

Acute Myeloid  
Leukemia  
**AML**



**WHAT YOU NEED TO KNOW**

You or your loved one has been diagnosed with acute myeloid leukemia (AML). What does it mean and how will it affect you?

This fact sheet will help you:

Learn about AML  
and how it is  
diagnosed

Get an overview  
of treatment  
options

Understand  
what happens  
next

## What is leukemia?

Leukemia is a cancer of the blood and bone marrow. Bone marrow is the soft, spongy material inside bones. Blood cells are formed in the bone marrow. Three kinds of blood cells develop from stem cells:

- **Red blood cells** carry oxygen
- **White blood cells** fight infection
- **Platelets** allow blood to clot (which stops bleeding)

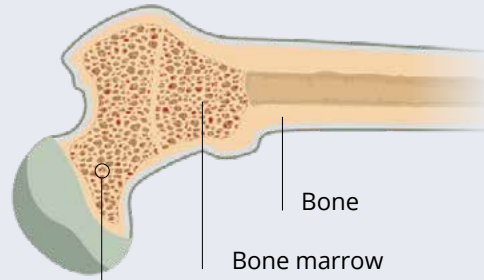
When you have leukemia, the cancerous blood cells prevent healthy blood cells from forming.

Leukemia is a cancer of the blood and bone marrow.

AML is the most common acute leukemia in adults.

Leukemia is acute when it progresses quickly.

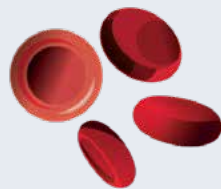
Blood is created in the **bone marrow** (the spongy part inside the bone).



Stem cell



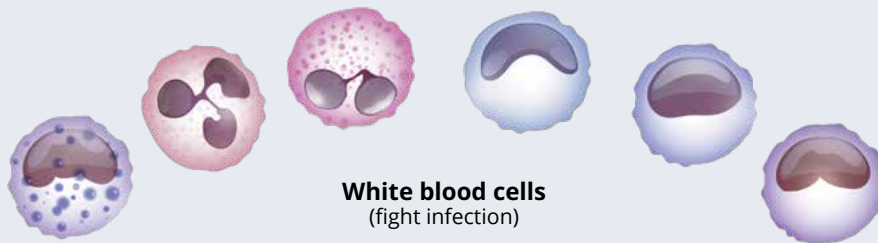
Three kinds of blood cells develop from stem cells:



**Red blood cells**  
(carry oxygen)



**Platelets**  
(allow blood to clot)



**White blood cells**  
(fight infection)

## About AML

- AML is one of four main types of leukemia
- It progresses quickly if untreated
- It features cancerous blood cells, often called “blasts”
- A developing stem cell becomes damaged in the bone marrow
- The damaged cell multiplies into leukemic blasts that don't function properly and block the production of normal blood cells
- The result is often a lower-than-normal number of healthy red and white blood cells and platelets
- It typically affects adults over the age of 65 and is slightly more common in men

## Risk factors

Certain factors can increase your risk of getting AML:

- Older age
- Previous chemotherapy or radiation therapy
- A genetic condition such as Down syndrome
- Progression from myelodysplastic syndrome (MDS) or other myelodysplasias (abnormal development of the bone marrow)
- Repeated exposure to harmful environmental factors, including:
  - Chemicals, such as benzene
  - Smoking

## Symptoms of AML

Most people with AML have no obvious symptoms. The disease is often discovered during a routine blood test. The symptoms can be similar to other less serious diseases.

You may experience:

- Aches and pains, mild fever, and swelling
  - When you have fewer normal blood cells
- Fatigue, shortness of breath during normal physical activities, and pale complexion
  - When your red blood cell count is low (anemia)
- Weight loss
  - When you are eating less or using more energy
- Bruising easily, ongoing bleeding from minor cuts, or pinhead-sized red spots on your skin (petechiae)
  - When your platelet count is low (thrombocytopenia)
- Infection
  - When your white blood count is low (neutropenia), your immune system is not working properly to guard against infection

## Your diagnosis

With a diagnosis, your doctor can determine the right treatment for you. Your test results help your doctor predict how AML will likely progress and how you may respond to treatment.

