

## **Chronic Myeloid Leukemia** <sup>[1]</sup>

### **About chronic myeloid leukemia (CML)**

Chronic myeloid leukemia, or CML, is a cancer that occurs when the blood-forming cells of the bone marrow (the soft, spongy tissue in the center of bones) make too many white blood cells, including immature ones.

Most patients with CML – approximately 95% – have a genetic abnormality that produces an abnormal chromosome in bone marrow stem cells, known as the Philadelphia chromosome (abbreviated “Ph chromosome” or simply “Ph”). The Ph chromosome carries a gene called BCR-ABL, which produces a protein called BCR-ABL.

The BCR-ABL protein triggers bone marrow to keep making abnormal versions of white blood cells, which are the leukemia cells. The BCR-ABL gene and BCR-ABL protein are the key causes of Ph+ CML. The resulting uncontrolled growth of these leukemia cells can cause a large increase in their concentration in the blood. Over time, these abnormal cells crowd out healthy red blood cells and platelets as well as normal white cells, which can have negative effects on your health.

### **Treating CML**

Targeted Ph+ CML therapies have been developed to slow the reproduction of leukemia cells. These therapies work to reduce the levels of cancer-causing proteins and Ph+ CML cells. Some patients who respond exceptionally well to treatment may achieve a level of leukemic cells that is nearly undetectable.

As with any condition, it is important to take your medication as prescribed and directed by your doctor. It is also important to get the most accurate test possible at each step of your journey, as this will enable you and your doctor to see if your treatment is working.

### **Questions to ask your doctor**

- What are my treatment choices?
- What are the expected benefits of each kind of treatment?
- What are my ultimate treatment goals?
- What are the risks of each treatment?
- What are the side effects of each treatment?
- How will I know if a treatment is working?
- How will each treatment affect my daily life?

- How will I know if my cancer is progressing?
- What are the symptoms of disease progression?
- If my disease stops responding to a course of treatment, what are my options?
- How frequently should I have routine tests?
- What milestones should I hope to achieve with treatment and how long should it take to achieve each of them?

## Additional resources

- [Meet the Milestones that Matter Fact Sheet \(PDF 0.2 MB\)](#) [2]
- [Meet the Milestones that Matter One Pager](#) [3]
- [Monitoring CML Treatment Response: Importance of Routine Testing \(PDF 0.2 MB\)](#) [4]
- [CML Infographic](#) [5]
- [CML Fact Sheet](#) [6]
- [CML Interactive Media Guide \(PDF 4.9 MB\)](#) [7]

## Videos

### CML Today and Tomorrow

### Understanding Ph+ CML

In Ph+ CML, the abnormal Philadelphia chromosome is created when parts of two separate genes within a cell's DNA switch places. »

### Treating Ph+ CML

The goal of treatment is to decrease the level of leukemic cells. CML treatment can be thought of as a series of steps or milestones. »

### Meet the Milestones that Matter

Checkpoints on a Ph+ CML patient's journey indicate response to treatment. Each level of reduction in leukemic cells is called a treatment milestone. »

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#### Links

[1] <https://www.novartis.com/our-focus/cancer/oncology-disease-areas/chronic-myeloid-leukemia>

[2] <https://www.novartis.com/sites/www.novartis.com/files/cml-meet-the-milestones-that-matter.pdf>

[3] <https://www.novartis.com/news/media-library/cml-meet-milestones-matter-one-pager>

- [4] <https://www.novartis.com/sites/www.novartis.com/files/cml-monitoring-treatment-response.pdf>
- [5] <https://www.novartis.com/news/media-library/understanding-cml-infographic>
- [6] <https://www.novartis.com/news/media-library/cml-background-fact-sheet>
- [7] <https://www.novartis.com/sites/www.novartis.com/files/cml-interactive-media-guide.pdf>