Your donor guide for an: 
Allogeneic Stem Cell Transplant

For people who are family member stem cell donors

Read this guide to learn:

- How an allogeneic stem cell transplant works
- Who can be a stem cell donor
- What appointments and health tests are needed before you can donate
- What to expect during your stem cell collection

For more information on how to get to the hospital, services and resources, and places for your family to stay near the hospital, visit:

- www.theprincessmargaret.ca for the Princess Margaret Cancer Centre
  Click on “Patients & Families”, then click on “Guide to Princess Margaret”.

- wwwuhn.ca for Toronto General Hospital
  Click on “Maps & Directions” at the top of the page for directions to the hospital. Click on “Patients & Families” for hospital services, resources and places to stay.
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If you need urgent help, or in case of emergency:

If you need urgent medical help after 5:00 pm:

- Phone the Princess Margaret Cancer Centre’s main line, 416 946 2000.
- Ask to speak with a “BMT doctor on-call”

For all emergencies, call 911 or visit the closest hospital emergency department.
If you have questions

Your transplant coordinator is _________________________________

Find their phone number listed below.

Phone your transplant coordinator, also called “nurse coordinator”
(Registered Nurse who will guide you through the donation process):

- If you need advice or medical help because of your stem cell donation
  (for example, feel a lot of pain due to medication, shortness of breath)

- With any questions or needs

- For your donation and appointment schedule

Your transplant coordinator may be in clinic during the day (9:00 am – 5:00 pm).
Leave one message and your call will be returned as soon as possible. If you
need urgent medical attention, go to the nearest emergency room.

Dawn Breen, RN, CON(C) – currently on leave
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Important terms

**Bone marrow**
This is the tissue found in the soft centre of bones. It creates blood cells (red blood cells, white blood cells, and platelets).

**Stem Cells**
Young blood cells that give rise to all other blood cells. These can turn into red blood cells (which carry oxygen), white blood cells (which fight infection) or platelets (which help to stop bleeding).

Bone marrow is a main source for stem cells, but they can also be found in your blood system and in umbilical cord blood (blood inside your umbilical cord).

**Peripheral Blood Stem Cells (PBSC)**
These are stem cells that move in the peripheral blood (main way of moving nutrients, like oxygen around the body). There are often too few of these cells to provide a useful amount for transplant.

When a healthy donor is given a drug called G-CSF (Granulocyte Colony Stimulating Factor), the number of stem cells in the peripheral blood will increase a lot. G-CSF causes the stem cells to move from bone marrow to peripheral blood by a process called mobilization.

**Collection**
The process of collecting stem cells through a bone marrow or PBSC donation.

**Donor work-up**
The process used to prepare you for the stem cell collection. This includes a medical check-up as well as the collection of other blood samples for infectious disease (disease that can spread) testing.

The donor work-up begins as soon as you are known to be the best match, and ends when you have fully recovered from the donation.
What is a stem cell donation?

This guide is for family members who have been chosen as a match for a patient that needs an allogeneic stem cell transplant. Read this guide to know:

- About donating stem cells
- What to expect

If at any time you have questions or need help due to an emergency, contact your transplant coordinator or the Bone Marrow Transplant (BMT) physician (doctor) on call (see page 4 for contact details).

What are stem cells?

Stem cells can be found in your bone marrow (soft, spongy tissue inside your bones). Bone marrow looks like dark, red blood. It makes blood cells for your body.

The newest (youngest) blood cells in bone marrow are called “stem cells”.

Stem cells are also found in your blood stream but in much smaller amounts. Stem cells are important because they grow into different blood cells, like:

- Red blood cells (carry oxygen and nutrients to other cells in your body)
- White blood cells (fight infection, and remove damaged cells)
- Platelets (form clots to help stop bleeding when you get cut, or hurt)

This image shows where bone marrow is inside your bone. Stem cells are found in bone marrow fluid.
What is an allogeneic stem cell transplant?
An “allogeneic stem cell transplant” means that healthy stem cells are collected from a healthy donor and infused (put) into a recipient with a bone marrow disorder. A “bone marrow disorder” means there are problems with the patient’s stem cells.

A stem cell donation can save the life of a patient, and allow them to heal from the bone marrow disorder.

There are 2 main steps for allogeneic stem cell transplant:

1. Chemotherapy and sometimes radiation treatment is given to the patient to “clean out” the damaged bone marrow.
2. The donor’s new stem cells are then infused and migrate (find their way) into the patient’s bone marrow.

