nutrient institute

WHAT'S INSIDE

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MACRONUTRIENTS

- These are nutrients needed in large quantities
- There are 3 major categories of macronutrients:
- Carbohydrate
- Protein
- Fat
- There are many different points of views but, in general, most experts recommend that the caloric composition of diet be: 45-65% carbohydrate, 10-35% protein, 20-35% fat utrients are one of three requirements for life (water, energy/sun).

CARBOHYDRATE

- Provides energy for the body
- Dietary sources are generally in the form or sugars and starches from grains and starchy vegetables like potatoes.
- A healthy body has a tight control on blood sugar levels and has three way to dispose of excesses: (1) burned during activities (healthy); (2) stored as glycogen in the liver (healthy); and (3) converted to body fat (unhealthy and a clear indication of consuming too many carbohydrates).
- Carbohydrates are put into two categories: simple carbs and complex carbs. These have massively different effects in the body:
- Simple carbs: are easy to digest sugars (click through to BAD STUFF/SUGAR). Simple carbs are over-consumed with the high sugar diet of today, which leads to obesity and poor health. Many snacks are appealing because they give a quick energy, but are loaded with sugar and unhealthy.
- Complex carbs: are slower to digest and rich in fiber (click through OTHER INGREDIENTS/FIBER). These promote satiety, leading weight loss and better blood glucose and cholesterol control.
- In general, we should be eating more complex carbs and fewer simple carbs. To understand the quality of carbs, you need to know which type you are consuming.

PROTEIN

- Humans consume dietary protein, but the body really only wants the amino acids, which make up protein.
- There are 12 essential amino acids (12: leucine, isoleucine, valine, tryptophan, tyrosine, phenylalanine, methionine, cysteine, threonine, histidine, lysine, arginine) (Click through to ESSENTIAL AMINO ACIDS). These are essential, because our body does not make these amino acids and must get them from protein-rich foods like meats, seafood, legumes, and dairy products.
- There are 8 non-essential amino acids (8: alanine, asparagine, aspartate, glutamate, glutamine, glycine, proline, serine). These are non-essential, because our body can make these amino acids. Some essential amino acids are used to make the non-essential ones.
- Protein is used to make all body parts, particularly all tissues and cells, and to maintain and grow muscle mass.

FAT

- There are 3 major fat categories: omega-3, -6, and -9. (click through HEALTHY FATS)
- Essential fats are omega-3s and -6s
- In general, we consume too many omega-6 fats and not enough omega-3s
- Omega-9s are made by the body, but extra consumption of them from foods like avocados and olive oil enhances health
- Saturated and trans fats are unhealthy (click through BAD STUFF)
- All fats provide a slow-releasing energy source
- Excess fat is stored around the body, but in some cases, in the abdominal region and on the liver, which increases the risk of type 2 diabetes

MICRONUTRIENTS

- Are nutrients needed in small amounts, but are equally important as the macronutrients – we just need them in small amounts
- Micronutrients are 2 categories: vitamins and minerals
- 14 vitamins (vitamins A, C, D, E, K, B6, B12, thiamine, riboflavin, niacin, biotin, folic acid, pantothenic acid, choline)
- 14 minerals (calcium, magnesium, phosphorus, manganese, selenium, chromium, iron, molybdenum, sodium, chloride, potassium, zinc, copper, iodine)
- Two minerals are consumed in excess (sodium and chloride)

OTHER INGREDIENTS

WATER

- Water is an essential nutrient and critical for life to hydrate the body and allow for the blood to deliver nutrients throughout it.
- The recommended amount of water: 15 cups for men (about 3 quarts); 11 cups for women (about 2-1/2 quarts); comes from foods, beverages, and water
- Makes up 60% of the body
- Brain, kidneys, lung, and intestine regulates hydration
- Water can come from foods, beverages, and water itself

WATER

- W Fiber is a type of edible carbohydrate from parts of plants that are resistant to digestion and absorption in the small intestine
- All fiber makes its way to large intestine for complete or partial digestion
- General functions
- Normalizes bowel movements

- Helps maintain bowel health
- Lowers cholesterol levels
- Helps control blood sugar levels
- Aids in achieving healthy weight
- There are two types of fiber – soluble and insoluble. Both are important and provide different functions.
- Soluble Good sources are: beans, legumes, oats, nuts, vegetables like Brussels sprouts, and fruits like blueberries and oranges. This type of fiber slows digestion, so it takes longer for the body to absorb sugars, thereby preventing blood sugar swings. This is important part of preventing and managing diabetes. The slowing of digestion promotes satiety, which could lead to weight loss. Soluble fibers also bind with fats, which facilitates lowering the bad cholesterol in the blood (LDL). Soluble fibers make the intestine stronger and healthier by creating healthy short fatty acids, which are preferred fuel for GI cells.
- Insoluble fibers. Good sources: seeds, skin of fruits, brown rice, and whole grains. These fibers draw water from the blood into the colon. This helps move waste through your body, thereby promoting laxation and preventing constipation.

