

The 3 Main Types of Blood Cancer, Explained by Experts

Leukemia, lymphoma, and multiple myeloma are all types of blood cancer—but here's how they differ.



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When you think of [cancer](#), one defining characteristic often comes to mind: the tumor—or the growth of troublesome cells—at the center of the diagnosis. Whether it's in the breast, lung, liver, or another body part, cancer is most often identified when a malignant group of cells is found on a scan. Blood cancers, however, are a different story.

These kinds of cancer—also known as [hematologic cancers](#)—usually start in the bone marrow, where blood is produced for the body, according to the [American Society of Hematology](#) (ASH). [Blood cancer](#) occurs when the bone marrow rapidly produces too many abnormal white blood cells, which then prevent your blood from doing what it's supposed to do (fighting off infections and preventing severe bleeding, along with other essential functions). "Cancer is basically cells that don't obey the rules," [Jeffrey Schriber](#), MD, director of Hematologic Malignancies at Cancer Treatment Centers of America in Phoenix tells *Health*.

But blood cancer isn't just one specific thing—there are actually three main types of blood cancer: leukemia, lymphoma, and myeloma (sometimes specifically called multiple myeloma). These three types of blood cancer all affect the body in different ways. Here's a closer look at what a diagnosis leukemia, lymphoma, or myeloma mean, according to oncologists.

What are the three types of blood cancer?

Before we dive right in, it's important to understand what, exactly, makes up a person's blood. According to the [ASH](#), when stem cells in the bone marrow mature, they can develop into three types of blood cells: red blood cells, white

blood cells, and platelets. Blood also made up of plasma, or the liquid that transports those solid cells.

Each of these cells have a different responsibility. Red blood cells contain hemoglobin, which carries oxygen from the lungs to the rest of the body, per the [National Cancer Institute](#) (NCI). White blood cells, of which there are a few different kinds, are an essential part of the body's immune system—they help you fight off infections and other diseases. Platelets help blood to clot, which then slows or stops bleeding, to ensure healing can take place.

Now that that's out of the way, the three main types of blood cancer—leukemia, lymphoma, and multiple myeloma—harm the health of a person's blood (and thus, their body) in different ways.

Leukemia

The name of this type of blood cancer—"leukemia"—is a bit of a giveaway: The prefix "leuk" technically means white, and so, per the [US National Library of Medicine's MedlinePlus](#) resource, "leukemia" means "white blood."

Leukemia is, essentially, an uncontrolled increase in the number of white blood cells known as leukocytes, MedlinePlus says. That overgrowth of abnormal white blood cells prevent the healthy blood cells (red blood cells, platelets, and mature white blood cells) from being made. When the levels of normal blood cells in the blood decline, life-threatening symptoms—frequent, severe infections; fever and chills; unintended [weight loss](#)—can arise. Leukemia can affect children or adults.

Drilling down even more, leukemia can also be grouped into two major types, per MedlinePlus: acute, which progresses quickly; and chronic, which progresses at a slower rate. Past that, there are four main types of leukemia: acute lymphocytic leukemia (ALL), acute myelogenous leukemia (AML), chronic lymphocytic leukemia (CLL), and chronic myelogenous leukemia (CML).

[Acute lymphocytic leukemia](#): ALL is the most common type of childhood cancer, per [MedlinePlus](#), though adults can develop it, too. It's a fast-growing type of cancer in which the body produces an abnormally large amount of lymphoblasts,

or immature white blood cells. These lymphoblasts eventually overtake the healthy, normal cells; and prevent more from being made.

Acute myelogenous leukemia: While ALL is the most common type of childhood cancer, AML is the most common type of blood cancer among young adults, affecting men more often than women, MedlinePlus says. AML is another fast-growing type of cancer in which the body produces too many immature white blood cells—this time, specifically called myeloblasts, per the [NCI](#).

Chronic lymphocytic leukemia: CLL is the most common type of blood cancer in adults. In contrast to ALL, CLL is a slow-growing type of cancer that affects a certain type of white blood cells called B lymphocytes (B cells), according to MedlinePlus. CLL typically affects older adults—typically, white men over the age of 60, specifically.

Chronic myelogenous leukemia: As with the other types of leukemia, CML occurs when there's an uncontrolled growth of white blood cells—this time, both immature and mature ones, known as myeloid cells. Those cells begin to build up in the bone marrow and blood, per MedlinePlus. While other types of leukemia often have no true known cause, CML is related to an abnormal chromosome called the Philadelphia chromosome. It's most commonly seen in middle-aged adults and children.

