MEDICINE INFORMATION

BEAM transplant conditioning

Patient information about BEAM before an autologous stem cell transplant, including mouth care, infection precautions and the return of your own cells.

At a glance

Treatment	Carmustine + Etoposide + Cytarabine + Melphalan
When it may be used	BEAM is used before some autologous transplants for lymphoma.
How it is given	Carmustine, etoposide, cytarabine and melphalan are given through a vein before your stem cells are returned.
Before you start	Ask for the transplant calendar and what to bring for admission.

What this treatment is and how it works

BEAM combines carmustine, etoposide, cytarabine and melphalan. Conditioning is treatment given before a transplant. It can kill lymphoma cells and also leaves the bone marrow unable to make enough blood cells for a time.

When it may be used

Autologous means the stem cells collected before treatment are your own.

Before treatment

Tell the team about breathing problems, infections, previous treatment or recent dental problems.

How treatment is given

Chemotherapy is given over several days. Your collected stem cells are returned through a vein on transplant day, often called day zero. Ask which medicines you will receive to prevent infection or nausea.

Tests and monitoring during treatment

The team checks blood counts, temperature, kidney and liver function and how much you can eat and drink. Blood products or antibiotics may be needed while the marrow recovers.

If you need a blood transfusion

You need irradiated blood components around the time of your own stem cell transplant. If you need red cells or platelets, tell the transfusion team about your treatment so they can arrange irradiated components. These are specially treated before transfusion to prevent a rare, serious reaction. Ask how long the precaution applies and whether you should carry a transfusion alert card or letter.

Side effects

Common or more frequent side effects

- **Very low blood counts.** There is a period after conditioning when the marrow makes few new blood cells. During this time the team watches for infection and bleeding and may give transfusions. Ask which blood counts the team is watching before discharge. Use the transplant unit's contact instructions even if your temperature is normal and you feel suddenly unwell.
- **Sore mouth or throat.** The lining of the mouth and throat can become sore enough to make drinking or swallowing medicine uncomfortable. Tell the ward early so it can offer pain relief and assess your intake. Your team may also use fluids or nutrition support for a period while the lining heals.
- **Taste and appetite changes.** Your favourite foods may taste different. Try smaller meals that suit you and ask the team for nutrition support if you are losing weight or avoiding most foods. Call if you cannot keep liquids down, you are taking much less than usual, or your urine becomes very scant.

Other reported side effects

Tell staff if swallowing is painful or you are drinking less. New cough or breathlessness should be checked during recovery, including after discharge.

Serious effects to recognise

- **Lung symptoms after carmustine.** Lung injury from carmustine can occur after the transplant and can sometimes appear months or years later. Report a dry cough that persists, worsening breathlessness or changes in exercise tolerance to your transplant follow-up team.

Infection and bleeding can become serious while your blood counts are low.

When to seek urgent help

Tell ward staff or call your transplant team urgently for fever, chills, bleeding, reduced urine, ongoing diarrhoea or new breathing symptoms. Follow your hospital's written temperature instructions. If you have no written threshold, call at 37.5°C (99.5°F) or above, or below 36°C (96.8°F). Call if you feel very unwell even when your temperature is normal.

Seek emergency care for severe breathing difficulty, swelling of the face or throat, chest pain, collapse or bleeding that will not stop.

Practical advice for this treatment

Plan for the days when blood counts are low

Before BEAM, stem cells are collected and stored. After the chemotherapy, your own cells are returned through a drip. The team will monitor you while the marrow starts making new cells and may give transfusions, infection prevention medicine or a white-cell growth factor. Ask which symptoms mean you need to contact the ward between visits.

Look after your mouth and fluid intake

High-dose chemotherapy can make your mouth and throat sore. Ask the unit for mouth-care instructions. If melphalan cooling is offered, ask how to use ice chips safely. Tell the team if swallowing becomes painful or you cannot drink comfortably. Let it know if diarrhoea or vomiting is affecting your fluid intake.

Report a cough even after you go home

Carmustine can affect the lungs, sometimes months or years later. Tell your follow-up team about a persistent dry cough, new breathlessness or reduced exercise tolerance. Other causes are also possible, including infection, so reporting changes promptly matters.

Medicines, interactions and vaccinations

Tell the team about all medicines, including products used at home. Ask about preventing infection and follow the transplant vaccination plan.

Everyday life

Ask which mouth care and food instructions the transplant unit uses. Share the emergency number with your caregiver and ask how to prepare for going home.

Pregnancy, fertility and breastfeeding

Discuss fertility before conditioning. Ask when contraception or breastfeeding precautions can end after transplant.

After treatment

The team follows the return of blood counts, called engraftment, and checks your recovery from lymphoma and transplant. Ask who will coordinate vaccines and follow-up.

Frequently asked questions

Are the stem cells my own?

Yes, for an autologous transplant. They are collected and stored before conditioning.

What does day zero mean?

It is the day your stem cells are returned.

How can I prepare for mouth soreness?

Ask for a mouth care plan before treatment and report pain early.

When do blood counts start to rise?

Recovery varies. The transplant team checks counts and will tell you what they are seeing.

Should I report a cough after leaving hospital?

Yes. Call your transplant team for a new cough or breathlessness. Lung problems related to carmustine can emerge months or years later, and an infection or another cause also needs assessment. Tell clinicians you received BEAM.

Do I need new vaccinations?

The team will advise when to restart vaccination after transplant.

Individual medicine guides

- Carmustine
- Etoposide
- Cytarabine
- Melphalan

Sources and further reading

Read this guide alongside your hospital's plan. Ask your pharmacist to confirm the exact product dispensed in India and follow the instructions for that product.

Summary of Product Characteristics (SmPC) and prescribing information

- Carmustine infusion - UK SmPC
- Etoposide infusion - Irish HPRA SmPC
- Cytarabine injection for systemic use - UK SmPC
- Melphalan injection - UK SmPC
- Intravenous etoposide - US prescribing information

Clinical protocols and other references

- eviQ BEAM conditioning protocol
- eviQ BEAM conditioning before an autologous transplant
- British Society for Haematology guideline on irradiated blood components
- Canadian National Advisory Committee recommendations on irradiated blood components

Additional sources

- eviQ BEAM patient information

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