BAD STUFF

Unhealthy Fats (Trans, Saturated)

- Saturated: stable fats found in

1. Animal fats: meats, poultry, butter, lard, cheese, milk.
2. Others: coconut, palm, and palm kernel oils

- Trans: manufactured, unnatural fats used by the food industry to enhance taste and texture and maintain a long shelf life of processed foods

1. Found in fried foods like doughnuts, baked goods including cakes, pie crusts, biscuits, frozen pizza, cookies, crackers, and stick margarines and other spreads.
2. Ingredients: partially-hydrogenated oils

- Raise cholesterol levels leading to increased risk of heart disease, diabetes, Alzheimer's disease, and dementia
- Diet should consist of <10% of calories (<200 calories; <20 grams) are saturated fats and zero

trans fats

- Replace foods containing saturated and trans fats with poultry, seafood, nuts, whole grains, low-fat dairy, fruits, and vegetables
- Trans fats worse on heart health than saturated fat (raise bad cholesterol and lower good cholesterol)

CHOLESTEROL

- Most common body steroid, used to make of bile acids, vitamin D, estrogen, progesterone, testosterone, cortisol, and cell membranes.
- Blood cholesterol mostly comes from what the body makes
- There is good cholesterol (HDL) and bad cholesterol (LDL) floating around in the blood. The bad cholesterol sticks to the insides of the blood vessels and hardens into plaque, increasing the risk of a heart attack. The good cholesterol is a scavenger for the bad cholesterol. It attaches to it and takes it to the liver where it is processed into a non-harmful fat and removed from the blood.
- Dietary sources: meats, especially organ meat, dairy products
- No guidelines exist for optimal cholesterol intake. Saturated fat is more important to limit.
- Excess cholesterol in blood increases the risk of heart disease, heart attack, and stroke

SUGAR

- Sugar is a carb, which is overconsumed in today's diet
- Average total sugar intake is 32 teaspoons (130 grams). Comprised of:

1. Naturally found in foods: milk, fruit, honey, root vegetables, fruits, vegetables, and sugar cane/beets
2. Added to foods: sucrose (table sugar), corn syrup, and high fructose corn syrup

- Amount added sugar recommended ranges from 25 grams to 50 grams (20% to 40% of what we consume today) by different organizations: FDA = 12 teaspoons (50 g; 200 calories), IOM = 31 teaspoons (125 g; 500 calories), WHO = 6-12 teaspoons (25-50 g; 100-200 calories)
- The body reacts the same to naturally sugars (i.e. in fruit) and to added sugars (e.g., in sugar-sweetened beverages). All sugars are equally bad at promoting obesity and chronic disease, whether they inherently are in foods (like in an apple) or added to foods (like a donut)
- The one exception is high fructose corn syrup (HFCS) which has a worse effect on the body than

sugar because:

HIGH FRUCTOSE CORN SYRUP

- Compared to other sugars found in foods or added to foods, high fructose corn syrup is worse because:

1. It is cheaper than sugar, so more of it is used
2. Sweeter than regular sugar and is more desired
3. Digested differently leading to increased disease risk
4. Mostly found in beverages that do not promote satiety
5. Enhances appetite
6. High fructose is root cause of adverse health effects

- Consumption has gone down by 27% between its peak in 2000 and 2015
- Highest intake: 189 calories per day per person, of which 158 calories are from sugared-sweetened beverages [carbonated and fruit juices]
- Today's intake: 138 calories per day per person, of which 115 calories are from sugared-sweetened beverages [carbonated and fruit juices]
- Increases the risk of: obesity, diabetes, heart disease, metabolic syndrome, nonalcoholic fatty liver disease (NAFLD) and gout

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BY NUTRIENTS

Amino Acids

- Obtained from dietary protein, which is broken down by digestive enzymes
- Bioactive component of dietary protein used for major functional and structural component of all the cells e.g., enzymes, blood transport molecules, hair, fingernails, skin, and hormones)
- 12 are essential and need to come from the diet; the body can make the remaining 8
- Too few in the diet leads to malnutrition, poor immune function, and adverse effects on all organs

