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Treating Chronic Myelomonocytic Leukemia

If you've been diagnosed with chronic myelomonocytic leukemia (CMML), your treatment team will discuss your options with you. It's important to weigh the benefits of each treatment option against the possible risks and side effects.

How is CMML treated?

Treatment for CMML may include:

- [Supportive Therapy for the Patient With Chronic Myelomonocytic Leukemia](#)
- [Chemotherapy for Chronic Myelomonocytic Leukemia](#)
- [Growth Factors for Treating Chronic Myelomonocytic Leukemia](#)
- [Radiation Therapy for Chronic Myelomonocytic Leukemia](#)
- [Surgery for Chronic Myelomonocytic Leukemia](#)
- [Stem Cell Transplant for Chronic Myelomonocytic Leukemia](#)

Common treatment approaches

Treatment of CMML is based on how severe the disease is, as well as your age and overall health. For many people with CMML, supportive therapy to prevent the problems caused by low blood cell counts is an important part of treatment.

- [General Approach to Treatment of Chronic Myelomonocytic Leukemia](#)

Who treats CMML?

Based on your treatment options, you might have different types of doctors on your

treatment team. These doctors could include:

- A **hematologist**: a doctor who treats blood disorders.
- A **radiation oncologist**: a doctor who treats cancer with radiation therapy
- A **medical oncologist**: a doctor who treats cancer with medicines such as chemotherapy
- A **surgical oncologist (oncologic surgeon)**: a doctor who uses surgery to treat cancer

You might have many other specialists on your treatment team as well, including physician assistants, nurse practitioners, nurses, nutrition specialists, social workers, and other health professionals.

- [Health Professionals Associated With Cancer Care](#)¹

Making treatment decisions

It's important to discuss all treatment options, including their goals and possible side effects, with your doctors to help make the decision that best fits your needs. You may feel that you need to make a decision quickly, but it's important to give yourself time to absorb the information you have learned. Ask your cancer care team questions.

If time permits, it is often a good idea to seek a second opinion. A second opinion can give you more information and help you feel more confident about the treatment plan you choose.

- [Questions to Ask Your Doctor About Chronic Myelomonocytic Leukemia](#)²
- [Seeking a Second Opinion](#)³

Thinking about taking part in a clinical trial

Clinical trials are carefully controlled research studies that are done to get a closer look at promising new treatments or procedures. Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the best way for doctors to learn better methods to treat cancer. Still, they're not right for everyone.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials.

- [Clinical Trials](#)⁴

Considering complementary and alternative methods

You may hear about alternative or complementary methods that your doctor hasn't mentioned to treat your cancer or relieve symptoms. These methods can include vitamins, herbs, and special diets, or other methods such as acupuncture or massage, to name a few.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor's medical treatment. Although some of these methods might be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be harmful.

Be sure to talk to your cancer care team about any method you are thinking about using. They can help you learn what is known (or not known) about the method, which can help you make an informed decision.

- [Complementary and Alternative Medicine](#)⁵

Help getting through cancer treatment

People with cancer need support and information, no matter what stage of illness they may be in. Knowing all of your options and finding the resources you need will help you make informed decisions about your care.

Whether you are thinking about treatment, getting treatment, or not being treated at all, you can still get supportive care to help with pain or other symptoms. Communicating with your cancer care team is important so you understand your diagnosis, what treatment is recommended, and ways to maintain or improve your quality of life.

Different types of programs and support services may be helpful, and can be an important part of your care. These might include nursing or social work services, financial aid, nutritional advice, rehab, or spiritual help.

The American Cancer Society also has programs and services – including rides to treatment, lodging, and more – to help you get through treatment. Call our National Cancer Information Center at 1-800-227-2345 and speak with one of our trained specialists.

- [Palliative Care](#)⁶

- [Find Support Programs and Services in Your Area](#)⁷

Choosing to stop treatment or choosing no treatment at all

For some people, when treatments have been tried and are no longer controlling the cancer, it could be time to weigh the benefits and risks of continuing to try new treatments. Whether or not you continue treatment, there are still things you can do to help maintain or improve your quality of life.

Some people, especially if the cancer is advanced, might not want to be treated at all. There are many reasons you might decide not to get cancer treatment, but it's important to talk to your doctors and you make that decision. Remember that even if you choose not to treat the cancer, you can still get supportive care to help with pain or other symptoms.

