

Complete Blood Counts

A complete blood count (CBC) is a laboratory test that shows the type and number of cells in the blood. Blood counts are checked frequently during cancer treatment. Your healthcare team checks the blood counts to monitor your child's response during treatment. It is normal for people who receive cancer treatment to have low blood counts. The blood counts usually drop one week to two weeks after treatment. This is called bone marrow suppression (myelosuppression.)

Most of the time, your child's blood counts will be at a level that allows him/her to fight infection, maintain normal energy at play, and prevent bleeding. During the times when the counts are normal, your child should be allowed to take part in play activities with other children. We will be glad to discuss any questions you may have about the safety of your child's play and sports.

Low blood counts may cause your child the most treatment delays, therapy changes and unscheduled trips to the hospital. The lowest point the blood cell counts reach after chemotherapy is called the **nadir**. You will probably be at home when the blood counts reach their lowest point, so it will be necessary for you to know what to look for, what to do and when to call the treatment team. Usually, the blood counts recover on their own but sometimes transfusions are necessary. The transfusions are given in the hospital or at the clinic.

Blood Cells

Blood cells are made in the hollow cavity of the bone called bone marrow. The bone marrow is the "factory" where blood cells are made. When some types of chemotherapy and radiation are given, the factory slows down production of blood cells. There are three types of blood cells: red cells, white cells, and platelets. Each type of blood cell has a special function.

Red blood cells (RBC's) are the cells which carry oxygen through the body and give us energy. If you have a low number of red blood cells, it is called **anemia**. There are two laboratory tests that are done to measure the number and function of red blood cells.

- Hemoglobin shows how much oxygen the red blood cells are able to carry to the organs and tissues. A normal hemoglobin is between 11 and 14.
- Hematocrit is the percentage of red blood cells in the blood. A normal hematocrit is between 31 and 43.
- The hemoglobin and hematocrit are used by our program to help determine transfusion needs. If the red blood cells drop below a certain level or your child has symptoms then your healthcare team may order a red blood cell transfusion.

Signs of anemia are

- feeling tired
- shortness of breath
- headache
- fast heart rate

Platelets

The body uses platelets to stop bleeding by forming clots. If you have a low platelet count it is called **thrombocytopenia**. When the platelet count is low, your child is at risk for bleeding. A normal platelet count is between 150,000 and 450,000. Signs and symptoms of low platelets may include:

- bruising
- bleeding
- small purple dots called petechiae (pah-teek-e-i)

When the platelet count drops below a certain level or there is active bleeding, a platelet transfusion may be ordered.

White Blood Cells

White Blood Cells (WBC's) help the body fight infections by capturing them and destroying them. WBC's also protect the body against certain bacteria, viruses and fungi. A normal white blood cell count is between 5,000 and 10,000. The numbers on your laboratory report may be written as 5.0 for a count of 5,000. When your child's WBC count is low your child is less able to fight infections.

There are several types of WBC's each having a special function. A test called the "**differential**" is the breakdown of the different types of white blood cells in your child's blood count.

- Neutrophils and Bands – fight bacterial infection
- Lymphocytes- make antibodies
- Monocytes- destroy and remove bacteria
- Basophils and Eosinophils- respond during allergic reaction

The Neutrophils are the most important because they help protect the body from bacterial infections. Other names for the neutrophils are granulocytes, segs, bands or polys.

The **absolute neutrophil count (ANC)** is the total number of neutrophils and bands in your child's white blood cell count. When your child's ANC is low, this is called **neutropenia**. When the ANC drops below 500 the risk of infection is very high.

The ANC is an important number for two reasons:

1. the ANC determines when chemotherapy can be given
2. the ANC determines when your child is neutropenic and is at greater risk for infections.

What you can do to protect your child when counts are low

- **Clean hands often and well** with hand sanitizer or soap and water. Always wash hands before eating and after using the bathroom. If hands are visibly soiled, they must be washed with soap and water.
- Avoid crowds and enclosed places such as shopping malls, movie theaters, airplanes, and churches.
- Avoid sick people
- Shower or bathe daily.
- Try to avoid nicks, cuts, and tears in the skin.

Blood Counts

- Wash skin immediately with soap and water if there is a nick, cut or burn. Bandage the cut if necessary. Change bandage daily until cut is healed.
- Wear gloves when doing any physical activity that might dry or damage your skin.
- Avoid going barefoot.
- Be very careful when cutting nails to avoid nicks.
- Use cuticle cream remover instead of picking, tearing or cutting cuticles.
- If you shave, use an electric razor.
- Never use rectal thermometers/medications.
- Do not clean out litter boxes or birdcages. Avoid all contact with animal urine or stool or fish tanks.
- Remember to wear helmet if riding a bike.
- Women should not use tampons or douche.

Other things you should do

- Take short rest periods between activities.
- Do not take medications containing aspirin or ibuprofen (Advil®) unless ordered by the healthcare provider. These drugs can make the platelets less effective.
- Avoid long exposure to the sun and getting sunburned. Wear sunscreen of at least SPF 15.

These are general guidelines. Be sure to talk to your healthcare provider about any specific questions or unusual symptoms your child may have. For Bone Marrow Transplant patients, see Bone Marrow Transplant Discharge packet).

Contact Us

For patient care assistance, please call the following phone numbers:

- Jimmy Fund Clinic (617) 632-3270
Business Hours 8 a.m. to 5 p.m., Monday through Friday
- Page Operator (617) 632-3352
Off hours: weekdays after 5 p.m., holidays, and weekends
Page pediatric hematology/oncology fellow on call
- Life Threatening Emergencies dial 911