Acute Myeloid Leukemia (AML): Introduction

What is cancer?

Cancer starts when cells in the body change (mutate) and grow out of control. Your body is made up of tiny building blocks called cells. Normal cells grow when your body needs them. They die when your body doesn't need them. Cancer cells grow even though your body doesn't need them. In most types of cancer, the abnormal cells grow to form a lump or a mass called a tumor.

What is leukemia?

Leukemia is different from most other types of cancer. Leukemia is cancer that starts in the bone marrow. This is where new blood cells are made. The bone marrow is a thick, spongelike tissue in the center of certain bones in your body.

Leukemia cells are early or immature forms of blood cells. It most often starts in white blood cells. Rarely, leukemia starts in early forms of the other two main types of blood cells: red blood cells (erythroleukemia) and platelets (megakaryocytic leukemia).

When a person has leukemia, the body makes too many abnormal, immature blood cells. These cells don't work the way they should and don't mature into cells that work.

It's rare for leukemia cells to form tumors. But they can travel in the blood all through the body. This means leukemia can affect organs all over the body.

Two types of white blood cells can turn into leukemia:

- **Lymphoid cells or lymphocytes.** This is called lymphocytic or lymphoblastic leukemia.
- **Myeloid cells or myelocytes.** This is called myeloid or myelogenous leukemia.

Leukemia can also be either acute or chronic:

- **Acute** leukemia tends to grow very quickly and needs to be treated right away.
- **Chronic** leukemia often grows slowly. It may take a long time before treatment is needed.

What is acute myeloid leukemia (AML)?

Acute myeloid leukemia (AML) is a fast-growing leukemia that starts in very immature forms of white blood cells (WBCs) called myeloblasts (or blasts for short). It's also known as acute myelogenous leukemia.

As the blasts grow and multiply, they crowd out the normal cells in the bone marrow. This keeps the bone marrow from making healthy blood cells. A low red blood cell (RBC) level is called anemia. It can cause paleness, shortness of breath, and tiredness (fatigue). A low platelet level is called thrombocytopenia. It can lead to easy bruising or bleeding.

People with AML have too many white blood cells in their blood. But these cells are not normal and don't help fight infections. In fact, people with AML often get more infections than people without it.

AML needs to be treated right away.

Subtypes of AML

There are many subtypes of AML. They're based on the exact type of cells the leukemia starts in and how mature the cells are. Which subtype of AML you have can affect the symptoms you have, your treatment options, and your prognosis (outlook).

The main classification system of subtypes is the French-American-British or FAB system. M0 through M5 start in immature white blood cells:

- **M0.** This is undifferentiated AML.
- **M1.** This is AML with few or no mature cells.
- **M2.** This is AML with mature cells.
- **M3.** This is acute promyelocytic leukemia (APL).
- **M4.** This is acute myelomonocytic leukemia (AMML).
- **M4eo.** This is AMML with a type of red blood cell called eosinophils.
- **M5.** This is acute monocytic leukemia.
- **M6.** This is acute erythroid leukemia. (Starts in immature red blood cells)
- **M7.** This is acute megakaryoblastic leukemia (AMKL). (Starts in immature platelets)

AML may be broken down into other subtypes with a different system than this one. Ask your healthcare provider which system they're using and what it means for you. The subtype of AML helps decide which treatment is best for you.

Another way to classify AML is by looking for certain genetic changes in the leukemia cells. These changes help your healthcare provider decide on the best treatment plan. They also help your provider know what your likely outlook is. Some gene changes are better (called favorable abnormalities) than others (unfavorable abnormalities).

Talk with your healthcare provider

AML is a complex blood cancer. If you have questions about your AML, talk with your healthcare provider. Your healthcare provider can help you understand more about the details of the leukemia you have.