

# Yoga and the Nervous System

Our bodies are intelligently designed for survival. We have a number of built-in mechanisms to keep us alive in the face of adversity. For example, if we lose consciousness due to sudden injury or even a panic attack, our breathing will resume normally.

The fight or flight response is the most effective survival physiological process we have. It is designed to prepare our bodies for either fleeing for our life, or for fighting for it.

During the flight or flight response, the blood pumped from the heart is shunted to the large muscle groups. This allows the body to run, fight and to easily clot the blood in the case of injury. The fight or flight response activates the sympathetic nervous system (SNS) and releases the stress hormones adrenaline and cortisol. It also mobilizes sugar and fats that are stored in the body to provide energy to move quickly.

The fight or flight response, also called the stress response, happens as soon as a threat is perceived. After some time the parasympathetic nervous system (PNS) takes over, inducing a relaxation response. The PNS invites breathing to return to normal, blood to be re-directed to the digestive and reproductive organs, and the muscles to relax. The relaxation response is also referred to as the 'rest and digest' response.

The fight or flight response is an evolutionary necessity, crucial when we were living in caves and fighting saber toothed tigers. Now that we no longer have tigers to fight in our everyday lives, our fight or flight response is turned on by our high-stress, sedentary lifestyles, and we are experiencing unprecedented health issues resulting from chronic stress.

Elevated cortisol levels (the stress hormone, released during fight or flight), are linked to insulin resistance, high blood pressure, low bone density, depression and stress-related eating.

Here are the top five negative health impacts from chronic stress:

**Heart disease**—linked to high levels of cortisol. It accumulates in the bloodstream in the form of cholesterol, becoming glue-like in consistency and sticks as plaque to the arteries.

**High blood pressure**—Similar as above, the arteries can become chronically contracted, losing their ability to contract and expand. Chronic contraction of the skeletal muscles (as happens when we get stressed) puts greater pressure on the arteries.

**Back pain**—Back pain is exasperated by a sedentary lifestyle and desk jobs. When we are in the stress response, muscles learn to contract without being able to release. Chronic holding of muscles leads to serious back pain issues.

**Type II Diabetes**—Over 90 percent of people with diabetes have Type II diabetes. Diabetes can lead to blindness, heart disease, stroke, kidney failure and amputations. People with Type II diabetes tend to be overweight.

**Depression/Anxiety**—Depression is often diagnosed when elevated levels of cortisol fail to decrease when they should. Depression is accompanied by feelings of worthlessness and hopelessness. The upper chest breath that is common in times of stress becomes chronic and leads to feelings of anxiety. This becomes a cycle that is difficult to break.

## HOW YOGA CAN HELP THE NERVOUS SYSTEM

Beyond the beneficial effects of strengthening and stretching the body, yoga improves the functioning of the nervous system. Yoga triggers the parasympathetic nervous system (PNS), resulting in the relaxation response. Breathing slows and is directed to the belly; the heart rate and the blood pressure decreases; and blood flow returns to the digestive and reproductive organs.

Yoga trains the body to put healthy stress also called hearty resilience, on the body and trains the body to relax. A well balanced yoga practice alternately challenges and gives rest to the body, which allows us to bring greater balance into our daily lives.