

Mending the Mind

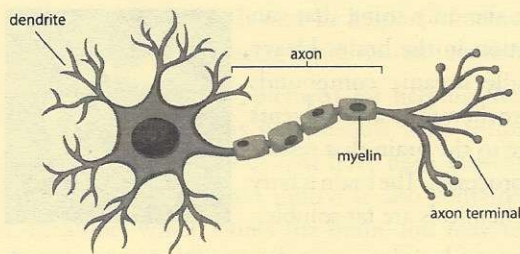
Natural Remedies for Healing Brain and Nerve Damage



For decades scientists believed that once we reached adulthood we had a fixed number of brain cells. These cells could not be replaced if damaged or destroyed. That meant if part of the brain was damaged from a concussion or a stroke, the cognitive functions performed by that area of the brain were permanently lost. It also meant they believed that as brain cells were lost through aging, brain function was doomed to deteriorate.

With advanced techniques into brain research, we now know that is not true. First, like every other type of cell, brain cells can divide to create new brain cells. This process, known as neurogenesis, means that over your lifetime old nerve cells are replaced with new ones. In fact, by the time you are 50, all the neurons in your hippocampus, the brain's memory center, will have been replaced. Which begs an interesting question, "How are memories actually stored?"

It's also been discovered that if one part of the brain is damaged, other areas can take over the functions previously performed by the damaged area. Nerve cells link to other nerve cells via branches called axons (as shown in the illustration below). When an axon is damaged or severed, a nerve cell can grow new axonal branches and form new connections with undamaged nerve cells. This creates new pathways to take over lost functions.



The term for this is neuroplasticity. Part of neuroplasticity is that the areas of your brain that you use more get bigger and form more neural connections. This means that when you apply yourself to acquire new information and skills, your brain compensates by increasing your mental capacity to accommodate your desire. It doesn't matter how old you are either. If you make a continuing effort to learn and

grow you are stimulating the development of new neural pathways.

Neurogenesis and neuroplasticity open a window of hope for everyone who has problems with their brain or nervous system, including those who have suffered brain damage due to a concussion or stroke. It also means you are not doomed to automatically lose memory and nerve function as you age. While we still have a lot to learn about what's possible when it comes to healing the brain, neurogenesis and neuroplasticity suggest we should try to do all we can to support healing and never give up by believing that brain and nerve injuries are incurable.

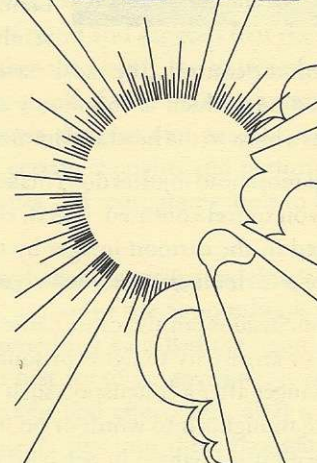
Brain Injury and Inflammation

Your brain is sort of like Jell-O in consistency. It's made of soft, fatty tissue that floats inside your skull surrounded by cerebral-spinal fluid. The skull, and the fluid inside it, cushion the brain to reduce the risk of damage. However, if your head is hit hard enough or is shaken about violently, the brain can be physically damaged by the trauma. Damage like this is called a traumatic brain injury (TBI).

The most common, and mildest form of TBIs are concussions. The word concussion comes from the Latin *concutere*, which means "to shake violently." The word shows the nature of the injury, which occurs from the jarring movement of the brain inside the skull.

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Brain Inflammation and Injury

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The Center for Disease control considers TBIs to be a serious public health problem. There are roughly 2.4 million TBI-related injuries every year and nearly 900,000 of them involve children.

Serious TBIs such as those which occur in motorcycle and automobile accidents usually receive immediate medical attention. However, concussions from other causes like falls, bicycle and skateboard accidents, and injuries incurred while playing sports may not receive the attention they deserve.

Symptoms of Concussion



A concussion is sort of like a bruise in your brain. The damage causes an inflammatory process and the localized inflammation and swelling causes that portion of the brain to cease functioning correctly, resulting in a loss of cognitive ability or motor control.

