Jay Bartel, Clinical Herbalist and Holistic Health Educator
Last Updated July 2019

Vitamins and Minerals for Nervous System Wellness

Many vitamins and minerals play a significant role in the function and structure of the nervous system. Below are several key vitamins and minerals that help with mood and nervous system support and a list of food sources for each.

- **Magnesium:** Magnesium is important for many processes in the body, including regulating muscle and nerve function, blood sugar levels, and blood pressure and making protein, bone, and DNA. Magnesium can support the body by helping to relaxing the muscles, and can be useful alleviating tension in conditions such as migraine headaches. Great sources include pumpkin seeds, chard, and bananas. Herbs rich in magnesium includes nettles, alfalfa, mints, burdock, medicinal mushrooms and more!

- **B Vitamins, generally:** The B vitamins are necessary to support nerve structure and function. Collectively, they play a role in energy and metabolism, and support chemical signalling throughout the brain. B vitamins are water soluble, so they are lost through
perspiration and urination. Many medications also deplete the body of B vitamins. Most B vitamins found in animal products so vegetarians and vegans may want to supplement.
    - **B1 (Thiamine):** Thiamine plays an integral role in brain and central nervous system function. Its coenzyme form is important for the synthesis of acetylcholine, which is necessary for preventing memory loss and nerve inflammation. Thiamine also plays a role in digestion, as it assists in the production of hydrochloric acid (stomach acid), which is vital to the proper breakdown and assimilation of food. Thiamine helps maintain muscle tone in the intestines and stomach, prevents constipation and plays a role in the metabolism of carbohydrates. These factors and more mean that thiamine provides nourishment for all digestive organs, and helps with energy, appetite, and nutrient assimilation. Food sources include: beef, liver, oats, oranges, pork, eggs, legumes, raisins, and broccoli. Herbs sources include: burdock root, catnip, cayenne, chamomile, chickweed, dandelion, alfalfa, fenugreek, sage and yarrow.
    - **B2, (Riboflavin):** Riboflavin is important for the growth and development of healthy cells. It helps with the conversion of carbohydrates from food into adenosine triphosphate (ATP). ATP is a molecule that stores energy in the body. In this way, riboflavin helps support stable and resilient energy levels. Food sources of riboflavin include: eggs, organ meat, leafy greens, broccoli, asparagus. Herb sources include: catnip, cayenne, alfalfa, bladderwrack, ginseng, nettle, sage, parsley, red clover and chamomile.
    - **B3 (Niacin)**: contributes to the function of every part of your body. It plays a key role in metabolism, is necessary for a healthy liver and nervous system, and is important in the production of sex and stress hormones in the body. Food sources of niacin include tuna, peanuts, avocado, peas. Herb sources include: alfalfa, licorice, catnip, burdock root and chamomile.
    - **B5 (Pantothenic Acid)**: Pantothenic acid helps turn ingested food into energy, and is important for many functions in the body, especially making and breaking down fats. It is involved in the synthesis of the neurotransmitters acetylcholine, epinephrine, and serotonin. Pantothenic acid intake can affect alertness, cognition, memory, and mood. Food sources include: milk, soybeans, turnip greens, egg yolks.
    - **B6: (Pyridoxine)**: Pryidoxine assists many brain and neurotransmitter functions and is needed to maintain the health of nerves, skin, and red blood cells. Food sources include : beef, organ meats,

fortified whole-grain cereal. Vegan food sources include: whole grains, legumes, bananas, seeds and nuts, potatoes, brussels sprouts, and cauliflower. Like many other B vitamins, B6 is depleted by stress, hormonal fluctuations, and many medications, including oral contraception.

- **B7 (Biotin)**: Biotin helps with the metabolism of proteins, fats, and carbohydrates, and plays a role in cell signaling. Food sources include: beef, eggs, almonds, mushrooms, broccoli, oats, banana, legumes.
- **B9 (Folate)**: iFolate is needed to make red and white blood cells in the bone marrow, to convert carbohydrates into energy, and to produce DNA and RNA. Many studies have correlated folate deficiency with clinical depression. Supplemental folate, called folic acid, is added to many foods. Food sources include beef liver, oranges, asparagus, bananas, melons, lemons, legumes, yeast, and mushrooms.
- **B12 (cobalmins)**: Vitamin B12 exists in several forms and contains the mineral cobalt, so compounds with vitamin B12 activity are collectively called "cobalamins". Methylcobalamin and 5-deoxyadenosylcobalamin are the forms of vitamin B12 that are active in human metabolism. Vitamin B12 is a nutrient that helps keep the body's nerve and blood cells healthy and helps make DNA, the genetic material in all cells. Vitamin B12 also helps prevent a type of anemia called megaloblastic anemia that makes people tired and weak.Two steps are required for the body to absorb vitamin B12 from food. First, hydrochloric acid in the stomach separates vitamin B12 from the protein to which vitamin B12 is attached in food. After this, vitamin B12 combines with a protein made by the stomach called intrinsic factor and is absorbed by the body. Some people have pernicious anemia, a condition in which they cannot make intrinsic factor. As a result, they have trouble absorbing vitamin B12 from all foods and dietary supplements. Food sources: fish, poultry, eggs, dairy products, and fortified cereal. Herb sources include: bladderwrack, dandelion, and alfalfa. The B12 found in animal products is most readily absorbed by the body. For this reason, vegans and vegetarians may consider supplementation.

- **Vitamin D:** Vitamin D is a nutrient found in some foods that is needed to maintain strong bones, to move muscles, and to carry messages from the brain to other parts of the body. The immune system also uses vitamin D when it fights off invading bacteria and viruses. Vitamin D is crucial for the production of serotonin, a neurotransmitter that helps to regulate wakefulness and euphoria, and plays a role in cognition, memory, and many other physological processes. The best source of vitamin D is the sun. Food sources of vitamin D include: salmon, tuna, beef liver, cheese, mushrooms, and fortified foods.

- **Choline:** Choline is a nutrient that is found in many foods. The brain and nervous system need it to regulate memory, mood, muscle control, and other functions. Choline is also needed to form the membranes that surround the body's cells. Most of the choline in the body comes assimilated foods, though the liver can also produce a small amount as well. Food sources of choline include: eggs, broccoli, peanuts, poultry, cauliflower .
- **Zinc:** Zinc is found in cells throughout the body. It helps the immune system fight off invading bacteria and viruses. The body also needs zinc to make proteins and DNA, the genetic material in all cells. Zinc also helps wounds heal and is important for proper senses of taste and smell. Emerging research suggests that zinc also plays a role in the glutamenergic and GABAnergic balance, and thus is a factor in energy and cognition. Recent studies link zinc defciency with clinical depression and issues with memory and sleep. Food sources of zinc include: oysters, red meat, legumes, dark chocolate, strawberries, cashews, red peppers.