



**Patient Details**

Ms Sample Report  
 Genova Diagnostics Europe Ltd  
 Parkgate House  
 356, West Barnes Lane  
 New Malden  
 KT3 6NB

**Practitioner Details**

Genova Diagnostics ( Europe )  
 Parkgate House  
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 New Malden  
 KT3 6NB

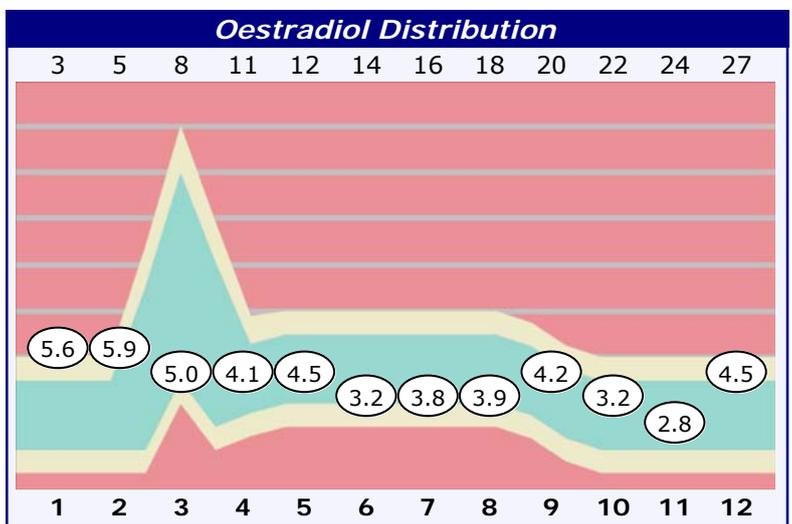
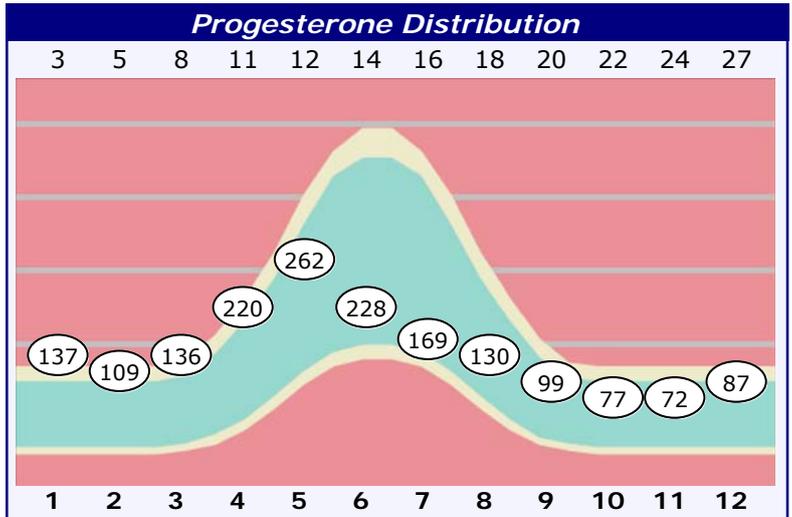
Client ID No: **IWX500220**  
 Accession No:  
 Patients DOB: 06/08/1975  
 Sample Date & Time: 31/08/2011  
 Date Of Report: 28/09/2011 12:07

<b>Follicular Phase</b>			
	<b>Progesterone</b> 10 - 100 pg/ml		<b>Oestradiol</b> 2 - 5 pg/ml
Sample 1	136.5 H		5.6 H
Sample 2	108.5 H		5.9 H

<b>Ovulation Phase</b>			
	<b>Progesterone</b> 10 - 100 pg/ml		<b>Oestradiol</b> 5 - 14 pg/ml
Pre Ovulation	136.2 H		5.0
Ovulation ✓	10 - 400 pg/ml		2 - 7 pg/ml
Sample 4	219.8		4.1

<b>Luteal Phase (Surge)</b>			
	<b>Progesterone</b> 100 - 400 pg/ml		<b>Oestradiol</b> 4 - 7 pg/ml
Sample 5	262.3		4.5
Sample 6	228.3		3.2 L
Sample 7	169.3		3.8 L
Sample 8	130.3		3.9 L

<b>Post Luteal Phase</b>			
	<b>Progesterone</b> 10 - 100 pg/ml		<b>Oestradiol</b> 2 - 5 pg/ml
Sample 9	98.9		4.2
Sample 10	76.9		3.2
Sample 11	71.7		2.8
Sample 12	86.5		4.5



<b>Distribution Analysis &amp; Testosterone</b>					
	Analyte			Reference Range	Units
Luteal Progesterone Output	1146.2		1146.2	500 - 1300	pg/ml
Total Oestradiol Output	50.7		50.7	35 - 70	pg/ml
Progesterone : Oestradiol	34.0		34.0	10 - 40	Ratio
Testosterone (Female)	66.5		66.5	20 - 70	pg/ml

**Patient Information**

Start of Test Cycle:	05/08/2011	Entering Menopause:	No
Last Sample Date:	31/08/2011	Suffer from PMS:	Yes
Test Cycle Length:	26	Fertility Studies:	No
Regular Cycle:	Yes	Taking Hormones:	None
Average Cycle Time:	28-30		

