calcium is involved in transmitting signals between nerve cells. It helps facilitate the release of neurotransmitters, which are chemical messengers that transmit signals across synapses.

Hormonal Secretion: Calcium aids in the release of hormones and enzymes that are involved in almost every function in the body, influencing processes like metabolism and digestion.

Heart Function: Calcium is important for maintaining normal heart rhythm. It helps regulate the contraction and relaxation of heart muscles, ensuring effective pumping of blood throughout the body.

Enzyme Function: Many enzymes require calcium as a cofactor to function effectively, impacting various biochemical reactions within the body.

DN

Regeneration / Women / Children / Motion / Structure / Circulation / Bioinformation / For Mature Women / Teeth Harmony / Heart Harmony / Muscle Harmony / Kidney Harmony / Age / Alkaline Powder / Blood Harmony / Minerals / Vegan / Alcohol Intake / Lymphatic System Harmony / For Women / Hormonal system Harmony / Sensitivities / Sports / Men

Animal Sources

Fish: Canned Sardines: With bones, a 3-ounce serving provides about 325 mg of calcium. Canned Salmon: Also with bones, it contains approximately 180 mg per 3-ounce serving.

Dairy Products: Milk: One cup (approximately 240 ml) provides about 300 mg of calcium. Yogurt: A typical serving (about 200 g) contains around 310 mg of calcium. Cheese: Varieties like mozzarella provide about 210 mg per ounce, while cheddar offers around 205 mg.

Plant Sources

Leafy Green Vegetables: Collard Greens: One cup cooked contains about 266 mg of calcium. Kale: Approximately 179 mg per cup when cooked. Bok Choy: Offers around 160 mg per cooked cup. Broccoli: Contains about 60 mg per cup when cooked.

Nuts and Seeds: Almonds: About 76 mg of calcium per ounce (approximately 23 nuts). Chia Seeds: Two tablespoons contain around 14% of the daily value for calcium.

Legumes and Beans: Soybeans and Tofu: One cup of cooked soybeans has about 175 mg, while tofu made with calcium sulphate can provide up to 832 mg per cup. White Beans: One cup cooked offers around 12% of the daily value for calcium.

Fruits: Figs (dried): Two figs provide about 65 mg of calcium. Oranges: One whole orange contains around 55 mg of calcium.

CHLORINE

Chlorine is a component of all body secretions and excretions resulting from processes of building (anabolism) and breaking down (catabolism) body tissues. Levels of chlorine closely parallel levels of sodium intake and output, since a primary source of both is sodium chloride, or common table salt. Chlorine is stored to a limited extent in the skin, subcutaneous tissues, and skeleton and constitutes two-thirds of the negatively charged ions (anions) in the blood. Chlorides (chlorine compounds) play an essential role in the electrical neutrality and pressure of extracellular fluids and in the acid-base balance of the body. Gastric secretion is composed of chlorides in the form of hydrochloric acid and salts.

Fluid and Electrolyte Balance: Chlorine, as chloride ions, works alongside sodium and potassium to help regulate fluid balance and maintain proper hydration levels in the body. It plays a crucial role in controlling osmotic pressure and the movement of fluids between cells and tissues.

Gastric Juice Component: Chloride is a key component of gastric juice, where it combines with hydrogen ions to form hydrochloric acid (HCl). This acid is essential for digestion, as it helps break down food and activates digestive enzymes.

Nerve Function: Chloride ions are vital for nerve transmission. They help generate electrical signals that facilitate communication between nerve cells, contributing to muscle contraction and overall nervous system function.

Acid-Base Balance: Chloride helps maintain the body's acid-base balance by acting as a counterion to positively charged ions (cations) like sodium. This balance is crucial for various physiological processes, including respiration and metabolism.

Red Blood Cell Function: Chloride is involved in the exchange of oxygen and carbon dioxide in red blood cells. It aids in the transport of these gases between the lungs and tissues, ensuring efficient respiration.

Cellular Functions: Chloride ions play roles in various cellular processes, including cell signalling, proliferation, and maintaining membrane potential. They are important for the functioning of certain transporters that regulate ion flow across cell membranes.

DN

Heart Harmony / Head Harmony / Muscle Harmony

Animal Sources

Seafood: Certain types of fish and shellfish contain chloride, which is naturally occurring in seawater.

Dairy Products: Milk and cheese can also contribute to dietary chlorine intake, although the amounts are generally lower compared to salt.

Plant Sources

Vegetables: Leafy Greens: Vegetables like spinach and kale can contain trace amounts of chlorine due to their growth in soil. **Tomatoes and Peppers:** These vegetables also contribute to dietary chloride intake.

Fruits: Some fruits, particularly those that grow in saline environments or are processed with salt, may contain small amounts of chloride.

CHROMIUM

Chromium is an essential trace mineral that can improve insulin sensitivity and enhance protein, carbohydrate, and lipid metabolism. Improved muscle growth or a decrease in fat mass. May be effective at improving the body's response to insulin or lowering blood sugar in those with diabetes.

Insulin Function: Chromium is crucial for enhancing the action of insulin, a hormone that regulates blood sugar levels. It helps improve insulin sensitivity, which is vital for glucose metabolism and energy production.

Carbohydrate Metabolism: Chromium aids in the metabolism of carbohydrates by facilitating the uptake of glucose into cells, thereby helping to maintain normal blood sugar levels. This function is particularly important for individuals with insulin resistance or type 2 diabetes.

Lipid Metabolism: Chromium also plays a role in lipid metabolism, stimulating the synthesis of fatty acids and cholesterol. This can contribute to maintaining healthy cholesterol levels and overall metabolic health.

Protein Metabolism: It is involved in protein metabolism, which is essential for muscle growth and repair, as well as overall bodily functions. **Potential Role in Weight Management:** Some studies suggest that chromium supplementation may help with weight management by reducing body fat and increasing lean body mass, although more research is needed to confirm these effects.

DN

Muscle Harmony / Thyroid Harmony / Trace Elements / Antioxidants / Fatigue / Sports / Regeneration / Psyche / Motion / Lifestyle / Bioinformation / Comfort / Joy of Life

Animal Sources

Seafood: Mussels: Approximately 128 mcg per 3.5-ounce serving. Oysters: About 57 mcg per serving. Shrimp: Contains around 26 mcg per serving.

Meat: Turkey Breast: Provides about 1.7 mcg per 3-ounce serving. Chicken Breast: Contains approximately 0.5 mcg per serving. Lean Beef: Offers around 2 mcg per 3-ounce serving.

Dairy Products: Cheese and other dairy products can provide some chromium, although typically in lower amounts compared to other sources.

Plant Sources

Brewer's Yeast: One of the richest sources, providing about 3.3 micrograms (mcg) of chromium per tablespoon. It is often used in baking and brewing.

Whole Grains: Foods like whole wheat bread, bran cereals, and oatmeal are good sources. Whole wheat flour contains about 21 mcg per 100 grams.

Vegetables: Broccoli: One cup cooked provides approximately 22 mcg of chromium. Green Beans: About 2.2 mcg per cup. Potatoes: Contains around 3 mcg per cup when mashed.

Fruits and Juices: Grape Juice: One cup contains about 7.5-8 mcg of chromium. Orange Juice: Provides about 2.2 mcg per cup.

Nuts and Dried Fruits: Nuts like Brazil nuts and dried fruits such as dates and prunes also contain chromium, though in smaller amounts.

COBALT

Useful in the body because it is a necessary component of vitamin B-12. Aids in repair of myelin, which surrounds and protects nerve cells. Great for MS. Helps in the formation of hemoglobin, which is the iron-containing metalloprotein found in red blood cells, which is used to transport oxygen around the body. Helps regulate and stimulate the production of some co-enzymes. Maintains the cardiovascular system. It reduces levels of homocysteine which is responsible for the damage of arterial walls which leads to arteriosclerosis.

Component of Vitamin B12: Cobalt is a vital part of vitamin B12, which is crucial for various bodily functions, including red blood cell formation, DNA synthesis, and neurological function. Without adequate cobalt, the body cannot effectively produce vitamin B12.

Red Blood Cell Production: Cobalt contributes to the production of red blood cells by supporting the synthesis of hemoglobin, the protein responsible for transporting oxygen in the blood. This role is particularly important in preventing anaemia.

Metabolism: Cobalt is involved in the metabolism of fats and carbohydrates. It plays a role in energy production by participating in metabolic pathways that break down these macronutrients.

Nervous System Function: Cobalt helps maintain healthy nerve function by supporting the formation of myelin, the protective sheath around nerve fibers. This is essential for efficient transmission of nerve impulses and overall nervous system health.

Synthesis of Neurotransmitters: It aids in the synthesis of neurotransmitters, which are chemicals that transmit signals in the brain and throughout the nervous system, thus influencing mood and cognitive function.

Immune Function: Cobalt has been shown to play a role in producing antibacterial and antiviral compounds that help prevent infections, contributing to overall immune health.

Thyroid Function: Adequate cobalt levels are necessary for the regulation of thyroid hormones, which are crucial for metabolism and energy levels.

DN

Trace Elements / Psyche / Joy of Life / Brain Harmony

Animal Sources

Seafood: Atlantic Herring: Approximately 0.04 mg of cobalt per 100 grams. Carp: Contains about 0.035 mg per 100 grams. Pink Salmon: Around 0.02 mg per 100 grams.

Meat and Poultry: Organ Meats: Such as liver (especially beef liver), which can have higher cobalt content. Pork and Lamb: These meats also contain small amounts of cobalt, typically around 0.01 to 0.02 mg per 100 grams.

Dairy Products: Milk and Cheese: These can provide small amounts of cobalt, although specific values may vary.

Plant Sources

Nuts and Seeds: Pine Nuts: Approximately 0.021 mg of cobalt per 100 grams. Sunflower Seeds: Contains about 0.0053 mg per 100 grams.

Vegetables: Certain vegetables like broccoli and spinach may contain trace amounts of cobalt.

Legumes and Grains: Foods such as lentils and beans can also contribute to dietary cobalt intake, though typically in lower amounts.

COPPER

Make red blood cells. Keep nerve cells healthy and support your immune system. Forms collagen, a protein that helps make up your bones and tissues. Protect cells from damage. Absorb iron into your body. Turn sugar into energy.

Cofactor for Enzymes: Copper acts as a cofactor for numerous enzymes, which are crucial for various biochemical reactions. These enzymes include:

- **Cytochrome c oxidase:** Involved in the electron transport chain for energy production.
- **Superoxide dismutase:** Helps protect cells from oxidative damage by converting superoxide radicals into less harmful substances.
- **Lysyl oxidase:** Important for the cross-linking of collagen and elastin, contributing to the structural integrity of connective tissues.

Iron Metabolism: Copper is vital for iron metabolism and is necessary for the incorporation of iron into hemoglobin. It helps prevent anaemia by facilitating the absorption and utilization of iron.

Antioxidant Defense: Through its role in superoxide dismutase, copper contributes to the body's antioxidant defense system, helping to neutralize free radicals and reduce oxidative stress.

Nervous System Function: Copper plays a role in the synthesis of neurotransmitters, which are essential for communication between nerve cells. It is involved in the production of dopamine and other neurotransmitters.

Connective Tissue Formation: Copper is necessary for the formation and maintenance of connective tissues, including skin, blood vessels, and bones. It supports wound healing and overall tissue repair.

Immune Function: Adequate copper levels are important for maintaining a healthy immune system. Copper deficiency can impair immune responses and increase susceptibility to infections.

Bone Health: Copper contributes to bone health by aiding in the formation of collagen and supporting bone mineralization.

Cardiovascular Health: Copper helps maintain healthy blood vessels and may play a role in preventing cardiovascular diseases by contributing to lipid metabolism and reducing inflammation.

DN

Antioxidants / Lymphatic System Harmony / Fatigue / Regeneration / Children / Psyche / Motion / Structure / Rigidity / Lifestyle / Energetic / Tissue Harmony / Bioinformation / Joy of Life / Rest / Teeth Harmony / Hair Harmony / Gastrointestinal System Harmony / Kidney Harmony / Age / Blood Harmony / Liver Harmony / Trace Elements

Animal Sources

Shellfish: Oysters: Extremely high in copper, providing about 7.6 mg per 100 grams (844% of the Recommended Daily Intake, RDI). Lobster: Contains approximately 0.5 mg of copper per 3-ounce serving. Crab: A 3-ounce serving provides about 0.6 mg of copper.

Organ Meats: Beef Liver: One of the richest sources, with about 11.8 mg of copper per 3-ounce slice (1313% of the RDI).

Calf Liver: Contains even higher amounts than beef liver.

Fish: Anchovies: Approximately 0.34 mg per 100 grams. Salmon: About 0.32 mg per 100 grams. Other fish such as trout and sardines also provide smaller amounts of copper.

Plant Sources

Nuts and Seeds: Sesame Seeds: Around 2.5 mg of copper per 100 grams (274% of the RDI). Almonds and Cashews: Provide significant amounts, with cashews offering about 67% of the RDI per ounce.

Mushrooms: Shiitake Mushrooms: Cooked shiitake mushrooms contain about 1.3 mg of copper per cup (144% of the RDI).

Legumes: Chickpeas (Garbanzo Beans): Approximately 0.6 mg of copper per cup (64% of the RDI). Other beans like lentils and kidney beans also contribute to dietary copper intake.

Vegetables: Sweet Potatoes: Provide about 0.7 mg of copper per cup when mashed. Leafy greens such as spinach and turnip greens also contain copper.

Dark Chocolate: Dark chocolate (70-85% cocoa) contains around 1.8 mg of copper per 100 grams (196% of the RDI).

Whole Grains: Foods like quinoa and buckwheat also provide small amounts of copper

DIHOMO-GAMMA-LINOLENIC ACID

Anti-inflammatory. Fights cell damage and regulates pain as part of the healing process. Prevents or treats a variety of health conditions, including asthma; atherosclerosis; cancer; diabetic neuropathy; eczema; chronic fatigue syndrome; depression; high-cholesterol; menopause symptoms; metabolic syndrome; psoriasis; and rheumatoid arthritis.

Plant Sources

Dihomo-gamma-linolenic acid (DGLA) is a polyunsaturated omega-6 fatty acid that is produced in the body from gamma-linolenic acid (GLA). While DGLA itself is not commonly highlighted in dietary sources, it can be found in certain foods that are rich in GLA. Here are some key food sources where you can find gamma-linolenic acid, which can subsequently lead to the production of DGLA:

Seed Oils: Evening Primrose Oil: Contains about 8-10% GLA, which can be converted to DGLA. Borage Oil: Very high in GLA, providing approximately 20-25%, making it one of the best sources for potential DGLA. Black Currant Seed Oil: Contains around 15-20% GLA.

Nuts and Seeds: Hemp Seeds: While primarily a source of omega-3 and omega-6 fatty acids, they also provide some GLA. Pumpkin Seeds: Contribute small amounts of GLA.

Legumes: Certain legumes may contain trace amounts of GLA, although they are not significant sources compared to oils.

DOCOSAHEXAENOIC ACID

Reduces heart disease risk. May improve ADHD. Reduces the risk of early preterm births. Anti-inflammatory properties that may reduce the risk of chronic diseases that are common with age, such as heart and gum disease, and improve

autoimmune conditions like rheumatoid arthritis, which causes joint pain. Supports muscle recovery after exercise. Supports eye health and may specifically improve dry eyes and diabetic eye disease (retinopathy). Known to lower the risk of several cancers, including colorectal, pancreatic, breast, and prostate. May help prevent or slow Alzheimer's disease. Lowers blood pressure and supports circulation. Aids normal brain and eye development in babies. Supports men's reproductive health. May reduce symptoms of depression.

Animal Sources

Fatty Fish: Salmon: One of the richest sources, providing about 2,477 mg of DHA per 6-ounce serving. Mackerel: Contains approximately 4,580 mg of DHA per 6-ounce serving. Sardines: Offer around 1,000 mg of DHA per 3.75-ounce can. Anchovies: Provide about 2,200 mg of DHA per 3.5-ounce serving. Herring: Contains approximately 1,700 mg of DHA per serving.

Shellfish: Oysters: A good source of DHA, with about 1,000 mg per serving.

Plant Sources

Algal Oil: Derived from algae, algal oil is a vegetarian source of DHA and is often used in supplements.

EICOSAPENTAENOIC ACID

Lowers ADHD symptoms. Reduces symptoms of depression. Supports heart health. Reduces symptoms and inflammation caused by rheumatoid arthritis. Reduces hot flashes. Reduces menstrual cramping and pain. Reduces discomfort and sensitivity to cold for people with Raynaud syndrome. Reduces joint pain and fatigue from lupus. Positive effects have also been reported on kidney and lung disease, type-2 diabetes, anorexia nervosa, Crohn's disease, burns, osteoporosis, and early stages of colorectal cancer.

Animal Sources

Fatty Fish: Mackerel: One of the richest sources, providing approximately 2.0 grams of EPA per 3-ounce serving. Salmon: Both farmed and wild salmon are excellent sources, with farmed salmon containing about 1.24 grams of EPA per serving. Sardines: Canned sardines provide around 0.45 grams of EPA per serving. Anchovies: Offer approximately 1.0 gram of EPA per serving. Herring: Contains about 1.3 grams of EPA per serving.

Shellfish: Oysters: Provide a mix of omega-3s, including about 0.30 grams of EPA per serving.

Other Seafood: Various other types of fish and seafood, such as tuna and halibut, also contain significant amounts of EPA.

Plant Sources

Algal Oil: Derived from algae, algal oil is a vegetarian source of EPA and is often used in supplements.

FLUORINE

Cognitive function, cardiovascular health. Bones, nails, hair teeth, cavities and gums. Liver health.

Animal Sources

Seafood: Blue Crab: Provides about 283.4 mcg of fluoride per cup. Shrimp: Contains approximately 257.3 mcg of fluoride per cup. Oysters: Offer about 53.6 mcg of fluoride per 3-ounce serving.

Plant Sources

Beverages: Black Tea: Brewed black tea can contain high levels of fluoride, with about 883.8 mcg per cup, depending on the water used. Coffee: Contains approximately 215 mcg of fluoride per 8-ounce cup, influenced by the water quality.

Fruit Juice (Grape): Grape juice has around 349.1 mcg of fluoride per cup.

Processed Foods and Snacks: Sodas: Fluoride content can vary but is around 299.8 mcg per 12-ounce can, depending on the water used in production.

Raisins: Approximately 0.1 mg of fluoride per serving.

Fruits and Vegetables: Potatoes: Boiled potatoes contain about 67.2 mcg of fluoride. Spinach: Cooked spinach has around 68 mcg of fluoride per cup.

