

After the procedure

Pressure will be applied to the area where the needle was inserted to stop the bleeding. Then a bandage will be placed on the site.

If you had local anesthesia, you'll be asked to lie on your back for 10 to 15 minutes and apply pressure to the biopsy site. You can then leave and go about your day, returning to normal activity as soon as you feel up to it.

If you had IV sedation, you'll be taken to a recovery area. Plan to have someone drive you home, and take it easy for 24 hours.

You may feel some tenderness for a week or more after your bone marrow exam. Ask your doctor about taking a pain reliever, such as acetaminophen (Tylenol, others).

Site care

Wear the bandage and keep it dry for 24 hours. Don't shower, bathe, swim or use a hot tub. After 24 hours you can get the aspiration and biopsy area wet.

Contact your doctor or nurse if you have:

- Bleeding that soaks through the bandage or doesn't stop with direct pressure
- A persistent fever
- Worsening pain or discomfort
- Swelling at the procedure site
- Increasing redness or drainage at the procedure site

To help minimize bleeding and discomfort, avoid rigorous activity or exercise for a day or two.

Results

The bone marrow samples are sent to a laboratory for analysis. Your doctor generally gives you the results within a few days, but it may take longer.

At the lab, a hematologist or a specialist in analyzing biopsies (pathologist) will evaluate the samples to determine if your bone marrow is making enough healthy blood cells and to look for abnormal cells. The information can help your doctor:

- Confirm or rule out a diagnosis
- Determine how advanced a disease is
- Evaluate whether treatment is working

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BONE MARROW BIOPSY AND ASPIRATION Patient Information Leaflet



Overview

A needle suctioning out liquid bone marrow from hipbone

Bone marrow biopsy and bone marrow aspiration are procedures to collect and examine bone marrow — the spongy tissue inside some of your larger bones.

Bone marrow biopsy and aspiration can show whether your bone marrow is healthy and making normal amounts of blood cells. Doctors use these procedures to diagnose and monitor blood and marrow diseases, including some cancers, as well as fevers of unknown origin.

Bone marrow has a fluid portion and a more solid portion. In bone marrow biopsy, your doctor uses a needle to withdraw a sample of the solid portion. In bone marrow aspiration, a needle is used to withdraw a sample of the fluid portion.

Bone marrow biopsy and bone marrow aspiration are often done at the same time. Together, these procedures may be called a bone marrow exam.

Why it's done

Bone marrow biopsy and bone marrow aspiration offer detailed information about the condition of your bone marrow and blood cells. Your doctor may perform a bone marrow exam to:

- Diagnose a disease or condition involving the bone marrow or blood cells
- Determine the stage or progression of a disease
- Check iron levels and metabolism
- Monitor treatment of a disease
- Investigate a fever of unknown origin

Bone marrow biopsy and aspiration may be used for many conditions. These include:

- Anemia
- Blood cell conditions in which too few or too many of certain types of blood cells are produced, such as leukopenia, leukocytosis, thrombocytopenia, thrombocytosis, pancytopenia and polycythemia
- Cancers of the blood or bone marrow, including leukemias, lymphomas and multiple myeloma
- Cancers that have spread from another area, such as breast, into the bone marrow

- Hemochromatosis
- Fevers of unknown origin

A bone marrow biopsy and a bone marrow aspiration offer different, but complementary, information about your bone marrow cells. The two procedures are usually performed together.

Risks

Bone marrow exams are generally safe procedures. Complications are rare but can include:

- Excessive bleeding, particularly in people with low numbers of a certain type of blood cell (platelets)
- Infection, especially in people with weakened immune systems
- Long-lasting discomfort at the biopsy site
- Penetration of the breastbone (sternum) during sternal aspirations, which can cause heart or lung problems

How you prepare

Bone marrow exams are often performed on an outpatient basis. Special preparation usually isn't needed. However, you may want to:

- Tell your doctor about medications and supplements you take. Certain medications and supplements may increase your risk of bleeding after a bone marrow biopsy and aspiration.
- Tell your doctor if you're nervous about your procedure. Discuss your worries about the exam with your doctor. In some cases, your doctor may give you a sedative medication before your exam, in addition to a numbing agent (local anesthesia) at the site where the needle is inserted.

What you can expect

A bone marrow biopsy and aspiration can be done in a hospital, clinic or doctor's office.

The procedures are usually done by a doctor who specializes in blood disorders (hematologist) or cancer (oncologist).

The bone marrow exam typically takes about 10 minutes. Extra time is needed for preparation and post-procedure care, especially if you receive intravenous (IV) sedation. The total time for the procedure is about 30 minutes.

Before the procedure

Your blood pressure and heart rate will be checked, and you'll be given some form of anesthesia to keep you comfortable.

Most people need only local anesthesia, as bone marrow aspiration, in particular, can cause brief, but sharp, pain. You'll be fully awake during the procedure, but the aspiration and biopsy site will be numbed to reduce pain.

The area where the doctor will insert the biopsy needle is marked and cleaned. The bone marrow fluid (aspirate) and tissue sample (biopsy) are usually collected from the top ridge of the back of a hipbone (posterior iliac crest). Sometimes, the front of the hip may be used.

Bone marrow aspiration - but not biopsy - is occasionally collected from the breastbone or, in children under the age of 12 to 18 months, from the lower leg bone.

You'll be asked to lie on your abdomen or side, and your body will be draped with cloth so that only the exam site is showing.

Bone marrow aspiration

The bone marrow aspiration is usually done first. The doctor makes a small incision, then inserts a hollow needle through the bone and into the bone marrow.

Using a syringe attached to the needle, the doctor withdraws a sample of the liquid portion of the bone marrow. You may feel a brief sharp pain or stinging. The aspiration takes only a few minutes. Several samples may be taken.

The health care team checks the sample to make sure it's adequate. Rarely, fluid can't be withdrawn and the needle is moved for another attempt.

Bone marrow biopsy

Your doctor uses a larger needle to withdraw a sample of solid bone marrow tissue. The biopsy needle is specially designed to collect a core (cylindrical sample) of bone marrow.