- [If Cancer Treatments Stop Working](#)⁸

The treatment information given here is not official policy of the American Cancer Society and is not intended as medical advice to replace the expertise and judgment of your cancer care team. It is intended to help you and your family make informed decisions, together with your doctor. Your doctor may have reasons for suggesting a treatment plan different from these general treatment options. Don't hesitate to ask him or her questions about your treatment options.

Supportive Therapy for the Patient With Chronic Myelomonocytic Leukemia

Chronic myelomonocytic leukemia (CMML) can be hard to treat. For many people with CMML, the main goal is to prevent the problems caused by low blood cell counts. For instance, [low red blood cell counts](#)¹ (anemia) can cause severe fatigue. Treating the anemia with [blood transfusions](#)² and/or [erythropoietin](#) can help patients feel better and allow them to be more active.

Some people are concerned about a slight risk of infection (hepatitis or HIV) spread by blood transfusion. This possibility is very unlikely, and the benefits of the transfused

cells greatly outweigh this risk.

People with CMML often need a lot of blood transfusions. This can cause excess iron to build up in the body. This extra iron can deposit in the liver and heart, affecting how well the organs work. This iron build up is usually seen only in people who receive many transfusions over a period of years. Drugs called chelating agents can be used to treat and prevent iron overload from transfusions. Chelating agents are substances that bind with iron so that the body can get rid of it. They can be given intravenously (IV) or as an injection (shot) under the skin.

CMML patients with bleeding problems caused by a shortage of platelets may benefit from platelet transfusions.

People with CMML tend to get infections very easily. They should be especially careful to avoid cuts and scrapes and care for any injury right away. They should tell their doctors about any fever, signs of pneumonia (cough, shortness of breath), urinary infection (burning when urinating), or other signs of infection right away. Doctors will treat any known or suspected infections with antibiotics. See [Infections in People with Cancer](#)³ for more details.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/blood-transfusion-and-donation.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts/infections.html

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See all references for Chronic Myelomonocytic Leukemia

www.cancer.org/cancer/chronic-myelomonocytic-leukemia/references.html

Nazha A, Prebet T, Gore S, Zeidan AM. Chronic myelomonocytic leukemia: Are we finally solving the identity crisis? *Blood Rev.* 2016;30(5):381-388.

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Chemotherapy for Chronic Myelomonocytic Leukemia

Chemotherapy (chemo) is the use of drugs for treating a disease such as cancer. The drugs can be swallowed as pills, or a needle can be used to inject them into a vein or muscle. Chemo is considered systemic treatment because these drugs enter the bloodstream and reach most areas of the body. This type of treatment is useful for diseases like chronic myelomonocytic leukemia (CMML) that are not only in one part of the body. Chemo cannot cure CMML, but it can help kill the abnormal bone marrow cells and allow normal ones to grow back.

Hydroxyurea

Hydroxyurea (hydroxycarbamate, Hydrea[®]) is a chemo drug that has helped some patients with CMML live longer. This drug comes as a capsule that's taken by mouth daily. It can bring the numbers of white blood cells and monocytes down to normal. It may also help shrink an enlarged spleen. Because the main effect of hydroxyurea is to lower blood counts, anyone taking this drug will have their blood counts checked regularly. Other side effects are usually mild and easily tolerated. Some patients have stayed on this drug for years without problems.

Hypomethylating agents

These drugs affect the way genes are controlled. Examples of this type of drug include azacytidine (Vidaza[®]) and decitabine (Dacogen[®]). Azacytidine is given as a shot under the skin or into your blood (IV) for 7 days in a row every month. Decitabine is given into your blood (IV), either once every 8 hours for 3 days, or once a day for 5 days. These drugs have been studied best in treating [myelodysplastic syndromes¹](#), where they seem to help stop abnormal cells in the bone marrow from dividing to make new cells. This lets the normal cells grow again, often leading to improved blood counts and less need for transfusions. Fewer patients with CMML have been treated with these drugs in studies, but they had similar benefits in terms of blood counts.

Side effects are usually mild and rarely lead to stopping treatment. Still, these drugs can

have some of the same side effects as regular chemotherapy, including:

- Nausea/vomiting
- Diarrhea
- Fatigue and weakness
- Low blood counts (most often the white blood cells or platelets)

Conventional chemotherapy

For a long time, CMML was grouped with [myelodysplastic syndromes²](#), and so it was treated with the same chemo drugs. Some of the chemo combos that have been used include:

- Cytarabine (ara-C) with idarubicin
- Cytarabine with topotecan
- Cytarabine with fludarabine

Sometimes, topotecan is given by itself.

