

Remède Physique

Newsletter

The Gut-Brain Connection

How the Health of the Intestines Affects Autism, ADHD/ADD, Alzheimer's, Autoimmune Conditions, etc

The Brain in Your Gut

The gut's brain, known as the enteric nervous system, is located in sheaths of tissue lining the esophagus, stomach, small intestine and colon.

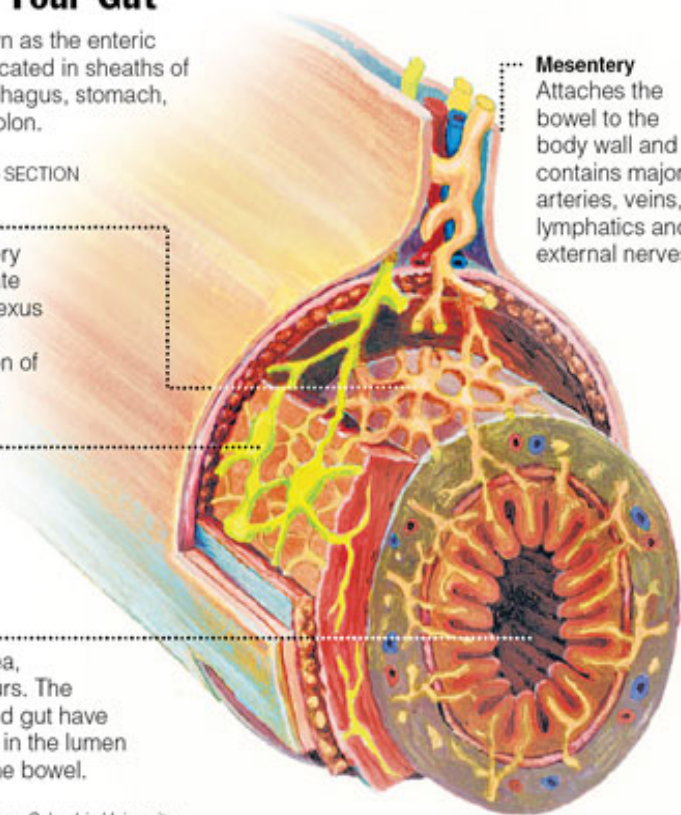
SMALL INTESTINE CROSS SECTION

Submucosal plexus Layer contains sensory cells that communicate with the myenteric plexus and motor fibers that stimulate the secretion of fluids into the lumen.

Myenteric plexus Layer contains the neurons responsible for regulating the enzyme output of adjacent organs.

Lumen No nerves actually enter this area, where digestion occurs. The brains in the head and gut have to monitor conditions in the lumen across the lining of the bowel.

Mesentery Attaches the bowel to the body wall and contains major arteries, veins, lymphatics and external nerves.



Source: Dr. Michael D. Gershon, Columbia University

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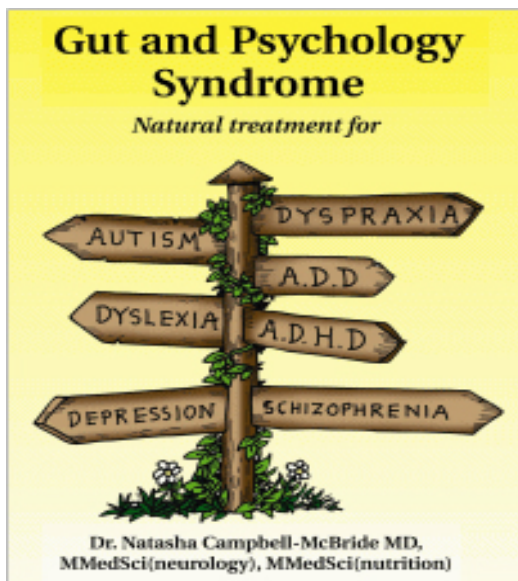
Anti-Inflammatory Diet

During fetal development our gut and our brain originate from the same clump of tissue.