The most extreme example of this is getting knocked out, which is commonly depicted in movies. A person receives a blow to the head and immediately becomes unconscious.

But most head injuries don't make you pass out. They can simply cause you to feel confused, dazed, clumsy or dizzy. This is what is depicted in the cartoon images by the stars spinning around the head of a cartoon character who has had a concussion.

Concussions can also cause nausea, vomiting, headache, blurred vision or sensitivity to lights or sounds. There may also be cognitive changes after a concussion such as a loss of memory, difficulty putting thoughts into words or poor concentration. Concussions can even cause changes in behavior or personality such as depression, outbursts of anger, irritability or anxiety.

These symptoms of a concussion can last for hours, days, weeks or even longer. And, they may not be recognized as being linked with the concussion.

Concussions and Chronic Brain Disorders

Normally the brain heals just fine from this type of injury, although the process typically takes about two weeks, as the brain appears to heal more slowly than many other tissues. The primary treatment doctors recommend for concussions is rest. You need to avoid anything that would further jar or injure your brain, which means you need to avoid excessive activity for a while.

Doctors will also recommend pain relieving medications for headaches associated with the concussion. In severe head injuries a surgical procedure may be required.

Resting after a concussion is very important because the evidence suggests that when multiple physical injuries to the brain occur it can set up a chronic inflammatory cascade. This can definitely happen from repeated sports injuries or falls or from severe abuse, such as where a small child is repeatedly shaken and/or struck in the head in a violent manner.

Unresolved chronic inflammation in any tissue, including the brain, lays the foundation for more serious chronic and degenerative

Prevention is Better than Cure



To avoid TBIs, it's best to play it safe by making sure to wear a helmet (or have your child wear a helmet) when engaging in contact sports, horseback riding, bike riding, skateboarding and other activities where head injuries are possible. Don't dive into shallow water. Take steps to avoid falls in the home such as install-

ing non-slip mats in bathtubs and showers, using safety gates with children if you have stairs and removing tripping hazards.

conditions to develop. There is evidence that chronic brain inflammation may be involved in anxiety, depression, drug and alcohol abuse, mental illness, ADHD and suicide. We also know that chronic inflammation is involved in neurological disorders like Alzheimer's and Parkinson's. There is even evidence that cancer develops in areas of chronic inflammation, being a type of injury that never fully healed.

So, if you or someone close to you has an injury to the head, whether from a fall or a violent jarring of the head, it's a good idea to carefully monitor them for signs of concussion. If you see any of these signs you should seek medical advice and the person with the concussion should take it easy, avoiding all jarring activities for a couple of weeks. It would also be wise to take some of the supplements listed in this newsletter to help the brain heal faster.

Brain Inflammation From Other Causes

Injuries aren't the only thing that can trigger inflammation in the brain. Heavy metals and volatile organic compounds (VOCs) like petrochemicals and solvents also cause damage to the brain that results in inflammatory processes. The brain is fatty tissue and these chemicals are fat soluble.



Mercury, for example, is known to damage the nervous system and may cause tremors, mood swings, insomnia, headaches, impaired thought processes and other changes in nervous function. The mad hatter in the story Alice in Wonderland may be based on the fact that hatters used mercury to make felt hats and were often a little odd as a result.

VOCs are generally fat soluble and many solvents are used to dissolve fats, making them very dangerous to the nervous system. The combination of these chemicals with metals like mercury or aluminum seems to be particularly problematic. This combination is found in many pesticides and vaccines.

Links have been found between these chemicals and neurological problems in children like ADD, ADHD, Tourette's syndrome, stuttering, delayed speech development, dyslexia and behavioral disorders. These toxins also affect adult nervous systems and may be contributing factors in anxiety, depression, insomnia, numbness, tingling, brain fog, sleep apnea, dementia and mental illness.

It's likely that most brain and neurological problems, including Alzheimer's and Parkinson's, trace back to chronic inflammation

in the brain. However, a stroke is a different issue. When one has a stroke, blood supply to a portion of the brain is blocked, which results in the death of brain cells in that area of the brain.