The goal of an allogeneic stem cell transplant is to get the new, donated stem cells to grow in the patient’s bone marrow (this is called “engraftment”).

Know who can be a stem cell donor

How are stem cell donors and patients matched for a transplant?
Before a stem cell transplant can be set up for a patient, a donor must be found. Potential donors are tested to see if they are a match. This test is called “human leukocyte antigen (HLA) typing”.

HLA are proteins found on the surface of white blood cells. The most important HLA types for sibling matching at this time are:

- HLA-A
- HLA-B
- HLA-DR

This image shows you where HLA proteins are found on white blood cells. Each white blood cell can have many HLA proteins.
These HLA proteins are tested in donors to help find out if the transplant will work or not. When the stem cell donor and patient share some of the same HLA proteins, they are said to be a “match”.

The closer the match is between the donor and patient, the fewer side effects and problems are felt by the patient after the transplant.

**Who are the most likely donors?**  
HLA proteins each have 2 antigens or parts to them, one given to you by each parent. These HLA are often passed on as a group. You get one group, called a “haplotype”, from your biologic (birth) mother and one from your biologic father. If you are not a full HLA matched donor, you may be eligible to be a haploidentical donor (at least 50% match).

Siblings (brothers and sisters) are the most likely donors:

- HLA testing will be done on full (same birth parents) siblings.
- There is only a 25% (25 out of 100) chance that any 2 siblings will be a match.
- If more than one sibling is found to be a match, extra blood work will be done to help choose the donor. The extra blood work will look at the donor’s blood type, and other markers (risks) such as viruses.
- The donor must be in good physical health to donate. If you have any health concerns or conditions (such as allergies, diseases, cancers) tell the search coordinator or your donation coordinator.
- The age of related donors who may be a good fit, ranges from 15 to 70 years of age. Younger or older donors can be seen by the transplant team to decide if it is safe for them to donate. This may happen if no other match is found, or available.
- A search for a match is not often done beyond siblings, since the chances of finding a match are not high outside of this group.
- There is only about a 1 – 2% (1 or 2 out of 100) chance that an extended family search will find a match. This is less than in the general public. For this reason, the Princess Margaret does not test extended family to see if they are matched stem cell donor.
If you would like more information about stem cell donation from the general public, contact:

One Match, the [Canadian Stem Cell Registry](http://www.onematch.ca)
Website: www.onematch.ca Phone: 1 888 2 DONATE (1 888 236 6283)

Contact your transplant team (see page 4 for details) if you have questions about who can be tested for HLA matching at the Princess Margaret.

Read below to see who the most likely stem cell donors are:

- **Biologic mother and father**: There is a 25% chance that siblings will have matching HLA.
- **Extended family**: has a 1-2% chance of matching.
Prepare for your first clinic visit (Day 1)

Stem cell donors must be in good general health. For this reason, you will need to get a health check-up and do some health tests during your first clinic visit.

**Important:** All of your health details is kept private, and will not be shared with anyone without your consent.

If at any time you decide that you do not wish to donate, or cannot donate for any reason, your sibling will be informed that there is no eligible (fit) sibling donor available.

All of your health tests will be done at the Princess Margaret Cancer Centre or at the Toronto General Hospital.

Read below to find out:

- What to bring with you to your first clinic visit
- When and where to go
- What to expect during your visit

**Know what to bring with you**

- Your health card (OHIP card). If you do not have a valid OHIP card, please bring your passport.
- A list of any medications you are taking (for example, over-the-counter medications or herbal supplements).
- Your “Allogeneic Stem Cell Transplant Schedule: For donors who are donating stem cells to a family member”.
  
  If you do not already have a copy of your transplant schedule, you will be given a copy by your transplant coordinator at your first clinic appointment.
- A pen and notebook to take notes.
- Your clinic appointment will take about 2 hours. Prepare by bringing snacks to eat and drink, and things to keep you busy.
Know what happens before your clinic visit

1. Arrive at the Princess Margaret to do your blood work and tests.

   **Time:** Please follow the schedule provided to you by your transplant coordinator.

   **Go to:** Princess Margaret Cancer Centre  
   610 University Avenue, Toronto, Ontario, M5T 2M9  
   Major intersection: University Avenue and College Street, walking distance from Queen’s Park subway station.

   For more details on how to get to the [Princess Margaret](http://www.uhn.ca/corporate/Directions/Pages/directions_PMH.aspx), visit this website: www.uhn.ca/corporate/Directions/Pages/directions_PMH.aspx

2. Get a blood test

   A blood test is a test of your blood using a needle in your arm. Blood tests are done to see how healthy you are.

