



## Bone Marrow Aspiration (and Trephine Biopsy if necessary)

### Procedure Information Sheet

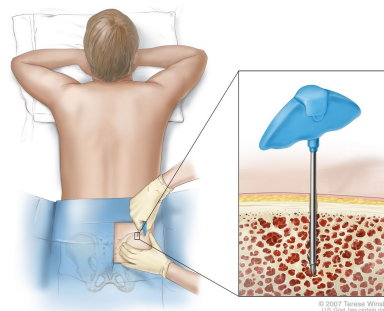
#### Introduction

The bone marrow is widely distributed throughout the body but functions as a single organ which accounts for 4% of the total body weight in adults. It is the site of primary production of peripheral blood cells, namely, the red blood cells for oxygen transport, the white blood cells for body defense and immunity, and the platelets for blood clotting.

Bone marrow examination is a minor bedside surgical procedure including aspiration and trephine biopsy of bone marrow, which is useful in the diagnosis and management of patients with hematological disorders.

#### Indication

- Unexplained anemia, decrease or increase in white blood cell count or platelet count
- Suspected leukemia or marrow infiltration by abnormal cells
- Unexplained enlargement of spleen and in fever of undetermined origin
- Diagnosis and staging of lymphoma
- Confirmation of normal marrow in potential allogeneic donor.



Source:  
<https://www.cancer.gov/publications/dictionaries/cancer-terms/def/bone-marrow-aspiration>

#### The Operation / Procedure

1. You will be instructed to lie in a prone position or laterally subjected to the examination site. The usual site for examination is at the posterior superior iliac crest which is part of the pelvic bone. Occasionally, sternum or the tibia (in children) may be chosen.
2. Doctor disinfects the skin and injects local anaesthetic into the chosen site.
3. A marrow needle is inserted into the centre of the bone under aseptic technique. A small amount of liquid marrow is aspirated. If Trephine biopsy is required, a small piece of bone about 1-2 cm with attached bone marrow will be taken.
4. Mild discomfort during marrow aspiration may be occasionally encountered. This can be alleviated with the use of local anesthesia.
5. Afterward, the marrow needle is removed and a pressure dressing is applied to the puncture site.
6. The whole procedure usually takes about 10 minutes – 20 minutes (for unilateral – bilateral).

#### Before the Operation / Procedure

1. A written consent is required.
2. Please inform doctor if you are taking medication that affect blood coagulation, such as Aspirin, Plavix, Warfarin, Xarelto, Pradaxa, Eliquis, Lixiana and so on.

#### After the Operation / Procedure

1. You should lie in a supine position, so as to apply body weight to the biopsy site to prevent bleeding.
2. If you find the dressing is wet, inform your nurses. New pressure dressing will be applied.
3. You should avoid overexertion (e.g. heavy activity or exercise) for at least 24 to 48 hours, to avoid potential pain or bleeding at the site of the procedure.

#### Risk and Complication

1. Pain is relatively common at the puncture site. It may last for several days and can be relieved by simple analgesics.
2. Bleeding at the puncture site (usually stop within a short period)
3. Infection (rare)
4. Damage to the nerve (very rare)

<b>Patient's Label</b>
Patient Name: _____
Hospital No: _____
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### Disclaimer

This leaflet only provides general information pertaining to this operation / procedure. While common risks and complications are described, the list is not exhaustive, and the degree of risk could also vary between patients. Please contact your doctor for detailed information and specific enquiry.

### Reference

Zehnder, J.L., Larson, R.A., Rosmarin, A.G. (2022). Bone marrow aspiration and biopsy: Indications and technique. *UpToDate*. Retrieved from [https://www.uptodate.com/contents/bone-marrow-aspiration-and-biopsy-indications-and-technique?search=bone%20marrow%20aspiration%20and%20biopsy&source=search\\_result&selectedTitle=1~150&usage\\_type=default&display\\_rank=1#H30](https://www.uptodate.com/contents/bone-marrow-aspiration-and-biopsy-indications-and-technique?search=bone%20marrow%20aspiration%20and%20biopsy&source=search_result&selectedTitle=1~150&usage_type=default&display_rank=1#H30)

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Patient's Signature: \_\_\_\_\_ Date: \_\_\_\_\_