



## Ifosfamide (Ifex®)

**Pronounce:** eye-FOSS-fa-mide

**Classification:** Alkylating Agent

### About Ifosfamide (Ifex®)

Ifosfamide exerts its anti-cancer affect by a process called alkylation. Alkylation damages the DNA of cells, which prevents them from dividing and causes them to die. Since cancer cells, in general, divide faster and with less error correcting than healthy cells, cancer cells are more sensitive to this damage.

### How to Take Ifosfamide

Ifosfamide is given by intravenous (into a vein) infusion. The dosage and schedule are determined by the person's size and type of cancer. It can be given alone or with other drugs.

The blood levels of this medication can be affected by certain foods and medications, so they should be avoided. These include grapefruit, grapefruit juice, verapamil, ketoconazole, rifampin, phenytoin, St. John's wort, and fluconazole. Be sure to tell your healthcare provider about all medications and supplements you take.

### Possible Side Effects of Ifosfamide

There are a number of things you can do to manage the side effects of ifosfamide. Talk to your care team about these recommendations. They can help you decide what will work best for you. These are some of the most common or important side effects:

#### Low White Blood Cell Count (Leukopenia or Neutropenia)

White blood cells (WBC) are important for fighting infection. While receiving treatment, your [WBC count can drop](#), putting you at a higher risk of getting an infection. You should let your doctor or nurse know right away if you have a fever (temperature greater than 100.4°F / 38°C), sore throat or cold, shortness of breath, cough, burning with urination, or a sore that doesn't heal.

#### Tips to preventing infection:

- [Washing hands](#), both yours and your visitors, is the best way to prevent the spread of infection.
- Avoid large crowds and people who are sick (i.e.: those who have a cold, fever, or cough or live with someone with these symptoms).
- When working in your yard, wear protective clothing including long pants and gloves.
- Do not handle pet waste.
- Keep all cuts or scratches clean.
- Shower or bathe daily and perform frequent [mouth care](#).
- Do not cut cuticles or ingrown nails. You may wear nail polish, but not fake nails.
- Ask your oncology care team before scheduling dental appointments or procedures.

- Ask your oncology care team before you, or someone you live with has any vaccinations.

## Low Red Blood Cell Count (Anemia)

Your red blood cells are responsible for carrying oxygen to the tissues in your body. When the [red cell count is low](#), you may feel tired or weak. You should let your oncology care team know if you experience any shortness of breath, difficulty breathing, or pain in your chest. If the count gets too low, you may receive a blood transfusion.

## Low Platelet Count (Thrombocytopenia)

Platelets help your blood clot, so when the [count is low](#) you are at a higher risk of bleeding. Let your oncology care team know if you have any excess bruising or bleeding, including nose bleeds, bleeding gums, or blood in your urine or stool. If the platelet count becomes too low, you may receive a transfusion of platelets.

- Do not use a razor (an electric razor is fine).
- Avoid contact sports and activities that can result in injury or bleeding.
- Do not take aspirin (salicylic acid), non-steroidal, anti-inflammatory medications (NSAIDs) such as Motrin/Advil (ibuprofen), Aleve (naproxen), Celebrex (celecoxib), etc. as these can all increase the risk of bleeding. Please consult with your healthcare team regarding the use of these agents and all over-the-counter medications/supplements while on therapy.
- Do not floss or use toothpicks and use a soft-bristle toothbrush to brush your teeth.

## Nervous System Toxicity

In rare cases, ifosfamide can be toxic to the nervous system. Symptoms of this can include mild confusion, drowsiness, difficulty walking, blurry vision, hallucinations, personality changes, seizure, and coma. Toxicity can develop immediately after treatment up to several days later. Your caregiver should be aware of this rare side effect and know to report any changes in your behavior to your healthcare team right away.

## Effect on Kidneys and Bladder

Ifosfamide can damage the kidneys. It can irritate or cause damage to the lining of the bladder, causing you to have blood in your urine. Intravenous fluids will be given with your treatment to flush the kidneys and bladder. A medication called Mesna will be given to protect the bladder lining. Your care team will monitor your kidney function with blood tests. Drink 6-8 glasses of fluid a day and try to urinate every 2-3 hours. Call your doctor or nurse if you have difficulty urinating or have blood in your urine.

