

Lumbar Puncture

WHAT YOU SHOULD KNOW:

- Lumbar puncture, also called an LP or spinal tap, is a procedure where a needle is inserted in your back and into the spinal canal. This is done to collect cerebrospinal fluid (CSF) or treat certain medical conditions. The spinal canal contains the spinal cord, which carries messages between your brain and your body, and CSF. CSF is a clear fluid that flows around the brain and inside the spinal canal. This fluid contains information about body functions and disease processes. It also acts as a cushion to protect the brain and spinal cord from injury. An LP may be used to check for an infection, inflammation (swelling), or other conditions affecting the brain. You cannot have an LP if you have increased pressure in the brain. This increased pressure may be caused by a tumor or blockage. If you bleed easily or an infection is present in the area where the needle will be inserted, the LP will not be done.
- During a lumbar puncture, CSF may be collected and sent to a lab for tests. The tests check for changes in the CSF, including the presence of blood, protein, glucose (sugar), and germs. The sample may also be used to do certain tests that check for an infection. CSF pressure may also be measured during the LP.

CARE AGREEMENT:

You have the right to help plan your care. Learn about your health condition and how it may be treated. Discuss treatment options with your caregivers to decide what care you want to receive. You always have the right to refuse treatment.

RISKS:

An LP may increase your risk for a headache, neck or back pain, nausea, or vomiting. You may have bleeding or spinal fluid may leak from the injection site. The procedure may cause injury to a disc, nerves, or your spinal cord.

GETTING READY:

Before your procedure:

- Write down the correct date, time, and location of your procedure.
- Arrange a ride home. Ask a family member or friend to drive you home after your procedure. Do **not** drive yourself home.

- Ask your caregiver if you need to stop any prescribed or over-the-counter medicine before your procedure, especially blood thinners.
- Bring your medicine bottles or a list of your medications when you see your caregiver. Tell your caregiver if you use any herbs, food supplements, or over-the-counter medicine.
- You will need an injection of contrast dye to help caregivers see your nerves or spinal cord more clearly. Tell the caregiver if you have ever had an allergic reaction to contrast dye. You may be given medicine to help prevent a reaction to the dye.
- Tell your caregiver if there is any chance you might be pregnant.
- You may need to have blood or urine tests. You may also need other imaging tests, such as x-rays, a CT scan, or an MRI. Ask your caregiver for more information about these and other tests that you may need. Write down the date, time, and location of each test.
- Because you should not eat or drink 3 hours prior to arriving for your appointment, if you are diabetic or have other dietary requirements, consult your primary physician.

The day of your procedure:

- Do not eat or drink 3 hours prior to arriving for your appointment. You may have sips of water with medications.
- Ask your primary caregiver before taking any medicine on the day of your procedure. These medicines include insulin, diabetic pills, high blood pressure pills, or heart pills. Bring a list of all the medicine you take, or your pill bottles, with you to the Stanford Neuroscience Health Center.
- You or your power of attorney will be asked to sign a legal document called a consent form. It gives caregivers permission to do the procedure or surgery. It also explains the problems that may happen and your choices. Make sure all your questions are answered before you sign this form.
- Caregivers may insert an intravenous tube (IV) into your vein. A vein in the arm is usually chosen. Through the IV tube, you may be given liquids and medicine.
- You will need medicine to numb an area of your back during the procedure. Tell caregivers if you have had a problem with anesthesia in the past.

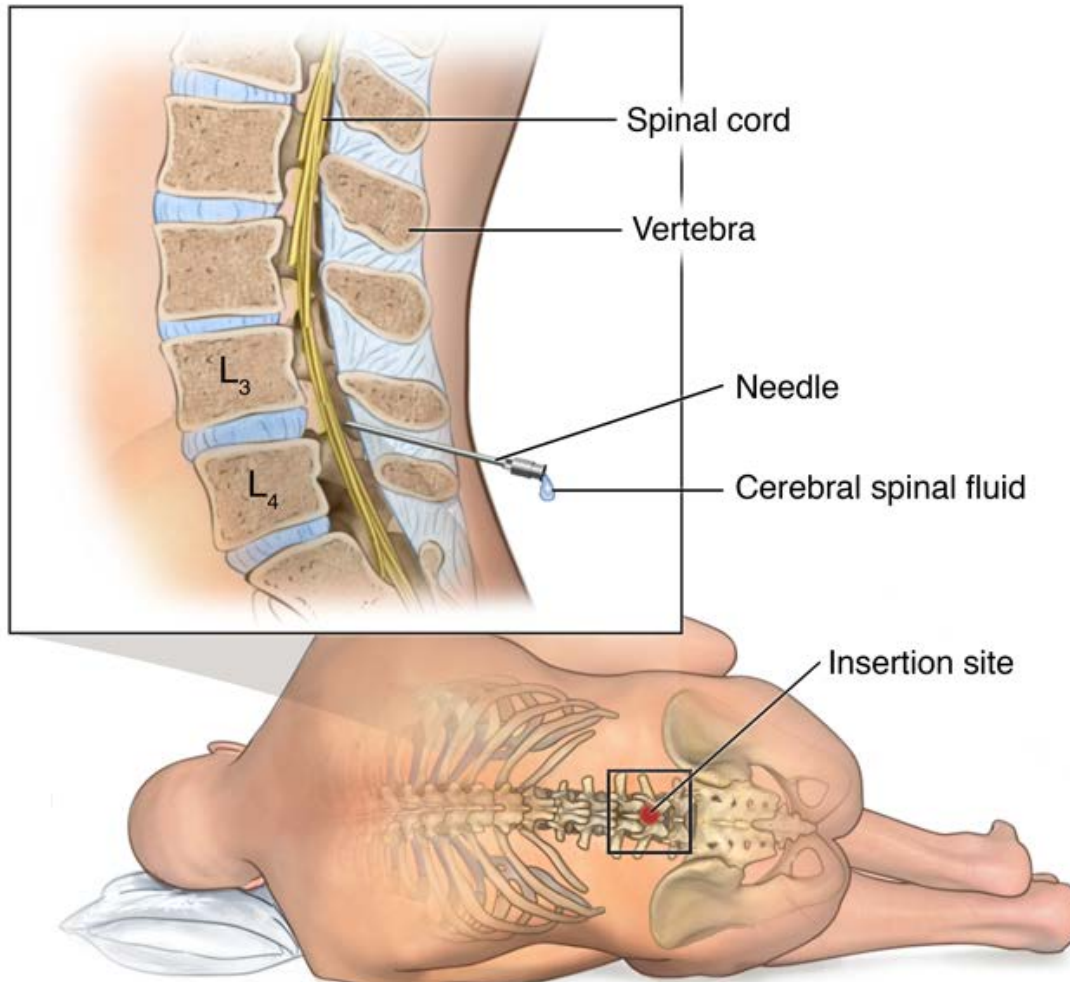
TREATMENT:

