

Using a lumbar infusion test to select patients who will benefit from treatment for normal pressure hydrocephalus

*NICE 'HealthTech
guidance' advises
the NHS on when
and how new
procedures can be
used in clinical
practice.*

This leaflet is about when and how a lumbar infusion test can be used in the NHS to test people for normal pressure hydrocephalus. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence).

This HealthTech guidance makes recommendations on the safety of a procedure and how well it works. An interventional procedure is a test, treatment or surgery that involves a cut or puncture of the skin, or an endoscope to look inside the body, or energy sources such as X-rays, heat or ultrasound. The guidance does not cover whether or not the NHS should fund a procedure. Decisions about funding are taken by local NHS bodies (primary care trusts and hospital trusts) after considering how well the procedure works and whether it represents value for money for the NHS.

NICE has produced this guidance because the procedure is not widely used in the NHS. There is not a lot of information yet about how well it works, how safe it is and which patients will benefit most from it.

This leaflet is written to help people who have been offered this procedure to decide whether to agree (consent) to it or not. It does not describe normal pressure hydrocephalus or the procedure in detail – a member of your healthcare team should also give you full information and advice about these. The leaflet includes some questions you may want to ask your doctor to help you reach a decision. Some sources of further information and support are on page 7.



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What has NICE said?

This procedure can be offered routinely to test people for normal pressure hydrocephalus provided that doctors are sure that:

- the patient (or carer) understands what is involved and agrees to the procedure, and
- the results of the procedure are monitored.

Lumbar infusion test to investigate normal pressure hydrocephalus

This procedure may not be the only possible test for normal pressure hydrocephalus. Your healthcare team should talk to you about whether it is suitable for you and about any other options available.

The procedure is not described in detail here – please talk to your doctor for a full description.

Hydrocephalus can occur if there is too much fluid in and around the brain and the spinal cord. This fluid is produced by the brain and is called the cerebrospinal fluid (often shortened to CSF). Normally any excess fluid drains away from the brain and is absorbed by the body, but in people with hydrocephalus the fluid builds up and puts pressure on the brain. Normal pressure hydrocephalus is a type of hydrocephalus in which the fluid does not drain away normally but does not necessarily increase pressure in the spinal canal. It often develops in elderly patients and can sometimes be difficult to distinguish from normal age-related changes in the brain.

Normal pressure hydrocephalus can be treated by inserting a tube called a shunt, which drains away the excess fluid. A lumbar infusion test can be used to select the patients most likely to benefit from a shunt. The test involves inserting a needle into the patient's lower back using a local anaesthetic and injecting fluid into the spine. The pressure of the fluid around the spinal cord is measured before, during and after injection of the fluid. The measurements can then be used to decide whether a shunt should be inserted.

Other tests can also be used, including the spinal tap test (also called a CSF tap test or a large-volume lumbar puncture test). This test involves removing fluid from the spine and monitoring whether the patient's symptoms temporarily improve.



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What does this mean for me?

NICE has said that this procedure is safe enough and works well enough for use in the NHS. If your doctor thinks the lumbar infusion test is a suitable option for you, he or she should still make sure you (or your carer) understand the benefits and risks before asking you (or your carer) to agree to it.

You may want to ask the questions below

- What does the procedure involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make me feel worse?
- Are there alternative procedures?
- What are the risks of the procedure?
- Are the risks minor or serious? How likely are they to happen?
- What care will I need after the test?
- What happens if something goes wrong?
- What may happen if I don't have the procedure?



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You might decide to have this procedure, to have a different procedure, or not to have a procedure at all.

Summary of possible benefits and risks

Some of the benefits and risks seen in the studies considered by NICE are briefly described below. NICE looked at six studies on this procedure.

How well does the procedure work?

One study reported that 33 out of 36 patients identified by lumbar infusion test as likely to benefit from a shunt showed an improvement in their condition following the shunt insertion. However, two thirds of the patients who were not predicted to benefit also showed some improvement after shunt insertion.

In a second study, 66 out of 83 patients were identified by lumbar infusion test as suitable for insertion of a shunt. Of these patients, 39 showed an improvement in their symptoms a year or more later. Of 30 patients who had a lumbar infusion test in another study, 19 out of 83 patients were selected for shunt insertion and 17 of these patients showed improvement.

In a study of 200 patients who had a shunt operation following a lumbar infusion test (in which 155 patients had their progress followed for 7 months), patients with higher initial pressure measurements showed the greatest improvement.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that how well the test works can be assessed by improvements in the patient's symptoms following a shunt operation.



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Risks and possible problems

No safety problems were reported in five out of six of the studies. In the study of 200 patients, 19% had a headache after the test and 2% of patients developed a condition called meningism, which is an irritation of the membranes that protect the brain and spinal cord.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that possible problems may include infection, headache after the procedure, bleeding, pain, and damage to the nerve roots.



More information about normal pressure hydrocephalus

[NHS Direct online](#) may be a good starting point for finding out more.

Your local Patient Advice and Liaison Service (PALS) may also be able to give you further advice and support.

About NICE

NICE produces guidance (advice) for the NHS about preventing, diagnosing and treating different medical conditions. The guidance is written by independent experts including healthcare professionals and people representing patients and carers. They consider how well an interventional procedure works and how safe it is, and ask the opinions of expert advisers. This guidance applies to the whole of the NHS in England, Wales, Scotland and Northern Ireland. Staff working in the NHS are expected to follow this guidance.

To find out more about NICE, its work and how it reaches decisions, see [www.nice.org.uk/aboutguidance](#)

This leaflet is about 'Lumbar infusion test for the investigation of normal pressure hydrocephalus'. This leaflet and the full guidance aimed at healthcare professionals are also available at [www.nice.org.uk/HTG169](#)

You can order printed copies of this leaflet from NICE publications (phone 0845 003 7783 or email publications@nice.org.uk and quote reference N1597).

We encourage voluntary sector organisations, NHS organisations and clinicians to use text from this booklet in their own information about this procedure.



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National Institute for Health and Clinical Excellence

MidCity Place, 71 High Holborn, London, WC1V 6NA; www.nice.org.uk

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