This type of treatment can help some patients, but it can cause severe side effects, including life-threatening infections or other problems. Using lower doses of chemo drugs is an approach that can help lower the chance of serious side effects. This treatment is generally only used in young and otherwise healthy people with CMML. Most patients with CMML are older and have other health problems. They are less likely to benefit from this intense type of chemo. Still, this may be an option for some people with advanced CMML.

Chemo drugs can cause many [side effects³](#). The side effects depend on the type and dose of the drugs that are given and the how long they are taken. Common side effects include:

- Hair loss
- Mouth sores
- Loss of appetite
- Nausea and vomiting
- Low blood counts

Chemo often slows blood cell production. In CMML, this problem is usually made worse before it gets better. It can lead to:

- Less ability to fight [infection](#)⁴ (low white blood cell counts)
- Easy bruising and bleeding (low platelet counts)
- Fatigue (low red blood cell counts)

When platelet counts get very low, patients may need platelet transfusions to prevent or stop bleeding. Likewise, [fatigue](#)⁵ caused by low red blood cell counts can be treated with red blood cell transfusions.

Most side effects are short-term and will go away over time after treatment ends. Your health care team often can suggest ways to lessen side effects. For example, other drugs can be given along with the chemo to prevent or reduce [nausea and vomiting](#)⁶.

Chemo drugs can also damage organs such as the kidneys, liver, testes, ovaries, brain, heart, and lungs. With careful monitoring, such side effects are rare. If serious side effects do occur, the chemo treatments may have to be reduced or stopped, at least for a short time.

Carefully monitoring and adjusting drug doses are important because some of these side effects can be permanent.

See [Chemotherapy](#)⁷ for more information.

Hyperlinks

1. www.cancer.org/cancer/myelodysplastic-syndrome.html
2. www.cancer.org/cancer/myelodysplastic-syndrome.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
4. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts/infections.html
5. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fatigue.html
6. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/nausea-and-vomiting.html
7. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html

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See all references for Chronic Myelomonocytic Leukemia

(www.cancer.org/cancer/chronic-myelomonocytic-leukemia/references.html)

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Vidaza: Package Insert and Label Information. Celgene Corporation. August 29, 2016.

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Growth Factors for Treating Chronic Myelomonocytic Leukemia

Hematopoietic growth factors are hormone-like substances that stimulate bone marrow to produce blood cells. These substances occur naturally in the body, but scientists have found a way to make them in large amounts. This lets patients get larger doses of these growth factors than their body would make. Growth factor drugs are usually given by subcutaneous (under the skin) injections (shots).

Shortages of blood cells cause many of the symptoms in people with chronic myelomonocytic leukemia (CMML), and growth factors can help keep blood counts at more normal levels.

Erythropoietin (Epo[®] or Procrit[®]) is a growth factor that promotes red blood cell production. It can help some patients avoid getting a lot of red blood cell transfusions. Sometimes erythropoietin is given along with a growth factor for white blood cells (G-CSF, Neupogen[®], or filgrastim) to improve the patient's response to the erythropoietin.

Darbepoetin (Aranesp[®]) is a long-acting form of erythropoietin. It works in the same way but can be given less often.

A drug called oprelvekin (Neumega[®], interleukin-11, or IL-11) can be used to stimulate platelet production. This drug can help increase the platelet counts of some CMML patients for a time, but then the counts go down again. For most people with CMML, this drug is not very helpful.

References

See all references for Chronic Myelomonocytic Leukemia

www.cancer.org/cancer/chronic-myelomonocytic-leukemia/references.html

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Radiation Therapy for Chronic Myelomonocytic Leukemia

Radiation therapy is treatment with high-energy rays or particles to kill cancer cells. The most common form of radiation therapy is external beam radiation therapy. The x-rays are aimed at the cancer from a machine outside the patient's body. The treatment is much like getting an x-ray, but the radiation is more intense. The procedure itself is painless. Before your treatments start, the radiation team will take careful measurements to determine the correct angles for aiming the radiation beams and the proper dose of radiation. Each treatment lasts only a few minutes, but the setup time -- getting you into place for treatment -- usually takes longer.

If someone who has chronic myelomonocytic leukemia (CMML) is having problems from a very enlarged spleen, radiation therapy may be used to shrink it. Shrinking the spleen can improve symptoms like abdominal (belly) pain and trouble eating, but there are some risks. Treating the spleen with radiation can affect the way it works. Since the spleen helps protect against [infections](#)¹, this can increase the risk of severe infections. If you are considering treatment with radiation for an enlarged spleen, you should talk about the risks and benefits with your doctor. You may also need to get

certain vaccines before radiation starts.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/low-blood-counts/infections.html

References

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Merck Manual. *Enlarged Spleen (Splenomegaly)*. Accessed October 6, 2017 at www.merckmanuals.com/home/blood-disorders/spleen-disorders/enlarged-spleen.