Cereals and Grains: Bread: Contains about 2.54 mg/kg of fluoride, contributing to dietary intake. Rice: Offers approximately 2.28 mg/kg of fluoride.

Alcoholic Beverages: Table Wine: Contains about 226.9 mcg of fluoride per 5-ounce glass.

GAMMA-LINOLENIC ACID

Anti-inflammatory. Fights cell damage and regulates pain as part of the healing process. Prevents or treats a variety of health conditions, including asthma; atherosclerosis; cancer; diabetic neuropathy; eczema; chronic fatigue syndrome; depression; high-cholesterol; menopause symptoms; metabolic syndrome; psoriasis; and rheumatoid arthritis.

Plant Sources

Seed Oils: Evening Primrose Oil: One of the richest sources, containing about 8-10% GLA. Borage Oil: Contains approximately 20-25% GLA, making it one of the highest sources available. Black Currant Seed Oil: Provides about 15-20% GLA.

Seeds: Hemp Seeds: Contain a small amount of GLA, along with other beneficial fatty acids. Pumpkin Seeds: While not as high as oils, they also contribute to dietary GLA.

Nuts: Walnuts: Provide a modest amount of GLA along with other essential fatty acids.

Legumes: Some legumes may contain trace amounts of GLA, but they are not significant sources compared to oils and seeds.

GLUTAMATE

Acts as an important neurotransmitter in the brain. Supports growth and development of the brain. Supports cognitive functions, including learning and memory. Supports the "gut-brain connection". Helps with bone formation and muscle tissue repair.

Animal Sources

Meat: Beef, pork, and poultry are rich in glutamate.

Fish: Seafood, including tuna and scallops, contains significant amounts.

Dairy Products: Cheese (especially aged cheeses like parmesan), milk, yogurt, and other dairy products are excellent sources.

Cured Meats: Processed meats often have added glutamate from curing processes.

Plant Sources

Vegetables: Tomatoes, mushrooms, and certain leafy greens like spinach and broccoli are high in glutamate.

Legumes: Beans and lentils also contribute to dietary glutamate.

Soy Sauce: A common source of free glutamate due to fermentation.

Fermented Beans: Products like miso and tempeh contain high levels of glutamate.

GLUTAMIC ACID

Improves memory and focus. Boosts the immune system. Supports prostate health. Detoxes the body. Improves athletic performance. Supports digestive health.

Animal Sources

Meat: Beef, pork, and poultry (chicken and turkey) are rich in glutamic acid.

Fish: Various types of fish, including cod and salmon, contain significant amounts.

Dairy Products: Milk, cheese (especially hard cheeses like parmesan), and yogurt are excellent sources.

Eggs: Eggs provide a good amount of glutamic acid.

Plant Sources

Vegetables: Tomatoes, mushrooms, and spinach are particularly high in glutamic acid.

Legumes: Beans and lentils contribute to dietary glutamic acid.

Nuts and Seeds: Almonds and sunflower seeds contain this amino acid.

Whole Grains: Foods like wheat, oats, and brown rice provide glutamic acid.

Other Sources

Soy Products: Tofu and soy sauce are also rich in glutamic acid.

IODINE

It regulates hormones, fetal development, and keeps the thyroid healthy.

Thyroid Hormone Production: Iodine is vital for the synthesis of thyroid hormones, specifically thyroxine (T4) and tri-iodothyronine (T3). These hormones regulate metabolism, energy production, and overall growth and development in the body.

Regulation of Metabolism: Thyroid hormones, which depend on adequate iodine levels, influence how the body uses energy from carbohydrates, fats, and proteins. They play a critical role in metabolic processes that affect weight management and energy levels.

Fetal and Infant Development: Iodine is particularly important during pregnancy and early infancy. Adequate iodine intake is essential for proper brain development and cognitive function in fetuses and infants. Insufficient iodine during this period can lead to developmental delays and intellectual disabilities.

Immune Function: Iodine may have a role in supporting the immune system. It has been suggested that adequate iodine levels can help modulate immune responses and may have protective effects against certain diseases.

Prevention of Goiter: A deficiency in iodine can lead to goiter, which is an enlargement of the thyroid gland as it attempts to trap more iodine from the bloodstream to produce sufficient thyroid hormones. This condition reflects inadequate hormone production due to low iodine availability.

Cognitive Function: Sufficient iodine levels are linked to better cognitive performance in children. Iodine deficiency is recognized as a leading cause of preventable mental retardation globally.

DN

Hormonal system Harmony / Regeneration / Women / Children / Motion / Structure / Thyroid Harmony / Trace Elements / Vegan

Animal Sources

Seafood: Seaweed: Especially types like kombu and nori, which can contain very high levels of iodine. For example, kombu can provide up to 2,984 mcg of iodine per gram. **Cod:** A 3-ounce serving contains about 158 mcg of iodine, making it one of the best seafood sources. **Halibut:** Contains approximately 50-100 mcg of iodine per serving. **Pollock:** About 67 mcg of iodine per 120 grams. **Shrimp:** Approximately 35 mcg of iodine per 3-ounce serving.

Dairy Products: Milk: One cup of cow's milk provides about 56 mcg of iodine. **Yogurt:** A cup of plain Greek yogurt contains around 75 mcg of iodine. **Cheese:** Varies by type, but on average, cheese contains about 37.5 mcg of iodine per 100 grams.

Eggs: One large egg contains about 22 mcg of iodine.

Plant Sources

Fruits and Vegetables: The iodine content in plant foods varies greatly depending on the soil in which they are grown. Generally, fruits and vegetables are poor sources unless they are grown in iodine-rich soil.

IRON

Iron is a mineral that the body needs for growth and development. Your body uses iron to make hemoglobin, a protein in red blood cells that carries oxygen from the lungs to all parts of the body, and myoglobin, a protein that provides oxygen to muscles. Your body also needs iron to make some hormones.

Oxygen Transport: Iron is a vital component of hemoglobin, the protein in red blood cells responsible for transporting oxygen from the lungs to tissues throughout the body. Each hemoglobin molecule can carry up to four molecules of oxygen, making iron crucial for efficient oxygen delivery.

Energy Production: Iron is involved in cellular respiration and energy production. It is a key component of various enzymes and proteins, including cytochromes, which are essential for the electron transport chain in mitochondria, where ATP (adenosine triphosphate) is produced.

DNA Synthesis: Iron plays a role in DNA synthesis and cell division. It is necessary for the activity of ribonucleotide reductase, an enzyme involved in converting ribonucleotides to deoxyribonucleotides, which are building blocks for DNA.

Immune Function: Adequate iron levels are important for maintaining a healthy immune system. Iron is involved in the proliferation and maturation of immune cells, particularly lymphocytes, which are crucial for adaptive immunity.

Cognitive Function: Iron is essential for proper brain function. It contributes to neurotransmitter synthesis and myelin formation, which are critical for nerve signal transmission and overall cognitive health.

Regulation of Body Temperature: Iron helps maintain body temperature through its role in metabolic processes that generate heat during energy production.

DN

Energy / Fatigue / Sports / Regeneration / Women / Children / Motion / Competition / Activation / Circulation / Rigidity / Energetic / Bioinformation / Balance / Rest / Hair Harmony / Head Harmony / Muscle Harmony / Nail Harmony / Kidney Harmony / Age / Blood Harmony / Liver Harmony / Trace Elements / Vegan / Antioxidants / Hormonal system Harmony

Animal Sources

Red Meat: Beef: Particularly ground beef and steak, providing about 2.7 mg of iron per 100 grams. Lamb: Approximately 1.8 mg per 100 grams. Pork: Contains about 0.9 mg per 100 grams.

Poultry: Turkey: Dark meat provides about 1.4 mg of iron per 100 grams. Chicken: Offers around 0.9 mg per 100 grams.

Shellfish: Oysters: Extremely high in iron, with about 8.26 mg per 100 grams. Clams: Approximately 2.91 mg per 100 grams. Mussels: About 7.08 mg per 100 grams.

Fish: Varieties like tuna and sardines also provide significant amounts.

Eggs: Contain about 1-2 mg of iron each

Plant Sources

Legumes: Lentils: About 3.3 mg of iron per cooked cup. Chickpeas: Approximately 4.7 mg per cooked cup. Beans (kidney, black, navy): Varies from about 2-3 mg per cooked cup.

Leafy Green Vegetables: Spinach: Contains about 2.7 mg of iron per cooked cup. Kale and Swiss Chard: Also good sources, providing around 1-2 mg per cooked cup.

Nuts and Seeds: Pumpkin Seeds: About 8.52 mg of iron per 100 grams. Almonds and Cashews: Provide around 1-2 mg per ounce.

Whole Grains: Quinoa: Approximately 2.8 mg of iron per cooked cup.

Dried Fruits: Dried Apricots: About 2.66 mg of iron per 100 grams. Raisins and Prunes: Also good sources, with about 0.5-1 mg of iron per serving.

Other Sources: Tofu and Tempeh: Provide around 3-5 mg of iron per serving.

L-ALANINE

Supports muscle enhancement and boosts energy. Regulates blood sugar. Supports the immune system and prostate.

DN

Amino Acids / Fatigue / Structure

Animal Sources

Meat: Chicken, turkey, beef, and pork are rich in L-alanine.

Fish: Various types of fish provide significant amounts.

Eggs: A good source of protein and amino acids, including L-alanine.

Dairy Products: Milk, yogurt, and cheese contain L-alanine.

Plant Sources

Soy Products: Tofu and tempeh are excellent sources.

Legumes: Beans, lentils, and peanuts are rich in L-alanine.

Seeds: Pumpkin seeds and sunflower seeds contain notable amounts.

Vegetables: Asparagus, spinach, and cauliflower also contribute to dietary L-alanine.

Foods like quinoa, rice, and oats provide L-alanine as well.

L-ARGININE

Relaxes blood vessels and may help with erectile dysfunction. Lowers blood pressure. Supports endothelium health which may reduce the chance of heart attack or stroke.

DN

Amino Acids / Liver Harmony / Lymphatic System Harmony / Hormonal system Harmony / Regeneration / Women / Children / Motion / Competition / Reduction / Exertion / Circulation / Comfort / Exhaustion / For Mature Women / Balance / Relief / Rest

Animal Sources

Meat: Beef, pork, chicken, and turkey are excellent sources of L-arginine.

Seafood: Fish and shellfish, such as salmon, tuna, shrimp, and crab, are rich in L-arginine.

Dairy Products: Milk, yogurt, and cheese contain L-arginine, with Greek yogurt being particularly high.

Eggs: Eggs, especially egg whites, are good sources of this amino acid.

Plant Sources

Nuts and Seeds: Almonds, walnuts, peanuts, pumpkin seeds, sunflower seeds, and sesame seeds are all rich in L-arginine. Nut butters like peanut butter also provide substantial amounts.

Legumes: Beans, lentils, chickpeas, and other legumes are excellent plant-based sources of L-arginine.

Soy Products: Soybeans and products like tofu and tempeh are high in L-arginine.

Whole Grains: Foods such as oats, wheat, barley, and quinoa contain L-arginine.

Chocolate: Dark chocolate contains smaller amounts of L-arginine.

L-ASPARAGINE

Supports brain development and function. Supports liver function. Regulates mood and the central nervous system.

Animal Sources

Dairy Products: Milk, cheese, and yogurt contain L-asparagine.

Meat: Poultry (like chicken and turkey), beef, and pork provide this amino acid.

Fish and Seafood: Various types of fish and seafood also contribute to dietary L-asparagine.

Plant Sources

Asparagus: Notably rich in L-asparagine, which is reflected in its name.

Whole Grains: Foods like oats, wheat, and brown rice contain significant amounts.

Legumes: Beans, lentils, and chickpeas are good sources of this amino acid.

Nuts and Seeds: Almonds, walnuts, and sunflower seeds provide L-asparagine.

Soy Products: Tofu and soy protein isolate are excellent plant-based sources.

Potatoes: This common vegetable is another source of L-asparagine.

Roasted Coffee: Contains small amounts of L-asparagine.

L-CARNITINE

Supports muscle repair and regulates muscle pain. Use is effective in the following conditions: serious kidney disease, hyperthyroidism, male infertility, and myocarditis (inflammation of the heart). Reduces memory issues in elderly people.

Supports heart health. Supports weight loss and fat burning.

DN

Birth / Sports / Regeneration / Women / Motion / Competition / Activation / Exertion / Rigidity / Lifestyle / Energetic / Comfort / Passion / Muscle Harmony / Kidney Harmony / Vegan

Animal Sources

Beef: One of the richest sources, with approximately 56 to 162 mg of L-carnitine per 4-ounce serving of cooked steak or ground beef.

Pork: Contains about 50 mg of L-carnitine per 4-ounce serving.

Chicken: Offers around 3 to 5 mg of L-carnitine per 4-ounce serving of cooked chicken breast.

Fish: Cod provides about 4 to 7 mg per 4-ounce serving.

Whole Milk: Contains approximately 8 mg of L-carnitine per cup.

Plant Sources

Avocado: While not as high as animal sources, avocados provide some L-carnitine and are a good option for those seeking plant-based sources.

Asparagus and Whole Wheat Bread: These foods contain trace amounts, around 0.1 to 0.2 mg per serving.

Most dietary L-carnitine comes from animal products, making it challenging for vegans to obtain sufficient amounts through diet alone. However, the body can synthesize L-carnitine from the amino acids lysine and methionine, which can be found in various foods.

L-CYSTEINE

Anti-aging properties. Supports immune function. Promotes detoxification from drug reactions and toxic chemicals.

Increases male fertility. Balances blood sugar levels. Supports digestive health. Relieves symptoms of respiratory conditions. Helps to treat psychiatric disorders as well as addictions. Other uses include acne, angina, asthma, emphysema, colon cancer, and lung cancer.

DN

Amino Acids / Alcohol Intake / Antioxidants / Spirituality / Hormonal system Harmony / Defense / Sports / Regeneration / Breath / Mobility / Rigidity / Comfort / Hair Harmony / Skin Harmony / Nail Harmony / Age

Animal Sources

Poultry: Chicken and turkey are rich in L-cysteine.

Beef and Pork: Both meats provide substantial amounts of this amino acid.

Eggs: Especially the yolks, are good sources of L-cysteine.

Dairy Products: Foods like yogurt, cheese, and ricotta contain L-cysteine.

Plant Sources

Legumes: Beans and lentils are good plant-based sources.

Nuts and Seeds: Sunflower seeds and other nuts provide some L-cysteine.

Whole Grains: Oat bran and whole wheat products contain L-cysteine.

Vegetables: Garlic, onions, broccoli, and Brussels sprouts are notable sources.

L-GLUTAMINE

A building block of protein. Used for weight loss, fat burning, and building muscle. Treats leaky gut syndrome. Improves gastrointestinal issues such as irritable bowel syndrome (IBS), Crohn's disease, ulcerative colitis, diverticulosis, and diverticulitis. Boosts brain health. Decreases muscle wasting. Improves athletic performance and exercise recovery. Suppresses insulin levels and stabilizes blood glucose.

DN

Hormonal system Harmony / Sports / Regeneration / Psyche / Sleep / Competition / Activation / Circulation / Exhaustion / Balance / Joy of Life / Age / Amino Acids / Alkaline Powder / Antioxidants

Animal Sources

Meat: Beef, pork, chicken, and turkey are particularly rich in L-glutamine.

Fish: Seafood options like cod and salmon provide significant amounts.

Dairy Products: Milk, yogurt, and cheese are excellent sources of L-glutamine.

Eggs: Eggs contain a good amount of L-glutamine, with about 0.7 grams per egg.

Plant Sources

Legumes: Beans, lentils, and peas are good plant-based sources of L-glutamine.

Nuts and Seeds: Almonds, walnuts, cashews, and pumpkin seeds contain L-glutamine.

Whole Grains: Foods like oats, rice, and wheat provide this amino acid.

Vegetables: Spinach, cabbage, asparagus, and broccoli are notable sources.

Tofu and Tempeh: These soy products are rich in L-glutamine and suitable for vegetarians and vegans.

Spirulina: This blue-green algae is a potent source of various amino acids, including L-glutamine.

L-GLYCINE

Helps build lean muscle mass. Prevents muscle wasting. Supports the production of human growth hormone. Boosts mental performance and memory. Helps to prevent ischemic strokes and seizures. Protects skin from signs of aging or cellular mutations. Protects collagen in joints and reduces joint pain. Supports flexibility and range of motion. Regulates blood sugar. Improves sleep. Reduces inflammation. Supports digestive health. Reduces allergic and autoimmune reactions. Supports production of red blood cells. Helps control symptoms of mental disorders.

DN

Fatigue / Sports / Regeneration / Psyche / Sleep / Motion / Competition / Structure / Activation / Rigidity / Bioinformation / Comfort / Relief / Rest / Brain Harmony / Muscle Harmony / Age / Amino Acids / Connective Tissue Harmony / Liver Harmony / Hormonal system Harmony

Animal Sources

Gelatin: This is one of the richest sources of glycine, as it is derived from collagen. Gelatin can be found in products like jello, gummies, and certain desserts.

Bone Broth: Made by simmering animal bones, bone broth is a great source of glycine.

Meat: Particularly in connective tissues, glycine is present in chicken skin, beef, pork, and lamb.

Fish: Various types of fish, especially those with skin and bones, contain glycine.

Dairy Products: Milk, yogurt, and cheese provide glycine as well.

Plant Sources

Legumes: Beans (such as kidney beans and black beans), lentils, and peas are good plant-based sources of glycine.

Nuts and Seeds: Peanuts and sunflower seeds contain glycine.

Whole Grains: Foods like brown rice and oats provide some glycine.

Vegetables: Spinach, kale, cabbage, and watercress are notable sources.

L-HISTIDINE

Supports the growth and creation of blood cells and tissue repair. Helps to maintain the protective covering over nerve cells (myelin sheath). The body metabolizes histidine into histamine, which is crucial for immunity, reproductive health, and digestion. Studies show that it may also lower BMI and insulin resistance in obese women and women with metabolic syndrome. Deficiency can cause anaemia, and low blood levels appear to be more common among people with arthritis and kidney disease.

DN

Kidney Harmony / Amino Acids / Regeneration / Circulation / Energetic

Animal Sources

Meat: Beef, pork, and poultry (chicken and turkey) are excellent sources of L-histidine.

Fish: Tuna, salmon, cod, and other seafood provide significant amounts of this amino acid.

Dairy Products: Milk, yogurt, and cheese (especially hard cheeses like parmesan) are good sources.

