

CORTISOL/ADRENAL FUNCTION

Saliva Testing of Cortisol

Problem

Many individuals today suffer from an impaired ability of the adrenal glands to mount a response to stress. This condition stems from various factors including chronic stress (e.g. marital, financial, job stress), sleep deprivation, excess caffeine and carbohydrates, chronic pain, extreme exercise and a generally unbalanced life style. Also known as "adrenal burnout" or "adrenal fatigue" the problem manifests with a constellation of symptoms ranging from chronic fatigue to infertility. Given the pace of modern, multi-tasking life, everyone is at risk, but the problem is more prevalent among medical professionals, police officers, executives and teachers.



Purpose

The adrenal glands produce cortisol, one of the key stress response hormones, 24 hours a day, although output varies throughout the day in a predictable fashion. Cortisol output is highest upon waking and declines steadily through the day, reaching its lowest point at night. Individuals with adrenal fatigue have a flattened cortisol profile; with loss of the morning surge. This diurnal variation of cortisol can be readily mapped using saliva sampling.

Hormones Tested

Cortisol can be collected once in the morning or twice a day (morning and bedtime). If levels are out of range and symptoms warrant, it is advisable to further evaluate diurnal adrenal function. In this case, four specimens are acquired: morning (within hour of waking), before lunch, before dinner and before bedtime. Saliva is particularly well suited for measurement of cortisol because there is no anticipatory rise in cortisol as is the case for venipuncture. Due to its non-invasive nature, saliva is increasingly recognized as the method of choice for assessing adrenal function.

Candidates for Adrenal Function

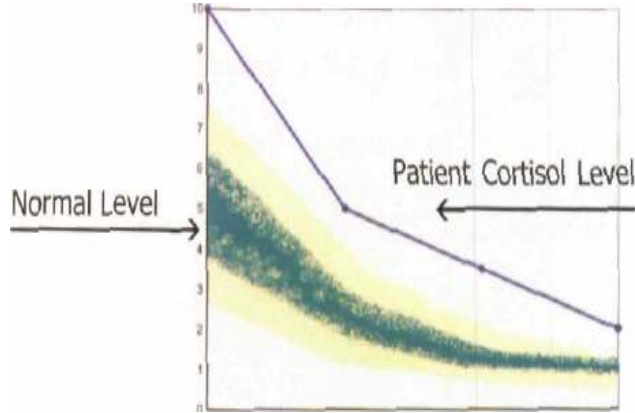
Individuals experiencing symptoms of morning and/or evening fatigue, increased susceptibility to infection, poor recovery from exercise, allergies and chemical sensitivity, unstable blood sugar, "burned out" feeling, insomnia, apathy, depressed mood and low sex drive.

Benefits

The main benefit of salivary cortisol testing for practitioners is to screen patients who present with symptoms consistent with adrenal fatigue. These patients rarely improve on their own and may visit numerous providers until the correct diagnosis is made; hence this is a meaningful service to provide. Most clinicians make this diagnosis based solely on medical history and examination, but patients appreciate objective testing that demonstrates something is definitely wrong, and not "all in their head". Saliva testing assists practitioners to identify individuals with quantifiable adrenal imbalance and to optimize their treatment.

Example below illustrates chronically elevated cortisol - a reflection of stress overload-which particularly in combination with low androgens, impacts the biochemical pathways that lead to accelerated bone loss.

ADRENAL FUNCTION (Cortisol mg/ml)



COMMON TYPES OF HORMONE IMBALANCE

Since hormones are so mutually dependent, an excess of one creates deficiency of another, and thus, numerous possibilities for hormone imbalance. Some common patterns:

- **Estrogen dominance** relative to a lack of adequate progesterone is common at menopause, and in women who do not ovulate regularly. Linked with unwanted symptoms, thyroid dysfunction and breast cancer risks.
- **Testosterone/Estrogen** ratio relative to declining testosterone levels in mid-life men, estrogen levels, normally minimal in males, tend to rise. Linked with "male menopause", thyroid and prostate problems.
- **Cortisol highs/lows** from stress overload cause adrenal imbalance, fatigue and allergies; can block testosterone/DHEA to accelerate bone loss and aging.
- **Thyroid deficiency, High estrogen and/or cortisol** thwart thyroid activity to trigger low thyroid symptoms: cold hands and feet, dry skin, weight gain, low libido, etc.

HOW CAN I FIND OUT IF I HAVE A MAJOR HORMONE IMBALANCE?

For Adrenal Imbalance symptoms test:

Adrenal Function Test DHEA-s and diurnal (all day) cortisols: morning, noon, evening and night. Cortisol can also be measured twice a day (morning and bedtime).

For Insulin Resistance symptoms test:

Fasting Insulin identifies risk factors for diabetes, stroke, heart disease and cancer.

In Saliva

Best comprehensive assessment of diurnal adrenal function.

In Blood Spot

Insulin resistance signals impairment in the ability of body cells to take up insulin for energy conversion in the body.

DO YOU HAVE SYMPTOMS OF HORMONE IMBALANCE?

Troublesome and persistent	Adrenal Imbalance Symptoms	Insulin Resistance
<p>Two or more symptoms in any given category indicate priorities for testing.</p> <p>Note: Symptoms may overlap between categories.</p>	<p>Stress</p> <p>Fatigue</p> <p>Sugar craving</p> <p>Allergies/asthma</p> <p>Chemical sensitivity</p> <p>Arthritis</p> <p>Aches/Pains</p> <p>Headaches</p> <p>Sleep disturbances</p> <p>Bone loss</p> <p>Weight gain in waist</p>	<p>Weight gain in waist</p> <p>Sugar cravings</p> <p>Elevated triglycerides</p> <p>Increased urinary urge</p> <p>Low blood sugar</p> <p>High cholesterol</p> <p>Difficulty sleeping</p> <p>Numbness (hands/feet)</p> <p>Erratic blood pressure</p>