   About 10 to 15 vials (small plastic tubes) of blood will be taken. Your blood will be tested for blood cell counts, blood type and transmissible diseases.

   **Time:** Please follow the schedule provided to you by your transplant coordinator.

   **Go to:** The Blood Collection Lab (Main Floor of the Princess Margaret, beside the Out-patient Pharmacy).

   - Tell the person at the front desk that you are a “stem cell donor”, and to draw the blood work entered in the Electronic Patient Record.
   - There is no need for a requisition (form used to request a blood test), the lab you go to will have all of your test details in their private computer system.
   - If you or someone from the lab have questions, contact your nurse coordinator (see page 4 for details).
3. Get an Electrocardiogram (ECG) test

**Time:** Please follow the schedule provided to you by your transplant coordinator.

**Go to:** Ambulance Waiting Area (Main Floor of the Princess Margaret, behind main elevators)

An ECG is a simple, painless test that:

- Measures your heart’s electrical activity
- This lets your health care team how well your heart is working

To do an ECG, small electrodes (plastic stickers) are gently placed on the surface of your skin (on your chest and arms). The test will take about 5 to 10 minutes to do.

**What happens at your clinic visit?**

Below you will find details on when and where to go for your first clinic visit, and what to expect.

**Time:** 1:30 pm

**Go to:** **Tuesday appointments at:**
West Hematology clinic (2nd Floor of the Princess Margaret)

**Wednesday and Thursday appointments at:**
South Hematology clinic (2nd Floor of the Princess Margaret)

During your visit, you will have a check-up and fill out forms and consents. Below you will find more details about the check-up and forms.

At this visit, the transplant team of doctors, nurses and coordinators will answer any of your questions, and talk to you about the donation process in more detail.
**Health history survey**

This is a survey about your medical history, and the risks of having been exposed to diseases that can be passed on to others.

This survey has no right or wrong answers. If you need help with it, ask a clinic doctor or your transplant coordinator. Many medical terms are used and the transplant team can help explain them if needed (see page 5).

It is important that you answer each question as best as you can. The doctor or nurse practitioner who assesses you will go over your answers and talk to you about how this affects your stem cell donation.

**Physical exam (check-up)**

This is an exam to feel or listen to certain parts of your body. The exam is painless and will not take very long. If you are not comfortable with any part of this exam, tell someone on the team.

**Bone marrow aspiration (a sample of bone marrow taken with a needle)**

You will only get a bone marrow aspiration if you are over 40 years old. Your health care team decides if this test needs to be done.

This is a short, low-risk test used to know:

- How well your bone marrow works.
- If there is any disease in your bone marrow, which can be common in older age groups, or can be passed on through your family.

To do a bone marrow aspiration:

1. You will be given a local anesthetic (with a needle) to freeze, or numb the area where the bone marrow is being tested. This will help to reduce, or prevent any pain you may feel.

   Your health care team will make sure you feel as comfortable as possible during the procedure. You can take Tylenol for any discomfort you may feel after the procedure.
2. When the local anesthetic (with a needle) is given, a short stinging or burning is often felt. This goes away very quickly as the area becomes numb.

3. Another needle is then pushed through the numb skin into the back of your hip bone. This needle is used to remove a sample of your bone marrow. If a sample of bone marrow cannot be taken from your hip bone, the sample could be taken from your sternum (chest, or breastbone).

4. You will feel a poking feeling and some pressure as the doctor finds the right spot to take the sample from. The bone marrow fluid is then removed from the bone.

5. After a small amount of bone marrow fluid is collected, the needle is removed.

The bone marrow aspiration is done in the clinic in an exam room and takes about 15 minutes. It will be done by the health care team member that does your assessment that day.

You are welcome to have a family member or friend with you for support, and to help you get home from the hospital.

Other health tests
Based on the results of your health check-up, you may need to do more health tests to see if you are ready to donate stem cells. These tests may be booked on a different day. Your transplant coordinator will talk to you about the types of tests you may need to do at your clinic visit.

If you are from outside of Canada and extra testing is needed, your transplant coordinator will give you a letter that outlines the billing process. Please present this letter when you go for any extra tests.