General

- Major functional and structural component of all the cells e.g., enzymes, blood transport molecules, hair, fingernails, skin, hormones)
- Need adequate supply to maintain cellular integrity and function for health and reproduction
- Too few in the diet leads to malnutrition, poor immune function, and adverse effects on all organs

Leucine

- Stimulates protein metabolism and insulin release
- Improves exercise performance, reduces muscle breakdown, and lessens fatigue
- Supports growth hormone synthesis
- Weight loss

Isoleucine

- Improves exercise performance, reduces muscle breakdown, and lessens fatigue
- Hemoglobin synthesis
- Regulation of blood sugar levels

Lysine

- Used to make carnitine, which carries fat around the body
- Helps calcium get absorbed
- Makes hormones, enzymes, and antibodies

Methionine

- Used to make carnitine, which carries fat around the body
- Aids in attaching sulfur to various proteins
- Helps the body make phospholipids
- Detoxifies the liver

Cysteine

- Precursor of methionine
- Helps make healthy skin, hair, and nails
- Supports healing after surgery
- White blood cell manufacturing

Phenylalanine

- Supports fat and carbohydrate metabolism
- Helps with occasional soreness
- Makes tyrosine that makes hormones, which support mood and memory
- Supports energy levels, memory problems, and alertness

Tyrosine

- Synthesized from phenylalanine
- Precursor for brain neurotransmitters, hormones, and melanin skin pigments
- Helps against stress, poor libido, and anxiety
- Supports mental alertness and helps with appetite suppression

Tryptophan

- Precursor for brain neurotransmitter, serotonin, which controls occasional soreness, blood pressure, and body temperature
- Also, precursor for niacin and the pineal gland, and melatonin
- Helps with anxiety, PMS, depression, insomnia, and restless leg syndrome

Threonine

- Neutral amino acid and works with glycine to control muscle spasms
- For strong bones and teeth
- Needed for healthy immune, digestive and cardiac systems
- Supports wound healing
- Helps liver digest fat

Valine

- Improves exercise performance, reduces muscle breakdown, and lessens fatigue because it serves as energy for the muscles
- For cognitive function
- Helps with nervousness, insomnia, and is an appetite suppressant

Histidine

- Helps bind and control function of iron, copper, zinc, and other trace elements
- Part of hemoglobin in the blood, which transports iron throughout the body
- Creates compounds that bind toxic metals (e.g., mercury, cadmium, lead) to protect vital organs like the brain, liver, and kidneys

Arginine

- Nitric oxide precursor, which is used to relax blood vessels and may be helpful to control blood pressure, heart function, and immune response
- Detoxifies the blood of ammonia
- Supports cell division, immune function, and wound healing
- May help with sexual dysfunction, migraines, and high blood pressure
- Helps with leg cramping and weakness

Vitamins

Vitamin A

- Key nutrient for the eyes, skin, and immune function.
- Keeps tissues and skin healthy.
- Plays an important role in bone growth.
- Diets rich in the carotenoids (i.e., alpha-carotene and lycopene) seem to lower lung cancer risk.
- Carotenoids act as antioxidants. Foods rich in the carotenoids lutein and zeaxanthin may protect against cataracts.
- Both adults and children need vitamin A to support healthy immune function, to decrease susceptibility for catching colds and the flu during the winter months.

Vitamin B1 (Thiamin)

- Helps convert food into energy
- Needed to allow for some of the essential amino acids to build muscle
- Needed to metabolize carbohydrates and three amino acids (leucine, isoleucine, valine)
- Too little is called beri-beri, and leads to weight loss, irritability, confusion, and muscle weakness
- Needed for healthy skin, hair, muscles, and brain
- Excessive alcohol intake reduces the blood thiamin levels

Vitamin B3 (Niacin)

- Helps convert food into energy
- Essential for healthy skin, blood cells, brain, and nervous system
- Works as a co-substrate to foster chemical reactions in the body
- Involved with energy production and DNA repair
- Too little causes pellagra, which is characterized by a rash, indigestion, and depression
- Extremely important for making DNA
- Used to lower cholesterol
- Too much may cause flushing

Vitamin B2 (Riboflavin)

- Helps convert food into energy
- Needed for healthy skin, hair, blood, and brain
- Is a catalyst for energy production and redox reactions (removal of oxygen) to make vitamins and co-enzymes
- Too little causes changes to the tongue, cuts on the sides of the mouth, scaly skin, and anemia
- Important for people with cancer, diabetes, or heart disease get enough riboflavin

