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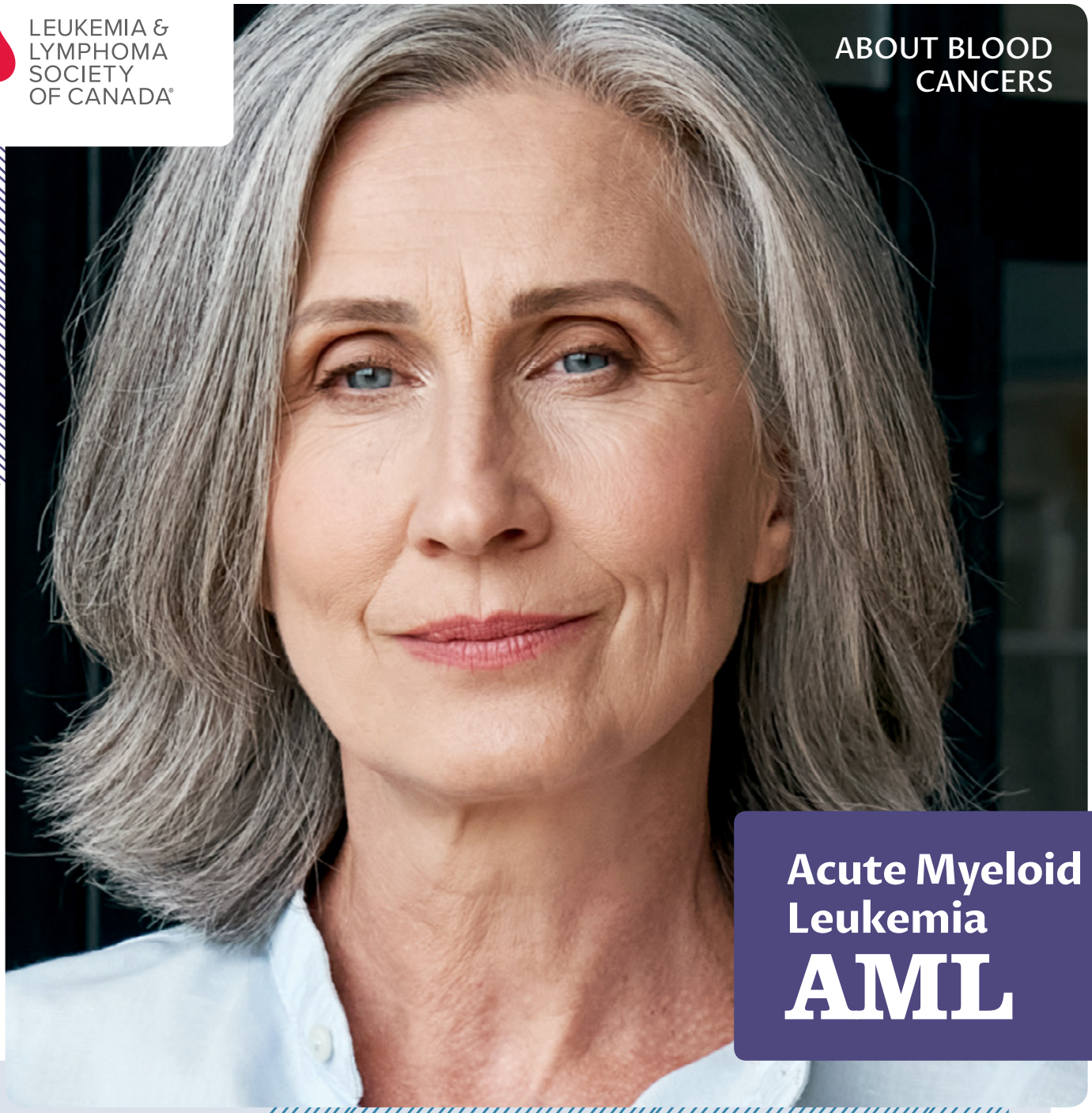
ABOUT BLOOD CANCERS



