

Article 5 – Fatigue Part Three; Stress and its role in ongoing fatigue.

In the previous articles on fatigue we have been looking at some of the main things which contribute to chronic tiredness. In this article we will look at how stress affects the normal function of some very important glands in the body – the adrenal glands (which sit on top of the kidneys) and the thyroid gland (which is below the voice box). The adrenal glands and thyroid have two totally separate jobs to do. However, if there is a problem with one this will eventually affect the function of the other, and this can have a significant impact on how well the body works because of the way two adrenal hormones adrenaline and cortisol take effect.

From a stress management point-of-view, your adrenal glands are your ability to face and meet the demands of day-to-day life, adapt to new surroundings and situations, adjust to changes in temperature, time zones or anything else that your body perceives to be a stress factor. Your body does not differentiate between the various types of stress, so it doesn't matter whether it is facing a stressful emotional situation, a death, job stress, an infection, intense physical exercise, excessive alcohol consumption, lack of sleep, hypoglycaemia or blood sugar issues, thyroid malfunction, allergy, dehydration, chronic illness, pain or any other stressor, the response will always be the same. The production and release of adrenal hormones will serve to either start the fight-or-flight response, or to communicate to the rest of the body how to stay in balance in the face of long term stress if the stressor is not removed.

The human body is organized so that it can respond immediately to threatening situations by generating a tremendous amount of energy in a hurry, which enables the person to run away quickly, or face the threat and fight it with a massive influx of chemical support. The hormones produced in response to a threat increase blood pressure, heart rate, blood flow to muscles, and increase blood sugar by mobilising the stored sugar reserves of the body. Nerve impulses from the brain cause the release of adrenaline from the adrenal glands, which helps you react appropriately in immediate short-term stress situations (the fight-or-flight response). If the stress carries on longer term another adrenal hormone becomes dominant. This hormone is cortisol. It is one of the most abundant and important of the adrenal cortex hormones. Cortisol helps you to handle longer-term stress situations.

Cortisol and adrenaline have very beneficial effects for us when they are used short to medium term as nature originally intended. Where things come unstuck is when we call on our adrenal glands to produce these hormones for extended periods of time. When we do this, a couple of things happen; we require increasing amounts of hormone to get the same job done because over time our cells become desensitized to it, and the effects of the increased amounts of hormone will eventually become detrimental – often having the opposite effect from that intended. If left unchecked, the increased demand also leads to a condition called adrenal insufficiency or exhaustion, where the adrenal glands literally run out of steam and are not able to keep up with the demands placed on them. There are huge flow-on effects when this occurs, as outlined below.

When cortisol levels are maintained at a high level for a sustained period of time there will often be increased inflammation and pain sensitivity. This happens because the body has become less able to use the cortisol produced which is our major natural anti-inflammatory. Hydrocortisone and prednisone are often used to top up the short fall, but over time these become less effective for the same reason. Fish oils, certain nutrients and herbs which support the adrenal gland function can actually reduce the

amount of these medications needed and help them to work better as they can increase the ability of cells to use the hormone more effectively. In many cases they may also reduce the need for pain killers.

With increased cortisol, insulin levels will increase contributing to weight gain around the middle of the body and problems controlling blood sugar. This will often lead to obesity and type 2 diabetes.

As the adrenals become more stressed there will be a decreased ability to cope with change which will often show as teariness, anxiety, panic attacks or depression.

There will often be decreased energy, stamina and strength. This is where the thyroid gland is predominantly affected and, as I mentioned before, the thyroid controls energy production. Increased cortisol levels are associated with a decrease in the hormone (TSH) which stimulates normal thyroid function. A breakdown here equals less energy. High cortisol levels also affect the way thyroid hormones are able to be converted from their least active form (T4) to the most active form (T3). This is why I often treat both the adrenals and the thyroid when there are stubborn energy production problems such as in cases of chronic fatigue.

Increased cortisol will affect the body's ability to repair bone and joint tissue which contributes to osteoporosis and mobility issues. This is why there is such a strong link between long term prednisone use and osteoporosis.

There can be profound changes in the levels of sex hormones produced because high cortisol levels will interfere with the feedback to the two "master" glands – the hypothalamus and pituitary. This can again affect the thyroid as well as the testes and ovaries and may result in low energy, decreased sex drive, PMS, infertility, too much estrogen and not enough progesterone or testosterone. High levels of estrogen will in turn increase cortisol levels which will create a vicious cycle.

There will usually be increased oxidative damage to cells which translates into premature aging and potential DNA damage, which is where the link between stress and cancer comes in.

The immune function may become suppressed which is why people become more prone to infections when stressed - especially chronic ones such as repeat thrush, cold sores, warts, flare-ups of genital warts, shingles, chronic respiratory illness, repeat boils etc - and allergies.

Normally our cortisol levels are lowest at night which enables us to go to sleep easily and are highest in the morning which gives us our ability to get-up-and-go. When these are out of balance, things get tipped upside down. People with this problem will find it very difficult to go to sleep at the normal time and feel like they've been run over by a truck in the morning. As the adrenals become more depleted, you will often get inappropriate releases of adrenaline at night as well, which shows as a broken sleep pattern – with waking specifically between the hours of 3am and 4am. There may also be a feeling of being "wired and tired" – lots of energy to the point of restlessness alternating with an extreme lack of energy.

Cholesterol is one of the primary building blocks for our stress hormones, which is one of the reasons why chronic stress will lead to an elevation of cholesterol. High cortisol will also result in an increased level of blood fat or triglycerides, and blood tests will often show elevated levels of both cholesterol and triglycerides in people with a high demand for this or any other steroid hormone.

As you can see, the implications of unresolved stress (regardless of the source) are many and the effects are far reaching. I have found that resolution of many health issues either relies upon or is greatly improved with the treatment of adrenal

depletion. The good news is that the adrenal glands do respond well to natural treatment in most people and this can make a huge difference to their quality of life.

I can be contacted at The Self Heal Clinic 06 304 8177 should you wish to address anything raised in this article or any other health issues.