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Lumbar Puncture (Spinal Tap)

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What It Is

A lumbar puncture (also called a spinal tap) is a common medical test that involves taking a small sample of cerebrospinal fluid (CSF) for examination. CSF is a clear, colorless liquid that delivers nutrients and "cushions" the brain and spinal cord, or central nervous system. In a lumbar puncture, a needle is carefully inserted into the lower spine to collect the CSF sample.

Why It's Done

Medical personnel perform lumbar punctures and test the cerebrospinal fluid to detect or rule out suspected diseases or conditions. CSF testing looks for signs of possible infection by analyzing the white blood cell count, glucose levels, protein, and bacteria or abnormal cells that can help identify specific diseases in the central nervous system.

Most lumbar punctures are done to test for meningitis, but they also can determine if there is bleeding in the brain, detect certain conditions affecting the nervous system such as Guillain Barré syndrome and multiple sclerosis, and administer chemotherapy medications.

Preparation

After the procedure is explained to you, you'll be asked to sign an informed consent form — this states that you understand the procedure and its risks and give your

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permission for it to be performed.

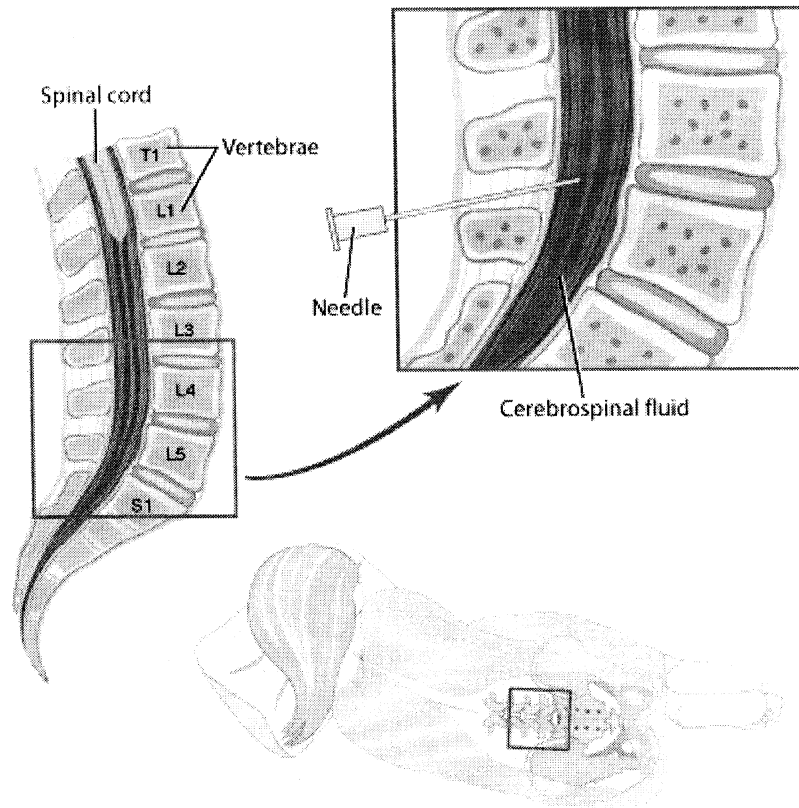
The doctor doing the lumbar puncture will know your child's medical history but might ask additional questions, such as whether your child is allergic to any medicines.

You might be able to stay in the room with your child during the procedure, or you can step outside to a waiting area.

The Procedure

A lumbar puncture takes about 30 minutes. The doctor carefully inserts a thin needle between the bones of the lower spine (below the spinal cord) to withdraw the fluid sample.

The patient will be positioned with the back curved out so the spaces between the vertebrae are as wide as possible. This allows the doctor to easily find the spaces between the lower lumbar bones (where the needle will be inserted). Older children may be asked to either sit on an exam table while leaning over with their head on a pillow or lie on their side. Infants and younger children are usually positioned on their sides with their knees under their chin.



A small puncture through the skin on the lower back is made and liquid anesthetic medicine is injected into the tissues beneath the skin to prevent pain. In many cases, before the injected anesthesia medication is given, a numbing cream is applied to the skin to minimize discomfort.

The spinal needle is thin and the length varies according to the size of the patient. It has a hollow core, and inside the hollow core is a "stylet," another type of thin needle that acts kind of like a plug. When the spinal needle is inserted into the lower lumbar area, the stylet is carefully removed, which allows the cerebrospinal fluid to drip out into the collection tubes.

After the CSF sample is collected (this usually takes about 5 minutes), the needle is withdrawn and a small bandage is placed on the site. Collected samples are sent to a lab for analysis and testing.

What to Expect

While some notice a brief pinch and some discomfort,

most people don't consider a lumbar puncture to be painful. Depending on the doctor's recommendations, your child might have to lie on his or her back for a few hours after the procedure. Your child might feel tired and have a mild backache the day after the procedure.

Getting the Results

Some results from a lumbar puncture are available within 30 to 60 minutes. However, to look for specific bacteria growing in the sample, a bacterial culture is sent to the lab and these results are usually available in 48 hours. If it's determined there might be an infection, the doctor will start antibiotic treatment while waiting for the results of the culture.

Risks

A lumbar puncture is considered a safe procedure with minimal risks. Most of the time, there are no complications. In some instances, a patient may get a headache (it's recommended that patients lie down for a few hours after the test and drink plenty of fluids to help prevent headaches). And in rare cases, infection or bleeding can occur.

Helping Your Child

You can help prepare your child for a lumbar puncture by explaining that while the test might be uncomfortable, it shouldn't be painful and won't take long. Also explain the importance of lying still during the test, and let your child know that a nurse might hold him or her in place. After the procedure, make sure your child rests and follow any other instructions the doctor gives you.

If You Have Questions

It's important to understand any procedure your child undergoes. If you have questions or concerns about the lumbar puncture procedure, be sure to speak with your doctor.

Reviewed by: Kate M. Cronan, MD

Date reviewed: September 2008