Micronutrient Testing

Research has shown that 50% of those taking multivitamins ARE STILL DEFICIENT.

**Micronutrient Testing from SpectraCell Laboratories**
SpectraCell Laboratories, Inc. is a CLIA accredited clinical laboratory that specializes in patented functional intracellular testing. This patented process resulted from 18 years of research at the University of Texas. Our tests measure how micronutrients are actually functioning within your patients’ white blood cells. These tests allow nutritional assessment of your patients for a broad variety of clinical conditions including arthritis, cancer, cardiovascular risk, diabetes, various immunological disorders, metabolism disorders and micronutrient deficiencies. Also offered by SpectraCell is a specialized profile of homocysteine, lipids and proteins to assess cardiovascular risk.

**SpectraCell’s Micronutrient Testing is More Advanced Than Other Laboratory Tests**
Before the introduction of micronutrient testing, many diagnoses and risk assessments were based on clinical observation and measurements of static levels of certain nutrients in serum. Static serum levels are not representative indicators for assessing cell metabolism and utilization.

**SpectraCell’s Patented Technology**
SpectraCell's patented chemically defined control media contains the minimal amount of each essential micronutrient that is needed to support optimal lymphocyte growth or mitogenic response. The functional intracellular status of micronutrients involved in cell metabolism is evaluated by manipulation of the individual micronutrients in the media, followed by mitogenic stimulation and measurement of DNA synthesis.

The same micronutrient technology also provides a total antioxidant function test (SPECTROX®) which assesses the ability of cells to resist damage caused by free radicals and other forms of oxidative stress. Due to the considerable number of cellular antioxidants with extensive interactions, redundancies, repair and recharging capabilities, measuring total function is the most accurate and clinically useful way to assess your patient's capacity to resist oxidative damage. Since lymphocytes are produced in the bone marrow and stored in peripheral locations for long periods of time (the average life span of a lymphocyte is approximately four to six months), SpectraCell's measurements provide a powerful portrait of each patient’s long term nutrient status. This is analogous to the use of a glycosylated hemoglobin test to evaluate blood glucose levels over a 1-3 month period.

**Patented Chemically Defined Media**
Micronutrient testing utilizes metabolically active peripheral lymphocytes and measures DNA synthesis using a patented, chemically-defined culture media that is free of serum or protein that could affect test results. This unique media allows our scientists to identify functional intracellular deficiencies that limit mitogenic responses and cell mediated immune function.

**Interpreting Test Results**
SpectraCell provides easy to read test reports for the clinician and the patient. We’ve incorporated numerical and graphic representations for each result and we offer repletion suggestions based on each patient’s deficiencies. We’ve included easy-to-understand supplement information that explains the role of each nutrient found deficient, deficiency symptoms, how to obtain that nutrient in food, and toxicity and RDI standards for adults.
What does the Immunidex measure?
A patient's Immunidex score is one measurement to evaluate a person's cell-mediated immune system performance. Specifically, it measures T-cell lymphocyte proliferation. Since immune function is a systemic measure of general health, a higher Immunidex score is generally desired since it means a person can respond efficiently not only to exogenous threats such as pathogens or allergens, but also to endogenous threats like tumors. The immune system, comprised of both cell-mediated (Th1) and humoral (Th2) components, when balanced and performing optimally, affords us critical protection and promotes health and wellness.

How is the Immunidex performed?
A patient's lymphocytes are isolated from whole blood and introduced to a protein that stimulates growth. The protein mitogen used to trigger mitosis, or cell division, is PHA (phytohemagglutinin), which stimulates T-lymphocytes to proliferate. The proliferative response is measured by the incorporation of radioactive thymidine into newly synthesized DNA. Your patient's response is compared to responses of a reference population and results are reported to you as an Immunidex score.

What affects the Immunidex result?
Micronutrient deficiencies will undermine a person's immune function, and thus lower the Immunidex. Since the highly complex immune system is dependent on the intracellular availability of vitamins, minerals and antioxidants, correcting specific micronutrient deficiencies typically raises the Immunidex and contributes to tangible clinical benefits, such as reduced infections and may assist in achieving Th1/Th2 balance.

How does the Immunidex correlate with antioxidant function?
In general, the higher the antioxidant score (Spectrox™), the higher the Immunidex score. Antioxidant function plays an important role in promoting optimal T-cell (lymphocyte) function. It is important to find out if a patient has deficiencies in specific antioxidant nutrients so they can supplement wisely. But it is also important to measure a total antioxidant function because the metabolic pathways in which antioxidants are involved are highly complex, sometimes redundant and often overlapping. Research confirms that taking excess antioxidants that are not needed (i.e. where no deficiency exists) can actually cause them to become pro-oxidants and decrease antioxidant function.

How is Immunidex related to aging?
As we age, our immune function typically decreases as seen in the figure to the right. Although many factors are involved in this complicated process of decline, the Immunidex is one of many relevant aging biomarkers since age diminishes the ability of a person's lymphocytes to respond to challenges. The effects of both good and poor antioxidant function on the Immunidex is shown and emphasizes the importance of testing for antioxidant function (Spectrox™) and individual antioxidant deficiencies.

How do you order the Immunidex?
The Immunidex is part of SpectraCell's Micronutrient Testing panel. There is no additional charge for this calculated test result. Ordering instructions are the same – same kit, same blood draw instructions.
Micronutrient Sample Test Results

Summary of Test Results

Repletion Suggestions Given

Detailed Numeric Results

Easy-to-Read Graphs for Patient Review - easily identifies borderline deficiencies