



KEEP ALL MEDICINE OUT OF THE SIGHT AND REACH OF CHILDREN

BEAM

What is BEAM?

BEAM is the name of a combination of chemotherapy drugs used to treat Hodgkin lymphoma and non Hodgkin lymphoma. It is made up of the drugs

B = Carmustine (BiCNU)

E = Etoposide

A = Cytarabine (Ara-C, cytosine arabinoside)

M = Melphalan

How you have BEAM

You have BEAM drugs into your bloodstream (intravenously). You have them through a central line, a portacath or a J - line. These are long, plastic tubes that give the drugs directly into a large vein in your chest. You have the tube put in just before your course of treatment starts and it stays in place as long as you need it.

You have BEAM in the following way

- On the first day of treatment you have carmustine as a drip, usually over 2 hours
- On the second day and the next 3 days you have cytarabine as a drip twice a day over 30 minutes. And you have etoposide as a drip once a day over two hours. Some hospitals give the cytarabine as a single dose
- On the 6th day you have melphalan as a drip over 15 to 30 minutes and you also have a drip to give you extra fluids
- At least 24 hours after the melphalan you have your stem cells
- You may hear your doctors name the days slightly differently. So that the first day of treatment is called minus 7 and they count down to the day you have the stem cells on Day 0. You usually stay in hospital during the 7 days of treatment and for 2 to 3 weeks afterwards.
- During the treatment you will be able to move around the ward even when the drip is going through. You also have fluids (hydration) alongside the chemotherapy. This is because BEAM can cause kidney damage and the extra fluids help to keep your kidneys working properly.
- There is a chemotherapy combination called mini BEAM, which uses the same drugs at lower doses. And one called DEXA BEAM, which is mini Beam with the steroid dexamethasone. You have both of these combinations as cycles of treatment. How many cycles you have depends on how well it works. The treatment is repeated every 4 to 6 weeks.
- 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. The side effects associated with BEAM are listed below. You can use the underlined links to find out more about each one. For general information, see our side effects of cancer drugs section.



KEEP ALL MEDICINE OUT OF THE SIGHT AND REACH OF CHILDREN

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. This may cause
- 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. You will need antibiotics, anti fungal drugs and anti viral drugs, and may also have injections of GCSF to increase the number of white blood cells
- 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). You may need to have platelets in a drip. It usually takes about 3 to 4 weeks for the number of platelets to get to a safe level again
- **Some of these side effects can be life threatening, particularly infections. You should tell your treatment centre if you have any of these effects.**
- **Contact your treatment center straight away if you have any of these effects or if your temperature goes above 38°C**
- Your doctor will check your blood counts daily to see how well your bone marrow is working.
- A sore mouth – some people will also have mouth ulcers. 3 out of 4 people (75%) have very sore mouths and need to have painkillers. You will have mouthwashes to help to keep your mouth clean. You may also need to have a drip to feed you (total parenteral nutrition or TPN)
- Feeling or being sick happens in many people, but you will have anti sickness drugs regularly – if they aren't working tell your doctor or nurse
- Diarrhoea affects 8 out of 10 people (80%) – drink plenty of fluids if you can and tell your doctor or nurse so that they can give you drugs to help control it
- Stomach pain
- Tiredness (fatigue) affects most people during and after treatment – most people find their energy levels are back to normal within 6 months to a year
- Hair loss – most people have complete hair loss but the hair grows back once the treatment ends
- Taste changes
- Some people develop soreness, redness and peeling on the palms of the hands and soles of the feet (plantar-palmer syndrome) which may cause tingling, numbness, pain and dryness
- Loss of appetite
- Lung problems – a cough or breathlessness can happen in up to 1 in 3 people (30%) due to inflammation of the lungs. Tell your doctor if you have this effect
- Women may stop having periods (amenorrhoea) but this may be temporary



KEEP ALL MEDICINE OUT OF THE SIGHT AND REACH OF CHILDREN

- Loss of fertility – you may not be able to get pregnant or father a child after treatment with this drug, so do talk with your doctor before starting treatment if you would like to have a baby in the future

Occasional side effects

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

- High uric acid levels in your blood due to cancer cells being broken down by the body – you will have regular blood tests and will be asked to drink plenty of fluids to flush out the uric acid. Your doctors may also give you a drug called allopurinol
- Kidney changes that are mild and unlikely to cause symptoms may occur – they will almost certainly go back to normal when treatment is finished, but you will have regular blood tests to check how well your kidneys are working
- Some people have an allergic reaction while having treatment, usually at the first or second treatment – let your treatment team know immediately if you have any skin rashes, itching, feeling hot, shivering, going red in the face, feeling dizzy, a headache, shortness of breath, anxiety or a sudden need to pass urine

Rare side effects

Fewer than 1 in 100 people have these.

- Liver changes that are very mild and unlikely to cause symptoms – the liver will almost certainly go back to normal when treatment is finished, but you will have regular blood tests to check how well your liver is working
- There is a small risk that you may get a second cancer some years after treatment

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 they can help you manage them. They can give you advice or reassure you. Your nurse will give you a contact number to call if you have any questions or worries. 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.



KEEP ALL MEDICINE OUT OF THE SIGHT AND REACH OF CHILDREN

Pregnancy and contraception

BEAM drugs may have a harmful effect on a developing baby. Talk to your doctor or nurse about contraception before starting treatment if there is any chance that you or your partner could become pregnant.

Breastfeeding

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

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 have these now.
- 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.