

Bone marrow aspiration and trephine biopsy



Information for patients

This information leaflet explains what happens when you have a bone marrow test. If you have any questions, please do not hesitate to speak to the doctor or nurse looking after you.

Confirming your identity

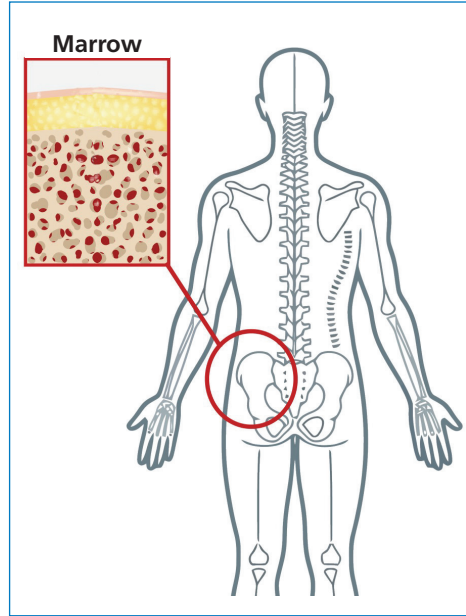
Before you have a treatment or procedure, our staff will ask you your **name** and **date of birth** and check your **ID band**. If you don't have an ID band we will also ask you to confirm your address.

If we don't ask these questions, then please ask us to check.

Ensuring your safety is our primary concern.

What is bone marrow aspiration and trephine biopsy?

Bone marrow is the spongy tissue inside your bones which produces your blood cells. A bone marrow aspiration and trephine biopsy is a combined medical procedure used to collect and examine liquid and solid bone marrow samples from your hip (pelvic) bone.



Why do I need this test?

This test can help doctors:

- detect any abnormal cells in the bone marrow
- identify and diagnose the cause of any abnormal blood cell counts
- decide on the best treatment for some blood conditions
- assess how treatment is working
- monitor the progression of certain conditions

What are the risks?

This is a very safe procedure with few risks. However, as with all medical procedures, there are some possible side effects and complications, including:

Pain and discomfort: We aim to provide you with adequate pain relief, but some patients find the procedure uncomfortable and may need extra pain relief such as Entonox.



Pain after the procedure is normal and can last several days. You can take over the counter pain relief such as paracetamol. If your pain lasts longer than this, please contact your healthcare professional for advice. Persistent pain occurs in around 1 in 10,000 cases.

Bleeding: There is a small risk you may experience bleeding from the biopsy site. This is usually minor and stops when pressure is applied. Haemorrhage occurs in around 1 in 2,500 cases.

Infection: You may develop an infection, however this is rare. If you develop a high temperature, pain, swelling, redness or discolouration in the area of your test, please tell the doctor in the Haematology Day Unit or your Clinical Nurse Specialist. Infection occurs in around 1 in 10,000 cases.

Difficulty in obtaining samples: Sometimes the samples can be difficult to take and several attempts may be needed. A repeat procedure may be needed if no sample can be taken or the sample does not provide us with enough information to make a diagnosis.

Damage to local structures: Rarely, a nearby blood vessel or nerves may be affected. If a blood vessel is affected, it may cause some bleeding, while you may feel pain, numbness, or a tingling in the area if the nerve is affected.

You can reduce bleeding and discomfort by avoiding strenuous activity or exercise for 24 hours after your test.

Are there any alternatives?

Bone marrow is the place where your blood is made. Currently, this test is the best way to investigate and diagnose your blood condition.



Do I need to prepare for the test?

As the bone marrow procedure will be done using local anaesthetic, you may eat and drink as normal before the procedure.

Anticoagulation medications

Anticoagulation medications increase your risk of bleeding from bone marrow biopsies. If you take any anticoagulant medications such as: warfarin, apixaban, edoxaban, rivaroxaban, dabigatran, heparin, clexane, clopidogrel or aspirin it is important to let your doctor know before the test.

You may or may not need to stop taking these medicines before you have the biopsy. This is to prevent any extra bleeding during or after the procedure. Your doctor will advise you when and for how long you need to stop taking them, but the below is a guide.

- Patients on apixaban, edoxaban, dabigatran, rivaroxaban, clexane, and other low molecular weight heparins, should not take the morning dose and restart again when it's due (at least 6 hours after the procedure). Patients on once a day in the evening can take the dose as usual.
- Patients on warfarin should have an international normalised ratio (INR) blood test within their normal range. The INR tests blood thinness. INR testing should be performed within the 24 hours before the procedure.
- Patients on aspirin, clopidogrel, and prophylactic (preventative) doses of low molecular weight heparin do not need any change in treatment.

If you have any concerns or questions about your anticoagulation medications, you should contact your clinical nurse specialist



Consent

Before your first bone marrow test, we will ask to take written consent. Staff will explain all the risks, benefits and alternatives before they ask you to sign the consent form. If you are unsure about any aspect of the treatment proposed, please do not hesitate to speak with a senior member of staff. If you have further bone marrow biopsies, you may not need to provide formal written consent again, but you should always be asked for your verbal consent.

Allergies

Before the procedure, we will check if you are allergic to:

- chlorhexidine or ChloroPrep (used to clean the skin)
- dressings or tapes
- local anaesthetic

What happens during the procedure?

