

IRON DEFICIENCY ANEMIA

by ROBERT FUSCO, MD

Anemia - you may have heard this word before. You know it's something medical dealing with the blood, but do you really know what this means? Here is a brief rundown.

Cells Need Oxygen

The human body is made up of billions of small cells which are grouped together in the various specialized organs such as the lungs, heart, liver, etc. These cells work behind the scenes 24/7 to keep you healthy and active. Day and night, they quietly perform many functions such as growth and repair of tissues, production of heat, motion, circulation, digestion, and so forth. Individually, each small cell is much like a tiny machine which requires many things to do its job - including oxygen. The oxygen obviously comes from the air that you breathe. The

problem is: How do you deliver oxygen down to each and every cell?

Your Bloodstream

The answer lies in your circulatory system, or bloodstream. Your blood stream is a river of fluid called plasma. It is in constant motion pulsing forward within your arteries and veins with each beat of your heart. Floating within this river are three types of living cells each with a specific job:

- Red blood cells (RBC)
Carry oxygen
- White blood cells (WBC)
Fight infection
- Platelets (PLT)
Clot your blood when injured

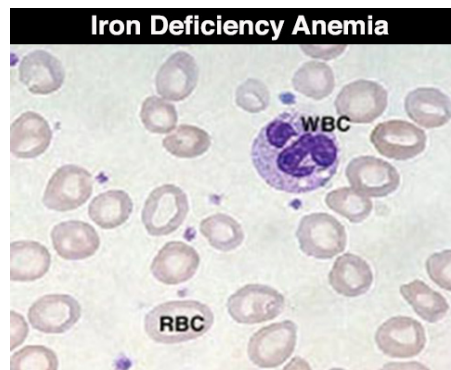
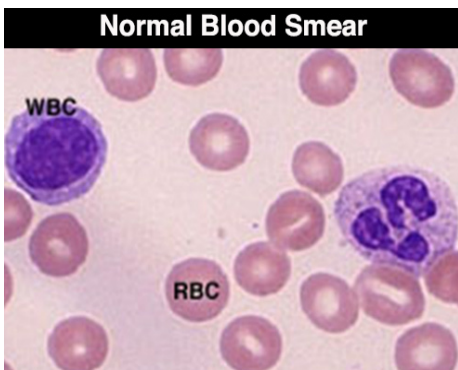
Red Blood Cells

RBCs are produced in the bone marrow and make up the majority



Dr. Robert Fusco

A native of Western Pennsylvania, Dr. Robert Fusco was graduated *summa cum laude* from the University of Pittsburgh. As an undergraduate, he was elected into membership of Phi Beta Kappa scholastic honor society. In 1973, he received his medical degree with honors, also from the University and was elected into Alpha Omega Alpha honor medical society. His specialty training in Internal Medicine and Gastroenterology was at Duke University Medical Center in North Carolina. He has been in practice at Sewickley since 1977. Dr. Fusco is board-certified both in Internal Medicine and Gastroenterology. He was formerly president of Sewickley Medical Association, a multi-specialty group and President of the Center for Digestive Health and Nutrition and Medical Director of Three Rivers Endoscopy Center. He is certified in Advanced Cardiac Life Support. He is a participating physician in Pennsylvania Blue Shield and Medicare. His practice is limited to Gastroenterology. He is married, has three children, seven grandchildren, and resides with his wife in Sewickley, PA.



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of the cells in your blood. As your blood constantly circulates, these red blood cells act like “oxygen delivery boys” picking up a load of oxygen as they travel through your lungs and dropping off the oxygen when they travel past the cells. They repeat this journey over and over thousands of times each day. It is amazing to realize that your heart only pumps about 3 ounces of blood with each beat, but over 24 hours moves about 2500 gallons of blood.

Hemoglobin

Red blood cells excel at oxygen delivery because they are made of a special red-colored pigment called hemoglobin which selectively grabs oxygen molecules. Each red blood cell contains several hundred hemoglobin molecules. Hemoglobin is mostly made of iron, a natural mineral. Just like a factory needs steel to make cars, your bone marrow needs iron to create hemoglobin and new red blood cells. But you need just the right amount. Too much iron is toxic to the body and can lead to organ damage. However, if iron levels are too low, hemoglobin production drops and fewer red blood cells are created.

Iron Deficiency Anemia

When the number of red blood cells falls below normal, this is called anemia. There are many types of anemia, but anemia due to insufficient iron is, of course, called iron deficiency anemia. It has nothing to do with leukemia or cancer of the bone marrow. Iron deficiency anemia is the most common form of anemia. It is nothing new for its manifestations have been found described in manuscripts that are more than 3,000 years old.

What Is Normal?

Your bloodstream needs a certain number of red blood cells, white blood cells and platelets to function properly. Your doctor can order blood tests to measure the number of each cell type in your blood and compare it to the normal levels. This test is called a **Complete Blood Count, or CBC**. One common way to estimate the number of red blood cells is to measure the amount of hemoglobin present in the blood - expressed in grams of hemoglobin per 100 cc of blood. A low Hemoglobin is another sign of anemia. Men with Hemoglobin measurements less than 14 and less than 12 for women are considered anemic. Normal WBC are 4800 - 10,800, Normal PLT 150- 400.

Here is my recent CBC. Note that my RBCs, WBCs, and PLTs are all in the normal range.

CBC ONLY		
WBC	5.5	4.8 - 10.8
HGB	15.0	14.0 - 18.0
Platelets	162	150 - 400

What Are The Symptoms?

One problem is that iron deficiency anemia is very sneaky. It usually develops very slowly over a period of many months or even years. There are no symptoms in the early stages. By the time you do have symptoms, anemia may be severe. When present, symptoms of iron deficiency include fatigue, muscle weakness, rapid heartbeat, and shortness of breath. It can cause chest pain, as the heart is forced to work harder and faster to compensate. Other signs of iron deficiency anemia are a pale complexion and hair loss.

The **CENTER FOR DIGESTIVE HEALTH & NUTRITION** is a private practice of experienced gastroenterologists and staff dedicated to the prevention and treatment of digestive disorders. Our physicians have been serving the needs of those in Western Pennsylvania and surrounding areas since 1977 having cared for tens of thousands of individuals with digestive problems. First opened in 1996, **THREE RIVERS ENDOSCOPY CENTER** is affiliated with our clinical practice and conveniently located in the same building.

What Causes Anemia?

It's all based on a delicate balance between how much iron enters your body and how much you lose daily. If you lose more iron than you absorb, the iron level will drop causing anemia. Common causes of excessive iron loss are pregnancy, breast feeding, heavy menstrual periods. However, all men and post-menopausal women have no reason to develop iron deficiency anemia since they do not have monthly periods. Iron deficiency anemia in a man or post-menopausal woman suggests that they are losing blood from somewhere else - most often from the digestive system. This is an important sign that requires full investigation often including consultation with a gastroenterologist.



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