In this case inflammation is not the issue, so supplements that reduce brain inflammation will not be helpful. However, supplements that aid neurogenesis and neuroplasticity might be helpful after a stroke. How much recovery can be made will depend on the extent of the damage, but remember that other parts of the brain can learn to take over for the damaged parts.

Supplements for Healing the Brain



Providing your brain with remedies that reduce inflammation and provide nutrients necessary for nerve growth can assist your body in healing damage to the brain if it is injured by concussions, toxins or other traumas. Supplements can also help the brain to develop new

neural connections more quickly. Here are a few major supplements to consider if you are trying to recover from some type of brain or nerve damage.

Supplements for Reducing Brain Inflammation

Herbs that reduce brain inflammation would be helpful to take after a concussion, or when suffering from a chronic mood disorder such as depression or anxiety. They may also be helpful for neurological side effects from vaccinations or other toxins.

Curcumin, one of the primary compounds in turmeric appears to be beneficial for reducing brain inflammation and oxidative damage in the brain. It may be helpful in neuro-recovery after a concussion or stroke, easing depression and combating memory loss.

Another useful supplement for helping the brain to heal is **green tea**. It contains polyphenols with antioxidant and anti-inflammatory properties that have been shown to be helpful in animal models of brain injury. It also contains the amino acid L-theanine, which calms the brain and may reduce excitotoxic damage after brain injury.

Alpha lipoic acid is another antioxidant supplement that crosses the blood brain barrier to protect sensitive nerve tissue from damage. It also helps with high blood sugar, which also tends to trigger inflammation in the brain.

Chinese club moss has a history of use for treating memory loss, dementia and mental illness in China. Modern research has found a compound in the plant called huperzine A which inhibits the enzyme that breaks down acetylcholine, the neurotransmitter involved in memory. It may also help protect brain cells from certain types of toxic chemicals.

Ginkgo biloba aids circulation to the brain and helps protect the brain and memory during the aging process. It may also be helpful for healing brain injuries like concussions.

A **Brain Protecting Formula** containing huperzine-A, ginkgo and alpha lipoic acid could be helpful in protecting the brain from inflammation and preventing the loss of cognitive ability. The dose for this formula is 2 capsules twice daily.

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You Brain is Not Your Mind

In the modern world science promotes the idea that thoughts and emotions are the result of activities in the brain. This mechanistic model of the mind is challenged by

research that shows changing your thoughts can alter both brain structure and brain function. If the brain gives rise to thoughts and emotions, how is it possible that consciously changing one's thoughts alters the chemistry and structure of the brain?

A growing body of research is suggesting that your experience of mind or consciousness does not arise from the brain. For example, after completely mapping the human brain, scientists cannot discover the area of the brain that makes decisions. They also cannot discover an area of the brain that integrates perceptions.

The idea of an invisible soul, spirit or consciousness aligns with the internal experience of mind and suggests that the brain is a tool used by the mind rather than being the source of mind. A helpful analogy would be to think of your brain as a computer and your mind as the computer designer and programmer. As you make decisions to think certain thoughts and perform certain actions, your brain reshapes and reprograms itself to better execute your instructions.

Experts in positive thinking have long recognized this process. For instance, Napoleon Hill, author of the famous book *Think and Grow Rich*, referred to something he called the habit force. It works like this. When you first try to do anything, it is hard and requires continuous thought and effort. But, after a time, you develop the neural pathways that run these thoughts and behaviors unconsciously. Thus, they tend to perpetuate themselves automatically.

There is evidence that chronic anxiety, depression and other negative mental and emotional issues may be programs of fear or defeat that are running on autopilot. By consciously changing these patterns you can create new neural circuitry that replaces them with more positive programs. To learn more about this read *You Are Not Your Brain* by Jeffery M. Schwartz, MD.

