

Chronic Myeloid Leukemia

What is chronic myeloid leukemia?

Chronic myeloid leukemia (CML) is a cancer of the blood-forming cells in the spongy tissue inside of bones called bone marrow. CML happens when part of a specific chromosome, which is a long strand of genes, attaches to another, forming what is called the Philadelphia chromosome. This only happens in the blood-forming cells and is not passed from parent to child.

What is the function of white blood cells?

White blood cells help the body fight infection. Ordinarily, more white blood cells are made during infections but then return to normal levels when the infection is cured. In CML, the Philadelphia chromosome acts like a switch, keeping white blood cell production in the “on” position.

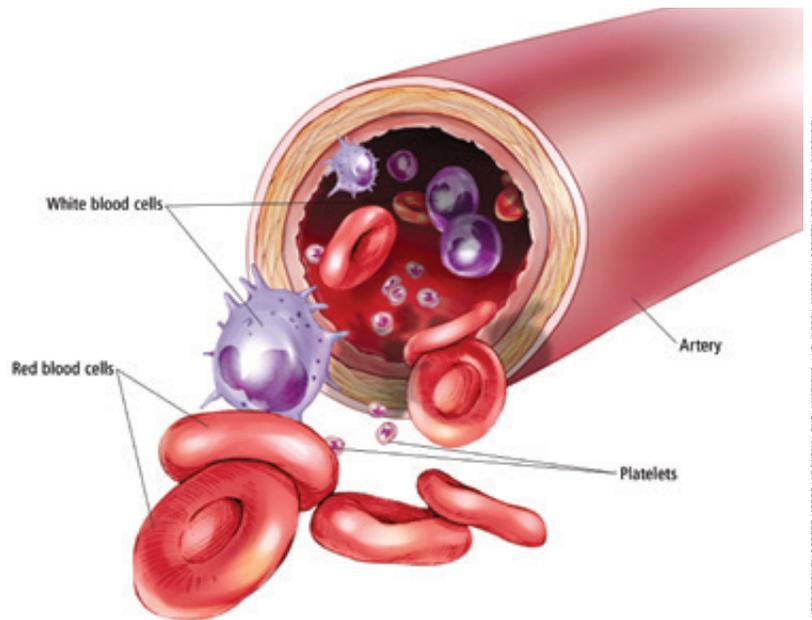


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What are the phases of chronic myeloid leukemia?

CML is divided into 3 different phases: chronic, accelerated, and blast. Without effective treatment, the disease can progress from chronic phase to accelerated or blast phases. Find more information about CML at www.cancer.net/cml.

How is chronic myeloid leukemia treated?

The treatment of CML depends on the phase of the disease and the patient's overall health. The goal of treatment is a complete cytogenetic response, meaning that there are no cells with the Philadelphia chromosome remaining. The treatment for chronic phase CML is targeted therapy with 1 of 5 drugs: imatinib (Gleevec), dasatinib (Sprycel), nilotinib (Tasigna), bosutinib (Bosulif), or ponatinib (Iclusig). If there is no evidence of the Philadelphia chromosome and blood cell counts are at healthy levels during the initial treatment, patients should continue the medication throughout their lifetime with regular monitoring. Bone marrow/stem cell transplantation may be used for accelerated or blastic phase CML or if targeted therapy is not effective. Chemotherapy may be used to lower white blood cell counts before the CML diagnosis is confirmed, when targeted therapy is not effective, or while a bone marrow/stem cell transplant is being arranged. When making treatment decisions, people may also consider a clinical trial. Talk with your doctor about all treatment options. The side effects of CML treatment can often be prevented or managed with the help of your health care team. This is called palliative care and is an important part of the overall treatment plan.

How can I cope with chronic myeloid leukemia?

Absorbing the news of a cancer diagnosis and communicating with your health care team are key parts of the coping process. Seeking support, organizing your health information, making sure all of your questions are answered, and participating in the decision-making process are other steps. Talk with your health care team about any concerns. Understanding your emotions and those of people close to you can be helpful in managing the diagnosis, treatment, and healing process.

Questions to ask the doctor

Regular communication is important in making informed decisions about your health care. Consider asking the following questions of your health care team:

- What phase of CML has been diagnosed?
- Can you explain my pathology report (laboratory test results) to me?
- Would you explain my treatment options?
- What clinical trials are open to me? Where are they located, and how do I find out more about them?
- What treatment plan do you recommend? Why?
- What is the goal of each treatment? Is it to eliminate the leukemia, help me feel better, or both?
- Who will be part of my treatment team, and what does each member do?
- What is the expected timeline for my treatment plan? Do I need to start treatment right away?
- How will this treatment affect my daily life? Will I be able to work, exercise, and perform my usual activities?
- Will this treatment affect my ability to become pregnant or have children?
- What long-term side effects may be associated with my treatment plan?
- What follow-up tests will I need, and how often will I need them?
- If I'm worried about managing the costs of cancer care, who can help me?
- Where can I find emotional support for me and my family?
- Whom should I call with questions or problems?

Additional questions to ask the doctor can be found at www.cancer.net/cml.

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TERMS TO KNOW

Bone marrow biopsy:

Removal and analysis of a bone marrow sample from the center of the bones

Chemotherapy:

The use of drugs to destroy cancer cells

Clinical trial:

A research study that tests a new treatment or drug

Cytogenetics:

Analysis of a cell's chromosomes

Hematologist:

A doctor who specializes in treating blood disorders

Leukemia:

A cancer of the blood

Oncologist:

A doctor who specializes in treating cancer

Philadelphia chromosome:

An abnormal chromosome that combines 2 genes into a single fusion gene called *BCR-ABL*.

Prognosis:

Chance of recovery

Stem cell transplant:

Procedure that replaces diseased bone marrow with healthy stem cells that create new bone marrow

Targeted therapy:

Treatment that targets specific genes or proteins that contribute to cancer growth and development

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