Adrenals 101

A world where we seldom leave our work at the office, and where technology infiltrates every corner of our lives can harm these two little glands, says Tara Thorne.

Healing and prevention

Adaptogenic supplements to support adrenal health include holy basil, ashwaghanda, rhodiola, licorice, Siberian ginseng and schizandra. Your adrenals need vitamins B5 and B6, zinc, magnesium and vitamin C, too. However, it is vital to practise stress reduction - yoga, meditation, nature walks, Epsom salt baths, less screen time – whatever calms you.

The way you see stress is important, too. According to Hans Selye, the "father of modern stress research," it's not the stressor, but how that stress is perceived that determines the response. This is very empowering, as it gives us the chance to decide what affects us and what doesn't, and to cultivate a mindset to keep things in perspective, rather than let our emotions spiral out of control.

It's not just mental stress that affects the adrenals. Physical stressors can include: stimulants like caffeine, which increase epinephrine production; high sugar diets; alcohol consumption; food sensitivities; autoimmune conditions; inflammation; smoking; drugs; shift work; excessive exercise; and gut dysfunction.

THE adrenal glands sit on top of the kidneys, and they're responsible for releasing stress hormones - cortisol, epinephrine and norepinephrine - and for keeping the stress response in check. The adrenals are kicked into action by the hypothalamic-pituitary-adrenal (HPA) axis – a negative feedback loop or mechanism in the body that regulates temperature, digestion, immune system, mood, sexuality, and energy usage. Here's how it works: when faced with a stressor - physical or mental - the hypothalamus in the brain releases corticotrophin-releasing hormone; this stimulates the pituitary gland to make adrenocorticotropic hormone (ACTH), which then prompts the adrenals to make cortisol. The very thing that switches this cycle on then switches it off: when the adrenals release cortisol, this cortisol sends a message back to the hypothalamus and pituitary, telling them to stop sending the signal to make more cortisol - hence the 'negative feedback loop'.

Problems arise when we're so stressed that these messages get all mixed up and the adrenals essentially become numb to the screams of the hypothalamus and pituitary, and quit their cortisol-making job altogether. This is end stage adrenal exhaustion or, more accurately, HPA axis dysfunction. Prolonged stress leaves us more susceptible to disease, because when the body is in 'fight or flight' mode and the sympathetic nervous system is turned on, this changes the way the body regulates activities that otherwise keep us well. When not enjoying the calming 'rest and digest' mode, when the parasympathetic nervous system is switched on, the following can ensue:

Digestive disorders

If it's constantly releasing stress hormones, the body assumes it's in a life or death situation so it shunts blood away from non-vital areas like the gut to support the heart and muscles that can save it from, say, a tiger. This is why digestive upsets are common in anyone with adrenal dysfunction. Plus, poor digestion means we're don't absorb nutrients properly, leading to imbalances which can cause disease.

Type 2 diabetes

When we're in a constant sympathetic nervous state, glucose is released into the bloodstream for quick energy so we can escape predators. This extra glucose stimulates the release of insulin, which is required to 'usher' glucose into cells to be used for energy. When stress is relentless, we keep producing glucose - but without a tiger to run from, our cells stop listening to the false alarms and ignore the insulin response. This in turn creates insulin resistance, which leads to type 2 diabetes. Worse, the rivers of glucose have to go somewhere, so the liver converts it into triglycerides and cholesterol, which is deposited around the waist.

Cardiovascular disease

Anyone under constant stress is at greater risk of cardiovascular disease. Ditto the high levels of glucose that are constantly released, as they create free radicals, which are what damage blood vessels, ultimately causing cardiovascular disease.

> If you catch every cold that's going around - and especially if they take ages to get over - you may want to give your adrenals more support.

Suppressed immunity

Cortisol suppresses the immune system, leaving us vulnerable to disease. Ongoing stress also opens up the 'tight junctions' that hold the gut intact and keep food separate from the bloodstream. When the gut is breached in this way, large proteins escape into our bloodstream and the immune system attacks these foreign substances, paving the way for autoimmune diseases.

Hypothyroidism

Thyroid health is dependent on adrenal health, so hypothyroidism and adrenal dysfunction often go hand-in-hand. Your thyroid reacts to stress by slowing down production of thyroid hormones in response to stress hormones. Plus, when you're pumping out more cortisol this decreases the liver's ability to clear oestrogen, which in turn increases a protein called thyroid-binding globulin (TBG). When our thyroid hormone is bound to TBG it becomes inactive, which leads to hypothyroidism.

What to look for

Symptoms of weakened adrenal glands include:

- Inability to concentrate
- Unstable blood sugar
- Excessive fatigue
- Salt and/or sugar cravings
- Cravings for carbohydrates
- Sleeping problems
- Nervousness
- Hypothyroidism
- Irritability
- Depression
- Exaggerated 'startle' reflex
- Bloating, wind, and belching
- Tension headaches
- Allergies
- Cold hands and feet
- Joint stiffness or fibromyalgia
- Orthostatic hypotension (dizziness when going from seated or lying down to standing)
- Increased belly fat
- A weakened immune system