Glossary of Medical Exam Terms

Physical Exam

The physical exam is conducted by the treating occupational health physician and designed to provide an assessment of your health as it relates to your specific occupation. This evaluation consists of a thorough physical exam, as well as a discussion about your medical history with the physician. The doctor will inquire further on any positive responses on your medical history questionnaire to help determine your physical ability to work. The exam, however, will not cover personal health issues which should be referred to your personal physician.

Blood Pressure

Your blood pressure test results consist of two numbers. The top number (or first number) is the systolic blood pressure and represents the maximum pressure exerted when the heart contracts.

The bottom number (or second number) is the diastolic blood pressure and is the period of time between contractions when the heart is at rest. During this time blood enters the relaxed chambers of the heart to be pumped throughout the body. The diastolic pressure will vary with age, sex, weight and emotional state.

- Normal Blood Pressure: <120/80
- Prehypertension: <120/80 – 139/89
- Stage 1 Hypertension: 140/90 – 159/99
- Stage 2 Hypertension: >160/100

More than one blood pressure measurement is needed before an accurate diagnosis can be made. If you fall into the stage 1 or stage 2 category for hypertension, you should consult your personal physician. If you are presently on medication for an existing high blood pressure problem, you should remember to take your medication as prescribed.

Chest X-Ray

A chest X-ray is used for screening and diagnostic purposes, providing images of the chest, lungs, heart, large arteries, ribs and diaphragm. A serial chest X-ray (repeated or sequential) may be used to evaluate changes over time of an abnormality found on a chest X-ray (for example, an increase in the size of an abnormality over a period of weeks).

This test is performed at the healthcare provider's office by an X-ray technician. You must stand in front of the machine and hold your breath during the X-ray. The following two views are usually taken:

1. Posterior-anterior view – the X-rays pass through the chest from the back.
2. Lateral view – the X-rays pass through the chest from one side to the other.

Chest Radiography

Radiographs are essential in the evaluation of occupational lung disorders and to identify many lung diseases before evidence of functional impairment is apparent. The films should be read in accordance with the classification established by the International Labor Organization (ILO) and the World Health Organization (WHO).

A certified radiologist will interpret your chest X-ray. However, if pneumoconiosis is suspected, a radiologist certified as a B-reader should preferably read the films. B-readers receive special training in evaluating the size, nature and extent of radiographic opacities and pleural shadows.
Pulmonary Function Test (PFT)

A pulmonary function test (PFT) or lung function test, is a method of determining how well your lungs and airways are working. The most common PFT is called spirometry. This test requires you to take in as deep a breath as possible, and blow out all of the air as fast and as hard as you can. Several blows are needed to assure that your best performance has been measured.

This breathing test measures a number of parameters. Normal results are expressed in percentage and are based upon your age, height, ethnicity and sex. A result is usually considered abnormal if it is less than 80% of your predicted value.

Definition of PFT results:

- Forced Vital Capacity (FVC) – total volume of air that can be expelled by forceful effort after maximum inspiration. A low number on this parameter could be an indicator of restrictive disease.
- Forced Expiratory Volume in One Second (FEV1) – volume of air exhaled in one second. A low number on this parameter could be an indicator of an obstructive disease.
- Ratio of FEV1 to FVC (FEV1/FVC) – a low number on this parameter could be an indicator of obstructive disease.

Vision Test

A vision test checks many different functions of the eye. A complete evaluation of your eyesight involves tests that measure the ability to see details at near and far distances (visual acuity), check for gaps or defects in the field of vision, and evaluate the ability to see different colors.

Vision Acuity Test

A visual acuity test is the most common test used to evaluate eyesight. This test measures the eye's ability to see details at near and far distances and usually involves reading letters or looking at symbols of different sizes on an eye chart. Usually, each eye is tested individually and then both eyes are tested together with and without corrective lenses (if you wear them).

The eye chart (Snellen test) consists of several lines of letters. The letters on the top line are the largest; those on the bottom line are the smallest. To test your ability to see at far distances, you will stand 20 feet from the chart. You will be asked to cover one eye with your hand or with a handheld cover (occluder) and read the smallest line of letters you can see on the chart.

When you have completed the test with one eye, you will cover your other eye and repeat the process. You may be asked to read the lines backward or read a different chart to make sure that you did not remember the sequence of letters from the previous test.

Audiometric Test

This test is part of a hearing conservation program designed to protect workers, with significant occupational noise exposure, from suffering material hearing impairment. A common misperception about this test is that it should be performed in a soundproof booth. According to the Occupational Safety and Health Administration (OSHA), a soundproof booth is not required. Rather, rooms used for audiometric testing should not have background sound pressure levels exceeding those specified in OSHA's occupational noise standard.
The following information is used to help employees understand their laboratory test results.

**Complete Blood Count (CBC)**

This is usually called CBC with differential (different types of white blood cells present on microscopic examination). This is a very common test that is done to find out if a person is anemic, has an infection or may have a tendency to bleed. The main components of this test are:

1. **White Blood Cells (WBC)** – these are cells that usually fight infection. Each laboratory has a normal range from 4,000 to 10,000. If this count is elevated, it may indicate presence of infection or steroid treatment, in addition to many other causes. If the count is low, it is usually from medications, infections, autoimmune diseases, or blood diseases among other causes.

   The white blood cells are usually divided in several types, which are called differential. They all have a normal range for each type. Minor variations in these subgroups are not unusual and are not cause for alarm. The different types of white blood cells are:

   - **Neutrophils** – these cells are usually elevated with bacterial infection. On the opposite end of the spectrum, very low numbers may be associated with an increased risk of infection.
   - **Lymphocytes** – these cells are usually elevated in viral infections. Low numbers of lymphocytes may be seen in different diseases such as hepatitis, lymphoma, or AIDS.
   - **Eosinophils** – these cells are usually elevated with allergies or infections with parasites.
   - **Monocytes** – these cells are elevated in blood diseases, certain infections or autoimmune diseases.

