

Ewing Sarcoma: Chemotherapy



What is chemotherapy?

Chemotherapy (chemo) uses strong medicines to kill cancer cells. The medicines travel all over your body in your bloodstream. They attack and kill cells that grow quickly, such as cancer cells. Some normal cells also grow quickly. Because of this, chemo can harm those cells. This can cause side effects.

When is chemo used for Ewing sarcoma?

Chemo is a common part of the treatment for Ewing sarcoma. This is because even if it looks like the cancer is only in the bone where it started, cancer cells tend to have already spread to other parts of the body. Chemo goes all over the whole body, so it can kill these cancer cells. Without chemo, the cancer is much more likely to come back.

Your healthcare provider will likely advise chemo in these cases:

- **As the first treatment for Ewing sarcoma, no matter how far it's spread.** Chemo can often shrink the main tumor. This might make surgery or radiation easier. It can also kill any cancer cells that have spread to other parts of the body. After chemo, surgery or radiation are used to remove or destroy the remaining tumor.
- **After surgery or radiation therapy.** Chemo is often used after these treatments to kill any cancer cells that may be left in the body. This decreases the chance that the cancer will come back later.

How is chemo given for Ewing sarcoma?

Before treatment starts, you'll meet with an oncologist. A medical oncologist is a healthcare provider who specializes in treating cancer with medicines, such as chemo. The healthcare provider will talk with you about treatment choices and what you might expect.

Chemo is most often given right into your blood through an IV (intravenous) line. The medicine might be given through a small plastic tube (catheter) that's been put into a vein in your hand or arm. But in most cases, a long-term access device is advised because treatment lasts a long time, and veins in the hands and arms tend to wear out. Your provider can talk with you about this choice. The medicine may drip in slowly over several hours. Or it may be given more quickly over a few minutes.

Chemo is usually given in an outpatient setting. That means that it's given at a hospital infusion center, clinic, or healthcare provider's office. You can go home after the treatment. Less often, you may need to stay in the hospital during treatment. Nurses will give the chemo and watch closely for problems or reactions during treatments. Since each chemo treatment may last for a while, you may want to take along something to do, such as a book, music, or videos.

You get chemotherapy in cycles over a period of time. That means you get the medicine for a set amount of time and then you have a rest period. Each period of treatment and rest is one cycle. Several cycles are given. Having treatment in cycles helps by:

- **Killing more cancer cells.** The medicine can kill more cancer cells over time, because cells aren't all dividing at the same time. Cycles allow the medicine to fight more cells.
- **Giving your body a rest.** Treatment is hard on other cells that divide quickly. This includes cells in the lining of your mouth and stomach. This causes side effects, such as mouth sores and upset stomach. Between cycles, your body can heal and get a rest from the chemo.
- **Giving your mind a rest.** Getting chemo can be stressful. Taking breaks between cycles can let you get an emotional break between treatments.

Most people get 4 to 6 cycles as part of their initial treatment, which usually lasts for several months. After surgery or radiation, chemo is given again. The total length of treatment is about a year. Your healthcare provider will talk about your schedule with you.

What chemo medicines are used to treat Ewing sarcoma?

These are some common chemo medicines used to treat Ewing sarcoma:

- Cyclophosphamide
- Doxorubicin
- Etoposide
- Ifosfamide
- Vincristine

Chemo for Ewing sarcoma is given as a combination of medicines. The most common combo used in the U.S. is vincristine, doxorubicin, and cyclophosphamide, alternating with ifosfamide and etoposide. You may hear this called VDC/IE.

What are common side effects of chemo?

Side effects of chemo are different for everyone. They depend on which medicines and dose are used. Most side effects can be treated and nearly all go away after treatment is over. But some may last longer or be permanent. Ask your healthcare provider what side effects to watch for. Tell them about any side effects right away. It's important to treat them before they get worse.

These are some of the more common side effects of chemo:

- **Hair loss.** Hair grows back after treatment stops.
- **Nausea and vomiting**
- **Mouth sores.** These might make it hard to eat or swallow.
- **Diarrhea**
- **Loss of appetite or changes in the way things taste**
- **Increased risk for infection.** During chemo treatments, your white blood cell count may become low. This means your immune system won't work as well as it should. It's a good idea to stay away from people who have illnesses during this time. It's also a good idea to take extra care to prevent cuts and scrapes that could become infected. Blood counts are regularly checked during treatment. Let the healthcare provider know about any signs of infection, such as fever, sore throat, a new cough, or a burning feeling when you pee.
- **Bleeding and bruising more easily.** Chemo can also lower blood platelet counts. Platelets are needed to help the blood clot normally.
- **Severe tiredness (fatigue).** It's common to feel very tired while getting chemo. This goes away over time once treatment ends.

Some other side effects can happen with certain chemo medicines. For instance:

- Cyclophosphamide and ifosfamide can harm the bladder. This might cause blood in your urine. You may be given extra fluids and medicine to prevent this.
- Vincristine can damage nerves. This may cause tingling and numbness, especially in the hands or feet (peripheral neuropathy). It can also cause constipation by affecting the nerves that play a role in bowel function.

- Doxorubicin might damage muscles in the heart. Your healthcare team will keep track of your heart function closely before and during treatment.
- Some chemo medicines might affect fertility or the ability to have children later in life. Talk with your healthcare team about your fertility concerns before starting treatment.
- Some medicines can raise the risk for another cancer, such as leukemia, in the future.

Working with your healthcare provider

It's important to know which medicines you're taking. Write down the names of your medicines. Ask the healthcare team how they work and what side effects they might cause.

Talk with your healthcare providers about what symptoms to watch for and when to call them. For instance, chemo can make you more likely to get infections. You may be told to check your temperature and stay away from people who are sick. You may need to call if you have a fever or chills. Know what number to call with questions. Is there a different number for evenings, holidays, and weekends?

It may be helpful to keep a diary of your side effects. A written list will make it easier to remember your questions when you go to appointments. It will also make it easier for you to work with your healthcare team to make a plan to manage side effects.

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