**Ovulation Phase Analysis**

Luteal Progesterone Surge occurred on Day :	<b>8</b>	
Length of luteal Phase in Days :	<b>22</b>	Optimal $\geq$ 11 Day's
Oestradiol Pre Ovulatory Peak Day :	<b>5</b>	
Oestradiol Peak to Luteal Surge :	<b>3</b>	Optimal $\leq$ 4 Day's

**Oestradiol Interpretation Guidelines****Profile Type: Progesterone / Oestradiol ratio is within normal limits**

A pre ovulatory peak was detected, suggesting ovulation in this cycle, however this is earlier in the cycle than is considered optimal. Overall oestradiol production is normal.

None Indicated

**Progesterone Interpretation Guidelines****Profile Type: Normal**

Significant luteal surge detected. Length of luteal Surge within normal limits  $>$  10 days. Progesterone production and distribution over luteal phase is adequate, however it is earlier in the cycle than is considered optimal.

None Indicated

**Testosterone Interpretation Guidelines**

None Indicated

**Additional Interpretation Guidelines**

Premenstrual syndrome (PMS), has been associated with progesterone deficiency, increased oestrogen, or oestrogen/progesterone imbalances.

# Adrenal Stress Profile



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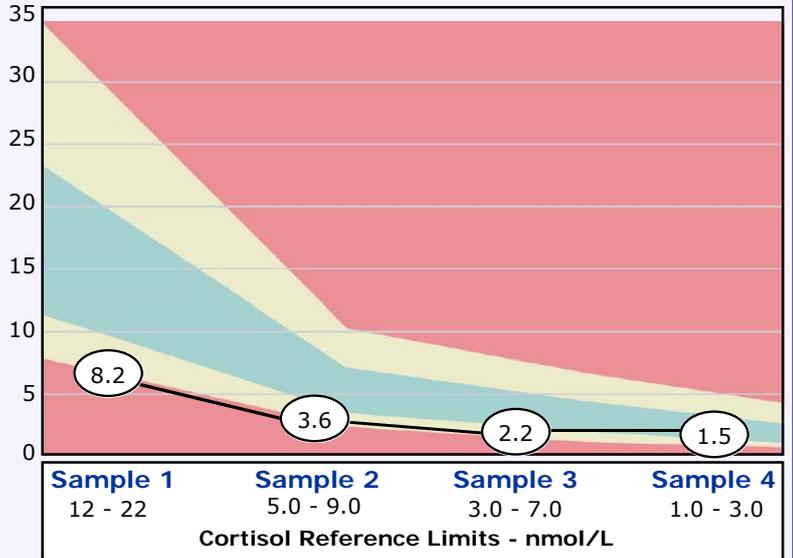
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 Date Of Report: 23/09/2011 16:59

**Salivary Cortisol and DHEA - Age Group 14 - 40**

**Cortisol Levels**

	Inside Range	Outside Range
Sample 1 Post Awakening	<input type="text"/>	8.2 L
Sample 2 (+ 4 - 5 Hours)	<input type="text"/>	3.6 L
Sample 3 (+ 4 - 5 Hours)	<input type="text"/>	2.2 L
Sample 4 (Prior to Sleep)	1.5	<input type="text"/>
<b>Total Daily Cortisol</b>	<input type="text"/>	15.5 L
	Range 21 - 41 nmol/L	



**DHEA Levels**

Sample 2 (am)	<input type="text"/>	0.20 L
Sample 3 (pm)	0.60	<input type="text"/>
<b>DHEA : Cortisol Ratio</b>	2.58	<input type="text"/>

Hormone	Reference Range (nmol/L)
DHEA Mean	0.40 - 1.47
DHEA: Cortisol Ratio	2.0 - 6.0

**Adrenal Stress Stage**

Adrenal Fatigue - Non-adapted response. This generally indicates falling levels of both cortisol and DHEA from excessive stimulation/secretion over long periods of time. It can also reflect the effects of exogenous use of DHEA in adrenal exhaustion states after several months of DHEA supplementation.

**Commentary**

**Commentary****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**

None Seen

**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 predisposition 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.

