



KEEP ALL MEDICINE OUT OF THE SIGHT AND REACH OF CHILDREN

ICE

What is ICE?

ICE is the name of a combination of chemotherapy drugs used to treat non Hodgkin's lymphoma that has come back after treatment. It is made up of the drugs

- I = Ifosfamide
- C = Carboplatin
- E = Etoposide (also known as Vepesid, Etopophos or Eposin)

The side effects of a combination of drugs are usually a mixture of those of each drug. The combination may increase or decrease your chance of getting each side effect or it may change the severity.

How you have treatment

- You have ICE drugs into your bloodstream (intravenously).
- You usually have ifosfamide with another drug called mesna, either as a drip (infusion) or as tablets. If you have the tablets you must take them exactly as your doctor prescribes. Mesna is not a chemotherapy drug. It stops the ifosfamide from irritating your bladder and making the lining bleed. You usually also have a drug called GCSF (growth colony stimulating factor) to make your bone marrow produce white blood cells more quickly after the chemotherapy.
- You usually have ICE chemotherapy as cycles of treatment. You may have between 2 and 4 cycles. Each cycle lasts 3 weeks so the whole course of chemotherapy may last from 6 to 12 weeks.
- You can have ICE chemotherapy in a number of ways. Two common ways are described below as schedule A and schedule B. Your doctor or nurse will explain to you exactly how you will have treatment.
- Schedule A
 - On the first day you have a carboplatin drip (infusion) for 1 hour, an etoposide drip for 1 hour and then an ifosfamide drip for 6 hours.
 - On the second day you have an ifosfamide drip for 18 hours. Then you have an etoposide drip for 1 hour and a mesna drip for 6 hours. You usually need to stay in hospital overnight.
 - Then you have no treatment for 18 days before starting your next treatment cycle.
- Schedule B
 - On the first day you have an etoposide drip for 1 hour.
 - On the second day you have an etoposide drip for 1 hour and a carboplatin drip for 1 hour. You then start a 24 hour drip of ifosfamide and mesna and may need to stay in hospital overnight.
 - On the third day you finish the ifosfamide and mesna drip and have an etoposide drip for 1 hour. You then start a 12 hour drip of mesna or your doctor may give you mesna tablets to take.
 - Then you have no treatment for 18 days before starting your next treatment cycle.



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Common side effects

More than 10 in every 100 people have one or more of the side effects listed below.

- A temporary drop in the number of blood cells made by the bone marrow, causing
- An increased risk of getting an infection from a drop in white blood cells – it is harder to fight infections and you can become very ill. You may have headaches, aching muscles, a cough, sore throat, pain passing urine or feel cold and shivery
- Tiredness and breathlessness due to a drop in red blood cells (anaemia) – you may need a blood transfusion
- Bruising more easily due to a drop in platelets – you may have nosebleeds, bleeding gums after brushing your teeth, or lots of tiny red spots or bruises on your arms or legs (known as petechia)
- Some of these side effects can be life threatening, particularly infections. You should contact your doctor or specialist nurse if you have any of these effects. Your doctor will check your blood counts regularly to see how well your bone marrow is working.
- **Contact your treatment center straight away if you have any of these effects or if your temperature goes above 38°C**
- Tiredness (fatigue) during and after treatment – most people find their energy levels are back to normal within 6 months to a year
- Numbness or tingling in fingers and toes occurs in 1 in 4 people (25%) and can cause difficulty doing small things such as doing up buttons – it starts a few days or weeks after treatment and usually goes within a few months of finishing treatment
- Feeling or being sick is usually well controlled with anti sickness medicines
- Hair loss – most people have complete hair loss but it will grow back when the treatment ends
- Irritation of the lining of the bladder and kidneys – drink plenty of water to flush out the chemotherapy. You may have fluids into your drip before and after your treatment. Tell your doctor or nurse if you have bleeding or pain when passing urine
- Kidney damage due to carboplatin – you will have blood tests before your treatment to make sure your kidneys are able to cope with the drug
- Loss of appetite
- A metallic taste when having the drugs through a drip, or loss of taste
- Confusion, sleepiness or extreme lack of energy (lethargy) and hallucinations happen in about 1 in 8 people (12%) who have ifosfamide – if you have any of these effects, it is important to tell your doctor or nurse straight away
- A drop in blood pressure can happen if etoposide is given quickly – if you feel dizzy or faint, call your nurse straight away to slow down the drip
- Women may stop having periods (amenorrhoea) – this may be temporary
- Loss of fertility – we don't know exactly how this drug affects fertility so do talk with your doctor before starting treatment if you plan to have a baby in the future



