



PILLAR 04

STRESS

"NOTHING IS MORE DAMAGING TO THE BRAIN THAN STRESS"

One of the major things that impacts and compromises brain function is chronic stress. Chronic stress is a major problem that is accepted as a normal part of our modern-day life. However, chronic stress is anything but normal. It is incredibly harmful to the brain, mental health, emotional health, and physical health.

Stress atrophies the entire brain, meaning it literally shrinks the brain. It promotes brain inflammation and upsets brain function. Stress also degrades the blood-brain barrier that protects the brain from infectious agents, whether they come from the outside world or within the body.

When we think of stress today, we think of sitting in rush hour traffic, rushing to get dinner on the table, juggling multiple responsibilities, stressful jobs or a difficult work environment. Sometimes stress comes in the way of unexpected challenges, such as a job loss, financial difficulties or a health diagnosis.

In truth, the stress response has been one of the single most important factors in keeping us alive and thriving. Back before our modern lifestyles, humans predominantly experienced stress when their lives were in imminent danger and had to be prepared to act quickly. The important thing to note about this type of stress is that it was periodic, and it was critical for our physical safety. Unfortunately, our stresses have morphed from life-threatening dangers into work stress, relationship stress, financial stress, etc., ... and our bodies can't tell the difference between whether we're in a life-or-death situation, or just leaving a tense work meeting. This has led to people existing in chronic "fight-or-flight" mode, which can take the stress response from something that saves our lives to something that, ultimately, hurts us.

The stress response is governed by the Central Nervous System (CNS). This system is further broken down into your Parasympathetic Nervous System (PNS) and Sympathetic Nervous System (SNS). The PNS, also known as the "rest and digest" state, oversees digestion, enzyme production, and other related bodily activities. The PNS is also responsible for relaxing the body and bringing



one back to baseline after a stressful event. This is the ideal state the body needs to be in most of the day. The SNS, on the other hand, governs the fight-or-flight response and is responsible for sending a flood of hormones such as cortisol, epinephrine and adrenaline throughout the body when one is experiencing stress. These hormones elevate the heart rate, increase breathing and shut down digestion to prime the body for action.

This reaction is a great one in times of occasional stress. However, if someone is experiencing chronic stress day-to-day, the SNS is constantly activated. This means that its flood of chemicals and hormones keeps coming and unfortunately is at the root of a wide range of serious health effects.

One of the most devastating effects of stress is the toll it takes on the brain. In order to generate the energy to adapt to stress, the body's two adrenal glands produce stress hormones. The primary stress hormone is cortisol. High cortisol response to high stress damages the brain, especially the hippocampus, the seat of learning and memory.

The hippocampus is full of receptor sites for cortisol, as it depends on cortisol to regulate many systems in the body. The hippocampus, for example, regulates the sleep-wake cycle, the circadian rhythm. A healthy circadian rhythm produces the highest amount of cortisol in the morning that gradually tapers off during the day until it is lowest at night. This has us feeling alert and refreshed in the morning and sleepy at night.

However, chronic stress continually pumps out high levels of cortisol, which over activates the hippocampus and can cause it to malfunction. Gradually the stressed out person suffers from insomnia, energy crashes during the day and not being able to stay asleep at night. As we have already discussed, poor sleep takes a huge toll on health.

It is important to note that one of the most significant stressors is one most people aren't aware of. This is stress that comes from chronically poor diets, marginal health and environmental toxicity.

The most common way people damage their brains is through blood sugar imbalances due to high-carbohydrate diets. Food such as cereal, pancakes, bread and pasta will send blood sugar and insulin levels skyrocketing. When breakfast, lunch, dinner and snacks all consist of these foods, high spikes in blood sugar are constantly triggered. The human body was designed to



lower blood sugar on an occasional basis, not on an hourly basis. Eventually, all this stress takes their toll on the brain.

Environmental stressors include hundreds of chemicals that enter the body via processed foods, chemicals in self care products and chemicals in cleaning products. We are exposed to these environmental stressors day in, day out. Any time the body struggles to compensate for imbalances and poor function, it creates a physiological stress response, and the brain becomes the ultimate victim.

Strategies to reduce the stress response and dampen inflammation have the potential to halt escalating brain degeneration.

STRATEGIES TO REDUCE STRESS

1. Awareness is crucial. Understanding the effects of stress on general health and brain health in particular should direct you to make mindful choices that minimize stress.
2. See section on Nutrition to begin shifting toward better health choices. Staying nourished with nutrient dense foods combats stress and anxiety.
3. Prioritize sleep in order to minimize stress on the body.
4. Start becoming an educated consumer. Choose body care products and cleaning products that are toxin free.

Check [EWG Skin Deep® Cosmetics Database](#) for guidance on safe products.

5. Make time for stress-free activities. Carve out time to relax. It is incredibly important.
 - Yoga
 - Walking
 - Deep breathing
 - Journaling
 - Enjoy a hobby
 - Avoid over-scheduling



While we are all so accustomed to stress and just think of it as a way of life, with your new awareness of its determinants, my hope is that you will make choices that will enable you to reduce neuroinflammation and experience better health.

Contact us for more specific guidance.