

THE GUT-BRAIN CONNECTION:

5 THINGS MOST DOCTORS WON'T TELL YOU

But You Need to Know

Chronic diseases are rising at alarming rates.

One in 9 ladies (who are in their prime) are being diagnosed with autoimmune diseases. Almost 50% of Americans have a chronic disease and childhood neurodevelopmental disorders are also higher today than ever before.

Why are so many people across all ages and genders affected? While there are multifactorial causes, what is exceedingly clear is that something can be done about it.

Even though the health and well-being of our families are being significantly impacted; their quality of life, health and function can always be improved.

The purpose of this document is to help you and your family make that improvement.

The next five sections contain essential information I have learned as a healthcare provider over the course of my career as I have focused on improving the health and quality of life of individuals of all ages facing autoimmune and other chronic health challenges.

I consider this necessary information for all families and health providers to know in order to help people experience their optimal health, function and quality of life.

Sincerely,

Drew Vercellino, D.C.

1. **“There is hope because quality of life can always be improved.”**

Many people given a diagnosis of an autoimmune disease, fibromyalgia, chronic fatigue, autism, and other chronic diseases are told that they have a genetically based condition and that the best treatments available are those which seek to manage symptoms or modify behavior.

What this advice fails to recognize is that while there often is a genetic component, there are also frequently co-existing health conditions, which are making the condition worse; or in some cases, causing the condition in the first place.

It's not all in the Genes?

The current prevailing story is that autoimmune diseases, hormonal disorders, autism, ADHD, and many mental health issues as well are predominantly an issue of genetics. That our genetics are the cause of these problems and that there is little that can be done.

While the genes are indeed important in the development of certain disorders, the genetic theory as their sole cause completely ignores scientific data showing otherwise.

You see, you cannot have a genetic epidemic.

It is impossible. Genes don't change that rapidly. Take autism for example:

If genes were the primary cause, the fact that the majority of individuals with autism do not have children would suggest that the rates of autism would be on the decline or at least have leveled out. This is not the case. The rise continues and many believe that the end is not in sight.

Two of the largest studies on the incidence of autism have shown that only 50% of the over 800% increase can be attributed to better and earlier diagnosis. The authors of both studies concluded that the other 50% increase must be due to the environment.

Similarly, researchers looking at the the staggering statistics regarding chronic health issues have come to the same conclusion. The cause of 107 million Americans (nearly half of the population) having a chronic disease is due to environmental factors.

While some environmental factors cannot be changed, others absolutely can. The point however is that are fate is not determined solely by our genes.

The old model of autoimmune diseases, hormonal disorders, autism, ADHD, and mental health issues being a purely genetic issue is quickly falling away to the rational and scientifically

supported position that **these disorders are largely due to environmentally induced or stimulated autoimmune responses in genetically predisposed individuals.**

Dr. Paul Hardy puts it best stating,

*“After twenty years of searching for the gene, or genes, and the expenditure of untold millions of dollars, no single gene, or set of genes, has been found. Possible gene loci have been identified, but what is very clear is that autism is a polygenetic condition with the environment probably playing a significant role in the expression of genetic factors. It is no longer genes **versus** environment – it is genes **and** environment!”*

These disorders, including autoimmune disorders, hormonal imbalances, and chronic inflammation primarily impact the central nervous system (brain and autonomic nervous system), gastrointestinal system, immune system, and detoxification systems.

The result is whole body dysfunction with symptoms specific to each of those systems being in a state of dysfunction. **The truth is that no matter what an individual’s genetic situation and state of health, strategies and techniques can be employed that can improve their quality of life.**