Eggs: Whole eggs and egg whites contain L-histidine.

Plant Sources

Legumes: Beans (such as kidney beans and black beans), lentils, and chickpeas are rich in L-histidine.

Nuts and Seeds: Pumpkin seeds, hemp seeds, peanuts, and sunflower seeds contain notable amounts.

Whole Grains: Foods like quinoa, brown rice, and oats provide L-histidine.

Vegetables: Spinach, asparagus, and mushrooms also contribute to dietary histidine.

L-ISOLEUCINE

Lowers glucose. Decreases muscle damage and soreness. Reduces fatigue and boosts performance.

DN

Fatigue / Skin Harmony / Muscle Harmony

Animal Sources

Meat: Beef, Pork, Chicken, Turkey

Fish and Seafood: Tuna, Salmon, Cod, Haddock

Dairy Products: Milk, Cheese (especially Swiss and cottage cheese), Yogurt

Eggs: Whole eggs are a complete source of protein, providing all essential amino acids, including isoleucine.

Plant Sources

Legumes: Lentils, Chickpeas, Black beans, Pinto beans
 Nuts and Seeds: Pumpkin seeds, Sunflower seeds, Sesame seeds
 Whole Grains: Quinoa, Brown rice, Oats
 Vegetables: Spinach, Swiss chard Peas

L-LEUCINE

Helps regulate blood sugar levels and aids the growth and repair of muscle and bone. It is also necessary for wound healing and the production of growth hormones. Deficiency can lead to skin rashes, hair loss, and fatigue.

DN

Fatigue / Regeneration / Skin Harmony / Structure / Muscle Harmony / Age / Amino Acids / Liver Harmony / Hormonal system Harmony

Animal Sources

Meat: Beef, Pork, Chicken, Turkey
 Fish: Tuna, Salmon, Cod
 Dairy Products: Milk, Yogurt, Cheese (especially cottage cheese and parmesan)
 Eggs: Whole eggs are a complete source of protein, providing all essential amino acids, including leucine.

Plant Sources

Legumes: Lentils, Chickpeas, Black beans
 Nuts and Seeds: Pumpkin seeds, Sunflower seeds, Almonds
 Whole Grains: Quinoa, Brown rice, Oats

L-LYSINE

Builds muscle; maintains bone strength, aids in recovery from injury or surgery, regulates hormones, antibodies, and enzymes. Possible antiviral effects.

DN

Structure / Activation / Circulation / Amino Acids / Vegan / Lymphatic System Harmony / Hormonal system Harmony

Animal Sources

Poultry: Chicken and turkey are excellent sources, with a 4-ounce chicken breast providing about 2,440 mg of lysine.
 Beef and Pork: Both are rich in lysine, with various cuts offering substantial amounts.
 Fish: Salmon and tuna are particularly high in lysine, with a 3-ounce serving of salmon containing approximately 1,590 mg.
 Dairy Products: Cheese: Parmesan cheese contains about 2.2 grams of lysine per 100 grams, Yogurt: Greek yogurt has around 833 mg of lysine per 100 grams, Milk: One cup of 1% milk provides approximately 758 mg of lysine.
 Eggs: Whole eggs also contribute to dietary lysine intake.

Plant Sources

Legumes: Lentils (1 cup cooked provides about 1.25 grams), split peas, chickpeas, and various beans (like black beans and kidney beans) are excellent sources.
 Soy Products: Tofu (about 0.7 grams per quarter block) and tempeh are rich in lysine.
 Quinoa: This grain is considered a complete protein and provides about 0.4 grams of lysine per cooked cup.
 Nuts and Seeds: Pumpkin seeds (about 0.35 grams per ounce) and pistachios also contain lysine.
 Amaranth: This gluten-free grain offers about 0.6 grams of lysine per cooked cup.

L-METHIONINE

Along with cysteine, methionine supports the health and flexibility of skin, and hair, and the strength of nails. Supports proper absorption of selenium and zinc as well as the removal of heavy metals like lead and mercury.

DN

Energetic / Bioinformation / Joy of Life / Rest / Amino Acids / Alcohol Intake / Antioxidants / Lymphatic System Harmony / Hormonal system Harmony / Fatigue / Regeneration / Psyche / Motion / Competition

Animal Sources

Meat: Beef, Pork, Turkey, Chicken

Fish: Tuna, Salmon, Cod, Halibut

Dairy Products: Cheese (especially hard cheeses like parmesan), Milk, Yogurt

Eggs: Egg whites are particularly high in methionine.

Plant Sources

Nuts and Seeds: Brazil nuts, Sesame seeds, Sunflower seeds

Legumes: Soybeans (including tofu and tempeh), Lentils and chickpeas also provide methionine, though in smaller amounts compared to animal sources.

Whole Grains: Oats and quinoa contain some methionine.

L-ORNITHINE

Supports muscle strength and health. Supports liver detoxification by assisting with eliminating extra nitrogen and other waste such as ammonia. Stimulates liver tissue regeneration.

DN

Comfort / Exhaustion / For Mature Women / Balance / Relief / Rest / Amino Acids / Liver Harmony / Lymphatic System Harmony / Hormonal system Harmony / Regeneration / Women / Children / Motion / Competition / Exertion / Circulation

Animal Sources

Meat: Beef, Pork, Chicken, Turkey

Fish: Tuna, Salmon, Cod

Dairy Products: Milk, Cheese, Yogurt

Eggs: Whole eggs are a good source of L-ornithine.

Plant Sources

Nuts: Peanuts and other nuts provide a decent amount of L-ornithine.

Seeds: Sesame seeds and pumpkin seeds are good sources.

Legumes: Soybeans (including tofu and tempeh) are rich in L-ornithine.

Whole Grains: Wheat germ and oats contain L-ornithine.

Quinoa: This gluten-free grain is another plant-based source.

L-PHENYLALANINE

Used to treat vitiligo. Produces dopamine. Supports learning, memory, and emotion. May reduce symptoms of depression. May aid in the treatment of Parkinson's disease. Relieves chronic pain. May promote weight loss.

Joy of Life / Rest / Brain Harmony / Thyroid Harmony / Amino Acids / Hormonal system Harmony / Sports / Psyche / Activation / Rigidity

Animal Sources

Beef: A rich source of L-phenylalanine, Pork: Contains significant amounts, Chicken: Poultry is also a good source.

Fish: Tuna and salmon are particularly high in L-phenylalanine.

Dairy Products: Milk: Cow's milk is an excellent source, Cheese: Various cheeses, especially hard cheeses like parmesan, are rich in this amino acid, Yogurt: Provides a good amount as well.

Eggs: Whole eggs contain substantial amounts of L-phenylalanine.

Plant Sources

Legumes: Beans (such as black beans and kidney beans), lentils, and chickpeas are good plant-based sources.

Nuts and Seeds: Peanuts, almonds, and walnuts contain notable amounts of L-phenylalanine.

Soy Products: Tofu, tempeh, and edamame are rich in this amino acid.

Whole Grains: Quinoa, oats, and wheat products provide some L-phenylalanine.

L-PROLINE

Helps to heal wounds and repair skin. Supports digestive health. Helps to prevent joint pain. Supports the cardiovascular system. Supports healthy metabolism and fights inflammation. Supports toe formation of new collagen. Naturally prevents or treats cellulite. Treats leaky gut syndrome.

DN

Amino Acids / Connective Tissue Harmony / Vegan / Lymphatic System Harmony / Hormonal system Harmony / Sensitivities / Structure / Rigidity / Tissue Harmony

Animal Sources

Meat: Beef, Pork, Chicken, Turkey

Fish: Salmon and tuna are particularly rich in L-proline.

Dairy Products: Milk, cheese, and yogurt provide good amounts of L-proline.

Eggs: Whole eggs contain significant levels of L-proline.

Plant Sources

Legumes: Lentils, chickpeas, and various beans (like black beans and kidney beans) are good sources.

Nuts and Seeds: Almonds, walnuts, peanuts, and pumpkin seeds contain L-proline.

Soy Products: Tofu and tempeh are excellent plant-based sources of L-proline.

Whole Grains: Oats, wheat, and quinoa also provide this amino acid

L-PYRROLYSINE

The largest naturally occurring amino acid.

L-pyrrolysine is not typically found in foods consumed by humans, and its presence is mostly limited to certain microorganisms. Therefore, it does not have common dietary sources like other amino acids do.

L-SELENOCYSTEINE

Supports heavy metal removal. Boosts immunity. Supports healthy gut.

Animal Sources

Fish: Certain fish, such as tuna and salmon, contain selenoproteins that include L-selenocysteine.

Meat: Poultry and red meats also provide some L-selenocysteine through their selenoprotein content.

Eggs: Eggs are another source of selenoproteins.

Plant Sources

Brazil Nuts: These nuts are exceptionally high in selenium, which can be converted to L-selenocysteine in the body.

Whole Grains: Some whole grains may contain selenium, contributing to L-selenocysteine levels.

Legumes: Beans and lentils can also provide selenium.

L-SELENOMETHIONINE

Supports healthy thyroid gland function, reproduction, DNA production, and protecting the body from infection. Supports healthy heart function. Supports cognitive function.

Animal Sources

Fish: Certain fish, such as tuna and halibut, are good sources of selenium, including L-selenomethionine.

Meat: Beef, pork, and chicken contain selenium, contributing to dietary intake of L-selenomethionine.

Poultry: Turkey and chicken are also significant sources of selenium.

Eggs: Eggs provide a moderate amount of selenium and thus contribute to L-selenomethionine intake.

Dairy Products: Milk and cheese contain selenium, although in smaller amounts compared to nuts and fish.

Plant Sources

Brazil Nuts: These nuts are one of the richest sources of selenium, with a single ounce (about 6-8 nuts) containing over 500 mcg of selenium, primarily in the form of L-selenomethionine.

Whole Grains: Some whole grains, like brown rice and whole wheat products, can provide selenium.

Legumes: Beans and lentils may also contain small amounts of selenium.

L-SERINE

Improves brain function. Fights fibromyalgia. Helps to relieve stress. Improves sleep. Boosts immune function.

DN

Amino Acids / Age

Animal Sources

Eggs: A good source of L-serine, providing essential amino acids.

Dairy Products: Milk, yogurt, and cheese contain L-serine.

Meat: Beef, Pork, Chicken, Turkey

Fish: Wild fish varieties also contribute to dietary L-serine.

Plant Sources

Soy Products: Tofu and other soy-based foods are rich in L-serine.

Nuts and Seeds: Peanuts, Almonds, Walnuts, Pistachios

Legumes: Lentils, Chickpeas, Kidney beans

Whole Grains: Oats and quinoa provide L-serine.

Vegetables: Sweet potatoes and seaweed (such as spirulina) are notable sources

L-TAURINE

Helps to maintain proper hydration and electrolyte balance in your cells. Helps to form bile salts for digestion. Regulates minerals such as calcium within cells. Supports the central nervous system and eyes. Regulates immune system and antioxidant function.

DN

Amino Acid / Liver Harmony / Vegan / Antioxidants / Sports / Competition / Activation / Exertion / Circulation / Comfort / Exhaustion / Kidney Harmony

Animal Sources

Shellfish: Scallops: Approximately 827 mg of taurine per 3.5-ounce serving, Mussels: About 655 mg per serving, Clams: Roughly 520 mg per serving.

Fish: Tuna: Contains up to 964 mg of taurine per 3.5-ounce serving, especially in darker meat, Tilapia: Offers about 972 mg in its dark muscle, Carp and Catfish: Also good sources with substantial taurine content.

Meat: Turkey: Dark meat has about 306 mg of taurine per 3.5-ounce serving, Chicken: Dark meat provides around 170 mg, while light meat has less.

Dairy Products: Yogurt: Contains about 3 to 7 mg of taurine per cup, Milk: Approximately 6 mg per cup.

Plant Sources

Seaweed: Certain types, such as nori, can provide taurine, making them suitable for plant-based diets.

L-THREONINE

Supports healthy skin and teeth; is a component of tooth enamel, collagen, and elastin. Helps to aid fat metabolism and may benefit people with indigestion, anxiety, and mild depression.

DN

Amino Acids / Connective Tissue Harmony / Blood Harmony / Hormonal system Harmony / Sports / Children / Psyche / Skin Harmony

Animal Sources

Meat: Beef: A significant source of L-threonine, Pork: Contains high levels of this amino acid, Chicken and Turkey: Poultry provides a good amount of L-threonine.

Fish: Salmon: Rich in L-threonine, Tuna and Halibut: Also good sources.

Dairy Products: Milk: Provides L-threonine, Yogurt and Cheese: Both are good sources.

Eggs: Whole eggs are an excellent source of L-threonine, with one large egg containing about 0.5 grams.

Plant Sources

Legumes: Lentils, Chickpeas, and Beans: Good plant-based sources of L-threonine.

Nuts and Seeds: Almonds and Sunflower Seeds: Provide L-threonine.

Whole Grains: Foods like oatmeal, brown rice, and whole wheat bread contain this amino acid.

Soy Products: Tofu and tempeh are excellent sources for vegetarians and vegans.

Certain Vegetables: Leafy greens like spinach may also contribute to dietary intake of L-threonine.

L-TRYPTOPHANE

Produces melatonin in the brain (pineal gland), the gut, the retina, and immune cells. Improves sleep quality and helps with insomnia. May improve obstructive sleep apnea. Helps with PMS. Assists with smoking cessation. May reduce symptoms of depression. May reduce manic symptoms. May reduce appetite. Used for dementia. Increases exercise performance, likely due to increased pain tolerance.

Animal Sources

Meat: Turkey: Often associated with high tryptophan content. Chicken: A good source of L-tryptophan. Beef and Pork: Both provide substantial amounts.

Fish: Salmon and Tuna: Rich in L-tryptophan.

Dairy Products: Milk: Contains a significant amount of tryptophan. Yogurt and Cheese: Both are good sources. Eggs: Whole eggs are an excellent source of L-tryptophan.

Plant Sources

Nuts and Seeds: Pumpkin Seeds: High in tryptophan. Sunflower Seeds, Almonds, and Walnuts: Also good sources.

Legumes: Chickpeas, Lentils, and various beans provide L-tryptophan.

Whole Grains: Oats: A notable source of tryptophan. Other grains like quinoa and brown rice also contain this amino acid.

Vegetables: Leafy greens like spinach can contribute to dietary tryptophan.

Soy Products: Tofu, tempeh, and soybeans are rich in L-tryptophan, making them excellent options for vegetarians and vegan

L-TYROSINE

May boost cognition and alertness under stress or sleep deprivation. May improve mood. May increase thyroid hormones. May help with fibromyalgia. Used for patients with narcolepsy. Reduces addiction and substance withdrawal. May support weight loss.

DN

Hormonal system Harmony / Activation / Age / Amino Acids

Animal Sources

Meat: Beef: Particularly rich in L-tyrosine, with skirt steak providing about 2,174 mg per 6-ounce serving. Pork: Lean pork chops offer around 2,088 mg per 6-ounce serving. Turkey: Ground turkey contains approximately 1,907 mg per 6-ounce serving.

Fish: Salmon and Tuna: Both are good sources of L-tyrosine.

Dairy Products: Skim Milk: Contains about 833 mg per 16-ounce serving. Yogurt: Provides around 649 mg per cup.

Cheese: Various cheeses also contribute to dietary L-tyrosine. Eggs: Whole eggs are a good source of L-tyrosine.

Plant Sources

Legumes: Beans, Lentils, and Chickpeas are good plant-based sources of L-tyrosine.

Nuts and Seeds: Pumpkin Seeds, Sesame Seeds, and Almonds contain notable amounts of L-tyrosine.

Whole Grains: Foods like quinoa and oats provide L-tyrosine as well.

Soy Products: Tofu and tempeh are excellent sources for vegetarians and vegans.

L-VALINE

Essential for mental focus, muscle coordination, and emotional calm. Valine supplements are often used for muscle growth, tissue repair, and energy. Deficiency may cause insomnia and reduced mental function.

DN

Sports /Regeneration / Structure / Rigidity / Age / Amino Acids / Liver Harmony / Vegan / Hormonal system Harmony

Animal Sources

Meat: Beef: A rich source of L-valine, particularly in cuts like steak. Pork: Contains significant amounts of this amino acid.

Chicken and Turkey: Both poultry options provide good levels of L-valine.

Fish: Salmon: Particularly high in L-valine. Tuna and Halibut: Also good sources of this essential amino acid.

Dairy Products: Milk: Provides a substantial amount of L-valine. Cheese and Yogurt: Both are excellent sources, especially cottage cheese. Eggs: Whole eggs are a complete protein source and contain L-valine.

Plant Sources

Legumes: Lentils, Chickpeas, and various beans (like black beans and kidney beans) are rich in L-valine.

Nuts and Seeds: Almonds, Peanuts, Sunflower Seeds, and Pumpkin Seeds contain notable amounts of L-valine.

Whole Grains: Foods such as quinoa, brown rice, and oats provide L-valine.

Soy Products: Tofu, tempeh, and other soy products are excellent plant-based sources of L-valine.

Spirulina: This blue-green algae is also rich in protein and contains L-valine.

LAURIC ACID

Strong antimicrobial and antiviral properties; helps to treat or prevent infections, viruses, digestive disorders, and chronic disease. Positive outcomes for treating herpes simplex virus (HSV), chronic yeast infections, and HIV/AIDS and has been shown to kill staphylococcus Aureus. Also controls infections like bronchitis, candida virus, sexually transmitted diseases like gonorrhoea, genital warts caused by human papillomavirus (HPS) or chlamydia, and intestinal infections caused by parasites. Helps fight antibiotic resistance. Supports heart health. Supports healthy skin and fights acne. Correlated with health and longevity in traditional populations.

Plant Sources

Coconut Products: Coconut Oil: The richest source, containing about 49% lauric acid. It is commonly used in cooking and baking. Coconut Milk: Contains significant amounts of lauric acid, making it a popular ingredient in many dishes. Coconut Cream: Similar to coconut milk but thicker, also rich in lauric acid. Palm Kernel Oil: Contains approximately 48% lauric acid, making it another excellent source. It is often used in processed foods and cooking.

Dairy Products: Cow's Milk: Contains about 2.9% lauric acid. Goat's Milk: Slightly higher at around 3.1% lauric acid. Butter: Contains about 3% lauric acid, particularly from grass-fed cows.

Human Breast Milk: The highest natural source of lauric acid, comprising about 6.2% of its total fat content.

Nuts and seeds: Macadamia Nuts: Contain trace amounts of lauric acid.

Certain Palm Fruits: Such as peach palm seeds and betel nuts, also contain lauric acid but in smaller quantities compared to coconut and palm kernel oil.

