

STRESS HORMONES.

From Accidentally Overweight by Dr. Libby Weaver

The Adrenal glands, the size of a walnut and sit on the top of your kidneys, and produce many hormones, two of which are your stress hormones, namely adrenalin and cortisol.

ADRENALIN AND CORTISOL – FRIEND OR FOE?

As a friend Adrenalin helps us get out of tight situations in a hurry. Adrenalin promotes what is known as the 'fight and fright' response. When activated, the typically excellent blood supply to your digestive system is diverted away from your digestive system to your arms and your legs. This is necessary because you need a powerful blood supply to your arms and legs to get you out of danger. You also need fuel to give them the necessary energy; the most readily available fuel is glucose, often referred to as sugar (a carbohydrate). Your liver and your muscles store glucose in the form of glycogen, and adrenalin communicates to your liver and your muscles that energy is required. They then convert glycogen back into glucose and dump it into your blood. Your blood sugar subsequently shoots up.

If you are not in danger but sitting on your bottom for the most part of the day at the computer and sugar is being dumped into your blood, you will make insulin to deal with that elevation in blood sugar, and an overload of insulin is one of our primary causes of type 2 diabetes.

Caffeine also acts on your adrenal glands by simulating the production of adrenalin. (page 68)

The human body is incredibly resilient, and although we were not designed to withstand long-term stress (due to the way we're designed, we are healthier when it is short-lived), many bodies appear to tolerate, as opposed to thrive on, years and years of living on adrenalin. Part of the challenge, however, is that once your body perceives that the stress has become long-term your dominant stress hormone begins to change.

Cortisol is your long-term stress hormone. (page 73).

In the right amount, cortisol is not only an anti-inflammatory, it also buffers the effect of insulin, meaning that optimum amounts help you continue to burn body fat for energy while also maintaining stable – as opposed to rapidly fluctuating blood sugar levels. Normally cortisol levels change during the day. It is designed to be high (let us say 25 units) in the morning – giving you that bounce you need to get out of bed, full of energy and vitality. In the evening (10pm) its optimum level is around 2 units.

As a stress response continues, the effect on the body begins to change. The evening levels might spike again making it hard to get to sleep. It can play havoc with sleeping patterns. But over time, the catabolic signaling of cortisol itself may have broken some of your muscles down, so now there is less space for glucose storage, so some of the blood glucose makes body fat. Keeping the glucose level of the blood within the normal, safe range is of more importance to your body than whether you have wobbly bits around your middle. This is also the process through which long-term stress can lead to Type 2 diabetes. (More about Insulin page 186) Also more cortisol means a slower metabolism. (page 78 and 79)

SILENT STRESS (Page 80).

ADRENAL FATIGUE.

If you have had a high level of cortisol output for many, many years, your adrenal glands may not be able to stand the tension. In general terms, you 'burn out'. Stiffness is a key symptom to adrenal fatigue. The fatigue you feel may make exercise the least appealing thing on the planet to you. (page 85)

THE AUTONOMIC NERVOUS SYSTEM.

The Autonomic Nervous System breaks down into two – the Parasympathetic Nervous System and the Sympathetic Nervous System.

The Parasympathetic Nervous System (PNS) becomes active when we truly rest. (When we are truly peaceful and quiet in mind, body and spirit, this is the system we were designed to most work on) but when we are stressed and running on Adrenalin the opposite arm is dominate the Sympathetic Nervous System. (SNS)

The PNS 'lives on' fats while the (SNS) 'lives on) sugars. So while we are stressed the body has to produce sugars or we crave sugars to feed the SNS.

If we use the two systems as they were designed we would only use the Sympathetic Nervous System when we needed to move quickly to get out of danger. (It produces adrenalin) and for the most part live in Peace supported by the Parasympathetic Nervous System.