

Bone Marrow Biopsy: Patient Information

What is a bone marrow biopsy and why do I need one?

Bone marrow is the soft, spongy tissue inside our large bones, where all blood cell production occurs. Many blood disorders originate in the bone marrow, and a bone marrow biopsy (also called bone marrow trephine) allows the Haematologist and Pathologist to look directly at these cells to make a diagnosis, or to determine if a disease elsewhere in the body is also affecting the bone marrow.

What does the test involve?

During this test, under local anaesthetic and sometimes intravenous sedation, a needle is passed into the bone marrow space usually through the back part of your hip bone. A sample of the bone marrow is taken through a syringe and a hollow needle, then the site is covered with a sterile dressing.

Is it painful?

It can be painful to have a bone marrow biopsy taken, so local anaesthetic is used to make the site numb. At times, under the recommendation of your doctor, an intravenous sedation medication is given in your vein, to make you sleepy and add more pain relief, during the procedure. This is not a general anaesthetic, and you wake up quickly afterwards. Sometimes the site of the biopsy is sore for a few days afterwards, but this usually well controlled with simple pain relief such as paracetamol.

Where do I have to go?

Bone marrow biopsies are performed in Day Oncology for outpatients (as a day case), or in your hospital bed if you are currently an inpatient in hospital.

What do I have to take?

Bring your Medicare card, insurance details, a list of all medications and allergies. If you are having your test as an outpatient, wear comfortable clothes with a loose fitting waistband.

Can I eat and drink and take my usual medications?

Do not eat or drink after midnight the night before the test. Do not have breakfast or anything to drink that morning. If you need sedation, it must be on an empty stomach.

Ask your doctor about any usual medications. Most medications can wait until after the procedure but essential medications can sometimes be taken very early that day with a small sip of water.

Who performs the test?

The procedure is performed by a doctor who is a specialist in blood disorders (haematologist) or an advanced trainee in Haematopathology. The doctor is often assisted by a nurse or a scientist from the haematology laboratory.

How long does it take?

Bone marrow biopsies are performed in the mornings at Cabrini, on Mondays, Wednesdays and Fridays. The bone marrow test typically takes about 30 minutes. If you receive intravenous (IV) sedation, extra time is needed for preparation and post-procedure care. It is best to assume that the whole morning will be taken up by the procedure including the preparation, the procedure itself and the recovery time afterwards.

What happens to me during the procedure?

Your nurse will check your blood pressure and heart rate. Because bone marrow aspiration and biopsy can be painful, you'll receive some form of anaesthesia (usually local anaesthetic to numb the site of the biopsy) to keep you comfortable. For most people, local anaesthesia is all that's needed but if you feel anxious about the pain, you can be given intravenous sedation. Speak with your Haematologist about this in advance if you are concerned.

You will be asked to lie on your side, or occasionally on your abdomen or back. The commonest site for biopsy is the back of the hip, about where your thumb would be if you put your hands on your hips. The area where the doctor will insert the biopsy needle is marked and cleaned, and draped with a sterile cloth. The bone marrow fluid (aspirate) and tissue sample (biopsy) are usually collected through a syringe and needle, through the numbed area.

Bone marrow aspiration

The bone marrow aspiration is usually done first. The doctor makes a small 3-4mm incision to make it easier to insert the needle. A hollow needle is inserted through the bone and into the bone marrow, and the bone marrow is drawn out similar to a blood test. You may feel a brief, sharp pain

or sting for a few seconds.

Bone marrow biopsy

In a bone marrow biopsy, a sample of solid bone marrow tissue is taken using a different needle which draws out a core of tissue like a matchstick. You may feel some pressure, aching and some movement during this part of the test.

What happens after the procedure?

After your bone marrow biopsy, pressure is applied to the area where the needle was inserted to stop any bleeding. Then a smaller bandage will be placed on the site.

If you had local anaesthesia, 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 need some time to recover. Because the sedative may cause impaired judgment, memory lapses or slowed response times, you must organise to have someone drive you home. Plan to take it easy for 24 hours.

You may feel some tenderness for a week or more after your bone marrow test. Ask your doctor about taking a pain reliever, such as paracetamol.

Note – if you had sedation for your bone marrow biopsy, you will not be able to drive home afterwards and you will need to organize transport to pick you up.

How do I care for the biopsy site?

Keep the bandage on and dry for 24 hours. Don't take a shower or bath, and don't swim or use a hot bath or spa. After 24 hours, it's OK to get the aspiration and biopsy area wet.

If bleeding soaks through the bandage or doesn't stop with direct pressure, contact your health care team. Also contact your doctor if you experience:

- A persistent fever
- Worsening pain or discomfort
- Swelling at the procedure site
- Increasing redness or drainage at the procedure site



Dr Kirsten Herbert
MBBS (Hons) BSc(Med) FRACP PhD

Assoc Prof Melita Kenealy
MBBS (Hons) FRACP FRCPA

Dr Michael Dickinson
MBBS (Hons) DMed Sci FRACP FRCPA

Assoc Prof Max Wolf
MBBS FRACP FRCPA

Cabrini Haematology & Oncology Centre --- (03) 9500 9345

Can I exercise afterwards?

Although you can often return to your normal activities after a bone marrow exam, avoid rigorous activity or exercise for a day or two. This will help minimize bleeding and discomfort.

Are there any risks of a bone marrow biopsy?

All procedures have risks. Bone marrow biopsies are very safe procedures, performed by experienced doctors. However the following risks have been reported:

Bleeding can occur at the site of biopsy. Constant ooze not resolving with pressure should be reported to your doctor. Pressure is applied after the procedure to reduce this risk.

Very rarely the biopsy site can become infected. Fevers, sweating and general unwellness in the days following the procedure should always be reported immediately. The risk is reduced by being careful to keep the wound clean and dry afterwards.

Pain at the biopsy site is not uncommon, and can persist for a number of days. Some people describe the sensation as a dull ache, some like a 'bruise on the bone'. Simple measures such as paracetamol pain relief are usually all that is required.

The overall risk of any of these complications occurring is about 1 in 1000, with pain being the commonest problem.

There are additional risks associated with sedation. Discuss these risks with your doctor.

When do I get the results?

Most results are available within 3-4 working days. Complex tests such as molecular tests or cytogenetics (DNA tests) can take many weeks. Discuss this with your doctor.