Vitamin B5 (Pantothenic Acid)

- Helps convert food into energy
- Helps make lipids (fats), neurotransmitters, steroid hormones, and hemoglobin
- Nearly all cells use it for vital functions
- Involved in fatty acid metabolism
- In adequate amounts lead to sleep disturbances, fatigue, and numbness

Vitamin B6

- Aids in lowering homocysteine levels and may reduce the risk of heart disease
- Helps convert tryptophan serotonin, a neurotransmitter that plays key roles in sleep, appetite, and moods.
- Helps make red blood cells
- Influences cognitive abilities and immune function
- Functions as a co-enzyme in the metabolism of glycogen and amino acids
- Helps support healthy homocysteine levels and cognition
- May be useful for carpal tunnel syndrome, premenstrual syndrome, and asthma

Vitamin B12

- Without B12, there is no cell growth, especially of those cells in the GI tract, bone marrow, and nervous system
- Aids in lowering or maintaining healthy levels of homocysteine; this may lower the risk of heart disease
- Assists in making new cells and breaking down some fatty acids and amino acids
- Protects nerve cells and encourages their normal growth
- Helps make red blood cells
- With aging, absorption may be less than a that of a younger person
- Needed for blood cell and nerve function
- Too little leads to anemia, fatigue, and shortness of breath

Biotin (Vitamin B7)

- Helps convert food into energy and synthesize glucose
- Helps make and breakdown some fatty acids.
- Needed for healthy bones and hair
- Involved with the synthesis of fatty acids and glucose

Vitamin C

- Anti-oxidant that neutralizes unstable molecules that can damage cells
- Deficiency is called scurvy, and is characterized by bleeding gums, muscle weakness, and red dots on the skin
- Foods rich in vitamin C may lower the risk for some cancers, including those of the mouth, esophagus, stomach, and breast
- Long-term use of supplemental vitamin C may protect against cataracts.
- Helps make collagen, a protein connective tissue that knits together wounds and supports blood vessel walls.
- Helps make the neurotransmitters serotonin and norepinephrine
- Bolsters the immune system

Choline

- Helps make and release the neurotransmitter acetylcholine, which aids in many nerve and brain activities like memory storage
- Plays a role in metabolizing and transporting fats
- Needed to transport fat and cholesterol, to make the structure of cell membranes, and for cell signaling
- Helps with muscle control
- Important for breathing; it helps the lungs easily expand and contract
- Keeps your mind sharp and your body moving

Vitamin D

- Helps maintain normal blood levels of calcium and phosphorus, which strengthen bones
- Helps form teeth and bones
- Supplements can reduce the number of non-spinal fractures
- Acts like a hormone and affects tissues in the brain, pancreas, intestine, and kidneys
- Too little results in weak bones, termed in children, as rickets
- Based on large epidemiological studies, people with higher vitamin D levels were healthier, and had less heart disease and cancer

Folic Acid (Vitamin B9)

- Without it, you can't make the nucleic acids used for DNA synthesis
- Vital for new cell creation
- Helps prevent brain and spine birth defects in the fetus, when taken early in pregnancy. Should be taken regularly by all women of child-bearing age since women may not know they are pregnant in the first weeks of pregnancy.
- Can lower levels of homocysteine and may reduce heart disease risk
- May reduce risk for colon cancer
- Offsets breast cancer risk among women who consume alcohol
- Assists with the formation of amino acids
- Support healthy homocysteine levels
- Too little intake leads to anemia

Vitamin E

- Acts as an antioxidant, neutralizing unstable molecules that can damage cells.
- Protects vitamin A and certain lipids from damage
- Diets rich in vitamin E may help prevent Alzheimer's disease
- Immune system protector
- Today’s dietary intakes of vitamin E are very low

Vitamin K

- Activates proteins and calcium essential to blood clotting.
- May help prevent hip fractures
- Helps with blood clotting
- From diet, but also made by intestinal bacteria

Minerals

Calcium

- Most abundant mineral in the body and 99% is found in the bones
- Aging produces bone loss, which leads to fractures
- Builds and protects bones and teeth
- Helps with muscle contractions and relaxation, blood clotting, and nerve impulse transmission.
- Plays a role in hormone secretion and enzyme activation.
- Helps maintain healthy blood pressure

Chloride

- Balances fluids in the body.
- A component of stomach acid, essential to digestion
- Too little affects blood flow
- Too much increases blood pressure
- Maintains pH of the blood

