

Lumbar Puncture

A lumbar puncture is used to obtain a sample of cerebrospinal fluid (CSF) for testing. CSF acts like a cushion, protecting the brain and spine from injury. The fluid is normally clear. The test can help your doctor identify the best treatment for you or to show how you are responding to your current treatment. The test is also used to measure pressure in the spinal fluid.

A lumbar puncture is performed by a doctor or a specially trained nurse, usually under a local anesthetic.

A lumbar puncture is also used to administer some chemotherapy drugs. The medications are injected directly through the lumbar puncture and into the cerebrospinal fluid where they flow freely to the brain or spinal cord.

How Do I Prepare?

Medications

Some over-the-counter and prescription medications can interfere with normal blood clotting and may increase the risk of bleeding. Follow the guidelines in the chart on when to stop taking certain medications, vitamins, and supplements. **If your doctor gives you different instructions, always follow your doctor's instructions.**

7 days (1 week) before the procedure , stop taking aspirin, products containing aspirin, herbal supplements, garlic tablets, and vitamins	
5 days before the procedure , stop taking warfarin (Coumadin [®] or Jantoven [®]), and clopidogrel (Plavix [®])	
3 days before the procedure , stop taking non-steroidal anti-inflammatory medications (NSAIDs) such as:	
– ibuprofen (Advil [®] /Motrin [®])	– etodolac (Lodine [®])
– naproxen (Aleve [®] /Anaprox [®])	– diclofenac (Voltaren [®])
– meloxicam (Mobic [®])	– piroxicam (Feldene [®])
– oxaprozin (Daypro [®])	– diflunisal
– sulindac (Clinoril [®])	– ketoprofen
1 day (24 hours) before your procedure , stop taking enoxaparin (Lovenox [®])	

Other medications (besides the ones listed in the chart) may be used to treat or prevent blood clots. If you are taking any of the medications listed below, talk to your doctor about when (or if) you should stop taking your medication before the lumbar puncture.

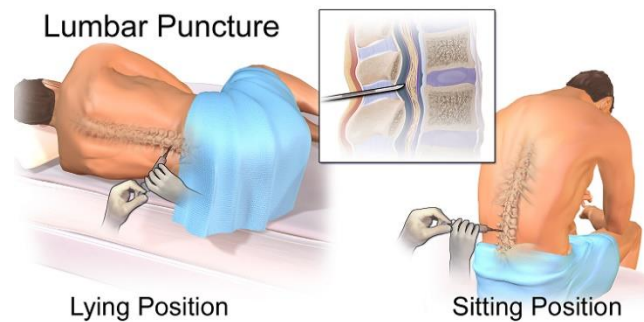
- apixaban (Eliquis®)
- cilostazol (Pletal®)
- dabigatran (Pradaxa®)
- dalteparin (Fragmin®)
- eptifibatide (Integrilin®)
- fondaparinux(Arixtra®)
- lepirudin (Refludan®)
- prasugrel (Effient®)
- rivaroxaban (Xarelto®)
- ticagrelor (Brilinta®)
- ticlopidine (Ticlid®)
- tinzaparin (Innohep®)
- tirofiban (Aggrastat®)

A Note for Patients Having Conscious Sedation

- Conscious sedation is a combination of medicines to help you relax and to block pain during a medical procedure.
- You will probably stay awake but you may be drowsy or you may not be able to speak. Conscious sedation lets you recover quickly and return to your everyday activities soon after your procedure.
- If you are an outpatient, there are some additional preparations if you will have conscious sedation for the procedure.
 - **Stop eating and drinking 8 hours before your test, except for water. Stop drinking water 2 hours before the test.**
 - If you have diabetes and take insulin, talk to your primary doctor about how to take your insulin on the day of the procedure.
 - If your doctor tells you to take your routine medication(s) on the morning of the procedure, take them with a very small sip of water.
 - **You must have someone to drive you home after the procedure.** (You cannot drive until the next day.) If you do not have someone to drive you home, your procedure will be cancelled.

The Lumbar Puncture Procedure

- During your lumbar puncture, you'll either be asked to lie on one side with your knees drawn up towards your chest OR to sit up, bent over a table and supported by pillows. Both positions allow your back to curve as much as possible so that the bones of the spine are widely separated.



- The skin over the lower spine is cleaned with an antiseptic. A local anesthetic is injected to numb the area. The doctor will wait for a few minutes for the anesthetic to take effect.
- A very thin, hollow needle is inserted between two of the spinal bones (vertebrae) and into the spinal canal.
- You'll need to stay as still as possible at this time. You may feel a sensation of pressure as the needle is put in, but most people do not feel any pain.
- A lumbar puncture does not usually take more than a few minutes once the needle is in place. When the needle is in the right position, a small amount of CSF will flow back into the needle. This fluid is collected and sent to the laboratory for examination.
- The needle is removed, the area is cleaned, and a bandage is placed over the needle site.
- Occasionally, special x-rays are used to help guide the needle into the proper position. This is called fluoroscopy.

After the Procedure

You'll need to lie flat for some time after the procedure, to avoid a headache, and drink a lot of fluids. This time can vary from one hour to several hours, depending on how you feel. You will be able to roll from side to side, but if you have a headache, sitting up can make it worse.

If you get a headache, tell your doctor or nurse. A mild pain medication can be given to help. We will also check your blood pressure and pulse. Ask when it will be safe for you to sit up. Once you have rested and feel well, you can return to your normal activities, although it's best not to drive or operate machinery for 24 hours after a lumbar puncture.

Your doctor will discuss your follow-up care with you.

Are There Risks?

Common risks and complications include:

- Headache, which may require medication and bed rest
- Minor pain and/or infection at the injection site, which may require antibiotics
- Bleeding or bruising at the puncture site
- Nerve damage. This is usually temporary, and should get better over a period of time

Less common risks and complications, which may require additional treatment, include:

- Severe headache, which may require several days of bed rest or follow up medical procedures
- Vomiting
- Damage to surrounding structures, such as blood vessels, organs and muscles
- Allergy to injected drugs

Rare risks and complications include:

- Injury to the spinal cord that may require surgery
- Seizures, coma, and other severe forms of nerve toxicities
- Permanent nerve damage, with possible paralysis
- Meningitis, requiring antibiotics and other treatment

When to Call the Doctor

Call the clinic immediately if you experience:

- **Fever of 100.4°F (38°C) or higher, chills**
- Any other signs of infection such as a sore throat, painful urination, or a skin wound that is red, swollen, painful, and/or warm to the touch