NutrEval®

- ***Analytes***

Metabolic Analysis
Creatinine and 39 organic acids ratioed to creatinine including
8 gastrointestinal metabolites
13 cellular energy metabolites
4 neurotransmitter metabolites
14 amino acid metabolites

Amino Acids Analysis
38 analytes for urine or plasma representativeness
Nutritionally essential and semi-essential amino acids
Dietary peptide-related markers
Non-essential protein amino acids
Intermediary metabolites and diagnostic markers

EMFA
Omega-6, omega-3, and omega-9 polyunsaturated fatty acids
Saturated fatty acids
Monounsaturated fatty acids
Metabolic pathways
Fatty acid ratios and percent distribution within families

Elemental Analysis
- 6 Toxic Elements:

antimony	lead
arsenic	mercury
cadmium	tin

- 8 Nutritional Elements:

chromium	potassium
copper	selenium
magnesium	vanadium
manganese	zinc

Oxidative Stress
lipid peroxides
glutathione
8-OHdG
CoQ10

Other
homocysteine (serum)
25-OH Vitamin D

- ***Specimen Requirement:***
Urine and blood specimens required. Refer to patient kit instructions for details.

- ***Before Taking this Test:***
  - Discontinue non-essential medications (4 days before test)
  - Refer to clinician instructions about what other medications and supplements to avoid (4 days before test)
  - Patients must fast overnight prior to blood draw
  - Arrange posting for Monday-Thursday
  - See instructions inside test kit for details

- ***Turn-Around Time:***
16 Days

The **NutrEval** profile is a comprehensive nutritional evaluation that can help inform treatment for various chronic diseases and promote optimal health and wellness.

This unique profile:

- Evaluates overall **nutritional status** of your patient
- Assesses the functional need for **vitamins and minerals**
- Provides insight into **disease risk**
- Includes an innovative **"Interpretation at a Glance"**
  - **Concise-Easy Interpretation**
  - **Provides clear, personalised recommendations for supplementation**
    - Anti-oxidants
    - B-vitamins
    - Minerals
    - Amino acids

The NutrEval Profile consists of:

Metabolic Analysis measuring 39 key organic acids to evaluate gastrointestinal function, cellular energy production, neurotransmitter processing, and functional need for vitamins, minerals, and co-factors.

Amino Acid Analysis measuring 38 amino acids to evaluate dietary protein adequacy, digestion, absorption, amino acid transport, metabolic impairments, and nutritional deficits; including essential vitamins, minerals, and amino acids.

Essential & Metabolic Fatty Acid Assessment measures the levels of fatty acids in red blood cell membranes that affect cellular communication and the inflammatory cascade.

Elemental Analysis in red blood cells is a reliable means to identify short-term toxic metal exposure and to evaluate intracellular nutrient mineral status.

Oxidative Stress Analysis is a sensitive tool to evaluate the body's anti-oxidant reserves, the presence of oxidative injury, and CoQ10.

Homocysteine can be used as a biochemical marker for certain nutritional deficiencies (vitamin B12, folic acid and vitamin B6). It also serves as an independent risk factor for cardiovascular disease, and is implicated in a number of other conditions.

Vitamin D (25-OH Vitamin D) 25-hydroxycholecalciferol is the principle circulating derivative of vitamin D and the precursor to the active form 1, 25-dihydroxycholecalciferol. As well as playing a vital role in maintaining bone health, Vitamin D is critical for immune function and deficiencies are associated with many serious illnesses.

- ***NOTE:*** Blood samples require centrifugion and separation within an alloted time frame. Please ensure this is possible at referring phlebotomy location, or schedule an appointment at one of our phlebotomy sites: www.gdx.net/uk/phlebotomy

GENOVA DIAGNOSTICS® EUROPE

NutrEval FMV amino acids — Interpretation At-A-Glance

Nutritional Needs

Antioxidants

Vitamin A / Carotenoids

3,000 IU | 5,000 IU | 10,000 IU (X)

- Beta-carotene & other carotenoids are converted to vitamin A (retinol), involved in vision, antioxidant & immune function, gene expression & cell growth.
- Vitamin A deficiency may occur with chronic alcoholism, zinc deficiency, hypothyroidism, or oral contraceptives containing estrogen & progestin.
- Deficiency may result in night blindness, impaired immunity, healing & tissue regeneration, increased risk of infection, leukoplakia or keratosis.
- Food sources include cod liver oil, fortified cereals & milk, eggs, sweet potato, pumpkin, carrot, cantaloupe, mango, spinach, broccoli, kale & butternut squash.