Lymphoma

Lymphoma is a type of cancer that starts in cells that are part of your body's immune system, specifically called lymphocytes, a type of white blood cell (leukocyte), according to the [Lymphoma Research Foundation](#) (LRF).

Normally, these lymphocytes—which are made in the bone marrow as well as the lymph nodes—travel through the body's blood and lymphatic system, working to protect the body from bacteria and viruses. But with lymphoma, a mutation occurs in these lymphocytes, causing them to replicate faster and/or live longer than typical lymphocytes, causing an overproduction. This can cause the lymph nodes in your neck, groin, or armpit may become enlarged, as well as your spleen, [Felipe Samaniego](#), MD, professor in the Department of Lymphoma/Myeloma,

Division of Cancer Medicine at The University of Texas MD Anderson Cancer Center, tells *Health*.

The symptoms of lymphoma can look a lot like symptoms of various other diseases: swollen lymph nodes, fever, night sweats, feeling tired, and unexplained weight loss are a few, according to the [Centers for Disease Control and Prevention \(CDC\)](#). Overall though, there are more than 70 different types of lymphoma, [Memorial Sloan Kettering Cancer Center \(MSKCC\)](#) says, and they fall broadly into two groups: [non-Hodgkin lymphoma and Hodgkin lymphoma](#).

[Non-Hodgkin lymphoma](#): This type of lymphoma—sometimes called non-Hodgkin's lymphoma or NHL, for short—is the most common type of lymphoma, and while it can occur at any age, it most often affects older adults, per MSKCC. NHL is further divided into two types: B-cell lymphoma and T-cell lymphoma, per the [Dana-Farber Cancer Institute](#). B-cell lymphoma impacts the B-cell lymphocytes that are responsible for producing antibodies, whereas T-cell lymphoma affects the T-cells that directly kill off bacteria or virus-infected cells. These can be slow-growing or aggressive types of cancer, depending on one of the many different subtypes a patient has.

Hodgkin lymphoma: Also called Hodgkin disease, this type of lymphoma is less common than NHL and is characterized by the presence of Reed-Sternberg cells, or very large, abnormal lymphocytes that contain more than one nucleus, according to the [National Cancer Institute](#). This type of lymphoma is commonly diagnosed in younger adults, ages 20 to 34, and the disease is usually classified into two main subtypes: classical Hodgkin lymphoma, which is the most common, and nodular lymphocyte predominant Hodgkin lymphoma.

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Multiple myeloma

[Multiple myeloma](#)—sometimes just called myeloma—is the third type of blood cancer. This type affects another kind of white blood cell called plasma cells or plasmacytes. Plasma cells, like the other kinds of white blood cells, are an

important part of the body's immune system, by making antibodies (aka immunoglobulins) that help the body attack and kill germs, [per the ACS](#).

Multiple myeloma occurs when these plasma cells begin to grow out of control, like the other types of blood cancer, and crowd out the other types of blood-forming cells in bone marrow. "Because the myeloma cells in bone marrow don't permit the marrow to produce normal levels of red blood cells, white blood cells, and platelets, you may have low blood counts," says Dr. Samaniego. In addition to low blood counts, the main features of multiple myeloma include: bone and calcium problems, infections, and kidney problems, according to the ACS.

These excess cells can also form tumors in the bones or other tissues of the body. Just one tumor is called a plasmacytoma, according to Moffitt Cancer Center; when more than one plasmacytoma develops, that's officially called multiple myeloma.

The categorizations of multiple myeloma can be a little confusing—they can be divided into a few different subtypes; the first, being **smoldering** versus **active** myeloma, which essentially means the myeloma is either asymptomatic and not causing issues (smoldering) or symptomatic (active) and causing issues throughout the body.

Past that, multiple myeloma is often divided into categories based on the specific type of antibodies that the cancerous plasma cells are producing. Antibodies are immune proteins, and each antibody is made up of two components (a "heavy" chain and a "light" chain). It's essential for doctors to know the specific proteins involved to determine the best possible treatment. The following five types of multiple myeloma are based on the heavy chains and given Greek letter names, per Moffitt Cancer Center:

- **Gamma (IgG)**
- **Alpha (IgA)**
- **Mu (IgM)**
- **Epsilon (IgE)**
- **Delta (IgD)**

Though treatment for blood cancer depends greatly on the specific type of blood cancer a patient has, a few of the most common treatments for leukemia, lymphoma, and multiple myeloma include: chemotherapy, radiation, or stem cell transplantation, according to the [Cancer Treatment Centers of America](#). If you or someone you know is dealing with some of the more common symptoms of blood cancer—fever, fatigue, and unexplained weight loss, to name a few—it's essential that you see a doctor to determine a diagnosis, and then a plan of action.

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