Vein assessment
Your transplant coordinator, doctor or nurse practitioner will look at your veins. If they feel your veins may not be able to handle the stem cell collection, they will inform the apheresis (stem cell collection) team. If this happens, a Central Venous Catheter (uses “Quinton Line”, or a thin tube that is placed in a large vein in the neck) will be booked.
More information about the Central Venous Catheter (CVC) will be given to you at your clinic visit. Your transplant coordinator will call to give you details about this if it is needed.

**Consent process**

Your health care team will discuss the stem cell donation procedure with you in detail. You will be asked to sign a consent form before donation. Signing this form allows your health care team to do the procedure.

You may also be asked if you would like to give your consent:

- To be in a research study
- To be given appointment times and dates by email
- Get a possible blood transfusion (see page 29 for details)
- To do other health tests

**Do I need to do anything else before returning home?**

You may need a medication called “G-CSF” (Granulocyte Colony Stimulating Factor) injections (shots). Another name for this medication is “Neupogen”. G-CSF helps your bone marrow to make more stem cells before they are collected (see page 21 for details).

During your visit, a member of your health care team will let you know if you need G-CSF injections.

If you do need G-CSF injections:

- Make sure you have a plan to pick up this medication. Your transplant coordinator will talk to you about this.
- Go to the Out-patient Pharmacy (Main Floor of Princess Margaret) to pick up the medication.
- All costs of the donation process are paid for by the patient’s Ontario Health Insurance Plan (OHIP). If you have any questions or concerns, talk to your transplant coordinator.
- Your health care team will tell you when you need to start taking the G-CSF injections. Until you take the injections, you must keep them in your fridge.
• Your transplant coordinator will teach you how to give yourself the injections the day of your assessment.
• You will get a schedule from your transplant coordinator letting you know how and when to take the injections. The schedule will also give you more details about where to go for the donation process.

Check to see that the details on the schedule match the details given to you by the transplant coordinator. If you are not given this schedule, ask your transplant coordinator for it.

**Important:** Do not start taking the injections until your transplant coordinator calls you to tell you start them.

**Interpretation Services**
Princess Margaret Cancer Centre offers all donors who are not fluent in English interpretation services free of charge. Please let the transplant coordinator know if you are interested in using an interpreter.
Find out if you can donate stem cells

After your health tests and check-up, your health care team will decide whether you can donate stem cells for your family member. Your health care team will phone you with their decision and explain the next steps.

The next steps are listed in this guide.

• At this point, you must be sure about your choice to donate your stem cells.

• If you choose not to donate, an unrelated (non-family) donor search can be done for the patient. If you decide not to donate, the transplant team will not reveal that you decided not to donate. The transplant team will only let the patient know that you are not an eligible (fit) donor.

An unrelated donor search can take few months or longer. It is possible that an unrelated donor may not be found.

Below are more details about what to expect after you have been told that you can donate.

What do I need to do once I know that I can donate?

• Stay healthy and take care of yourself. This will ensure you are healthy enough to donate.

• Be careful and avoid getting hurt. Your donation will be delayed by any serious injury that needs surgery, or a stay in hospital.

• If you feel sick, contact your transplant coordinator right away (see page 4 for contact details). You may need to come back for another check-up.

• Make sure your health care team can reach you. It is important that you give them up-to-date contact details (like your cell phone number and/or email). Be ready for the donation as planned when they call you.

• Do NOT take any recreational (non-medical) drugs. They can poorly affect your health and the health of your stem cells.

• Do NOT play any contact sports while you are taking the G-CSF injections, and for a few days after you stop taking the injections.
Talk to your health care team if you plan on traveling home by airplane after your donation. There may be some travel limits. Most donors are allowed to fly as a passenger, 24 to 48 hours after stem cell donation.

Some donors who travel too soon after stem cell collection are at risk of getting blood clots (clusters of solid blood). Your health care team will make sure you are not showing any side effects and feel well enough to travel.

**I have been told that I can donate. When will my stem cells be collected?**
In most cases, if you are cleared to donate stem cells, they are collected about 2 to 3 weeks after your clinic visit. If there are any changes, your health care team will contact you.
Get your stem cells collected

How will my stem cells be collected?

Stem cells are collected in 2 ways:

1. Peripheral Blood Stem Cell Collection (see page 20), or
2. Bone Marrow Harvest (see page 27)

- The patient may need stem cells collected in a certain way. If so, your health care team will let you know.
- If the patient can get either collection method, you can choose the method you prefer.
- The most common stem cell collection method at the Princess Margaret is peripheral blood stem cell collection.
- Most of the time, peripheral blood stem cells are preferred.

