Lumbar puncture

A lumbar puncture tests a sample of fluid from your spine. You might need a lumbar puncture if your doctor suspects your lymphoma might be in your central nervous system (CNS; brain and spinal cord) or to give you chemotherapy that reaches your CNS.

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What is a lumbar puncture?

A lumbar puncture (also called a ‘spinal tap’) is a test that can be used to check for lymphoma cells in the cerebrospinal fluid (CSF). This fluid protects and cushions your brain and spinal cord.

The sample of CSF is examined under a microscope to see if any lymphoma cells are present. Other tests may also be done on your CSF sample.

The results of a lumbar puncture help doctors to decide if you need treatment that reaches your central nervous system (CNS; brain and spinal cord).
A lumbar puncture may also be done to give chemotherapy directly into the CSF so that it can reach the CNS. This way of giving treatment is called ‘intrathecal chemotherapy’. You might have intrathecal chemotherapy:

- as a preventive treatment if your doctors think there is a high risk of lymphoma spreading to your CNS. This is known as ‘CNS prophylaxis’
- to treat lymphoma of the brain, spinal cord or eye (CNS lymphoma).

Who might need a lumbar puncture?

Lymphoma cells are sometimes found in the CSF in some types of high-grade non-Hodgkin lymphoma, for example:

- Burkitt lymphoma
- diffuse large B-cell lymphoma (DLBCL)
- T-cell lymphoma
- CNS lymphoma.

Not everyone with these types of lymphoma needs a lumbar puncture. Your doctor decides what tests you need based on your individual circumstances.

What is the process for having a lumbar puncture?

Most people who need a lumbar puncture have the procedure as an outpatient and do not have to stay in hospital overnight.

How should I prepare?

You should be given information about the procedure and how to prepare for it. You may have a blood test before the procedure to check that you don’t have any problems with blood clotting. You can eat and drink as normal before the test. Tell your medical team about any medicines, vitamins and other supplements you are taking. If you are taking medicine to thin your blood, you may be asked to stop this before the procedure.
What happens during the procedure?

Your details, such as your name and date of birth, are checked before the procedure.

You are usually asked to lie on your side and curl up, with your knees pulled up towards your chest. Sometimes, it is easier for you and your doctor if the test is done while you are sitting up instead. In this case, you are asked to sit leaning forwards onto a pillow that is resting on a table in front of you. Make sure you are comfortable – you need to keep as still as possible during the procedure.

When you are in the correct position, the doctor feels for a gap between your vertebrae (bones of your spine) in your lower back. The doctor cleans the area then injects a local anaesthetic. A few people, particularly children, might be given a sedative to help them relax. When the area is numb, the doctor inserts a special needle into the space containing CSF.

*Figure: Lumbar puncture needle going into the lower spine*

When the needle is in the right place, CSF starts to drip out. The doctor collects a small amount of the fluid (usually around one teaspoon or 5 ml). It only takes a few seconds. This test isn’t usually painful but it might be uncomfortable and the local anaesthetic can sting.

If you are having intrathecal chemotherapy, the drugs are injected through the needle. You might have samples of CSF taken and intrathecal chemotherapy given during the same procedure if needed.
The needle is then removed. The doctor or nurse puts a plaster or dressing over the tiny hole left by the needle. You can remove this the next day.

What happens after the procedure?

You might be asked to lie down flat for a while after the procedure. This may reduce the risk of developing a headache. Drinking plenty, including caffeinated drinks like tea, coffee and coke, might also help. Although there is no clear evidence that these measures reduce the risk of a headache, many haematology teams recommend them. Most people can go home the same day.

Headaches are very common after a lumbar puncture. A headache can develop several hours or the day after the procedure and can last for several days. If you develop a headache after going home, you should lie down and rest until it eases. Make sure you have pain relief medication available in case you need them. Ask your medical team for advice on which pain relief medications are best before you go home.

You need someone to drive you home and you should not drive or operate machinery for at least 24 hours.

You can usually return to your normal activities once any headaches have eased but avoid anything too strenuous for at least a week.

Is a lumbar puncture safe?

A lumbar puncture is usually a very safe procedure. The main risks are developing headaches, or pain and swelling at the injection site. These problems generally get better on their own. Seek advice from your medical team if problems persist or are severe. Serious complications are very rare but could include infection or bleeding. Contact your medical team if you develop any of the following:

- fever (temperature above 38°C)
- sensitivity to bright lights
- vomiting (being sick)
- blood or fluid around the injection site
- tingling or numbness in your legs.
Your medical team should give you further information on what to look for and when to seek advice.

When will I get the results?

It can take anywhere from a couple of days to a couple of weeks to get the results of your lumbar puncture, depending what tests are done on the sample. Waiting for test results can be an anxious time but your medical team are gathering important information at this time so they can give you the best possible treatment.

References

These are some of the sources we used to prepare this information. The full list of sources is available on request. Please contact us by email at publications@lymphoma-action.org.uk or phone on 01296 619409 if you would like a copy.


Further reading

- Waiting for your test results
- CNS lymphoma
- CNS prophylaxis
- Glossary
Acknowledgements

- We would like to thank the Expert Reviewers and members of our Reader Panel who gave their time to review this information.

Tell us what you think and help us to improve our resources for people affected by lymphoma. If you have any feedback, please visit www.lymphoma-action.org.uk/feedback or email publications@lymphoma-action.org.uk.

All our information is available without charge. If you have found it useful and would like to make a donation to support our work you can do so on our website www.lymphoma-action.org.uk/donate. Our information could not be produced without support from people like you. Thank you.

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