LINOLEIC ACID

Supports heart health. Supports healthy brain function. Supports skin and hair health. Supports reproductive health. Boosts immune function. Protects bone density.

Animal Sources

Meats: Various meats (beef, chicken, pork) contain linoleic acid, typically making up 70-85% of their total polyunsaturated fatty acids.

Eggs: Eggs are a notable source, with a significant portion of their fat content being linoleic acid.

Plant Sources

Vegetable Oils: Soybean Oil: One of the richest sources, making up about 50% of its content. Corn Oil: Contains approximately 59% linoleic acid. Sunflower Oil: High in linoleic acid, with around 65% of its total fat content. Safflower Oil: Also very high in linoleic acid, often exceeding 75%.

Nuts and Seeds: Walnuts: Provide about 10.5% linoleic acid. Pumpkin Seeds: Contain significant amounts of linoleic acid.

Sunflower Seeds: Rich in linoleic acid, contributing to dietary intake.

Processed Foods: Many processed foods contain vegetable oils rich in linoleic acid, particularly those made with soybean oil.

MAGNESIUM

About 60% of the magnesium in your body is found in bone, while the rest is in muscles, soft tissues and fluids, including

blood. In fact, every cell in your body contains it and needs it to function. One of magnesium's main roles is acting as a cofactor or helper molecule in the biochemical reactions continuously performed by enzymes.

Protein formation: Helps create new proteins from amino acids.

Enzyme Function: Magnesium acts as a cofactor for over 300 enzymatic reactions, facilitating biochemical processes crucial for metabolism, including energy production, protein synthesis, and DNA repair.

Muscle and Nerve Function: It helps regulate muscle contractions and nerve impulses. Magnesium works in conjunction with calcium to maintain proper muscle function; while calcium promotes contraction, magnesium aids in relaxation.

Heart Health: Magnesium is important for maintaining a healthy heartbeat by regulating heart rhythm and helping to prevent arrhythmias. It also contributes to blood pressure regulation and cholesterol production.

Bone Health: Approximately 50-60% of the body's magnesium is found in bones, where it contributes to bone density and structure. Adequate magnesium levels are associated with a lower risk of osteoporosis.

Blood Sugar Control: Magnesium plays a role in regulating blood glucose levels and improving insulin sensitivity, which is crucial for metabolic health and diabetes management.

Energy Production: It is involved in the conversion of food into energy, aiding in the metabolism of carbohydrates and fats.

Cognitive Function: Magnesium supports brain health by regulating neurotransmitters that send messages throughout the nervous system. It plays a role in memory and learning by acting as a gatekeeper for NMDA receptors, preventing over stimulation of nerve cells.

Stress Management: Magnesium helps reduce levels of cortisol, the stress hormone, thus playing a role in stress management and promoting relaxation.

Immune System Support: Adequate magnesium levels are linked to a healthy immune response, helping the body fight off infections.

DN

Sports / Men / Regeneration / Women / Children / Breath / Motion / Competition / Structure / Activation / Exertion / Circulation / Rigidity / Lifestyle / Energetic / Bioinformation / Comfort / Exhaustion / For Mature Women / Balance / Relief / Recreation / Rest / Brain Harmony / Heart Harmony / Gastrointestinal System Harmony / Muscle Harmony / Kidney Harmony / Age / Alkaline Powder / Weight / Minerals / Alcohol Intake / Lymphatic System Harmony / For Women

Animal Sources

Fish: Salmon: Contains about 53 mg of magnesium per half fillet (about 3.5 ounces). Mackerel: Also a good source, providing around 97 mg per fillet.

Dairy Products: Yogurt (low-fat): Contains about 42 mg of magnesium per cup. Milk (whole): Provides around 24 mg per cup.

Plant Sources

Nuts and Seeds: Pumpkin Seeds: Approximately 168 mg of magnesium per ounce. Almonds: About 80 mg per ounce.

Cashews: Roughly 74 mg per ounce.

Leafy Green Vegetables: Spinach: Contains about 157 mg of magnesium per cooked cup. Swiss Chard: Provides around 150 mg per cooked cup. Kale: Also a good source, with about 24 mg per cooked cup.

Whole Grains: Quinoa: Approximately 118 mg of magnesium per cooked cup. Brown Rice: Contains about 42 mg per cooked cup. Oats: About 36 mg in one packet of instant oatmeal.

Legumes: Black Beans: Provide around 120 mg of magnesium per cooked cup. Chickpeas: Approximately 80 mg per cooked cup. Lentils: About 71 mg per cooked cup.

Fruits: Avocado: About 58 mg of magnesium in one medium avocado. Bananas: Approximately 37 mg in one large banana.

Dark Chocolate: Dark chocolate (70% cocoa or higher) contains about 64 mg of magnesium per ounce.

Tofu and Soy Products: Tofu (firm): Approximately 53 mg of magnesium in a half-cup serving.

MANGANESE

Helps the body form connective tissue, bones, blood clotting factors, and sex hormones. It also plays a role in fat and carbohydrate metabolism, calcium absorption, and blood sugar regulation. Manganese is also necessary for normal brain and nerve function.

Cofactor for Enzymes: Manganese is a vital cofactor for numerous enzymes involved in various biochemical processes. These include oxidoreductases, transferases, hydrolases, lyases, isomerases, and ligases. It is crucial for the activation of enzymes that facilitate metabolic reactions.

Antioxidant Defense: Manganese is a component of manganese superoxide dismutase (MnSOD), an important antioxidant enzyme that helps protect cells from oxidative stress by converting superoxide radicals into less harmful molecules. This function is essential for mitigating damage caused by free radicals, which are linked to aging and various diseases.

Bone Health: Manganese plays a role in bone formation and maintenance. It contributes to the synthesis of connective tissue and is involved in the mineralization process necessary for healthy bones.

Metabolism Regulation: It is involved in the metabolism of carbohydrates and lipids, helping regulate blood sugar levels and insulin sensitivity. Manganese aids in the utilization of nutrients and supports energy production.

Wound Healing: Manganese is necessary for collagen formation, which is essential for wound healing and tissue repair. Adequate manganese levels support the body's ability to heal injuries effectively.

Thyroid Function: Manganese contributes to the production of thyroxine, a hormone critical for regulating metabolism and maintaining energy levels.

Brain Function: It plays a role in cognitive function by participating in neurotransmitter synthesis and protecting neuronal cells from oxidative damage.

Reproductive Health: Manganese is important for reproductive health and may influence fertility through its role in hormone regulation and metabolic processes.

DN

Children / Growth / Energetic / Bioinformation / Recreation / Teeth Harmony / Hair Harmony / Ear Harmony / Alkaline Powder / Connective Tissue Harmony / Blood Harmony / Trace Elements / Alcohol Intake / Antioxidants / For Women / Birth / Hormonal system Harmony / Libido

Animal Sources

Shellfish: Mussels: Approximately 5.8 mg of manganese per 3-ounce serving (over 250% of the Daily Value). Oysters: About 1 mg per 3-ounce serving (45% of the Daily Value). Clams: Roughly 0.9 mg per 3-ounce serving (37% of the Daily Value).

Plant Sources

Nuts and Seeds: Hazelnuts: Around 1.7 mg per ounce (76% of the Daily Value). Pecans: Approximately 1.3 mg per ounce (56% of the Daily Value). Pine Nuts: About 2.5 mg per ounce (109% of the Daily Value).

Whole Grains: Brown Rice: Contains about 1.1 mg per half-cup cooked (47% of the Daily Value). Oatmeal: Approximately 0.9 mg per cup cooked. Quinoa: About 0.6 mg per cup cooked.

Legumes: Chickpeas (Garbanzo Beans): Approximately 0.9 mg per half-cup cooked (37% of the Daily Value). Lentils: About 0.5 mg per half-cup cooked (21% of the Daily Value).

Leafy Green Vegetables: Spinach: Contains around 0.8 mg per half-cup cooked (37% of the Daily Value). Swiss Chard: Approximately 0.4 mg per half-cup cooked.

Fruits: Pineapple: About 0.8 mg per half-cup raw chunks (33% of the Daily Value). Bananas: Approximately 0.4 mg in one large banana.

Tofu and Soy Products: Firm Tofu: Contains about 1.2 mg per cup. Tempeh: Provides around 1.8 mg per cup.

Other Sources: Sweet Potatoes: About 2.5 mg per cup mashed.

MOLYBDENUM

Your body uses molybdenum to process proteins and genetic material like DNA. Molybdenum also helps break down drugs and toxic substances that enter the body especially sulphites.

Cofactor for Enzymes: Molybdenum is crucial for the activity of several important enzymes, including: **Sulfite Oxidase:** Converts sulfite, a potentially toxic compound, into sulfate, which is less harmful and can be excreted from the body. This process helps prevent the accumulation of sulfites that can trigger allergic reactions and other health issues. **Xanthine Oxidase:** Involved in the breakdown of purines into uric acid, which is then excreted. This enzyme plays a role in metabolizing nucleotides and is important for regulating levels of uric acid in the body. **Aldehyde Oxidase:** Helps in the detoxification process by breaking down aldehydes, which can be toxic. It also assists in metabolizing certain drugs and alcohol. **Mitochondrial Amidoxime Reducing Component (mARC):** Although its exact function is not fully understood, it is thought to help remove toxic byproducts from metabolism.

Detoxification: Molybdenum aids in the detoxification of harmful substances in the liver, helping to process and eliminate toxins from the body. This includes breaking down drugs and environmental pollutants.

Metabolism of Sulphur-Containing Amino Acids: Molybdenum is involved in metabolizing sulphur-containing amino acids, which are important for various bodily functions, including protein synthesis and energy production.

Antioxidant Activity: By facilitating the breakdown of harmful compounds, molybdenum contributes to the body's antioxidant defences, helping to protect cells from oxidative stress.

Energy Production: Molybdenum plays a role in energy metabolism by assisting in enzymatic reactions that convert nutrients into usable energy.

DN

Recreation / Hair Harmony / Heart Harmony / Gastrointestinal System Harmony / Blood Harmony / Trace Elements / Alcohol Intake / Fatigue

Animal Sources

Organ Meats: Beef Liver: Contains about 104 mcg per 3 ounces (231% of the Daily Value).

Dairy Products: Low-Fat Yogurt: Provides around 26 mcg per cup (58% of the Daily Value). Low-Fat Milk: Contains approximately 22 mcg per cup (49% of the Daily Value).

Cod Fish: Contains small amounts as well.

Plant Sources

Legumes: Black-Eyed Peas: Approximately 288 mcg of molybdenum per 1/2 cup cooked (640% of the Daily Value). Lima Beans: About 104 mcg per 1/2 cup cooked (231% of the Daily Value). Lentils: Approximately 150 mcg per 100 grams.

Whole Grains: Oats: About 95 mcg per 100 grams. Brown Rice: Contains around 60 mcg per 100 grams.

Vegetables: Baked Potato: About 16 mcg in one medium potato (36% of the Daily Value). Spinach: Contains approximately 45 mcg per 100 grams.

Nuts and Seeds: Almonds: Approximately 70 mcg per 100 grams. Peanuts: About 11 mcg per ounce (24% of the Daily Value).

Other Sources: Green Peas: Roughly 100 mcg per 100 grams.

MYRISTIC ACID

Myristic acid is common in facial cleansers because of its ability to wash away oils. It also helps keep skin hydrated and youthful in appearance, like most fatty acids. **Hair care:** The ingredient is a hair conditioning agent, so it keeps hair hydrated and healthy.

Animal Sources

Dairy Products: Butter: One of the richest sources, with about 8.3 g of myristic acid per 100 g. Cheese: Especially aged cheeses like Parmigiano, which contains approximately 3.4 g per 100 g.

Meat: Fatty Cuts of Beef and Pork: These meats contain myristic acid in smaller amounts. **Poultry:** Chicken and turkey also provide myristic acid.

Fish: Certain fish, such as eel and herring, contain myristic acid, though in smaller quantities compared to dairy and meat.

Plant Sources

Coconut Oil: Contains about 17 g of myristic acid per 100 g, making it one of the richest plant sources.

Palm Kernel Oil: Another significant source, with around 14 g of myristic acid per 100 g.

Nutmeg: Myristic acid was first discovered in nutmeg, which contains trimyristin (the triglyceride form) that is about 75% myristic acid.

OLEIC ACID

Lowers total cholesterol. Decreases blood pressure. Boosts mood and energy. Improves cognition. Anti-inflammatory properties. Improves response to insulin. May decrease obesity. Anti-aging benefits for your skin.

Animal Sources

Animal Fats: Lard (pork fat): Contains about 40% oleic acid. **Beef Tallow:** Also contains a notable amount of oleic acid.

Plant Sources

Olive Oil: One of the richest sources, containing about 77% oleic acid. **Peanut Oil:** Provides about 59% oleic acid. **Sunflower Oil:** High-oleic varieties can contain around 80% oleic acid.

Nuts and Seeds: Almonds: Contain about 31% oleic acid. Hazelnuts: Approximately 78% of their fat content is oleic acid.

Pistachios: Also a good source, with around 25% oleic acid.

Avocados: Avocados are rich in healthy fats, with oleic acid making up a significant portion of their fat content.

ORTHOSILICIC ACID

Sometimes referred to as soluble silica, orthosilicic acid is a dietary form of silicon, a mineral involved in the formation of collagen and bone. Orthosilicic acid is available in supplement form and is used to treat certain medical conditions and to boost hair and skin health.

Collagen Synthesis: Orthosilicic acid stimulates the production of collagen, a vital protein that provides structure and strength to connective tissues, including skin, tendons, ligaments, and cartilage. Enhanced collagen synthesis supports skin elasticity and overall skin health, potentially reducing signs of aging such as wrinkles.

Bone Health: It is involved in bone mineralization and the maintenance of bone density. Research indicates that orthosilicic acid contributes to the deposition of calcium and phosphate in bone tissue, which is essential for strong and healthy bones. Supplementation has been linked to improved bone mineral density in individuals with osteoporosis.

Joint Health: Orthosilicic acid may help increase collagen concentration in cartilage, supporting joint health and potentially reducing the risk of joint-related issues as one ages.

Skin, Hair, and Nail Integrity: The compound plays a role in maintaining the structural integrity of skin, hair, and nails. It has been shown to improve hair strength and quality while reducing nail brittleness.

Cardiovascular Health: Some studies suggest that orthosilicic acid may contribute to cardiovascular health by promoting arterial elasticity and potentially lowering blood pressure. It has been associated with reduced atherosclerosis risk due to its presence in connective tissues like the aorta.

Detoxification: Orthosilicic acid may aid in detoxifying aluminium from the body, which is significant given aluminium's potential neurotoxic effects linked to conditions like Alzheimer's disease. It appears to reduce the bioavailability of aluminium, helping to mitigate its accumulation in brain tissue.

Potential Immune Support: There is some evidence suggesting that silicon may play a role in supporting immune function, although more research is needed to fully understand this aspect.

Plant Sources

Whole Grains: Foods like oats, barley, and brown rice contain silica, which can convert to orthosilicic acid in the body.

Vegetables: Certain vegetables, particularly green leafy ones such as spinach and kale, are good sources of silica.

Fruits: Bananas: They contain silica in small amounts. Oranges: Citrus fruits also provide some silica.

Beverages: Mineral Water: Some mineral waters naturally contain orthosilicic acid, depending on their source. Beer: Certain types of beer, especially those brewed with barley, can be a source of orthosilicic acid due to the presence of silica in the grains used.

Herbs and Spices: Nettle: This herb is known to have a high silica content. Horsetail (Equisetum): Often used in herbal remedies, horsetail is rich in silica.

Other Sources: Soy Products: Foods like tofu and soy milk may contain small amounts of orthosilicic acid.

Root Vegetables: Some root vegetables, such as carrots and potatoes, also contribute to dietary silica intake

OMEGA-3 FATTY ACIDS

Reduces symptoms of depression and anxiety. Supports eye health and can reduce the risk of macular degeneration. Can promote brain health during pregnancy and early life. Supports heart health. Can reduce symptoms of ADHD in children. Can reduce symptoms of Metabolic Syndrome. Anti-inflammatory. Can fight autoimmune diseases, including type-1 diabetes, autoimmune diabetes, multiple sclerosis, lupus, rheumatoid arthritis, ulcerative colitis, Crohn's disease, and psoriasis. Can improve mental disorders. Can fight age-related mental decline and Alzheimer's disease. May help prevent cancer. Can reduce asthma in children. Can reduce fat in your liver. May improve bone and joint health. Can alleviate menstrual pain. May improve sleep. Supports healthy skin.

Animal Sources

Marine Sources (Rich in EPA and DHA) Fatty Fish: Salmon: One of the best sources, providing high levels of both EPA and DHA. Mackerel: Extremely rich in omega-3s. Sardines: Canned sardines are convenient and nutrient-dense. Anchovies: Small but packed with omega-3s. Herring: Another oily fish that is high in omega-3 content.

Fish Oil: Fish oil supplements provide concentrated doses of EPA and DHA. Caviar: Fish eggs are also a good source of omega-3 fatty acids.

Plant Sources (Rich in ALA)

Seeds: Flaxseeds: One of the richest sources of ALA; flaxseed oil is particularly high in this omega-3. Chia Seeds: High in fiber and ALA, making them a nutritious addition to diets. Hemp Seeds: Contain a good balance of omega-3 and omega-6 fatty acids.

Nuts: Walnuts: A great plant-based source of ALA.

Oils: Flaxseed Oil: Extremely high in ALA. Hempseed Oil: Contains a significant amount of ALA. Canola Oil: Provides a moderate amount of ALA.

Legumes: Some legumes, such as soybeans, also contain ALA.

Algal Oil: A vegetarian source of DHA derived from algae, suitable for those who do not consume fish.

OMEGA-6 FATTY ACIDS

May reduce symptoms of nerve pain in people with diabetic neuropathy. May reduce symptoms of Rheumatoid arthritis and assist with related joint pain. May reduce symptoms of ADHD. Reduces blood pressure and supports heart health. Supports bone health.

Animal Sources

Meat and Poultry: Poultry (such as chicken and turkey) contains omega-6 fatty acids, with higher amounts found in the

skin. Eggs also provide a moderate amount of omega-6, primarily in the yolk.

Plant Sources

Vegetable Oils: Soybean Oil: Contains about 50 grams of omega-6 per 100 grams. Corn Oil: Approximately 49 grams of omega-6 per 100 grams. Sunflower Oil: Around 34 grams of omega-6 per 100 grams. Safflower Oil: About 12.7 grams of omega-6 per tablespoon.