During embryogenesis, one section of the tissue turns into the central nervous system (the brain and spinal cord) and the other section becomes the enteric nervous system. The enteric nervous system is a subdivision of the peripheral nervous system (nerves and ganglia outside of the brain and spinal cord) that directly controls the gastrointestinal system.

The two nervous systems are connected by the vagus nerve, which is the longest of the cranial nerves. The vagus nerve directly connects the brain with the intestines; it originates in the brain stem and terminates in the colon.

There is a direct, intimate, lifelong connection between the intestines and the brain.



Dr. Natasha Campbell-McBride's Book is an excellent educational resource for understanding the gut-brain connection.

What do the following conditions have in common?

ADHD/ADD, autism, dyspraxia, dyslexia, behavioral problems, learning challenges, failure to thrive, Alzheimer's, allergies, asthma, eczema, psoriasis, dermatitis, schizophrenia, depression, bipolar disorder, obsessive compulsive disorder, multiple sclerosis, lupus, rheumatoid arthritis, autoimmune thyroid dysfunction, or any other autoimmune condition ...

"All diseases begin in the gut"
Hippocrates

They all originate in a breakdown of the digestive system.

Children and adults with autism spectrum disorders have mild to severe digestive symptoms ranging from colic, bloating, and flatulence, to heartburn and reflux or alternating diarrhea / constipation, fussy eating habits and malnourishment. Often times these people have extremely limited diets, sometimes consisting of as little as two or three items!

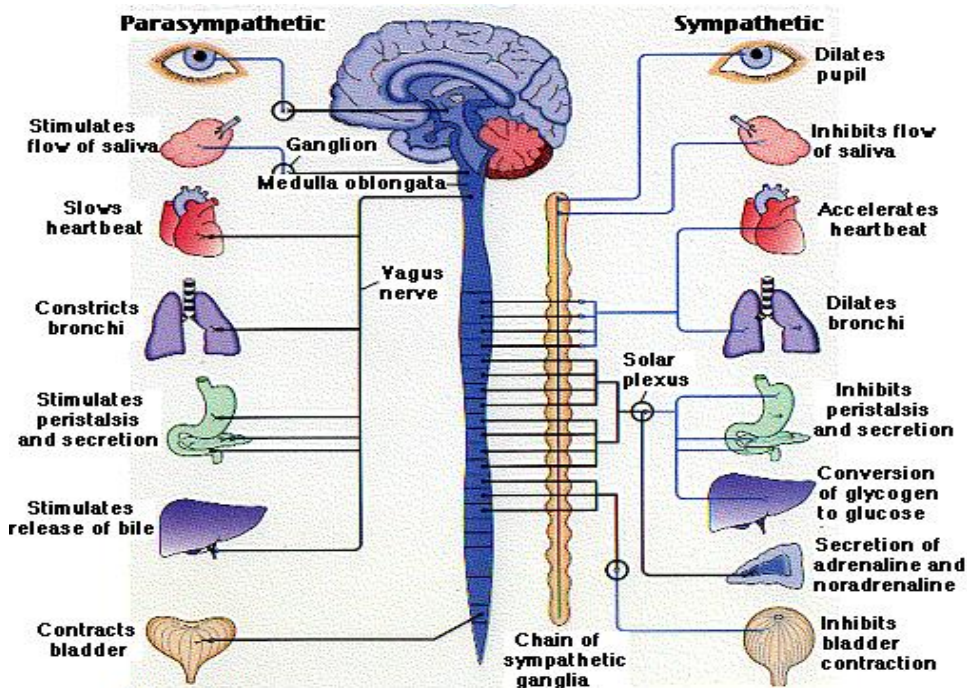
There are increasing numbers of published works linking these conditions with 'non-specific colitis' and 'fecal compaction with over-spill syndrome.'

