

Biophysicalcheck™

The BiophysicalCheck is an assessment of biomarkers that are not commonly evaluated during a routine annual physical unless symptoms are already present. The BiophysicalCheck evaluates biomarkers that aid in the identification of these diseases as well as additional diseases and conditions that are not uncommon. Discovering and managing these conditions effectively can often lead to a healthier workforce and lower medical costs. Biomarkers in the BiophysicalCheck are useful in the evaluation of many diseases and conditions including:

Autoimmune Evaluation

ANTIPHOSPHOLIPID SYNDROME (APS)

The APS is a disorder that causes an increased risk of blood clots in the veins and arteries. The most common problems caused by APS related blood clotting are deep vein thrombosis, stroke and pregnancy-related complications such as miscarriage, preterm delivery or preeclampsia.

SYSTEMIC LUPUS ERYTHEMATOSUS (SLE)

SLE is a chronic autoimmune disease in which the body's immune system attacks the body itself, most often harming the heart, joints, skin, liver, kidneys, nervous system, lungs and blood vessels.

POLYMYOSITIS

Polymyositis is an autoimmune disorder that affects the muscles causing muscular inflammation and weakness. The most commonly affected muscles are the muscles closest to the trunk, such as the hip, shoulder and neck muscles.

RHEUMATOID ARTHRITIS

Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints and the tissues around the joints, as well as other organs in the body. Rheumatoid arthritis is a progressive illness that has the potential to cause joint destruction and functional disability. It should also be noted that the presence of rheumatoid factor in a person's blood can occur up to a few years before the onset of an autoimmune inflammatory condition.

SCLERODERMA

Scleroderma is a chronic autoimmune condition that causes abnormal collagen deposits in the skin, connective tissue and other organs of the body. The disease may occur in a mild form or be severe.

SJÖGREN'S SYNDROME

Sjögren's syndrome ("SHOW-grins") is a chronic disease where the immune system attacks the glands that make tears and saliva. The major symptoms of Sjögren's syndrome are dry eyes and dry mouth.

Cancer Evaluation

For most cancers, early detection is the key to a better outcome. However, it is important to note that almost all cancer biomarkers are normally produced by the body. Levels above the reference range may be normal for a particular individual or be related to a non-cancerous disease or condition. In most cases, cancer may be indicated when

- biomarkers levels change significantly
- biomarker levels are very elevated
- several associated biomarkers are outside of the reference range

The BiophysicalCheck evaluates the following common cancers: prostate, lung, colon/rectum, bilio-pancreatic, liver, gastric, testicular, breast, and ovarian.

Cardiovascular Evaluation

Cardiovascular disease refers to a group of diseases that occur as a result of blockages to the arteries that supply blood to various organs and parts of the body. The two most common and potentially deadly problems are heart attacks and strokes.

Cell Signaling Evaluation

INFLAMMATION

Chronic inflammation is a relatively new and exciting branch of medicine. Research points to chronic activation of the immune system (also known as chronic inflammation) as the cause of many diseases including cardiovascular disease (heart attack and stroke), cancer, autoimmune conditions and Alzheimer's. Many physicians are now treating chronic inflammation in the hopes of avoiding more serious disease.

Diabetes Evaluation

INSULIN RESISTANCE/TYPE II DIABETES

Both conditions are the result of the body's inability to efficiently respond to insulin. Both insulin resistance and type 2 diabetes are risk factors for developing other health problems, including cardiovascular disease.

OBESITY

Adiponectin is a hormone produced by fat cells that regulates the metabolism of lipids and glucose. Low levels of adiponectin are found in people who are obese or who are at increased risk of heart attack.

METABOLIC SYNDROME

Metabolic syndrome is a collection of health risks that increases your chance of developing heart disease, stroke, and diabetes. The condition is also known as Syndrome X, insulin resistance syndrome, and dysmetabolic syndrome. Metabolic syndrome affects about 20% of the U.S. adult population.

Endocrine Evaluation

HYPERTHYROIDISM

Hyperthyroidism is a disease in which the thyroid gland produces too much thyroid hormone. Symptoms include fatigue, anxiety, sudden weight loss, rapid heartbeat, irritability, more frequent bowel movements, difficulty sleeping, sweating and tremors.

HYPOTHYROIDISM

Hypothyroidism is a disease in which the thyroid gland produces too little thyroid hormone. Symptoms include tiredness, weight gain, constipation, depression, sleepiness, memory loss, decreased sex drive and more.

Hematology Evaluation

HEMOCHROMATOSIS

Hemochromatosis is a condition that interferes with iron metabolism and causes a surplus of iron in the body. Severe forms of this disease may be associated with liver injury. One in 10 people are carriers of the disease. Hemochromatosis is treatable and if discovered and treated early enough, most people can avoid any damage to their body as a result of iron overload.