Nuts and Seeds: Walnuts: Provide about 37 grams of omega-6 per 100 grams. Pumpkin Seeds: Rich in omega-6, contributing significantly to dietary intake. Hemp Seeds: Contain around 22 grams of omega-6 per 100 grams. Sunflower Seeds: Approximately 34 grams of omega-6 per 100 grams.

Tofu and Soy Products: Tofu contains about 3 grams of omega-6 per half-cup serving, making it a good source for vegetarians.

Processed Foods: Many processed foods, including snacks, frozen pizzas, and fast food, are high in omega-6 due to the use of vegetable oils.

Incorporating these foods into your diet can help ensure adequate intake of omega-6 fatty acids, which are essential for various bodily functions. While they are important for health, it's crucial to maintain a balance between omega-6 and omega-3 fatty acids in the diet to support overall wellbeing .

PALMITIC ACID

Supports cellular functions. Helps to heal skin issues including rash, irritation and redness, dryness, and insect bites. Palmitoleic acid has been reported to have beneficial effects on insulin sensitivity, cholesterol metabolism, and hemostasis. It has been proposed that palmitoleic acid may prevent beta-cell apoptosis induced by glucose or saturated fatty acids.

Animal Sources

Dairy Products: Butter: Contains about 24% palmitic acid. Cheese: Particularly high in palmitic acid, with varying amounts depending on the type. Milk: Contains significant levels of palmitic acid.

Meat: Beef: Especially in fatty cuts, palmitic acid can make up about 26% of the fat content. Pork: Similar to beef, it contains a notable amount of palmitic acid. Chicken: Poultry also contributes to dietary intake.

Plant Sources

Oils: Palm Oil: The richest source, with about 44% of its total fat content being palmitic acid. Palm Kernel Oil: Contains around 8% palmitic acid. Coconut Oil: Approximately 8.4% of its fat is palmitic acid.

Other Oils: Soybean Oil: Contains about 11% palmitic acid. Sunflower Oil and Cottonseed Oil: Both contribute smaller amounts. Cocoa Butter: Contains around 25.8% palmitic acid, making it a significant source in chocolate products.

PHOSPHORUS

It plays an important role in how the body uses carbohydrates and fats. It is also needed for the body to make protein for the growth, maintenance, and repair of cells and tissues. Phosphorus also helps the body make ATP, a molecule the body uses to store energy. Phosphorus works with the B vitamins.

Bone and Teeth Health: Approximately 85% of the phosphorus in the body is found in bones and teeth, where it combines with calcium to form hydroxyapatite, the mineral complex that provides strength and structure to bones.

Energy Production: Phosphorus is a key component of adenosine triphosphate (ATP), the primary energy carrier in cells. It is crucial for energy transfer and storage, enabling the body to utilize carbohydrates, fats, and proteins effectively.

Cellular Function: Phosphorus is involved in the formation of cell membranes through phospholipids, which are essential for maintaining cell structure and function. It also plays a role in signalling pathways that regulate various cellular processes.

DNA and RNA Synthesis: As a component of nucleotides, phosphorus is essential for the synthesis of DNA and RNA, which are crucial for genetic information storage and transmission.

Acid-Base Balance: Phosphorus helps maintain the body's pH balance by acting as a buffer in blood and other bodily fluids, ensuring that metabolic processes occur optimally.

Muscle Function: It contributes to muscle contraction and relaxation, aiding in overall muscle function and recovery after exercise.

Kidney Function: Phosphorus plays a role in filtering waste products from the blood through the kidneys, helping to maintain proper fluid balance and electrolyte levels.

Nutrient Utilization: It assists in the metabolism of other nutrients, including carbohydrates and fats, enhancing their utilization by the body.

DN

Teeth Harmony / Heart Harmony / Muscle Harmony / Kidney Harmony / Age / Minerals / Alcohol Intake / Sports / Circulation / Rigidity

Animal Sources

Meat and Poultry: Chicken Breast: Approximately 190 mg of phosphorus per 3-ounce serving. Turkey: About 185 mg per 3-ounce serving. Pork Chop: Roughly 200 mg per 3-ounce serving. Beef (various cuts): Typically provides around 145-200 mg per 3-ounce serving.

Seafood: Salmon: Contains about 215 mg of phosphorus per 3-ounce serving. Tuna (canned): Approximately 130 mg per serving. Mahi Mahi: About 155 mg per 3-ounce serving. Shrimp: Roughly 120 mg per serving.

Dairy Products: Yogurt: Can contain around 300 mg of phosphorus per cup. Milk: Approximately 111-138 mg per half-cup. Cheese (e.g., Romano): About 215 mg per ounce.

Eggs: Contain about 95 mg of phosphorus in one large egg.

Plant Sources

Legumes: Lentils: Approximately 280 mg of phosphorus per cup cooked. Chickpeas: About 250 mg per cup cooked. Navy Beans: Roughly 250 mg per cup cooked.

Nuts and Seeds: Pumpkin Seeds: Approximately 675 mg of phosphorus per quarter-cup. Sunflower Seeds: About 395 mg per quarter-cup. Almonds: Roughly 210 mg per quarter-cup.

Whole Grains: Oats: Can provide around 140-175 mg of phosphorus per three-quarter cup cooked. Brown Rice: Contains about 60 mg per half-cup cooked. Quinoa: Approximately 110 mg per half-cup cooked.

Soy Products: (e.g., tofu): Varies but can provide around 20-30% of the Daily Value (DV) depending on the type.

POTASSIUM

Potassium is one of the most important minerals in the body. It helps regulate fluid balance, muscle contractions and nerve signals. What's more, a high-potassium diet may help reduce blood pressure and water retention, protect against stroke and prevent osteoporosis and kidney stones.

Fluid Balance: Potassium helps maintain normal fluid levels inside cells, which is crucial for overall hydration. It works in tandem with sodium to regulate fluid balance in the body, ensuring that cells maintain their shape and function properly.

Muscle Contraction: It is vital for muscle function, including the contraction and relaxation of muscles. Potassium ions facilitate the electrical impulses that trigger muscle contractions, making it essential for all types of muscle activity, including that of the heart.

Nerve Function: Potassium is crucial for transmitting nerve signals. The movement of potassium ions in and out of nerve cells generates electrical impulses, allowing for communication between the brain and other parts of the body.

Heart Health: Adequate potassium levels are necessary for maintaining a regular heartbeat. It helps regulate heart rhythm and can prevent arrhythmias (irregular heartbeats). Both low and high potassium levels can lead to serious heart issues.

Blood Pressure Regulation: A potassium-rich diet has been linked to lower blood pressure levels. Potassium helps counteract the effects of sodium, reducing tension in blood vessel walls and promoting healthy blood pressure.

Bone Health: Potassium may play a role in bone health by reducing calcium loss through urine, which can help prevent osteoporosis and support overall bone density.

Kidney Function: The kidneys help regulate potassium levels in the body by excreting excess amounts through urine. Proper potassium intake supports kidney function and helps prevent kidney stones by maintaining appropriate calcium levels in urine.

Acid-Base Balance: Potassium helps maintain acid-base balance in the body by acting as a buffer, which is important for metabolic processes.

DN

Brain Harmony / Heart Harmony / Gastrointestinal System Harmony / Kidney Harmony / Ear Harmony / Alkaline Powder / Liver Harmony / Minerals / Alcohol Intake / Lymphatic System Harmony / Fatigue / Sports / Regeneration / Children / Skin Harmony / Motion / Competition / Structure / Exertion / Circulation / Tissue Harmony / Exhaustion

Animal Sources

Fish and Meat: Salmon: Contains approximately 319 mg of potassium per three-ounce serving. Chicken Breast: Roughly 332 mg per three-ounce serving. Beef (various cuts): Typically provides around 224-320 mg per three-ounce serving.

Dairy Products: Yogurt: Contains about 260-435 mg per six-ounce serving. Milk: Approximately 350-380 mg per cup.

Plant Sources

Fruits: Bananas: Approximately 422 mg of potassium per medium banana. Oranges: About 240 mg per medium orange or 235 mg per half-cup of orange juice. Cantaloupe: Roughly 215 mg per half-cup. Honeydew Melon: Around 200 mg per half-cup. Prunes: About 305 mg in five prunes or 370 mg per half-cup of prune juice. Avocado: Approximately 245 mg per quarter avocado.

Vegetables: Potatoes: A medium baked potato with skin contains about 925 mg. Sweet Potatoes: Approximately 450 mg per medium baked sweet potato with skin. Spinach: About 420 mg per half-cup cooked. Mushrooms: Roughly 280 mg per half-cup cooked. Tomato Products: Tomato paste has about 670 mg per quarter-cup, while a medium raw tomato contains approximately 290 mg.

Legumes: Lentils: Approximately 365 mg per cup cooked. Kidney Beans: About 600 mg per cup cooked. Pinto Beans: Roughly 400 mg per half-cup cooked.

Nuts and Seeds: Sunflower Seeds: About 241 mg per quarter-cup. Peanuts: Roughly 210 mg in two tablespoons of peanut butter.

Grains: Brown Rice: Contains about 60 mg of potassium per half-cup cooked

SELENIUM

Selenium is a nutrient that plays a key role in maintaining thyroid hormone metabolism and DNA synthesis and protecting the body from oxidative damage and infection.

Antioxidant Defense: Selenium is a vital component of selenoproteins, including glutathione peroxidase and thioredoxin reductase, which have antioxidant properties. These enzymes help protect cells from oxidative damage caused by reactive oxygen species (ROS), reducing the risk of chronic diseases such as cancer and heart disease.

Thyroid Function: Selenium is crucial for the synthesis and metabolism of thyroid hormones. It helps convert the inactive thyroid hormone (T4) into its active form (T3). Adequate selenium levels are necessary for optimal thyroid function, and deficiency can lead to autoimmune thyroid conditions like Hashimoto's disease and Graves' disease.

DNA Synthesis and Repair: Selenium contributes to DNA synthesis and repair mechanisms, which are essential for maintaining genetic integrity and preventing mutations that could lead to cancer.

Immune Function: Selenium supports immune system function by enhancing the proliferation of immune cells and modulating inflammatory responses. It may improve the body's ability to fight infections and reduce inflammation.

Cognitive Health: The antioxidant properties of selenium may help protect against cognitive decline and neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease. Some studies suggest that adequate selenium intake

may support brain health.

Reproductive Health: Selenium plays a role in reproductive health, particularly in male fertility, where it is involved in sperm production and motility.

Potential Cancer Prevention: Some research indicates that selenium may have a protective effect against certain types of cancer due to its role in antioxidant defense and DNA repair. However, the evidence is mixed, and more research is needed to fully understand its effects.

DN

Hair Harmony / Nail Harmony / Kidney Harmony / Thyroid Harmony / Age / Liver Harmony / Trace Elements / Vegan / Alcohol Intake / Antioxidants / Hormonal system Harmony / Energy / Fatigue / Men / Regeneration / Children / Growth / Breath / Competition / Circulation / Lifestyle / Energetic / Tissue Harmony / Bioinformation / For Mature Women / Passion / Balance / Relief / Recreation / Rest

Animal Sources

Fish: Tuna: Approximately 92 mcg per 3-ounce serving, or about 167% of the DV. Halibut: Contains around 47 mcg per 3-ounce serving (85% DV). Sardines: About 45 mcg per 3-ounce can (82% DV).

Meat and Poultry: Roasted Ham: Approximately 42 mcg per 3-ounce serving (76% DV). Turkey: Contains about 31 mcg per 3-ounce serving (56% DV). Beef Liver: Provides around 28 mcg per 3-ounce serving (51% DV). Chicken: About 22 mcg per 3-ounce serving (40% DV).

Seafood: Shrimp: Contains about 40 mcg per 3-ounce serving (73% DV). Other seafood like oysters and mussels also provide significant amounts of selenium.

Dairy Products and Eggs: Cottage Cheese: Approximately 20 mcg per cup (36% DV). Eggs: One large egg provides about 15 mcg, or approximately 27% DV.

Plant Sources

Brazil Nuts: Brazil nuts are one of the richest sources of selenium, with about 544 mcg per ounce (6-8 nuts), providing 989% of the recommended daily value (DV).

Grains and Legumes: Brown Rice: About 19 mcg per cooked cup (35% DV). Some enriched pastas can contain around 37 mcg per cup.

Nuts and Seeds: Besides Brazil nuts, sunflower seeds also provide selenium, with about 41% DV in one ounce.

Tofu and Soy Products: Firm tofu contains around 43.8 mcg per cup (80% DV).

Baked Beans and Whole Wheat Bread: Baked beans provide approximately 13 mcg per cup, while whole wheat bread can contribute around 13-24% of the DV depending on the brand.

SODIUM

Sodium is an important nutrient for health. It plays a vital role in nerve and muscle function and helps your body maintain normal fluid balance.

Fluid Balance: Sodium helps regulate the balance of fluids in the body by controlling the amount of water retained or excreted. It works closely with potassium to maintain proper hydration levels and blood volume, which is vital for overall health and homeostasis.

Nerve Function: Sodium is critical for generating and transmitting electrical impulses in nerve cells. It facilitates communication between the brain and other parts of the body by allowing nerve signals to propagate effectively. This is essential for reflexes, muscle contractions, and overall nervous system function.

Muscle Contraction: Sodium plays a key role in muscle function, including the contraction and relaxation of muscles. It is involved in the excitation-contraction coupling process, which allows muscles to respond to nerve impulses and contract properly.

Blood Pressure Regulation: Sodium influences blood pressure by affecting blood volume. An increase in sodium intake

can lead to increased blood volume, which may raise blood pressure. Conversely, sodium balance is crucial for maintaining healthy blood pressure levels through mechanisms involving the kidneys and hormones like aldosterone

Nutrient Transport: Sodium helps transport nutrients into cells by creating concentration gradients across cell membranes. It facilitates the absorption of glucose, amino acids, and other essential compounds through sodium-dependent transport mechanisms

Acid-Base Balance: Sodium contributes to maintaining acid-base balance in the body. It acts as a buffer, helping to regulate pH levels in bodily fluids.

DN

Heart Harmony / Muscle Harmony / Kidney Harmony / Minerals / Sports / Motion / Competition / Structure / Exhaustion

Sources

Celtic sea salt, himalayan salt or pure sodium salt. Also in all processed foods but the form of sodium there is not healthy for our human body.

SULPHUR

Your body needs sulphur to build and fix your DNA and protect your cells from damage that can lead to serious diseases such as cancers. Sulphur also assists your body to metabolize food and contributes to the health of your skin, tendons, and ligaments.

Sulphur is a key component of amino acids, particularly methionine and cysteine, which are integral to protein synthesis. These sulphur-containing amino acids contribute to the structure and stability of proteins, including keratin in hair and collagen in connective tissues.

Antioxidant Function: Sulphur is involved in the production of glutathione, one of the body's most important antioxidants. Glutathione helps protect cells from oxidative stress and damage caused by free radicals, thereby supporting overall cellular health.

Detoxification: Sulphur plays a role in detoxifying harmful substances in the liver. It assists in the conjugation process, where toxins are made more water-soluble for easier excretion from the body.

Metabolism: Sulphur is involved in various metabolic processes, including the synthesis of coenzyme A, which is essential for fatty acid metabolism and energy production. It also plays a role in the regulation of gene expression and DNA repair.

Joint Health: Sulphur contributes to the formation of cartilage and connective tissues, which are crucial for joint health. It is often found in supplements like glucosamine sulfate and chondroitin sulfate that are used to support joint function.

Skin Health: Sulphur helps maintain skin elasticity and integrity by promoting collagen production. It is also used topically to treat various skin conditions, such as acne and psoriasis.

Cellular Signalling: Sulphur compounds are involved in cellular signalling pathways that regulate various physiological processes, including inflammation and immune responses.

DN

Age / Vegan / Fatigue / Psyche

Animal Sources

Meat: Beef, pork, and poultry (chicken and turkey) are excellent sources of sulphur, particularly due to their high content of the amino acids methionine and cysteine.

Fish and Seafood: Shellfish such as shrimp, crab, and lobster are rich in sulphur.

Eggs: Both the yolk and the white contain significant amounts of sulphur.

Dairy Products: Milk: Whole milk and other dairy products like yogurt and cheese provide sulphur.

Plant Sources

Cruciferous Vegetables: Broccoli: Contains a good amount of sulphur along with other beneficial compounds. Cauliflow-

er: Another cruciferous vegetable rich in sulphur. Brussels Sprouts: These also contribute to dietary sulphur intake. Allium Vegetables: Garlic: Known for its strong flavour and health benefits, garlic is high in sulphur compounds. Onions: Both yellow and red onions are rich in sulphur. Leeks and Shallots: These vegetables also provide substantial amounts of sulphur.

Legumes and Nuts: Chickpeas: A good source of sulphur along with protein. Lentils: Provide both protein and sulphur.

Nuts: Almonds and walnuts contain moderate amounts of sulphur.

Seeds: Sunflower Seeds: These seeds are another source of dietary sulphur.

Whole Grains: Whole grains like oats and brown rice can contribute to sulphur intake.

Fruits: While fruits generally contain less sulphur than vegetables or animal products, some dried fruits (like raisins) may have small amounts.

TIN

Tin fluoride seems to prevent bacteria from forming, which might prevent plaque and cavities. Tin compounds also seem to prevent the nerves around the teeth from being stimulated, which can prevent tooth sensitivity. People apply tin to the skin for bad breath, dental cavities, sensitive teeth, gingivitis, plaque, and hair loss.

Some organotin compounds have been studied for their antioxidant properties. For example, diorganotin complexes have shown potential in scavenging free radicals and exhibiting antioxidant activity, which may help protect cells from oxidative stress. However, these effects are primarily observed in specific compounds rather than elemental tin itself.

Industrial and Medical Applications: Tin compounds have been used in various industrial applications, including as stabilizers in plastics and as antifouling agents in marine paints. Some organotin compounds are being researched for their potential use in pharmaceuticals due to their biological activity.

Non-Essential Trace Element: While tin is present in trace amounts in some foods, it is not classified as an essential nutrient for humans. The body does not require tin for metabolic processes, and its biological role remains largely unclear.

Toxicity Concerns: Certain organotin compounds can be toxic and have been associated with adverse health effects, including endocrine disruption and reproductive toxicity. Therefore, while tin may have some biological activity in specific forms, excessive exposure to certain tin compounds can be harmful.

Sources

Canned Foods: Canned Tomatoes and Tomato Products: These often contain high concentrations of tin due to the interaction with tin-lined cans. Concentrations can range significantly, with levels reported as high as 141-405 ppm in tomato juice. Canned Fruits: Pineapple, pears, and similar fruits also have elevated levels of tin, often due to the canning process.

