

Chronic Myeloid Leukemia (CML): Overview



What is chronic myeloid leukemia (CML)?

Cancer starts when cells change (mutate) and grow out of control. The changed (abnormal) cells often grow to form a lump or mass called a tumor. Leukemia is different from most other types of cancer.

Leukemia cells don't often form tumors. Leukemia is cancer that starts in the bone marrow. The bone marrow is where new blood cells are made. It's the thick, sponge-like tissue in the center of certain bones.

When a person has leukemia, the body makes too many abnormal blood cells. They can crowd out healthy cells in the bone marrow. This leads to not making enough of all the different types of blood cells. Leukemia cells travel throughout your body in your blood. So leukemia can affect organs all over your body.

Chronic myeloid leukemia (CML) is also called chronic myelocytic and chronic myelogenous leukemia.

CML starts in myeloid stem cells that normally mature into red blood cells, white blood cells, and platelets. Changes cause an abnormal chromosome to form in very early or immature forms of these myeloid stem cells in the bone marrow. This chromosome is called the Philadelphia chromosome. It's made up of 2 fused genes that form a gene called BCR-ABL. This gene makes the normal cell become a CML cell that grows and divides out of control.

People with CML have too many white blood cells in their blood. Over time, this can cause the person to not have enough red blood cells. This is called anemia, and it can cause tiredness (fatigue). CML can lead to not enough platelets, too. This causes easy bleeding and bruising.

Who is at risk for chronic myeloid leukemia?

A risk factor is anything that may increase your chance of having a disease. The exact cause of someone's cancer may not be known. But risk factors can make it more likely for a person to have cancer. Some risk factors may not be in your control. But others may be things you can change.

The risk factors for CML include:

- Being accidentally exposed to very high levels of radiation
- Being older in age
- Being a man

Talk with your healthcare provider about your risk factors for CML and what you can do about them.

Can chronic myeloid leukemia be prevented?

There's no sure way to prevent CML.

Are there screening tests for chronic myeloid leukemia?

There are currently no regular screening tests for CML. Screening tests are done to check for disease in people who don't have symptoms.

What are the symptoms of chronic myeloid leukemia?

CML tends to grow slowly. Many people with CML don't have any symptoms when it's first found.

Common symptoms of CML can include:

- Feeling very tired or weak

- Fevers with no clear cause
- Night sweats
- Frequent infections
- Pain or a sense of fullness in the left upper belly (abdomen) from an enlarged spleen
- Feeling full after eating only a small amount
- Losing weight without trying
- Bleeding and bruising easily
- Bone or joint pain
- Itchy skin
- Shortness of breath

Many of these may be caused by other more common health problems. But it's important to see a healthcare provider if you have these symptoms. Only a healthcare provider can tell if you have cancer.

How is chronic myeloid leukemia diagnosed?

CML is often found when blood tests are done for another reason, like during a routine physical. If your healthcare provider thinks you may have CML, exams and tests will be needed to be sure. Your healthcare provider will ask you about your health history, symptoms, risk factors, and family history of disease. A physical exam will be done.

You may also have 1 or more of these tests:

- Blood tests (many different kinds)
- Bone marrow aspiration and biopsy

After a diagnosis of CML, you'll likely need other tests. These help your healthcare providers learn more about your cancer. They can help determine the phase of the cancer. The phase of CML is based on the number of blast cells in your blood or bone marrow. The tests also show how the CML cells are affecting your other blood cell counts and how fast the cells are growing. All this information helps your healthcare team figure out the best treatment plan for you.

How is chronic myeloid leukemia treated?

Your treatment choices depend on test results, your age, your overall health, the speed at which the CML cells are growing, and the phase of the cancer. The goal of treatment may be to cure you, control the cancer, or help ease problems caused by cancer. Talk with your healthcare team about your treatment choices, the goals of treatment, and what the risks and side effects may be.

Systemic treatment is used to destroy or control cancer cells that may have traveled around your body. When taken by pill or injection, chemotherapy and targeted therapy are systemic treatments. People with CML get systemic treatment.

You may have just 1 treatment or a combination of treatments. Tests will be done during treatment to see how well it's working.

Treatments for CML include:

- Targeted therapy
- Immunotherapy
- Chemotherapy

- Stem cell transplant

Talk with your healthcare providers about your treatment choices. Make a list of questions. Think about the benefits and possible side effects of each choice. Talk about your concerns with your healthcare provider before making a decision.

What are treatment side effects?

Cancer treatment can damage normal cells. This causes side effects like mouth sores, skin changes, appetite loss, and vomiting. Many side effects get better after treatment ends, but some can last the rest of your life.

Talk with your healthcare provider about side effects linked to your treatment. Be sure you know what to watch for. There are often ways to manage and even prevent side effects.

Coping with chronic myeloid leukemia

Many people feel worried, depressed, and stressed when dealing with cancer. Getting treatment for cancer can be hard on your mind and body. Keep talking with your healthcare team about any problems or concerns you have. Work together to ease the effect of cancer and its symptoms on your daily life.

Here are tips:

- Talk with your family or friends.
- Ask your healthcare team or social worker for help.
- Speak with a counselor.
- Talk with a spiritual advisor, such as a minister or rabbi.
- Ask your healthcare team about medicines for depression or anxiety.
- Keep socially active.
- Join a cancer support group in person or online.

Cancer treatment is also hard on the body. To help yourself stay healthier, try to:

- Eat a healthy diet, with a focus on high-protein foods.
- Drink plenty of water, fruit juices, and other liquids.
- Keep physically active.
- Rest as much as needed.
- Talk with your healthcare team about ways to manage treatment side effects.
- Take your medicines as directed by your team.

When should I call my healthcare provider?

Your healthcare provider will talk with you about when to call. You may be told to call if you have any of the below:

- New symptoms or symptoms that get worse
- Signs of an infection, such as a fever or chills
- Side effects of treatment that affect your daily function or don't get better with treatment

Ask your healthcare provider what signs to watch for and when to call. Know how to get help after office hours and on weekends and holidays.

Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.
- At the visit, write down the name of any new diagnosis and new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed and how it will help you. Also know what the side effects are.
- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your provider if you have questions.

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