

# ASCO ANSWERS

## CHRONIC MYELOID LEUKEMIA

### WHAT IS CHRONIC MYELOID LEUKEMIA?

Chronic myeloid leukemia (CML) is a cancer of the blood-forming cells in the bone marrow (spongy tissue inside of bones) that causes the white blood cells to grow uncontrollably. CML happens when a portion of one chromosome (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 inherited (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.

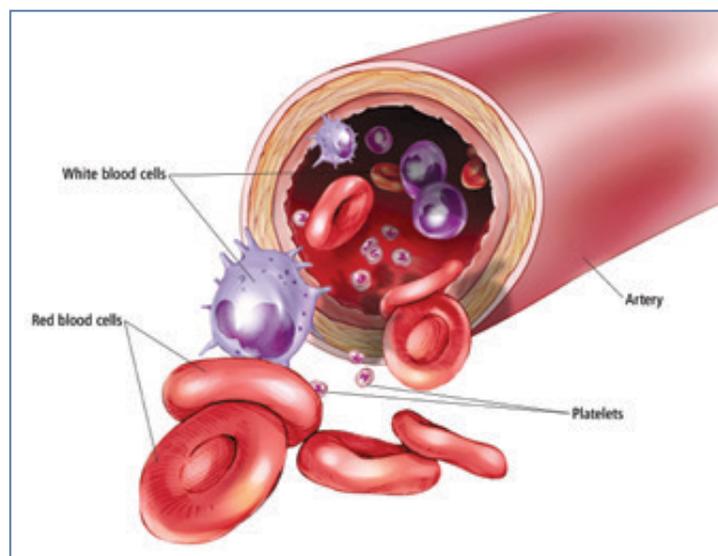


Illustration by Robert Morale/Visual Explanations, LLC. © 2004 American Society of Clinical Oncology.

Find additional cancer information at [www.cancer.net](http://www.cancer.net).

### WHAT ARE THE PHASES OF CHRONIC MYELOID LEUKEMIA?

CML is divided into three different phases: chronic, accelerated, and blastic. These phases reflect the number of blasts (immature leukemia cells) in the blood and bone marrow. Without effective treatment, CML in all patients in the chronic phase will move into the blastic phase. Learn more about the phases of CML at [www.cancer.net/cml](http://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 one of five 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 normal during the initial treatment, patients should continue the medication throughout their lifetime with regular monitoring to see how well the treatment continues to work. 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 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.

### HOW CAN I COPE WITH CHRONIC MYELOID LEUKEMIA?

Absorbing the news of a cancer diagnosis and communicating with your doctor are key parts of the coping process. Seeking support, becoming organized, and considering a second opinion are other steps. 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?
- 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 related to my cancer care, who can help me with this concern?
- Where can I find emotional support for me and my family?
- Whom should I call for questions or problems?

Additional questions to ask the doctor can be found at [www.cancer.net/cml](http://www.cancer.net/cml).



Doctor-Approved Patient Information from ASCO<sup>®</sup>

**For more information, visit ASCO's patient website, [www.cancer.net](http://www.cancer.net), or call 888-651-3038.**

*The ideas and opinions expressed here do not necessarily reflect the opinions of the American Society of Clinical Oncology (ASCO) or The Conquer Cancer Foundation. The information in this fact sheet is not intended as medical or legal advice, or as a substitute for consultation with a physician or other licensed health care provider. Patients with health care-related questions should call or see their physician or other health care provider promptly and should not disregard professional medical advice, or delay seeking it, because of information encountered here. The mention of any product, service, or treatment in this fact sheet should not be construed as an ASCO endorsement. ASCO is not responsible for any injury or damage to persons or property arising out of or related to any use of ASCO's patient education materials, or to any errors or omissions.*

To order more printed copies, please call 888-273-3508 or visit [www.cancer.net/estore](http://www.cancer.net/estore).

## 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 people with cancer

### **Philadelphia chromosome:**

An abnormal chromosome that makes an abnormal protein, causing uncontrollable growth of white blood cells in CML

### **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