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

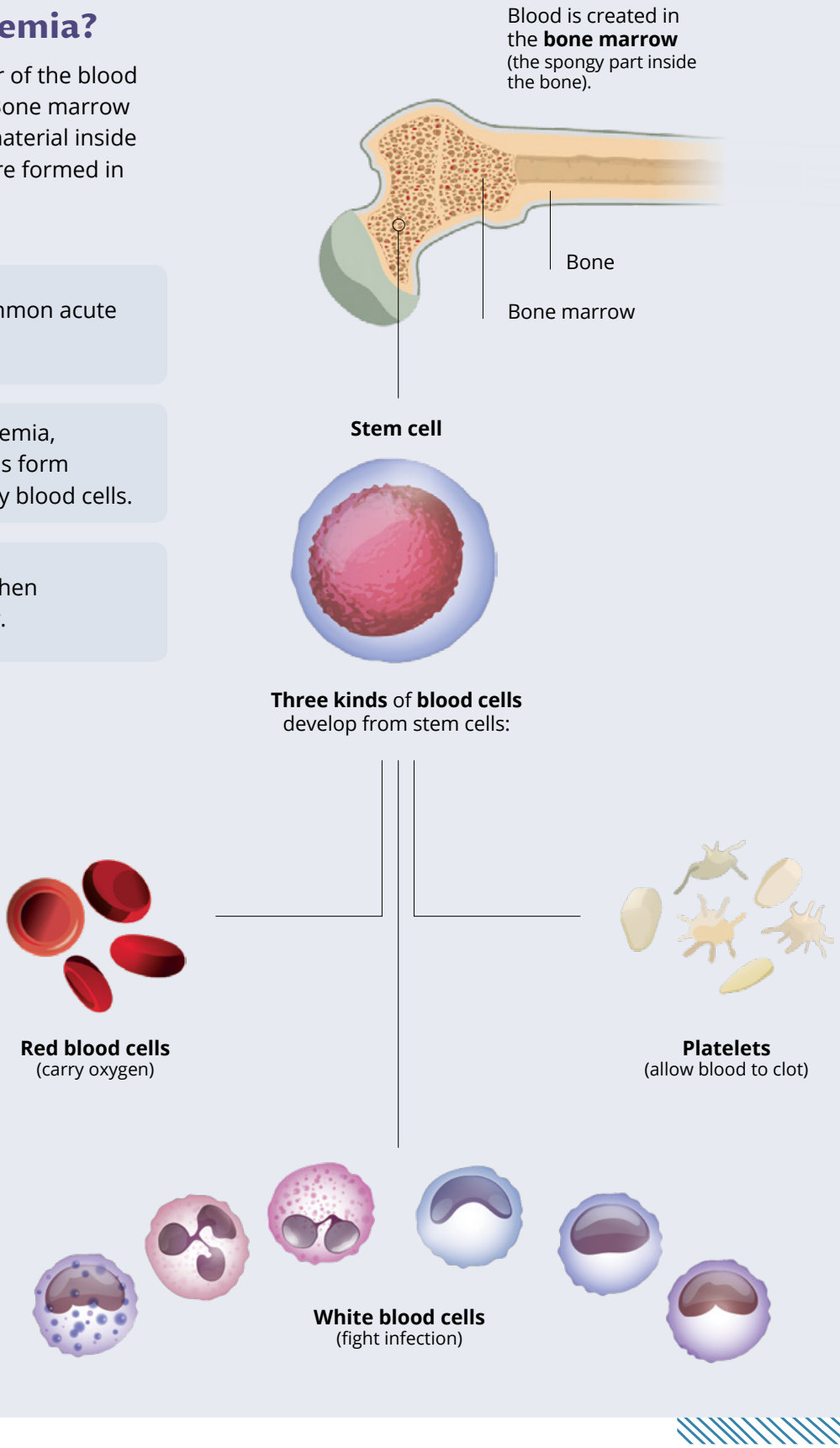
What is leukemia?

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.

AML is the most common acute leukemia in adults.

When you have leukemia, cancerous blood cells form and push out healthy blood cells.

Leukemia is acute when it progresses quickly.



About AML

- One of four main types of leukemia
- No way to prevent AML
- Progresses rapidly if untreated
- A developing stem cell in the bone marrow becomes a damaged cell (known as a leukemic cell)
- This 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

Risk factors

Certain factors can increase your risk of getting AML:

- Your age
- Previous chemotherapy or radiation therapy
- A genetic condition such as Down syndrome
- Progression from MDS or other myelodysplasias
- Repeated exposure to certain environmental factors, including:
  - Chemicals, such as benzene
  - Smoking

Signs and symptoms

Most people with AML have no obvious signs or symptoms, and the disease is uncovered during a doctor's visit and a routine blood test. The signs and 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

After your diagnosis

With your 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.

