

# GENOVA Metabolic Analysis Profile (Organic Acids)

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*The Metabolic Analysis Profile is a nutritional test that assesses urine metabolites in order to evaluate four critical areas of metabolism: gastrointestinal function, cellular and mitochondrial 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 chronic fatigue and mood disorders to headache, muscular/joint pain, and digestive problems.*

The Metabolic Analysis Profile is a nutritional test using a urinary assessment of 46 key organic acids grouped according to their primary roles in the following four central areas of metabolism.

## **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.

## **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 panel 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.

## **Neurotransmitter Metabolites**

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

## Assessment of Nutrient Sufficiency

This nutritional 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.

### CONDITIONS WHICH MAY BENEFIT FROM ORGANIC ACID TESTING

Allergies	Anaemia
Autism	Blood sugar irregularities
Cardiovascular disease	Chemical sensitivities
Depression / Anxiety	Dermatitis
Fatigue	Hyperactivity
Insomnia	Irritable Bowel Syndrome
Malabsorption and maldigestion	Mental or developmental delay
Mood disorders	Muscle pain
Autoimmune disorders	Inflammation

## Genova METABOLIC ANALYSIS (Organic Acids) (urine) [4040]

❖ 2-Hydroxyphenylacetic acid, 3-Hydroxypropionic acid, 3-Methyl-4-OH-phenylglycol, 4-Hydroxyphenylpyruvic acid, 5-OH-Indoleacetic acid, Adipic acid, Arabinose, Benzoic acid, Benzoic/Hippuric ratio, Cis-Aconitic acid, Citramalic acid, Citric acid, Dihydroxyphenylpropionic acid, Formiminoglutamic acid, Fumaric acid, Glutaric acid, Hippuric acid, Homogentisic acid, Homovanillic acid, Indoleacetic acid, Isocitric acid, Kynurenic acid, Lactic acid, Malic acid, Methylmalonic acid, Orotic acid, Phenylacetic acid, Pyroglutamic acid, Pyruvic acid, Suberic acid, Succinic acid, Tartaric acid, Vanilmandelic acid,  $\alpha$ -Keto- $\beta$ -Methylvaleric acid,  $\alpha$ -Keto adipic acid,  $\alpha$ -Ketoglutaric acid,  $\alpha$ -Ketoisocaproic acid,  $\alpha$ -Ketoisovaleric acid,  $\beta$ -OH-Butyric acid,  $\beta$ -OH- $\beta$ -Methylglutaric acid.

## Other Organic Acids tests available

- **Genova Organix Comprehensive Profile (urine) [4041]:** Fatty Acid Metabolism, Carbohydrate Metabolism, Energy Production (Citric Acid Cycle), B-Complex Vitamin Markers, Methylation Cofactor Markers, Neurotransmitter Metabolism Markers, Oxidative Damage and Antioxidant Markers, Detoxification Indicators, Compounds of Bacterial or Yeast/Fungal Origin.
- **Organic Acids – Metabolic Panel (urine) [4016]:** Citric Acid Cycle Metabolism, Ketone/Fatty acid metabolites, Organic acids for Cofactor Need, Bacterial dysbiosis markers, Yeast & Fungal dysbiosis markers, neurotransmitter metabolites.

## How to order a test kit:

To order a test kit simply request the test name or test code on a NutriPATH request form and have the patient phone **NutriPATH Customer Service** on **1300 688 522**.

