Live Blood Cell Analysis

*The pictures below are courtesy of the Enzymology Research Center, Inc.* and are presented to show the relationship between various conditions and the blood.

Photos taken with a dark field microscope

**Normal Red Blood Cell (RBCs)**
The circulatory system is the means by which oxygen, nutrients, antibodies, and hormones are transported to the cells to keep them alive and functioning. This is how our blood looks when we are experiencing optimum health. The Erythrocytes (cells) are round and separated and move through the capillaries very easily. The average size of healthy RBCs is 7.2 microns.

**Protein Linkage**
This condition is the first sign of cell stickiness and may progress into rouleau if not corrected. Protein linkage is a sign that excessive protein is being consumed or the protein is not being digested completely. As the cells start sticking together it becomes harder for the heart to push the blood through the veins and arteries.

**Rouleau**
When the blood gets to this condition the amount of oxygen that can be transported is severely diminished. This condition is caused by high fat and protein diets and high acidity. Your blood will look like this if you drink one soda and will stay that way for at least two hours. Because your cells are not getting oxygen you will feel tired, have poor digestion, and skin disorders.
Erythrocyte Aggregation
This condition is one step worse than rouleau. This is often seen in people with degenerative diseases. This is caused by undigested fats and proteins and high acidity. Degeneration of tissue always follows low oxygen and acidity. This condition can precede a blood clot which can cause a stroke or heart attack.

Poikilocytosis
This condition is caused by free radicals. This also lowers the blood's oxygen-carrying capacity and shortens the life of the cell. RBCs don't have nuclei, so they will not mutate, but the fact that there is free radical damage signifies that there will also be damage to the nuclei of tissue cells which is the beginning of mutations that lead to cancer.

Microcyte
These are small RBCs having a diameter of less than 5 microns. These cells have less hemoglobin than normal cells and is often seen in people with iron deficiency anemia.
Macrocyte
These cells are greater than 10 microns in size. Macrocytes are often seen in people with hemolytic anemia.

Anisocytosis
In this condition there are variations in the size of the cells. This is mostly seen in people with low levels of the vitamins B12 and folic acid and the mineral iron.

Target Cell
These RBCs are deficient in iron and therefore hemoglobin, which is the part that carries oxygen. The symptoms produced in the body are tiredness, poor digestion, and anemia.
Hemolysis
This is literally the destruction of the red blood cell. This can be caused by bacterial infection or any number of toxins introduced into the blood stream. The hemoglobin goes out of the cells interior and diffuses into the plasma. This can also be caused by any hypotonic fluid injected intravenously. Death will follow if not corrected.

Fat, Protein, and Liver Congestion

Normal Thrombocytes (Platelets)
Platelets are small disk shaped components of blood that have an important role in blood coagulation. When a blood vessel is injured the platelets adhere to each other and to the injury to form a plug which stops the bleeding. Platelets number approximately 200,000 to 300,000/cu.mm.

Thrombocyte Aggregation
When the thrombocytes (platelets) aggregate when there is no injury a very dangerous situation develops. The aggregated platelets can form a clot which can block an artery causing a stroke or heart attack. This clot is called a thrombus. Diets high in fats and proteins or high sugar consumption can create this situation.
**Spicules (Fibrin)**
Fibrin are platelets that have changed in shape that form a net-like substance in which blood clots are formed by the entrapment of red and white cells and platelets. When they are formed in the blood when there is no injury there is an imminent danger of a blood clot that can cause a heart attack or stroke. This is caused by liver stress due to incomplete digestion of proteins and fats.

**Chylous**
Chylomicrons are small particles of fats in the blood after the digestion and assimilation of fat in food. The presence of chylomicrons in the blood after a 12 hour fast indicates a condition known as hyperlipoproteinemia, This can lead to atherosclerosis, coronary artery disease, and enlargement of the liver and spleen.

**Plaque**
Atherosclerotic plaque is one of the most dangerous conditions in the blood. It can adhere to the artery walls narrowing and hardening them. These crystals are formed when the system becomes acidic and the fatty acids from simple carbohydrates crystallize.
Uric Acid Crystal
Uric acid is a byproduct of protein metabolization and urea. When the body becomes acidic the urea forms crystals that can lodge in the joints or in the tissues. Uric acid is the cause of gout and one of the causes of fibromyalgia. These crystals are shaped like knives and is the reason it can cause so much pain for people with either of these disorders.

Cholesterol Crystal
Cholesterol is an important sterol in the body that is the precursor for many important hormones. Only when the body is acidic does the cholesterol crystallize and become a problem. This is probably the most seen crystal in blood analysis, but it's important to realize that cholesterol is not the problem when you see the crystals, acidity is.

Echinocyte
These are red blood cells that have a thorny appearance. This is usually indicative of kidney stress and crenation (the shrinking of the cell by dehydration).

Immune System, Parasites, Bacteria, and Fungal Forms
Healthy White Blood Cell
These cells are made up of lymphocytes and leukocytes. They form the basis of the immune system. There are approximately one or two white cells for every 500 red cells. When there is an elevated count it is usually a sign of an infection. The white blood cells protect us from infectious diseases and will destroy any cells that have mutated.

Yeast
A fungus that feeds on undigested food and sugar in the blood. The principle yeast found in the blood is Candida Albicans. It is usually found in people with cancer, fibromyalgia and those with chronic fatigue. This condition is also indicative of over acidity as yeast cannot live in an alkaline environment.

L-Form Bacteria
This is a bacterial infection (it's hard to see in this picture) that is shaped like a butterfly. This usually signifies a condition of low immunity and high blood sugar.
Rod Form Bacteria
This is an advanced form of a bacterial infection and is regarded as a serious indicator of a weak immune system. These bacteria produce very toxic acid byproducts as a result of their metabolic processes.

Parasitized Red Blood Cells
This is bacteria or parasites that get inside the cells. Of course the cell will die, and unless they are stopped by the immune system, they will continue to attack other cells.

Fungal Forms
Fungi can spread throughout your body through the blood and develop colonies. They usually develop slowly and are hard to diagnose and usually resistant to treatment. They are seldom fatal and most of the time go unnoticed. This is a sign of poor assimilation of nutrients and an acidic condition in the body fluids.