

Patient information from BMJ

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Lumbar puncture

When you have a lumbar puncture (or “spinal tap”) a doctor uses a needle to take some fluid from around your spine for testing.

Here, we look at how the test is done, how it might help you, and what to expect afterwards. You can use our information to discuss the test with your doctor.

What is a lumbar puncture?

Medical tests can help to diagnose various problems. For example, most people have had scans, such as x-rays, or given blood or urine samples.

With a lumbar puncture, a doctor takes a sample of the fluid that surrounds your spine, called **cerebrospinal fluid**. This fluid does several jobs in the body, including:

- Helping to protect the bones and nerves in your spine from injury - for example if you have a fall, and
- Helping to remove waste products from your brain.

Doctors use this test to check for signs of some medical conditions, such as those that affect your nervous system, and for certain infections.

A lumbar puncture is more complex than many routine medical tests, so it's useful to know about what's happening and how it might affect you.

When you have a lumbar puncture:

- You undress and lie on a cart on your left side with your knees drawn up. Your doctor might ask you to sit on the edge of the cart instead, depending on what the test is for
- The doctor needs to take fluid from between two of the bones (called **vertebrae**) in your lower back. They will find the spot they want and clean it carefully to prevent infection
- The doctor will give you two shots of **local anesthetic**: one near the surface of your skin and the other into the deeper tissue. These shots should prevent you from feeling any pain during the procedure
- After waiting a few minutes for the anesthetic to work, the doctor will insert the needle and begin to draw out some cerebrospinal fluid for testing

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- Collecting the fluid takes between 30 and 45 minutes
- Once the fluid is collected, the doctor removes the needle and puts a dressing over the area
- The test is now finished. But you will need to lie down for about an hour afterwards.

Why might I need a lumbar puncture?

Testing cerebrospinal fluid can help doctors to spot problems including:

- Some types of infection, including **meningitis**
- Encephalitis (swelling in the brain)
- Bleeding in the brain
- Some conditions that can lead to tumors, and
- **Multiple sclerosis** and other conditions that affect the nervous system.

Not everyone can have a lumbar puncture. For example, you won't be able to have this test if you:

- Are allergic to the anesthetic
- Have an injury to your lower back, or
- Have been diagnosed with swelling in the brain.

What are the risks?

Lumbar puncture is a fairly common test, but it is done in a sensitive part of the body that has a lot of nerves and blood vessels. So problems can sometimes happen.

The most common problem is a **headache** after having the test. About one third of people who have a lumbar puncture have a headache afterwards. This doesn't usually last for more than a few days, but it can last for up to two weeks.

Other possible problems include:

- Bleeding around the spine. This is rare. But if it happens you might need treatment to stop it
- Infection
- Pain in the nerves of the lower back, and
- Having to repeat the test if the fluid doesn't flow properly.

What can I expect afterwards?

Your doctor will want to keep an eye on you for at least an hour after you have the test, to check for any problems.

You should be able to go home the same day, but you won't be able to drive home.

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Your doctor will advise you to take things easy for a few days, and to stay hydrated by drinking plenty of (nonalcoholic) fluids.

If you have a headache, take pain relief medication, such as acetaminophen, if you need to. But don't take more than the recommended dose.

Your doctor might also suggest that you drink fluids that contain caffeine, which is a natural pain reliever. But make sure to drink them in moderation, especially if you're not used to caffeine.

Be aware of how you're feeling, and call your doctor or get medical help if you:

- Have a lot of bleeding where the needle went in
- Have swelling where the needle went in that gets worse or doesn't go down after a few days
- Develop a fever
- Have a severe headache, or a headache that won't go away
- Feel nauseous or vomit, or
- Find it painful to look at bright lights.

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