

# Lumbar Puncture

**Information for  
parents and carers**



## **What is a lumbar puncture?**

A lumbar puncture is a procedure which is carried out to collect a sample of cerebrospinal fluid (CSF) for testing.

CSF covers the brain and spinal cord. A sample is collected by inserting a special hollow needle into the lower part of the back, between two vertebrae (bones of the spine) and into the space around the spinal cord. This part of the spine is the easiest and safest area to access, as the spinal cord itself is well above this space. A small amount of CSF is collected and sent to the laboratory for testing.

## **Why does my child need a lumbar puncture?**

A lumbar puncture is commonly carried out for one (or more) of these reasons:

- to detect possible infection in the CSF (meningitis or encephalitis)
- to measure the pressure in the CSF
- to measure the level of certain chemicals in the CSF
- to reduce the CSF pressure.

The doctor looking after your child will talk to you about the exact reasons why your child is having a lumbar puncture.

## **What are the benefits?**

A lumbar puncture will help with diagnosis, or it may be part of treatment of your child's condition (for example, to reduce raised CSF pressure or give medication).

## **What are the risks?**

This is a simple and safe procedure. However, lumbar puncture carries a low risk of the following complications:

### **Headache**

Some children develop a headache after a lumbar puncture. This is due to the slight reduction in pressure around the brain after removal of a small amount of CSF. It usually gets better on its own within 24 to 48 hours. Giving your child plenty of fluids will help, as it is important to be well hydrated after the procedure to help them recover more quickly. A simple painkiller like paracetamol may also help or they may need to lie down for longer.

### **Bleeding**

If bleeding occurs when the lumbar puncture is carried out, it usually means the doctor needs to adjust the position of the needle or reinsert the needle.

### **Infection**

There is a small risk of infection where the needle was inserted into the CSF space. Strict sterile precautions are taken to reduce this risk.

### **CSF leak**

After the test, a little CSF fluid may leak out and collect under the skin. You may notice a small swelling where the lumbar puncture was carried out. This is not dangerous and will get better by itself.

The doctor will discuss these risks with you in more detail.

## **Are there any alternatives?**

There are no other methods of obtaining a sample of CSF or measuring the CSF in most children.

## **What happens before the procedure?**

### **In an emergency situation:**

This is usually when the lumbar puncture is being done to exclude meningitis or encephalitis. Local anaesthetic cream may be used to numb the area of skin where the needle will be inserted. No sedation or anaesthesia will be used, as it is important not to alter your child's level of consciousness or breathing. The doctor will ask for your verbal consent.

### **Planned, non-emergency procedure:**

The lumbar puncture may be done as part of a number of other tests (for example, an MRI scan and blood tests) and may be carried out with your child awake, under sedation, or with them asleep under general anaesthesia. Local anaesthetic cream is used to numb the area of skin where the needle will be inserted.

The doctor will explain the procedure in detail and talk with you about any worries you may have. The doctor will then ask for your written consent for the procedure to be carried out.

If there is anything you are unsure about, or if you have any questions, please ask the doctor before signing the consent form.

## **What happens during the procedure?**

Your child will be positioned on their side, with their legs curled up and their knees under their chin. They will be held still in this position.

Their skin over the area where the lumbar puncture will be carried out will be cleaned, and the surrounding area covered with a sterile drape. The doctor will find the correct space between two vertebrae, then insert the needle into the space around the spinal cord.

Usually, this does not hurt if local anaesthetic cream is used. If your child has not been sedated they will notice a feeling of 'pushing' at this point, but the anaesthetic cream will take away the feeling of pain.

The CSF will drip out and be collected in sterile containers, then sent to the laboratories to be examined. If other tests are needed, they will be carried out at this point. The needle is then removed and a sticky plaster put over the site where the needle was inserted.

It may not be possible to get your child into the right position, due to them being scared or restless. If this happens your child may need sedation or a general anaesthetic, if the situation allows for this.

Sometimes it is not easy for the doctor to find the area where the needle should be inserted, and another doctor may be called to assist.

## **Fasting instructions**

If your child is having a planned procedure under sedation or general anaesthetic, please make sure you follow the fasting (starving) instructions, which should be included with their appointment letter.

**Fasting is very important before sedation or general anaesthetic.** If your child has anything in their stomach whilst they are under anaesthetic, it might come back up while they are asleep and get into their lungs.

## **Pain assessment**

Your child's nurse will use a pain assessment tool to help assess their pain after this procedure. This is a chart which helps us to gauge how much pain your child may be feeling. You and your child will be introduced to this assessment tool either at their pre-assessment visit or on the ward before the procedure, or after the procedure if it is carried out in an emergency. You can continue to use this assessment at home to help manage your child's pain, if you wish.

## **Pregnancy statement**

All girls aged 12 years and over will need to have a pregnancy test before their procedure. This is in line with our hospital policy.

We need to make sure it is safe to proceed with the procedure, because many treatments including anaesthetic, radiology (X-rays), surgery and some medicines carry a risk to an unborn child. The pregnancy test is a simple urine test and the results will be available immediately. If the result is positive we will discuss this and work out a plan to support your child.

## **Anaesthetic risks**

In modern anaesthesia, serious problems are uncommon. Risk cannot be removed completely, but modern equipment, training and drugs have made general anaesthesia a much safer procedure in recent years. Throughout the whole of life, a person is at least 100 times more likely to suffer serious injury or death in a road traffic accident than as a result of anaesthesia<sup>1</sup>.

