CBC (complete blood count)

• **Differential White Blood Cell Count (Differential):** There are five major types of white blood cells: neutrophils, lymphocytes, monocytes, eosinophils and basophils. The "differential count" gives the percentages of these five cell types. Increase or decreases of these percentages are characteristic for certain medical conditions. The determination of these percentages helps your doctor to arrive at a specific diagnosis.
• **Hematocrit (HCT):** Red blood cells make up about 45% of the volume of blood. This percentage is called hematocrit. If the number of red cells is low the hematocrit decreases. Men have somewhat higher hematocrits than women do. Low hematocrit indicates anemia.
• **Hemoglobin (HGB):** Hemoglobin makes up one third of the mass of each red cell. Hemoglobin carries oxygen from the lung to the tissues of the body. Since men tend to have more red cells than do women, men also have higher hemoglobin levels. Hemoglobin contains iron. A lack of iron due to poor diet or chronic blood loss often causes anemia. In anemia less hemoglobin is available to carry oxygen to the tissues which may result in weakness and tiredness.
• **Mean Corpuscular Hemoglobin Concentration (MCHC):** As stated earlier hemoglobin makes up about one third of the mass of a red cell, ranging normally from 31 to 36%. When not enough hemoglobin is produced, as for instance in iron deficiency anemia, MCHC values may fall below 25%.
• **Mean Corpuscular Hemoglobin (MCH):** The weight of hemoglobin in a tiny red blood cell can be calculated. This calculation is the mean corpuscular hemoglobin (MCH). Certain conclusions are drawn from normal, low, or high values in the diagnosis of anemia.
• **Mean Corpuscular Volume (MCV):** Red blood cells are tiny, round disks of a certain average size. The volume of these disk-like corpuscles can be measured. In some types of anemia the MCV is abnormally small and in others abnormally large. MCV is therefore helpful in characterizing an anemia.
• **Platelets:** Blood platelets are even smaller than red blood cells. The same small droplet of blood that contains 5 million red cells also contains between 140,000 and 450,000 platelets. Their function is to stop bleeding from injured small blood vessels as in cuts or abrasions by sticking together and forming plugs. A variety of disease conditions can cause low numbers of platelets. Such patients may bleed more easily and excessively. Higher than normal platelet counts occur in pregnancy or after strenuous exercise. Increased platelets are noted in more serious conditions such as diseases of the bone marrow. Platelets do contribute to coronary heart disease and blood clot formation.
• **Red Blood Cell Count (RBC):** Red blood cells are the major component of your blood. They cause the red color of blood. One cubic millimeter, a tiny droplet the size the size of a pinhead , normally contains about 5 million cells! Men generally have more red cells than do women. Red cells are made in the bone marrow and released into the circulating blood. If the number of red cells drop below the lower normal limit, the condition is called anemia. There are many causes of anemia. Rarely, some persons may have too many red cells in their blood, creating a condition called polycythemia. Both conditions can be treated successfully in most cases.
• **White Blood Cell Count (WBC):** Blood contains a variety of white blood cells. They normally number between 4,000 and 11,000 per cubic millimeter. Their main function is defense against infections and purging of areas of injuries and inflammation. Pus consists mainly of huge numbers of white blood cells.
Elevations of the WBC are seen in many conditions such as infections, injuries, after surgery, and in other conditions. A mild decrease in WBC frequently occurs in viral infections.