Do I need to stay in hospital overnight?
You will need to stay in a hospital overnight if a second day of collection is needed and your Quinton line is not removed at the end of the first day.

You will also need to stay in hospital overnight if your stem cells are collected through bone marrow harvest. If this is the case, prepare an overnight bag and bring it with you on the day of your bone marrow harvest.

Do I need to pay for stem cell collection?
You do not need to pay for any part of the stem cell donation. The stem cell donation and transplant process is paid for by the Ontario Health Insurance Program (OHIP).

**Important:** Travel, food, hotel/housing and other costs are not covered by OHIP. If you are coming from out of town, or from out of the country, you will need to book and cover these costs.

Talk to your transplant coordinator if you have any concerns about these costs.
Know about Peripheral Blood Stem Cell Collection

Peripheral blood stem cell collection is when stem cells are collected using a machine. You will be connected to the machine using an intravenous (IV) needle. You will have 2 intravenous (IV) needles inserted. One IV collects blood that will flow into the machine where stem cells are collected and the remaining blood will be returned through the other IV.

Your blood will be drawn into the machine where the stem cells will be collected. The machine will then return the rest of your blood back to your body. This system is fully sterile and closed.

Prepare for your stem cell collection

• You will need to take G-CSF injections every morning for 4 days before the collection. G-CSF injections help increase the amount of stem cells in your blood.

• You should take your first injection with a family member or friend present, in case you have a reaction.

• You can also choose to have a family doctor, friend or family member give you the injections.

• This injection is easy to give to yourself once you have been shown how. Your transplant coordinator will show you how to inject G-CSF, and will tell you when to start.

• Eat breakfast high in calcium on the day of collection. Avoid drinking coffee as you will be hooked up to the apheresis machine and bathroom breaks will be difficult and limited.

• You can bring a friend or family member with you on the day of the collection. However space is limited on the unit.

• Have a snack before you leave the Apheresis Centre and eat a well-balanced meal the evening after your donation.

• Drink plenty of fluids (8-10 glasses of water) for the next 24 hours; avoid alcohol and caffeine.
What are the side effects of taking G-CSF injections?
You may have some short-term side effects, such as:

- Muscle aches or soreness
- Bone pain
- Headaches
- Fatigue (feeling tired)
- Flu-like symptoms
- Feeling unwell
- Skin redness and irritation where the medication was injected

These side effects should go away within a few days once you stop the G-CSF injections. If you still have side effects for a week or longer after you have stopped taking the injections, tell your transplant coordinator (see page 4 for contact details).

There are no known long-term side effects with G-CSF injections.

Where should I keep my G-CSF injections?
Always keep your G-CSF injections in the fridge until just before use.

Day of your stem cell collection

When and where to arrive:

1. Go for your blood work (day of donation)
   **Time:** 7:00 am
   **Go to:** Toronto General Hospital
   Eaton South, Ground Floor – Diagnostic Test Centre

2. Go to your clinic apheresis (stem cell collection) appointment
   **Time:** 8:00 am
   **Go to:** Toronto General Hospital, Apheresis Unit (take the Eaton elevators to the 12nd Floor and follow the signs, Elizabeth Street entrance).
Check-in at the reception desk. Your apheresis (stem cell collection) nurse will draw your blood to check the level of stem cells in it before the collection.

The nurse will review your blood test results with you.

3. **Get your stem cells collected**

   - You will come to the apheresis unit (see step 1) and be hooked up to a machine called a “cell separator”.
   - You will be hooked up to the machine by intravenous (IV) (a needle in each arm), and seated in a comfortable position.
   - Your blood will be drawn into the machine. A total of 200 mL (about 1 cup) will go through it at any one time.
   - The machine will collect the stem cells from your blood and return the rest of the blood cells back to your body. This process is called **apheresis**.
   - The apheresis process takes about 4 to 6 hours. Enough stem cells are often collected in one day.
   - During the time that your blood is outside your body, sodium citrate (a chemical that makes sure your blood does not clot before it returns to you) will be added to it.
During the collection, you may feel:

- Cold – this is due to your blood going through the machine. This feeling is normal and will stop when the collection is done.
- Tingling in your lips, fingers and toes – this is due to low calcium which can happen when blood is drawn from your body. Tell the nurse if this happens, and you will be given more calcium through your IV to help.

What if my health care team has trouble finding my veins with the IV needles?

