

Lumbar Puncture FAQs, Myths, and Patient Testimonials

Lumbar punctures (LP), cerebrospinal fluid (CSF), and biomarkers—these are three terms that you will hear when learning about our center's research. Biomarkers are biological indicators that may lead us to a prevention or a cure for Parkinson's disease, CSF is the substance in which some of these biomarkers are found, and a lumbar puncture is the method used to access CSF.

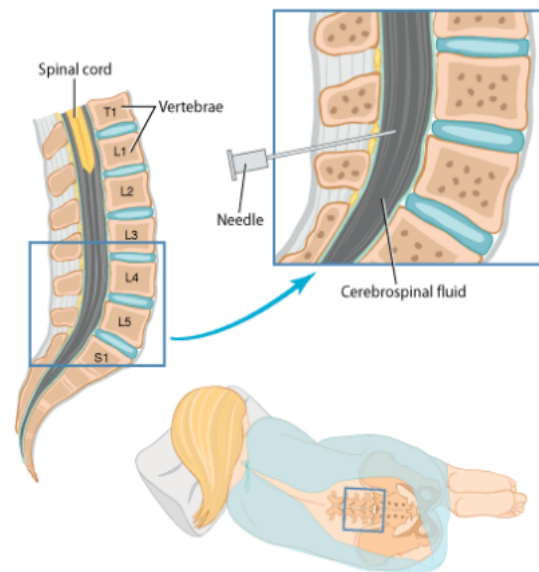
Often, when we tell people that lumbar punctures are a part of our research, there may be some hesitation. That hesitation is understandable, but we hope by providing clear information about the procedure and answering some common questions, we can help to make you feel more comfortable.

What is a lumbar puncture?

A lumbar puncture (also called a spinal tap) is a common medical procedure in which doctors remove a small sample of cerebrospinal fluid (CSF) from a person's lower back (the "lumbar" region). During a LP, participants lie on their side, which allows doctors to easily access the area of the lower back where the LP will occur. Once participants are in position, doctors use a local anesthetic to numb the area and then use a thin needle to draw out a small amount of spinal fluid. Because the anesthetic numbs the area, the LP should not be particularly uncomfortable or painful. After an LP, participants occasionally feel mildly sore as a result of staying in an unfamiliar position during the procedure. If participants are sore after an LP, they can take a standard pain reliever like Tylenol.

What is CSF, and why is it so important?

CSF is a clear, colorless liquid that is in direct contact with the brain. It provides a cushion to the brain and spinal cord and serves a purpose in the chemistry of the brain. Since the CSF interacts very closely with the brain, many researchers believe that it can provide a more direct window into changes that may be occurring there.



The needle location of the lumbar puncture

What risks are involved?

Our center has improved the procedures for research lumbar punctures and has created safety guidelines that are followed throughout our institution. While lumbar punctures are a relatively safe procedure, there are some minor side effects that you may experience. You may experience minor discomfort, bruising, or swelling of the skin where the needle is inserted. A headache may occur after the LP. This is frequently referred to as a "spinal headache". We have performed thousands of LPs and have improved the procedure to reduce discomfort in order to minimize the chance of LP-related headaches. If a mild headache occurs following an LP, we encourage taking Tylenol and drinking beverages that are high in caffeine. In the rare case of a severe headache, we perform a simple medical procedure called an epidural blood patch to relieve the pain. Most spinal headaches can be avoided by following the instructions and follow-up care provided by our physicians.

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MYTH: Lumbar punctures are really painful.

The discomfort associated with a lumbar puncture seems to vary from person to person. Most people report that the only painful or uncomfortable part of the procedure is a very brief sting they experience when the local anesthetic or numbing medicine is injected. This local anesthetic is similar to the one you would receive at the dentist, and it is used to prevent pain during the lumbar puncture. As the needle for the lumbar puncture is positioned to collect spinal fluid, most people describe the feeling as a pressure sensation.

MYTH: There is a chance that a person could get meningitis by having a lumbar puncture.

People cannot develop meningitis from a lumbar puncture that is conducted properly. The worry over meningitis and lumbar punctures perhaps arose because bacterial meningitis, which is a condition where bacteria makes its way into the spinal canal, and is diagnosed by using a lumbar puncture to collect spinal fluid for testing.

MYTH: If the doctor sneezes while someone is undergoing the procedure, that person will become paralyzed.

The spinal cord ends about five inches above the spot where the lumbar puncture needle is inserted. Because the needle is inserted well below where the spinal cord ends, there is almost no chance of nerve damage or paralysis. Nerves branch off the spinal cord and dangle loosely down through the lower part of the spine. Sometimes the needle may brush against one of these nerves, which may cause a brief “electric” twinge to go down the person’s leg but results in no other symptoms, particularly not paralysis. This feeling usually goes away quickly, but if the twinge returns while spinal fluid is being withdrawn, our doctors will quickly readjust the needle, which usually stops this brief discomfort.

What have patients said about their LP experience?

Sometimes it helps put our minds at ease when we hear of other’s experiences. Our hope is that you will feel comforted by some of these patient testimonials:

“I had two lumbar punctures, I had one seven years ago (2014) and one a few months ago (2020). They both went very smoothly and I had no ill effects at all. I felt no pain at all and I was very impressed with the staff, they stayed with me the whole time even while I was resting for an hour after the procedure. They stayed in the room with me to make sure I had water and did not develop a headache. The people I dealt with that day were so appreciative and they made me feel like I was contributing.”

“Much to my surprise, it really was quite easy to get through, with minimal discomfort. Local anesthesia meant that I honestly did not feel anything and was only mildly uncomfortable due to the position for the procedure. The only side effect was a very mild headache for a few hours, easily relieved with Tylenol.”

So, why do I participate in this clinical research study? It is only through clinical research participation that disease treatments and medications are made available.”

“It was much better than I thought it would be. Everyone said it would be really painful but it was no worse than any other injection I’ve ever had. I always tell people that Penn is a great place to have a lumbar puncture. It really went very well and I always tell people it was a very easy procedure. The doctor was very experienced.”