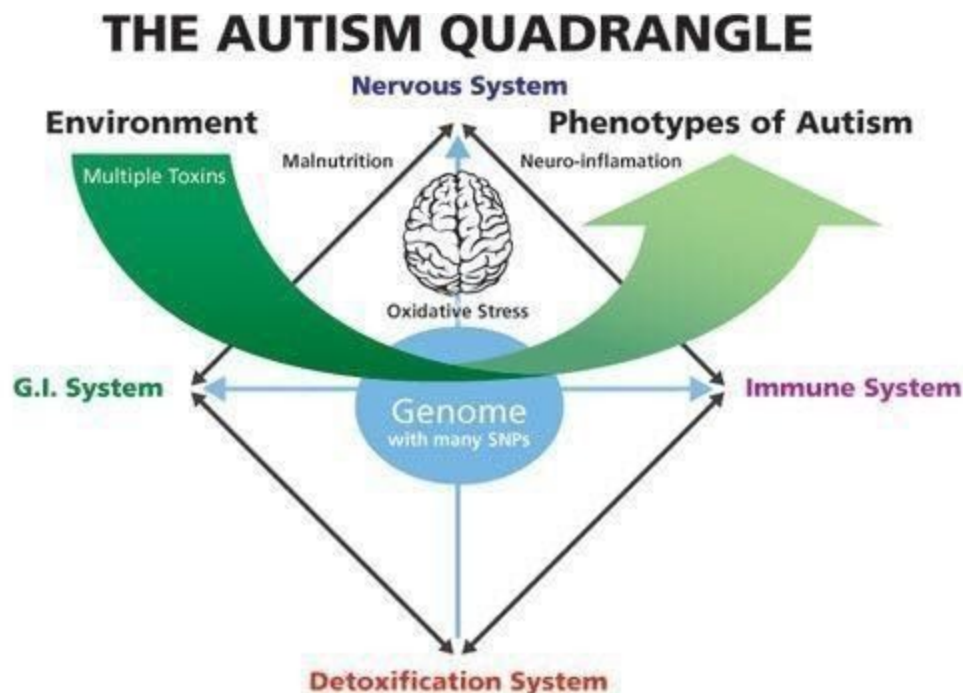
Depending on the stage of the disease process, when it started, and a person’s individual genetics, their recovery and healing process will vary accordingly.

Nonetheless, **there is always room for improvement in quality of life.**

2. “Chronic health issues involve the WHOLE body.”

In order to truly understand these various yet related conditions, I believe it is essential to view it as a whole body disorder (rather than just a thyroid, sleep, or digestive issue).

Dr. Paul Hardy is a diplomate of the American Board of Medicine and the American Board of Psychiatry and Neurology. He also serves on the Panel of Professional Advisors of the Autism Society of America and is a director at the Autism Research Institute. He has created a fantastic graphic to help depict these chronic health issues as whole-body disorders.



As you can see, the problem is a cyclic one as each system influences the other. While in one person autism are the expressive symptoms. In others, symptoms come from the immune systems or digestive system or some even express through all of them!

As you can see, the problem is a cyclic one as each system influences the other. While the graphic is called the “Autism Quadrangle,” the framework describes the majority of chronic health diseases and challenges. The common theme being that environmental toxins and disruptions in the gastrointestinal system, detoxification system, and immune system can all have detrimental effects on the delicate nervous system.

Major gut dysfunction is a hallmark in a large percentage of individuals with autism, ADHD, fibromyalgia, hormone imbalances, and other mental/emotional health problems. In a nutshell, problems with the gut result in a leaky gut which allows pathogens, proteins and other materials to enter the bloodstream and produce a chronic and consistent autoimmune inflammatory response. This causes brain inflammation and the resultant changes in brain structure and function.

Couple this with a compromised or injured nervous system and suboptimal detoxification systems and you have a recipe for a chronic, neurodegenerative, or/and inflammatory condition.

While this process of chronic cyclic dysfunction, inflammation and autoimmune responses is quite daunting, it is a process that can be halted and reversed. Many children and adults alike have seen tremendous leaps in health and function even when they have been told that nothing could be done or their condition was incurable.

If you study Dr. Hardy's graphic above, it should become very clear what the interventions should be.

They should be those approaches, therapies and procedures aimed at supporting and **strengthening the function of reparative processes of the:**

- **Nervous system**
- **Gastrointestinal system**
- **Immune system and**
- **Detoxification systems.**

This approach has helped thousands of children and adults impacted by various chronic diseases, neurodevelopmental disorders, inflammatory conditions, and autoimmune challenges and can lead to tremendous growth and healing by following these guidelines and the information I will be sharing throughout this document.

