



COMPREHENSIVE NUTRIENT TEST

60+ micronutrients
macronutrients

*Vitamins, minerals, co-factors, amino acids, and fatty acids

Who Needs Comprehensive Nutrient Testing?

Individuals with Disease Management

Patients diagnosed and treated with chronic conditions and in need of nutritional support

Unwell But Undiagnosed Individuals

Patients whose conditions exhibit generalized symptoms (i.e. fatigue, headache, and weakened immunity) but remain unexplained and undetected by standard laboratory tests

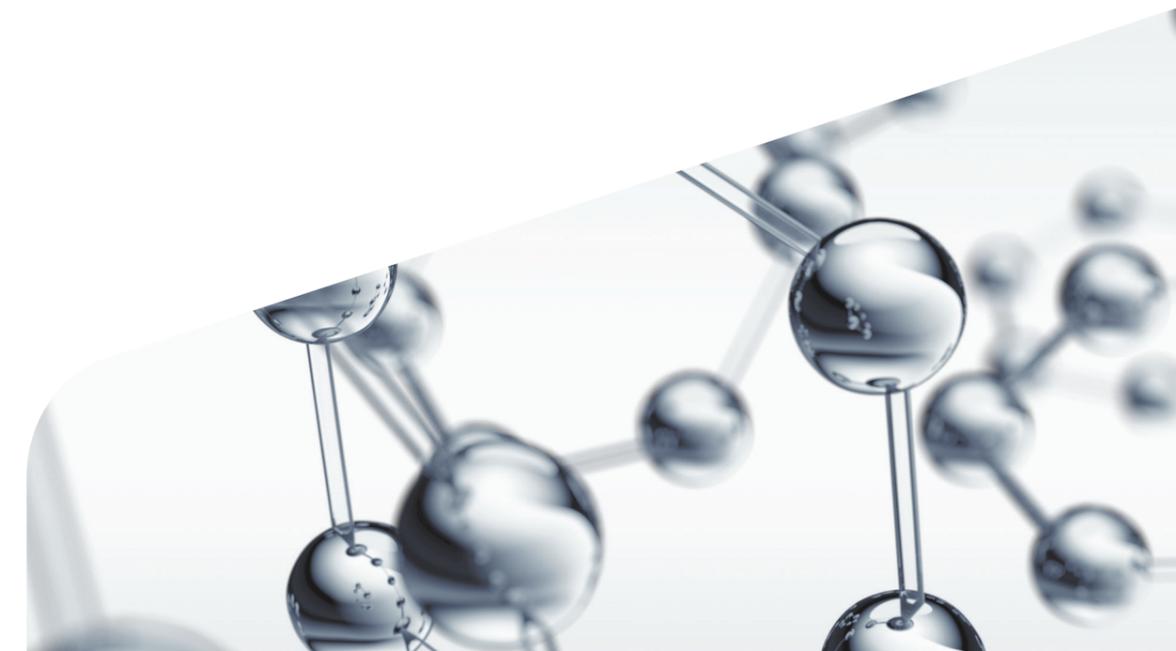
High Risk Groups

Individuals whose lifestyle, health condition, and family history require nutritional optimization to manage health risks and disease predisposition (i.e. pregnancy, family history of disease and metabolic conditions, surgery)

Health-Savvy Individuals

Individuals who proactively seek ways to prevent diseases, optimize health, and maximize physical and cerebral performance

Detailed and accurate intracellular nutritional assessment of more than 60 micronutrients and macronutrients*— from the *First* Comprehensive Nutrient Laboratory in Asia.



TEST INFORMATION

Specimen : 25 ml. whole blood
Result TAT : 10 working days
Method : ICP-MS, LC-MS/MS, GC, HPLC-Fluorescence, Microassay

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COMPREHENSIVE NUTRIENT TEST

Prevent micronutrient deficiency at the early onset

Micronutrient balance is key to optimal energy metabolism and physical health.

Marginal deficiencies may occur as a result of inadequate micronutrient intake, poor diet, malabsorption, and abnormal metabolism, coupled with the increased nutritional requirement of a demanding or stressful lifestyle, chronic conditions, and medications. Nutritional deficit impairs energy production of our cells, resulting to fatigue and predisposition to chronic and immune conditions.¹

Clinical symptoms appear long after micronutrient deficiencies have developed, oftentimes in late stages where damage is almost irreversible.

THE SUB-CLINICAL STAGES OF MARGINAL MICRONUTRIENT DEFICIENCY

Stage	Aetiology	Evidence
1	Depletion of vitamin stores (more rapid for water-soluble than for fat-soluble vitamins).	Measurement of vitamin/mineral levels in the blood or tissues.
2	Non-specific biochemical adaptation.	Decreased excretion of metabolites in the urine.
3	Secretion of micronutrient-dependent enzymes or hormones reduced.	First physical signs; lack of energy, malaise, loss of appetite, insomnia.
4	Reversible impairment of metabolic pathways and cellular function.	Morphological, metabolic or functional disturbances.
5	Irreversible tissue damage.	Clinical signs of micronutrient deficiency.