- In rare cases, your health care team may need to use a Central Venous Catheter (CVC) if putting IV needles into your veins is too hard.
- The CVC consists of a small tube that is put into a larger vein in your neck. This small tube is called a “Quinton line”.
- Putting in the CVC is done in the Medical Imaging Department (1st Floor of the Peter Munk Building of Toronto General Hospital, University Avenue entrance).
- If a second day of collection is needed and the Quinton line is not removed at the end of the first day, you will need to stay overnight at the hospital. If this needs to happen, you will be told as soon as possible.
- Your health care team will tell you ahead of time if they need to use a CVC, and will give you more details about it. Talk to your transplant coordinator about this if you have concerns or questions.

Are there any risks?

There is a risk of an infection to where the IV needles were used for collection. The risk of infection is very low, but still possible. The area will be cleaned very well to prevent infection.

Watch for redness and swelling in this area. Tell your health care team if redness and swelling does not go away within a few days after the collection.

Before your stem cell collection, your transplant team will discuss any risks and side effects with you in detail. Contact your transplant coordinator if you have any questions or concerns about this.
After your stem cell collection

Will my stem cells be lower than normal after the collection?

No. The G-CSF injections raise the amount of stem cells in your blood above normal ranges. This means that your stem levels should be back to normal or slightly higher after your collection.

How much physical activity is safe?

- Rest when you return home from the donation. Don’t overdo it. You may be more tired than usual.
- If you feel light headed or dizzy, lie down right away and raise your feet above your head, if possible.
- If you live alone, have someone stay with you overnight.
- You can take part in sports again 3 to 7 days after the donation. (Ask the Collection Centre or Apheresis Centre for their advice.)
- Wait 24 hours before using heavy machinery, climbing ladders or working from heights.

What should I do when I travel?

- You will leave the hospital the same day as donation, but are not allowed to drive yourself home. Ask a friend of family member to drive you home or take a taxi.
- If you live out of town, please stay overnight somewhere near Princess Margaret.
- You may need to limit your travel for 1 or 2 days after the donation. (Ask the Collection Centre or Apheresis Centre for their advice.)

What should I do after the stem cell collection?

- You should be able to return to work the day after donation.
- Most donors fully recover within a few days to 1 week.
- See your family doctor after 2 weeks and also 1 year after your stem cell collection for a blood test. Tell your doctor that you donated stem cells.
- If you do not have a family doctor or walk in clinic that you can go to, tell your health care team. These follow-up blood tests can be arranged through the Princess Margaret if there are no other options.
Know about Donor Leukocyte Collection

A donor leukocyte infusion is the injection of the donor’s lymphocytes (white blood cells) into the blood. The lymphocytes are collected from the blood of the original bone marrow or peripheral stem cell donor.

The goal of donor leukocyte infusion is for the donated white blood cells to destroy remaining cancer cells through a process called **graft-versus-tumor effect**. It is hoped that this infusion therapy will lead to a remission of cancer.

Your leukocyte cells are collected using a machine and a process called **apheresis**. Please see page 22 for a picture of the machine.

You will be connected to the machine using an intravenous (IV) needle. You will have 2 intravenous (IV) needles inserted. One IV collects blood that will flow into the machine where leukocytes are collected and the remaining blood will be returned through the other IV.

Your blood will be drawn into the machine where the cells will be collected. The machine will then return the rest of your blood back to your body. This system is fully sterile and closed.

Donor leukocyte collection differs from your stem cell collection as you will not receive any Growth Factor injections before your donor leukocyte collection.

**Prepare for your Donor Leukocyte collection**

- Pack a snack or a lunch for your day of collection. The unit has a fridge you can use to store your food.
- You can bring a friend or family member with you on the day of the collection. However space is limited on the unit.
- Have a snack before you leave the Apheresis Centre and eat a well-balanced meal the evening after your donation.
- Drink plenty of fluids (8 to 10 glasses of water) for the next 24 hours. Do not have alcohol and caffeine.
Day of your Donor Leukocyte collection

When and where to arrive:

1. Go for your blood work (day of donation)
   Time: 7:00 am
   Go to: Toronto General Hospital
         Eaton South, Ground Floor – Diagnostic Test Centre

2. Go to your clinic apheresis (stem cell collection) appointment
   Time: 8:00 am
   Go to: Toronto General Hospital, Apheresis Unit (take the Eaton
         elevators to the 12nd Floor and follow the signs, Elizabeth Street
         entrance).

Check-in at the reception desk. Your apheresis (donor leukocyte collection)
nurse will draw your blood to check the level of stem cells in it before the
collection.