One area commonly overlooked is when did the process leading up to the condition begin? Did it start months before? Years?

Research is showing that these problems can begin early in childhood or even before a child is born. One concept that is extremely important to understand is that children do not just have smaller versions of an adult brain. Children's brains and nervous systems are much more vulnerable than adult brains to toxins and inflammation which can alter the brain's normal development.

3. "There is a major link between gut health and brain health."

Dr. David Perlmutter, a leading neurologist and the author of several books, recently wrote a book called *Brain Maker*. This book is entirely dedicated to the link between the health of the digestive system and the health and function of the brain and is just one of many similar books on the topic as well as countless scientific papers documenting this.

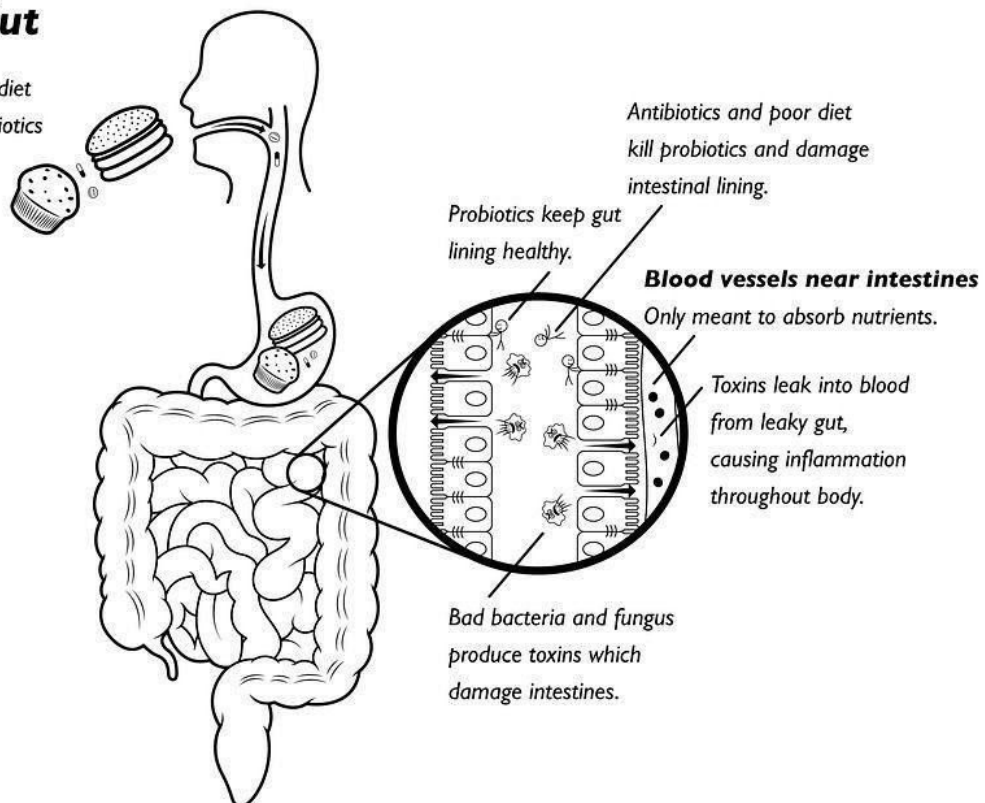
The link between the health of the digestive system and the health of nervous system is something that is becoming more and more studied throughout the scientific community, and for very good reason.

If you or your child has an unhealthy digestive system, it will have an extremely detrimental effect on the nervous system.

Various factors can cause the stomach and gut lining to become impaired and inflamed. This leads to a condition commonly known as 'Leaky Gut'. **When a person has leaky gut syndrome, their body is no longer able to absorb nutrients in a sufficient manner.** This is why in the graphic above, malnutrition is depicted in the upper left. The child may be eating a very healthy diet, but if the person is not absorbing the nutrients in the food, he/she will not be healthy.

