



University Hospitals Birmingham
NHS Foundation Trust



Bone Marrow Aspiration and Trepine Biopsy

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Introduction

This information leaflet explains what is involved before, during and after a bone marrow aspirate and trephine biopsy. Your doctor will go through the procedure with you but this information will help you understand more about what is discussed.

What is a bone marrow aspiration and trephine biopsy?

The bone marrow is the spongy tissue and fluid which is found inside the bones in the body. It makes your blood cells (red and white blood cells and platelets). In some of the larger bones in the body, such as the pelvis and chest bone, the bone marrow can be accessed and a sample removed.

A bone marrow aspiration is when a small amount of bone marrow fluid is withdrawn, put into tubes and spread onto slides. It can then be looked at under the microscope and further tests can be done looking at the proteins on the cells and the genetic material inside them.

A bone marrow trephine biopsy is when a tiny core of the bone marrow tissue is removed. This is then processed and sliced very thinly. It can be looked at under the microscope to see how the cells lie while they are actually in the bone marrow. This gives more information than just looking at the cells in liquid (as in the bone marrow aspirate).

Why do I need a bone marrow aspiration and trephine biopsy?

There are a number of reasons why you may be advised to have these tests and your doctor will explain these to you. Common reasons include:

- to find the cause of low blood counts
- to look for evidence of bone marrow involvement by a disease
- to monitor response to treatment

You may require only an aspiration, or you may need to have an aspiration and biopsy together. Your doctor will discuss with you which tests you require.

What preparation is needed before the test?

If you are taking aspirin, warfarin, clopidogrel, or other medication to thin the blood, your doctor will have given you advice about whether you need to stop these prior to the procedure.

If you are unsure whether you need to stop any medications, please contact your clinical nurse specialist (key worker) or consultant (please see contact details at the end of this leaflet).

You may need a blood test prior to the procedure to ensure the risk of bleeding is low. If you have been asked to stop or reduce your medication you may start to take it again on the evening of the procedure.

Tell your doctor or nurse if you have previously had an allergic reaction to any local anaesthetics (which you may have had during dental procedures or prior to having stitches put in).

Depending on your circumstances you may be offered sedation before the procedure, which will make you a bit drowsy but will not put you completely to sleep. You may find you don't remember much of the procedure afterwards if you have sedation. If a sedative is given then you will be asked **not to eat for six hours before the procedure** but you can drink water, squash or black tea or coffee up to two hours before.

You will need to sign a consent form before the procedure to indicate that you understand what it involves. The doctor or nurse performing the procedure will go through this with you on the day.

Can I come for the test on my own?

You can attend alone and drive home on your own as long as your observations are stable, but we would advise, if possible, to have someone accompany you.

How is the test done?

Bone marrow samples are usually taken from the bony ridge at the back of the pelvic bone. You will usually be asked to lie on a bed on your left side, curled up in a ball as much as is comfortable. The skin will be cleaned with antiseptic, which can be cold but doesn't hurt. A local anaesthetic is then injected into the area, usually with a couple of injections. The anaesthetic stings at first, but then makes the skin numb.

Bone marrow aspiration: a thin needle will be passed through the numbed skin into the pelvic bone. A small amount of liquid bone marrow will be withdrawn into a syringe. You may feel an odd sensation for a few seconds, although many patients do not feel anything at all. The needle will then be removed and the samples put into the appropriate tubes. Passing the needle and taking the sample usually only takes a few minutes.

Bone marrow trephine biopsy: if required, this is done immediately after the aspiration. A different needle will be inserted into the site where the aspiration needle was. The needle will be passed a few centimetres into the bone and rotated to obtain the sample. You may feel pushing and some pain at this point but this part of the test is usually over very quickly. After the needle is removed, the site will be checked to ensure there is no bleeding and then a simple dressing will be applied.

After the test

You will need to lie flat on your back (lying directly on the site of the procedure) for a short while to ensure no bleeding occurs.

If you have had sedation, you must not drive home or travel on your own. Please bring someone with you who can take you home. If this is a problem for you, discuss it with your nurse before you come into hospital. If you have had a sedative you will must not operate machinery, drive or sign any legal papers for 24 hours.

You may have some discomfort and bruising over the test site for a few days for which you can take normal painkillers, such as paracetamol.

Following the procedure there will be a small wound in the skin (2-3 millimetres) which will heal without stitches. You should not soak the area for 48 hours after you leave hospital. This means that you must avoid going swimming or having a bath. You may have a shower during this time. The dressing can be removed after 24 hours after the procedure.

What are the risks of bone marrow aspiration and trephine biopsy?

Complications are uncommon. In a small number of cases, there may be some bleeding from the biopsy site. This is usually minor and stops on its own or with pressure applied to the area. Occasionally, the bleeding is more severe and you may need to be reviewed by a doctor or nurse. Even more rarely, a blood transfusion and/or admission to hospital may be necessary.

There is a very small risk that the wound may become infected after the biopsy. On rare occasions, the biopsy needle can damage other nearby structures. You will experience some discomfort when the anaesthetic wears off, however if the site becomes sore or inflamed, or you experience severe or worsening pain after the procedure then please contact us on the numbers at the end of this leaflet.

What are the alternatives?

Your doctor has recommended this test to you as the best way to find out important information about your illness and how to treat it. If you choose not to have the procedure it could delay you receiving important treatment. If you have any questions your doctor will discuss these with you.

What happens next?

A further appointment should already have been made for you to come back to the outpatient clinic to discuss the results. If you have not received an appointment, please contact your consultant's secretary.

About this information

This guide is provided for general information only and is not a substitute for professional medical advice. Every effort is taken to ensure that this information is accurate and consistent with current knowledge and practice at the time of publication.

Contact details

Haematology Day Unit: **0121 371 7822/7823**

Haematology consultants' secretaries: **0121 371 4383/4381**
(Monday – Friday 08:00 - 17:00)

Emergency and out-of-hours: please contact **Ward 625** on **0121 371 6251/6293**.

There is always a haematology doctor on-call available via **Switchboard: 0121 627 2000**

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The Trust provides free monthly health talks on a variety of medical conditions and treatments. For more information visit www.uhb.nhs.uk/health-talks.htm or call 0121 371 4323.

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