

BONE MARROW ASPIRATION AND BONE MARROW BIOPSY

AT CHILDREN'S HOSPITAL OF PITTSBURGH OF UPMC, we believe parents and guardians can contribute to the success of the tests and invite you to participate. Please read the following information to learn about the tests and how you can help.

Fast Facts About the Bone Marrow Aspiration and Biopsy

- A bone marrow aspiration is a test to remove a small sample of fluid from inside the bone so that it can be tested and studied under a microscope.
- A bone marrow biopsy is a test to remove a small sample of bone so that it can be tested and studied under a microscope.
- Many patients will receive both tests at the same time, but some may only receive the bone marrow aspiration.
- Both samples are taken from the large hip bone in your child's lower back.
- Your child will receive sedation medication for this test. This medication will make your child very relaxed during the test so that he or she will feel less pain and have no memory of it afterward.
- When sedation medication is given, there are special rules for eating and drinking that must be followed.
- Each test takes about 15 minutes, followed by 30 minutes of rest.

What Are the Bone Marrow Aspiration and Biopsy?

A bone marrow aspiration (*as-per-RAY-shun*) and bone marrow biopsy (*BY-op-see*) are tests to see if your child's bone marrow—the fluid located in the center of large bones—is producing normal blood cells.

- Bone marrow aspirations and bone marrow biopsies give doctors important information about your child's bone marrow that they cannot learn from a physical examination.
- The samples will be taken with two different types of needles, which are carefully inserted into your child's hip bone.
- These samples are then tested and studied under a microscope.



Home Preparation

Because your child will receive sedation (*se-DAY-shun*) medication for this test, there are special rules that must be followed in the hours before the test.

For children older than 12 months:

- After midnight the night before the tests, do not give any solid food or non-clear liquids. That includes milk, formula, juices with pulp, coffee and chewing gum or candy.

For infants under 12 months:

- Up to 6 hours before the **scheduled arrival time**, formula-fed babies may be given formula.
- Up to 4 hours before the **scheduled arrival time**, breastfed babies may nurse.

For all children:

- Up to 2 hours before the **scheduled arrival time**, give only clear liquids. Clear liquids include water, Pedialyte®, Kool-Aid® and juices you can see through, such as apple or white grape juice.
- Medications may be taken with clear liquid up to 2 hours before the test.
- In the 2 hours before the **scheduled arrival time**, give nothing to eat or drink.
- You may bring along a "comfort" item—such as a favorite stuffed animal or "blankie"—for your child to hold during the test.

BONE MARROW ASPIRATION AND BIOPSY cont'd

Before the Tests

Bone marrow aspirations and bone marrow biopsies are done at the Division of Pediatric Hematology/Oncology of Children's Hospital. After you have registered your child at the Pediatric Hematology/Oncology Registration Desk, you will be asked to sit in the waiting area.

- We invite one parent or guardian to stay with your child during the tests. Other adults and siblings must stay in the waiting room during the test.
- You and your child will be called to the testing room and a nurse will meet with you to take your child's vital signs, weight and medical history.
- As the parent or legal guardian, you will be asked to sign a consent form before the sedation medication is given.
- You may ask any questions or concerns about your child's test at this time.
- Your child may wear normal clothes to the tests, but will be asked to remove any jewelry and give it to you to keep during the test.
- Your wait time will vary depending on how many children are being tested that day and the type of test that has been ordered for your child. Since every child is different, the length of time needed to do each test also will vary. Please be patient with the medical staff.



- The doctor will carefully insert a needle into the hip bone. The doctor will then attach a syringe (*sir-RINJ*) to draw out a sample of the fluid from inside the bone. This fluid will be red and will be studied by the doctor later.
- It is not unusual for the doctor to attach more than one syringe if more samples are needed. Your child's body will quickly replace the small amount of the fluid that has been taken out.
- Your child may react as if he or she is uncomfortable during the test. This sensation will stop once the test is finished, however, and he or she will not remember it later.
- Most children also receive a bone marrow biopsy. If your child is having a bone marrow biopsy, the doctor will perform this test right after the bone marrow aspiration.
- The doctor will insert a different kind of needle into the hip bone in the same area of your child's lower back. This needle is used to remove a small sample of bone, which the doctor will study later. More than one sample may need to be taken.
- During this portion of the test, your child may react as if he or she is feeling some pain, but the IV medication will **keep him or her from remembering any pain later.**

The Tests

You will be joined in the testing room by a doctor and one or two assistants who will work with your child and do the tests.

- If your child does not already have a central venous catheter (such as a Mediport or Broviac), an intravenous (*in-tra-VEE-nus*) or IV line will be placed into a vein in his or her arm and medicine will be given to relax your child. This medication will take effect very quickly.
- During the tests, your child's heart rate, blood pressure, temperature and blood oxygen level will be checked continuously. A blood pressure cuff around the upper arm and a small fingertip clip will be used. They will not cause any pain.
- Your child will be asked to lie on his or her stomach or side and stay still during the tests.
- Your child may keep his or her clothes on during the tests, but pants and underwear may need to be loosened and lowered slightly so that the doctor can reach the lower back.

A Parent's/Guardian's Role During the Tests

The most important role of a parent or guardian during the tests is to help your child stay calm and relaxed. The best way to help your child stay calm is for you to stay calm. Although your child may seem to be feeling pain during the tests, **rest assured that the medication will keep him or her from remembering any pain afterwards.**

- You may stay near your child or hold his or her hand for comfort during the tests.
- You may bring along a "comfort" item—such as a favorite stuffed animal or "blankie"—for your child to hold during the tests.
- Please follow the instructions of the medical team during the tests and do not distract them or interrupt the tests in any way.
- We welcome your questions, but please ask them either before or after the tests.

BONE MARROW ASPIRATION AND BIOPSY cont'd

After the Tests

When the doctor has taken all the samples he or she needs, the tests are over.

- After the tests, your child will be asked to rest lying down for about 30 minutes.
- Band-aids will be placed on the spots where the needles were inserted. They can be removed the next day.
- Your child may be tender or sore in the area where the samples were taken. (If so, he or she may take a mild pain reliever, such as Tylenol® or acetaminophen.)
- Your child may seem groggy after the tests because of the IV medication. The length of time it will take the medications to wear off will vary, as some children take longer than others to become alert.
- Your child should rest quietly at home for the rest of the day and overnight. He or she should not drive a car or ride a bike or scooter for 24 hours.
- Your child may resume normal eating and drinking at the rate he or she is comfortable with when you get home.
- The doctor will explain what was done during the tests, and will be available to answer any questions you might have.
- The doctor will not know the results of the tests for about 2 days. Once the results are in, the doctor will contact you to talk about them.

Special Needs

If your child has any special needs or health issues you feel the doctor performing the tests needs to know about, please call the Division of Pediatric Hematology/Oncology at Children's Hospital of Pittsburgh **before the tests** and ask to speak with a nurse. It is important to notify us in advance about any special needs.

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To see the list of all available patient procedures descriptions, please visit www.chp.edu/procedures.