Leaky Gut

- Poor diet
- Antibiotics



Unfortunately, leaky gut syndrome causes much worse problems than malnutrition. The increased porous nature of the gut lining due to irritation and inflammation allows food particles and pathogens to enter the bloodstream and cause a chronic autoimmune response and

chronic inflammation. (This is why most people complain of gas pains or bouts of constipation then diarrhea)

This cascade produces food sensitivities, allergies and eventually leads to Leaky Brain; a condition in which the blood-brain barrier becomes compromised and allows for this same process to now negatively affect the brain.

A food sensitivity is a condition in which a person's immune system attacks certain foods that the person eats, because the immune system has mis-identified that food as something harmful (like a bacteria). This is extremely insidious because oftentimes the person has no ill-effects from the sensitivity until days after the food is consumed.

This cascade of events leads to encephalitis (an inflamed brain) which then results in many of the symptoms we see in neurodevelopmental conditions such as trouble focusing, anxiety, rage, depression, speech delays, motor planning difficulties and more. More common symptoms seen in adults are chronic fatigue, unbalanced hormones, achy joints, chronic sickness, and autoimmune disorders.

Here are some early warning signs that could cue you in on potential digestive system problems:

C – Section delivery - Typically we receive our microbiome (healthy gut bacteria) from our mother when we pass through the vaginal canal. C-section deliveries skip this step, so these babies do not inherit the healthy bacteria from mother the same way.

Antibiotic Use – Antibiotics don't just harm bad bacteria, they also destroy the healthy bacteria that is very important to our system. If the healthy bacteria in our system are destroyed, it often leads to a breakdown of the healthy lining in our small intestines. This often precedes leaky gut disorder, which then leads to multiple sensitivities, allergies, and neuroinflammation.

Loose stools – A healthy stool should be solid with a rich, brown color. The stool should not be too hard or too soft. Here is a wonderful article by Dr. Joseph Mercola discussing what our stool says about our health:

<http://articles.mercola.com/sites/articles/archive/2013/02/14/normal-stool.aspx>

Stomach Pain – This is typically caused by inflammation in the digestive tract. Stomach pain is not always associated with food we have just eaten. In fact, it is very common for children to have stomach pain a day or two after eating food that irritated their system. Monitoring your diet and how you react to foods (even days later) is a very important step in the healing process.

Addiction to certain foods – While in kids the most common addictions are to foods like

Pizza, Cheese and crackers, or Macaroni and cheese, most adults have an addiction to sugar. Many people have sensitivities to gluten and grain products, as well as to dairy. What makes this problem worse is that they are often addicted to the very foods that they are most sensitive to; as eating these foods soothes opiate receptors in the brain. If you are constantly craving foods with a high gluten/dairy content, it is a major sign that you need to heal your digestive system. Eliminating those foods and processed sugars can greatly improve inflammation in your body!

One of the best ways to learn more about your digestive system (and how to heal it) is to read a book called **Gut and Psychology Syndrome by Natasha Campbell-McBride, M.D.** Not only is Dr. Campbell-McBride the mother of a child with learning disabilities herself, she also holds master's degrees in neuroscience as well as nutrition.

One of the most important steps to heal the digestive system is to remove offensive foods that trigger a negative immune response and cause leaky gut syndrome.

3. Natural Chronic solutions for helping gut and brain health

Many chronic disease, hormonal imbalance, allergies, asthma, food-sensitivities, and autoimmune conditions all have one thing in common: they involve an immune system that has gone haywire.

The immune system is one of the most important parts of the human body. Without it, we would be vulnerable to every bacteria, virus, fungus, and parasite in our environment (and there are many!). These microorganisms would kill us in a matter of days if it weren't for our immune system.

A healthy immune system allows the body to **appropriately** respond to foreign invaders, such as pathogenic bacteria or viruses. **Many people in today's world actually have an immune system that is overactive.** It is chronically stimulated, and as a result is no longer able to create a proportionate response when there is a problem. The immune system starts to over-respond to every threat, even to the point where it can attack the body's own tissue (which is how many autoimmune conditions begin.)

In essence, these overactive immune systems respond to a minor infection (such as a cold) with the immune equivalent of dropping a nuclear bomb.