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Occasional side effects

Between 1 and 10 in every 100 people have one or more of these.

- Your ability to hear some high pitched sounds may be reduced by carboplatin – this usually gets better on its own after treatment
- Ringing in their ears (tinnitus) affects about 1 in 100 people treated with carboplatin (1%)
- Inflammation around the drip site – if you notice any signs of redness, swelling or leaking at your drip site, tell your chemotherapy nurse immediately
- Reddening of the skin in areas where you have had radiotherapy in the past – the skin may also get dry and flaky and feel sore and hot. This goes away on its own but keep affected areas out of the sun
- Liver changes that are very mild and unlikely to cause symptoms can occur with – the liver will almost certainly go back to normal when treatment finishes, but you will have regular blood tests to check how well your liver is working
- A skin rash
- A sore mouth
- Diarrhoea or constipation
- An allergic reaction with chills, fever, wheezing, a fast heart rate, drop in blood pressure and swelling of the face happens in 1 or 2 out of every 100 people (1 to 2%) who have etoposide or carboplatin

Rare side effects

- There is a small risk that you may get a second cancer some years after ICE treatment. If this does happen, it most often occurs 5 to 8 years afterwards.

Important points to remember

You may have a few of the side effects mentioned above. A side effect may get worse through your course of treatment. Or you may have more side effects as the course goes on. This depends on

- How many times you've had a drug before
- Your general health
- How much of the drug you have (the dose)
- Other drugs you are having

Coping with side effects

Talk to your doctor, pharmacist or nurse about all your side effects so that they can help you manage them. They can give you advice or reassure you. Your nurse will give you a contact number to ring if you have any questions or problems. If in doubt, call them.

Other medicines

Tell your doctor about any other medicines you are taking, including vitamins, herbal supplements, and over the counter remedies – some drugs can react together.



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Pregnancy and contraception

These drugs may have a harmful effect on a developing baby and it is not advisable to become pregnant or father a child if you are having this treatment. Talk about contraception with your doctor or nurse before treatment starts.

Breastfeeding

Breastfeeding is not advisable during this treatment because the drug may come through in the breast milk.

Medical and dental treatment

If you need to go into hospital for any reason other than cancer, always tell the doctors and nurses that you are having chemotherapy. Give them contact details for your cancer doctor.

Talk to your cancer doctor or nurse if you think you need dental treatment. Always tell your dentist you are having chemotherapy.

Immunisations and chemotherapy

- You should not have immunisations with live vaccines while you are having chemotherapy or for at least 6 months afterwards. These include rubella, mumps, measles (usually given together as MMR), BCG, yellow fever and Zostavax (shingles vaccine).
- You can have other vaccines, but they may not give you as much protection as usual until your immune system has fully recovered from your chemotherapy. It is safe to have the flu vaccine.
- It is safe for you to be in contact with other people who've had live vaccines as injections. There can be problems with vaccines you take by mouth (oral vaccines), but not many people these days. So there is usually no problem in being with any baby or child who has recently had any vaccination. You might need to make sure that you aren't in contact with anyone who has had oral polio, cholera or typhoid vaccination recently, particularly if you live abroad.