NEUROTRANSMISSION in the brain

Neurotransmitters are chemical messengers in the body. Their job is to transmit signals from nerve cells to target cells. These target cells may be in muscles, glands, or other nerves.

The brain needs neurotransmitters to regulate many necessary functions, including: heart rate breathing sleep cycles digestion mood concentration appetite muscle movement

Testing reveals that you may be low in the following neurotransmitter(s). A list of the best foods to eat and supplements to help with this follows.

DOPAMINE: Beta brain waves, frontal lobe/stomach meridian, energy, working memory, controls movement and response to messages received from sense organs via the hypothalamus.

Symptoms of Low Dopamine: Parkinson's, Muscle cramps, spasms, tremors, rigidity, chronic back pain, chronic constipation, weight fluctuations, poor balance, difficulty eating/swallowing, reflux problems, poor concentration, poor motivation, addictive disorders, obesity, severe fatigue, no joy in life.

Diet: Boosted by high protein diet with fruit sugars. Eat as much fruits and veggies as you wish.

Food Therapy: Chicken, Cottage Cheese, Duck, Wild game, Luncheon Meat, Pork, Ricotta, Soybeans, Turkey, Eggs, Granola, Oat flakes or rolled oats, Sausage Meat, Low fat/low salt cheese, Wheat germ, Whole milk, Walnuts, Yogurt

Avoid: Carbonated beverages, Processed sugars, Lead exposure, chemicals, cadmium, cigarette smoke

Probiotics to help increase Dopamine:

Lactobacilus planatarum Lactobacillus rhamnosus Saccharomyces boulardii

Supplements that may be helpful: Tyrosine; DL Phenylalanine; Methionine; Mucuna Pruriens; Rhodiola; Vit. B6; B complex; Phosphatidylserine; Gingko Biloba; Chromium; Arginine; Fish Oil; Willowbark; Guarana; Vit. B1; Hydroxycitric acid; Conjugated linoleic acid

Note: Tyrosine is the precursor of dopamine. Phenylalanine is a precursor of Tyrosine.

Exercise: Quiet relaxation, breathing exercises.

Other: Get enough sleep. Listen to music. Sunshine, Meditate. Vagus nerve stimulation. Low level laser therapy with red and infrared light. Cold water immersion (cold showers)

ACETYLCHOLINE: Alpha brain waves, Parietal lobe/gallbladder meridian, thinking, action, brain speed, immediate memory.

Symptoms of Low Acetylcholine: Poor short term memory, brain fog, fatigue which gets worse with exertion, fast heart rate, constipation, flushed red face/neck, blindness, slow movements, involuntary movements, slow digestion, poor digestion, food intolerances, language disorders, memory loss, cognitive disorders, learning disabilities, Alzheimer's.

Diet: Boosted by eggs, caviar, sardines, fish oils, olive oil. Eat as much fruits and veggies as you wish. Low animal fat diet.

Food Therapy: Beef/chicken/pork liver, Eggs, Pork, Canned shrimp, Salmon, Tilapia fish, Wheat bran, Cod fish, Lean ground beef, Artichokes, Macadamia nuts, Oatbran, Wheat bran, Peanut butter, Pinenuts, Hazelnuts, Soy Protein Powder, Tomato paste, broccoli, brussel sprouts, cabbage, toasted wheat germ, tomatoes, blueberries

Avoid: aluminum (cookware, underarm deodorants, tums, rolaids, water softeners). Violent films, aggressive language, PCB's, fertilizers, pesticides, electromagnetic fields, microwave radiation,

power lines, microwave ovens, fluorescent lighting, cell phones.

Probiotics to help increase Acetylcholine: Lactobacillus plantarum Bifobacterium longum

Supplements that may be Helpful: Choline; Estradiol; Vasopressin; Erytropoietin; Progesterone; Human growth Hormone (HGH); Calcitonin/Miacalcin; Parathyroid hormone; Testosterone; Manganese; Fish oils; Acetyl-carnitine; Lipoic acid; Phosphatidylserine; Phosphatidylcholine; Glycerol phosphocholine; Vit. B1; Vit. B5; Vit. B12; Taurine; Gingko biloba; Korean Ginseng; DHEA (docosahexaenoic acid); Huperzine-A; Zinc

Note: Choline is a precursor of acetylcholine. Acetylcholine is used for memory enhancement . Both Phosphatidylserine and Acetyl L Carnitine are needed to make neurotransmitters.