The procedure will be performed in a side room in the Haematology Day Unit on the ground floor of the Cheyne Wing or one of the wards if you are an inpatient. The procedure will be performed by a doctor, clinical nurse specialist or advanced clinical practitioner. There will also be a health care assistant in the room and you may bring one family member or friend for support.

We will ask you to loosen the waistband on your trousers or skirt and lie on your side with your knees bent up to your chest. When you are in the right position, we will clean the area above your bottom with antiseptic fluid.

We will then inject the area around the back of your pelvic bone, where the sample will be taken from with local anaesthetic



(lidocaine). This may sting initially and then go numb. If additional pain relief is needed, Entonox® (gas and air) is available to you at any time.

Entonox® is a mixture of a gas called nitrous oxide and oxygen. It is breathed in through a mouthpiece. It works quickly to help control pain and anxiety. We can provide guidance on when and how to use it effectively.

The effects of Entonox® wear off within minutes and you will remain awake throughout. Entonox® is very safe to use, but side effects may include feeling:

- dizzy or sleepy
- sick or nauseous
- light-headed
- tingling, usually in your fingers

These effects wear off quickly when you stop breathing in the gas. There are no longer term effects of using it. The nursing assistant will monitor your oxygen levels while you are using the Entonox®.

For very anxious patients, we can also offer tablets such as lorazepam to help you relax before the procedure. This should be taken at least 30 minutes before the procedure. If lorazepam is needed, we advise against driving to and from your appointment. Other techniques like listening to music or meditation can also help.

When the area is numb, we will insert a needle into your pelvic bone to take a small liquid sample (aspirate). You may find this uncomfortable, with a strange sensation in your legs, but this should quickly go away.



Then a slightly larger needle will be used to take a small piece of bone marrow (trephine). You may feel some pushing and pressure during this part of the procedure. You may also feel a sharp sensation when we take the sample and when we remove the needle.

Please tell us if you are in pain or need more support at any stage. Your comfort and safety are important.

When the biopsy is finished a sterile dressing will be placed over the area.

How long will it take?

The whole test takes about 45 minutes, although it may take longer in certain circumstances.

What happens after the procedure?

When the procedure has finished you are free to go home. You may need a blood test before you go and this can be done in the department.

You should feel safe and supported to return home after the procedure. Please let us know if you:

- need assistance with mobility
- feel weak or in pain
- would like spare dressings to take home

What happens when I return home?

When you are home and the local anesthetic has worn off you may feel some discomfort in your back. You can take painkillers such as paracetamol to ease this. Please do not take ibuprofen without consulting the medical team.



You must keep the dressing on for 24 hours and keep it clean and dry. Do not bathe or shower during this time. After 24 hours the dressing can be removed.

It is normal to have some bruising and pain after the procedure. However, if you have a high temperature, significant bleeding or you feel unwell, call the medical staff in the Haematology Day Unit as soon as possible on **020 3299 4832**.

What happens to the bone marrow sample and when do I get my results?

We send the bone marrow sample to a laboratory to be looked at under a microscope, as well as other tests depending on your diagnosis or suspected diagnosis. We may also store and use samples for testing and research (see below).

Your results can take up to 2 to 3 weeks to come back, and sometimes longer for rarer tests. Your doctor will discuss them with you at your next clinic appointment. A doctor may contact you if it is urgent.

Who can I contact with queries and concerns?

While you are at King's having your test, please talk to a member of the medical or nursing staff in the Haematology Day Unit.

Before or after your test, please call the department on:

020 3299 2963. Out of hours, call the hospital switch board on **020 3299 9000** and ask to speak to the haematology registrar.

Samples for research:

We may ask you if we can take some extra samples for research (Biobank). This is completely voluntary. Your decision will not affect



your care. Please read the patient information sheet and consent form in this information pack and bring it with you to your first appointment at King's. Alternatively, you can click on the links or the QR codes to access them electronically.

[Patient information sheet](#)



[Consent form](#)



More information

Macmillan Information and Support Centre

The Macmillan Information and Support Centre at King's offers help and support to patients, carers, relatives and friends.

Tel: **020 3299 5229**

Email: kch-tr.macmillan1@nhs.net

Cancer Research UK.

This charity has more information about cancer and its care.

www.cancerresearchuk.org

MyChart

Our MyChart app and website lets you securely access parts of your health record with us, giving you more control over your care. To sign up or for help, call us on **020 3299 4618** or email kings.mychart@nhs.net. Visit www.kch.nhs.uk/mychart to find out more.



Sharing your information

King's College Hospital NHS Foundation Trust has partnered with Guy's and St Thomas' NHS Foundation Trust through the King's Health Partners Academic Health Sciences Centre. We are working together to give our patients the best possible care, so you might find we invite you for appointments at Guy's or St Thomas' hospitals. King's College Hospital and Guy's and St Thomas' NHS Foundation Trusts share an electronic patient record system, which means information about your health record can be accessed safely and securely by health and care staff at both Trusts. For more information visit www.kch.nhs.uk.

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. They can also pass on praise or thanks to our teams.

Tel: **020 3299 4618**

Email: kings.pals@nhs.net

If you would like the information in this leaflet in a different language or format, please contact our Interpreting and Accessible Communication Support on 020 3299 4618 or email kings.access@nhs.net



