

Leukemia - Chronic Myeloid - CML - Overview [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 08/2014

ON THIS PAGE: You will find some basic information about this disease and the parts of the body it may affect. This is the first page of Cancer.Net's Guide to Chronic Myeloid Leukemia. To see other pages, use the menu on the side of your screen. Think of that menu as a roadmap to this full guide.

About leukemia

Leukemia is a cancer of the blood. Leukemia begins when normal blood cells change and grow uncontrollably. Chronic myeloid leukemia (CML) is a cancer of the blood-forming cells, called myeloid cells, found in the bone marrow. Bone marrow is the spongy, red tissue in the inner part of large bones. CML most often causes an increase in the number of white blood cells, such as neutrophils or granulocytes, that normally fight infection. It is also sometimes called chronic granulocytic, chronic myelocytic, or chronic myelogenous leukemia. About 10% of people with leukemia have CML.

About the Philadelphia Chromosome

People with CML have a genetic mutation or change in their bone marrow cells that they develop from damage that occurs by chance after they are born, and there is no risk of passing on the gene to their children. This specific mutation is called a translocation, which means that part of a long strand of genes called a chromosome breaks off and reattaches to another chromosome. In CML, part of chromosome 9 breaks off and bonds to a section of chromosome 22, resulting in what is called the Philadelphia chromosome or Ph chromosome. This causes two genes called *BCR* and *ABL* to become one fusion gene called *BCR-ABL*. It is found only in the blood-forming cells, not in other organs of the body. The *BCR-ABL* gene causes myeloid cells to make an abnormal enzyme, called a fusion protein, that allows white blood cells to grow out of control.

About CML

Ordinarily, the number of white blood cells is tightly controlled by the body?more white blood cells are produced during infections or times of stress, but then the numbers return to normal when the infection is cured. In CML, the abnormal *BCR-ABL* enzyme is like a switch that is stuck in the ?on? position?it keeps stimulating the white blood cells to grow and multiply. In addition to

increased white blood cells, the number of blood platelets that help the blood to clot often increase, and the number of red blood cells, which carry oxygen, may decrease.

Looking for More of an Overview?

If you would like additional introductory information, explore these related items. Please note that these links take you to other sections on Cancer.Net:

- [ASCO Answers Fact Sheet](#) [3]: Read a one-page fact sheet (available as a PDF) that offers an easy-to-print introduction to this type of cancer.
- [Cancer.Net Patient Education Video](#) [4]: View a short video led by an ASCO expert in this type of cancer that provides basic information and areas of research.
- Cancer.Net En Español: [Read about CML in Spanish](#) [5]. Infórmase sobre [leucemia mieloide crónica en español](#) [5].

To continue reading this guide, use the menu on the side of your screen to select another section.

Links:

[1] <http://www.cancer.net/cancer-types/leukemia-chronic-myeloid-cml/overview>

[2] <http://www.cancer.net/about-us>

[3] http://www.cancer.net/sites/cancer.net/files/asco_answers_cml.pdf

[4] <http://www.cancer.net/node/27376>

[5] <http://www.cancer.net/es/node/31349>