Canned Vegetables: Many canned vegetables may contain tin, particularly if they are stored in unlacquered cans.

Fruit Juices: Fruit Punch and Other Juices: Some juices have been reported to contain significant levels of tin, particularly if they are stored in cans that may corrode. For example, fruit punch has been noted to have levels as high as 2,000 ppm under certain conditions.

Seafood: Certain seafood products can also contain tin, especially if they are canned or processed in tin containers.

Processed Foods: Foods that use tin-based preservatives or stabilizers may also have higher levels of tin.

Fresh and Frozen Foods: While fresh and frozen foods typically contain less than 1 mcg of tin per gram, they can still have trace amounts due to environmental exposure from soil or water.

VANADIUM

Vanadium is used for treating diabetes, low blood sugar, high cholesterol, heart disease, tuberculosis, syphilis, a form of "tired blood" (anaemia), and water retention (edema); for improving athletic performance in weight training; and for preventing cancer.

Insulin Mimetic Activity: Vanadium compounds, particularly vanadyl sulfate, have been studied for their insulin-mimicking properties. They may enhance insulin sensitivity and glucose uptake in cells, suggesting potential benefits for managing

diabetes and metabolic disorders.

Antioxidant Properties: Vanadium has been shown to influence oxidative stress within cells. While some studies indicate that vanadium can promote the generation of reactive oxygen species (ROS), leading to oxidative damage, other research points to its potential protective effects by enhancing antioxidant defences, such as increasing glutathione levels

Cellular Signalling: Vanadium may play a role in cellular signalling pathways that regulate various physiological processes. It interacts with enzymes and can influence metabolic pathways, including those related to lipid metabolism and energy production.

Potential Anticancer Effects: Some vanadium compounds have demonstrated anticancer properties in laboratory studies. They may induce apoptosis (programmed cell death) in cancer cells and inhibit tumour growth, although more research is needed to establish their efficacy and safety in clinical settings.

Impact on Lipid Peroxidation: Vanadium can initiate lipid peroxidation through its reactivity with cellular components, which may lead to cellular damage. However, it may also have protective effects against lipid peroxidation under certain conditions, highlighting its complex role in oxidative stress.

Neuroprotective Effects: Preliminary studies suggest that vanadium may have neuroprotective effects, potentially influencing neurodegenerative processes. However, the mechanisms are not fully understood, and further research is required to clarify these effects.

DN

Sports / Comfort / Teeth Harmony / Trace Elements

Animal Sources

Shellfish: Seafood, particularly shellfish like shrimp and lobster, contains notable levels of vanadium.

Plant Sources

Mushrooms: Mushrooms are one of the richest sources of vanadium, with significant concentrations found in varieties such as shiitake and portobello.

Grains and Cereals: Whole grains, including oats and barley, are good sources. For example, grains can contain around 1-14.7 µg/100 g depending on the type.

Vegetables: Many vegetables provide vanadium, including green beans, carrots, cabbage, garlic, tomatoes, radishes, and onions. They typically contain around 0.6 µg/100 g.

Legumes: Beans and lentils also contribute vanadium to the diet, with levels varying by type.

Fruits: Some fruits contain vanadium, though generally in lower amounts compared to other food groups.

Spices and Herbs: Black pepper, parsley, dill weed, and other herbs are known to have higher concentrations of vanadium.

Beverages: Beer and wine have been noted as sources of vanadium due to their ingredients and fermentation processes.

VITAMIN D2 (ERGOCALCIFEROL)

Vitamin D (D2) comes from plant sources, such as wild mushrooms, as well as fortified foods, such as milk or cereal products. Vitamin D2 as a prescription is used to treat hypoparathyroidism (decreased thyroid hormone secretion), vitamin D resistant rickets, and hypophosphatemia (low levels of phosphorus in the blood).

Calcium and Phosphorus Absorption: Vitamin D2 is crucial for the absorption of calcium and phosphorus from the diet. It enhances intestinal absorption of these minerals, which are essential for maintaining healthy bones and teeth.

Bone Health: By promoting calcium and phosphorus absorption, vitamin D2 helps in the mineralization of bone. It plays a significant role in preventing conditions such as rickets in children and osteomalacia in adults, both of which are characterised by weak or soft bones.

Regulation of Serum Calcium Levels: Vitamin D2 helps maintain proper serum calcium levels by facilitating the mobilization of calcium from bones into the bloodstream when needed. This regulation is critical for various physiological functions, including muscle contraction and nerve transmission.

Hormonal Regulation: Ergocalciferol influences the parathyroid hormone (PTH) levels, which regulates calcium homeostasis in the body. When vitamin D levels are adequate, PTH secretion is balanced, helping to maintain stable calcium levels.

Immune Function: Vitamin D2 has been shown to play a role in modulating the immune system. It may enhance the pathogen-fighting effects of monocytes and macrophages—white blood cells that are important for immune defense.

Cell Growth and Differentiation: Vitamin D2 is involved in cellular growth and differentiation processes. It influences gene expression related to cell proliferation and apoptosis (programmed cell death), which can have implications for cancer prevention.

Potential Effects on Mood: Some studies suggest that adequate levels of vitamin D, including D2, may have a positive effect on mood and could help reduce the risk of depression.

Support During Pregnancy: Adequate vitamin D levels during pregnancy are important for fetal development, particularly for bone health and immune function.

DN

Kidney Harmony / Age / Weight / Liver Harmony / Vegan / Vitamin Intake / Alcohol Intake / Hormonal system Harmony / Sensitivities / Sports / Men / Women / Children / Breath / Activation / Exertion / Circulation / Rigidity / Lifestyle / Energetic / Tissue Harmony / Comfort / For Mature Women / Passion / Balance / Relief / Recreation / Rest / Teeth Harmony

Plant Sources

Mushrooms: UV-exposed Mushrooms: Certain mushrooms, especially those exposed to ultraviolet (UV) light, can be significant sources of vitamin D2. For example: Portobello Mushrooms: When exposed to UV light, they can provide up to 446 IU (11.2 mcg) per 100 grams. Shiitake Mushrooms: Raw shiitake mushrooms contain about 0.4 mcg of vitamin D2 per 100 grams, while dried shiitake can provide around 3.9 mcg.

Yeast: Certain types of yeast can also contain ergocalciferol, particularly when exposed to UV light.

Lichen: Some lichen species can produce vitamin D2 and may be used in supplements or as a source in various products.

VITAMIN D3 (CHOLECALCIFEROL)

Vitamin D3 mainly comes from animal sources such as fish oil, fatty fish, liver, and egg yolks. When your skin is exposed to sunlight, it produces vitamin D3. It is known to help strengthen bones and muscles, boost immunity, increase mood, aid in weight loss, and improve heart function. A fat-soluble vitamin that helps your body absorb calcium and phosphorus for strong bones and treat and prevent bone disorders (such as rickets, osteomalacia). Vitamin D with calcium is used to treat or prevent bone loss (osteoporosis).

Calcium Absorption: Vitamin D3 is essential for the absorption of calcium from the gastrointestinal tract. It enhances the efficiency of calcium absorption, which is crucial for maintaining healthy bones and teeth. Without adequate vitamin D3, the body cannot effectively utilize calcium, leading to weakened bones and conditions such as osteoporosis and osteomalacia.

Bone Health: By promoting calcium absorption, vitamin D3 helps maintain bone density and strength. It works alongside calcium to support bone mineralization, reducing the risk of fractures, particularly in older adults. Adequate levels of vitamin D3 are necessary for preventing rickets in children and osteomalacia in adults.

Muscle Function: Vitamin D3 is important for muscle function and strength. Studies have shown that sufficient vitamin D levels can improve muscle performance and reduce the risk of falls in older adults by enhancing muscle strength.

Immune System Support: Vitamin D3 plays a role in modulating the immune system. It helps activate immune cells such as T-cells and macrophages, which are critical for fighting infections and reducing inflammation. This immunoregulatory function may help lower the risk of autoimmune diseases and infections.

Hormonal Regulation: Vitamin D3 acts like a hormone in the body, influencing various physiological processes. It regulates parathyroid hormone levels, which are involved in calcium homeostasis. This regulation is essential for maintaining stable calcium levels in the blood.

Potential Anti-Cancer Effects: Some research suggests that vitamin D3 may have protective effects against certain cancers by regulating cell growth and differentiation. Higher levels of vitamin D have been associated with a lower risk of cancers such as colorectal, prostate, and breast cancer.

Cardiovascular Health: There is evidence to suggest that adequate vitamin D levels may contribute to cardiovascular health by influencing blood pressure regulation and reducing inflammation.

Mood Regulation: Vitamin D3 may play a role in mood regulation and mental health. Some studies have linked low levels of vitamin D to an increased risk of depression and cognitive decline.

Plant Sources

Fatty Fish: Salmon: A 3-ounce serving of cooked salmon can provide over 570 IU (approximately 71% of the Daily Value).

Mackerel: About 360 IU per 3-ounce serving. **Sardines:** One can (about 3.75 ounces) contains approximately 200 IU.

Fish Liver Oils: Cod Liver Oil: A single tablespoon can provide about 1,360 IU, making it one of the richest sources of vitamin D3.

Eggs: Egg Yolks: One large egg contains about 41 IU of vitamin D3.

Beef Liver: A 3-ounce serving of beef liver can provide approximately 42 IU of vitamin D3.

Cheese: Certain types of cheese contain small amounts of vitamin D3, usually around 6-10 IU per ounce.

Mushrooms: While most mushrooms contain vitamin D2, some varieties exposed to UV light can also provide vitamin D3. For example, UV-exposed shiitake mushrooms can have significant levels of both forms.

VITAMIN E (TOCOPHEROL)

Vitamin E is key for strong immunity and healthy skin and eyes. In recent years, vitamin E supplements have become popular as antioxidants for the immune system.

Antioxidant Protection: Vitamin E acts as a powerful antioxidant, protecting cells from oxidative damage caused by free radicals. Free radicals are unstable molecules that can harm cells and are linked to various chronic diseases, including heart disease and cancer. By neutralizing these free radicals, vitamin E helps reduce oxidative stress and cellular damage.

Immune Function: It plays a crucial role in supporting the immune system. Vitamin E enhances the function of immune cells, helping the body defend against infections by strengthening the immune response to viruses and bacteria.

Cell Signalling and Regulation: Vitamin E is involved in cellular signalling processes and helps regulate gene expression. It influences various metabolic processes, including those related to cell proliferation and differentiation.

Formation of Red Blood Cells: Vitamin E contributes to the formation of red blood cells and helps maintain their integrity. It prevents oxidative damage to red blood cells, which is essential for their proper function.

Cardiovascular Health: By preventing the oxidation of low-density lipoprotein (LDL) cholesterol, vitamin E may help reduce the risk of atherosclerosis (the buildup of plaques in arteries). This action can contribute to overall cardiovascular health by promoting healthy blood circulation and reducing the risk of heart disease.

Skin Health: Vitamin E is often used in skincare products due to its antioxidant properties, which help protect skin cells from UV damage and promote skin healing. It may also improve skin hydration and elasticity.

Neurological Function: There is evidence suggesting that adequate vitamin E levels may play a role in cognitive health and may help reduce the risk of neurodegenerative diseases such as Alzheimer's disease. However, research findings on this topic are mixed.

Potential Anti-Inflammatory Effects: Vitamin E may have anti-inflammatory properties that can help mitigate chronic inflammation, which is associated with various health conditions, including heart disease and arthritis.

DN

Ear Harmony / Weight / Liver Harmony / Vitamin Intake / Alcohol Intake / Antioxidants / Lymphatic System Harmony / For Women / Hormonal system Harmony / Libido / Men / Regeneration / Women / Children / Skin Harmony / Breath / Motion / Competition / Rigidity / Lifestyle / Bioinformation / Comfort / For Mature Women / Balance / Relief / Teeth Harmony

Plant Sources

Nuts and Seeds: Almonds: One ounce (about 23 nuts) contains approximately 7.3 mg of vitamin E. Sunflower Seeds: One ounce provides about 7.4 mg. Hazelnuts: Approximately 4.3 mg per ounce. Pine Nuts: About 3 mg per two tablespoons. Fruits: Avocado: Half an avocado contains about 2 mg of vitamin E. Kiwi and Mangoes: These fruits also provide smaller amounts of vitamin E.

Vegetables: Spinach: Cooked spinach offers about 2 mg per half-cup. Broccoli: Contains approximately 1 mg per half-cup cooked. Red Bell Peppers: A medium raw pepper provides around 2 mg.

VITAMIN K1 (PHYLLOQUINONE)

K1 is mostly found in plant foods like leafy green vegetables. It makes up about 75–90% of all vitamin K consumed by humans. Is mainly used for clotting and blood disorders and strengthening brittle bones.

Blood Clotting: Vitamin K1 is essential for the synthesis of certain proteins required for blood coagulation. It acts as a cofactor for the enzyme gamma-carboxylase, which modifies specific proteins (such as prothrombin and other clotting factors II, VII, IX, and X) by adding carboxylic acid groups. This modification allows these proteins to bind calcium ions, which is crucial for their activation and function in the clotting process. Without sufficient vitamin K1, the body cannot effectively form blood clots, leading to increased risk of uncontrolled bleeding.

Bone Health: Vitamin K1 contributes to bone metabolism by aiding in the synthesis of osteocalcin, a protein that helps bind calcium to the bone matrix. Adequate levels of vitamin K1 are associated with improved bone density and reduced risk of fractures. This role is particularly important for maintaining skeletal health throughout life.

Cardiovascular Health: By regulating calcium metabolism in the body, vitamin K1 helps prevent arterial calcification. It promotes the carboxylation of matrix Gla-proteins (MGP), which inhibit vascular calcification and maintain cardiovascular health.

Insufficient vitamin K can lead to increased calcification of arteries, contributing to cardiovascular disease

Cellular Functions: Vitamin K1 is involved in various cellular processes beyond coagulation and bone health. It plays a role in cell signalling and regulation of gene expression, influencing cellular growth and differentiation.

Potential Role in Osteoarthritis: There is ongoing research into the potential benefits of vitamin K1 in joint health, particularly regarding its effects on osteoarthritis by influencing cartilage metabolism and inhibiting calcification within joints.

DN

Age / Blood Harmony / Liver Harmony / Vitamin Intake / Women / Energetic / Comfort / For Mature Women / Teeth Harmony

Plant Sources

Leafy Green Vegetables: Kale: Approximately 1,062 mcg of vitamin K1 per cooked cup. Collard Greens: Around 1,059 mcg per cooked cup. Spinach: About 889 mcg per cooked cup. Turnip Greens: Approximately 529 mcg per cooked cup. Swiss Chard: Contains about 572 mcg per cooked cup.

Cruciferous Vegetables: Broccoli: About 220 mcg per cooked cup. Brussels Sprouts: Approximately 218 mcg per cooked cup.

Herbs and Other Greens: Parsley: Contains about 1,200 mcg per 100 grams when fresh. Basil and Cilantro: Also good sources, with varying amounts depending on freshness.

Vegetable Oils: Soybean Oil: Roughly 180 mcg per tablespoon. Olive Oil: Contains approximately 55 mcg per tablespoon.

Fruits and Nuts: Fruits generally contain less vitamin K1 than vegetables but still contribute to intake. For example: Blackberries: About 20 mcg per half-cup. Figs (dried): Approximately 16 mcg for five pieces.

Legumes and Nuts: Certain legumes and nuts provide moderate amounts of vitamin K1, such as: Pine Nuts: About 54 mcg per ounce.

VITAMIN K2 MENAQUINONE)

All K vitamins are needed for proper blood coagulation, whereas vitamin K2 — and not K1 — is essential to build and

maintain strong bones, as well as to avoid calcium deposits in the arteries and blood vessels. K2 is found in fermented foods and animal products, and is also produced by gut bacteria.

Bone Health: Vitamin K2 is crucial for bone metabolism. It activates osteocalcin, a protein that binds calcium to the bone matrix, thereby enhancing bone mineralization and strength. Adequate levels of vitamin K2 are associated with improved bone density and a reduced risk of fractures, particularly in postmenopausal women and older adults.

Cardiovascular Health: Vitamin K2 helps prevent arterial calcification by activating matrix Gla-protein (MGP), which inhibits the deposition of calcium in blood vessels. This function is vital for maintaining cardiovascular health and reducing the risk of heart disease. Studies have shown that higher intakes of vitamin K2 are linked to a lower risk of cardiovascular diseases.

Activation of Vitamin K-Dependent Proteins: Vitamin K2 serves as a cofactor for the enzyme gamma-carboxylase, which is necessary for the carboxylation of vitamin K-dependent proteins (VKDPs). This process is essential for their activation, allowing them to bind calcium effectively. These proteins include those involved in coagulation (such as prothrombin) and bone metabolism (such as osteocalcin).

Anti-Inflammatory Effects: Vitamin K2 has been shown to suppress pro-inflammatory mediators, which may help reduce inflammation in the body. This property can be beneficial in managing chronic inflammatory conditions.

Potential Cancer Protection: Emerging research suggests that vitamin K2 may have protective effects against certain types of cancer. It may inhibit tumour growth and suppress genetic processes that lead to cancer development.

Neurological Health: Vitamin K2's ability to cross the blood-brain barrier suggests it may play a role in brain health and cognitive function, although more research is needed to fully understand this relationship.

Insulin Sensitivity and Blood Sugar Regulation: Some studies indicate that vitamin K2 may improve insulin sensitivity and help regulate blood sugar levels, which could be beneficial for individuals with diabetes or metabolic syndrome.

Animal Sources

Animal Products: Chicken Liver: Provides around 14.1 mcg per 100 grams.

Egg Yolks: The amount can vary, but they typically contain between 67 to 192 mcg, depending on the hen's diet.

Beef Liver: Contains about 11 mcg per 100 grams.

Fish: Certain fish, such as eel, can be a good source of vitamin K2, providing around 63 mcg per 100 grams.

Plant Sources

Natto: Natto is the richest source of vitamin K2, containing about 1000 mcg per 100 grams. This traditional Japanese dish is made from fermented soybeans and is highly regarded for its health benefits.

Fermented Cheeses: Gouda Cheese: Contains approximately 73 mcg per 100 grams. Edam Cheese: About 32 mcg per 100 grams. Brie and Camembert: These cheeses also provide significant amounts of vitamin K2, with varying levels depending on the aging process.

Fermented Foods: Sauerkraut: Contains about 2.75 mcg per half-cup. The fermentation process increases its vitamin K2 content. Other fermented vegetables may also provide small amounts of vitamin K2.