# Melatonin Profile (Saliva)



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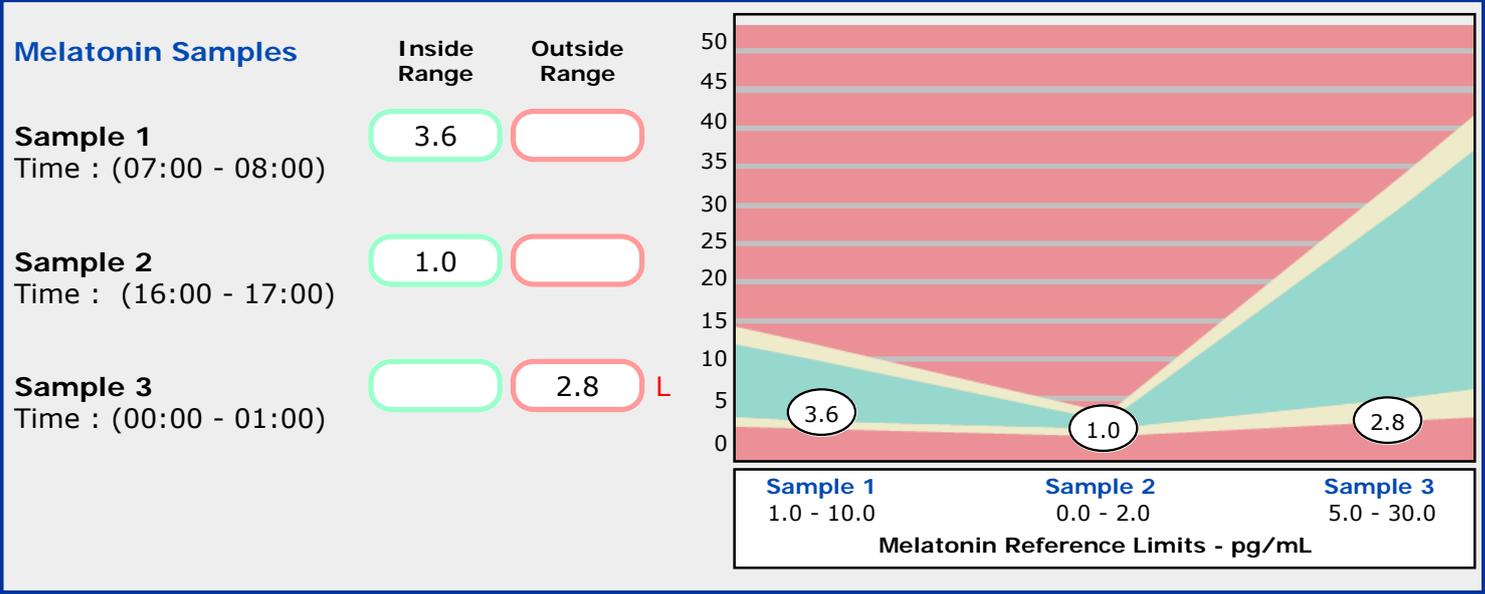
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## Salivary Melatonin



## Commentary - General

Melatonin is the major hormone secreted by the pineal gland and is a key modulator of seasonal and circadian biorhythms. The synthesis and secretion of melatonin is controlled by a circadian clock in the hypothalamus and is synchronised by the light/dark cycle. The production of melatonin is inhibited by daylight and occurs during darkness. Melatonin is therefore inherently involved in the timing of functions such as sleep, mood, reproduction and immune system activity. Melatonin also not only acts as a hormone, but also as a potent antioxidant and is one of the most powerful scavengers of free radicals.

## Commentary - Specific

## Commentary

### MELATONIN RHYTHM INTERPRETATION GUIDELINES

This profile reveals a disturbance in the circadian rhythm of melatonin. This may influence other hormones such as thyroid, testosterone, and oestrogen, as well as playing a crucial role in sleep wake cycles. Melatonin influences other vital functions including cardiovascular and antioxidant protection, endocrine function, immune regulation and body temperature.

#### Suspect:

1. An extended light phase of the day which may decrease the duration of melatonin secretion and/or exposure to light-at-night or electromagnetic fields
2. Drugs and other substances that may decrease melatonin levels include: beta blockers, NSAIDS, steroids, nicotine, alcohol, sleep aids, anti-anxiety and antidepressant medication (SSRI's & benzodiazapines). Prozac may also lower melatonin levels. Caffeine, tobacco, alcohol and high doses of vitamin B12 (3 mg a day).
3. Evening exercise, which can decrease melatonin levels up to three hours after the end of exercise.
4. Increased risk for mood disorders, such as some forms of depression.
5. Increased metabolism of melatonin by the liver.
6. Decreased production of melatonin by the pineal gland.

#### Consider the following actions:

1. Avoid bright light at night and reduce exposure to electromagnetic fields, to prevent melatonin depletion.
2. Re-evaluate the scheduled time of taking required medications. If possible, avoid use of melatonin-lowering substances at times of recorded low melatonin.
3. Modify exercise routine if reduced melatonin levels are not desired.
4. In cases of depression and other mood disorders rule out other possible causes.
5. Consider single or divided low dose melatonin supplementation (prescription only). Dosing should be individualised to fit the clinical presentation. The goal should be to resynchronise the circadian rhythm of melatonin.\* (\* Use with caution in pregnancy or with corticosteroids taken for immune-suppressive purposes.)
6. Consider ingestion of foods high in melatonin precursors during time when recorded melatonin is low.  
FOODS high in tryptophan (melatonin precursor): Spirulina seaweed, soybean, cottage cheese, chicken liver, pumpkin seeds, turkey, chicken, watermelon seeds, almonds, peanuts, brewer's yeast, malted milk, milk, yoghurt.
7. Consider enhancing the production of melatonin with nutrient supplements during recorded times of low melatonin: Niacinamide, vitamin B6, calcium, and magnesium.
8. Avoid large doses of vitamin B12 (3 mg a day), which may cause a significant decrease in melatonin levels.