Think back to the last time you had the flu. You probably remember feeling bloated, foggy, and having your entire body ache. The reason this happens is because in the case of the flu, your immune system responds by producing inflammation to kill off the virus. This is a healthy response, but the side-effects from that response cause you to feel terrible.

For many, however, their body's and brain's are inflamed to the point where it is like they have the flu all the time. The inflammatory response does not shut off, because of a variety of processes that are keeping the immune system turned on and engaged in an unhealthy way.

Various processes can cause an immune system to be overactive. Parasitic infections, chronic viral infections, a Vitamin D deficiency, food sensitivities, sugar addictions, pesticides and heavy metal or environmental toxicity can all negatively affect the immune system; resulting in a system that is overstressed and unbalanced. Another major cause is an imbalance in the autonomic nervous system, which we will discuss in-depth in the next section.

In order to stop the chronic autoimmune involvement and hyperactivity of the immune system, their needs to be sustained and diligent steps to remove offending and irritating substances as outlined above, as well as specific protocols designed to restore the gut (GAPS diet, Specific Carb Diet, etc).

This process is certainly not an easy one and often requires the assistance of trained professionals in holistic healing and nutrition such as naturopathic doctors, functional medical doctors, and other similar providers.

To get an eye-opening perspective on the difficulties of eating pure, healthy food and staying healthy in today's world, check out the video documentary, *Bought*. In it you will learn about the prevalence of GMO's, the multiple sources of toxin exposure, and overall dangers of today's modern society.

While the gut health is certainly one reason for an altered and overactive immune response, one of the most commonly overlooked reasons (the missing link if you will) is that the nervous system is no longer properly controlling the immune system. **Without the proper guidance from the brain, the immune system does not know how to have a healthy response.**

The people who undergo care in our office often have one major thing in common: when we can restore a normal, healthy balance to the nervous system, the immune system often improves.

When the immune system becomes balanced, many of the hyperallergic responses that the person has been suffering with go away. This leads to healthier, happier kids and adults, who get sick a whole lot less.

5. **“The health, balance and integrity of the nervous system is paramount.”**

The nervous system is a fascinating system. As complex as the system can get, the nervous system is based on a very simple process.

Our nervous system takes in information from our senses (sight, sound, touch, taste, touch, smell, and proprioception) and then sends that information to the brain so that our brain can adapt to that information. In other words, our brain needs to know what's going on so that it can send the proper messages to all the other parts of the body.

That amazing feat is coordinated by a part of our nervous system known as the autonomic nervous system.

The Autonomic Nervous System

The autonomic nervous system is that part of our nervous system that does everything automatically for us. We don't have to think about breathing, digesting our food, and making our heart beat because it is all performed automatically. The nervous system determines the needs our bodies have and then responds appropriately.

**As long as it can interpret those needs accurately
and send the proper signals to all of the parts.**

That automatic system is subdivided into two branches:

- **the sympathetic nervous system (Fight or Flight) and**
- **the parasympathetic system (Healing, Resting Digesting, Development)**

The nervous system is only able to be in one of these states at a time. This is an extremely important concept, because fixing an imbalance in these systems is key to healing and optimal function for everyone!

