Immune System Lab Tests

You can order many of these through your doctor's office or through Direct Labs at http://www.directlabs.com/DrRitamarie

Complete Blood Count With Differential (CBC): This test panel includes measures of red and white blood cell counts and platelets. What's pertinent to your immune system is the white blood cell count (WBC) and differential. Differential means that in addition to the total number of white blood cells present, they report the breakdown of each type of WBC, which provides valuable information about your immune system function. Elevated WBC is often a sign of an acute response, like an infection or severe allergic reaction. Low WBC count often indicates amore long term and chronic immune tress, like autoimmunity and chronic, low grade, delayed onset allergies. Order through your practitioner or http://www.directlabs.com/DrRitamarie

- **Neutrophils:** First line of immune system defense. They have a short half-life of approximately 2-3 days, so if these are elevated it suggests that there is a current infection. Neutrophils comprise about 40 – 60% of all WBCs.
- **Lymphocytes:** These are the white blood cells that make antibodies, the proteins that engulf and eliminate invaders. Elevation of lymphocyte count often indicates that there is an acute viral infection. Lymphocytes comprise about 20 – 40% of all WBCs.
- **Eosinophils:** Generally when Eosinophils are elevated, there is a parasitic infestation, allergies or both. Eosinophils are not effective against bacteria. They generally comprise about 0 – 3% of all WBCs.
- **Basophils:** These are what's called phagocytic, meaning they can engulf and eliminate invaders via chemicals like histamine and heparin. They tend to be elevated in inflammatory conditions and when there is a parasitic infestation, especially with amoeba. Basophils usually comprise 0-1% of all WBCs.
- **Monocytes:** These are the body's second line of defense against infection. When elevated, it suggests you are in the recovery stage of an infectious illness. Their job is to remove dead cells, microorganisms and particulate matter in your blood. Elevated monocytes can indicate liver dysfunction or benign prostatic hypertrophy in males. They also produce interferon, an antiviral agent. Monocytes usually comprise 0-7% of all WBCs. ***With elevation of basophils, Eosinophils and monocytes, parasitic infection is probable.

Blood Testing for Inflammation:

- **CRP-hs:** C-reactive protein is a marker for inflammation. CRP a protein found in the blood, the levels of which rise in response to inflammation. CRP is synthesized by the liver in response to factors released by macrophages and fat cells during an active immune process. CRP-hs detects low levels of inflammation and is more sensitive to inflammation related to cardiovascular disease.
- **Erythrocyte Sedimentation Rate (SED, aka ESR**): This is an indirect measure of inflammation. When your blood is placed in a tall, thin tube, red blood cells (erythrocytes) gradually settle to the bottom. Inflammation can cause the cells to clump together. Because these clumps of cells are denser than individual cells, they settle to the bottom more quickly. The SED rate test measures the distance red blood cells fall in one hour. The farther the red blood cells have fallen, the greater the inflammatory response of your immune system.

Specialized Blood Testing for Immune System: In chronic and severe immune system issues, like autoimmunity and chronic infection, sometimes more advanced testing is required. This may include:

- Cytokines
- Interleukins
- T Helper cells

Gluten Testing: Antibodies to gluten can be tested in the stool, saliva, and blood.

- **Gluten Antibody Stool Testing:** Measures IgA antibodies and appears to be the most accurate. Available at Enterolab www.enterolab.com.
- **Blood Testing for Gluten Antibodies:** Traditional testing has been for IgG antibodies and there appears to be a high percentage of false negatives because it just measures for anti-gliadin antibodies, one fragment of gluten. Cyrex labs www.cyrexlabs.com has a blood test that measures all the gluten subfractions that appears to be pretty accurate, as long as you consume gluten for the 2 weeks prior to testing. Cyrex labs requires a practitioner to order; however another lab, True Health Labs, http://www.truehealthlabs.com/ will allow direct order without a doctor's prescription.
- **Saliva Gluten Antibody Testing:** Cyrex also has a gliadin antibody saliva test which requires you to consume gluten at least every other day for 2 weeks prior to testing. Its reliability has not been studied long enough to tell how accurate it is.

Fatty Acid Testing: The primary thyroid hormone component that stimulates your cells. Important to run in all conditions related to low thyroid function or to monitor the effects of medication.

Food Sensitivity Testing: Reliability on these tests is controversial. You can measure antibodies to certain foods to detect food allergies. Most labs measure just IgG, antibodies related to delayed sensitivity. Some labs also include IgA antibodies, produced to protect mucous membranes and IgE antibodies producing an immediate reaction. Available through Genova diagnostics and Metametrix at http://www.directlabs.com/DrRitamarie as well as ALCAT and several other labs. ALCAT measures response of the leukocytes (White blood cells) and is touted to be more accurate to antibody blood testing.

Antibody Testing: When your immune system dysfunctions and starts to attack your own body tissue as if it were a dangerous invader, you develop symptoms of an autoimmune condition. You can produce antibodies to any tissue in the body. These antibodies can be measured individually, via your primary practitioner or at http://www.directlabs.com/DrRitamarie. Cyrex labs has a comprehensive autoimmune panel, as well as panels for individual body systems. Here's just a sampling of autoimmune conditions and the body systems they affect:

- **Hashimotos Thyroiditis:** Thyroid peroxidase and Antithyroglobulin antibodies
- **Grave's Disease:** Autoimmune hyperthyroid – Thyroid stimulating antibodies and sometimes Thyroid peroxidase and Antithyroglobulin antibodies
- **Sjogren's:** A condition of the tear ducts and salivary glands – Antinuclear antibodies and rheumatoid factor antibodies
- **Rheumatoid Arthritis:** Antinuclear antibodies and rheumatoid factor antibodies
- **Scleroderma:** Antiphospholipid, anti-nuclear and platelet glycoprotein antibodies
- **Lupus:** Antiphospholipid, anti-nuclear, collagen and platelet glycoprotein antibodies
- **Pernicious Anemia:** Parietal cell and intrinsic factor antibodies, attacking the stomach cells that are related to vitamin B12 absorption
- **Inflammatory Bowel Disease:** Crohn's and Ulcerative Colitis – Tropomyosin antibodies
- **Type 1 Diabetes:** Insulin, Islet cell and Glutamic acid decarboxylase antibodies

Vitamin D: This vitamin plays a major role in the immune systems defense mechanisms. Levels need to be closely monitored in cases of immune system dysfunction.

CWP: Comprehensive Wellness Panel from http://www.directlabs.com/DrRitamarie contains tests for most body systems including liver, kidney, cholesterol panel, anemia markers, immune system markers, and more. It's a good general screen which includes CBC and can be ordered as a general screen.