



Allogeneic Donor Peripheral Blood Stem Cell Harvesting

This information describes the procedure for donating peripheral (peh-RIH-feh-rul) blood stem cells at Memorial Sloan Kettering (MSK).

About Allogeneic Peripheral Blood Stem Cell Harvesting

Peripheral blood stem cell harvesting is a procedure to harvest (collect) some of the stem cells in your blood. Stem cells are immature cells that make all of the blood cells in your body. This includes the white blood cells that fight infection, red blood cells that carry oxygen, and platelets that stop you from bleeding. Allogeneic (A-loh-jeh-NAY-ik) means the stem cells are taken from a donor (you) and given to another person. Peripheral blood is the blood that circulates in your blood vessels.

After they're harvested, your stem cells will be given to a patient in a peripheral blood stem cell transplant. The cells that you donate will grow, mature, and replace the patient's cancerous cells.

Before Your Procedure

Stem cell mobilization and granulocyte colony-stimulating factor (GCSF) injections

There are only a small number of stem cells that naturally circulate in your blood. To increase the number of stem cells in your bloodstream, you will get injections (shots) of a medication called granulocyte colony-stimulating factor (GCSF). GCSF makes your body make more stem cells than usual. It also helps make the stem cells move into your bloodstream, where they can be collected more easily. This process is called mobilization. Examples of GCSF medications include filgrastim (Neupogen[®]) and plerixafor (Mozobil[®]). You will need either filgrastim alone, or filgrastim and plerixafor. Your nurse will talk with you about which injections you will need.

If you're asked to take filgrastim, those injections will be every day for about 5 to 6 days. You can be taught to do the injections yourself, or you can talk with your nurse about making other arrangements (such as coming into the clinic or having someone else give you the injections at home). If you're doing the injections yourself, your nurse will give you the resource *Giving Yourself an Injection of Filgrastim (Neupogen[®]) or Pegfilgrastim (Neulasta[®]) With a Prefilled Syringe* (https://140.163.1.151/pe/injection_neupogen_neulasta).

If you're asked to take plerixafor, those injections will be every day for 1 to 4 days. They will be given in the clinic by a nurse.

You must store these medications in the refrigerator.

Common side effects of GCSF include bone pain in your sternum (breastbone), arms, legs, and lower back. It

can also cause nausea (feeling like you're going to throw up), low-grade fevers (a temperature of 99 to 100 °F), headaches, and flu-like symptoms. Either regular or extra strength acetaminophen (Tylenol®) can help relieve these side effects. If acetaminophen doesn't help, tell your doctor. They will prescribe something stronger.

Tunneled catheter placement

A tunneled catheter is a type of central venous catheter (CVC). Before we collect your stem cells, a nurse from our donor room will check your veins to make sure that they can be used for the procedure. If your veins can't be used (for example, if they're too small), you will have a tunneled catheter put into a large vein near your collarbone. The tunneled catheter has 2 access ports that will be used during your harvesting procedure. It will be removed once your collection is complete. Your nurse will teach you how to care for it and will give you written information.

What to eat

As your stem cells are collected, your blood calcium levels may drop. For a few days before your harvesting procedure, we recommend that you eat dairy products and other foods that are rich in calcium. Examples include Greek yogurt, almonds, dark leafy vegetables, and tofu. This will help raise the calcium levels in your blood.

The Day of Your Procedure

Where to go

Your harvesting procedure will be done at one of the following locations:

- Blood Donor Room
Arnold and Marie Schwartz Cancer Research Building
1250 First Avenue
New York, NY 10065
[212-639-7643](tel:212-639-7643)
- Apheresis Unit on the 12th floor
David H. Koch Center for Cancer Care at Memorial Sloan Kettering
530 East 74th Street
New York, NY 10021
[646-608-3142](tel:646-608-3142)

You will have appointments 2 days in a row. Each harvesting session usually takes 4 hours. On these days, you will need to take the dose of filgrastim at least 1 hour before your appointment.

What to expect

You will lie on a bed or sit in a recliner chair during each harvesting session. A nurse will connect you to a machine either by an IV tube in each of your arms or by your tunneled catheter. Blood will be drawn through one of the IV lines or tunneled catheter ports. The blood will circulate through the machine and the machine will separate and collect your stem cells. The rest of your blood will be returned to you through your other IV line or tunneled catheter port.

You can watch TV or read during your procedure. You might feel cold during the procedure, so blankets will be available to make you comfortable.

As your stem cells are collected, you may have muscle cramps, twitching, or a tingling sensation around your lips and fingertips. These are signs that your blood calcium level is low. If you have any of these things, tell a nurse. They will give you Tums[®], which are a quick and easy source of calcium. They may also give you a medication that has calcium through your IV line or tunneled catheter.

After Your Procedure

After your procedure, if IV lines were placed in your arms, you will have a bandage on your arms to prevent bleeding. Leave the bandage in place for at least 3 hours, but not more than 5 hours. If there's bleeding when you take the bandages off, apply gentle but firm pressure on the sites for 3 to 5 minutes. Call your doctor if the bleeding doesn't stop.

If your tunneled catheter was used, it will be flushed and recapped. It will be removed after your last harvesting procedure.

Ask your doctor when you can return to your regular activities. Most people can go back to their regular activities the day after the donation.

When to Call Your Doctor

Call your doctor if you:

- Have a fever of 100.5 °F (38 °C) or higher.
- Develop significant flu-like symptoms (symptoms that keep you from doing your usual activities, such as work or school).
- Develop significant pain on the left side of your body.
- Develop a severe headache and any neurological changes such as changes in vision, changes in short-term or long-term memory, changes in mobility, difficulty speaking, or any other concerning symptoms.
- Have any of the following symptoms around your tunneled catheter site or the areas where the IVs were in your arms:
 - Redness
 - Bleeding that doesn't stop with firm pressure
 - Pain
 - Swelling

GCSF Injection Schedule

Medication: _____ Dose: _____

Date Time Donor Room Appointment

Tell us what you think

Tell us what you think

Your feedback will help us improve the information we provide to patients and caregivers. We read every comment, but we're not able to respond. If you have questions about your care, contact your healthcare provider.

Survey Questions

Questions **Yes** **Somewhat** **No**

Was this information easy to understand? Yes Somewhat No

What could we have explained better?

Submit

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If you have any questions, contact a member of your healthcare team directly. If you're a patient at MSK and you need to reach a provider after 5:00 pm, during the weekend, or on a holiday, call 212-639-2000.

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For more resources, visit www.mskcc.org/pe to search our virtual library.

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