The nurse will review your blood test results with you.
Know about Bone Marrow Harvest

Bone marrow harvest is a type of surgery. This procedure collects stem cells from the back of your hip bone. You will be given a general anesthetic (medication to help you relax and sleep) during the procedure, which takes about 45 minutes to 1 hour.

Most people stay overnight and return home the next day. Prepare and bring an overnight bag with you just in case. If the amount of bone marrow collected is low, you may be able to go home the same day.

Prepare for your bone marrow harvest

- Do not eat or drink anything after midnight the night before the bone marrow harvest procedure.
- Pack a bag for a one-night stay at the hospital, just in case you need one.

Day of your bone marrow harvest

1. When and where to arrive
   
   Time: No later than 6:00 am
   
   Go to: Short Term Care Unit (STCU), 18B Area, 18th Floor
   
   Princess Margaret Cancer Centre
   
   610 University Avenue, Toronto, Ontario M5T 2M9

   Check-in at the reception desk and you will be given a room.

2. Get your stem cells collected
   
   You will be brought down to the operating room on a stretcher. You will meet with your health care team who will tell you about what to expect during the procedure.

   You can ask any questions you may have at this time.
Once you are in the operating room:

- You will have an intravenous (IV) line put in one arm to get fluids and medication.
- You will get medication to help you relax, so that you will not feel any pain.
- Once you are relaxed and asleep, a breathing tube will be put down your throat and used to check your breathing.
  
  The tube will be removed after the procedure. You may feel some pain or discomfort for a day or so, due to a sore throat.
- You will be rolled onto your stomach. The doctors will make 2 to 4 small, incisions (cuts) above each of your hip bones for the bone marrow collection.
- You will have a long needle put into your hip bones through the cuts. The bone marrow will then be aspirated (drawn out) through the needle. About 1 litre of bone marrow will be collected. All of the removed bone marrow will grow back.
- Small bandages will be placed over each cut, and a large pressure bandage placed over your entire lower back.

3. Rest and recover

After the procedure:

- You will be moved to the recovery room where you will stay until the sleeping medication wears off.
- You will be moved to the short-term care unit where your health care team will give you support and watch over you.

4. Get ready to go home

You will likely be asked to stay overnight so your health care team can continue to watch over you. Before you go home, your health care team will:

- Check your lower back for any bleeding.
- Remove the large bandage, check the smaller bandages, and replace them if needed.
Are there any risks?
In rare cases, a stem cell donor may need a blood transfusion (new blood put into your body through IV) after the collection. This is done when more blood than usual is taken out or lost during the procedure.

Blood transfusions are rare during this time, and you will not likely need to get one. A member of your health care team will tell you if you need a blood transfusion. They will also talk to you about the risks of getting a blood transfusion.

Donors are also at risk of having other rare, but serious, problems during bone marrow harvest. These can include:
- Poor response to anesthesia
- Infection
- Injury at the site the needle enters
- Swelling from the fluid that is given to replace the amount of fluid that was taken out
- Complications (problems) from the intubation (when thin, flexible tube is placed in the throat)

After your stem cell collection

Will I have any side effects after my stem cells are collected?

After stem cell collection you may have some short-term side effects, like:

Feeling stiffness and aches in your lower back.
- It is normal to feel stiffness and aches in this area right after stem cell collection. This can last for 1 to 2 weeks, or more rarely, up to many months after collection.
- Take acetaminophen (like Tylenol) to manage the pain.

Nausea (feeling of having to throw up), vomiting (throwing up) and feeling dizzy or light-headed
- This is from the anesthesia and should improve within a few days.
Throat discomfort and a raspy voice
- This is from the breathing tube and should improve in one to 3 days.

General swelling
- This may happen around your body (mainly your hands, feet, and belly).
- This is due to the amount of fluid given to you through the IV, and should improve in 1 to 2 days.

Fatigue (feeling tired)
- This is because your blood levels are lower than normal. This can last up to one month after stem cell collection.
- Your family doctor can prescribe (give you) iron pills to help, if needed.

**When do I need medical help after a bone marrow harvest?**

If you have any of these symptoms (signs), call your Collection Centre:
- Fever (temperature of 38 degrees Celsius or 100.5 degrees Fahrenheit or higher)
- Redness, bleeding, swelling, pus or pain at the collection site that is getting worse
- Shortness of breath
- Dizziness

For all emergencies, call 911 or visit the closest hospital emergency department.
How do I care for myself at home?

To prevent infection:
- Do not shower for 24 hours after discharge (leaving the hospital).
- The bandages can be removed after your shower.