Exercise: Visual meditation (gazing at images to balance brain). Running, brisk walking, aerobics, biking, anything that increases heart rate.

Other: good quality sleep

GABA (gamma-aminobutyric acid) - Theta brain waves, Temporal lobe, for rhythm and balance, verbal memory

Symptoms of Low GABA: difficulty falling asleep, anxiety, muscle pain, trembling, shaky, headaches, night sweats, too much energy, depression, mood swings, cold sweaty hands, despair, fear, panic, sudden phobias, hypertension, palpitations, seizures, feels overwhelmed. Works with B3 and inositol.

Diet: Boosted by eating complex carbohydrate vegetables. Eat lots of fresh fruits and vegetables, especially complex carbohydrates.

Food Therapy: Brown rice, Bananas, Broccoli, Spinach, Potato, Oranges, Whole grain oats, Halibut fish, Walnuts, Beef liver, Rice bran, Lentils, Whole wheat or grain, nuts, cantaloupe, organ meats.

Avoid: Carbonated drinks, Alcohol, Anything white (white flour, white rice, sugar)

Probiotics to help increase GABA production:
L. Rhamnosus L. Paracasei L. Brevis Lactococcus lactis

Supplements that may be helpful: Inositol (2-12g/day); Phosphatidyl-choline; Melatonin; Glutamic acid; Niacinamide; Vit. B6; Valerian Rt ; Passionflower; Kava; Taurine; Valine; Isoleucine; Leucine; B Complex; DHEA; Progesterone; Pregnenolone; Reishi Mushrooms; Glycine; Gabapentin

Note: Glutamine (amino acid produced by the body, obtained from the diet) and Inositol make GABA. Need GABA for fibromyalgia, bipolar, restless legs, neuropathy, migraines. Glutamate (part of non-essential amino acid, considered the most prevalent neurotransmitter in the nervous system) converts to GABA with Vit. B6.

Exercise: Running, swimming, nature walking.

Other: Meditation

SEROTONIN: Delta brain waves, Occipital Lobe/Bladder Meridian, for good sleep, visual memory

Low Serotonin symptoms: Depression, anxiety, carb cravings, poor memory and focus, agitation especially in the evening, muscle pain, moody, PMS, sleep disorders, eating disorders.

Diet.: Boosted by poultry and complex carbohydrates. Eat as much fruits and veggies as you wish.

Food Therapy: Pork, Turkey, Wild game, Luncheon Meat, Cottage Cheese, Avocado, Wheat Germ, Sausage meat, Eggs, Ricotta cheese, Duck, Chicken, Whole Milk, Oak flakes, Granola, Chocolate,

Yogurt.

Avoid: **simple carbohydrates (eg. white flour, white sugar), artificial sweeteners, chemicals in foods, food dyes, PCB's, pesticides, burning plastics, mercury (as in certain fish), loud music, violent films, porn, foul language.**

Probiotics **to help increase Serotonin:**
Lactobacillus rhamnosus Bifidobacterium infantis Lactobacillus helveticus

Supplements **that may be helpful: Tryptophan; Vit. B6; St. John's Wort (Serotonin uptake); Fish Oil; B12; 5HTP; B5; Folic Acid; Niacinamide; Thiamine (Vit.B1); Melatonin; Magnesium; Hydroxycitric acid; Passionflower; Adenosine; Pregnenolone; Progesterone**

Note: **Tryptophan is a precursor of serotonin. You need serotonin for anxiety, weight loss. Don't take St. John's Wort if you are already taking anti-depressants.**

Exercise: **Running, Swimming 30 min 3 times a week.**

Other: **Sunshine. Meditation**