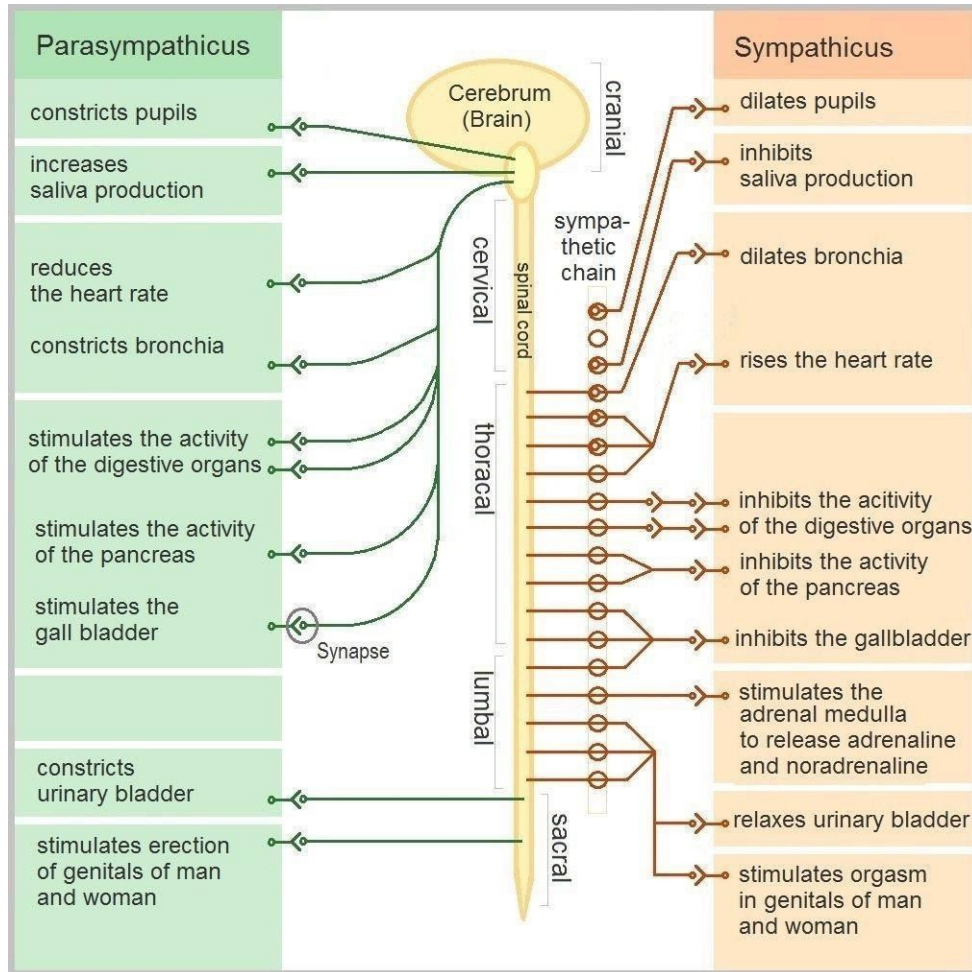
Imagine that you have a pair of red glasses and a pair of blue glasses. You always have to wear glasses, but you can only wear one pair at a time; and the pair that you wear greatly influences how you perceive and interact with the world.

When you wear the red glasses (**Fight or Flight**), **your heart rate elevates, your palms begin to sweat, and blood flow shifts from organs of digestion towards the large muscle groups so that we can run or fight.**

Even the blood flow in the brain shifts from areas concerned with higher functioning to

areas associated with immediate survival.

When you wear the blue glasses (**Healing, Resting, Digesting, Development**), you are much calmer. Your body focuses on development, repair, digestion, producing the right hormones, and maintaining homeostasis. Areas of the brain that are associated with higher functioning are engaged, while areas associated with emergency situations are not active.



Many individuals, especially those with autoimmune diseases, hormonal issues, children experiencing neurodevelopmental disorders and adults suffering from inflammatory diseases find themselves in a state of a chronic sympathetic (Fight or Flight) response.

While this state is a positive temporary response to a stressor, chronic activity of this system will cause breakdown and malfunctioning of our bodies and health. This is akin to wearing the red glasses constantly, and almost never being able to take them off.

The chronic engagement of our sympathetic nervous system causes a continuous supply of stress hormones, can disrupt sleep patterns, and lead to chronic gut and digestive complaints.

This stress response leads to a variety of symptoms from other body systems, which are caused by the body's inability to repair itself while under constant stress. For example, melatonin is needed for proper sleep, but when the stress hormone cortisol is continually produced, it prevents proper melatonin production!

