

Chronic Myeloid Leukemia



This NCCN QUICK GUIDE™ sheet summarizes key points from the complete [NCCN Guidelines for Patients®: Chronic Myeloid Leukemia](#). These guidelines explain which tests and treatments are recommended by experts in cancer. To view and download the guidelines, visit [NCCN.org/patients](https://www.nccn.org/patients) or, to order printed copies, visit Amazon.com.

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What is chronic myeloid leukemia?



Chronic myeloid leukemia (CML) is a slow-growing blood cancer that starts in the blood stem cells of bone marrow. A chromosome change called the Philadelphia chromosome is found in CML. This happens when a piece of chromosome 9 and a piece of chromosome 22 break off and trade places with each other. The result is a fused gene called *BCR-ABL1*.

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What tests might I have?

General health tests include a medical history, family history, and physical exam.	14
Blood tests count the number of cells and certain chemicals in your body.	15
To diagnose CML, samples of bone marrow must be removed and tested.	16
A lumbar puncture tests the fluid that surrounds the spine or brain.	20
Heart or cardiac tests evaluate how well your heart works.	20

What are the 3 phases of CML?

- There are 3 phases of CML: chronic, accelerated, and blast phase. Phases are based on the number of blasts in the blood and marrow. Normal bone marrow contains 5 percent (5%) blasts. This means that it is normal to have 5 blasts for every 100 blood cells. In CML, the number of blasts are above normal.

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What are the goals of treatment?

Chronic phase	Treatment is based on risk groups using age, spleen size, and blood counts.	30
	The goal of treatment is to hit certain milestones within a specific timeframe and to put cancer in remission.	
	The 2 very important milestones are early molecular response (EMR) at 3 months and 6 months and complete cytogenetic response (CCyR) by 12 months.	
	Treatment milestones are measured as the percentage of cells with <i>BCR-ABL1</i> that remain after treatment. The goal is to reduce the number of CML cells with the Philadelphia chromosome to as close to zero as possible.	
Accelerated phase	<ul style="list-style-type: none"> ➤ In all phases, CML cells contain the Philadelphia chromosome. However, in the accelerated phase, there may be new abnormal changes within chromosomes. 	39
	<ul style="list-style-type: none"> ➤ The treatment goal is to stop the leukemia from progressing to blast phase. A bone marrow transplant is often needed. 	
Blast phase	<ul style="list-style-type: none"> ➤ Blast phase CML happens after a series of events, including additional gene mutations and resistance to targeted therapy. 	39
	<ul style="list-style-type: none"> ➤ Treatment for blast phase CML is based on the type of blast cell. A bone marrow transplant is often needed. 	

How can you decide between options?

<ul style="list-style-type: none"> ➤ Don't be shy; ask your doctors questions. They are there to help. ➤ Get a second opinion. Even doctors get second opinions! ➤ Support groups can be helpful. You can learn a lot from others. ➤ Compare the pros and cons of each option. 	46
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