## Nausea and/or Vomiting

Talk to your oncology care team so they can prescribe medications to help you manage [nausea and vomiting](#). In addition, dietary changes may help. Avoid things that may worsen the symptoms, such as heavy or greasy/fatty, spicy, or acidic foods (lemons, tomatoes, oranges). Try saltines, or ginger ale to lessen symptoms.

Call your oncology care team if you are unable to keep fluids down for more than 12 hours or if you feel lightheaded or dizzy at any time.

## Loss or Thinning of Scalp and Body Hair (Alopecia)

Your hair may become [thin, brittle, or may fall out](#). This typically begins two to three weeks after treatment starts. This hair loss can be all body hair, including pubic, underarm, legs/arms, eyelashes, and nose hairs. The use of scarves, wigs, hats, and hairpieces may help. Hair generally starts to regrow soon after treatment is completed. Remember your hair helps keep you warm in cold weather, so a hat is particularly important in cold weather or to protect you from the sun.

## Important but Less Common Side Effects

- **Secondary Cancers:** A secondary cancer is one that develops as a result of cancer treatment for another cancer. This is quite rare, but you should be aware of the risk. In most cases, a secondary cancer related to chemotherapy is a blood cancer (leukemia, lymphoma). This can occur years after treatment. This is most often associated with repeated treatments or high doses. Your provider will monitor your labs closely. Consider having a complete blood count with differential checked annually by your healthcare provider if you received high-risk therapies.
- **Lung Changes:** This medication may cause pulmonary fibrosis (scarring and stiffening of the lung tissue) or interstitial pneumonitis. These problems can develop months to years after treatment is completed and may be more common in people with pre-existing lung conditions. You may have breathing tests (pulmonary function tests) performed periodically. Call your physician right away if you have shortness of breath, cough, wheezing, or difficulty breathing.
- **Heart Problems:** Ifosfamide can cause or worsen pre-existing heart problems including congestive heart failure, arrhythmias, ST-segment and t-wave changes, pericardial effusion, pericarditis, decreased heart function, and heart attack. Notify your healthcare provider if you have sudden weight gain or swelling in the ankles or legs. If you develop chest pain or pressure, pain in the left arm, back, or jaw, sweating, shortness of breath, clammy skin, nausea, dizziness, or lightheadedness, call 911 or go to the nearest emergency room.
- **Liver Problems:** This medication can cause liver toxicity, which your oncology care team may monitor using blood tests called liver function tests. Notify your healthcare provider if you notice yellowing of the skin or eyes, your urine appears dark or brown, or you have pain in your abdomen, as these can be signs of liver toxicity. This medication, and when used in combination with other medications, may also potentially cause a serious side effect called veno-occlusive disease, also known as hepatic sinusoidal obstruction syndrome. This is caused by blockage of the blood flow through the small veins of the liver. Symptoms that should immediately be reported to your care team include yellowing of the skin or eyes, an enlarged liver which can lead to discomfort in the upper abdomen, weight gain, and fluid accumulation in the belly. The chance of having this side effect is higher if you are planning to receive a stem cell transplant after receiving this medication.
- **Allergic Reactions:** In some cases, patients can have an allergic reaction to this medication. Signs of a reaction can include shortness of breath or difficulty breathing, chest pain, rash, flushing or itching or a decrease in blood pressure. If you notice any changes in how you feel during the infusion, let your nurse know immediately.

## Sexual & Reproductive Concerns

This drug may affect your reproductive system, resulting in the menstrual cycle or sperm production becoming irregular or stopping permanently. Women may experience menopausal effects including hot flashes and [vaginal dryness](#). In addition, the desire for sex may decrease during treatment.

Exposure of an unborn child to this medication could cause birth defects, so you should not become pregnant or father a child while on this medication. Effective birth control is necessary during treatment and for a 6 month period after treatment, even if your menstrual cycle stops or you believe you are not producing sperm. You may want to consider sperm banking or egg harvesting if you may wish to have a child in the future. Discuss these options with your oncology team. You should not breastfeed while taking this medication.

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