ANEMIA

Anemia is a condition caused by low levels of iron. The most common symptom is fatigue. Anemia is very common, affecting 1 in 50 men and 1 in 10 women.

VON WILLEBRAND DISEASE

Von Willebrand's disease is the most common inherited bleeding disorder, affecting about 1% of the general population. People with von Willebrand's disease suffer from anemia, fatigue, loss of energy and may develop iron deficient anemia.

Immune / Inflammation Evaluation

IMMUNOGLOBULIN A (IGA) DEFICIENCY

People with immunoglobulin A (IgA) deficiency can experience an increased number of infections and are at high risk of a potentially life threatening allergic reaction, known as anaphylactic shock, to transfused blood products.

ALLERGY, ASTHMA AND ECZEMA

Immunoglobulin E antibodies are proteins that are present in the blood. Significant elevations are seen with a variety of conditions, most commonly, allergies, asthma, and eczema.

Infectious Disease Evaluation

HEPATITIS A

Infection with the hepatitis A virus causes inflammation of the liver. The most common signs and symptoms of hepatitis A include vomiting, nausea, diarrhea, fatigue and jaundice (yellowing of the skin and eyes).

HEPATITIS B

Infection with the hepatitis B virus causes inflammation of the liver. Symptoms of hepatitis B include jaundice (yellowing of the skin and eyes), fatigue, abdominal pain, loss of appetite, nausea, vomiting, diarrhea, low grade fever, and headache. The virus can remain in the body for many years and chronic hepatitis B infection is a major cause of primary liver cancer worldwide.

HEPATITIS C

Infection with the hepatitis C virus causes inflammation of the liver. Hepatitis C is a serious disease affecting about 1 in 50 people. It is very infectious and it spreads by contact with the blood of an infected person. Up to 80% of people infected with the hepatitis C virus experience no symptoms and are unaware they have been infected. For those who do experience symptoms, jaundice, fatigue, abdominal pain, loss of appetite and nausea are the most common symptoms. Hepatitis C is the leading cause for liver transplants and is lethal in 1-5% of those infected. Hepatitis C is also a major risk factor for liver cancer.

GASTRIC ULCERS AND CHRONIC GASTRITIS

Helicobacter pylori (*H. pylori*) are bacteria present on the lining of the stomach of some individuals. *H. pylori* bacteria cause about half of the gastric ulcers in the United States and many cases of chronic gastritis (inflammation of the stomach).

Nutritional Evaluation

FOLATE DEFICIENCY

Folate, also known as folic acid, is a B vitamin involved in many metabolic reactions in the body, including new cell growth. Folate is needed to make normal red blood cells and to prevent anemia. It also helps prevent changes to cells that may lead to cancer. Folate is essential for the metabolism of homocysteine, and helps maintain normal levels of this amino acid. Maternal folic acid intake has been shown to reduce the risk of neural tube defects in the fetus. Low levels of folic acid may be related to anemia, nutritional disorders, and metabolic disorders and may increase the risk of high blood pressure in women.

VITAMIN B12 DEFICIENCY

Multiple, unrelated conditions may result in a person becoming vitamin B12 deficient. The most common cause is the failure to absorb the vitamin B12 that is present in the food we eat. Varying degrees of vitamin B12 deficiency are present in approximately 10-20% of individuals over the age of 60. Although most people who possess a decreased amount of this vitamin do not demonstrate any symptoms, vitamin B12 deficiency represents a health concern because of the adverse conditions it has the potential to cause.

VITAMIN D DEFICIENCY

Vitamin D is also required for normal development of teeth and bones, and low vitamin D levels have been linked to heart disease and cancer, particularly colon cancer.

Organ System Evaluation

ALPHA-1-ANTITRYPSIN DEFICIENCY

Alpha-1-Antitrypsin (AAT) deficiency is an inherited condition with symptoms that typically mimic asthma and emphysema. People who smoke and have AAT deficiency have an increased chance of developing severe, life threatening emphysema.

CELIAC DISEASE

Celiac disease is an autoimmune condition that affects the small intestine. With this condition the body is sensitive to a protein called gluten, found in foods such as wheat, rye, and barley. Symptoms include abdominal cramping, intestinal gas, bloating, diarrhea or constipation. Untreated celiac disease can lead to the development of other autoimmune conditions, as well as osteoporosis, infertility, and other conditions.

ATROPHIC GASTRITIS

Atrophic gastritis is chronic inflammation and tissue damage in the stomach. Eventually, the stomach can not secrete adequate amounts of the chemicals needed for digestion, leading to digestive problems, and nutritional disorders such as anemia and vitamin deficiency. If left untreated, atrophic gastritis may ultimately develop into stomach cancer.

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