

What is Acute Myeloid Leukemia (AML)?

AML is one of the most common types of leukemia in adults, and its incidence significantly increases with age. About 20,050 people will be diagnosed with AML this year.¹ The median age of diagnosis is 68 years old.^{1,2} It occurs when a mutation takes place in the DNA of a type of white blood cell called a myeloblast that is found in bone marrow.

In AML, mutations cause the myeloblast to grow and divide uncontrollably. The bone marrow becomes flooded and overcrowded by these mutated and immature myeloblasts that cannot function properly.^{3,4}

Some patients diagnosed with AML present with an isocitrate dehydrogenase-1 (IDH1) or isocitrate dehydrogenase-2 (IDH2) mutation. IDH1 mutations are present in about 6 to 10% of AML cases and IDH mutations are present in about 20% of AML cases.^{5,6} Presence of IDH mutations in AML are predictive of a poor response to traditional chemotherapy, but IDH1 and IDH2 are also biomarkers for targeted therapies that may be an important option for these patients.⁵ That's why testing for these mutations helps your healthcare team understand which AML treatments may work for you.



Risk Factors

Factors that may increase your risk of AML include:⁴

- Age
- Sex
- Previous cancer treatment
- Exposure to high levels of radiation or dangerous chemicals
- Smoking
- History of blood disorders
- Genetic disorders

Talk to your doctor if you think you may be at risk.



Symptoms

Early signs of AML may resemble symptoms of the flu or other common diseases such as:^{4,7}

- Fever
- Fatigue
- Easily bruising or bleeding
- Shortness of breath
- Bone pain
- Frequent infections
- Pale skin



Treatment

Treatment options for AML can often be affected by the patient's age, overall state of health, and other characteristics. Current treatments for AML include chemotherapy, radiation therapy, chemotherapy with stem cell transplant, targeted therapy, or other drug therapy.⁷ Targeted therapies, such as monoclonal antibodies, are also being evaluated in clinical trials for the treatment of AML. Some people with leukemia choose to enroll in clinical trials to try experimental treatments or new combinations of known therapies.⁸ The main treatment for most types of AML is chemotherapy, sometimes along with a targeted therapy drug.⁹

The treatment of adult AML usually has 2 phases:⁷

- **Remission Induction Therapy** is used to kill the leukemia cells in the blood and bone marrow and hopefully put the leukemia into remission.
- **Post-remission Therapy** begins after the leukemia is in remission to kill any remaining leukemia cells that may not be active but could develop and become active.

Survivorship

Survivorship is a unique experience for everyone based on their own set of circumstances. For some people with AML, treatment can get rid of all the cancerous cells, however this isn't the case for everyone. Whether a patient has completed treatment or is still being treated, their doctors will want to continue to monitor them closely. Currently, the five year survival rate for AML is 30.5%.²

Some patients' AML never fully goes away, regular treatments with chemotherapy or other therapies may be needed to help keep the AML under control and relieve symptoms. Even after treatment ends, follow-up appointments are crucial, as monitoring is necessary to ensure the leukemia does not return. Frequent coordination between the patient, the patient's oncologists and primary care physicians is essential for receiving the best care possible.¹⁰

Always remember to speak with your oncologists and other members of your healthcare team about resources and tools that can help you navigate your cancer journey.

1. American Cancer Society. Key Statistics for Acute Myeloid Leukemia (AML). <https://www.cancer.org/cancer/acute-myeloid-leukemia/about/key-statistics.html>. Accessed May 2022.
2. National Cancer Institute. Cancer Stat Facts: Leukemia — Acute Myeloid Leukemia (AML). <https://seer.cancer.gov/statfacts/html/amyl.html>. Accessed May 2022.
3. American Cancer Society. What Is Acute Myeloid Leukemia (AML)? <https://www.cancer.org/cancer/acute-myeloid-leukemia/about/what-is-aml.html>. Accessed May 2022.
4. Mayo Clinic. Acute Myelogenous Leukemia: Symptoms & causes. <https://www.mayoclinic.org/diseases-conditions/acute-myelogenous-leukemia/symptoms-causes/syc-20369109>. Accessed May 2022.
5. DiNardo, C. Durable Remissions from Ivosidenib in IDH1-Mutated Relapsed or Refractory AML. *New England Journal of Medicine*. June 2, 2018.
6. Liu, X., Gong, Y. Isocitrate dehydrogenase inhibitors in acute myeloid leukemia. *Biomark Res* 7, 22 (2019). <https://doi.org/10.1186/s40364-019-0173-z>.

7. National Cancer Institute. Adult Acute Myeloid Leukemia Treatment (PDQ®)—Patient Version. <https://www.cancer.gov/types/leukemia/patient/adult-aml-treatment-pdq>. Accessed May 2022.
8. Mayo Clinic. Acute myelogenous leukemia: Diagnosis & treatment. <https://mayoclinic.org/diseases-conditions/acute-myelogenous-leukemia/diagnosis-treatment/drc-20369115>. Accessed May 2022.
9. American Cancer Society. Treating Acute Myeloid Leukemia (AML) <https://www.cancer.org/cancer/acute-myeloid-leukemia/treating.html>. Accessed May 2022.
10. American Cancer Society. Living as an Acute Myeloid Leukemia (AML) Survivor. <https://www.cancer.org/cancer/acute-myeloid-leukemia/after-treatment/follow-up.html>. Accessed May 2022.