



Creating Optimal Cognitive Function and Mental Health

No matter what we do in life, we want to be at **Our Best**. We are impassioned to express and experience our truly amazing selves. Lifestyle, to include movement, hydration, low-stress, and the foods we do and don't eat, is the single most important modifiable factor involved in creating and maintaining overall systemic health and living our **Best Life**.

Our body is a system comprised of interrelated smaller systems. Systems such as the integumentary system (skin, hair, nails), skeletal system (bones, joints), muscular system (cardiac, smooth, skeletal), nervous system (brain, spinal cord, nerves), Endocrine System (Pineal Gland, Pituitary Gland, Thyroid Gland, Thymus, Adrenal Gland, Pancreas, Ovary, Testis), Cardiovascular/Circulatory System (Heart, Blood Vessels), Lymphatic System (red bone marrow, thymus, lymphatic vessels, thoracic duct, spleen, lymph nodes), Respiratory System (nasal cavity, pharynx, larynx, trachea, bronchus, lung), Digestive System (oral cavity, esophagus, liver, stomach, small intestine, large intestine, rectum, anus), Urinary System (kidney, ureter, urinary bladder, urethra), and Reproductive System (prostate gland, penis, testis, scrotum, ductus deferens). The functionality of each of these systems affect the other as well as our overall health. The lifestyle we enact affects each of these systems and our overall systemic health in a multitude of ways.

INSTINCT: Our instinct is to survive. Our bodies react and potentially evolve in many ways to make this happen. Some of these reactions produce coping skills and physical expressions that are helpful and not so helpful as they may lead to symptoms that don't serve us. Each of us has the opportunity to provide our mind, body and spirit the needed lifestyle, to include nutrition, to serve and not impede our expression of our Amazing Self.

Let's think back to our childhood. We are riding our bike, we fall, and it hurts! Immediately, we go into survival mode. Our emotions elevate, our body becomes inflamed as we move to heal. If we continue to crash on our bike, these elevated emotions and inflammation becomes chronic.



Our reaction to eating processed, toxic food is similar. We become emotionally elevated and inflamed. If we continue in this unhealthy way, this inflammation becomes chronic. This inflammation is systemic and affects us in a multitude of ways. Similarly, when we are in a heightened state of inflammation, we overreact to non-familiar viruses, bacteria and other microbes causing us a non-productive level of inflammation.

When our brains aren't getting the right amount or types of foods necessary to maintain systemic health to include cognitive health, in part, our brain function can suffer. This will then manifest as cognitive, emotional, and physical exhaustion, poor memory, and mood instability. The foods we eat can make or break our ability to optimize brain function for peak performance in everything we do.

The choices we make in deciding what foods to eat directly impact our brains. Like a premium car engine that needs super fuel to run efficiently, the brain requires high-quality nutrients to reach and sustain peak performance. In the example of the car, poor quality fuel doesn't burn efficiently. Poor efficiency means energy is lost and goes unused, escaping through the production of unwanted byproducts— such as toxic gasses in exhaust.

The brain operates in the same way. If someone consumes the standard American "SAD" diet which is typically comprised of 2000 calories from a poor-quality diet composed of processed sugars, non-organic whole foods and fast foods, they won't get the same amount of nutrients and energy as they would if they had consumed the same number of calories in fresh, whole, organic foods.

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Even worse, the by-products of the SAD diet has deleterious effects on every biological process in the brain. The increased toxicity reduces antioxidants, increases tissue-damaging free radicals, and disrupts insulin regulation and electrolyte balance – all of which leads to increased levels of chronic inflammation. The consequences of this will manifest itself in mood instability, as well as poor memory retention, recall, concentration, critical and creative thinking, and body control.



The good news is we can improve our brain function with a few simple lifestyle modifications that will serve our brain, systemic health, and spirit.

SERVING OUR BRAIN

When considering proper brain nutrition, focus on three main areas:

- Hydration
- Foods that limit inflammation and promote systemic health to include brain health
- Gut Health

HYDRATION

The brain is 75% water. Without proper hydration, brain function suffers. Water is essential for biochemical reactions within our nervous system and is a vital substrate in the conversion of food to energy in neurons. When you are dehydrated, you have trouble concentrating and remembering things. You also can have difficulty performing complex cognitive tasks, such as creative thinking or doing math.

Dehydration can also worsen symptoms of anxiety and lead to panic attacks. When you don't drink enough water, your body releases the stress hormone, cortisol, and this may lead to an increased heart rate, headaches, fatigue, and light headedness – all of which can trigger or worsen feelings of stress and anxiety.