   - **Basophils** – these cells are usually elevated in blood diseases.

2. **Hemoglobin (Hgb) and Hematocrit (Hct)** – this test usually indicates the presence of anemia when they are below normal range. Their elevation usually occurs in smokers and a blood disease called polycythemia.

3. **Mean Corpuscular Volume (MCV)** – this test is usually used to determine what type of anemia a person may have. If elevated, it may indicate anemia from vitamin deficiency, such as Vitamin B12 or folic acid. If it is below normal, it usually indicates anemia from iron deficiency.

4. **Platelet Count** – the smallest of the blood cells involved in clotting. The platelet count can be abnormal in many conditions. The most common disorder is a lowering of the platelet count (purpura) due to medication interactions or antibody formation. In some individuals with liver disease, the spleen becomes enlarged as blood flow through the liver is impeded. This tends to store more platelets thereby reducing the number in circulation.

**Chemistry Panel**

This test is usually called Chem followed by a number (Chem-7, Chem-16, Chem-25), depending on how many tests are ordered. It is a very common test that is used to find out if a person may have diabetes, kidney problems, problems with electrolytes (such as potassium), liver problems and elevation of cholesterol or triglycerides.

Additional testing for larger panels may include blood proteins, calcium, phosphorus, serum iron and muscle enzymes. The number of tests included in the panel for each laboratory is different. The primary components in a Chem test include:

1. **Glucose (blood sugar)** – this is usually elevated with diabetes or medications such as steroids. It
may be low in patients who have problems with their pancreas or liver.

2. **Blood Urea Nitrogen (BUN)** – this test is elevated with kidney problems. It may be low in patients with liver disease, pregnancy and certain diets.

3. **Creatinine** – this test is usually elevated with kidney problems.

4. **Electrolytes**
   - Sodium – this test is usually elevated with dehydration from different causes. It may be low in patients who sweat profusely or are on a water pill.
   - Potassium – this test may increase with kidney problems, potassium supplements or certain water pills. It may decrease in patients with kidney problems, vomiting or diarrhea.

5. **Liver Function Tests**
   - Alanine aminotranferase (ALT) – an enzyme produced in hepatocytes. The level of ALT in the blood is increased in conditions in which hepatocytes are excessively damaged or die. As cells are damaged, ALT leaks out into the bloodstream. All types of hepatitis (viral, alcoholic, medication-induced, etc.) can lead to elevations in the serum ALT activity.
   - Aspartate aminotransferase (AST) – an enzyme, similar to ALT, but less specific for liver disease. It is produced in muscle and can be elevated in other conditions. In many cases of liver inflammation, the ALT and AST activities are elevated roughly in a 1:1 ratio.
   - Alkaline phosphatase – a family of related enzymes, produced in the bile ducts, intestine, kidney, placenta and bone. An elevation in the level of serum alkaline phosphatase, especially in the setting of normal or only modestly elevated ALT and AST activities, suggests disease of the bile ducts. Alkaline phosphatase can also be increased in some bone disorders. It is also elevated in growing children and early adulthood up to age 22.
   - Gamma glutamyltranspeptidase (GGT) – an enzyme produced in the bile ducts and elevated in the serum of patients with bile duct disease. GGT may be elevated in virtually any liver disease and even sometimes in normal individuals. GGT is also induced by many medications and alcohol. Its serum activity may be increased in heavy drinkers--even in the absence of liver damage or inflammation. There are some families with higher levels because of genetic make-up. It may also be increased in conditions known as fatty liver when the liver is actively metabolizing high lipid levels.
   - Bilirubin – the major breakdown product that results from the destruction of old red blood cells. Bilirubin concentrations are elevated in the blood either by increased production, decreased uptake by the liver, decreased conjugation or decreased secretion from the liver or blockage of the bile ducts. Many different liver diseases, as well as conditions other than liver diseases, can cause the serum bilirubin concentration to be elevated.

6. **Albumin** – the major protein that circulates in the bloodstream. It is synthesized by the liver and secreted into the blood. Low serum albumin concentrations could indicate poor liver function, malnutrition, some kidney disease and other rare conditions.

7. **Uric Acid** – this substance is a by-product of cell metabolism and can sometimes cause gout.

8. **Lipid Panel** – this blood test measures total cholesterol, triglycerides and further breaks
cholesterol down into its components: HDL and LDL. The clinician uses this to help estimate heart disease and stroke risk.

Urinalysis

This test is usually called a UA and is used to check for urinary tract infection and presence of blood, sugar or protein in the urine. Different components of urinalysis are as follows:

- White Blood Cells – usually indicate presence of possible infection.
- Nitrites – a positive test also may indicate infection.
- Leukocyte Esterase – a positive test may indicate infection.
- Ketones – usually seen in diabetes, fasting, dieting or starvation
- Glucose – usually shows up in the urine test when blood sugar is over 180. This means presence of possible diabetes.
- Red Blood Cells – may indicate bleeding in the urinary tract, infection, or may be related to menstruation. The cause should always be determined especially in men.
- Protein – a positive test may be seen with kidney problems, diabetes and bone cancer, among other causes.
- Urobilinogen – a positive test may be seen in liver disease, breakage of blood cells and medication.

For More Information

If you have additional questions that are not addressed in this document, please contact your personal physician or call WorkCare at (800) 455-6155.