

---

## Matched related donors undergoing peripheral blood stem cell collection

Peripheral blood stem cell collection is a safe procedure that will allow you to donate stem cells to a relative suffering from a blood disorder.

### What are stem cells?

Stem cells are cells present in the bone marrow that have the unique ability to grow and develop into the blood cells that your body requires to function (these include red blood cells, white blood cells and platelets).

### Why do we need to collect stem cells from you?

The peripheral blood stem cell collection is performed as you have given your consent to be a stem cell donor for your relative and tissue typing has indicated that you are a suitable donor.

### What happens before the stem cell collection?

Before undergoing a stem cell collection (also known as apheresis or harvest), you will be asked to answer a screening questionnaire and go through an assessment by our doctor to ensure you are fit to be a donor.

A specialist apheresis nurse will explain the procedure for peripheral blood stem cell collection and address any concerns.

We will also take a blood sample from you to check for infections such as hepatitis, HIV, and syphilis. A pregnancy test will be performed for females of childbearing age before starting the course of GCSF injections.

## How do we collect the stem cells?

Stem cells can be stimulated to enter your bloodstream from the bone marrow by using a growth hormone called granulocyte stimulating factor (GCSF). This process is called mobilisation.

A course of GCSF (granulocyte stimulating factor) injections will be given to you to mobilise your stem cells into your bloodstream.

The GCSF injections are usually given for five days, preferably at the same timing each day. An appointment will be made five days from the start of the GCSF injections for the peripheral blood stem cell collection.

Our apheresis nurse will inform you of the date of commencement of the GCSF injections and the doses required.

## How is GCSF administered?



The GCSF injections are available in the forms of pre-filled syringes that need to be stored in the fridge. The GCSF injections are administered just under your skin. The suitable places for these injections include the top of the thighs, the back of the arm, and stomach. GCSF injections should ideally be given in the evening at the same time each day.

Most patients prefer to do their own injections after being taught by the nurse. Relatives and carers can also be taught to administer the injections for you. Injections can also be given in our clinic or by your general practitioner.

Step-by-step instructions for giving GCSF injections:

1. Wash and dry your hands.
2. Remove the required number of GCSF injections from the packaging. You may need to take several injections each day to ensure your body receives the optimum dose of GCSF injections. Our Apheresis Nurse will explain the right dose required for you.
3. Choose the injection site. Rotate the sites of injections regularly to avoid discomfort and allow the skin to recover.
4. Grasp a 'pad' of fatty tissue under the skin using your thumb and forefinger and insert the needle making an angle of 90 degrees with the skin.
5. Gently push the plunger thoroughly and then withdraw the needle from your skin.
6. Discard the syringe and needle immediately into a yellow sharps disposal bin. Do not cover or re-sheath the needle.
7. Rewash and dry your hands.
8. Bring the yellow sharps bin and unused syringes back to the clinic when you visit us for your stem cell collection procedure.

Do not stop or miss the doses of GCSF injections unless advised by our doctor. This may affect the success of stem cell collection.

## What are the side effects of GCSF injections?

---

GCSF injections may cause some pulsating pain in the bone as your bone marrow is being stimulated to form new stem cells. You may also develop mild symptoms of flu. You can take painkillers such as paracetamol to relieve these side effects.

