

## Infection

Lumbar punctures are carried out using a sterile technique, so infection is a very rare complication, but can be serious. Whenever a needle has punctured the skin there is a low risk of infection being introduced. If you become feverish following a lumbar puncture you should seek immediate medical attention from your doctor, or attend the Emergency Department.

## Bleeding or bruising

Bleeding or bruising are risks whenever a needle punctures the skin. This risk is small, but increased if you are taking medication to thin the blood or if you have a bleeding disorder. Very rarely, bleeding after a lumbar puncture has been known to cause pressure on a nerve and can result in paralysis.

## Pressure coning

Pressure coning is another extremely rare complication of a lumbar puncture. This can happen if there is a blood clot, abscess, or a growth of some sort within the brain or spinal area. If this is thought to be a possibility, you will have had a CT or MRI brain scan before the procedure to make sure that it is safe to proceed.

All the potential complications are rare. On balance, the benefit of carrying out the lumbar puncture to find out what is wrong with you or how best to treat you is highly likely to outweigh the risk of anything going wrong. Please discuss with your doctors if you have particular concerns about any of these issues.

Royal United Hospitals Bath  
NHS Foundation Trust  
Combe Park,  
Bath BA1 3NG  
01225 428331  
[www.ruh.nhs.uk](http://www.ruh.nhs.uk)

Please contact the Patient Advice and Liaison Service (PALS) if you require this leaflet in a different format, or would like to feedback your experience of the hospital. Telephone 01225 825656 or Email [ruh-tr.PatientAdviceandLiaisonService@nhs.net](mailto:ruh-tr.PatientAdviceandLiaisonService@nhs.net)

# Lumbar Puncture

## What is a Lumbar Puncture?

A lumbar puncture (sometimes known as a spinal tap) is a procedure to obtain a sample of cerebrospinal fluid (CSF) so that it can be tested. The CSF is the fluid that surrounds the brain and spinal cord for protection. A fine hollow needle is placed between the vertebrae of the lower spine and a few drops of CSF are allowed to drip out. The fluid that is removed for analysis is quickly replaced by the body, as the CSF is constantly being produced. The procedure is very safe and takes place routinely without complications

## Why are lumbar punctures done?

Testing the CSF can provide information about potential problems in the brain and spinal cord. These problems can include infection, bleeding, inflammation, or increased pressure within the head. Sometimes a lumbar puncture is carried out to remove fluid and reduce the pressure surrounding the brain. The doctors treating you should explain why they want to carry out this procedure.

Depending on why you are having the test, it can take anything from a couple of hours to a few weeks to get all the results back. Most often, the main results are known within 1 – 2 hours.

## Before we start

Your doctor will explain the reason for carrying out the lumbar puncture, and you should be given the opportunity to ask any questions. You will be asked to give verbal consent to the procedure before starting. You can at any time decline or stop the lumbar puncture for any reason, but this may make it more difficult for your doctors to work out what is wrong with you or how to treat it.

## What we need to know first

You need to tell us if you are allergic to latex, to iodine or to any other antiseptic cleaning agent. We also need to know what medication you take (particularly 'blood thinners' such as warfarin, rivaroxaban, apixaban, aspirin, clopidogrel, or heparin injections), or if you know you have a bleeding tendency: these may mean the test needs to be delayed. Please also tell your doctor if you have had any operation or injury to your spine in the past or are known to have curvature of the spine.

## How is the test done?

The doctor will usually ask you to lie on your side at the edge of the bed, with your knees curled up tightly and your chin tucked down, keeping your back parallel to the bedside. This separates the vertebrae, allowing the needle to be inserted more easily. Sometimes the procedure is carried out in a sitting position instead.



The skin of the lower back is then cleaned with an antiseptic, which feels wet and cold, and a sterile drape is placed over your back.

A local anaesthetic is usually then injected under the skin with

a fine needle; this stings for a few seconds before the area becomes numb. You may then feel a sensation of pushing or pressure as the lumbar puncture needle is inserted into the space around the spinal cord.

Sometimes a brief sharp pain is experienced down one leg as the needle is inserted – this is normal and does not indicate that there is anything wrong. If the pain persists more than a few seconds you should let the doctor know. Even if there is discomfort it is important to try not to move. It is almost impossible actually to cause damage to a nerve during this procedure, as the needle is inserted below the level of the spinal cord.

Once the needle is in place, the CSF starts to drip out slowly. The doctor will measure the fluid pressure, and collect samples to send to the laboratory for testing. After the needle is removed, a plaster is put over the site. The whole procedure normally takes 20 – 30 minutes.

You will be encouraged to drink plenty of fluid over the next 24 hours. You will be safe to drive after the procedure (as long as you haven't taken any sedating medication) and can resume normal activities the next day if you are otherwise well.

## What are the possible side-effects of complications?

### Headache

Headache affects about 1 in 10 people and typically starts within 1 to 2 days of the lumbar puncture. It is caused by the lowering of CSF pressure on removing the fluid samples. Symptoms are usually worse when standing or sitting up, and much better when lying down. You should lie down as much as possible and keep drinking plenty of fluid. Caffeine may be beneficial for this type of headache and painkillers may be taken if necessary. Normally this type of headache settles by itself within a couple of days, but if it persists or is severe you should contact your GP or the ward staff.

### Backache

Up to a third of patients develop a backache after a lumbar puncture. It is almost always mild and settles over a few days without any specific treatment. Simple painkillers such as paracetamol can be helpful. It is extremely rare that a lumbar puncture causes damage to the nerves in the back. If you develop numbness or tingling in the legs you should contact your GP or attend the Emergency Department.