Autoimmune Profile (Comprehensive)

Autoimmunity

There are more than 80 types of autoimmune diseases identified to date. Many of them share similar symptoms, so that pinpointing the exact autoimmune condition can be a monumentally time-consuming, exasperating task. Many patients are not diagnosed until these initially innocuous symptoms manifest into clinical complaints and sub-optimal health. The detection of autoantibodies can be employed for more specific determination of autoimmune diseases. Autoantibodies can also determine the progress of the disease and whether or not therapy has been effective.

Complement, Total (CH50)

What Is a Complement Test?

Complement tests are blood tests that measure the activity of a group of proteins in the blood (serum). These proteins make up the complement system, which helps the immune system fight infections and destroy substances that are foreign to the body. While the purpose of this complement system is to help the immune system remove harmful pathogens (viruses, bacteria, and other germs) from the body, it is also activated when the body makes antibodies against its own tissues that it views as foreign. This happens in autoimmune diseases.

A complement test can be used to monitor the progress of patients undergoing treatment for autoimmune diseases, such as lupus and rheumatoid arthritis. The test can measure how advanced these diseases are based on the activity of the complement protein in the blood. It can also be used to gauge the effectiveness of ongoing treatments for autoimmune disorders and to diagnose some cancers and infectious diseases.

RBC Glutathione

RBC Glutathione

Glutathione (GSH) is the most abundant and important intracellular antioxidant. GSH in erythrocytes is an indicator of intracellular GSH status, the overall health of cells and of the ability to endure toxic challenges. Low levels of GSH have been reported in cardiovascular disease, cancer, AIDS, autism, alcoholism, and debilitating neurodegenerative diseases such as Alzheimer's and Parkinson's. It has also been associated with chronic retention of many potential toxic elements, chemicals and some drugs. Assessment and support of erythrocyte GSH can contribute to healthy aging and effective detoxification of toxic metals and chemicals.

This test is useful for

- Oxidative Stress
- AIDS

- Alzheimer's Disease
- Autism
- Cancer
- Cardiovascular Disease
- General Health and Longevity
- Parkinson's Disease
- Retention of Toxic Elements/Chemicals

Detailed Information

Glutathione (GSH) is a tripeptide (λ-glutamyl-cysteinylglycine) synthesized in most cells. The level of GSH in erythrocytes is a sensitive indicator of intracellular GSH status, the overall health of cells and of the ability to endure toxic challenges. GSH is the most abundant non-protein thiol in mammalian cells. It is involved in many biological processes including detoxification of xenobiotics, removal of oxygen-reactive species, regulation of the redox state of cells and the oxidative state of important protein sulfhydryl groups, and regulation of immune function.

GSH levels are thousands of times higher in cells than in plasma. Plasma GSH represents primarily that synthesized and exported from the liver. Reduced GSH (rGSH) is the active form of the tripeptide and the ratio of rGSH: oxidized GSH (GSSH) is normally about 9:1. Once a blood sample is obtained, erythrocyte rGSH is very susceptible to oxidation and the rGSH:GSSH ratio drops rapidly. Specimen handling to prevent the ex vivo oxidation of rGSH is impractical, and direct measurement of rGSH in vivo is not feasible outside of a research setting. However, research clearly indicates that undesirable ratios of rGSH:GSSH are equally associated with abnormally low levels of total cellular GSH. Therefore, it is clinically meaningful to assess the level of total erythrocyte GSH as an indicator of GSH status and metabolism.

Low levels of GSH have been reported in cardiovascular disease, cancer, AIDS, autism, alcoholism and debilitating neurodegenerative diseases such as Alzhiemer's and Parkinson's. It has also been associated with chronic retention of potential toxic elements such as mercury, lead, arsenic, cadmium, manganese and iron, as well as chemicals and some drugs. Intracellular GSH biosynthesis and intracellular levels can be upregulated as a protective mechanism.
Some factors that result in increased biosynthesis and "high normal" erythrocyte GSH levels include, but are not limited to, moderate alcohol consumption, smoking, regular physical exercise and acute exposure to toxic metals. Under such conditions it is essential to provide the body with the key nutrients involved in GSH synthesis in order to sustain functionally appropriate levels of GSH. Magnesium and potassium are required for both energy-dependent enzymatic steps in GSH synthesis, and cysteine is the rate limiting amino acid. Nutritional products that have been documented to increase erythrocyte GSH/GSH biosynthesis include high-quality whey protein preparations, α-lipoic acid, curcumin, oral

liposomal GSH, nebulized GSH, and to a lesser extent, N-acetyl-L-cysteine.

Assessing and supporting appropriately high levels of erythrocyte GSH is important for protecting cells and promoting overall health and longevity, and contributes significantly to safe and effective metal detoxification.