CBC — What It Shows

What's the first thing you check when you get your blood test results? Viral load? CD-4 count? What about the rest. Chances are every blood draw includes a Complete Blood Count, an examination of the components of your blood including red and white blood cells and platelets. Most test results are reported as amounts in a sample of blood (for example, cells per milliliter) or as a percentage. All blood cells are made in the bone marrow, the center of large bones. Some medications or diseases can damage the bone marrow. This can reduce the numbers of different types of red or white blood cells.

Every laboratory has its own “reference range” or normal values for the results of each test. Most lab reports show the normal range and highlight any test results outside the normal range.

**RED BLOOD CELL TESTS**

Red blood cells carry oxygen from the lungs to cells throughout the body. This is measured by three main tests. The Red Blood Cell Count (RBC) is the total number of red blood cells. Hemoglobin (HGB) is a protein in red blood cells that actually carries oxygen from the lungs to the rest of the body. Hematocrit (HCT) measures the percentage of blood volume taken up by red blood cells.

Very low readings for RBC, hemoglobin and hematocrit can indicate anemia. With anemia, the cells do not get enough oxygen to function normally. People with anemia feel tired all the time and might look pale.

**Mean Corpuscular Volume (MCV)** measures the average volume (size) of individual red blood cells. A low MCV means that the cells are smaller than normal. This is usually caused by an iron deficiency or chronic disease. A high MCV can be caused by HIV medications. This is not dangerous. However, a high MCV can indicate megaloblastic anemia, where red blood cells are large and pale. This is caused by a shortage of folic acid.

While the MCV measures the average size of red blood cells, the RDW (Red Blood Cell Distribution Width) measures the range of red blood cell sizes. RDW can help diagnose anemia or some vitamin deficiencies. **Mean Corpuscular Hemoglobin (MCH)** and **Mean Corpuscular Hemoglobin Concentration (MCHC)** measure the amount and concentration of hemoglobin in the average cell. The MCH is calculated by dividing total hemoglobin by the total number of red blood cells.

**Platelets (PT)** help stop bleeding by forming clots and scabs. If you don’t have enough platelets, you might get internal bleeding or you could bruise easily. People with HIV disease sometimes have a low platelet count, also called “thrombocytopenia.” Taking HIV medications usually corrects this problem. Platelets are almost never so high that they cause health problems.

**WHITE BLOOD CELL TESTS**

White blood cells (also called leukocytes) help fight infections in the body.

**White Blood Cell Count (WBC)** is the total number of white blood cells. A high WBC usually means that the body is fighting an infection. A very low WBC can be caused by problems with the bone marrow. This condition, called cytopenia or leukopenia, means that your body is less able to fight off infections.

The Differential counts five types of white blood cells: neutrophils, lymphocytes, monocytes, eosinophils and basophils. These are reported as a percentage of the WBC. The percentages are multiplied by the WBC to get “absolute” counts. For example, with 30% percent lymphocytes and a WBC of 10,000, absolute lymphocytes are 30% of 10,000, or 3,000.

**Neutrophils or polymorphonuclear cells (Polys)** fight bacterial infections. They normally account for 55% to 70% of WBCs. If you have a very low count, you could get a bacterial infection. This condition is called neutropenia. Advanced HIV disease can cause neutropenia. So can some medications including ganciclovir, a drug used to treat cytomegalovirus and the anti-HIV drug AZT.

*Continued on next page.*
POZ COFFEE  
Wednesday and Saturday Mornings  
10:00 am  
Filter Coffee House, 1295 University Ave.  
Jump-start your day with other HIV+ people and stay informed about local happenings and HIV news. Find out how other HIV+ people are handling their lives. Info: call POZabilities at 619-241-8538.

SERENITY YOGA  
Wednesdays, 4:30 pm to 5:45 pm  
Joyce Beers Community Center  
3009 Vermont St. (Across from Trader Joe’s)  
Free weekly yoga for those living with HIV. Relax and get fit. Contact John S. Mj.Metz@hotmail.com.

MAMA’S KITCHEN NUTRITION CLASSES  
Every Tuesday, 11:30 am to 1:30 pm  
January’s classes are on the 5th, 12th, 19th, and 26th  
Mama’s Kitchen, 3960 Home Ave., San Diego, 92105  
Join any time and cycle through the series. A series of 8 classes in an ongoing series including healthy eating and HIV, food safety, and more. Free lunch and cooking demonstrations.  
Register by email to: stephanie@mamaskitchen.org. or call 619-233-6262 x118.

BUILDING ON A POSITIVE LIFE  
Thursday Evenings, 6:00 - 8:00 pm  
Mercy Gardens, 540 Lewis St.  
An ongoing Educational/Social support group for HIV+ men who have sex with men. Learn to be Positive about being HIV+. Be empowered, share and grow with other men who can relate to your journey.  
Frank Jones, 619-288-4439 or GatorBearCA@gmail.com

POZ MEN’S MOVIE NIGHT AND POTLUCK  
Tuesday, January 12th, 6:00 pm  
Greg’s House, 4162 Genessee Ave.  
RSVP by Jan. 9th to 619-241-8538  
Suggested Donation $2.00  
Bring a dish to share and then settle in with friends and watch “Cinema Paradiso”. Cinema Paradiso offers a nostalgic look at films and the effect they have on a young boy who grows up in and around the title village movie theater in this Italian comedy drama that is based on the life and times of screenwriter/director Giuseppe Tornatore.

POZ MEN’S DINING OUT GROUP  
Thursday, January 21st, 6:00 pm  
Salazar’s, 1502 Market St., San Diego  
(Between 15th and 16th Streets)  
RSVP by January 19th to 619-677-8560  
Enjoy a meal out with other HIV+ people. Vintage Mexican food diner in the East Village. The “taste of home” quality of the food is enjoyed by many long-time customers.

VACATION ISLAND BONFIRE  
Tuesday, January 26th, 6:00 pm  
Vacation Island. Directions below.  
No RSVP needed — bring a POZ friend.  
Suggested Donation $2.00  
Bring a dish to share, a camp chair and/or blanket, some clean wood for the fire (no nails, screws, paint or laminates please).  
DIRECTIONS: Take 1-8 West to West Mission Bay Dr. exit, turn right onto West Mission Bay Dr. and merge into left lane. West Mission Bay Drive becomes Ingraham. Turn left on Vacation Rd, then take the first immediate right turn and follow to parking lot.

Support Those Who Support Us

CBC — What It Shows (cont.)
There are two main types of lymphocytes (lymphs). “T cells” attack and kill germs, and help regulate the immune system. “B cells” make antibodies, special proteins that attack germs. Lymphocytes are normally 20% to 40% of WBCs. A regular CBC does not give T-cell counts. Most people with HIV infection get special T-cell tests. However, the results of a CBC are needed to calculate T-cell counts, so both tests are done at the same time.

Monocytes or Macrophages (Monos) make up 2% to 8% of WBCs. They fight infections by “eating” germs and telling the immune system what germs they have found. Monocytes circulate in the blood. When monocytes settle in various tissues they are called macrophages. A high count usually indicates a bacterial infection.

Eosinophils (Eos) are normally 1% to 4% of WBCs. They are involved with allergies and reactions to parasites. Sometimes, HIV disease can cause a high eosinophil count. A high count, especially if you have diarrhea, gas or stomach bloating, may indicate the presence of parasites.

Basophils (Bas) are not well understood, but they are involved in long-term allergic reactions such as asthma or skin allergies. They are usually less than 1% of WBCs.

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Medical Center
A family of fine pharmacies
www.pozabilities.org poz@pozabilities.org 619-241-8538