What will happen:

- You will lie on an x-ray table, most likely on your stomach. Local anesthesia is a shot of medicine put into the skin on your back. It is used to numb the area and dull the pain. You may still feel pressure or pushing during the procedure.

- Your radiologist will insert a needle between the bones of your spine and into your spinal canal. An x-ray with a monitor will be used to carefully guide the needle.
- After the procedure is done, the needle will be removed, and the injection site will be covered with a bandage.

Lumbar puncture (spinal tap)



After your procedure:

- You will be taken to a room to rest for at least 30 minutes. Caregivers will monitor you closely for any problems. Do **not** get out of bed until your caregiver says it is okay. When your caregiver sees that you are okay, you will be able to go home. You

may need to drink more liquids than usual after the procedure or you may need IV fluids.

- A neurologic exam will check your leg movement and sensation.
- You may develop a headache during the first few hours after your procedure. The headache may be mild to severe and may get worse when you sit up or stand. Fluid loss from your spinal column may increase your risk for a headache.

CONTACT A CAREGIVER IF:

- You cannot make the procedure.
- You have a skin infection or wound near the area where the procedure will be done.
- Your skin is itchy, swollen, or you have a rash.
- You have questions or concerns about your condition or care.

AFTER YOU LEAVE:

Post procedure headache:

- You may develop a headache during the first few hours after your LP, which may last up to several days. This happens when the amount of CSF and the CSF pressure are decreased, such as with a CSF leak. The headache may range from mild to severe and may get worse when you sit or stand. You may have neck or back pain, as well. The following may help ease or prevent a post procedure headache:
 - Drinking liquids: You may be asked to drink more liquid than usual after your procedure. For most people, the best liquids to drink are caffeinated. Do not drink alcohol. Tell your caregiver if you cannot drink a lot of liquid because of another medical condition, such as a heart or kidney condition.
 - Lying down: You may need to lie flat for some time after your procedure.
 - Treatment options: You may have any of the following:
 - Medicines:
 - Caffeine: Caffeine may be used to treat a post procedure headache. As CSF pressure decreases, such as with a leak, blood vessels in the brain will dilate (get bigger) to get more fluid to the brain. Headache pain is caused by the blood vessels getting bigger. Caffeine causes the blood vessels in the brain to get smaller, which will decrease your headache pain. Drink caffeinated drinks, such as coffee or tea, every 4 to 6 hours. If this does not relieve your headache, call your caregiver.
 - Pain medicine: You may need medicine to relieve or decrease you headache pain. These medicine may include NSAIDS

(non-steroidal anti-inflammatory medicine), such as ibuprofen, acetaminophen, or medicine that your primary caregiver orders for you. Your primary caregiver will decide which medicine is best for you to take for your headache. Follow your primary caregiver's instructions on how to take your medicine. Tell your primary caregiver if the pain medicine does not help or if you have any questions about your medicine.

- Procedures: You may need to have a blood patch if your headache is not relieved by the treatments above.
 - Blood patch: If your headache is caused by a leakage of CSF from the LP site, a blood patch procedure may be needed. This procedure uses a small amount of your blood, which is taken from a vein, to patch (seal) the leak. The blood is put through a needle into your spinal canal in the same way that the LP was done. You will need to lie in bed for 1 to 2 hours after this procedure. This procedure may need to be repeated if your headache is not relieved.

CALL THE NEURORADIOLOGY DEPARTMENT IF:

- You have severe pain in your back or neck that was not present before your procedure or that is much worsened after your procedure.
- You have bleeding or a discharge coming from the area where the needle was put into your back.
- You have questions or concerns about your procedure.

SEEK CARE IMMEDIATELY IF:

- You have a headache that is very bad and does not get better after lying down.
- You have a fever.
- You have a stiff neck or have trouble thinking clearly.
- Your legs, feet, or other parts below the waist feel numb, tingly, or weak and if these are new or worsened symptoms after your procedure.