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Chronic Myeloid Leukemia

Chronic myeloid leukemia (CML) is a rare and slow-growing bone marrow cancer that can lead to anemia (low red blood cell count) and excessive bleeding. Medical advances mean CML is highly treatable.

With treatment, most people experience reduced symptoms (remission) or are able to manage CML as an ongoing (chronic) condition. Special cancer-fighting drugs can slow or stop the growth of cancer cells.

What is chronic myeloid leukemia (CML)?

Chronic myeloid leukemia (chronic myelogenous leukemia or chronic granulocytic leukemia) affects immature blood stem cells in the bone marrow. These cells normally turn into healthy blood cells and platelets. Instead, they become abnormal CML white blood cells.

As abnormal cells grow, they crowd out healthy blood cells. This can lower your body's resistance to infections and lead to easy bleeding and anemia (shortage of red blood cells).

The abnormal cells can also spread to the bloodstream and other parts of the body. Left untreated, CML can progress from chronic to an accelerated phase, where treatment is harder to manage.

Chronic myeloid leukemia facts and stats

- Chronic myeloid leukemia represents about 15% of all leukemia in adults.
- The median age at diagnosis is 65.
- Cases of CML are extremely rare in children.

For survival rates, view our **leukemia statistics**

(<https://leukemiarf.org/leukemia/statistics/>) webpage.

Causes and risk factors of chronic myeloid leukemia

Scientists have identified a rare genetic change (mutation) in people with chronic myeloid leukemia called the Philadelphia chromosome. This chromosome can lead to the development of abnormal white blood cells and cancer growth.

CML is not passed from parent to child (hereditary). Risk factors include:

- Older age
- Male gender
- Exposure to radiation, including radiation therapy for cancer

Symptoms of chronic myeloid leukemia

Because many people don't experience symptoms from chronic myeloid leukemia, the condition is often detected during routine blood work. Chronic myeloid leukemia symptoms may include:

- Excessive night sweats
- Easy bleeding
- Fatigue
- Fever
- Infection
- Pain below the ribs on the left side (from an enlarged spleen)
- Unexpected weight loss

Diagnosing chronic myeloid leukemia

To diagnose chronic myeloid leukemia, your doctor conducts a medical exam and asks about your health and family health history. Tests may include:

- **Blood tests:** These tests can check for unusually high numbers of white blood cells, which indicate the presence of leukemia. Doctors can also look at the size and shape of blood cells. Changes in the cells can also indicate leukemia.
- **Bone marrow biopsy and aspiration:** Doctors use these tests to look for leukemia cells in the bone marrow. They use thin, hollow needles to remove small samples of bone marrow and bone tissue for analysis.
- **Genetic testing:** These tests look for the Philadelphia chromosome, which leads to most cases of CML. They can also detect other genetic changes (mutations) in blood or bone marrow samples that help doctors confirm diagnosis.

- **Imaging:** Doctors may use these tests, which produce detailed images of the body, to check for signs of cancer in other parts of the body. Imaging tests may include X-ray, CT scan, and MRI.

Treatments for chronic myeloid leukemia

Recent medical advances mean that many people with chronic myeloid leukemia go into remission (no signs of cancer) after treatment. For others, doctors may treat the cancer as an ongoing (chronic) condition with daily medication. CML is not divided into stages, which doctors use to describe the extent of cancer in other forms of the disease.

Chronic myeloid treatment options include:

- **Targeted therapy**
(<https://leukemiarf.org/patients/treatment/options/targeted-therapy/>): Targeted drugs and other substances can often stop the growth of cancer cells or kill them while minimizing harm to surrounding healthy tissue. They can also block bone marrow from producing the immature blood cells that cause CML. Most people start treatment for CML with targeted drugs, which can help achieve remission.
- **Chemotherapy**
(<https://leukemiarf.org/patients/treatment/options/chemotherapy/>): These drugs destroy cancer cells. You receive chemotherapy drugs through an injection in the vein or in pill form. Doctors may combine chemotherapy with targeted drug therapy to treat aggressive CML.
- **Immunotherapy**
(<https://leukemiarf.org/patients/treatment/options/immunotherapy/>): These treatments help your immune system fight off cancer. Immunotherapy may involve antibodies, drugs that help your body develop antibodies, and targeted therapies that block cancer cells from multiplying. Doctors may offer immunotherapy with or without chemotherapy.
- **Stem cell transplant**
(<https://leukemiarf.org/patients/treatment/options/transplants/>) (**bone marrow transplant**): This treatment offers the only potential cure for CML, but it isn't used very often due to side effects. Stem cell transplant (bone marrow transplant) may be an option if other treatments haven't worked. The doctor extracts damaged stem cells (blood-forming cells in the bone marrow) and replaces them with healthy cells from a donor.
- **Clinical trials** (<https://leukemiarf.org/clinical-trials/>): Clinical trials available at some medical centers may give eligible patients access to promising treatments not widely available.

Learn more about CML treatments from Dr. Ehab Atallah from Medical College of Wisconsin in a **special recorded webinar** (<https://leukemiarf.org/patients/webinars/chronic-myeloid-leukemia-treatments/>).

Helpful resources

Support can help you feel more understood and less alone when you receive a CML diagnosis. We offer **peer support** (<https://leukemiarf.org/patients/support/>) programs to connect you with others who understand the challenges that cancer

brings. Our offerings also include an online support community and a mentoring program. We also offer a **directory of resources** (<https://leukemiarf.org/patients/resources/>) to help patients and caregivers.

Want more information?

Sign up to receive emails about upcoming CML patient webinars, the latest treatment updates, and other patient resources.

SIGN UP ([HTTPS://LEUKEMIARF.ORG/EMAIL-SIGN-UP/](https://leukemiarf.org/email-sign-up/))

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