Accession No:

Genova Diagnostics Europe

Adrenal - Thyroid Profile

Practitioner Details

Genova Diagnostics (Europe)
Parkgate House
356 West Barnes Lane
New Malden
Surrey
KT3 6NB

Patient Details

Ms Sample Report
Parkgate House
356 West Barnes Lane
New Malden
Surrey
KT3 6NB

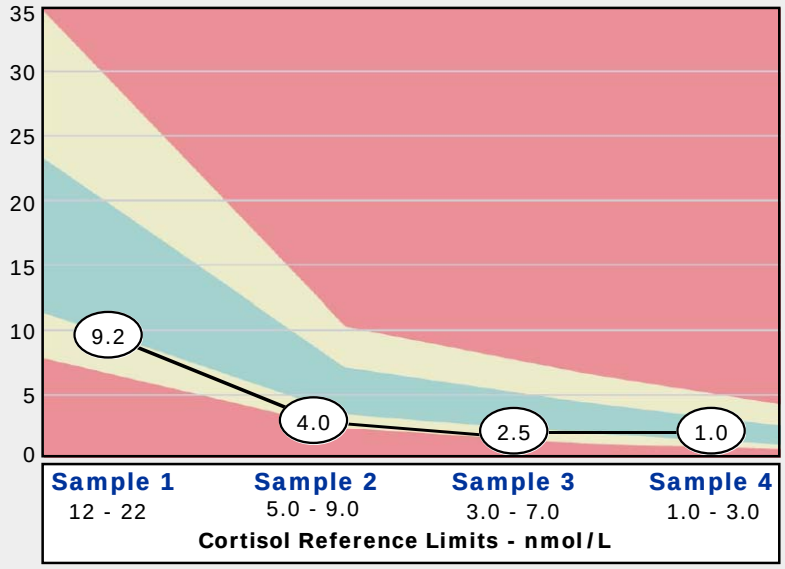
Client ID No: **IWX500220**
Accession No:
Patients DOB: 20/03/1975
Sample Date:
Date Of Report: 09/12/2008

Salivary Cortisol and DHEA - Age Group 14 - 40

Cortisol Levels

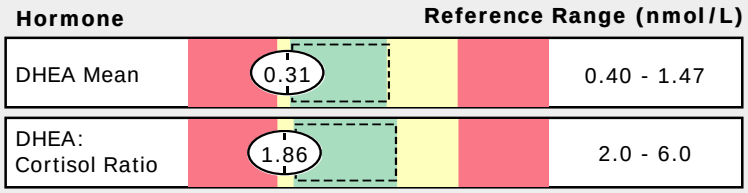
	Inside Range	Outside Range	
Sample 1 Post Awakening		9.2	L
Sample 2 (+ 4 - 5 Hours)		4.0	L
Sample 3 (+ 4 - 5 Hours)		2.5	L
Sample 4 (Prior to Sleep)	1.0		
Total Daily Cortisol		16.7	L

Range 21 - 41 nmol/L



DHEA Levels

Sample 2 (am)		0.30	L
Sample 3 (pm)		0.32	L
DHEA : Cortisol Ratio		1.86	L

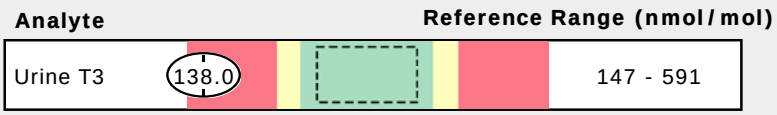


Adrenal Stress Stage

Exhaustion Stage: This is generally a state of insufficient production of adrenal hormones after multiple years of persistent stressors with insufficient coping mechanisms. Patients usually present with fatigue, poor energy and immune system hypofunction. They may exhibit chronic anxiety. In some patients this represents impaired response to shorter-term stressors (i.e. overreactivity to short term stress). Adrenal support and restoration measures, as well as identification and balancing of major stressors are indicated. This state should not be confused with Addison's disease, which is a near absence of adrenal hormones, and is a medical emergency.

Urine T3 (FMV) Results

Analyte	Result		Units	Normal Range
Triiodothyronine (T3)	138	L	nmol/mol creatinine	147 - 591



Commentary

ADDITIONAL TEST RESULTS

DEVIATIONS FROM THE NORMAL CORTISOL RHYTHM

The Morning cortisol level is below the normal range. Morning cortisol may be a good indication of peak adrenal gland function since they represent peak cyclic activity. Low morning cortisol levels suggest a degree of adrenal hypofunction.

The noon cortisol level is below the normal range. Noon cortisol levels may be a good indication of adaptive adrenal gland function since they represent the adrenal glands' response to the demands of the first few hours of the day. Low noon cortisol levels suggest a degree of adrenal hypofunction with decreased adaptive response.

A Low afternoon cortisol is suggestive of suboptimal adrenal functioning.