Take your prescription pain medication if you need help managing your pain.
- Take your pain medication as prescribed.
- Use only acetaminophen or ibuprofen medication (for example, Tylenol, Motrin or Advil) because they will not cause bleeding. Do NOT take aspirin or medications containing aspirin.
- You can expect the pain to get better over time.

Take an iron supplement if your health care team recommends it.
- To help your body absorb iron, take it with Vitamin C (such as a glass of orange juice).
- Iron supplements can cause constipation so drink lots of water and eat foods with lots of fibre such as grains, fruits and vegetables.
- If your constipation doesn’t go away, you can buy over-the-counter laxatives at your local pharmacy.

How much physical activity is safe?
- Donors usually ask a friend of family member to drive them home or they take a taxi. You will also need to have a companion stay with you overnight.
- Rest during the day and keep your legs raised on a pillow whenever possible.
- You can go back to your usual everyday activities within 48 to 72 hours after collections. If you have any concerns, please talk with your transplant coordinator.
**When can I return to work and sports?**
Ask your health care team when you can return to work. You may need to take more time off depending on the job you do.

Do not expect to return to your sports activities immediately or too strenuous activities for at least 2 to 3 weeks.

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**Most donors feel back to normal in less than 4 weeks.**

**Important:** Take time to recover. You will be more tired than usual. Doing too much too soon can make your symptoms worse and delay your recovery.

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**What should I do after the stem cell collection?**
You should see your family doctor to get a basic blood test 1 month after stem cell collection. This will make sure that all of your blood levels are back to normal.

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**An overview of the stem cell donation process**

**Step 1:** You and the patient are tested to check if you both have matching stem cells. This is done using a blood test called the Human Leukocyte Antigen (HLA) test.

**Step 2:** If you are a match, your health is checked to ensure it is safe for you to give stem cells. This is important for your health and the patient’s health.

**Step 3:** If you are cleared to donate, your stem cells will be collected and frozen until the patient is ready for the transplant.
Know where to get support while you recover

If you have questions about your health, please contact your transplant coordinator (see contact information on page 4).

If you need urgent help, or in case of emergency:

If you need urgent medical help after 5:00 pm:

- Phone the Princess Margaret Cancer Centre’s main line, 416 946 2000.
- Ask to speak with a “BMT doctor on-call”

For all emergencies, call 911 or visit the closest hospital emergency department.

If you have questions:

From 8:00 am to 5:00 pm:

- Phone the Princess Margaret Cancer Centre’s main line, 416 946 4501:
- Dial the extension for the transplant coordinator (nurse coordinator) that you have been assigned to
Stem cell donation can have an effect on your body and your emotions. It is normal for you to worry or stress before, during, and after stem cell donation.

As you support your family member during this hard time, it is important that you also feel supported. You may feel different emotions that change from day-to-day. These emotions may be positive and hopeful, or negative and fearful.

Each person has strengths and skills that they use to cope with tough emotions. Below are some tips that can help you before, during, and after your stem cell donation:

- **Get health information.** Ask your health care team questions so you know what to expect. This will help you feel more involved and in control of the donation process.

- **Share your feelings.** Share your feelings with those you feel close to, like your family and friends, or members of your health care team. It is often helpful to talk about your feelings with someone and to know that you are being listened to.

- **Get emotional support.** Below you will find details on people and places that can support you at the Princess Margaret. Contact them to get emotional support, and the help you may need to cope during this time.
The Princess Margaret’s Healing Beyond the Body (HBB) – Psychosocial Volunteers

Healing Beyond the Body (HBB) is a special type of volunteer service. Volunteers are trained to give support to you and your family in order to help make the hospital experience less stressful, confusing and overwhelming.

Volunteers can also offer assistance with resources and help you learn about the different services and programs available to you. HBB volunteers visit the nursing unit while you are in the hospital and also offer in-patients the use of the activities from their “Diversion Cart” - which includes DVDs, crafts, games and reading material.

You can also find HBB volunteers throughout the hospital including the transplant out-patient clinics.

Princess Margaret Spiritual Care
Spiritual Care can help you maintain your health and help you cope with tough experiences. It can help you find meaning, value and connection, especially during hard times.

Spiritual care professionals can help you express your feelings and concerns in a way that honors your values and beliefs.

Ask your health care team to contact a spiritual care professional for you, or call the number listed below.

Phone: 416 946 4501, extension 5652

The development of patient education resources is supported by the Princess Margaret Cancer Foundation.