VITAMIN A (RETINOL)

A nutrient important to vision, growth, cell division, reproduction and immunity. Vitamin A also has antioxidant properties. Antioxidants are substances that might protect your cells against the effects of free radicals — molecules produced when your body breaks down food or is exposed to tobacco smoke and radiation.

Vision: Vitamin A is essential for maintaining good vision, particularly in low-light conditions. It is a key component of rhodopsin, a light-sensitive protein in the retina that enables the eye to detect light and colour. A deficiency can lead to night blindness and other vision problems, including xerophthalmia, which can cause irreversible damage to the cornea.

Immune Function: Vitamin A supports the immune system by promoting the growth and differentiation of T cells and B cells, which are crucial for the body's defense against infections. Adequate levels help maintain the integrity of mucosal

surfaces in the respiratory and gastrointestinal tracts, acting as a barrier against pathogens.

Cell Growth and Differentiation: It plays a vital role in cellular communication and differentiation, which is crucial for normal growth and development. This includes the formation and maintenance of various tissues such as skin, lungs, heart, and other organs.

Reproductive Health: Vitamin A is important for both male and female reproductive health. It contributes to sperm production in males and is essential for fetal development during pregnancy.

Skin Health: It helps maintain healthy skin by supporting cell turnover and repair processes. Vitamin A derivatives are often used in dermatological treatments for conditions like acne and psoriasis.

Antioxidant Properties: Provitamin A carotenoids, such as beta-carotene found in plant foods, act as antioxidants that protect cells from oxidative stress caused by free radicals. This may help reduce the risk of chronic diseases.

Bone Health: Vitamin A is involved in bone remodeling and growth, contributing to overall bone health.

DN

Age / Liver Harmony / Vegan / Vitamin B Complex / Vitamin Intake / Antioxidants / Birth / Libido/ Eyesight/ Women/ Children/ Growth/ Breath/ Motion/ Circulation / Energetic / Bioinformation / Teeth Harmony

Animal Sources

Liver: One of the richest sources, providing about 7,740 mcg of retinol per 100 grams for beef liver and even higher amounts for lamb liver and liver sausage.

Fish: Oily fish such as salmon and mackerel provide significant amounts of vitamin A.

Eggs: The yolk contains approximately 270 mcg of retinol per large egg.

Dairy Products: Whole milk and cheese are good sources, with whole milk containing about 78 mcg per cup.

Plant Sources

Carrots: Rich in beta-carotene, providing about 1,192 mcg RAE (retinol activity equivalents) per cup when cooked.

Potatoes: Approximately 1,920 mcg RAE per baked cup. **Spinach and Kale:** Cooked spinach offers around 172 mcg RAE per cup, while kale provides about 500 mcg RAE.

Fruits: **Mangoes:** About 89 mcg RAE per cup. **Cantaloupe:** Contains around 270 mcg RAE per cup. **Apricots:** Two apricots provide approximately 67 mcg RAE.

Other Sources: Other yellow and orange fruits and vegetables (like pumpkin and butternut squash) are also excellent sources of carotenoids.

VITAMIN B1 (THIAMINE)

Vitamin B1, or thiamin, helps prevent complications in the nervous system, brain, muscles, heart, stomach, and intestines. It is also involved in the flow of electrolytes into and out of muscle and nerve cells. It helps prevent diseases such as beriberi, which involves disorders of the heart, nerves, and digestive system.

Energy Metabolism: Thiamine is crucial for converting carbohydrates into energy. It acts as a coenzyme in the metabolism of glucose and is involved in the conversion of pyruvate to acetyl-CoA, which is a key step in energy production through the Krebs cycle. This process is vital for generating adenosine triphosphate (ATP), the primary energy currency of cells.

Nervous System Function: Thiamine supports the health of the nervous system by facilitating nerve signal transmission. It plays a role in synthesizing neurotransmitters, which are essential for communication between nerve cells. Adequate thiamine levels are necessary for proper brain function and cognitive health.

Muscle Function: Thiamine is important for muscle contraction and overall muscle health. It helps regulate the flow of electrolytes into and out of muscle and nerve cells, which is crucial for muscle responsiveness and coordination.

Cardiovascular Health: Thiamine is essential for maintaining heart health. A deficiency can lead to cardiovascular issues, including a condition known as wet beriberi, which is characterized by swelling, difficulty breathing, and heart failure due to fluid accumulation.

Role in Metabolism of Amino Acids: Thiamine is involved in the metabolism of certain amino acids and plays a role in the synthesis of lipid molecules, contributing to overall metabolic balance.

Cognitive Function: Adequate levels of thiamine are associated with cognitive function and may help prevent conditions like WernickeKorsakoff syndrome, which can occur due to severe thiamine deficiency, often linked to chronic alcoholism.

DN

Age / Liver Harmony / Vegan / Vitamin B Complex / Vitamin Intake / Alcohol Intake / Antioxidants / Hormonal system Harmony / Energy / Fatigue / Sports / Men / Regeneration / Women / Children / Psyche / Growth / Skin Harmony / Breath / Motion / Activation / Exertion / Circulation / Rigidity / Lifestyle / Energetic / Tissue Harmony / Bioinformation / Exhaustion / For Mature Women / Passion / Balance / Relief / Joy of Life / Recreation / Rest / Teeth Harmony / Brain Harmony / Hair Harmony / Head Harmony / Gastrointestinal System Harmony / Nerve Harmony / Kidney Harmony

Animal Sources

Pork and Other Meats: Pork: Particularly high in thiamine, with about 1.1 mg of thiamine per 6-ounce serving (approximately 96% of the Daily Value). Beef: Contains moderate amounts of thiamine. Organ Meats: Such as liver, are also good sources.

Fish: Salmon: Approximately 0.6 mg per 6-ounce fillet (about 48% of the Daily Value). Tuna and Trout: Also provide significant amounts of thiamine.

Dairy Products and Eggs: While not particularly high in thiamine, they contribute to overall intake when consumed in larger quantities.

Plant Sources

Legumes: Navy Beans: About 0.4 mg per cup cooked (36% of the Daily Value). Black Beans and Lentils: Provide similar amounts of thiamine.

Whole Grains: Brown Rice: Contains around 0.4 mg per cup cooked (30% of the Daily Value). Whole Wheat Bread: Approximately 21% of the Daily Value in two slices.

Nuts and Seeds: Flaxseeds: About 0.5 mg per ounce (39% of the Daily Value). Sunflower Seeds and Macadamia Nuts: Also good sources.

Vegetables: Green Peas: Approximately 0.4 mg per cup cooked (35% of the Daily Value). Acorn Squash and Asparagus: Contain moderate amounts of thiamine.

Fruits: Some fruits, such as bananas and oranges, contain small amounts of thiamine.

VITAMIN B2 (RIBOFLAVIN)

Vitamin B2 helps break down proteins, fats, and carbohydrates. It plays a vital role in maintaining the body's energy supply. Riboflavin helps convert carbohydrates into adenosine triphosphate (ATP). The human body produces ATP from food, and ATP produces energy as the body requires it.

Energy Metabolism: Riboflavin is essential for the formation of two major coenzymes: flavin mononucleotide (FMN) and flavin adenine dinucleotide (FAD). These coenzymes are crucial for energy production, as they facilitate the metabolism of carbohydrates, fats, and proteins into adenosine triphosphate (ATP), the primary energy carrier in cells. This process is vital for maintaining energy levels and supporting various cellular functions.

Cellular Function and Growth: Riboflavin supports normal cellular function and growth. It plays a role in the synthesis of red blood cells and helps maintain healthy skin, eyes, and nerve functions. Adequate riboflavin levels are necessary for overall growth and development.

Antioxidant Activity: Riboflavin contributes to antioxidant defences by helping to maintain normal levels of homocysteine, an amino acid linked to cardiovascular health. High homocysteine levels can increase the risk of heart disease, so riboflavin's role in its metabolism is important for cardiovascular health.

Metabolism of Other Vitamins: Riboflavin is involved in the metabolism of other B vitamins. For example, it aids in

converting tryptophan into niacin (vitamin B3) and is necessary for converting vitamin B6 into its active form, pyridoxal 5'-phosphate.

Vision Health: There is evidence suggesting that riboflavin may help prevent cataracts and protect against other vision problems by maintaining healthy eye tissues. Deficiency in riboflavin can lead to increased risk of cataract development.

Migraine Prevention: Some studies have indicated that riboflavin supplementation may reduce the frequency and severity of migraine headaches, possibly due to its role in mitochondrial function and energy production.

Weight / Liver Harmony / Vegan / Vitamin B Complex / Vitamin Intake / Alcohol Intake / Antioxidants / Energy / Fatigue / Sports / Men / Women / Children / Motion / Activation / Energetic / Bioinformation / Exhaustion / For Mature Women / Relief / Recreation / Brain Harmony / Hair Harmony / Head Harmony / Nail Harmony / Kidney Harmony

Animal Sources

Dairy Products: Milk: A good source, providing about 0.9 mg per 16-ounce glass (approximately 69% of the Daily Value).

Yogurt: Contains around 0.5 mg per cup. **Cheese:** Various types provide riboflavin, with hard cheeses generally having higher amounts.

Meat and Poultry: Lean Beef: Particularly skirt steak, which contains about 1.5 mg per 6-ounce serving (112% of the Daily Value). Pork: Lean cuts like pork chops provide around 0.5 mg per 6-ounce serving. **Organ Meats:** Beef liver is especially high in riboflavin.

Fish: Salmon: Approximately 0.8 mg per 6-ounce fillet.

Other fish such as tuna and trout also contain significant amounts.

Eggs: One large egg provides about 0.3 mg of riboflavin (20% of the Daily Value).

Plant Sources

Nuts and Seeds: Almonds: About 0.3 mg per ounce (25% of the Daily Value). Other nuts also contribute to riboflavin intake.

Legumes and Vegetables: Spinach: Contains approximately 0.4 mg per cup cooked (33% of the Daily Value). Other green leafy vegetables, such as beet greens and asparagus, also provide riboflavin.

VITAMIN B3 (NICOTINIC ACID)

Every part of your body needs it to function properly. As a supplement, niacin may help lower cholesterol, ease arthritis, and boost brain function, among other benefits.

Energy Production: Niacin is crucial for converting food into energy. It serves as a precursor to two important coenzymes: nicotinamide adenine dinucleotide (NAD) and nicotinamide adenine dinucleotide phosphate (NADP). These coenzymes are involved in over 400 biochemical reactions, primarily related to energy metabolism, including the breakdown of carbohydrates, fats, and proteins into usable energy (ATP).

Cholesterol Regulation: Niacin has been shown to improve blood lipid profiles by increasing high-density lipoprotein (HDL) cholesterol (the "good" cholesterol) and lowering low-density lipoprotein (LDL) cholesterol (the "bad" cholesterol) and triglycerides. This effect can contribute to a reduced risk of cardiovascular diseases.

DNA Repair and Synthesis: Niacin is involved in the synthesis and repair of DNA. The NAD coenzyme plays a role in cellular signalling and helps maintain genomic stability, which is vital for preventing mutations that could lead to cancer.

Antioxidant Effects: Niacin exhibits antioxidant properties, helping to protect cells from oxidative stress caused by free radicals. This protective role may contribute to overall health and the prevention of chronic diseases.

Skin Health: Niacin can improve skin health by enhancing the skin's barrier function, reducing inflammation, and protecting against sun damage. Topical forms of niacin have been studied for their potential benefits in treating conditions like acne and rosacea.

Nervous System Function: Adequate niacin levels are important for maintaining healthy nervous system function. Deficiency can lead to neurological symptoms, including cognitive impairment and psychiatric disorders.

Circulation and Inflammation: Niacin helps improve circulation by promoting vasodilation (widening of blood vessels)

through the release of prostaglandins. It has also been shown to suppress inflammation, which can be beneficial for various inflammatory conditions.

DN

Vitamin B Complex / Vitamin Intake / Alcohol Intake / Sensitivities / Sports / Psyche / Sleep / Lifestyle / Energetic / Exhaustion / Relief / Joy of Life / Recreation / Rest / Nerve Harmony / Ear Harmony

Animal Sources

Beef: Beef Liver: One of the richest sources, providing about 14.9 mg of niacin per 3-ounce serving. Chicken Liver: Contains approximately 9.3 mg per 3-ounce serving. Pork: Offers around 6.3 mg per 3-ounce serving.

Poultry: Chicken Breast: A skinless, cooked 3-ounce serving provides about 10.3 mg of niacin. Turkey Breast: Contains about 10.0 mg per 3-ounce serving.

Fish: Salmon: Approximately 8.6 mg per 3-ounce serving. Tuna: Offers around 8.4 mg per 3-ounce serving. Anchovies: Provide about 1 mg per fish.

Meat: Ground Beef: A 3-ounce serving of 90% lean ground beef contains about 5.8 mg of niacin.

Plant Sources

Legumes and Nuts: Peanuts: A great vegetarian source, with about 4.2 mg per ounce (approximately two tablespoons of peanut butter). Sunflower Seeds: Also contain significant amounts of niacin.

Whole Grains: Whole grains like brown rice provide around 5.2 mg per cooked cup.

Vegetables and Fruits: While generally lower in niacin compared to animal products, certain vegetables like avocados contain about 2.6 mg of niacin per whole avocado.

VITAMIN B5 (PANTOTHENIC ACID)

Is one of the most important vitamins for human life. It's necessary for making blood cells, and it helps you convert the food you eat into energy. Vitamin B5 is one of eight B vitamins. All B vitamins help you convert the protein, carbohydrates, and fats you eat into energy.

Energy Metabolism: Pantothenic acid is crucial for the synthesis of coenzyme A (CoA), which is essential for fatty acid metabolism. It helps convert carbohydrates, fats, and proteins from food into energy. CoA is involved in the Krebs cycle, which produces ATP, the energy currency of cells.

Synthesis of Hormones: Vitamin B5 plays a role in the synthesis of steroid hormones produced by the adrenal glands, including cortisol and other stress-related hormones. This function is important for the body's response to stress and overall hormonal balance.

Cholesterol Synthesis: Pantothenic acid is involved in synthesizing cholesterol and other lipids. It helps regulate lipid metabolism, which can influence cholesterol levels in the body.

Red Blood Cell Formation: Vitamin B5 aids in the formation of red blood cells, which are essential for transporting oxygen throughout the body.

DNA Synthesis and Repair: It contributes to DNA synthesis and repair processes, helping maintain genomic stability and cellular health.

Skin Health: Pantothenic acid has been shown to enhance skin health by promoting wound healing and maintaining skin hydration. It is often included in skin care products for its moisturising properties.

Nervous System Function: Vitamin B5 supports healthy nervous system function by participating in neurotransmitter synthesis and maintaining overall neural health.

Digestive Health: It plays a role in maintaining a healthy digestive system by assisting in the metabolism of nutrients and supporting gut health.

DN

Vitamin B Complex / Vitamin Intake / Alcohol Intake / For Women / Energy / Fatigue / Children / Psyche / Skin Harmony

/ Tissue Harmony / Exhaustion / Relief / Joy of Life / Rest / Hair Harmony / Head Harmony / Muscle Harmony / Kidney Harmony

Animal Sources

Meat: Chicken Liver: Approximately 8.3 mg per 3-ounce serving. Beef Liver: Contains about 7.6 mg per 3-ounce serving.

Pork: Offers around 5.0 mg per 3-ounce serving.

Fish and Seafood: Salmon: About 1.6 mg per 3-ounce serving. Lobster: Provides approximately 1.0 mg per 3-ounce serving.

Poultry: Chicken Breast: Contains around 1.3 mg per 3-ounce serving. Turkey: Similar amounts to chicken.

Dairy Products: Egg Yolks: Approximately 0.9 mg per large egg. Milk and Yogurt: About 0.9 mg per cup of milk.

Plant Sources

Legumes and Nuts: Sunflower Seeds: Approximately 2.4 mg per 1/4 cup. Peanuts: Around 0.5 mg per 1/4 cup. Lentils and Split Peas: Provide about 1.3 mg per cooked cup.

Whole Grains and Cereals: Brown Rice: Contains about 0.4 mg per cooked half-cup. Oats and Whole Wheat Bread: Provide varying amounts, generally around 0.4-0.5 mg.

Vegetables: Avocado: Approximately 1.0 mg per half avocado. Mushrooms (especially shiitake): About 2.6 mg per half-cup cooked. Other vegetables like broccoli, cauliflower, and sweet potatoes also contain pantothenic acid.

VITAMIN B6 (PYRIDOXINE)

Vitamin B6 helps maintain a normal amount of this amino acid in your blood. A stronger immune system. Vitamin B6 helps chemical reactions in the immune system, helping it work better. Eating foods rich in vitamin B6 will help your body guard against infection.

Amino Acid Metabolism: Vitamin B6 is crucial for the metabolism of amino acids, serving as a coenzyme in over 140 enzyme reactions. It facilitates processes such as transamination, decarboxylation, and racemization, which are vital for synthesizing and breaking down proteins and amino acids

Neurotransmitter Synthesis: It plays a significant role in the production of neurotransmitters, including serotonin, dopamine, norepinephrine, and gamma-aminobutyric acid (GABA). These neurotransmitters are essential for regulating mood, emotions, and cognitive function.

Energy Metabolism: Vitamin B6 is involved in the metabolism of carbohydrates and fats. It helps convert glycogen into glucose through glycogenolysis and supports gluconeogenesis, ensuring a steady supply of energy.

Hemoglobin Production: It is essential for the synthesis of hemoglobin, the protein in red blood cells that carries oxygen. Vitamin B6 aids in the formation of heme, the iron-containing component of hemoglobin, thus playing a role in preventing anaemia.

Immune Function: Vitamin B6 supports immune health by promoting the production of lymphocytes (a type of white blood cell) and interleukin-2, which are important for immune responses.

Regulation of Homocysteine Levels: It helps maintain normal levels of homocysteine, an amino acid linked to cardiovascular disease when elevated. Adequate vitamin B6 intake may reduce the risk of heart disease by lowering homocysteine levels.

Cognitive Development and Function: Vitamin B6 is important for brain development during pregnancy and infancy and may help protect against cognitive decline in older adults by supporting neurotransmitter function.

Skin Health: It contributes to skin health by helping to maintain healthy skin and may alleviate symptoms associated with certain skin conditions.