Chromium

- Enhances the activity of insulin, by facilitating glucose uptake from the blood
- Helps maintain normal blood glucose levels, and is needed to free energy from glucose
- Helps with carbohydrate and fat metabolism

Copper

- Plays an important role in iron metabolism, which helps form collagen to support bone and muscles
- Helps metabolize foods into energy
- Helps make red blood cells
- Works to support enzyme function to make blood proteins, collagen for wound healing, and nerve tissues
- A disruption in one of these copper enzyme systems causes Lou Gehrig's disease, which is characterized by progressive muscle weakening

Iodine

- Key to keeping your energy levels up
- Part of thyroid hormone, which helps set body temperature; influences nerve and muscle function, reproduction, and growth; and making blood and nerve cells.
- Prevents goiter and congenital hypothyroid disorder
- Too little or too much results in goiter, which is characterized by sluggishness and weight gain

Iron

- Key to keeping your energy levels up
- Helps hemoglobin in red blood cells and myoglobin in muscle cells ferry oxygen throughout the body.
- Needed for chemical reactions in the body and for making amino acids, collagen, neurotransmitters, and hormones
- Too little in the diet results in anemia, which is characterized by fatigue, headaches, weakness, apathy, and poor tolerance to cold weather

Magnesium

- Needed for many chemical reactions in the body (over 300 reactions inside the body)
- Works with calcium in muscle contraction, blood clotting, and regulation of blood pressure.
- Helps build bones and teeth
- Assures that sodium and potassium move around the blood freely, so that muscles can contract and nerves can send messages
- Mostly in the bones, but is also found in the muscle and heart
- Acts in the cells to foster protein synthesis and energy release
- Deficiency can cause severe muscle cramps

Manganese

- Helps form bones
- Helps metabolize amino acids, cholesterol, and carbohydrates
- Helps make the enzymes that protect vulnerable cells in the body, like those in the mitochondria
- Involved in bone formation
- Helps metabolic processes of protein, fat, and carbohydrate

Phosphorus

- Second most abundant mineral in the body after calcium
- Used to make DNA and RNA
- Used for energy production
- Helps build and protect bones and teeth
- Helps convert food into energy
- Part of phospholipids, which carry lipids in blood and sit on cell membranes to help shuttle nutrients into and out of cells

Molybdenum

- Part of several enzymes, one of which helps ward off a form of severe neurological damage in infants that can lead to early death
- Involved with making the amino acids, methionine and cysteine
- Makes part of DNA

Selenium

- Acts as an antioxidant, neutralizing unstable molecules that can damage cells.
- Helps regulate thyroid hormone activity
- Anti-oxidant, which protects cells from damage by oxygen-free radicals
- Can substitute for vitamin E
- Too little can cause heart problems

Sodium

- Balances fluids in the body.
- Helps send nerve impulses
- Needed for muscle contractions
- Impacts blood pressure; even modest reductions in salt consumption can lower blood pressure
- Too little affects blood flow
- Too much increases blood pressure
- Maintains pH of the blood

Potassium

- Balances fluids in the body
- Helps maintain steady heartbeat and sends nerve impulses.
- Needed for muscle contractions.
- A diet rich in potassium seems to lower blood pressure.
- Getting enough potassium from your diet may benefit bones
- Low intakes may cause cardiac arrhythmias, stroke, muscle weakness, glucose intolerance, increased blood pressure, kidney stones, and increased bone loss
- Often low in the diet

Zinc

- Helps form many enzymes and proteins to create new cells
- Frees vitamin A from storage in the liver.
- Needed for immune system, taste, smell, and wound healing.
- When taken with certain antioxidants, zinc may delay the progression of age-related macular degeneration
- Numerous zinc-requiring enzymes work in the function of the eyes, liver, kidneys, muscle, skin, bones, and male reproductive organs
- Too little in children results in dwarfism and mental retardation
- Too little in adults: loss of appetite, poor immune function, and abnormal taste
- Males who don't get enough during childhood have stunted growth and can't reproduce

Fatty Acids

Omega-3

- Part of membranes in all cells in the body and particularly important in the nerves and eyes
- Immune boosting
- If lacking, leads to neurological abnormalities and poor growth
- High ratios of omega-6 to omega-3 increases the risk of heart disease, cancer, and death

Omega-6

- Part of the membrane of all cells in the body
- Involved with cell signaling
- If lacking, leads to dry skin, scaly rash, and poor growth
- Lowers bad cholesterol

