

Chronic Myeloid Leukemia

Chronic myeloid leukemia, or CML, is a type of cancer that develops in the blood-forming cells of the bone marrow, in which immature cells build up and eventually invade the blood.

In approximately 95% of patients with CML, a genetic mutation produces an abnormal chromosome in bone marrow stem cells known as the Philadelphia chromosome (abbreviated “Ph chromosome” or “Ph”). When the Ph chromosome is present, CML is classified as Philadelphia chromosome-positive (Ph+).

The Ph chromosome *BCR::ABL* produces a protein of the same name—the BCR::ABL protein. The protein triggers bone marrow to keep making abnormal white blood cells, or leukemic cells. These cells increase in concentration in the blood, and over time, they crowd out healthy red blood cells, platelets, and normal white blood cells. If left untreated, this could be fatal.

There are three phases of CML: chronic-phase (the earliest phase), accelerated-phase, and blast-phase. In most patients, CML is diagnosed in the early, chronic phase. With the right treatment, many patients can remain in chronic phase without progressing to a more advanced phase.

Managing CML

Over the past two decades, therapies that target cancer-causing proteins and cells with the Ph chromosome have been introduced to the treatment landscape. These therapies slow the reproduction of leukemia cells and have helped to transform outcomes for patients with CML.

Some patients who respond well to treatment may achieve a level of leukemic cells that is nearly undetectable; however, others are still at risk for disease progression. Patients who don't see their leukemic cells decrease may either be experiencing primary resistance where their body doesn't respond to treatment, or secondary drug resistance where the body loses its response to a medication over time. Additionally, patients may also experience drug intolerance where the side effects of a medication become so bothersome that a patient can no longer tolerate it.

If you have questions about the management of your CML, or are struggling with symptoms or treatment side effects, you should talk to your doctor.

As with any condition, it is important to take your medication as prescribed and directed by your doctor. It is also important to continue regular testing at each step of your journey, as this will enable you and your doctor to see if your treatment is working.

Additional resources

[Understanding CML backgrounder \(PDF 0.2 MB\)](#)

[Innovation in CML at Novartis](#)

CML heritage story video

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