Here are some possible tests you may undergo:

Name of test	Description
<b>Medical history and physical exam</b>	The doctor reviews past illnesses, injuries, and symptoms and will examine your lungs, heart, and other organs.
<b>Complete blood count</b>	This blood test measures the number of red blood cells, white blood cells, and platelets in a sample of blood. People with AML often have lower-than-normal counts of red blood cells and platelets and higher or lower-than-normal white blood cell counts.
<b>Blood cell examination</b>	This test looks at blood cells under a microscope to check if they appear normal and to identify blast cells.
<b>Bone marrow aspiration and biopsy</b>	These two procedures, usually done at the same time, draw bone marrow cells for comprehensive testing. In AML, the percentage of blasts in the bone marrow is usually higher than 20%.
<b>Flow cytometry</b>	This test takes cells from your blood or bone marrow to detect proteins or markers (antigens) on the blasts and confirm the AML type.
<b>Cytogenetic (chromosomal) analysis</b>	This genetic test looks inside blood or bone marrow cells with a microscope to help determine how AML will respond to treatment.
<b>Fluorescence <i>in-situ</i> hybridization (FISH)</b>	This test looks at genes and chromosomes in cells to detect cancer cells.
<b>Molecular analysis</b>	This genetic test looks for specific mutations in the genes of leukemia cells.
<b>Lumbar puncture</b>	A thin, hollow needle is inserted into the lower part of the spine to collect a cerebrospinal fluid sample. This test is performed to check for leukemia cells in the brain and spinal cord.
<b>Blood and HLA typing</b>	Blood typing confirms a person's blood type, while HLA (human leukocyte antigen) testing matches a transplant recipient with a compatible donor.



## AML treatment

Your treatment will aim to manage your AML symptoms and complications, including infections and fatigue. It will also focus on **remission** by eliminating AML cells in your blood and bone marrow and restoring your blood counts to normal.

New treatments for AML have been introduced in recent years, including clinical trials.

You will experience side effects from treatment, which can affect people in different ways. Most side effects improve or go away after treatment ends. New drugs and therapies can help control most side effects.

**Clinical trials** are research studies that aim to improve the care and treatment of people living with cancer.

**For some people with a blood cancer, a clinical trial may be the best treatment choice. Talk to your healthcare team for more information.**

## Types of treatment

Common AML treatments and potential side effects include:

### Chemotherapy

uses medicine (chemicals) to kill cancer cells. Induction chemotherapy is often given right after diagnosis to:

- Kill as many AML cells as possible
- Get blood counts back to normal
- Eliminate signs of AML for a long period

People who are unable to do induction chemotherapy may be given drugs such as azacitidine and venetoclax to stop leukemia cells from growing.

- **Potential side effects:** nausea, diarrhea, vomiting, loss of appetite, brain fog (chemo brain), fatigue, shortness of breath, temporary hair loss, mouth sores, rashes, fever, tumour lysis syndrome (TLS), low white blood cell count (neutropenia), infections, and damage to your nerves (neuropathy).

### Post-remission therapy

(also known as consolidation) is usually needed at some point in remission. The first round of chemotherapy may not get rid of all AML cells. They can multiply, leading to a relapse where the disease becomes active again.

### An allogeneic stem cell transplant (SCT)

may be part of your post-remission therapy. With an allogeneic SCT, doctors transfer a healthy person's (donor) stem cells into your body to slow the growth of AML. The goal is to restore your body's ability to make normal cells following chemotherapy.

- **Potential side effects:** low white blood cell count (increased risk of infection), low platelet count (increased risk of bleeding or bruising), low red blood cell count (causes fatigue, dizziness, shortness of breath, and feeling unwell), pain and issues with your digestive system, skin and hair problems, issues with your organs or central nervous system, and possible graft-versus-host disease (GvHD) or veno-occlusive disease (affecting the small vessels leading to your liver)

### Maintenance therapy

is often given to prevent cancer from returning once you are in remission. The goal is to help keep you in remission for as long as possible and to prevent relapse (also known as cancer recurrence). It may be recommended if you are not eligible for a stem cell transplant or if you are at risk of relapse. Maintenance therapy depends on several factors and may include chemotherapy, targeted therapy or supportive therapy.

## Factors that affect treatment

Discuss your treatment options with your doctor to make sure you understand the benefits and risks of each approach. Your treatment plan is based on:

- Your age and overall health status
- The subtype of AML
- Your lab test results

- Whether you have:
  - A serious infection at diagnosis
  - AML in your central nervous system
  - AML that has not responded to treatment or has relapsed
- Your medical history, including previous chemotherapy treatment or if you've had MDS
- Your lifestyle and preferences

## Long-term or late effects of treatment

Medical follow-up is important after treatment for AML. You may need blood tests, bone marrow tests, or imaging tests to determine if you need further treatment. Your medical team will provide a care plan listing follow-up visits and the tests you will have at those visits.

You may experience long-term or late effects of your treatment:

### Long-term side effects

can last for months or years after treatment ends. Examples include chronic fatigue and brain fog.

### Late effects

are medical problems that do not show up until years after treatment ends. See your doctor to get follow-up care for possible early detection of heart disease, secondary cancers, fertility issues, thyroid problems, trouble concentrating, or chronic fatigue.



Living with AML can be overwhelming. Seek medical help if you feel “down” or “blue” or don’t want to do anything and your mood does not improve over time. These could be signs of depression, an illness that should be treated even when you’re undergoing treatment for AML. Treatment for depression has important benefits for people living with cancer. Remember, you are not alone.

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