Canadian Blood Services

Your complete guide to donating stem cells

Donating stem cells is a life-saving gift.

What are stem cells?

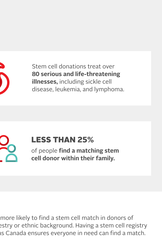
Stem cells are immature cells that can develop into any type of blood cell, such as:

- **Red blood cells** which carry oxygen throughout our body.
- **White blood cells** which fight off infections.
- **Platelets** that help control bleeding.

When you donate blood stem cells, it replaces a patient's unhealthy stem cells and helps heal many illnesses affecting the blood and immune system.

Stem cell donations are crucial in helping patients with failed bone marrow and those receiving chemotherapy or radiation.

DONATE TODAY.



Why should I donate stem cells?

Many people that require a stem cell transplant rely on the kindness of a stranger.

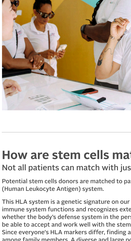
NEARLY 1,000
patients in Canada **are waiting for a life-saving stem cell transplant.**

Stem cell donations treat over **80 serious and life-threatening illnesses,** including sickle cell disease, leukemia, and lymphoma.

ONLY 50%
of patients in need **find a suitable donor.**

LESS THAN 25%
of people **find a matching stem cell donor within their family.**

Why is ethnic diversity important in stem cell donation?



*Reporting is based on self-identified ethnicity

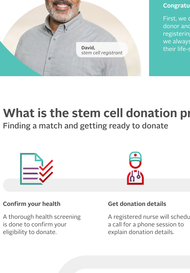
People are more likely to find a stem cell match in donors of similar ancestry or ethnic background. Having a stem cell registry as diverse as Canada ensures everyone in need can find a match.

Currently, people who are **Black, Indigenous, Asian, Hispanic or mixed-race** collectively make up only about **a third of registrants.** Therefore, we need donors from as many diverse ethnic and mixed-race backgrounds as possible:

- African, Caribbean and Black
- First Nations, Métis or Inuit
- South Asian
- Asian
- Mixed-race
- Ethnicities representing less than 2%
- White

How do I sign up to donate stem cells?

Registration is easy and takes less than 3 minutes, visit:
blood.ca/register4stem



1 SIGN UP
Check your eligibility and register online.

2 SWAB UP
Receive your swab kit, collect your sample by gently swabbing the insides of your cheeks. Then just mail it back to us, free of charge.

3 SHOW UP
It can take a month or years to find a match. Make sure your health and contact information are up to date.

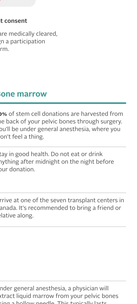
If you're **between the ages of 17-35** and healthy, consider joining the Canadian Blood Services' Stem Cell Registry. Research shows younger donors provide better transplant outcomes and are urgently needed.

How are stem cells matched?

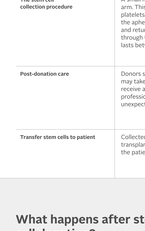
Not all patients can match with just any donors.

Potential stem cells donors are matched to patients in need through our "HLA" (Human Leukocyte Antigen) system.

This HLA system is a genetic signature on our cells that controls the way our immune system functions and recognizes external threats. HLA determines whether the body's defense system in the person receiving the transplant will be able to accept and work well with the stem cells from the person donating. Since everyone's HLA markers differ, finding a match can be challenging, even among family members. A diverse and large pool of stem cell registrants increases the chances of finding suitable matches for patients in need.



> **We're looking at a very small number of genes that determine the white blood cell groups, called the human leukocyte antigen or HLA system.**
>
> **Dr. Matthew Seftel,** medical director for stem cells.



What if I'm a stem cell match?

Congratulations! You have the chance to save a life.

First, we check if the matching registrant is still interested in being a stem cell donor and that they continue to be in good health. Years can pass between registering to donate and being called upon as a match for someone in need. So, we always confirm that the registrants are still interested and available to give their life-saving gift. You can leave the registry at any time.

What is the stem cell donation process?

Finding a match and getting ready to donate

Confirm your health
A thorough health screening is done to confirm your eligibility to donate.

Get donation details
A registered nurse will schedule a call for a phone session to explain donation details.

Do blood work
A team member will book simple blood work for you at a nearby Canadian Blood Services clinic to test for infectious diseases.

Get a physical
A routine physical examination will be performed at the hospital where you will donate. This ensures you and the patient are safe.

Participant consent
Once you are medically cleared, you will sign a participation consent form.

Two ways to donate	Peripheral Blood Stem Cells (PBSC)	Bone marrow
	90% of stem cell donations are collected through this non-surgical process which is similar to giving blood.	**10%** of stem cell donations are harvested from the back of your pelvic bones through surgery. You'll be under general anesthesia, where you won't feel a thing.
Prepare for donation	Over the course of 4-5 days before donation day, donors take Granulocyte Colony Stimulating Factor or GCSF medication to prepare for donation.	Stay in good health. Do not eat or drink anything after midnight on the night before your donation.
On donation day	Arrive at one of the seven transplant centers in Canada. It's recommended to bring a friend or relative along.	Arrive at one of the seven transplant centers in Canada. It's recommended to bring a friend or relative along.
Final check with medical staff	Staff answer questions, conduct a final blood test, and ensure the GCSF medication has effectively increased the right number of stem cells in the bloodstream.	
The stem cell collection procedure	A small needle is inserted into the veins of each arm. This is similar to donating plasma or platelets. Blood is drawn from one arm, while the apheresis machine separates the stem cells and returns the remaining blood to the donor through the vein of the other arm. This typically lasts between 4-6 hours.	Under general anesthesia, a physician will extract liquid marrow from your pelvic bones using a hollow needle. This typically lasts between 45 to 90 minutes.
Post-donation care	Donors should avoid driving post-donation and may take pain relievers if needed. You'll also receive a contact number for a medical professional should you encounter any unexpected issues.	Don't drive yourself home. If necessary, take the prescribed pain medication. You'll also receive a contact number for a medical professional should you encounter any unexpected issues.
Transfer stem cells to patient	Collected stem cells are transported to the transplant hospital/center and infused into the patient.	Collected stem cells are transported to the transplant hospital/center and infused into the patient.

What happens after stem cell donation?

> **For the majority of donors, they are immensely satisfied with the procedure of donating blood stem cells to a person in dire need.**
>
> **Dr. Matthew Seftel,** medical director for stem cells.

Resume normal activities
Most donors can return to their usual activities the next day.

Your body makes more stem cells
Your bone marrow continuously makes new blood stem cells. After donating, your body will quickly replace the ones you gave.

A chance to meet the recipient
Some donors can meet the stem cell recipient, if both parties agree. Meeting can be a really special experience. Even those that don't meet their recipients, feel fulfilled knowing they've positively impacted someone's life.

Recipient testimonials

> **One of the things meeting Doreen did for me was remind me of how there's still so much good in the world. She gave me a chance to love my family and friends that much longer, and I'm just so grateful and humbled by it.**
>
> **Tom,** *stem cell recipient*

Donor testimonials

> **For me being a committed donor is you went and got swabbed, you understand what this means in terms of what the process is going to be and that if you do get a call you're likely the only match that recipient has. And then just being ready to donate whenever you do get the call. It's a very low effort job, but it's a very important job.**
>
> **Robbie,** *stem cell donor*

JOIN OUR STEM CELL REGISTRY VISIT BLOOD.CA/REGISTER4STEM