

Blood contains red blood cells, platelets and white blood cells. Blood cancer and certain treatments such as chemotherapy can lower these blood cell counts. Low blood cell counts can lead to serious complications during cancer treatment. Your doctor will order frequent blood tests to monitor your blood cell counts during and after treatment. Often, blood cell counts return to normal after treatment.

LOW RED BLOOD CELL COUNT (ANEMIA)

Anemia is a condition that develops when the number of red blood cells is below normal. Red blood cells contain a protein called hemoglobin, which carries oxygen to all the cells in the body. Anemia often develops gradually, so there may be no symptoms at first. As the red blood cell level gets lower, one or more of the following symptoms may appear:

- Extreme fatigue or weakness
- Shortness of breath, especially with physical activity
- Pale skin, gums or nails
- Lightheadedness or dizziness
- Rapid heartbeat
- A tendency to feel cold

LOW PLATELET COUNT (THROMBOCYTOPENIA)

Thrombocytopenia is a condition in which there is a lower-than-normal number of platelets in the blood. Platelets are tiny blood cells that help form blood clots to slow or stop bleeding. Symptoms of thrombocytopenia may include:

- Excessive bleeding from cuts, or from the mouth, gums or nose
- Pinhead-sized bleeding points in the skin, called “petechiae”(pronounced puh **tee** kee uh), especially on the lower legs and ankles
- Dark bruises from minor bumps
- Reddish or pinkish urine
- Black or bloody bowel movements
- Changes in vision; headaches, dizziness or weakness

Avoid Excessive Bleeding. To decrease your risk of excessive bleeding, do the following:

- Avoid medications that can increase the risk of bleeding such as aspirin, ibuprofen products like Advil® and naproxen products like Aleve® unless your doctor tells you to use them. Ask your doctor for a list of medications and other products that you should avoid taking.

- Do not drink alcohol without consulting your doctor.
- Brush your teeth gently with an extra-soft toothbrush and follow dental advice for caring for teeth and gums.
- Blow gently into a soft tissue to clean the nose.
- Be careful using sharp or hot objects in order to avoid cuts, nicks and burns. Use an electric shaver instead of a razor.
- Use unscented lotion and lip balm to prevent dry skin and chapped lips.
- Avoid contact sports and other activities that might result in injury.

LOW WHITE CELL COUNT (NEUTROPENIA)

Neutropenia is a condition that occurs when there is a lower-than-normal level of neutrophils (a type of white blood cell) in the blood. White blood cells help the body fight infection. Patients with a low neutrophil count are more likely to develop infections. Report signs of infection to your doctor immediately. Signs of infection include:

- A temperature of 100.4°F or higher
- Chills or sweating
- Loose bowel movements or diarrhea
- Pain when urinating
- Persistent cough or sore throat
- Vaginal discharge or itching
- Redness, swelling, warmth or tenderness around a wound
- Abdominal pain
- Bleeding gums or white patches in the mouth

Reducing Your Risk of Infection. To reduce your risk of infection

- Wash your hands regularly or use a liquid or gel hand sanitizer.
- Avoid large crowds of people.
- Stay away from anyone with a fever, the flu or other infection.
- Wear protective gloves when cleaning or gardening.

- Avoid activities that put you at risk for cuts, burns or other injuries.
- Clean cuts and scrapes immediately. Rinse the wound under running water. Wash the skin around the wound with soap. To avoid irritation, do not use soap on the wound. Remove any debris in the wound with tweezers cleaned with alcohol. For serious wounds or if you cannot remove all debris, see a doctor.
- Practice good hygiene and personal care.
- Practice good food safety.
- Properly care for and clean your catheter or port (if you have one).
- Talk to your doctor about the appropriate vaccinations for you and your caregiver.

Download LLS' free publication *Reducing Your Risk of Infection* at www.LLS.org/booklets for more strategies to reduce the risk of infection.

PANCYTOPENIA

Pancytopenia results when counts are low for all three types of blood cells: red blood cells, white blood cells and platelets.

Contact your healthcare team immediately if you experience any symptoms of anemia, excessive bleeding or infections.

GET ONE-ON-ONE SUPPORT.

The Leukemia & Lymphoma Society team consists of master's level oncology social workers, nurses and health educators who are available by phone Monday–Friday, 9 a.m. to 9 p.m. (ET).

INFORMATION SPECIALISTS

- Call **800.955.4572**
- Visit www.LLS.org/InformationSpecialists

CLINICAL TRIAL NURSE NAVIGATORS

- Call **800.955.4572**
- Visit www.LLS.org/CTSC

TREATING LOW BLOOD CELL COUNTS

Severe low blood cell counts can lead to serious complications that may delay your next round of cancer therapy. If you have low blood cell counts, your treatment will depend on which counts are low and what is causing them to be low. Common treatments include the following:

Blood Transfusions. If red blood cell counts or platelet counts remain low, your doctor may recommend a blood transfusion to improve blood counts, manage symptoms and avoid treatment delays. Transfusions, which use cells donated by healthy volunteers, can help replace red blood cells, platelets and other blood components. (Transfusions are typically not used to treat low white blood cell counts.)

Download LLS' free publication *Blood Transfusion* at www.LLS.org/booklets to learn more.

Growth Factors. To improve red blood cell or white blood cell counts, your doctor may prescribe a type of medication called a “growth factor.” Growth factors, given by injection or intravenously (IV), stimulate the bone marrow to produce more blood cells.

- Erythropoiesis-stimulating agents (ESAs) such as epoetin alfa (Epogen® and Procrit®) or darbepoetin alfa (Aranesp®) can help your body produce more red blood cells.
- Colony-stimulating growth factors such as filgrastim (Neupogen®), pegfilgrastim (Neulasta®) and sargramostim (Leukine®) can also help your body produce more white blood cells.

Growth factors can cause serious side effects in some patients, so it is important to talk to your doctor about the risks and benefits of this therapy. Learn more at www.LLS.org/drugs.

Stopping or Delaying Treatment. For patients with severe low blood cell counts, you may need to stop your cancer treatment or delay it until your blood cell counts rise.

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