What this means is that these folks have various stages of inflammation in the intestines, erosions of the mucous membranes of the colon and

intestines, abscesses filled with pus, ulcers and fecal compaction where large amounts of old compacted feces is glued to the walls of the digestive tract providing a fertile environment for parasites, bacteria, fungi and viruses.

Without well-functioning gut flora, the intestinal wall becomes unprotected and malnourished; leading to permeability of the digestive tract.

A permeable intestinal wall allows macromolecules of undigested foods to pass into the blood stream. This leads to toxic overload and over time autoimmune processes begin, wherein the body makes destructive antibodies against its own tissues. In fact, anytime an autoimmune condition exists, the gut is compromised.



The Vagus Nerve

originates in the medulla oblongata of the brain stem and terminates in the colon. It directly connects our gut with our brain, like the roots of a tree supply the entire plant with nourishment. If the roots of a tree are planted in poor soil, the health of the entire plant will suffer. Likewise, if the vagus nerve is terminating in a gut full of unbalanced flora, the brain will not receive the life giving nutrients it needs to thrive.

It is common wisdom that the body function as a whole. In the body every system, organ, tissue and cell depend on each other, affect each other and communicate with each other.

For thousands of years, health care practitioners have agreed that the state of the digestive tract is responsible for the health of the human being because of the holistic nature of the body. Hipocrates, the founder of modern medicine, who lived from 460-370 BC, wrote that *all diseases begin in the gut*. This is some basic knowledge that has been around for a very long time.

So it is nice to know that modern scientific research has confirmed that 80% of the immune system is located in the digestive tract in the form of gut associated lymphatic tissue. And that a healthy immune system and our ability to fight off viral, bacterial, fungal and parasitic assault is dependent upon a healthy optimally functioning digestive tract.

Additionally, our ability to think clearly and effectively is also dependent on the state of our digestive system. This is due largely in part to neurotoxicity.

When the flora of the digestive tract is imbalanced, the digestive system becomes a major source of toxicity in the body.

A predominance of abnormal gut flora is a symptom of and a contributor to intestinal permeability. Intestinal permeability occurs when the gut wall becomes damaged and is unable to prevent macromolecules of food and toxins escaping into the blood stream.

The gut's "brain" is located in tissue lining the esophagus, stomach, small intestine and colon.

Abnormal gut flora produces an as yet unknown number of different neurotoxins; several of these neurotoxins have been studied in depth because an overabundance has been detected in patients with gut induced psychological disorders like ADHD/ADD, autism, Alzheimer's, dyslexia and even schizophrenia (to name a few).

The neurotoxins produced by abnormal flora in the gut pass through the damaged gut wall, get absorbed through the blood and transported throughout the body, including the brain via blood supply and the vagus nerve.

(continued)

The brain cannot function properly when it is bathed in these neurotoxins.

Some of the neurotoxins found in patients with gut associated psychological syndromes include ethanol and acetaldehyde, gluteomorphins and casomorphins, and deltorphin and dermorphin. Most of these patients are also found to have autoimmune conditions caused in part by neurotoxicity that leads their bodies to produce antibodies against their own tissues.

As Dr Campbell-McBride stresses in her book *Gut and Psychology Syndrome*, the mixture of toxins can be very individual to each patient. This is because an unknown number of various neurotoxins are produced by abnormal gut flora and they have not all been studied yet.

Ethanol and Acetaldehyde: are actually the chemicals found in alcohol that makes you inebriated. In healthy people, dietary glucose is converted into lactic acid, water and energy through glycolysis. In people with yeast overgrowth the opportunistic fungus *Candida albicans* steals the glucose and digests it through alcoholic fermentation. The yeast prefers to use carbohydrates for this process and many people with yeast overgrowth have overwhelming urges to eat carbohydrates almost exclusively.

When there is candida overgrowth,

the body and brain get a constant supply of alcohol.

Gluteomorphins and Casomorphins: are opiates like opium, morphine and heroin.