Most children recover quickly and are soon back to normal after this procedure and anaesthetic. Some children may suffer side effects like sickness or a sore throat. These usually last only a short time and there are medicines available to treat them if necessary.

The exact likelihood of complications depends on your child's medical condition and on the procedure and anaesthesia your child needs. The anaesthetist can talk to you about this in detail before the procedure.

If your child is having sedation instead of general anaesthesia, we will give you a separate leaflet which explains the risks of sedation.

## **In the anaesthetic room**

If your child is having a general anaesthetic, this will be given in the anaesthetic room. If they are having sedation this can be given in a treatment room or on the ward.

A nurse and one parent or carer can go with your child to the anaesthetic room. Your child can also take a toy or comforter.

It may be possible to give the anaesthetic with your child sitting on your lap. Your child may either have anaesthetic gas to breathe, or an injection through a cannula (a thin plastic tube that is placed under the skin, usually on the back of the hand). Local anaesthetic cream (EMLA or Ametop, sometimes known as 'magic cream'), can be put on their hand or arm before injections so they do not hurt as much. It works well for 9 out of 10 children.

If the anaesthetic is given by gas, it will take a little while for your child to be anaesthetised. They may become restless as the gases take effect. If an injection is used, your child will normally go to sleep very quickly. Some parents may find this upsetting.

When your child is asleep you will be asked to leave quickly, so that the medical staff can concentrate on looking after them. The nurse will take you back to the ward to wait for your child.

Your child will then be taken into the operating theatre or scan room to have the lumbar puncture. The anaesthetist will be with them at all times.



## **After the procedure**

Your nurse will make regular checks of your child's pulse, temperature and wound. They will also make sure your child has adequate pain relief until they are discharged home.

Your child will be encouraged to lie flat for an hour or so after the procedure. If they have had sedation or a general anaesthetic, when they are fully awake they should be encouraged to drink and, if they are not sick, they can start eating their normal diet. If the lumbar puncture was a planned procedure, your child may be discharged later the same day.

The minimum recovery time before discharge is 2 hours. This is usually enough time for us to check that your child is recovering well. It also gives us time to check that they are passing urine (having a wee) after the procedure. Your child may be allowed home before they have passed urine. If they have not passed urine within 6 hours of the procedure, please contact the ward for advice.

Your child cannot go home on public transport after a general anaesthetic or sedation. You will need to take them home by car. This will be more comfortable for them, and also quicker for you to return to the hospital if there are any complications on the journey home. You should bring loose fitting, comfortable clothes for them to wear on the journey home.

The anaesthetic may leave your child feeling sick for the first 24 hours. The best treatment for this is rest and small, frequent amounts of fluid, toast or biscuits. If they are sick and this continues for longer than 24 hours, please contact their GP.

The hospital experience is strange and unsettling for some children, so do not be concerned if your child is more clingy, easily upset or has disturbed sleep.

## Getting back to normal

If your child is in pain at home, give them paracetamol according to the instructions on the bottle.

You can remove the sticky plaster covering the place where the needle was inserted after 24 hours and it is fine for your child to go to school the day after a planned lumbar puncture, but they should not take part in sports or PE for a week after the procedure.

Please contact the hospital or your GP if you are concerned about your child after the procedure, in particular if you notice:

- an unexplained high temperature (of 38°C or above)
- tenderness, redness and/or swelling where the needle was inserted
- clear fluid or blood leaking from the area where the needle was inserted. Your child will need to immediately lie flat, in any position, to slow the flow of CSF or blood.

## Follow-up care

Please make sure you have enough children's paracetamol at home.

Your nurse will tell you if your child will need a follow-up appointment in the Children's Outpatients department. The letter confirming the date and time will come by post. Please speak to your child's consultant's secretary if this does not arrive within 1 month.

## How to give feedback about your experience

We would like to hear about your experience with our Children's Services. Please ask for a paper survey to fill in.

## References

<sup>1</sup>Royal College of Anaesthetists (2023) Seventh edition  
Your child's general anaesthetic RCOA, London.

Website: [www.rcoa.ac.uk/patientinfo](http://www.rcoa.ac.uk/patientinfo)

## How to contact us

If you have any worries or queries about your child once you get home, or you notice any signs of infection, leaking fluid or bleeding, please telephone the ward where your child was seen and ask to speak to one of the nurses.

You can also contact your GP.

### **Children's Day Care Ward**

Telephone: **01865 234 148 /9**  
(7.30am to 7.30pm, Monday to Friday)

### **Robin's Ward**

Telephone: **01865 231 254 /5**  
(24 hours, 7 days a week)

### **Children's Clinical Decisions Unit (CDU)**

Telephone: **01865 223 028 /01865 226 876**  
(24 hours, 7 days a week)

### **Melanie's Ward**

Telephone: **01865 234 054 /55**

### **Tom's Ward**

Telephone: **01865 234 108 /9**

### **Bellhouse-Drayson Ward**

Telephone: **01865 234 049**

### **Kamran's Ward**

Telephone: **01865 234 068 /9**

### **Horton General Hospital Children's Ward**

Telephone: **01295 229 001 /2**  
(All of these wards are open 24 hours, 7 days a week)

### **Oxford University Hospitals Switchboard**

Telephone: **0300 304 7777**

## Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

Authors: Jackie Campbell, Advanced Nurse Practitioner  
Dr Sithara Ramdas, Consultant Paediatric Neurologist  
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Oxford University Hospitals NHS Foundation Trust  
[www.ouh.nhs.uk/information](http://www.ouh.nhs.uk/information)



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