




Patient Information Guide

How Cancer Treatment
Can Affect Your Blood Count

Cedars-Sinai Cancer Program



A vertical strip on the left side of the page shows a microscopic view of cells, likely red blood cells, with various shades of blue and white. The cells are irregular in shape and some have a darker center, possibly representing the nucleus or a specific organelle.

cancer therapy and your red blood cells



The goal of cancer treatment with chemotherapy and/or radiation is to interfere with the growth of cancer cells and ultimately destroy them.

However, some of your body's normal cells – such as the blood cells – are adversely affected by cancer treatment. As a result, you become more susceptible to infection because your normal body defenses may be weakened.

Some drugs used in chemotherapy can slow or depress the production of blood cells. That is why during the course of your therapy, the doctor will order samples of your blood to closely watch your blood cell “count,” making sure it is not too low.

Fortunately, your body has the ability to repair damaged normal cells, making most side effects of cancer treatment temporary.

bone marrow

The bone marrow is the place where most of your white blood cells, red blood cells, and platelets are formed. These cells are then released into your bloodstream. The bone marrow forms these three blood elements very rapidly and is affected by most chemotherapy treatments. Generally, you can expect the quantity of these three blood components to decrease 7 to 20 days following chemotherapy. The white blood cells, red blood cells, and platelets usually begin to build up again after a few weeks.

Remember, each drug affects the bone marrow in different ways. Your doctor and nurse will explain to you what you should expect. Your doctor may also order regular blood tests (CBC) to watch the effect your treatment is having on your blood cells.

Anemia

Red blood cells (RBC) carry oxygen to the tissues in your body. When your red blood cell count is low, your body tissues do not get enough oxygen to do their work. This results in a condition called anemia. The blood count test that measures anemia is called hemoglobin and/or hematocrit.

SIGNS AND SYMPTOMS:

If you are anemic, you may feel:

- ▶ Tired and/or weak.
- ▶ Shortness of breath.
- ▶ Dizziness.
- ▶ A pounding in your head.
- ▶ Ringing in your ears.

Be sure to report any of these symptoms to your nurse or doctor.

WHAT YOU CAN DO WHEN YOU ARE ANEMIC:

- ▶ Get plenty of rest.
- ▶ Move slowly when changing positions to avoid dizziness.
- ▶ When getting up from a lying position, sit up for several minutes before standing.
- ▶ Eat a well-balanced diet.
- ▶ Alternate activities with periods of rest.

TREATMENT:

Although anemia can improve on its own, your doctor may want to give you medications or a blood transfusion to help build up your red blood cell count in a shorter period of time.

white blood cells

The most serious threat to your health during cancer treatment comes from a low white blood cell (WBC) count. Without enough mature WBCs, your body is unable to properly fight off infections. If you have an infection when you have a low WBC, and do not seek treatment promptly, you may increase your risk of a life-threatening infection.

It is important for you to know your white blood cell count and understand the significance it has to you during your therapy.

The doctor monitors the risk of infection by frequently ordering a total blood cell count (CBC) with “differential”. Sometimes it is called a “diff”. There are several different types of white blood cells that your doctor will look at.

Neutrophils are cells that fight infection, Lymphocytes often fight viruses, and Monocytes fight fungal infections. Immature white blood cells are usually found in the bone marrow and are called Bands.

platelets

Platelets help your blood to clot, so that excessive bleeding is prevented when you are injured. If there are not enough platelets in your blood, you may bleed or bruise more easily. The blood test that measures the platelets in your body is called a platelet count.

SIGNS AND SYMPTOMS:

- ▶ Nosebleeds.
- ▶ Easy bruising, or more bruises.
- ▶ Prolonged bleeding from a cut.
- ▶ Bloody stools with a red or black color.
- ▶ Blood in urine - looks pink.
- ▶ Tiny pinpoint-sized red or purple spots on your skin.

Be sure to notify your nurse or doctor of any of these symptoms.

WHAT YOU CAN DO:

- ▶ Do not take aspirin or any medications containing aspirin (acetaminophen is a safe substitute).
- ▶ Use a sponge-type toothbrush or cotton swab to clean your teeth, do not floss; check with your nurse or doctor before seeing your dentist.
- ▶ Be careful when using knives or tools—shave with an electric razor; if cut, place a clean cloth or paper towel over the cut, applying steady pressure for several minutes; if the bleeding does not stop, call your nurse or doctor.
- ▶ Avoid contact sports.
- ▶ Wear protective gloves when working in the yard or with thorny plants.
- ▶ Clean your nose by gently blowing; if you have a nosebleed, apply pressure or ice over the bridge of your nose for several minutes. If the bleeding does not stop, call your nurse or doctor.

TREATMENT:

Your doctor may order a platelet transfusion to rapidly increase your platelets when bleeding does not stop.

common sites of infection

Skin

The skin is considered the body's first line of defense against infection. The chance of developing an infection significantly increases when the patient's white blood cell count is low or when there is a break/opening on the skin surface.

SIGNS AND SYMPTOMS:

Inform your doctor about:

- ▶ Redness.
- ▶ Swelling.
- ▶ Pain.
- ▶ Pus.

WHAT YOU CAN DO:

- ▶ Keep skin clean.
- ▶ Avoid cuts and scratches.
- ▶ Avoid walking barefoot.
- ▶ Use an electric shaving razor.
- ▶ Apply lotion or oil to soften skin and avoid cracking.
- ▶ Wash hands after using the toilet.
- ▶ Wipe from front to back.
- ▶ Gently clean rectal area after bowel movements.
- ▶ Notify your doctor if you have or develop hemorrhoids.
- ▶ Wear gloves when working in the garden or while washing dishes.
- ▶ Immediately clean any scrape or cut with warm water and soap.