Gluteomorphins and casomorphins are opiates derived from the improper digestion of gluten and casein. Gluten is a protein found in grains, like wheat, rye and barley. Casein is a protein found in milk of cows, goats, sheep, and even humans.

These opiates from grains and milk pass the blood-brain barrier and block certain areas of the brain, just like morphine or heroin.

Deltorphin and Dermorphin: are extremely potent neurotoxins found on the skin of the South American poison dart frog. These toxins have been detected in the blood of autistic children by biochemist Dr Alan Friedman. At this time, it is surmised that a fungus in the gut is responsible for producing these toxins.

A number of other toxins have been identified in people with gut associated psychological syndromes and autoimmune conditions and studies continue to be released.

The important idea is that people with gut associated psychological syndromes and autoimmune conditions have a lot of toxins in their bodies and the toxins are coming from their intestines.



**“Having particular unbeneficial microbes in the digestive system can provide us with our own permanent source of toxicity.”
Dr Campbell-McBride**

Chronic neurotoxicity leads to a number of different problems:

Reduced ability of the stomach to produce digestive acid.

Reduced ability of the pancreas to produce digestive enzymes.

Direct damage to the gut wall causing malabsorption of nutrients, leading to nutritional deficiencies especially in B and A vitamins

Compromised immune system

Liver congestion and a reduced ability to detoxify drugs and pollutants.

Liver congestion and an inability to dispose of old neurotransmitters, hormones and other by-products of normal metabolism.

Lack of self-control, impaired co-ordination, speech impediments, stupor, aggression, mental retardation, and loss of memory.

Peripheral nerve damage with altered senses and muscle weakness.

Direct muscle tissue damage with altered ability to contract and relax muscles.

Enhanced toxicity of common drugs, pollutants and other toxins.



Treatment and Maintenance:

Treating gut associated psychological syndromes and autoimmune conditions focuses on removing toxicity stored in body tissues and healing the digestive tract.

This requires adherence to an anti-inflammatory diet, supplementation and lifestyle changes.

It is important to understand that recovery takes a long time ... in many cases, years. And maintaining a symptom free life

requires persistent, diligent application of diet and supplementation. That is why healing becomes a way of life.

It is erroneous to believe that you can spend a few months repairing the intestinal wall and then return to the same old habits that caused the deterioration to begin with.

This is akin to breaking your arm, and once it is healed, imagining that you could never break it again, regardless of whether you drop a boulder on it or not. That is a foolish expectation, wouldn't you agree?

Do not fall into the mistaken assumption that one liver cleanse and one round of intestinal repair will prevent you from ever experiencing intestinal permeability again.

Maintain your enthusiasm by seeking out the fellowship of other people who have made healing their way of life.

**A Healthy Digestive
Tract Requires
Constant
Maintenance and a
Daily Supply of
Probiotics**



Anti-Inflammatory - Healthy Immune System Diet

Protein: Individuals may have as much protein as required (meat, poultry, fish, and eggs **if no allergy is present** ... many folks with allergies to chicken eggs can eat duck eggs with no adverse effects. Use a **Pulse Test** to determine if there is a food sensitivity. Just a few ounces of animal protein a couple times a day will suffice. Target amounts of protein: Adult Men 56 grams/day, Adult Women 46 grams/day, Teenage Boys 52 grams/day, Teenage Girls 46 grams/day, School-aged Children 19-34 grams/day, Babies 10 grams/day. Red meat, pork poultry and seafood average 6-9 grams of protein per ounce. Eggs contain 6-8 grams of protein per egg. Focus on filling up with leafy greens and healthy fats. Fats trigger the brain to feel satisfied after eating. If you do not feel satisfied after eating, there was not enough fat in your meal.

Vegetables: No vegetables with high lectin content: such as mushrooms, peppers, potatoes, tomatoes, and eggplant.

