# Anemia and Cancer

Anemia is a level of hemoglobin or hematocrit which is lower than normal. Hemoglobin is the substance in red blood cells that carries oxygen to all parts of your body. Hematocrit is a reading. It shows the percentage of your blood which is made up of red blood cells. Anemia can be temporary or it can be caused by long term disease or illness. People with mild anemia may not have symptoms or they may have only mild symptoms. People with severe anemia can feel tired, get short of breath with activity, and often have problems with daily activities.

Almost all people with cancer develop mild anemia after chemotherapy. About 80% experience more serious anemia. The type of cancer, how advanced it is, and how it is treated determines whether a patient will develop anemia.

## CAUSES

There is usually more than one cause of anemia in cancer. Certain causes relate to the disease. Others relate to the cancer treatment.

## CANCER TREATMENTS MAY CAUSE ANEMIA WHEN:

- There is damage to the bone marrow by chemotherapy or radiation therapy. This decreases the body's ability to produce blood cells. It can cause anemia.
- Red blood cells may not live as long as usual. The body is not able to make up for this loss by making red blood cells faster than usual.
- There is bleeding, including blood loss during surgery. The body's ability to make new red blood cells may decrease. This is because the cancer damages the spongy material in the center of bones (*bone marrow*) where blood cells are made.
- There is long standing (*chronic*) disease. Certain chronic diseases can interfere with the production of red blood cells, resulting in chronic anemia.
  - The kidneys produce a hormone called erythropoietin. It stimulates bone marrow to produce red blood cells. Iron is also needed to produce red blood cells. In anemia of chronic disease, a body can not use its stored iron. Erythropoietin is suppressed (kept from working) and the bone marrow does not respond normally. A shortage of iron and erythropoietin can result in a shortage of red blood cells.

## EFFECTS OF UNTREATED ANEMIA IN CANCER

- Fatigue and other symptoms like feeling short of breath can make it difficult to keep up with regular daily activities.
- People with severe anemia may not be able to get their treatments on schedule. Or they may end up with a lower dose of their treatment.
- People with certain types of cancer do not respond as well as expected to radiation therapy if they have anemia. Chemotherapy can be more toxic or less effective with anemia.
- A study has shown people with both cancer and anemia have a shorter life expectancy than people with cancer who do not have anemia. This does not mean that you will live longer with cancer if you do not have anemia or if you get anemia and it is treated. But it does show how important it is to treat anemia.

## SYMPTOMS

Most people do not realize they are anemic until a blood test shows a low hemoglobin or hematocrit. Symptoms and signs usually develop when anemia is moderate to severe. They can include:

- Fatigue.
- Chest pain.
- Trouble breathing.
- Numbness or coldness in your hands and feet.
- Weakness.
- Dizziness.
- A fast heartbeat.
- Pale skin.
- Irritability.
- Headaches.

People with cancer may have many different types of symptoms. Things change because of cancer or cancer treatment. It can be difficult to figure out what is going on. The best way to know if you have anemia is to ask the caregiver who treats your cancer about your blood counts. Talk with your caregiver about how much your hemoglobin and hematocrit have changed.

## TREATMENT

Your caregiver will provide the treatment that is best for you based on what is causing the anemia. Several medications are approved to help correct anemia. Close communication with your caregiver will help you to receive the best anemia treatment available.

**Normal Lab Values:**

Normal hemoglobin is greater than 12 g/dL for women, with a hematocrit which is greater than 36%.
Normal hemoglobin is greater than 14 g/dL for men, with a normal hematocrit which is greater than 42%.

*This information is courtesy of the National Anemia Action Council. For more information see www.anemia.org.*

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