



TEST PATIENT

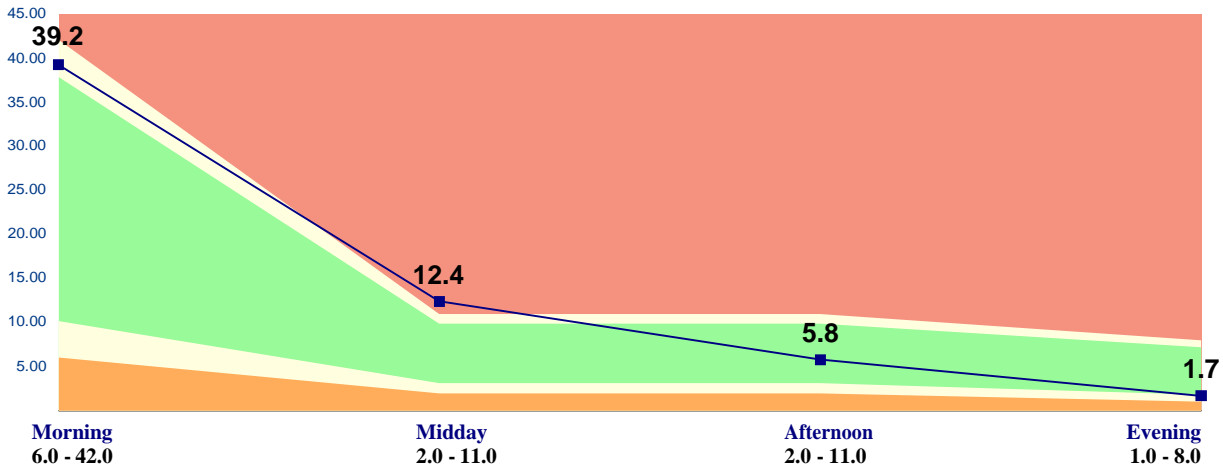
Sample TestName
Sex : F
Date Collected : 00-00-0000

LAB ID: 00000000 UR#:00000000

TEST PHYSICIAN

DR EDWARD CHAN
11-1, WISMA LAXTON,
JALAN DESA, TAMAN
DESA, 58100 KL

ADRENOCORTEX STRESS PROFILE



Cortisol Reference Range - nmol/L

Colour Key Ranges :
 Above: Red
 Borderline: Yellow
 Normal: Green
 Below: Orange

Cortisol Values		Result		Range
Cortisol Profile, Morning	39.2		6.0 - 42.0	nmol/L
Cortisol Profile, Midday	12.4*H		2.0 - 11.0	nmol/L
Cortisol Profile, Afternoon	5.8		2.0 - 11.0	nmol/L
Cortisol Profile, Evening	1.7		1.0 - 8.0	nmol/L
Cortisol Daily, Total	59.1		11.0 - 76.0	nmol/L
DHEAS Values		Result		Range
DHEAS Profile Morning	5.6		2.5 - 25.0	nmol/L
DHEAS/CORTISOL AM	0.14*L		0.20 - 0.60	RATIO

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Adrenocortex Stress Comments

ELEVATED MORNING SALIVA CORTISOL LEVEL:

Saliva morning cortisol level is elevated. Is this due to supplementation, adrenal stress, inflammation, medication or fasting?

Morning Cortisol is a good indicator of peak adrenal gland function, since it represents peak cyclic activity. High Cortisol reflects HPA axis imbalance and morning hypoglycaemia or stress.

ELEVATED MIDDAY CORTISOL LEVEL:

Is this due to supplementation, adrenal stress, inflammation, medication or fasting?

Suggestive of blood sugar imbalance.

LATE AFTERNOON CORTISOL LEVEL IS WITHIN RANGE:

Late afternoon cortisol level is adequate and within range.

LOW EVENING CORTISOL LEVEL:

Saliva evening cortisol levels should be lower than the mean of the range. If all 4 readings in the adrenal stress profile are low, suspect adrenal fatigue, otherwise maladaptation.

LOW DHEAS LEVEL:

Saliva DHEAs level is below the mean range and suggestive of the need for supplementation with 25mg of DHEA. If however, testosterone/androgens are elevated, consider 7 Keto form of DHEA.

Maladaptation if consistently elevated cortisol. Adrenal fatigue if morning and evening cortisol only elevated, or if all markers low.

SALIVA DHEAS Ranges:

Premenopausal, no oral contraceptives:	2.5 - 25	nmol/L
Premenopausal, with oral contraceptives:	2.0 - 8.0	nmol/L
Postmenopausal:	< 6.5	nmol/L

SALIVA DHEAs/CORTISOL RATIO - LOW

As a maladaptation to stress, a reduction in DHEA and an increase in cortisol synthesis can occur in the adrenal cortex due to mild or severe pathophysiological conditions. This maladaptation of adrenocortex function is characterized by a shift in pregnenolone metabolism away from both the mineralocorticoid and androgen pathways toward the glucocorticoid pathway. These changes result in a decrease in the DHEA/cortisol ratio.

Low ratio has also been reported in patient suffering from Depression, Post Surgical Stress, and anorexia nervosa.

