



Northumbria Healthcare
NHS Foundation Trust

Lumbar Puncture

Issued by General Medicine



What is a lumbar puncture?

A lumbar puncture is a medical procedure, which involves a needle being inserted into the lower part of your back in order to obtain a sample of fluid. This fluid is called the cerebrospinal fluid (CSF) and it bathes and protects the brain and the bundle of nerves that run from the base of the brain down the back (spinal cord). This fluid can hold important clues about the health of the brain and the spinal cord. It is produced continuously so the small amount that is removed during a lumbar puncture is rapidly replaced.

Why would I need a lumbar puncture?

A lumbar puncture is often used to diagnose and to provide treatment of certain problems that affect the brain and the spinal cord. Some of these problems include:

Infection

Infection can occur in the brain and the spinal cord such as meningitis. This can be a serious condition and a lumbar puncture can help to identify bacteria or viruses in the CSF and can ensure appropriate treatment is started.

Bleeding

Bleeding can occur in the space between the brain and the thin layer of tissue that surrounds it. This is called a subarachnoid haemorrhage. A Lumbar puncture can be used to detect the presence of a bleed. This is important because there is a risk of further bleeding and treatment is available to prevent this.

Other conditions

There are also other conditions that your doctor might think that it is appropriate for you to have a lumbar puncture to help with the diagnosis.

Providing treatment

A lumbar puncture can be used to give medication into the CSF, numbing the lower half of the body so that operations can be carried out without the need for a general anaesthetic.

The exact reason for you requiring a lumbar puncture will be explained to you by your doctor

What are my alternatives?

A lumbar puncture is not compulsory. However if a lumbar puncture is not performed your doctors may find it difficult to be sure of the diagnosis and this may prevent them providing the correct treatment for you, may hinder your recovery and may prolong your hospital stay.

How is the procedure performed?

Before the procedure

Before having a lumbar puncture your doctor will carry out various checks to make sure that it is safe for you to have the procedure. You must make your doctor aware if you are taking any blood thinning medication or any medication which prevents blood clots such as warfarin, dabigatran, apixaban, rivaroxaban, clopidogrel, ticagrelor, prasugrel or you have a bleeding disorder.

In some situations we may perform a scan of the brain prior to performing a lumbar puncture. Not all patients require this and if you do it will be explained to you by the doctor performing the lumbar puncture.

A doctor will explain the procedure to you and you will be given the opportunity to ask questions. You will be asked to give consent before the procedure is performed.

The procedure

You will usually be asked to change into a hospital gown before the procedure. In most cases you will be asked to lie on your side with your knees curled up and your chin on your chest. This makes the procedure easier to perform. Sitting whilst bending forwards is an alternative position but it is not always suitable.

Once you are in the correct position a cold, wet antiseptic solution will be applied to your back. You will then feel a sharp scratch and a stinging sensation whilst local anaesthetic is inserted to numb the skin. A hollow needle is then inserted in between the bones in the lower part of the back. You may be aware of a pushing sensation at this point and you may experience some discomfort. Tell your doctor if this becomes too uncomfortable.

Occasionally you may feel a sharp sensation in one of your legs if the needle touches one of the nerves. This will only be brief and indicates to the doctor that the direction of the needle needs to be adjusted. Even if there is discomfort it is important that you try to stay still. Once the needle is in the correct position CSF fluid will start to drip out. Several samples will then be collected.

Generally only small samples are needed for laboratory testing. Once the procedure is complete the needle will be removed and a small plaster will be applied to the skin. The whole procedure usually takes between 20-30 minutes.

After the procedure

The plaster can be removed after 24 hours. You can usually return to normal activities once you can get up and about without experiencing a headache. You should avoid strenuous exercise for a week following the procedure as a precaution.

When will I get my results?

The results of the various tests performed during the lumbar puncture are available at different times. The results of the tests looking for inflammation or evidence of bleeding are normally available within a couple of hours. Other tests such as those identifying bacteria can take at least 48 hours to complete. More complex tests can take several weeks for the results to be available.

What are the side effects and risks?

Difficulties obtaining a sample

Sometimes it may be difficult to obtain the sample. Another doctor may be called to help and in some cases the procedure may be stopped and reorganised.

Headache

A headache is a common side effect of a lumbar puncture, usually developing within 24-48 hours of the procedure. It is known as a post lumbar puncture headache and is caused because the spot where the lumbar puncture needle goes in does not always close up straight away. If the hole stays open, CSF can leak out, causing a headache. Most people describe it as a headache located in the front or the back of the head, which is made worse in the upright position and is improved by lying down. The headache can usually be treated with simple painkillers; fluids and some people have found benefit from drinking caffeine based drinks. In the vast majority of cases the hole closes up on its own and the headache goes away in a couple of days, however if it persists or is severe you should seek medical advice.

Back pain

Back pain is also a common side effect of the procedure. This is normally a localised pain close to the site where the needle was inserted. This usually lasts for a couple of days and can be treated with simple painkillers. It is exceptionally rare that a lumbar puncture causes permanent damage to the nerves in the back. If you develop numbness or tingling in your legs you should seek medical advice.

Infection

Infection is an extremely rare complication of a lumbar puncture, however if it does develop it can be serious. Cleaning the skin with an antiseptic before the procedure and having good infection control measures reduces the risk of this occurring. You should seek medical advice if you develop a temperature or sensitivity to bright lights or if the lumbar puncture site becomes painful and swollen.

Dermoid formation

A small lump in the skin can occasionally develop where the lumbar puncture was performed. This will reduce over time.

Bleeding

It is common to experience a small amount of bleeding on the skin where the needle was inserted. There is also a risk of bleeding into the space where the CSF is located. This is very rare but the risk is increased if you are taking blood thinning medications such as warfarin or have a bleeding disorder.

Please remember that a lumbar puncture is a safe procedure, serious complications are rare and it would only be recommended if felt clinically necessary.

Contact

If you have any concerns about the information contained in this leaflet please speak to one of the ward nurses or doctors. If you require further information after you have been discharged please contact your GP (in hours) or Accident and Emergency (out of hours).

This leaflet is intended for general information only. For individual advice please speak to your doctor.

Alternative Formats

If you would like a copy of this information in large print, another language, audio tape or other format please call the Contact Centre on **03 44 811 8118**

Other sources of information

NHS 111

NHS Choices

www.nhs.uk/pages/homepage.aspx

NICE (National Institute for Health and Clinical Excellence)

www.nice.org.uk

Patient Advice and Liaison Service (PALS)

Freephone: **0800 032 0202**

Text: 07815 500015

Email: northoftynepals@nhct.nhs.uk

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General Enquiries **03 44 811 8111**

www.northumbria.nhs.uk

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