Stem cell transplants

A stem cell transplant is an intensive type of treatment that replaces damaged or destroyed blood-forming cells with healthy ones. Find out who might need one and what it involves.

Summary

- A stem cell transplant is a type of treatment that replaces damaged or destroyed blood-forming cells with healthy ones.
- A stem cell transplant is very intensive. It can have serious side effects. You'll have tests to check it's suitable for you and that you're fit enough to have one.
- Stem cell transplants involve a few steps:
    - **Collecting the stem cells**. These might come from you or from a matched donor, depending on the type of transplant you are having.
    - **Conditioning therapy**. This gets your body ready for the stem cells. It involves chemotherapy, radiotherapy, or both.
    - **Having the stem cells**. This is a quick process, a bit like a blood transfusion.
    - **Waiting for your bone marrow to recover**. During this time, your blood counts might get very low.
- Stem cell transplants can cause unpleasant or serious side effects or long-term complications.
- Most people who have a stem cell transplant stay in hospital for several weeks. It takes many months to recover.

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What is a stem cell transplant?

A stem cell transplant is an intensive type of treatment that replaces damaged or destroyed blood-forming cells with healthy ones.

You might need one if:

- Your own stem cells are unhealthy or not working properly
- Your own stem cells are healthy, but the treatment you need for your cancer will destroy them

About stem cells

Stem cells are blood-forming cells that mainly live in your bone marrow. They make all the blood cells your body needs. This includes:


Red blood cells, which carry oxygen around your body


White blood cells, which fight infections


Platelets, which help your blood clot

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Who might have a stem cell transplant?

A stem cell transplant might be an option for some people with:

- Acute leukaemias such as acute myeloid leukaemia, acute promyelocytic leukaemia and acute lymphoblastic leukaemia
- Myelodysplastic syndromes
- Myeloproliferative neoplasms such as myelofibrosis
- Mixed myelodysplastic-myeloproliferative neoplasms
- Other blood or immune system disorders

Stem cell transplants are rarely used to treat people with chronic myeloid leukaemia or chronic lymphocytic leukaemia.

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Types of stem cell transplant

There are two main types of stem cell transplant:

- Allogeneic stem cell transplants use stem cells from a donor.
- Autologous stem cell transplants use your own healthy stem cells.

Almost all stem cell transplants for people with leukaemia, MDS or MPNs use stem cells from a donor.

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Before a stem cell transplant

Having a stem cell transplant is a big decision. If it's an option for you, your transplant team will explain the benefits and the risks of having one. They'll give you the chance to ask questions so you can decide if it's the right choice for you. You might also want to discuss it with people close to you. But the final decision is yours. Nobody else can, or should, make it for you.

If you decide to have a stem cell transplant, you'll be looked after by a team of health professionals at a specialist hospital.

Your key contact is usually your transplant coordinator or transplant clinical nurse specialist. They will explain what you can expect before, during and after your transplant.

You'll have tests to check that a stem cell transplant is suitable for you and that you're fit enough to have one. These might include:

- Blood tests
- A bone marrow test
- A chest X-ray
- Breathing tests
- A heart tracing and heart scan
- Dental checks
- A pregnancy test



Your transplant team will also fit a central line. This makes it easier to give you medicines into your veins and take blood tests.

Finding a donor

For donor stem cell transplants, your team will search for a donor with a tissue type that matches yours. This might be a brother or sister, or occasionally another close family member. Or it might be an unrelated donor.

Anthony Nolan have more information about finding a donor.

Fertility options

Some treatments you have as part of a stem cell transplant can affect your fertility. Your team will explain this. If you might want children in the future, they will talk to you about your options. This could include freezing eggs, sperm or embryos. But this may not be possible for everyone. Your transplant team may refer you to a fertility specialist.

The Human Fertilisation and Embryo Authority (HFEA) has more information about fertility preservation for people with cancer.

Cancer, Fertility and Me helps people with cancer make decisions about fertility preservation.

Planning ahead

Most people who have a stem cell transplant stay in hospital for several weeks. It takes many months to recover. If you usually work, talk to your employer about having time off. You may be entitled to benefits if you are unable to work.

Depending on your circumstances, you may need to arrange for people to help:

- Look after your children
- Look after your pets
- Water your plants
- Mow your lawn
- Collect your post
- Keep an eye on your home
- Run your car for a few minutes each week

- Take you to or from appointments
- Support you at home during your recovery

If you usually work, talk to your employer about having time off. You may be entitled to benefits if you are unable to work. Our Advocacy and Welfare Team can help you find support.

Money, work and your rights →
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Having a stem cell transplant

Stem cell transplants involve a few steps.

Collecting the stem cells

The stem cells either come from you or from a donor, depending on the type of transplant you're having. They are usually collected from the bloodstream, but sometimes they might be collected from the bone marrow.