Name of test	Description
Medical history and physical exam	The doctor reviews past illnesses, injuries, and symptoms. They examine your lungs, heart, and other organs.
Complete blood count	This test measures the number of red blood cells, white blood cells, and platelets in a sample of your blood to find out if the counts are high or low. With AML, you will often have lower than normal counts of red blood cells and platelets and a higher or lower than normal white blood cell count.
Blood cell examination	This test looks at blood cells under a microscope to check if they appear normal. With AML, you often have too many leukemic blast cells (immature blood-forming cells that aren't normally found in your blood).
Bone marrow aspiration and biopsy	These two tests look at bone marrow cells for anything unusual in your chromosomes. They are usually done at the same time. With AML, this test compares the percentage of normal cells to AML cells in your bone marrow. If you have 20% or more AML blast cells, you have AML.
Flow cytometry	During this test, cells are taken from your blood or tissue biopsy to detect proteins or markers (antigens). This helps to determine the type of AML you have.
Cytogenetic (chromosomal) analysis	This is a genetic test that looks inside blood or bone marrow cells with a microscope. This helps to determine how your AML will respond to treatment.

Subtypes of AML

Identifying the subtype of your disease is an important step in planning your treatment. Doctors often use one of two systems to classify subtypes – the World Health Organization (WHO) classification system and the French, American, British (FAB) system.

AML subtypes include:*

- AML with recurrent genetic abnormalities
- AML with myelodysplasia-related changes (a type of cancer where the bone marrow does not make enough healthy blood cells)
- AML related to previous therapy
- AML with a translocation (genetic change) between chromosomes 8 and 21
- AML with a translocation or inversion (genetic rearrangement) in chromosome 16
- AML with changes in chromosome 11
- Acute promyelocytic leukemia, which usually has a translocation between chromosomes 15 and 17
- AML not otherwise categorized (does not fall into the above categories)

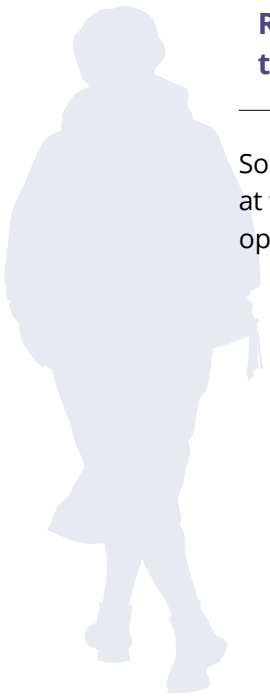
*According to the WHO classification system, which is more recent than the FAB system.

AML treatment

AML treatment can vary greatly. Your treatment will focus on remission (eliminating AML cells in your blood and bone marrow) and getting your blood counts back to normal. Treatment will also help to manage the symptoms and complications of AML.

Types of treatment

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, and eliminate signs of AML for a long period. A combination chemotherapy procedure uses two or more chemotherapy drugs.
Post-remission therapy	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 relapse (the disease becoming active again).
Stem cell transplantation (SCT)	can be part of your post-remission therapy. There are two types: • **Allogeneic SCT** transfers a healthy person's (donor) stem cells into your body to slow the disease's growth. The goal is to restore your body's ability to make normal cells following chemotherapy. • **Reduced-intensity allogeneic SCT** is used in people with more risk factors, including age and overall health. It involves lower doses of chemotherapy.
Radiation therapy	uses x-rays or other high-energy rays that can kill cancer cells. It may be used to treat a large mass of AML cells in the spine or brain.



Some people don't respond to treatment and will be treated with different drugs. Others respond at first, but eventually their AML returns, and they need more treatment. Clinical trials (new treatment options under study) may be an option. Talk to your medical team.

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
- Your 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 myelodysplastic syndrome (MDS)

Treatment side effects

When you begin your treatment for AML, you may already have abnormal levels of red blood cells, white blood cells, and platelets.

You may experience mild to severe side effects, depending on your age, your overall health, and your treatment plan. Most side effects disappear once your treatment ends. New drugs and therapies can help control most side effects. Speak to your doctor if you are having side effects.

Common side effects

You may experience side effects such as:

- Anemia from a decrease in red blood cells
- Increased bleeding or bruising from a drop in platelet count
- Infection from a large drop in white blood cells, leading to:
  - fever or chills
  - coughing and sore throat
  - frequent and loose bowel movements
  - mouth sores and rashes
  - hair loss and nausea

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 molecular tests to determine if you need further treatment. Your medical team should provide you with a care plan listing how often you will need follow-up visits and the tests you will have at those visits.

- **Long-term side effects** are common and can last for months or years after treatment ends. An example is chronic fatigue.
- **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 problems, thyroid problems, trouble concentrating, and chronic fatigue.

Living with AML can be overwhelming. Seek medical help if you are feeling “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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