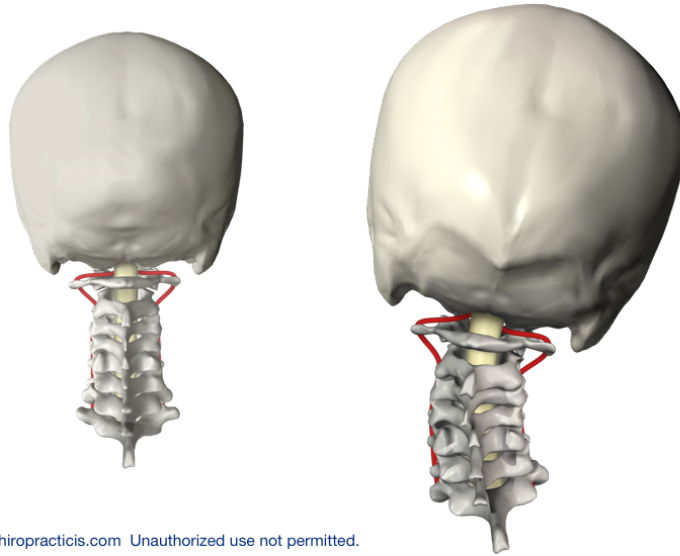
From this perspective, one soon sees that **balancing the autonomic nervous system can have dramatic positive effects for adults with chronic diseases, hormone imbalances, digestive system problems or on a child with neurodevelopmental issues.**

Creating a Healthy, Balanced Nervous System

By shifting the nervous system out of the chronic stress response, the brain and body are now able to enter phases of restoration and development that were previously inaccessible. As the brain and body are able to get into these phases of restoration, the individual is able to achieve a better understanding of their own bodily needs, and then the brain can provide the appropriate and healthy response that is needed to heal.

While most therapies are aimed at treating or modifying symptoms, the objective of chiropractic is to bring balance to the nervous system by addressing any structural imbalances in the spine that may be interfering with optimal spinal cord and brain function.

Structural imbalances or misalignments of the spine are known as vertebral subluxations. Subluxation of the spine will, by the vary nature of the anatomy; produce irritation of the delicate neurovascular system that resides within the spine and skull. If you look at the autonomic nervous system chart above, you can see very clearly how interrelated the sympathetic and parasympathetic nervous systems are with our spinal cord.



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Studies have shown us that these spinal misalignments distort the nerve signals going to the brain or back down to the body, resulting in dysfunction and a wide range of possible health conditions. **Studies have also shown us that correcting these subluxations has a positive effect on the autonomic nervous system, and can also improve brain function.**

To put it in very simple terms, **vertebral subluxations distort or interfere with the vital nervous system messages going to the brain and cause the brain to work in less than optimal ways.**

This neurological dysfunction occurs because of the inaccurate information that the brain receives from the body. **In the scientific community, this inaccurate information is known as dysafferentation.**

When an individual's brain is not getting accurate information from their environment, it becomes much more difficult for them to regulate their senses.

For a person with chronic conditions, restoring the healthy neurological communication pathways often means that they are now able to accurately perceive their environment, and then form a healthy response.

Correcting vertebral subluxations improves neurological function, allowing the body to better strive for optimal health, function and quality of life.

Vertebral subluxations can have many causes. Traumatic injuries, a difficult pregnancy or birth, and postural or work-related stressors are some of the most common; but there are many others as well. The common factor is stress either physically, mentally, or chemically in some manner either through environmental toxins, altered autoimmune processes, or even

emotionally traumatic events.

How to Determine if You Have a Compromised Nervous System Due to Subluxation

The best way to find out if you or your child has vertebral subluxations that may be contributing to various health challenges is to schedule an appointment for an evaluation and testing.

In our office we use non-invasive testing of the autonomic system to assess the health of the nervous system and then employ very gentle and safe hands-on procedures to restore the integrity and balance to that system.

To find out if you or your child is being affected by vertebral subluxations that may be contributing to altered nervous system functioning, **call our office at (925) 560-0700.**

If you have any questions, please feel free to email me at dublin@thespecific.com or call me directly at the number above. We also offer regular workshops on this topic and welcome you to attend our next one to learn even more about the gut-brain connection.

My sincere hope is that the information in this ebook will help propel you forward in gaining even more information and on a journey of improved health, function and quality of life for you and your family.

Sincerely,
Drew Vercellino, D.C.