Blood and Hemoglobin

(Bodenschatz et al.)

Aph 105c
The Complete Blood Count

Blood: The Most Precious Liquid Of Life
We rarely think about the importance of blood, even though it circulates through our entire body throughout our life. But it is important that you never take your blood for granted, especially when you are sick. While the human body does not require a large amount, in order to function properly, you cannot survive without a healthy and proper supply of this precious red liquid.

What Is A Complete Blood Count?
Your blood is made up of three basic types of cells: red cells, white cells and platelets. It takes all three types, working together properly, to perform vital bodily tasks. In order to know how efficiently your blood cells are functioning, a blood test, or Complete Blood Count (CBC) is commonly performed to measure the levels of the different types of cells in your blood.

Sample CBC Chart

Hemoglobin: Fuel For Your Engine
Hemoglobin (Hb) is important to you because it transports the oxygen in your blood to all parts of your body. The oxygen carried by Hb is the fuel your body needs to stay active. If you think of your body as a car, then think of hemoglobin as the fuel that makes your engine run. If your body runs low on hemoglobins, or Hbs, then like a car on empty, it cannot function efficiently. Hemoglobin is a complex iron protein found in your red blood cells. It's the substance that makes your blood look bright red.

What Is Anemia?
Red blood cells live about two months, then wear out and must be replaced. Normally your body makes enough red cells; but certain diseases can cause the underproduction of red blood cells. If this happens, your Hb will drop and your body will not get enough oxygen, resulting in a condition known as anemia. With anemia, you may become extremely tired physically and mentally and may be unable to do your normal activities. Even extra sleep will not help an anemic person feel better.

How Does Hemoglobin Fuel My Body?
Because hemoglobin contains iron, it is the perfect vehicle to transport oxygen and carbon dioxide in cells throughout your body. When red blood cells fill the alveoli of your lungs, they take up oxygen. The hemoglobin in those cells then combines with the oxygen to form a compound called oxyhemoglobin. When the red cells travel through the rest of your body, they give up the oxygen to the tissues. Once in the tissue, hemoglobin takes up carbon dioxide and releases it into the air sacs in your lungs. The carbon dioxide is then exhaled. The process sounds complicated, but actually, it's as easy as breathing!
Hemoglobin Molecule

Hemoglobin molecule

α Chain

β Chain

Heme group

[Image of a hemoglobin molecule structure with labels]
Oxygen Binding