Water

- Makes up 60% of the body
- Needed by blood to transport essential nutrients around the body
- Brain, kidneys, lung, and intestine regulates hydration
- Amount needed daily is about 3 quarts for men and 2-1/2 quarts for women.
- Water can come from foods, beverages, and water itself

Fiber

- Normalizes bowel movements
- Helps maintain bowel health
- Lowers cholesterol levels
- Helps control blood sugar levels
- Aids in achieving healthy weight

BrainCare™ (Brain Shake)

Milled flax seed (source of omega-3)

- Supports nerve growth and sending signals around the body
- Slow brain aging
- Helps slow brain atrophy
- Important building block for nerve cell membranes
- May reduce the risk of dementia, if consumed throughout a lifetime

Phosphatidylserine (PS)

- A major component of brain cell membranes, and is involved with brain cell growth and communication
- Effective treatment of cognitive deterioration, leading to improved memory, problem solving, communication, and learning

N-Acetyl-L-Cysteine

- Crosses the blood-brain-barrier to help control oxygen free radicals
- Oxidative stress leads to neurodegenerative conditions
- Precursor for powerful antioxidant made by the body (glutathione)
- Supports learning, memory, and decision making
- Maintains healthy cognitive decline with aging

Choline Bitartrate (choline)

- Involved with brain cell structure and neurotransmitter production
- Deficiencies are related to neurological disorders

Alpha Lipoic Acid

- Protects brain cells from oxidation, allowing for maintenance of healthy energy production at a cellular level
- May help improve cognition and memory
- Supports learning, memory, and decision making
- Maintains healthy cognitive decline with aging

Coenzyme Q10 (Ubidecarenone)

- The human brain is poorly equipped with antioxidant defenses
- Oxidation is a universal contributor to all neuro-degenerative disorders
- May be promising to preserve healthy brain function with aging by reducing nerve degeneration

Vitamin C (Ascorbic Acid)

- Neurotransmitter production
- Increase brain energy
- Supports better health and cognition
- Helps slow brain aging
- An anti-oxidant to protect the brain, leading to maintenance of cognitive function

Acetyl-L-Carnitine

- Protect brain cells from oxidation, allowing for maintenance of healthy energy production at a cellular level
- Maintains healthy cognitive decline with aging
- May help improve cognition and memory
- Supports learning, memory, and decision making

L- tyrosine

- Provides precursor to make neurotransmitters epinephrine and norepinephrine
- Allows body to send signals

Quercetin

- Found in red wine
- Penetrates the blood-brain-barrier, which helps explain how it may contribute to brain conditions
- Moderate consumption of red wine may lower the relative risk for Alzheimer's dementia
- Interferes with the production of beta amyloid, a toxic substance that builds up in Alzheimer's disease

L- tryptophan

- Neurotransmitter production of serotonin
- Elevates mood
- Improves behavior and cognition

Vitamin E (DL-Alpha-Tocopheryl Acetate)

- Supports nerve growth and sending signals around the body
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Zinc Citrate

- Supports better health and cognition
- Helps maintain normal learning, attention, and memory
- Provides anti-oxidant protection to the brain
- Low intake is associated with poor cognitive function

Vitamin A (Retinyl Palmitate)

- An anti-oxidant to protect the brain, leading to maintenance of cognitive function

Vitamin B3 (Niacinamide)

- Used in neurotransmitter production
- Increases brain energy

L-Selenomethionine

- An anti-oxidant to protect the brain, leading to maintenance of cognitive function
- Low intake is associated with poor cognitive function

Vitamin B5 (D-Calcium Pantothenate)

- For energy production in the brain
- Helps slow brain aging

Folic acid

- Supports synthesis of neurotransmitters
- Slow brain atrophy
- Supports healthy cognitive function

Vitamin B12 (Cyanocobalamin)

- Used for neurotransmitter production
- Increases brain energy
- Helps slow brain atrophy and cognitive decline
- Helps slow brain aging

Vitamin D3 (Cholecalciferol)

- Helps slow brain aging

Vitamin B6 (Pyridoxine Hydrochloride)

- Used for neurotransmitter production
- Increases brain energy
- Helps slow brain atrophy and cognitive decline
- Helps slow brain aging

Vitamin B1 (Thiamin Mononitrate)

- Supports nerve growth and sending signals around the body
- Increases brain energy
- Helps slow brain aging

Vitamin B2 (Riboflavin)

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- Increases brain energy
- Helps slow brain aging

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