Metabolic Analysis Profile

sample type: **URINE**

This **Metabolic Analysis Profile** assesses urine metabolites in order to evaluate four critical areas of metabolism: gastrointestinal function, cellular energy production, neurotransmitter processing, and amino acid/organic acid balance as influenced by vitamin/mineral cofactors. Results can be used to address chronic systemic complaints ranging from fatigue and mood disorders to headaches, muscular/joint pain, and digestive problems.

- ***Analytes:***
  Creatinine and 39 organic acids ratioed to creatinine including
  8 gastrointestinal metabolites
  13 cellular energy metabolites
  4 neurotransmitter metabolites
  14 amino acid metabolites

- ***Specimen Requirements:***
  First morning urine collection;
  2 tubes (samples frozen)

- ***Before Taking this Test:***
  - Avoid taking creatine supplements (2 days before test)
  - Check with healthcare provider about what other medications and supplements to avoid (4 days before test)
  - Women should not collect urine during menses
  - Arrange posting for Monday-Thursday
  - See instructions inside test kit for details

The **Metabolic Analysis Profile** is a urinary assessment of 39 key organic acids grouped according to their primary roles in the following four central areas of metabolism.

1. Gastrointestinal Function

This profile measures eight markers that can reveal malabsorption and dysbiosis. These imbalances can be addressed to improve gut health and to help prevent or alleviate: **Chronic digestive problems, common causes of nutritional deficiency, yeast overgrowth, cognitive impairment, gastrointestinal distress, and degenerative conditions**.

2. Energy Production

This profile assesses metabolites that serve as important intermediates in the citric acid (Krebs) cycle. This cycle supplies the body with its primary energy needs, converting 90% of food energy into cellular energy. This subpanel also includes:

- Carbohydrate metabolites that can signal impaired glucose metabolism
- Markers that help evaluate the breakdown of fats and production of cholesterol
- A marker measuring the production of coenzyme Q10

Imbalances of cellular energy metabolites are linked with chronic fatigue, accelerated cell breakdown, and unhealthy aging.

3. Neurotransmitter Metabolites

A special grouping of neurotransmitter metabolites serve as important diagnostic indicators of abnormal metabolism that can underlie many key aspects of neuropsychiatric function. These markers are urinary metabolites of powerful neurotransmitters that act on the central nervous system, including: **Epinephrine**, **Dopamine**, and **Serotonin**. These substances can profoundly influence patterns of stress response, emotional well-being, cognition and sleep.

4. Assessment of Nutrient Sufficiency

This test provides a functional assessment of nutrient sufficiency and usage that covers a broad range of vitamins, coenzymes, elements, enzyme activators and other nutrients. An analysis of amino acid metabolites which require vitamin and mineral cofactors for their metabolism can hint at deficiencies of: **vitamins B6**, **B12** and **C**, **magnesium**, **copper**, **iron**, and **various amino acids**.

Metabolic Analysis Testing

- All markers on the **Metabolic Analysis Profile** are measured in urine and ratioed to creatinine. This allows a single urine sample to be used for analysis.
- The test report includes an **in-depth interpretation** for abnormal results with a list of possible remedial nutrients. Customised vitamin & mineral formulas are available.
- The test is available with pediatric (ages 2-12) as well as adult reference ranges.

The **Metabolic Analysis Profile** is an important clinical tool for treating imbalances underlying metabolic, nutritional, and neurological disorders. Using test results, practitioners can design comprehensive, customised therapies to restore optimal metabolic health.

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Innovative Testing for Optimal Health

Metabolic Analysis Profile

Genova Diagnostics
Europe
Innovative Testing for Optimal Health

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

Patient: **SAMPLE PATIENT**
Age: 40
Sex: F
MRN:

Order Number:
Completed: March 28, 2006
Received: March 28, 2006
Collected: March 28, 2006

Malabsorption and Dysbiosis Markers

	Reference Range
Malabsorption Markers	mmol/mol creatinine
1. Indoleacetic Acid (IAA)	<= 9.0
2. Phenylacetic Acid (PAA)	<= 0.0
3. Dihydroxyphenylpropionic Acid (DHPPA)	<= 2.2
4. Succinic Acid	<= 20.0
Bacterial Dysbiosis Markers	mmol/mol creatinine
5. Citramalic Acid	<= 7.0
6. Indoleacetic Acid (IAA)	<= 9.0
7. Phenylacetic Acid (PAA)	<= 0.0
8. Dihydroxyphenylpropionic Acid (DHPPA)	<= 2.2
9. Benzoic / Hippuric Acids Ratio	<= 0.02
10. Succinic Acid	<= 20.0
Yeast / Fungal Dysbiosis Markers	mmol/mol creatinine
11. Arabinose	<= 42.3
12. Tartaric Acid	<= 14.1
13. Citramalic Acid	<= 7.0

Neurotransmitter Metabolites

	mmol/mol creatinine
14. Vanilmandelic Acid (VMA)	1.2-5.9
15. Homovanillic Acid (HVA)	0.9-4.4
16. 3-Methyl-4-OH-phenylglycol (MHPG)	<= 16.7
17. 5-OH-Indoleacetic Acid (5-HIAA)	1.1-6.5

Cellular Energy and Mitochondrial Metabolites

Glycolysis Metabolites	mmol/mol creatinine
18. Lactic Acid	6.3-36.4
19. Pyruvic Acid	1.1-15.4

This test reveals important clinical information about:

- ***Four critical areas of metabolism*** — *gastrointestinal function, cellular energy production, neurotransmitter processing, and amino acid-organic acid balance as influenced by nutrient cofactors*
- ***Metabolic imbalances*** *that may be underlying fatigue, neuromuscular problems, headaches, neurological dysfunction, mood disorders, delayed infant development or failure to thrive, personality disorders, gastrointestinal distress, recurrent skin rashes, and kidney/urinary problems*
- ***Individualized need for nutrients*** *to optimize metabolic function, including vitamins, elements (minerals), organic acids, amino acids, and other nutrients*