Vitamin C

250 mg | 500 mg | 1,000 mg (X)

- Vitamin C is an antioxidant (also used in the regeneration of other antioxidants). It is involved in cholesterol metabolism, the production & function of WBCs and antibodies, and the synthesis of collagen, norepinephrine and carnitine.
- Deficiency may occur with oral contraceptives, aspirin, diuretics or NSAIDs.
- Deficiency can result in scurvy, swollen gingiva, periodontal destruction, loose teeth, sore mouth, soft tissue ulcerations, or increased risk of infection.
- Food sources include oranges, grapefruit, strawberries, tomato, sweet red pepper, broccoli and potato.

Vitamin E / Tocopherols

100 IU | 200 IU | 400 IU (X)

- Alpha-tocopherol (body's main form of vitamin E) functions as an antioxidant, regulates cell signaling, influences immune function and inhibits coagulation.
- Deficiency may occur with malabsorption, cholestyramine, colestipol, isoniazid, orlistat, olestra and certain anti-convulsants (e.g., phenobarbital, phenytoin).
- Deficiency may result in peripheral neuropathy, ataxia, muscle weakness, retinopathy, and increased risk of CVD, prostate cancer and cataracts.
- Food sources include oils (olive, soy, corn, canola, safflower, sunflower), eggs, nuts, seeds, spinach, carrots, avocado, dark leafy greens and wheat germ.

α-Lipoic Acid

50 mg | 100 mg | 200 mg (X)

- α-Lipoic acid plays an important role in energy production, antioxidant activity (including the regeneration of vitamin C and glutathione), insulin signaling, cell signaling and the catabolism of α-keto acids and amino acids.
- High biotin intake can compete with lipoic acid for cell membrane entry.
- Optimal levels of α-lipoic acid may improve glucose utilization and protect against diabetic neuropathy, vascular disease and age-related cognitive decline.
- Main food sources include organ meats, spinach and broccoli. Lesser sources include tomato, peas, Brussels sprouts and brewer's yeast.

CoQ10

30 mg | 60 mg | 90 mg (X)

- CoQ10 is a powerful antioxidant that is synthesized in the body and contained in cell membranes. CoQ10 is also essential for energy production & pH regulation
- CoQ10 deficiency may occur with HMG-CoA reductase inhibitors (statins), several anti-diabetic medication classes (biguanides, sulfonylureas) or beta-blockers.
- Low levels may aggravate oxidative stress, diabetes, cancer, congestive heart failure, cardiac arrhythmias, gingivitis and neurologic diseases.
- Main food sources include meat, poultry, fish, soybean, canola oil, nuts and whole grains. Moderate sources include fruits, vegetables, eggs and dairy.

Glutathione

(X)

- Glutathione (GSH) is composed of cysteine, glutamine & glycine. GSH is a source of sulfate and plays a key role in antioxidant activity and detoxification of toxins.
- GSH requirement is increased with high-fat diets, cigarette smoke, cystinuria, chronic alcoholism, chronic acetaminophen use, infection, inflammation and toxic exposure.
- Deficiency may result in oxidative stress & damage, impaired detoxification, altered immunity, macular degeneration and increased risk of chronic illness.
- Food sources of GSH precursors include meats, poultry, fish, soy, corn, nuts, seeds, wheat germ, milk and cheese.

Plant-based Antioxidants

(X)

- Oxidative stress is the imbalance between the production of free radicals and the body's ability to readily detoxify these reactive species and/or repair the resulting damage with anti-oxidants.
- Oxidative stress can be endogenous (energy production and inflammation) or exogenous (exercise, exposure to environmental toxins).
- Oxidative stress has been implicated clinically in the development of neurodegenerative diseases, cardiovascular diseases and chronic fatigue syndrome.
- Antioxidants may be found in whole food sources (i.e., brightly colored fruits & vegetables, green tea, turmeric) as well as nutriceuticals (e.g., resveratrol, EGCG, lutein, lycopene, ginkgo, milk thistle, etc.).

Key

- Function
- Causes of Deficiency
- Complications of Deficiency
- Food Sources

This Innovative "Interpretation at a Glance":

- ***Highlights individualised nutritional recommendations***
- ***Provides insight into disease risk and treatment options***

- Toxic Exposure
- Detoxification & Methylation
- Gastro-Intestinal Dysfunction
- Dysbiosis
- Cardiovascular Disease
- Mitochondrial Impairment
- Neurotransmitter Imbalance

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

Genova Diagnostics Europe Ltd
46-50 Coombe Road
New Malden
Surrey, KT3 4QF

tel: 020 8336 7750 • fax: 020 8336 7751
www.gdx.net/uk

GENOVA DIAGNOSTICS EUROPE

REGISTERED COMPANY ADDRESS: 118 LONDON ROAD KINGSTON KT2 6QJ REGISTERED COMPANY NO. 4273097