Drinking water has been found to have a calming effect, as it helps to reduce symptoms associated with anxiety. Several research studies have found that drinking adequate amounts of water helps to improve mood stabilization in moments of high stress.

As such, making sure you're staying hydrated is an important first step. Some resources say that you should drink half your body weight in ounces of water every day. This estimate is not enough if you live at high altitude and/or are active. The American College of Sports Medicine suggests adding 12 ounces of water to that amount for every 30 minutes of activity. That means if you exercise an hour a day, you need to add 24 ounces of water to your recommended amount.



ANTI-INFLAMMATORY and NUTRITIVE FOODS

Foods that are organic and do not cause inflammation are also important for maintaining proper brain function. Organic, anti-inflammatory plant-sourced foods provide calories which burn efficiently and don't produce unhealthy byproducts.

Foods that limit inflammation are easy to find and taste great. Green leafy vegetables such as spinach, kale, and cabbage contain high levels of antioxidants, vitamins, and minerals. Some medical studies have concluded that consuming one serving a day of green leafy veggies can reduce the risk of developing Alzheimer's disease and cognitive decline.

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Omega-3 Fatty Acids are essential as our bodies can't make them. Omega-3's are very beneficial for lupus, rheumatoid, arthritis, diabetes, psoriasis, ulcerative colitis, multiple sclerosis and are critical for brain health. Clean, non-toxic fish is a great source. Another great source of omega-3 fatty acids and antioxidants are nuts and seeds.

Berries contain antioxidants and anthocyanins. They mitigate current inflammation and train our body to respond more productively to future episodes of inflammation. Berries are also great sources of antioxidants and vitamins. The pigments in berries and other brightly colored fruits or vegetables are called flavonoids. Flavonoids have been shown to improve memory and concentration. Like other phytonutrients, flavonoids are powerful antioxidants with anti-inflammatory and immune system benefits.



Organic whole grains, such as brown rice, oats, barley, and quinoa contain high amounts of antioxidants and vitamin E. Some medical studies show vitamin E can improve cerebral blood flow. There are also studies that have demonstrated reduced chronic inflammation and improved memory in individuals who consume whole grains.

GUT HEALTH

The microbiome research of the last decade has revealed something wonderful. Human biology is far from alone. We are supported, detoxed, fueled, and regenerated by the action of thousands of species of bacteria, fungi, protozoa, parasites, and mitochondria. Quadrillions of these organisms, in stunning biodiversity, compose the organic garden of our body.

The health of our gut microbiome is dependent, in a large part, on the foods we eat. The more whole, organic foods we eat, the healthier and more diverse our gut becomes and aids in our systemic and cognitive health.

Toxins, unhealthy foods, alcohol, and antibiotics reduce this diversity and protective effect leading, in part, to the permeability of our gut lining. Being on the front line, and one of the few regions of the inner body being in direct contact with elements from the outside world, the gut microbiome has evolved to have a mutually beneficial relationship with many microbes such as bacteria, fungi, viruses, parasites, we often think of as being pathogens.

Several scientific studies have found that individuals with a healthy gut microbiome have decreased levels of brain fog, stress, anxiety, and depression and have a generally more positive outlook compared to individuals with altered gut microorganism populations. More recent research is suggesting that our gut microbiome can also play a role in reducing chronic inflammation, regulating glucose and insulin balance, and might even improve cognitive scores in people with dementia.



Brain function is controlled by messages sent via chemicals called neurotransmitters. Many of our most common neurotransmitters such as GABA, norepinephrine, serotonin, dopamine, and acetylcholine are produced in the gut. Serotonin is an important neurotransmitter which helps to regulate our sleep cycle and mood – it's our de-stressing hormone. People who have low levels of serotonin experience anxiety, depression, aggression, irritability, and insomnia. 90% of our serotonin is produced in the gut by the billions of bacteria, fungi, viruses, parasites that make up our gut microbiome.

OUR OPPORTUNITY

We are all dealing with heightened levels of stress and anxiety as we attempt to cope with the current state of the world. Staying hydrated, eating organic, whole foods, and increasing the health of our microbiome will reduce inflammation and promote brain health, our expression of our amazing self, how we feel and view the world around us. These simple changes will help you in staying positive and feel empowered as you tackle the challenges of your day. Drink water, eat the rainbow, and remember how lucky the world is to have you living in it.

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