Focus on dark leafy greens, and a variety of bright and rich colors. Asparagus, spinach, lettuce, broccoli, beets, cauliflower, carrots, celery, artichokes, garlic, onions, zucchini, yellow squash, rhubarb, cucumbers, turnips, watercress, etc. Eat as much as you want, as you can never eat too many vegetables. Eat some vegetables raw or lightly cooked every day. Avoid starchy vegetables, such as sweet potatoes, yams and corn.

Grain: no grains. No glutinous grains: no wheat, barley or rye, no oats. No grain substitutes: no corn, potatoes, rice, tapioca, amaranth, arrowroot, millet, montina, lupin, quinoa, sorghum, taro, teff, chia, nut flours, no bean flours like gram from chickpeas. **Glutinous grains and cross reactive grains can never be re-introduced. After the immune response has been regulated (it take anywhere from 6 months to 3 years to accomplish this) some non-glutinous grains may be tolerated in moderation. Use a Pulse Test to determine which grains will be less reactive for you.**

Fats: Eat plenty of wholesome natural fats, such as oils from coconut, sesame, olive, hemp, walnut, flax, etc. Supplemental fish oil is recommended. Avoid all artificial fats and oils, such as hydrogenated or partially hydrogenated oils.

Fruits: Be careful with fruits. Only consume fruit at the end of the meal or not at all. When eating fruit, it is also best to eat fruit with the skin on. Eat it with added fat. These tips will aid in regulating blood sugar to promote balance within your body. Fruit is not a necessity. It is recommended you consume most of your fruit during the warmer seasons of the year. Best fruits are berries, apples, pears, avocados, coconuts, peaches, kiwi, guava, and olives. Avoid sweeter fruits: such as bananas, grapes, pineapple, papayas, dried fruits, etc.

Nuts and Beans: No nuts - not raw, not roasted, not soaked. No beans. No soy. No seeds except for ground flax seed meal, which can be used to make bread and muffins. **After the immune response has been regulated (it can take anywhere from 6 months to 3 years to accomplish this) some nuts and seeds may be tolerated in moderation.**

Dairy: No dairy. No cow's/ sheep's/goat's milk, cheese, butter or cream. "If it comes from a teat, don't eat." Do not use soy cheese or nut cheese as a substitute. Unsweetened Coconut Milk and Unsweetened Coconut Yogurt are the only recommended substitutes. Very carefully clarified butter is allowed because all of the casein and lactose have been removed. Purity Farms brand ghee can be found in most health food stores. Once inflammatory markers are within the functional range for 6 months we will pulse test to determine if your body can tolerate cow, goat or sheep dairy products. **With IBDs and autoimmune issues dairy often can never be re-introduced.**

Coconut: this is a great food for you. Use coconut oil, coconut butter, coconut milk, coconut water, coconut manna, coconut flour, etc. The fat contained in coconut milk is very healthy and the milk is non-irritating/anti-inflammatory. The type of canned coconut milk you use and the type of coconut beverage is very important. You must only use the unsweetened, plain, coconut beverage (all others sold contain sugars, which must be avoided). As far as the canned coconut milk goes the only brands that do not contain BPA in the lining of the can are Natural Value and Native Forest. Coconut Beverage refrigerated boxes and tetra packs (unrefrigerated cartons) also do not have BPA in the lining. It is important that you make an effort to avoid BPA whenever you can.

Sweeteners: Stevia or Lo Han only. No sugar, artificial sweeteners, honey, maple syrup, etc. After the immune/inflammatory response is modulated honey and maple syrup can usually be re-introduced in moderation.

Stimulants: no stimulants such as sugar, caffeine, tobacco, tea and alcohol. No recreational drugs.

Water: Drink plenty of fresh, pure water daily. The equation to calculate the water you should drink daily is: (your body weight divided by 2 = # ounces of water to be properly hydrated).

Tea: to reduce stress try **Kava Stress Relief** tea by YogiTea. To aid sleep try **Soothing Caramel Bedtime** tea by YogiTea. Contact Vanessa to have an herbal tea formulated specifically for your needs.