



## **Adrenal Fatigue – What Is It?**

September 2008.

Article by Marek Doyle, [www.blueprintfitness.co.uk](http://www.blueprintfitness.co.uk)

On a basic level, adrenal fatigue (sometimes called adrenal insufficiency) is a condition which results the adrenal glands cease to meet the demands placed upon them and occurs following a period of excessive stress. Reduced energy, mental function, libido, hypoglycaemia, poor sleeping patterns and difficulty in losing weight are typical of those suffering and, whilst there are no formal figures, I estimate that adrenal fatigue affects 1 in 10 of my clients to varying degrees. So why haven't you heard of it?

More than seven decades after Hans Selye first began to identify an autonomous reaction of the adrenal glands to external stressors, adrenal issues are still largely ignored by the pharmaceutical industry. Unlike thyroid conditions, which are treatable with various combinations of the many T3 and T4 replacements that have been developed and patented, there have been no equivalent drugs that can restore adrenal function to its natural level. Put simply, there is no profit available for any pharmaceutical companies. What's more, as the pharma giants are the biggest contributors to the costs of educating new doctors, adrenal fatigue remains destined to remain omitted from the agenda for the foreseeable future.

The function of the adrenal glands is a complicated science. There are a number of important substances secreted by these pyramid-shaped glands which include aldosterone from the adrenal cortex (which affects body hydration), adrenaline from the adrenal medulla (responsible for energy and alertness). However, most diagnosis of adrenal fatigue centres around the more measurable steroid hormones cortisol and DHEA, produced in the adrenal cortex. These hormones should rise in the morning to wake a person and then progressively fall from mid-afternoon to allow unwinding and sleep. They work together to balance your decision-making, your energy levels, your blood sugar, your immune system function, your sex hormones and almost every system you care to mention. Because cortisol has major effects on the immune system and blood sugar levels, and because DHEA is the base substance from which your body makes oestrogen and testosterone, the effects of adrenal imbalance can be difficult to pin down and categorize.

It is the medical view that adrenal function comes in just three flavours; normal, Cushing's Disease (extreme excess of both cortisol and DHEA) and Addison's Disease (extreme, potentially-fatal deficiency of both cortisol and DHEA). The reality is that adrenal dysfunction does not respect the textbooks that try to compartmentalise it. Cortisol and DHEA sometimes do excessively rise and fall together, but this is rarely the case; different tissues within the adrenal glands can fatigue at different rates, thus there is no reliable path to recognise. This is why the adrenal medulla (responsible for the release of adrenaline) can still be over-active while the adrenal cortex (responsible for the release of cortisol and DHEA) is seriously under-active.

So how does this occur? Firstly, adrenal fatigue is a consequence of the external environment and one's response to it. This especially refers to the stress response. When we detect a stressful situation (previously catching a glance of a lurking predator, nowadays being being cut up by a careless SUV driver or receiving a harsh email from a work colleague), the brain sends a hormone called ACTH to the adrenal glands, which stimulates secretion of adrenaline, followed by cortisol and DHEA. This system increases alertness, increases the heart rate and generally prepares the body for action. It is the 'fight or flight' reaction.

This reaction works fine unless it is activated too regularly. If this is the case, the reaction becomes over-exaggerated. The adrenal glands over-release adrenaline, and then cortisol, whenever they receive a signal from the brain. This is Adrenal Fatigue Stage One, and almost all of us enter this at various points during periods of stress, such as a week of prolonged and consecutive stressors. This would typically result in increased tiredness at the end of each day, becoming flustered quickly, and being shaken easily by loud noises. Affected individuals remain thoroughly functional and, provided the stressors are removed, adrenal function reliably returns to normal.

However, if it is not, an individual will enter Stage Two. This is characterised by a constant over-secretion of stress hormones, especially cortisol - the stress switch is permanently flicked to the 'on' position. Whilst still able to function in the working world, individuals in this state will often find they are tense, forgetful, unmotivated, constantly suffering with colds, have wounds/ulcers that heal slowly, may struggle to digest food and will notice an increase in blood pressure and in bodyfat (especially around the abdomen). The higher stress hormones will keep the body alert later into the evening, and typically these individuals will take considerably longer to fall asleep, despite how tired they feel. To overcome this now-ingrained response at the adrenal glands, a total removal of stressors must be maintained to allow hormonal secretions to slowly return to ideal levels.

