



Riley Hospital for Children
Indiana University Health

STEM CELL HARVEST

INTRODUCTION TO APHERESIS

The Riley Apheresis Center plays an important role in many of the Riley Children's Cancer Center treatment plans/protocols.

Apheresis (pronounced: ā-for-ē-sis) refers to a process by which blood cells or different parts of the blood can be collected. When special cells called "stem cells" are collected by this process, it is referred to as a Peripheral Blood Stem Cell Collection. These "stem cells" originate in the bone marrow and are encouraged to move out of the marrow and into the peripheral blood stream through the use of a stimulating factor (often GCSF or Neupogen). The "stem cells" collected from the peripheral blood can be used to support the growth of new blood cells between chemotherapy treatments or for a stem cell transplant.

If peripheral blood stem cell collection becomes part of your/your child's therapy, you will receive more detailed information about the process from your doctor and/or transplant coordinator. You will also be given a packet titled "Introduction to Apheresis" by your coordinator which provides more details about this procedure and our coordinator will discuss with you the timing for required labs and other preparation for apheresis.

The Apheresis Center is an outpatient area staffed with qualified, experienced Registered Nurses (RN's). These RN's are responsible for performing the collection of and/or infusion of stem cells. While in the Apheresis Center, you/your child will be seen and evaluated by a Stem Cell Transplant physician and pediatric nurse practitioner or physician assistant. They work in conjunction with you/your child's primary Hematologist/Oncologist to coordinate various aspects of your/your child's care.

Questions regarding Peripheral Blood Stem Cell Apheresis Collections can be directed to Cathleen Kelley, RN (317) 948-0619 and Linda Simison, RN at (317) 948-0639.

BONE MARROW HARVEST

To collect bone marrow from a related donor for transplant, a bone marrow harvest is done in the operating room.

About two weeks before the harvest date, the related donor will be asked to come to Riley for a pre-operative check-up. For healthy allogeneic donors, this may include blood work, chest x-ray, and an examination by a physician or nurse practitioner. The donor's blood will also be tested for possible infectious diseases such as CMV, herpes, and HIV. This is required by the State Board of Health. A Stem Cell Transplant physician will meet with you/your child to discuss this procedure in detail and legal consents for the procedure will be signed at this time. Also, within 24 hours of the procedure, the donor will need to have blood drawn again as a final check before the donation and will be seen briefly by the nurse practitioner or physician assistant. The donor or patient should NOT have aspirin, Ibuprofen, Motrin, Advil, etc. for 48 hours prior to the harvest. Tylenol is acceptable. If the donor is taking specific medications, these will be reviewed by the Stem Cell physician prior to the harvest.

We prefer and advise related allogeneic donors to arrive in Indianapolis the day before the procedure. The clinical coordinator and your child's social worker will help you with lodging arrangements at the Ronald McDonald House or in making local hotel reservations if the Ronald McDonald House is not available. The morning of the operation, the patient/donor will usually need to be at the hospital by 6:30 a.m. The staff in day surgery will contact you 24 hours before the surgery to confirm diet and arrival times. The patient/donor should go to the outpatient registration area to check-in then go to Day Surgery. The nurses will take vital signs (temperature, blood pressure, etc.), and help get the donor settled. If your child's donor is an adult (parent, older sibling), he/she may need to have this procedure done at University Hospital. Your coordinator will discuss this with you and your donor.

The patient/donor will go to the operating room for the procedure. She/he will have an IV started, and be put completely asleep by the anesthesiologist. Either two transplant doctors or one doctor and one nurse practitioner/physician assistant will be doing the bone marrow harvest. A doctor or nurse practitioner/physician

assistant will stand on each side of the patient/donor. After the donor procedure site is carefully "scrubbed" or cleaned to get rid of bacteria on the skin, the procedure will begin. A bone marrow needle is inserted into the hipbone, and the liquid bone marrow is pulled from the center of the bone with a syringe. The marrow is put into a bag which contains heparin to keep it from clotting. The needle is pulled out, re-inserted, and more marrow is taken out. This may be done many times to get enough bone marrow, but you will usually see only 1-2 needle marks on each side of the back. Sometimes the patient/donor is also placed on his back and marrow is taken from the front side of the hipbones. When the procedure is over, the marrow, which looks like blood, will be hand carried in a special bag and container to the Stem Cell Lab for processing.

The patient/donor is then taken to the recovery room until she/he wakes up, and then will return to the Day Surgery area to continue the recovery process. The donor will usually stay there 2-6 hours, until she/he is awake, alert, and can drink fluids without getting sick. A blood test will also be drawn to check for anemia. The nurses there will give you instructions on how to take care of you/your child for the next few days. The transplant doctor or nurse practitioner/physician assistant will also come by to check on the patient/donor. Usually, allogeneic donors will go home from the hospital the same day, but will need to return to the outpatient Stem Cell Clinic the day after surgery to have bandages removed and to be seen by a physician and nurse practitioner/physician assistant. If on the weekend or a holiday, arrangements may be made for the donor to be seen by a physician on the inpatient unit.

The patient/donor may be sore for a few days after the procedure, and it can take up to two weeks for full recovery. Non strenuous activity is best for the first 48 hours.

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