



PATIENT & CAREGIVER EDUCATION

Bone Marrow Aspiration and Biopsy

This information explains what to expect before, during, and after your bone marrow aspiration and biopsy procedure.

Bone marrow is a thick liquid inside your bones. Bone marrow contains a large number of stem cells. Stem cells are immature cells that make all the blood cells in your body: the white blood cells that fight infection, red blood cells that carry oxygen, and platelets that stop you from bleeding.

Your healthcare provider may need to take a sample of your bone marrow to see:

- How many blood cells you have and if they're growing normally.
- If there are any cancer cells or scar tissue in your bone marrow.
- If your chemotherapy treatment is affecting your bone marrow cells.
- The effects of an allogeneic stem cell transplant. This is a

procedure that replaces your abnormal marrow stem cells with healthy stem cells from a donor.

Sometimes, you may need to have a bone marrow procedure to get samples for research studies.

About Your Procedure

There are 2 different procedures to get a sample of bone marrow: a bone marrow aspiration and a bone marrow biopsy. You may have 1 or both of these procedures done. Most people usually have both done.

- In a **bone marrow aspiration**, your healthcare provider will put a narrow needle into your bone to take out some of your bone marrow liquid.
- In a **bone marrow biopsy**, your healthcare provider will put a slightly larger needle into your bone to take a small sample of your bone marrow and the bone around the marrow.

If you're having both procedures done, the aspiration is usually done first. Both procedures together usually take about 30 minutes. Your doctor will give you more information about the procedures you'll be getting.

Before Your Procedure

Tell your healthcare provider if you have any bleeding issues or allergies to the following:

- Chlorhexidine (used in liquids that kill germs)
- Local anesthetics (medications used to make an area numb)
- Latex
- Adhesives (such as tape or glue)

Ask about your medications

You may need to stop taking some of your medications before your procedure. Talk with your healthcare provider about which medications are safe for you to stop taking. We have included some common examples below.

Anticoagulants (blood thinners)

If you take a blood thinner (medication that affects the way your blood clots), talk with your healthcare provider before your procedure to see if you should stop taking it.

Do not stop taking your blood thinner medication without talking with your healthcare provider.

Examples of Blood Thinners			
apixaban (Eliquis®)	dalteparin (Fragmin®)	meloxicam (Mobic®)	ticagrelor (Brilinta®)
aspirin	dipyridamole	nonsteroidal anti-	tinzaparin

	(Persantine®)	inflammatory drugs (NSAIDs) such as ibuprofen (Advil®, Motrin®) or naproxen (Aleve®)	(Innohep®)
celecoxib (Celebrex®)	edoxaban (Savaysa®)	pentoxifylline (Trental®)	warfarin (Jantoven®, Coumadin®)
cilostazol (Pletal®)	enoxaparin (Lovenox®)	prasugrel (Effient®)	
clopidogrel (Plavix®)	Fondaparinux (Arixtra®)	rivaroxaban (Xarelto®)	
dabigatran (Pradaxa®)	heparin (shot under your skin)	sulfasalazine (Azulfidine®, Sulfazine®)	

Read our resource *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E* (www.mskcc.org/pe/common_meds). It has important information about medications you might need to stop taking for this procedure and what medications you can take instead.

During Your Procedure

The bone marrow sample is usually taken from the back of your hip bone. You'll lie on your stomach or your side for this. In some cases, the sample can be taken from your breastbone (chest bone)

or the front of your hip bone. If this is the case for you, you'll lie on your back for the procedure.

Bone marrow aspiration

First, your healthcare provider will clean a small area of your skin with a liquid that kills germs. Then, they'll inject the area with a local anesthesia (such as procaine (Novocain®) or lidocaine) to numb it. You may feel some burning during the injection (shot). This will go away in a few seconds.

Once the anesthesia starts working, your healthcare provider will insert a needle into your bone to perform the aspiration. You'll feel pressure as the needle is inserted. If you're experiencing pain, tell the healthcare provider doing the procedure.

While the needle is inserted, your healthcare provider will take out a small amount of liquid bone marrow through the needle. This is called the aspirate or aspiration. You may need to have more than 1 sample taken. During the aspiration, you may feel a pulling or drawing sensation moving down your leg. Some people feel pain for a few seconds while the aspirate is taken, and some people feel no pain at all. The anesthesia won't help with this pain.

Bone marrow biopsy

The bone marrow biopsy will be done in the same area, but your healthcare provider will use a different needle. A small piece of

bone and bone marrow will be taken for the biopsy. You may feel more pressure in your hip or leg during this procedure. You may also feel a twisting sensation as the needle is inserted and taken out.

Based on the type of cancer you have, you may need to have the bone marrow aspiration and biopsy done on both your right and left hip bones on the same day. Your doctor will talk about this with you if it's needed.

When your procedure is done, a small bandage will be put on the area(s).

After Your Procedure

You'll be able to sit up on the procedure table for a few minutes once the procedure is over. Following the procedure, you may feel:

- A little light-headed for a few minutes. This will go away. Don't walk until the feeling goes away.
- Numbness in your leg or foot on the side where you had the procedure. If this happens, tell your healthcare provider. Don't try to stand up on your own. This usually goes away in a few minutes.
- Soreness in the area where the bone marrow was taken. Ask your healthcare provider about medication to help with this.

At home

- Don't take aspirin or products that contain aspirin, naproxen (Aleve®), or ibuprofen (Advil®, Motrin®) for 24 hours after your procedure. If you have to take aspirin, another medicine containing aspirin, or pain medication after your procedure, talk with your healthcare provider. For a list of medicines that contain aspirin, read *Common Medications Containing Aspirin, Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), or Vitamin E* (www.mskcc.org/pe/common_meds).
- If you stopped taking medications that thin your blood, ask your healthcare provider when you should start taking them again.
- Keep your bandage on for 24 hours. Don't get the bandage wet.
- Don't shower, bathe, or go swimming for 24 hours after your procedure. After 24 hours, you can take a bath or shower and take off your bandage.
- If you have bleeding at the site of your procedure, put pressure on the area, and call your healthcare provider.
- You may have bruising at the site for the next few days. This will appear to look black and blue and will clear up on its own.

When to Call Your Healthcare Provider

Call your healthcare provider if you have:

- Pain that won't go away.
- redness at the site of your procedure.
- Pain that goes down your leg (on the side where you had the procedure) and doesn't get better.
- A fever of 100.4 °F (38 °C) or higher.
- Bleeding at the site of your procedure.

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.

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

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