

Bone Marrow Aspiration and Biopsy



KANAKIA
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What is bone marrow?

Bone marrow is the soft tissue in the center of most bones of the body. Its function is to manufacture blood cells.

Why is a bone marrow test done?

The bone marrow test is done when blood tests are abnormal and do not give enough information about a suspected problem. There are several reasons to do a bone marrow test:

- Diagnose a disease or condition
 - Anemia
 - Bone marrow diseases
 - * Myelofibrosis
 - * Myelodysplastic syndrome
 - Blood cells conditions
 - * Leukopenia
 - * Leukocytosis
 - * Thrombocytopenia
 - * Thrombocytosis
 - * Pancytopenia
 - * Polycythemia
 - Cancers of bone marrow or blood
 - * Leukemias
 - * Lymphomas
 - * Multiple myeloma
 - Cancers that have spread from other areas
 - Hemochromatosis
 - Infections e.g. tuberculosis
 - Storage diseases
 - * Amyloidosis
 - * Gaucher's disease
- Determine stage or progression of a disease
- Check iron levels and metabolism
- Monitor treatment of a disease

- Investigate unexplained fevers
- For medical procedures
 - Stem cell transplantation
 - Chromosomal analysis

How is the bone marrow tested?

The bone marrow can be tested by aspiration or by biopsy. Aspiration means to draw some liquid marrow out through a needle, whereas a biopsy means to take out a small piece of solid marrow through a needle. Most often the hip bone is used for the test. In small infants the tibial bone is used for the test.

How is the test done?

1. During the bone marrow test, the child lies on his side on a procedure table or bed.
2. Someone will stand beside the child to hold him tight and keep him very still. Holding still will help to get the test done faster.
3. The doctor will feel the lower back to find the right spot for the test. In most cases, it is preferred to give anesthesia to the younger patients and children.
4. Next, the doctor will put on gloves and clean the back with a bacteria-killing soap. This will feel cold. Then special sterile towels are placed over the back, leaving only a small area of skin showing.
5. At the correct spot which is the PSIS or posterior superior iliac spine, the doctor will give local anesthesia. The child will feel a hard pressure on the back.
6. The doctor will then use a bone marrow aspiration needle to pull some liquid marrow into a syringe. The child may feel some quick, sharp pain if not under anesthesia. This is bone marrow aspiration.

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Note: When the test is done under anesthesia, the patient will require to be fasting for 4-6 hours.

A bone marrow biopsy will be performed when needed. The doctor will use a different type of needle to remove a small piece of solid bone marrow through the needle. After the biopsy is done, a dressing is applied to the wound.

- Long lasting discomfort at the biopsy site
- Injury to heart or lung when test performed on sternum

What to do after the test?

In case of pain, please take paracetamol. Remove the dressing the next day. Replace the dressing with an adhesive bandage. In case of oozing of blood or swelling, please inform the doctor immediately. Please ensure that the dressing is not soiled, especially in younger babies.

When will the reports be ready?

The doctor will study your bone marrow aspiration slides under a microscope. Some studies take only one day, but others may take several days. Following this, the doctor will discuss the result with you.

What are the risks of bone marrow test?

Bone marrow tests are generally safe. Rare complications are:

- Allergic reaction to anesthesia
- Excessive bleeding, especially in low platelet count
- Infection, particularly in weakened immune system

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