Becoming a Stem Cell Donor
Utah Blood and Marrow Transplant Program

What is stem cell transplant?
Stem cell transplant is a treatment for many cancers. It is often used to treat leukemia and lymphoma. Doctors also use stem cell transplants to treat other blood and genetic diseases.

In a healthy person, stem cells in the bone marrow develop into the cells that make up blood. A stem cell transplant replaces unhealthy stem cells with healthy stem cells.

Where do stem cells for transplant come from?
Some transplants use the patient’s own stem cells. These are called autologous transplants. Some transplants use stem cells from another person. These are called allogeneic transplants. Usually, the stem cell donor is a close relative of the patient. Sometimes the stem cells come from the blood in the umbilical cord of a newborn baby.

What is donor matching?
Donor matching tests the potential donor’s saliva or blood cells to make sure the proteins called antigens are compatible with the patient’s cells. Antigens help your immune system recognize the cells that belong to you. Your immune system tries to kill cells that do not belong such as germs, viruses, and cells from other living things.

The goal is to find a donor with 10 specific antigens that are the same as the patient’s, a perfect match. The patient’s biological brothers and sisters each have a 1 in 4 chance of being a perfect match.

Sometimes the tests find no potential donor who is a perfect match. Then the transplant team may choose a donor whose cells match some, but not all, of the 10 antigens. This kind of donor is called a mismatched donor.

Another matching option is called a haplomatch. This is a related donor whose cells match five of the 10 antigens. Not every matching donor will be a qualified donor. Closer matches may give better chances for a successful stem cell transplant.

What are the commitments for donors?
The Utah Blood and Marrow Transplant (BMT) Program at Huntsman Cancer Institute in Salt Lake City does the stem cell collection. The time commitment for stem cell donors is about 7–10 days.

The transplant patient’s insurance covers the donor’s medical costs for donor workup and the collection. Donors or patients must cover the donor’s travel and lodging expenses. The patient’s insurance may include a benefit that will help with these costs. Discounted lodging for patients and donors is available nearby. The BMT social workers can help arrange your stay.

Being a stem cell donor is a serious emotional commitment. Mixed feelings are common. Stem cell transplants are not always successful. Complications outside the donor’s control can happen. Donors need emotional support from family and friends. The transplant team and our social workers can also be a resource to help you.

We need your full commitment BEFORE the patient begins preparing for the transplant. If you change your mind, the patient could face life-threatening consequences without your stem cells.

What is the donor workup?
From the matching donors, the transplant team selects the best match for the patient. The team checks the potential donor for other things important to the transplant’s success. This process is called the donor workup. The workup appointment takes 1–2 hours. It includes the following:

- You must complete a medical history questionnaire.
- The transplant team checks your veins to make sure they are strong enough for stem cell collection.
- The transplant team does some blood tests.

The day of the workup appointment or soon after, the transplant doctor meets with you. At this appointment, the doctor will do the following:

- Review your medical history questionnaire
- Do a physical exam

If your medical history and test results show you qualify, the doctor will explain the collection procedure in detail and ask you to sign a consent form.

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How are stem cells collected from donors?
The transplant team can collect stem cells from donors in two different ways: peripheral blood stem cell (PBSC) collection and bone marrow collection. The team will choose the collection method depending on what is best for you and the patient.

PBSC Collection
PBSC are stem cells in your bloodstream. The method of collection is called *apheresis*. In apheresis, your blood goes through a needle in one arm (IV) to a machine that collects only the stem cells. The rest of your blood returns to you through a needle in your other arm. For the five days before the donation, you will get daily shots of a drug called *filgrastim*. This drug raises the number of stem cells in your blood.

The BMT Program’s apheresis team does the procedure in our clinic. No anesthesia or hospital stay is needed. The collection session starts at 7 a.m. and lasts about 4–6 hours. It sometimes takes two collection days to get enough stem cells for the transplant. You will know by late afternoon whether a second day is needed.

Some donors may not have arm veins large enough for apheresis. One of the tests in the donor workup checks for this. If this happens, the transplant team will place a larger IV called a central line catheter in a vein in your neck. You will have a shot to numb the area and get medicines to keep you calm and free of pain. When the collection is complete, the team removes the central line.

Your body replaces stem cells within 24 hours of the collection. You can return to normal activities the next day.

Bone Marrow Collection
Bone marrow donation is an outpatient surgery. It takes place in a hospital operating room, but you do not stay overnight. You do not have to take *filgrastim* shots before the collection.

Doctors use needles to collect marrow from your hip bone. You will get anesthesia medicines so you feel no pain during the collection.

The procedure takes 1–2 hours. You may need a blood transfusion after the stem cell collection.

Usually, donors leave the hospital the same day as the collection. It is important that you stay in Salt Lake City through the next day.

You will feel bruised and achy in the lower back and hips after the collection. The transplant team will give you medicine to ease the pain. Usually, you can return to normal activities in 3–4 days.

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For more information about stem cell transplants at HCI, contact the BMT Transplant Coordinators
Carol Nielson 801-587-4489
Francesca Paglione 801-587-4653
Zachary Miller 801-213-5608
Laura Spruit 801-587-4086

For more information about financial concerns, contact HCI’s Patient Financial Advocates
Traer Poore 801-587-4483
David Ocejo 801-587-4037

Some other resources for information about stem cell transplants and donation
HCI’s G. Mitchell Morris Cancer Learning Center Phone: 1-888-424-2100 E-mail: cancerinfo@hci.utah.edu Visit: 6th floor HCI cancer hospital
National Marrow Donor Program Phone: 1-800-627-7692 Website: bethematch.org
Blood & Marrow Transplant Information Network Phone: 1-888-597-7694 Website: www.bmtinfonet.org