

Preparing for an Autologous Stem Cell Transplant

Step 1 : Stem Cell Mobilization

What to expect: Your doctor and transplant team will determine a mobilization regimen for you to help release your stem cells out of the bone marrow into the bloodstream for collection.

Step 2 : Stem Cell Collection

What to expect: During peripheral blood stem cell collection, you will be connected to an apheresis machine, also known as a cell separator. Blood will leave your body through a central venous catheter, the machine will collect the stem cells and then the remaining blood components will return to your body through the catheter. A blood thinner called citrate may be slowly added to your blood during this process to help prevent blood clotting.

This process may take approximately 4-6 hours to complete each day. Repeated collections on subsequent days may be needed to collect enough stem cells for your transplant.

Step 3 : Stem Cell Freezing and Storage

What to expect: Your stem cells will be processed, frozen and stored after each apheresis session. Your frozen stem cells will be ready and waiting for you once you have completed your chemotherapy and/or radiation.

During the freezing process a chemical called dimethylsulfoxide (DMSO) is mixed with the stem cells to protect the cells during freezing.

Step 4 : Pre-Transplant Chemotherapy

What to expect: After the stem cells are collected, you will receive high-dose chemotherapy and/or radiation therapy. These higher doses of chemotherapy and radiation are intended to kill any remaining cancer cells and make room for your new cells to grow. The side effects that may occur during this phase may be similar to those you experienced with previous treatment, but could range in severity.

Step 5 : Stem Cell Transplant

What to expect: On the day of your autologous stem cell transplant, the frozen, previously collected stem cells will be brought to your bedside, thawed and infused back into your bloodstream through your central venous catheter. Infusion times range from 30 minutes to 5 hours, depending upon the volume of cells to be infused. During and for a period after the infusion, you will be checked frequently for signs of fever, chills, hives, a fall in blood pressure and/or shortness of breath among others. Some patients may feel nauseated or vomit during the procedure.

Step 6 : Engraftment and Recovery

What to expect: As soon as your stored stem cells are infused, they travel through your bloodstream to the bone marrow space in a process called homing.

Even though the stem cells start the homing process right away, it will be approximately 8-30 days before these infused cells are able to mature and produce healthy new blood cells, a process called engraftment.