Prevent or mitigate the long-term effects of nutritional imbalance through our precise intracellular analysis of micro- and macronutrients. This provides the clinician with accurate information that can be used to formulate a precise, proactive, and personalized dietary and supplementation protocol for each individual patient.

Extensive intracellular evaluation of 60+ nutrients

Fat-Soluble Vitamins

Vitamin A (retinol)
Vitamin D (cholecalciferol)
Vitamin E (alpha-tocopherol)
Vitamin K (phyloquinone)

Water-Soluble Vitamins

Vitamin B1 (thiamine)
Vitamin B2 (riboflavin)
Vitamin B3 (total niacin)
Vitamin B5 (Pantothenic acid)
Vitamin B6 (pyridoxine)
Vitamin B7 (biotin)
Vitamin B9 (folate)
Vitamin B12 (total cobalamin)
Vitamin C (ascorbic acid)

Minerals

Calcium Chromium
Magnesium Copper
Selenium Iron (Ferritin)
Zinc Sodium
Manganese Potassium
Vanadium

Co-Factors

Betacarotene
CoQ10 (ubiquinone)
Total Lipoic acid

Essential Amino Acids

Histidine
Arginine
Tryptophan
Lysine
Phenylalaline
Threonine
Valine
Taurine
Methionine

Non-Essential Amino Acids

Alaline
Asparagine
Aspartic Acid
Cystine
Glutamine
Glycine
Glutamic Acid
Proline
Serine
Tyrosine

Metabolic Amino Acids

Beta alaline
GABA gamma-amino butyric acid
Phosphoserine

Validated methods and studies showed that amino acid plasma analysis detects essential amino acid insufficiencies, thus providing a high level of reliability for indicating chronic stresses and evaluating several acquired conditions, like endocrine disorders, liver diseases, muscle diseases, neoplastic diseases, neurological disorders, nutritional disturbances, renal failure, and burns.

- Identifies subtle deficiencies and borderline toxicities crucial to disease management and health optimization
- Provides actionable and targeted information to address marginal deficiencies and other imbalances
- Validated test methods and cutting-edge technology for cellular-level assessment of micro- and macronutrients

Essential Fatty Acids

Omega-3 Alpha linolenic acid (ALA) Eicosatrienoic acid (ETA) Eicosapentaenoic acid (EPA) Docosahexaenoic acid (DHA)	Omega-9 Trans elaidic acid (TEA) Cis oleic acid (COA) Eicosenoic acid (EIA) Eurcic acid (EUA) Nervonic acid (NA)
Omega-6 Linoleic acid (LA) Gamma linoleic acid (GLA) Eicosadienoic acid (EDA) Dihomo gamma linoleic acid (DGLA)	Saturated Fatty Acids Palmitic acid (PA) Stearic acid (SA)
Arachidonic acid (AA) Docosatetraenoic acid (DTA)	Ratio Ratio Omega-6/Omega-3 Ratio AA/EPA

The Essential Fatty Acids Panel measures a wide array of omega acids in relation to the total fatty acids. The omega-3 to -6 ratio and arachidonic acid (AA) to eicosapentaenoic acid (EPA) are included as inflammatory markers and predictors of cardiovascular disease (CVD),² where omega-3 fatty acid levels are suggested as a modifiable risk factor CVD prevention³

The analysis of fatty acids in red blood cells measures its 120-day lifespan in blood circulation, which reveals the metabolic functions and dietary intake factors on a longer time scale that can be used as a biomarker for fatty acid metabolism, diet-disease correlation, and epidemiological studies.^{4,5}

¹ The Role of Vitamins and Minerals in Energy Metabolism and WellBeing. E. Huskisson, S.Maggi, M.Rui. Journal of International Medical Research, 2007

² Harris WS. The Omega-3 Index: Clinical Utility for Therapeutic Intervention. Curr Cardiol Rep. 2010;12:503-508

³ Simopoulos A. The importance of the ratio of omega 6/omega 3 essential fatty acids. Biomed Pharmacother. 2002;56:365-79.

⁴ Christie, W.W. Gas Chromatography and Lipids: A practical guide. Bridgwater,Somerset: The Oily Press Ltd, 1989

⁵ Rodrigues, R.O., Costa, H., Lima, R., & Amaral, J.S. "Simple Methodology for the Quantitative Analysis of Fatty Acids in Human Red Blood Cells." Chromatographia 78, no. 19-20 (2015)