Consider the following options:**Lifestyle changes:**

Stress reduction, rest & relaxation, prayer, meditation, regular exercise, blood sugar stabilization, sufficient sleep, elimination of food allergies and restoration of normal bowel function

Nutritional supplements:

High-grade multi-vitamin/mineral. Additional Vitamin C, Vitamin B5, Vitamin B6 and zinc, as indicated. Phosphatidyl serine may resensitize the hypothalamus and pituitary to cortisol negative feedback.

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Herbal Support:

Nervine and "calmative" herbs: St. John's Wort (*Hypericum*), Passionflower (*Passiflora*), Valerian (*Valeriana*), Skullcap (*Scutellaria*), and Hops (*Humulus lupulus*)

Low dose adaptogens: Siberian ginseng (*Eleutherooccus senticosus*) Withania (*Withania somnifera*)

In cases of high cortisol or low DHEA or low DHEAs/cortisol ratio consider using nervine and adaptogenic herbs with divided dosing throughout the day.

DHEA or pregnenolone supplementation may be warranted.

Consider measuring testosterone and/or estradiol levels and intervene if necessary
Support immune function, if indicated.

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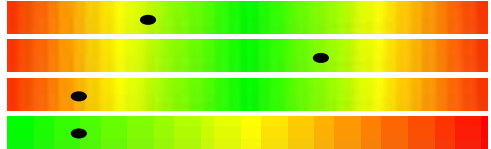
**MICRO SAMPLE ASSAYS**

BLOOD SPOT

Essential Thyroid Profile

TSH, BS

Result	Range	Units
1.3	0.5 - 5.0	mIU/mL
18.0	11.0 - 21.0	pmol/L
2.3 *L	3.0 - 6.0	pmol/L
18.0	< 35.0	IU/mL



FT4, BS

FT3, BS

TPO Antibody, BS

(*) Result outside normal reference range

(L) Result is below lower limit of reference range

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Micro Sample Thyroid Comments

There are differing views regarding reference ranges of TSH. New reference ranges using populations without thyroid disease suggest that the optimal TSH range for thyroid function should be 0.5-2.0mIU/L. However it should be noted that this laboratory shall continue to report a normal reference range of 0.5 - 5.0 mIU/L.

FREE T4 and FREE T3

Free T4 and T3 represent bioactive portion of thyroid hormone. The test results can identify functional or subclinical hyper- and hypothyroidism and overt hypo- and hyperthyroidism. T4 converts to active T3 or inactive rT3.

LOW FT3 LEVEL:

A low T3 level may indicate overt hypothyroidism. Treatment is indicated. If T3 levels are in the lower part of the reference range, whilst T4 is normal, this may indicate decreased deiodinase activity.

Treatment Considerations:

If T4 is low or low normal, treat as per protocols for low T4

If T4 is normal follow the suggestions below to enhance T4 to T3 conversion

If patient is currently on L-thyroxine, consider a thyroid medication that contains both T4 and T3.

If patient is not currently on L-thyroxine, consider T3 therapy if nutritional, hormonal and lifestyle therapies are not adequate

Selenium, Iron, Zinc

Vitamins A, B2, B6 and B12

Tyrosine

Potassium, Copper, Chromium

Consider therapy with Withania. Assess and treat high levels of reverse T3

Assess and treat cortisol and/or estrogen excess

Consider implementing the following dietary and lifestyle factors:

Balance protein levels; decrease if excessive and increase if inadequate

Reduce excessive consumption of soy products, cruciferous vegetables, walnuts and alcohol

Reduce excessive exercise

Increase calorie intake if patient is on a calorie restrictive diet

Purify water, Fluoride may interfere with T3 production

THYROID ANTIBODIES COMMENTS:

Thyroglobulin Antibodies (ATG Ab)

Thyroglobulin is a large protein from which the thyroid hormones T3 and T4 are produced.

Thyroid Peroxide Antibodies (TPO Ab)

Thyroid peroxidase (TPO) is responsible for the iodination of tyrosine residues in the thyroglobulin molecule.

LOW Titres No treatment required.

HIGH Titres Interpretation:

Elevated levels of thyroid antibodies may inhibit the function of TSH or T4

Elevated thyroid antibodies may therefore lead to symptoms of either hypothyroidism or hyperthyroidism, even if levels of TSH, T4 & T3 are optimal.

Treatment Considerations:

Selenium and omega 3 supplementation

(*) Result outside normal reference range

(L) Result is below lower limit of reference range



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Antioxidant supplementation
A gluten free and/or dairy free diet
Nutrients that support the immune system
Assess patient for celiac disease
Assess and treat leaky gut
Assess and treat liver detoxification
Assess and treat heavy metal levels
Assess and treat food sensitivities & allergies
Supplement with low dose cortisol (Hydrocortisone) and/or DHEA daily.

Anti-Thyroid Peroxidase antibody (anti-TPO Ab, also known as anti-microsomal Ab) is elevated in autoimmune thyroid disease and post partum thyroiditis.
Anti-Tg (anti-Thyroglobulin Abs) are elevated less frequently than anti-TPO in auto-immune thyroid disease, but there are some cases which are anti-TPO negative and anti-TG positive.

Incidence of thyroid Abs	a-TPO	a-TG
Hashimoto's thyroiditis	>95%	85%
Graves' disease	>80%	30%
Post-partum thyroiditis	>80%	N/A
Normal population	<10%	10%