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Surgery for Chronic Myelomonocytic Leukemia

Surgery is rarely used to treat chronic myelomonocytic leukemia (CMML). Sometimes, though, surgery to remove the spleen may be an option if the patient is having problems from an enlarged spleen. Like all surgery, this has risks related to anesthesia and wound infection. Also, since the spleen helps protect against infection, removing it can increase the risk of severe infections. If you are considering having your spleen removed, discuss the risks and benefits with your doctor.

General information about surgery in the treatment of cancer can be found in [Cancer Surgery](#)¹.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery.html

References

See all references for Chronic Myelomonocytic Leukemia

www.cancer.org/cancer/chronic-myelomonocytic-leukemia/references.html

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Stem Cell Transplant for Chronic Myelomonocytic Leukemia

Stem cell transplant (SCT) is the only treatment that can cure chronic myelomonocytic leukemia (CMML). In this treatment, the patient gets high-dose chemotherapy often along with radiation to the entire body to kill the cells in the bone marrow (including the abnormal bone marrow cells). Then the patient is given new, healthy blood-forming stem cells. The 2 main types of SCT are: allogeneic and autologous.

In an **autologous stem cell transplant**, after the bone marrow is destroyed, the patient gets back their own stem cells. This type of transplant is not a standard treatment for patients with CMML because their bone marrow has abnormal stem cells.

For an **allogeneic stem cell transplant**, the patient gets blood-forming stem cells from another person -- the donor. The best results are when the donor's cells are closely matched to the patient's cell type and the donor is closely related to the patient, such as a brother or sister. Less often, an unrelated donor is matched to the patient.

Allogeneic stem cell transplant can have serious, even fatal, side effects and so is rarely used in elderly patients. Because of these side effects, some doctors only use this treatment for people younger than a certain age.

A special type of allogeneic transplant, a **non-myeloablative allogeneic stem cell transplant**, may be an option for older patients. This type of transplant is sometimes called a mini-transplant or a mini-allo. In this type, the doses of chemo and/or radiation that are given are lower than those used for a standard allogeneic transplant. These doses are not high enough to kill all the bone marrow cells, but they kill just enough to

allow the donor cells to take hold and grow in the bone marrow. The lower doses of chemo and/or radiation cause fewer side effects, which makes this type of transplant easier for older patients to tolerate. Still, it has some serious side effects.

For now, allogeneic SCT is the only treatment that can cure some patients with CMML, but not all patients who get a transplant are cured. And patients can die from complications of this treatment. Also, many people with CMML are not able to get this treatment.

For more information, see [Stem Cell Transplant for Cancer](#)¹.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/stem-cell-transplant.html

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General Approach to Treatment of

Chronic Myelomonocytic Leukemia

Stem cell transplant (SCT) is the only way to cure patients with chronic myelomonocytic leukemia (CMML). It may be the treatment of choice for younger patients when a matched donor is available. Advances in SCT processes mean this treatment could also be an option for some older patients.

If SCT is not an option, CMML is not curable. In this case, the goal is to relieve symptoms while limiting complications and reducing [side effects](#)¹. **Supportive care**, such as transfusions, blood cell growth factors, and antibiotics to treat infections, is used to treat all patients with CMML so they can live as long as possible.

Many times no treatment is needed for CMML but if it is, either the drug azacytidine (Vidaza) or decitabine (Dacogen) is often the first choice. These drugs may make blood counts drop for a time after treatment is started. Then, if the drug is working, blood counts rise to levels above those seen before treatment was started.

A major benefit for patients receiving azacytidine or decitabine is less need for transfusions and an improved quality of life. If their disease responds, the patients often are less fatigued and are able to function more normally.

Treatment with hydroxyurea can help some patients who have high white blood cell counts. This drug can help lower monocyte counts and decrease the need for transfusions. It can also shrink the spleen to help the patient feel more comfortable.

Conventional **chemotherapy** using drug combinations used to treat [acute myeloid leukemia](#)² can be an option for patients who are younger and otherwise healthy, but it's rarely used.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects.html
2. www.cancer.org/cancer/acute-myeloid-leukemia.html

References

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