DN

Brain Harmony / Head Harmony / Nerve Harmony / Kidney Harmony / Age / Liver Harmony / Vegan / Vitamin B Complex / Vitamin Intake / Alcohol Intake / Lymphatic System Harmony / For Women / Hormonal system Harmony / Fatigue / Sports / Men / Regeneration / Women / Children / Psyche / Skin Harmony / Breath / Motion / Competition / Activation /

Exertion / Lifestyle / Bioinformation / Exhaustion / For Mature Women / Passion / Balance / Joy of Life / Recreation / Rest / Teeth Harmony

Animal Sources

Meat: Beef Liver: Approximately 0.9 mg per 3-ounce serving (53% of the Daily Value). Chicken Breast: About 0.5 mg per 3-ounce serving (29% of the Daily Value). Turkey: Contains around 0.4 mg per 3-ounce serving.

Fish: Yellowfin Tuna: Provides about 0.9 mg per 3-ounce serving (53% of the Daily Value). Salmon: Approximately 0.6 mg per 3-ounce serving (35% of the Daily Value).

Plant Sources

Legumes: Chickpeas: A rich source, with about 1.1 mg per cup (65% of the Daily Value). Other legumes like lentils and beans also contain significant amounts.

Vegetables: Potatoes: About 0.4 mg per cup (25% of the Daily Value). Other starchy vegetables and leafy greens like spinach also provide vitamin B6.

Fruits: Bananas: Approximately 0.4 mg in one medium banana (25% of the Daily Value). Watermelon: Contains about 0.1 mg per cup.

Nuts and Seeds: Various nuts, such as peanuts, provide around 0.1 mg per ounce.

Other Sources: Foods such as marinara sauce, ground beef, waffles, bulgur, and cottage cheese also contribute to vitamin B6 intake.

VITAMIN B7 (BIOTIN)

Vitamin B7 promotes appropriate function of the nervous system and is essential for liver metabolism as well. Biotin is commonly advised as a dietary supplement for strengthening hair and nails, as well as in skin care. It is suggested that biotin aids cell growth and the maintenance of mucous membranes.

Energy Metabolism: Biotin is essential for converting food into energy. It acts as a coenzyme for carboxylase enzymes, which are involved in the metabolism of carbohydrates, fats, and proteins. This includes processes such as gluconeogenesis (the synthesis of glucose from non-carbohydrate sources), fatty acid synthesis, and the breakdown of certain amino acids.

Cell Growth and Division: Biotin is important for cell proliferation and growth. It contributes to the synthesis of nucleic acids (DNA and RNA), which are vital for cell division and overall cellular function.

Gene Regulation: Biotin plays a role in gene expression by modifying histones, which are proteins that help package DNA in a compact form. This modification can influence how genes are expressed, affecting various biological processes.

Skin, Hair, and Nail Health: Biotin is often associated with maintaining healthy skin, hair, and nails. It supports the health of keratin, a key structural protein in these tissues. Deficiency in biotin can lead to hair loss, brittle nails, and skin issues such as dermatitis.

Nervous System Function: Biotin contributes to the health of the nervous system by supporting the production of neurotransmitters and maintaining nerve function. It may help alleviate symptoms associated with nerve damage and support recovery from conditions like multiple sclerosis.

Blood Sugar Regulation: Biotin may help regulate blood sugar levels by enhancing insulin sensitivity and inhibiting gluconeogenesis in the liver, thereby reducing blood glucose levels. This function is particularly relevant for individuals with diabetes.

Immune Function: Biotin supports immune health by contributing to the regulation of immunological functions and helping maintain healthy mucosal membranes.

DN

Kidney Harmony / Vitamin B Complex / Vitamin Intake / Energy / Fatigue / Sports / Regeneration / Bioinformation / Exhaustion / Relief

Animal Sources

Meat: Beef Liver: One of the richest sources, providing about 30 mcg per 3-ounce serving, which meets over 100% of the Daily Value.

Fish and Seafood: Salmon: Contains around 5 mcg per 3-ounce serving.

Pork: A 3-ounce serving of cooked pork provides about 3.8 mcg of biotin.

Dairy Products: Milk: One cup of milk has about 0.3 mcg of biotin. Cheese: Various types contribute smaller amounts.

Eggs: Particularly the yolk, with one cooked egg containing approximately 10 mcg of biotin. Note that raw egg whites contain avidin, which can inhibit biotin absorption, but cooking the eggs neutralizes this effect.

Plant Sources

Nuts and Seeds: Sunflower Seeds: Approximately 2.6 mcg per quarter-cup serving. Almonds: About 1.5 mcg per quarter-cup serving.

Legumes: Soybeans: A rich source with about 19.3 mcg per three-quarters of a cup. Other legumes like lentils and black beans also contain significant amounts.

Vegetables: Sweet Potatoes: Approximately 2.4 mcg per half-cup cooked. Mushrooms: Particularly portobello mushrooms, which can provide around 11.1 mcg per 100 grams.

Fruits: Bananas: Contain about 0.2 mcg per medium banana. Other fruits like raspberries also provide smaller amounts.

Yeast: Nutritional yeast can be particularly high in biotin, offering around 21 mcg per two tablespoons

VITAMIN B9 (FOLATE)

Folate (vitamin B-9) is important in red blood cell formation and for healthy cell growth and function. The nutrient is crucial during early pregnancy to reduce the risk of birth defects of the brain and spine.

DNA and RNA Synthesis: Folate is essential for the synthesis and repair of DNA and RNA, which are vital for cell division and growth. This is particularly important during periods of rapid growth, such as during pregnancy, infancy, and adolescence.

Red Blood Cell Formation: It plays a crucial role in the production of red blood cells. Adequate folate levels help prevent anaemia by ensuring that red blood cells are produced in sufficient quantities and are healthy

Protein Metabolism: Folate is involved in the metabolism of amino acids, which are the building blocks of proteins. It helps convert homocysteine, an amino acid that can be harmful at high levels, into methionine, which is beneficial for health.

Neural Tube Development: Adequate folate intake before conception and during early pregnancy is critical for proper neural tube development in the fetus, significantly reducing the risk of neural tube defects such as spina bifida and anencephaly.

Cardiovascular Health: By helping to regulate homocysteine levels, folate may contribute to cardiovascular health. Elevated homocysteine levels have been associated with an increased risk of heart disease.

Mental Health: Folate is important for brain function and emotional health. It has been linked to mood regulation and may help reduce symptoms of depression and cognitive decline.

Cellular Division and Growth: Folate supports cellular division and growth, making it essential for tissue repair and regeneration. This function is particularly crucial during periods of rapid cell turnover or growth.

Immune Function: Folate plays a role in maintaining a healthy immune system by supporting the production of white blood cells and other immune functions.

DN

Age / Liver Harmony / Vegan / Vitamin B Complex / Vitamin Intake / Alcohol Intake / Hormonal system Harmony / Fatigue / Sports / Men / Women / Children / Psyche / Growth / Skin Harmony / Breath / Activation / Exertion / Circulation / Lifestyle / Energetic / Bioinformation / Comfort / Exhaustion / For Mature Women / Passion / Balance / Relief / Joy of Life / Rest / Teeth Harmony / Hair Harmony / Nerve Harmony / Kidney Harmony

Animal Sources

Beef Liver: One of the richest sources, with about 212 mcg per 3-ounce serving (54% of the Daily Value).

Eggs: A boiled egg contains about 18 mcg of folate.

Plant Sources

Legumes: Lentils: Approximately 358 mcg of folate per cooked cup (90% of the Daily Value). Chickpeas: About 71 mcg per cooked cup. Black-eyed peas: Around 89 mcg per cooked cup.

Vegetables: Asparagus: Contains about 268 mcg of folate per cooked cup (67% of the Daily Value). Spinach: Provides approximately 263 mcg per cooked cup (66% of the Daily Value). Broccoli: Contains about 168 mcg per cooked cup (42% of the Daily Value). Brussels Sprouts: About 47 mcg per half-cup cooked.

Fruits: Avocado: Contains around 163 mcg per whole avocado (41% of the Daily Value). Oranges: A medium orange provides about 40 mcg of folate. Papaya: One cup contains approximately 53 mcg, or about 13% of the Daily Value.

Nuts and Seeds: Sunflower Seeds: Approximately 67 mcg per ounce. Various nuts like almonds and walnuts also provide smaller amounts.

Other Sources: Foods like beets, turnips, and certain root vegetables also contribute to folate intake.

VITAMIN C (ASCORBIC ACID)

Also known as ascorbic acid, is necessary for the growth, development and repair of all body tissues. It's involved in many body functions, including formation of collagen, absorption of iron, the proper functioning of the immune system, wound healing, and the maintenance of cartilage, bones, and teeth.

Collagen Synthesis: Vitamin C is essential for the synthesis of collagen, a critical protein that helps maintain the structure and integrity of skin, tendons, ligaments, blood vessels, and cartilage. This function is crucial for wound healing and tissue repair.

Antioxidant Activity: As a powerful antioxidant, vitamin C helps protect cells from damage caused by free radicals—unstable molecules that can lead to oxidative stress and contribute to chronic diseases such as cancer and cardiovascular disease. It neutralizes free radicals and regenerates other antioxidants, including vitamin E.

Immune Function: Vitamin C supports the immune system by enhancing the function of various immune cells, promoting their ability to fight infections. It also helps in the production of antibodies and may reduce the severity and duration of colds.

Iron Absorption: Vitamin C enhances the absorption of non-heme iron (the type of iron found in plant-based foods) by converting it into a more absorbable form. This is particularly beneficial for individuals at risk of iron deficiency anaemia.

Neurotransmitter Synthesis: It plays a role in synthesizing neurotransmitters such as norepinephrine, which are essential for brain function and mood regulation.

Wound Healing: Due to its role in collagen formation and tissue repair, adequate levels of vitamin C are crucial for effective wound healing. Insufficient vitamin C can lead to slower healing processes.

Cardiovascular Health: Vitamin C may help improve cardiovascular health by enhancing endothelial function (the lining of blood vessels), reducing blood pressure, and improving nitric oxide production, which aids in vasodilation.

Prevention of Scurvy: A deficiency in vitamin C leads to scurvy, characterized by symptoms such as fatigue, weakness, bleeding gums, bruising, and joint pain due to compromised collagen synthesis and connective tissue integrity.

DN

Kidney Harmony / Age / Connective Tissue Harmony / Weight / Liver Harmony / Vegan / Vitamin Intake / Antioxidants / Lymphatic System Harmony / Sensitivities / Sports / Men / Regeneration / Women / Children / Skin Harmony / Breath / Motion / Competition / Structure / Activation / Exertion / Rigidity / Lifestyle / Energetic / Tissue Harmony / Comfort / Exhaustion / For Mature Women / Relief / Recreation / Teeth Harmony

Plant Sources

Fruits: Citrus Fruits: Oranges: One medium orange provides about 70 mg of vitamin C. Grapefruit: Approximately 96 mg

per medium grapefruit. Kiwi: One medium kiwi contains around 56 mg of vitamin C. Strawberries: One cup provides about 97.6 mg. Cantaloupe: A medium cantaloupe has about 202.6 mg of vitamin C. Papaya: Contains about 88 mg per cup. Guava: One guava can contain up to 125 mg of vitamin C.

Vegetables: Bell Peppers: Red Bell Peppers: About 191 mg per cup chopped. Green Bell Peppers: Approximately 120 mg per cup chopped. Broccoli: One cup cooked contains about 101 mg. Brussels Sprouts: A half-cup cooked provides around 49 mg. Kale: One cup raw kale has about 93 mg, while cooked kale contains around 21 mg. Spinach and Leafy Greens: Various greens provide moderate amounts of vitamin C.

Other Sources: Tomatoes and Tomato Juice: About 23 mg per medium tomato and approximately 45 mg per cup of juice. Potatoes (especially sweet potatoes): Provide some vitamin C, with a medium potato containing around 20 mg.

VITAMIN B12 (COBALAMIN)

Vitamin B12 is a nutrient that helps keep your body's blood and nerve cells healthy and helps make DNA, the genetic material in all of your cells. Vitamin B12 also helps prevent megaloblastic anaemia, a blood condition that makes people tired and weak.

Nerve Health: Vitamin B12 is vital for maintaining the health of nerve cells. It helps produce myelin, the protective sheath that surrounds nerves, ensuring proper nerve function and communication. A deficiency can lead to neurological issues, including numbness, tingling, and balance problems.

Red Blood Cell Formation: It is essential for the production of red blood cells. Vitamin B12 works in conjunction with folate (vitamin B9) to help form healthy red blood cells and prevent megaloblastic anaemia, a condition characterized by large, immature red blood cells that are ineffective at transporting oxygen.

DNA Synthesis: Vitamin B12 plays a crucial role in DNA synthesis and repair. This function is particularly important during periods of rapid cell division and growth, such as during pregnancy and infancy.

Cognitive Function: Adequate levels of vitamin B12 are associated with cognitive health. It supports brain function and may help prevent cognitive decline and memory loss associated with aging.

Energy Production: Vitamin B12 is involved in the metabolism of fatty acids and amino acids, contributing to energy production in the body. A deficiency can lead to fatigue and weakness due to impaired energy metabolism.

Homocysteine Regulation: It helps regulate homocysteine levels in the blood. Elevated homocysteine is a risk factor for cardiovascular diseases, and vitamin B12 works with vitamins B6 and B9 to convert homocysteine into methionine, an amino acid that is beneficial for health.

Immune Function: Vitamin B12 supports the immune system by promoting the production of white blood cells, which are essential for fighting infections.

Prevention of Birth Defects: Adequate vitamin B12 intake during pregnancy is crucial for fetal development and may help prevent congenital abnormalities related to neural tube defects.

DN

Hair Harmony / Head Harmony / Nerve Harmony / Kidney Harmony / Age / Blood Harmony / Liver Harmony / Vegan / Vitamin B Complex / Vitamin Intake / Alcohol Intake / Fatigue / Sports / Men / Women / Children / Psyche / Growth / Breath / Activation / Exertion / Circulation / Lifestyle / Energetic / Tissue Harmony / Bioinformation / Exhaustion / For Mature Women / Passion / Balance / Relief / Joy of Life / Recreation / Rest / Teeth Harmony

Animal Sources

Meat: Beef Liver: One of the richest sources, providing about 70.7 mcg per 3-ounce serving. Chicken Liver: Contains approximately 4.7 mcg per ounce.

Fish: Clams: About 84 mcg per 3-ounce serving. Sardines: Around 8.9 mcg per 3-ounce serving. Salmon: Approximately 4.9 mcg per 3-ounce serving.

Beef Steak: Provides around 6.9 mcg per 3-ounce serving.

Dairy Products: Milk: Contains about 1.2 mcg per cup. Yogurt: Approximately 1.2 mcg per 8-ounce serving. Cheese: Varieties like Swiss cheese provide around 0.9 mcg per ounce.

Poultry: Chicken and Turkey: Cooked turkey liver contains about 23.9 mcg per 3 ounces, while roasted chicken breast has about 0.3 mcg per 3-ounce serving.

Eggs: One large egg provides approximately 0.6 mcg of vitamin B12, mostly found in the yolk.

Plant Sources

Nutritional Yeast: Often fortified with vitamin B12, providing about 4.8 mcg per tablespoon.

ZINC

Zinc, a nutrient found throughout your body, helps your immune system and metabolism function. Zinc is also important to wound healing and your sense of taste and smell.

Immune Function: Zinc is vital for the development and function of immune cells, including neutrophils, natural killer (NK) cells, and macrophages. It helps regulate both innate and adaptive immune responses, enhancing the body's ability to fight off infections. A deficiency in zinc can lead to impaired immune function and increased susceptibility to infections

Wound Healing: Zinc is important for skin health and plays a significant role in wound healing. It contributes to cell proliferation, collagen synthesis, and inflammatory response regulation, which are all critical for effective healing processes

DNA Synthesis and Cell Division: Zinc is necessary for DNA synthesis and cell division, making it essential for growth and development during pregnancy, childhood, and adolescence. It acts as a cofactor for numerous enzymes involved in these processes.

Antioxidant Properties: Zinc exhibits antioxidant properties by stabilizing cell membranes and protecting against oxidative stress. It helps neutralize free radicals, which can damage cells and contribute to chronic diseases

Taste and Smell: Zinc is crucial for the proper functioning of taste and smell receptors. A deficiency can impair these senses, leading to alterations in taste perception.

Hormonal Regulation: Zinc plays a role in hormone production and regulation, including insulin secretion from the pancreas. It is important for maintaining normal blood sugar levels and metabolic processes.

Neurological Function: Zinc is involved in neurotransmission and brain function. It supports cognitive health by influencing neuronal signalling and protecting against neurodegenerative diseases

Protein Synthesis: As a cofactor for various enzymes, zinc is essential for protein synthesis, which is crucial for muscle repair, growth, and overall cellular function.

Regulation of Inflammatory Responses: Zinc helps modulate inflammatory responses by influencing cytokine production and immune cell activity, thus playing a role in managing chronic inflammatory conditions.

DN

Brain Harmony / Hair Harmony / Nail Harmony / Kidney Harmony / Ear Harmony / Age / Alkaline Powder / Liver Harmony / Trace Elements / Vegan / Antioxidants / Lymphatic System Harmony / Birth / Hormonal system Harmony / Libido / Energy / Fatigue / Eyesight / Sports / Men / Regeneration / Women / Children / Psyche / Growth / Skin Harmony / Breath / Motion / Structure / Activation / Circulation / Rigidity / Lifestyle / Energetic / Bioinformation / Comfort / For Mature Women / Passion / Balance / Relief / Joy of Life / Rest

Animal Sources

Seafood: Oysters: One of the richest sources, providing about 74 mg of zinc per 3-ounce serving (over 600% of the Daily Value) Crab: Alaskan king crab offers approximately 6.5 mg per 3-ounce serving Lobster: Contains around 6.2 mg per 3-ounce serving.

Meat: Beef: A 3-ounce serving of beef chuck roast provides about 8.4 mg of zinc Pork: A 3-ounce serving of pork chops contains about 2.0 mg. Chicken: Roasted chicken leg (thigh and leg) has around 5 mg per serving

Dairy Products: Cheese: Varieties like Swiss and cheddar provide moderate amounts of zinc, typically around 1 mg per ounce.

Nuts and Seeds: Pumpkin Seeds: About 7 mg of zinc per ounce Cashews: Approximately 1.6 mg per ounce Hemp Seeds: Roughly 3 mg per 3 tablespoons

VITAL SUBSTANCES

Legumes and Grains: Chickpeas: About 1.5 mg per cooked cup Lentils: Approximately 1.3 mg per cooked cup Oats: Contain around 2 mg per cup cooked

Tofu and Soy Products: Tofu: A 4-ounce serving provides about 1.8 mg of zinc