



Test Information Sheet

HPA Axis and Stress Function

The adrenal glands are located at the top of the kidneys and produce hormones that help the body to control blood sugar, burn protein and fat, react to stressors, and regulate blood pressure. They are made up of two distinct components; the adrenal cortex which, amongst others, produces the hormones cortisol, aldosterone and DHEA and the adrenal medulla which produces adrenaline and noradrenaline. They form an important part of the hypothalamus-pituitary-adrenal (HPA) axis, which when functioning optimally allows the adrenals to secrete appropriate levels of hormones in response to physiological and psychological stress which are vital to our survival mechanism.

Why test adrenal function

The HPA Axis enables us to respond and adapt to a variety of daily stressors by allowing our body to balance energy expenditure with demand. Our response to stressors is highly individual and is mediated by a complex set of feedback loops involving two areas in the brain, the hypothalamus and pituitary gland and the adrenal glands collectively known as the HPA axis. This axis regulates the circulating levels of adrenal hormones via a negative feedback loop. In response to a stressful event, our sympathetic nervous system, which enables us to respond quickly to danger and stressors, initially releases adrenaline preparing the body for “fight or flight”. If the stress is sustained cortisol is then secreted. Its function is to maintain and mediate the stress response whilst also regulating metabolism, the inflammatory response and immune function.

It is this sustained or chronic stress that does not allow for sufficient recovery. After continual over activation of our stress response, hormone levels may become both depleted and imbalanced and non-essential functions such as growth, reproduction, digestion, and the immune system may be downregulated with subsequent symptoms. One of the commonly overlooked sources of stress and resulting HPA axis dysfunction is chronic or severe infection.

DHEA, a precursor to sex hormones, is important to measure as, if it is low, it may signify hormonal imbalance. It has a protective effect against systemic inflammation and the potentially damaging effects of excessive cortisol.

Symptoms of HPA Axis dysfunction

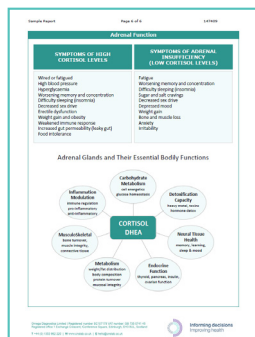
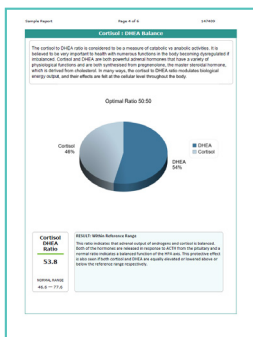
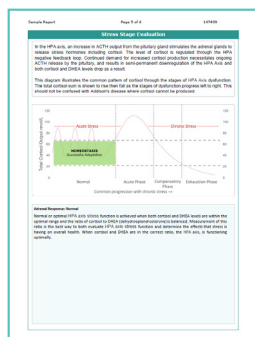
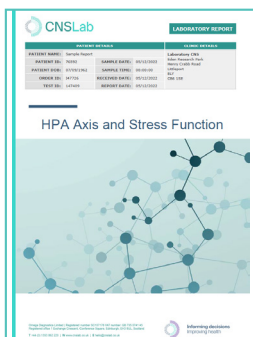
- ✓ Increasing fatigue unrelieved by sleep
- ✓ Brain fog, confusion, irritability, and low mood state
- ✓ Anxiety and disturbed sleep
- ✓ Food cravings for stimulants and for sugary, spicy, and salty foods
- ✓ Poor temperature control
- ✓ Frequent thirst and need to urinate
- ✓ Constipation and diarrhoea, abdominal pain, and muscle cramps
- ✓ Low libido
- ✓ Inflammation, including joint pains
- ✓ Postural hypotension
- ✓ Weakened immunity
- ✓ Poor stress resilience

HPA axis and stress function testing – how does the test work

The CNSLab HPA Axis and Stress Function test measures both cortisol and DHEA levels using saliva samples taken at specific times throughout the day. Cortisol is secreted as a circadian rhythm; it should rise steeply on waking in the morning and gradually decline until around midnight. This initial steep increase is the cortisol awakening response (CAR), measured immediately upon waking. It records our anticipated response to the stressors of the day ahead and is an important indication of the health and resilience of the HPA axis. DHEA is measured in the morning and the afternoon, and a cortisol/DHEA ratio is given.

Test results

A comprehensive test report details the secretion of cortisol levels at five specific times throughout the day, morning and afternoon, DHEA concentrations and the cortisol/DHEA ratio. An ideal ratio is 50:50. Deviations noted above or below reference levels can help to identify the degree of support required to improve any imbalances in HPA axis function. For instance, hyper secretion of cortisol with a simultaneous reduction in DHEA may be associated with a prolonged stress response. In the short-term dysregulation may be supported with supplementation and dietary changes enabling the potential implementation of long-term lifestyle changes.



Supporting the adrenals

Dietary and Lifestyle Protocols to consider:

- Improving sleep duration and quality
- Employing stress management including mindfulness, meditation, and healthy exercises
- Reduction in dietary stressors such as sugar, caffeine, alcohol, and processed foods devoid of nutrients
- Intake of nutrient dense foods high in Vitamins C, B Vitamins, zinc, magnesium, and Omega 3 essential fatty acids

Sample requirements and test turnaround

The CNSLab HPA Axis and Stress Function test uses a convenient saliva sample collection method, taken at 5 intervals throughout the day.

Results are available within 10 working days.

Important notice

Before taking the test, it is important that the individual should:

- ✓ Read the instructions for use carefully before doing the test
- ✓ Be fully hydrated
- ✓ Have no blood from the gums within the mouth, as this can artificially raise readings
- ✓ Avoid the use of cortisol or hydrocortisone containing medications for 7 days prior to testing
- ✓ Ensure the samples are taken at the specified times and are labelled correctly
- ✓ Avoid smoking, toothbrushing, flossing or the use of mouthwash for at least 30 minutes before sample collection

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©2022 The assistance of a professional health care provider is advised and any medical concerns should be referred to a medical doctor. Specifications, terms and pricing are subject to change at any time. Sample report shown for illustrative purposes only, format may vary. Standards and Controls are calibrated against the isotope dilution-LCMS reference method. There are no internationally recognised reference ranges for cortisol and DHEA. Ranges were determined from a large in house study and a review of available literature. Not all products are available in all countries. Generic images used under licence from Shutterstock.com. Product images are the property of Omega Diagnostics.