If the stressors are not removed, then the individual will inevitably move into Stage Three Adrenal Fatigue. This could take weeks, months or even years, but this is defined by a sharp fall in the secretion of adrenal hormones. The tissues that are responsible for their manufacture 'burn out' from sustained overuse. Whilst more often that not it is cortisol production that is effected, DHEA levels can also collapse in this way (confusingly enough, this mimics a crash in cortisol). An excess of stress hormones will seriously drain the resources of any individual yet, as they are essential for energy production, a deficiency leaves a person even more tired. 'Death warmed up' is often a phrase used by clients in this state. Blood pressure will also be lowered in most cases, allergic reactions may occur with more frequency, and salt cravings are likely. The overworked tissues responsible for the production of stress hormones cannot keep pace with the requirement, which sees cortisol (or DHEA) levels remain deleteriously low all day. Often, these overworked tissues will compensate for under-performing by continuing to release stress hormones well into the night. This creates a paradox whereby an individual cannot summon enough energy to function properly during the day, yet cannot sleep at night. Rather than having assumed an unhealthy response, the tissues are now unable to perform their role; this is naturally a more serious condition.

The good news is that it is possible to fully restore functional and healthy adrenal function.

In theory, it is a simple case of resting the damaged tissues to allow them to heal – this means reducing the load placed on them (reducing stressors, and increasing rest and time for sleep) and, normally, assisting them meet the load (supplementing with licorice root, hydro-cortisone or DHEA). If you are going to take supplements that effect adrenal hormones, this should only be done following suitable testing and under the supervision of someone familiar with adrenal function.

Cortisol can be fortified by licorice root, as it extends the half-life of the hormone and boosts its potency. I have got good results using 250mg-750mg daily of licorice root extract (standardised to 20% glycyrrhizinic acid) . Cortisol can also be fortified through hormone replacement (using bio-identical hydrocortisone), with different doses required for different situations; 5-20mg is often most appropriate from my experience. When DHEA supplementation is indicated, 10-40mg is often all that is needed to restore a client to top form. After a period of time, normally 6-8 weeks, the supplements can be decreased in small intervals and, providing there is no return of malady, discontinued altogether. This normally occurs over several months. Supporting adrenal function with Vitamin C, Vitamin B5 and licorice root can be extremely important, as is the removal of psychological stressors. Caffeine, alcohol, tobacco and sugar should all be removed.

In practise, this process is often bereft with problems. The affect this has on blood sugar levels, mental response, sex hormones and all the other bodily systems means that intervention can have multiple interactions. Disturbances in stress levels over any period of time will reliably effect many different areas of metabolism, especially digestion. Digestion is intrinsically linked to the function of the liver, and I very rarely see any client recovering from adrenal fatigue that would not benefit from a liver cleanse. The affect that cortisol:DHEA ratio has on estrogen and testosterone levels should also not be overlooked, especially in females whose hormonal interaction is more complicated.

With a firm understanding of both adrenal function and the interactions in an around the human body, it is possible to navigate an efficient route back to optimum health. There are a number of difficulties I regularly face in restoring the adrenal function in various individuals, primarily bio-chemical individuality and obtaining the co-operation of client's doctors (who are typically very cagey when in unfamiliar territory), but the approach that is best suited to dealing with adrenal fatigue is to assess everything that is possible (through blood/saliva tests as well as client questioning), analysing this will a holistic mindset that takes into account the whole body, but to always 'treat the patient, not the test'.

Naturally, prevention is better than any cure, and the increasing incidence of adrenal fatigue only serve to show how important it is for any practitioner to prioritise the reduction of stress in the lives of all the clients they deal with on a daily basis.

**Marek is a personal trainer, nutritional therapist and allergist operating in Kensington, Chelsea, West London and Basingstoke. He is the director of Blueprint Fitness, [www.blueprintfitness.co.uk](http://www.blueprintfitness.co.uk)**