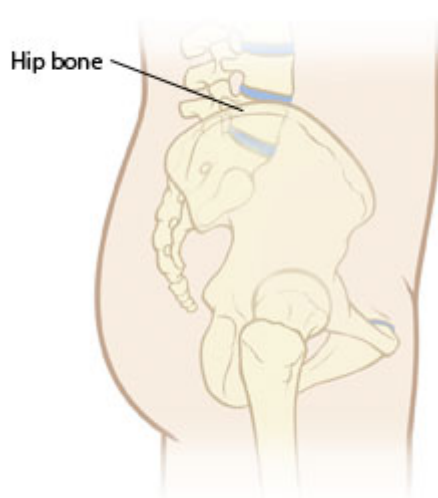


Bone Marrow Aspiration and Biopsy



Bone marrow is the soft, spongy part inside the body's larger bones. Bone marrow has both liquid and solid parts. It makes most of the body's blood cells. Aspiration and biopsy are procedures done by a trained healthcare provider to take a sample of bone marrow out of the body. This is to be examined by a pathologist. For each procedure, the healthcare provider puts a needle into one of your bones. Often this is done in the back of the hip bone. Then the provider takes a sample of bone marrow through the needle.

If a sample of fluid and cells is taken, it's called bone marrow aspiration. If a solid sample of bone and bone marrow tissue is removed, it's called bone marrow biopsy. In each case, the samples are sent to a lab and studied. The procedures can be done alone, but are most often done together (bone marrow exam). This sheet tells you more about what to expect.



Why the procedures are done

The procedures may be done for a number of reasons. They can help diagnose certain blood or bone marrow problems or infections. They may help find certain cancers, such as leukemia, multiple myeloma, or lymphoma. They can show if cancer in other areas of the body has spread to the bone marrow. They can be used during cancer treatment, such as chemotherapy, to see how well treatment is working. And they may be done before certain treatments, such as a stem cell transplant that need a bone marrow sample. Your healthcare provider will explain why you need the procedure and answer any questions you have.

Preparing for the procedure

Get ready for the procedure as your provider instructs you. Also:

- Tell your healthcare provider:
 - What medicines you take. This includes blood thinners, such as aspirin. This also includes both prescription and over-the-counter medicines. And it includes herbs, vitamins, and other supplements. You may need to stop taking some or all of them before the procedure.
 - If you are allergic to any medicines. Also mention if you have ever had a reaction to medicines used during other tests or procedures in the past.
 - If you have any other allergies.

- If you have a history of bleeding problems.
- If you are pregnant or could be.
- Follow any directions you're given about medicines to stop taking and what to stop eating or drinking before the procedure.
- Make arrangements for an adult to drive you home after the procedure. Also make sure you have someone who can help you at home.

The day of the procedure

The procedures can be done at a hospital, clinic, or healthcare provider's office. They are done by a healthcare provider. Whether you're having one or both procedures, plan to be at the facility for 1 to 2 hours. You'll likely go home the same day.

Before the procedure begins

What to expect before the procedure:

- An IV (intravenous) line may be put into a vein in your arm or hand. This line gives you fluids and medicines.
- You may be given medicine (sedative and pain reliever) to help you relax and reduce pain, if needed. This medicine is given by pill, shot, or through the IV line.

During the procedure

What to expect during the procedure:

- You'll lie on your side or your stomach if the sample will come from the hip bone.
- The site to be used for the bone marrow samples is marked and cleaned. The most common site is the back of the hip bone. Less common sites include the front of the hip bone or breastbone.
- Healthcare staff will inject a numbing medicine (local anesthesia) at the site.
- The healthcare provider makes a small cut (incision) through the numbed skin.
- One or both procedures are then done. Be sure to lie still for each procedure. It's normal to feel some pressure or pain during each procedure. However, do tell your healthcare provider if you experience severe pain, discomfort, or difficulty breathing during the procedure.
 - Bone marrow aspiration. The provider puts a thin hollow needle through the cut and into the bone. A syringe is then attached to the needle and used to remove a sample of bone marrow fluid and cells. You may feel a dull, deep, aching pain during the aspiration.
 - Bone marrow biopsy. The provider puts a different needle through the same cut and rotates it into the bone. You may feel pain and pressure. A small amount of bone and marrow tissue is then removed.
- The samples are sent to a lab to be assessed.
- When the procedure is done, staff will put pressure on the site to stop bleeding. The site is then bandaged.

After the procedure

Most people can go home after a short time of observation. If you need it, you'll be given medicine to manage pain. If you were given a sedative, you may be taken to a recovery room to rest until the medicine wears off. An adult family member or friend must drive you home afterward.

Recovering at home

Once at home, follow any instructions you're given:

- Take all medicines as directed.
- Care for the procedure site as instructed.
- Check for signs of infection at the procedure site (see below). Mild bruising is normal.
- Keep the bandage clean and dry. Don't get the procedure site wet. Don't bathe or shower until your healthcare providers say it's OK to do so. If you wish, you may wash with a sponge or washcloth.
- Don't do any heavy lifting or other strenuous activities as directed.

Call the healthcare provider

Call your healthcare provider if you have any of the following:

- Fever of 100.4°F (38°C) or higher, or as directed by your healthcare provider
- Signs of infection at the procedure site, such as increased redness or swelling, warmth, or bad-smelling drainage
- Prolonged bleeding from the biopsy site
- Increasing pain, swelling, or numbness around the biopsy site
- New pain, numbness, or weakness in your leg on the side of the biopsy.
- Severe pain in the back or abdomen

Follow-up

Your healthcare provider will discuss the results with you when they are ready. This is often within a week after the procedure.

Risks and possible complications of these procedures

Complications are rare but include:

- Severe bleeding or bruising at the procedure site
- Infection at the procedure site
- Bone break (fracture)
- Bone infection

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