DEVIATIONS IN DHEA PRODUCTION

Decreased DHEA levels may be seen in thyroid disorders, cardiovascular disease, obesity, reduced immunity, rheumatologic diseases, and excess cortisol production, or with administration of pharmacological doses of glucocorticosteroids. Low levels are indicative of a lowered capacity to endure physiological or psychological stress/trauma/injury, and may present with abnormal immune response, with increased incidence of autoimmune disease.

URINE T3 COMMENTARY

Triiodothyronine (Free T3, or FT3) represents the biologically active fraction of total T3, the majority of which is bound by protein carriers in the serum and is therefore inactive. T3 is 3-5 times as physiologically active as T4, and 80% of the circulating T3 is from the peripheral conversion of T4 predominately in liver and kidney. A low urinary FT3 suggests a hypothyroid state. This can result from inadequate production of T4 in the thyroid gland or from impaired peripheral conversion from T4, consistent with a relative shift away from T3 production and toward reverse T3 production, an adaptive change thought to conserve energy expenditure. (Serum T4 and/or TSH levels can provide a fuller picture.) Decreased T3 production has been observed in states of severe calorie restriction, systemic inflammatory conditions, and/or prolonged or severe stress. The enzyme necessary for the conversion of T4 into T3 (5'-deiodinase) is selenium dependent. Conversion may be impaired by a selenium deficiency or by the presence of the heavy metal selenium antagonists such as mercury, cadmium and lead. Hypothyroidism may induce signs and symptoms such as fatigue, depression, low body temperature, weight gain, constipation, changes in menstrual function, myxoedema, decreased memory and concentration, muscle and joint pain, hair loss, and/or possible goiter.

Reported By: NRA

Commentary

GENERAL INFORMATION FOR PATIENTS

General:
An important part of any abnormal stress response, should include identifying and reducing the cause(s) of stress. The body interprets physiological stressors, such as lack of sleep, imbalanced blood sugar levels or intensive athletic training, in the same way as psychological stress due to bereavement or divorce for example. Adrenal function is significantly influenced by blood sugar levels, therefore much of the dietary advice below aims to stabilise levels of sugar in the blood.

Dietary:
- Never skip meals! Ensure that you eat at least every 3 or 4 hours, taking healthy snacks as necessary. Small, regular meals help to maintain energy levels and mood, while decreasing tiredness, irritability and fat storage.
- Avoid highly refined foods such as white bread/ pasta/ rice, chocolate, biscuits, sweets or anything with added sugars. Hidden sugars are also included in many cereals, breads, tinned produce, and processed/ packaged foods. Replace processed foods with the unrefined foods, such as wholemeal bread, brown rice, oats and rye. Note that excess alcohol can also cause imbalanced blood sugar levels.
- Tropical fruit (melon, grapes, banana etc), dried fruit and fruit juices can also be very sugary, therefore only a very limited intake of these should be allowed. Instead include other fruit such as cherries, berries, apples and pears, which are less 'sweet'.
- Ensure plenty of protein, such as lean meat, chicken, fish, eggs, beans, lentils, nuts and seeds, are included with each meal. Protein helps to slow the release of sugar into the blood stream.
- Stimulants such as tea, coffee and cigarettes may provide a temporary energy boost, however these not only deplete many essential nutrients, but always reduce energy levels in the long run. Aim to drink at least 1 - 1½ litres of filtered/ bottled water throughout the day, which can include herbal teas.
- Nutrients that specifically support the adrenal glands are vitamin C, found in most fresh fruit and vegetables. Magnesium is dramatically depleted in times of stress, and symptoms of a deficiency often include fatigue, anxiety, insomnia and a predispostion to stress. Include plenty of dark green leafy vegetables, wholegrains, nuts and seeds to supply adequate levels of magnesium. The B-complex vitamins can help to support adrenal function, particularly vitamin B5, which directly supports adrenal cortex function and hormone production. Sources include wholegrains, nuts and seeds.

Lifestyle:
- Good quality sleep is of utmost importance for long-term health and regeneration. Few people can cope with less than 7 or 8 hours of sleep per night, and those who regularly undersleep are almost always less efficient, not more. To promote proper sleep, keep regular sleeping patterns and ensure the bedroom is dark enough with adequate ventilation. Do not work in the bedroom.
- Make sure that food is eaten in a relaxed environment, and chewed thoroughly to promote optimum digestion and absorption of nutrients.
- Regular exercise is very beneficial for relieving stress and decreasing negative emotions such as worry or anxiety. However in patients with significantly depleted adrenal hormones, intensive cardiovascular exercise will further deplete adrenal reserves. Gentle exercises such as yoga, pilates, swimming and brisk walking are all excellent alternatives and are often calming in themselves.
- Regular relaxation needs to be built into ones daily life. Reading, bathing, massage and listening to music can promote relaxation, but watching the TV does not! Activities such as tai chi and meditation are extremely beneficial at reducing stress.
- Counselling or other therapies may be beneficial for those having to cope in the face of severe stressors.