TREATMENT:

Your doctor may order antibiotics or antifungal medications.

common sites of infection

Lungs

There are many germs or bacteria present in the air. When a person's immune system is depressed due to cancer treatment, the patient is more likely to develop a lung infection. Airborne germs can enter through the nose or mouth and reach the lungs.

SIGNS AND SYMPTOMS:

Inform your doctor about:

- ▶ Shortness of breath, with or without exercise.
- ▶ Coughing more than usual.
- ▶ Coughing up sputum/phlegm.

WHAT YOU CAN DO:

- ▶ Rest well.
- ▶ Avoid crowds.
- ▶ If possible, shop during off hours.
- ▶ Avoid close contact with sick children or adults.
- ▶ Avoid smoking and smoky rooms.
- ▶ Exercise as much as your energy level allows.

common sites of infection

Mouth

Since many germs are normally found in the mouth, it is very important for cancer patients to have good dental hygiene. If possible, have the dentist examine your mouth before starting chemotherapy or radiation. Sores, cavities and tooth infections can lead to more serious illnesses when undergoing cancer therapy.

SIGNS AND SYMPTOMS:

- ▶ Increased sensitivity to hot or cold food.
- ▶ Mouth soreness.
- ▶ Tender, white, raised patches.

WHAT YOU CAN DO:

- ▶ When your blood counts are low, check the mouth area more frequently.
 - If you have dentures, remove them so the entire oral cavity can be seen.
 - Closely look at the following areas:
 - Inside and around the lips.
 - Under the tongue.
 - Around the gumline.
 - The roof of the mouth.
 - Gently brush your teeth with a soft brush after every meal and at bedtime.
 - Avoid injuring your gums.
 - Replace your toothbrush after a mouth infection.
- ▶ Check with the doctor or nurse before going to the dentist.

common sites of infection

TREATMENT:

- ▶ Avoid commercial mouth washes, which often contain alcohol that can burn and dry your mouth.
- ▶ Rinse well with a solution of 1/2 teaspoon of salt and 1/2 teaspoon of baking soda in 8 ounces of warm water.
- ▶ Avoid acidic foods, such as tomato, orange and grapefruit juices.
- ▶ Use spices and salt in moderation.
- ▶ Avoid tobacco and alcohol.
- ▶ Use water-based lip balm.

Additional information can be found on the **Patient Information Card** entitled “**Oral Care Guidelines**”.

common sites of infection

Urinary tract and rectum

The urinary tract, rectum and genitalia are susceptible to infection. Thorough cleaning after bowel movements may help reduce this risk. Constipation can lead to straining and tear the lower bowel. As a result germs could enter through the breaking skin tissue.

SIGNS AND SYMPTOMS

Inform your doctor about:

- ▶ Discharge from the urinary tract.
- ▶ Pain or burning during urination.
- ▶ Increase in the urgency or frequency of urination.
- ▶ Lower back pain.
- ▶ Pain above the pubic area.
- ▶ Blood in the urine.
- ▶ Vaginal itching/discharge.
- ▶ Chills, fever, nausea and vomiting.
- ▶ Painful bowel movements, constipation, diarrhea.

WHAT YOU CAN DO:

CONSTIPATION:

- ▶ Increase the bulk in your diet by adding raw fruits, vegetables, whole wheat and grain.
- ▶ Drink at least five or six glasses of liquids every day.
- ▶ Avoid the use of suppositories and enemas.
- ▶ When oral nutrition is difficult, contact your medical team.

For more information, obtain the **Patient Information Card** “**Adult Constipation Management**”

common sites of infection

FEMININE HYGIENE:

- ▶ Wipe from front to back after urinating or having a bowel movement.
- ▶ Do not douche.
- ▶ Use sanitary pads during menstruation.
 - Avoid tampons.
 - Report excessive flow.

MARITAL RELATIONSHIPS:

- ▶ Cleanliness and proper lubrication during sexual relations should be maintained. Use a water-based lubricating jelly.
- ▶ During periods of extremely low blood counts, sexual intercourse may not be advisable. Consult your nurse or doctor.

temperature chart

CENTIGRADE / FAHRENHEIT

Centigrade / C°

Fahrenheit / F°

36.7 98.1

36.8 98.2

36.9 98.4

37.0 98.6 Normal

37.1 98.8

37.2 99.0

37.3 99.1

37.4 99.3

37.5 99.5

37.6 99.7

37.7 99.9

37.8 100.0

37.9 100.2

38.0 100.4 Inform your doctor if
temperature is > 38°C

38.1 100.6

38.2 100.8

38.3 100.9

38.4 101.1

38.5 101.3

38.6 101.5

38.7 101.7

38.8 101.8

38.9 102.0

39.0 102.2

39.1 102.4

39.2 102.6

39.3 102.7

39.4 102.9

39.5 103.1

39.6 103.3

39.7 103.5

39.8 103.6

39.9 103.8

40.0 104.0

Note:

Healthcare professionals usually refer to temperature in Centigrade (C°).

This chart will help you convert from Fahrenheit (F°).





CEDARS-SINAI MEDICAL CENTER.
Cancer Program

8700 BEVERLY BLVD., C2000 LOS ANGELES, CALIFORNIA 90048