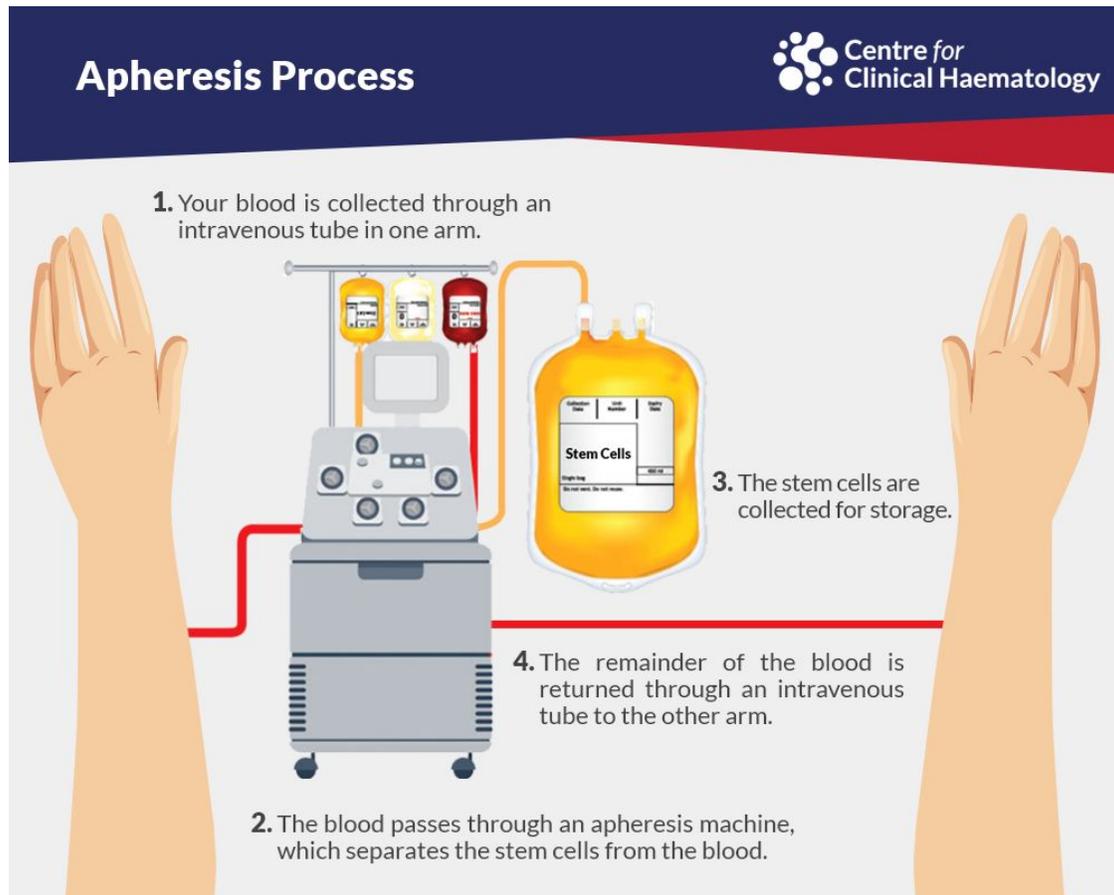
However, if you feel severe pain in the stomach, shoulder tip or chest, please contact our doctor immediately for advice.

## When will my stem cells be collected?

---

You will be given an appointment for the stem cell collection at the Haematology Ward in Mount Elizabeth Novena Hospital. It is vital that you attend your appointment on the correct date, or it will affect the entire process.

## How will my stem cells be collected?



We will insert a cannula into one arm to draw your blood into a machine known as the cell separator. This machine spins the blood which results in the separation of your stem cells which are then collected in a bag.

We will collect only a few hundred millilitres of blood, which is less than the amount of blood drawn during a blood donation.

The remaining blood will be returned to your body through a cannula in your other arm. The entire process takes approximately six hours.

If the amount of stem cells collected is insufficient, you will be required to repeat this process for up to three days in a row.

## What complications might occur during this procedure?

---

Most people do not develop any complications during stem cell collection. The process is not painful, though it may cause mild discomfort.

You may experience a tingling feeling around the mouth that occurs due to the low calcium level in your blood. This is caused by the citric acid which is mixed with your blood while it is being processed in the cell separator machine to inhibit blood clotting.

Inform our nurse if you experience this as the symptoms can be easily be relieved by chewing calcium tablets. If the tingling does not reduce even after chewing calcium tablets, intravenous calcium would be given directly into your vein.

In rare cases, patients develop low blood pressure during the procedure. This symptom may occur in donors who are using medications for high blood pressure. We may ask you to omit these medications in the morning to avoid low blood pressure during stem cell collection.

If the veins in your arms are very narrow, there may be difficulties obtaining a good blood flow. In such cases, we may put a temporary catheter into a larger vein of your neck or chest. The catheter will remain in place only during the collection procedure. The line can be removed immediately after the collection of sufficient stem cells.

## Do I need to bring anything with me on the day or make any special arrangements?

---

You will be attached to the cell separator machine for several hours during the procedure. Hence, it is advisable to bring something that will keep you occupied like a magazine or book. You can also bring an electronic device as the hospital provides free WiFi.

- You can eat food and drink normally throughout the day.
- It should be noted that you will have to stay connected to the collection machine until the procedure is completed. Hence, if you need to visit a restroom during the procedure, our team will help you use a bottle or bedpan.
- You may feel tired after the procedure. Hence, it is advisable to avoid driving and arrange for someone to drive you home after the procedure.

## What happens after the procedure?

---

The cells donated by you will be stored in a stem cell laboratory and administered to the patient on the day of their stem cell transplant in a way similar to blood transfusions.

## Donor aftercare?

---

An appointment will be made for you to visit our transplant clinic one to two weeks after the peripheral blood stem cell collection for a blood test and follow-up assessment by our medical team. Our nurses may contact you to check on your recovery.

### *Disclaimer:*

*The information on the Centre For Clinical Haematology website is intended for educational use. It should not be considered or used as a substitute for medical advice, diagnosis or treatment from a qualified health professional.*