For test kits, clinical support, or more information contact:

Genova Diagnostics, Europe
Parkgate House
356 West Barnes Lane
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+44 (0)20 8336 7750 • Fax: +44 (0)20 8336 7751

More detailed publications with references are also available: www.GDXuk.net

Essence Hormone Tests

The most complete line of endocrine testing

Adrenal Stress Profile

sample type: SALIVA

The **Adrenal Stress Profile** is a powerful and precise noninvasive salivary assay that evaluates bioactive levels of the body's important stress hormones, **cortisol** and **DHEA**. This profile serves as a critical tool for uncovering biochemical imbalances underlying anxiety, depression, chronic fatigue, obesity, dysglycaemia, and a host of other clinical conditions.

- ***Analytes:***
  DHEA
  cortisol
  Secretory IgA (Comprehensive)

- ***Specimen Requirement:***
  4 (2ml) saliva samples collected at specific times over a 24-hour period

- ***Before Taking this Test:***
  - Avoid caffeine, alcohol, and nicotine (on day of test)
  - Do not eat, brush or floss teeth, use mouthwash, or chew gum (1 hour before)
  -Wash hands before collection
  - See instructions inside test kit for details

The adrenal hormones cortisol and DHEA function to influence:

- Metabolism
- Anti-inflammatory response
- Thyroid function
- Resistance to stress

Changing the amounts of cortisol and DHEA can profoundly affect:

- Energy levels
- Emotional states
- Resistance to disease
- General sense of well-being

Although both DHEA and cortisol are produced by the adrenal cortex, they exhibit many opposing actions.

Cortisol: Many of cortisols physiological actions are geared toward the mobilisation of reserves. Cortisol is released in large amounts in response to physical, physiological, and/or psychological stress. When stressors persist, the secretion of glucocorticoids can be prolonged, leading to maladaptation of the adrenal cortex and adrenal hyperplasia.

Excess cortisol can adversely affect:

- Bone and muscle tissue
- Cardiovascular function
- Sleep
- Immune defense (reduced SIgA)
- Thyroid function
- Weight control
- Glucose regulation
- Aging

Over time, cortisol secretion can become impaired, resulting in an inability to respond to stress as demonstrated in conditions such as:

- Chronic fatigue
- Allergies
- Menstrual problems
- Arthritis

DHEA, in contrast to cortisol, exerts mostly anabolic actions and balances the body's stress response.

DHEA functions to:

- Provide substrate for the synthesis of sex hormones
- Guard against degenerative conditions associated with aging
- Influence immune function and energy production
- Affect insulin sensitivity, thyroid function, protein synthesis and others.

Imbalances of DHEA have been associated with:

- Impaired immunity
- Depression
- Insulin resistance
- Alzheimers disease
- Cancer
- Panic disorder
- Obesity
- Cardiovascular disease

Genova Diagnostics® Europe

Innovative Testing for Optimal Health

Accession No:

Genova Diagnostics® Europe

Comprehensive Adrenal Stress Profile (Saliva)

Practitioner Details

Genova Diagnostics (Europe)
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Patient Details

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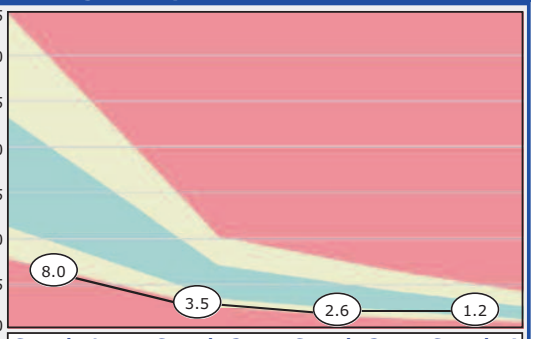
Surrey
KT3 6NB

Client ID No: **IWX500220**
Accession No:
Patients DOB: 02/03/1975
Sample Date:
Date Of Report: 08/05/2008

Salivary Cortisol and DHEA - Age Group 14 - 40

Cortisol Levels	Inside Range	Outside Range	
Sample 1 Post Awakening		8.0	L
Sample 2 (+ 4 - 5 Hours)		3.5	L
Sample 3 (+ 4 - 5 Hours)		2.6	L
Sample 4 (Prior to Sleep)	1.2		
Total Daily Cortisol		15.3	L
	Range 21 - 41 nmol/L		

DHEA Levels			
Sample 2 (am)		0.35	L
Sample 3 (pm)		0.32	L
DHEA : Cortisol Ratio	2.19		



Hormone	Reference Range (nmol/L)
DHEA Mean (0.34)	0.40 - 1.47
DHEA: Cortisol Ratio (2.19)	2.0 - 6.0

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.

Secretory IgA Results

Analyte	Result		Units	Normal Range	Optimal Range
Secretory IgA	75.2	L	µg/mL	118 - 641	130 - 471

Analyte	Reference Range (µg/mL)
SIgA Mean (75.2)	118 - 641

Clinical Significance:

- ***Accurate measurement of cortisol and DHEA*** *is valuable in preventing illness and identifying contributing factors to chronic disorders.*
- ***Salivary assessment reflects the unbound, bioavailable fraction of hormone.*** *The ease of collection allows for multiple sampling throughout the day, enabling the practitioner to evaluate the circadian rhythm of cortisol.*
- ***Customised therapeutic programs*** *based on exercise, diet, stress reduction, and/or supplementation can be implemented based on laboratory results.*

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