This understanding is also important when the brain and nerves are damaged. The circuitry and programming that allowed a person to work on autopilot have been damaged in injury or stroke. Besides taking supplements to aid brain healing, it will take focused concentration and effort over a period of time to create new neural circuits in other parts of the brain to relearn, in effect, what they used to know how to do.

There are stories of people who have suffered brain or nerve damage who through consistent positive thoughts, which can also be called faith, have made miraculous recoveries. No one knows the extent to which the mind can act to heal any part of the body, including the brain and nerves, but the belief that healing is impossible will prevent any healing that is possible from taking place.

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Supplements to Aid Neurogenesis

Since neural tissue has a high fat content, it follows that good fats can be used to nourish the brain and aid the process of forming new brain cells. The fats in brain and nerve tissue are primarily made up of the long chain omega-3 essential fatty acids, EPA and DHA, with DHA being the most prominent. Shorter chain omega-3 fatty acids are found in many plant foods, especially nuts and seeds like hemp seeds, flax seeds and walnuts, but the longer chain EPA and DHA are the best choices for supporting brain healing.

EPA and DHA are found in deep ocean fish and grass-fed animal foods and in ***Omega-3 Essential Fatty Acid Supplements*** made from fish or krill oil. Supplements of just **DHA** can also be helpful in overcoming brain injuries and various neurological disorders.

These fatty acids not only support the formation of brain tissue, they also reduce inflammation. They are even more useful in reducing inflammation when taken with the fat soluble **Vitamins A, D and E**, which act as antioxidants to protect fatty tissues from oxidative damage. Consuming medium chain saturated fatty acids from coconut oil and organic butter has also been helpful in healing brain, nerve and memory problems.

One herb that may be helpful in neurogenesis is **St. John's wort**. It has a long history of use as a restorative nerve tonic. It has been called the "arnica of the nervous system." Arnica is used to help reduce bruising and swelling after injuries and St. John's wort can be applied topically or taken internally like arnica to aid healing from spinal injuries, concussions, nerve damage and sciatica.

Supplements to Aid Neuroplasticity

The primary way to keep the brain forming new neural connections is to always be learning something new. This keeps reshaping and reprogramming the brain and helps prevent memory and cognitive loss associated with aging. (See *Your Brain is Not Your Mind* on page three to understand this better.) There are also supplements which can aid your ability to create new connections in your brain cells.

For instance, research shows that magnesium improves memory and general cognitive function by aiding neuroplasticity. It is also a nutrient in which many people are deficient. There is a special form of magnesium, magnesium l-threonate, which readily crosses the blood-brain barrier and has been shown in studies to increase the formation of new neural connections.

There are also herbs which appear to improve cognitive function, especially as we age. These herbs may also help the brain repair faster after it has been damaged and to form new connections.

One of these is **gotu kola**, an herb from India that is widely used in Ayurvedic medicine as a nerve tonic in the treatment of mental and nervous ailments such as epilepsy, schizophrenia and memory loss. Gotu kola also contains theobromine, which is presumed to help increase oxygen to the brain, thereby promoting greater mental capacity and vitality.

Another helpful herb is **bacopa**, which contains the memory boosting compounds bacopaside-A and bacopaside-B. It increases the neurotransmitter acetylcholine, which means it helps promote better memory, reaction times and learning during stressful periods. It also helps slow aging and degeneration of the brain.

Magnesium l-threonate, gotu kola, bacopa and ginkgo can all be taken as part of a **Brain Boosting Formula**. The dose is 3 capsules at night before bed and 3 more in the morning before breakfast. The formula may cause sleepiness, drowsiness or headaches, especially if one is severely magnesium deficient. This is a temporary effect and should pass as one's levels of magnesium improve. If drowsiness is a problem, start only with the night time dose.

Additional Help and Information

For more information about healing the brain contact the person who gave you this newsletter. You can also consult the following resources:

You are Not Your Brain by Jeffery M. Schwartz, MD

<https://vitalitymagazine.com/article/healing-brain-injuries-naturally/>

<https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557>

<https://www.webmd.com/brain/news/20110420/nutrition-may-help-treat-traumatic-brain-injury#1>