- You or your donor have injections for a few days to boost stem cell production and encourage the cells to move into your bloodstream.
- The stem cells are then collected using a cell separator machine. This takes a few hours.
- The cells can be used straight away or frozen to be used later.

Conditioning therapy

Conditioning therapy gets your body ready for the stem cells. It usually takes a few days. It has three main aims:

- It helps get rid of any cancer cells that are left in your body
- It makes space in your bone marrow for the new stem cells
- In the case of a donor transplant, it aims to kill immune cells that could reject the donor cells

It usually involves chemotherapy, radiotherapy to your whole body, or both. Your transplant team will tell you what they recommend for you. Most people need to stay in hospital to have it.

Having the stem cells

Leukaemia Care Registered Charity Number 1183890. Scotland Registered Charity Number SC049802
Helpline: 08088 010 444

This is a quick process, similar to having a blood transfusion. It can feel like an anticlimax.

You have paracetamol and antihistamines first to reduce the chance of having a reaction to the cells. A nurse monitors you closely while you have the cells and for a few hours afterwards.



Waiting for your bone marrow to recover

After having the stem cells, it takes a few weeks for them to settle into your bone marrow. They can then start making new blood cells. During this time, your blood counts might get very low. You'll have transfusions to top up your red blood cells and platelets.

Your immune system will be very low. You'll probably stay in a room on your own to lower your risk of infections.

Tell your transplant team straight away if you feel unwell, especially if you have chills or feel feverish.

Being on your own for a lot of the time can be difficult, especially when you are feeling unwell. Anthony Nolan have information about preparing for, and coping with, isolation.

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Side effects or complications of stem cell transplants

The conditioning therapy you have as part of a stem cell transplant can cause unpleasant or serious side effects. These include:

- Sore mouth and throat
- Feeling sick or being sick
- Diarrhoea
- Changes in taste or appetite
- Hair loss
- Bladder irritation
- Liver problems
- Inflammation in your airways

> **There are lots of things your transplant team can do to help. Tell them straight away if you have any side effects so they can start treatment promptly.**

Graft versus host disease

If you have a stem cell transplant using donor cells, you might get a complication called graft versus host disease, or GvHD. This is when your new immune system mistakenly attacks healthy cells. You have medicines to try to prevent it, but it can still happen.

GvHD can be:

- Acute, which happens within around 3 months of your transplant

- Chronic, which starts between 3 months and 2 years after your transplant

GvHD can cause many different symptoms. Your transplant team will monitor you for any signs. If it develops, you might need steroids, medicines to lower your immune system, or other treatments.

Anthony Nolan have more information about graft versus host disease.

Graft failure

Rarely, donor stem cells do not start making new blood cells. If this happens, your transplant team will explain your options.

Anthony Nolan have more information about graft failure.

Long-term complications

Having a stem cell transplant can help treat leukaemia, MDS and MPNs. But it can also lead to other health problems months or years later. You'll have follow-up appointments to check for these. They include:

- Your leukaemia, MDS or MPN coming back
- Getting a different cancer
- Hormone changes
- Early menopause
- Eye problems
- Damage to other organs in your body
- Emotional or mental health problems

Your transplant team will tell you what symptoms to look out for and what to do if you notice them.

Anthony Nolan have more information about possible long-term effects of a stem cell transplant.

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After a stem cell transplant

You'll go home once your white blood cell count is high enough and you are feeling well enough. Going home after a stem cell transplant can be worrying, but your transplant team are still there to support you.

You'll probably feel very tired at first. It will take time for your energy levels to improve. Try not to expect too much of yourself at first. Build up your activity levels slowly and rest when you need to.

You'll have lots of medicines to take at home. You'll probably still need blood transfusions too.

Infections

You will still have a high risk of infections when you go home. However careful you are, you are likely to get some infections. You may need to go back into hospital for a time for treatment.

> **Contact your transplant team straight away if you have any signs of infection.**

Going back to work or study

If you work or study, you could start planning to go back once your white blood cell count has recovered and you're feeling well enough. You may want to have a phased return and gradually build up your hours.

Anthony Nolan have lots of resources to help during your recovery including a transplant tracker app.

Follow-up

You'll have regular follow-up appointments and blood tests. These check how you're getting on, look for signs of any complications and check if your cancer is still under control.

Vaccinations

Having a stem cell transplant means you lose your protection against illnesses you were vaccinated against in the past. When your immune system has recovered, you should be invited to have all your vaccinations again.

- It is safe to have non-live vaccines.
- You should not have live vaccines for at least 2 years after having a stem cell transplant.

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Need support?

You are not alone. We're here for you whether you have a diagnosis yourself or know someone who has. If you'd like advice, support, or a listening ear, call our freephone helpline on 08088 010 444 or send a WhatsApp message to 07500 068 065.

Helpline and WhatsApp →

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