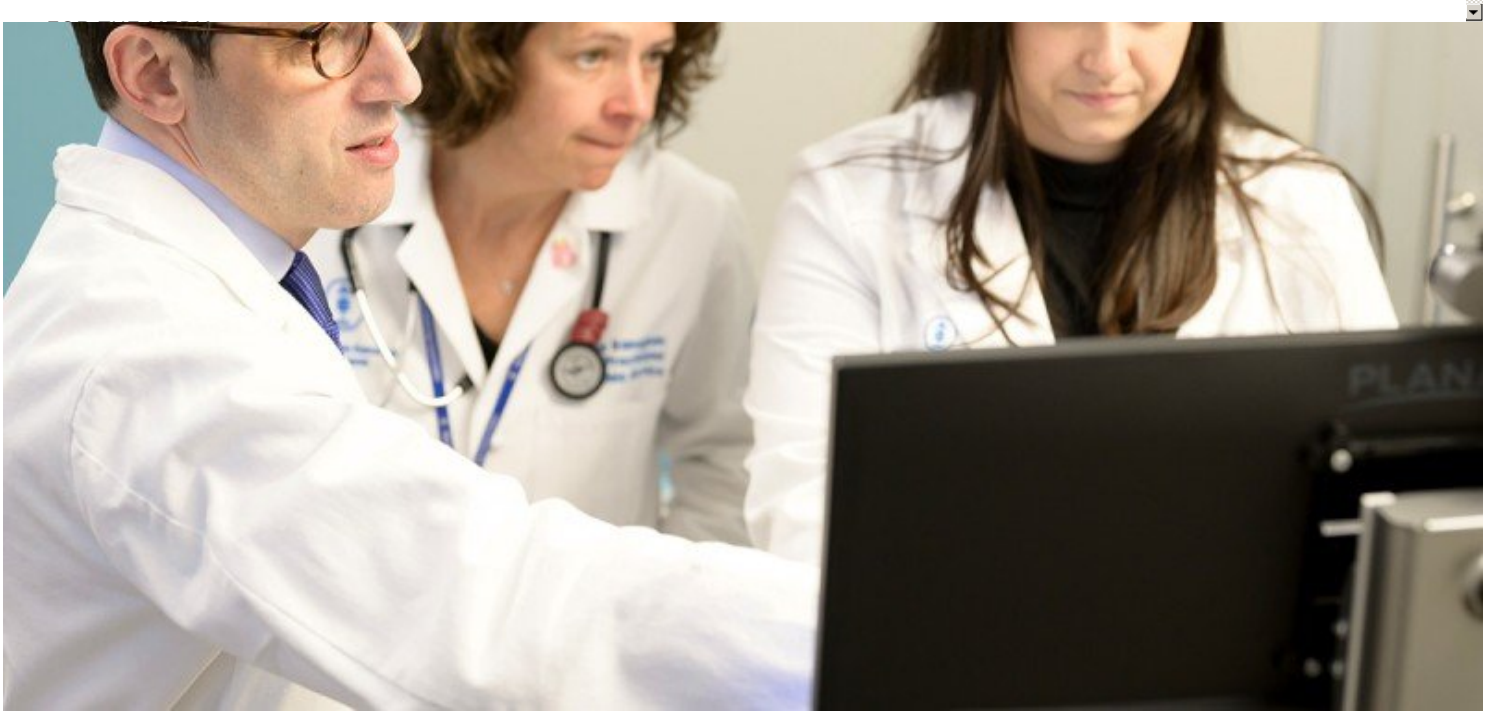
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Memorial Sloan Kettering Cancer Center

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Hematologic oncologist Eytan Stein (left) leads MSK's Program for Drug Development in Leukemia; he's pictured here with nurse practitioner Coleen Ranaghan (middle) and registered nurse Nicole Banu.

Receiving a diagnosis of leukemia or a related blood cancer can be overwhelming. It is an experience that comes with a lot of questions. Understanding more about the different types of leukemia and how they are treated can help you feel more prepared to talk to your doctor.

New Patient Appointments

Call 646-497-9154
Available Monday through Friday, 8:00 a.m. - 6:00 p.m. (Eastern time)

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What is leukemia?

Leukemia is a group of cancers that originate in leukocytes. These are the white blood cells that form in the spongy inner part of bones, called bone marrow. Other blood cancers that are caused by defects in the bone marrow include myeloproliferative neoplasms and systemic mastocytosis.

Normally, stem cells in the bone marrow develop into red blood cells, white blood cells, and platelets. Red blood cells help carry oxygen throughout the body. White blood cells help in fighting infections. Platelets are important for helping blood to clot.

Leukemia and Other Blood Cancers in Kids

Looking for information about diagnosing and treating leukemia in children, adolescents, and young adults?

Learn more

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What causes leukemia?

Most white blood cells live for just a few hours or days. They are continuously replaced by new cells when they die. Leukemia develops when the genetic material (DNA) in the white blood cells is damaged or altered. These cells don't mature or become fully functional. As these immature cells multiply, they overwhelm the bone marrow. This stops or slows down the production of normal white and red blood cells and platelets.

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What are the types of leukemia?

Doctors categorize the types of leukemia in a few ways. One way is based on which kind of white blood cell is involved, either the lymphocytes or the myeloid cells. Another way is by determining whether the illness is developing very quickly (acute disease) or slowly over time (chronic disease). Other blood cancers may involve the overproduction of different types of blood cells.

Symptoms vary depending on which type of leukemia you have:

acute lymphocytic leukemia (ALL)

- acute myeloid leukemia (AML)
- chronic lymphocytic leukemia (CLL)
- chronic myeloid leukemia (CML)
- myeloproliferative neoplasms
- systemic mastocytosis

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What are the treatments for leukemia?

Our doctors most commonly recommend one or more of the following treatments for leukemia:

- targeted therapy
- chemotherapy
- CAR T cell therapy or other types of immunotherapy
- bone marrow or hematopoietic stem cell transplantation

Your personalized treatment plan will depend on which blood cancer you have.

You may also be eligible for a clinical trial exploring a new therapy.

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Why should I choose Memorial Sloan Kettering for leukemia treatment?

The doctors, nurses, and other specialists at MSK offer the most-advanced treatments for leukemia. We provide a supportive environment focused on the physical, emotional, and spiritual needs of our patients.

Our leukemia experts use a variety of tests to diagnose leukemia and determine its type. These tests can reveal abnormalities in the appearance of cells and the amounts of different types of blood cells in circulation. Tests can also show changes in the bone marrow or genetic and molecular makeup of the leukemia cells. Our hematologists are experts in diagnosing and treating blood cancers, including myeloproliferative neoplasms and systemic mastocytosis.

Doctors from MSK's Leukemia Service perform tests to identify specific genes that are abnormal in each person with blood cancer. This allows us to give drugs that are directed to those particular genes. Our leukemia specialists have been instrumental in developing a number of new drugs and have done studies proving how effective the medicines are. This research has led to approvals from the US Food and Drug Administration.

We currently have many clinical trials under way that make new drugs available to people with leukemia even while they are still in development.

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Types of Leukemia

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