

FLUOROSCOPIC GUIDED LUMBAR PUNCTURE

What is a Lumbar Puncture?

Fluoroscopy-guided lumbar puncture (spinal tap) is a minimally invasive, image-guided diagnostic and therapeutic procedure that involves the removal of cerebrospinal fluid (CSF) from, or an injection of medication or other substance (e.g. radiotracer, chemotherapy agents) into the lumbar cistern of the spinal column. A lumbar puncture is performed in your lower back, in the lumbar region. During a lumbar puncture, a needle is inserted between two lumbar bones (vertebrae) to remove a sample of CSF. This is the fluid that surrounds your brain and spinal cord to protect them from injury.

You will lie face down with pillow or a sponge under your abdomen, pelvis, or angled slightly while laying face down. This allows the X-ray to move over the top of you and obtain images to best determine the site for the procedure. The site will be marked and sterilely prepped. Lidocaine will be injected into the skin and muscle tissue for anesthesia. Then using Fluoroscopic guided imaging, a needle will be inserted into the spinal canal space to obtain the fluid.

Why might I need a lumbar puncture?

A lumbar puncture may be done for various reasons. The most common reason is to remove a small amount of CSF for testing. This can help in the diagnosis of various disorders. The fluid is tested for red and white blood cells, protein, and glucose (sugar), and occasional other specialized tests. The clarity and color of the fluid are also checked, and it is tested to see whether bacteria, viruses, or abnormal cells are present. Excess CSF may also be removed in people who have an overproduction or decreased absorption of the fluid.

A lumbar puncture procedure may be helpful in diagnosing many diseases and disorders, including:

- Meningitis. An inflammation of the membrane covering the brain and spinal cord. The inflammation is usually the result of a viral, bacterial, or fungal infection.
- Encephalitis. An inflammation of the brain that is usually caused by a virus.
- Certain cancers involving the brain and spinal cord
- Bleeding in the area between the brain and the tissues that cover it (subarachnoid space)
- Myelitis. An inflammation of the spinal cord or bone marrow.
- Neurosyphilis. A stage of syphilis during which the bacteria invades the central nervous system.
- Guillain-Barré syndrome. A disorder in which the body's immune system attacks part of the nervous system.
- Demyelinating diseases. Diseases that attack the protective coating that surrounds certain nerve fibers — for example, multiple sclerosis or acute demyelination polyneuropathy.
- Headaches of unknown cause. After evaluation and head imaging if necessary, a lumbar puncture may be done to diagnose certain inflammatory conditions that can result in a headache.

- Pseudotumor cerebri (also called idiopathic intracranial hypertension, or IIH).
- Normal pressure hydrocephalus
- In addition, a lumbar puncture may be used to measure the pressure of the CSF. The healthcare provider uses a special tube (called a manometer) to measure the pressure during a lumbar puncture.

A lumbar puncture may also be done to inject medicine directly into the spinal canal. These include:

Contrast dye for X-ray studies — for example, myelography.

Chemotherapy drugs used to treat cancer.

What are the risks of a lumbar puncture?

- A small amount of CSF can leak from the needle insertion site. This can cause headaches after the procedure. If the leak continues, your headache can be severe.
- You may have a slight risk of infection because the needle breaks the skin's surface, providing a possible way for bacteria to enter the body.
- Short-term numbness or paresthesia's of the legs or lower back pain may be experienced.
- Very small risk of bleeding in the spinal canal.
- There may be other risks depending on your specific medical condition. Be sure to discuss any concerns with your healthcare provider before the procedure. Your healthcare provider may have other reasons to recommend a lumbar puncture.

How do I prepare for a lumbar puncture?

We will contact you by phone prior to your lumbar puncture to discuss the procedure and answer any questions you may have.

Please inform the us if:

You are on antibiotics - you may need to wait to do the procedure if currently on antibiotics for an infection in your blood. If you have an active infection or fever, your procedure may need to be rescheduled.

- You are allergic to any local anesthetics (lidocaine)
- There is any chance that you could be pregnant
- You are on anticoagulant therapy (blood thinners). Examples include warfarin (Coumadin, Jantoven), clopidogrel (Plavix), and some over-the-counter pain relievers such as aspirin, ibuprofen (Advil, Motrin IB, others) or naproxen sodium (Aleve). Also, tell your doctor or nurse if you're allergic to any medications, such as numbing medications (local anesthetics).

PRECAUTIONS: If you are pregnant or think you might be pregnant, please check with your doctor before scheduling the exam. Other options should be discussed with you and your doctor.



CLOTHING: You may be asked to change into a gown. A gown will be provided for you. However, the procedure may also be done while you remain in your clothes from home. For this reason, try to wear non-restrictive, comfortable clothing and slip on shoes if possible. Please remove all piercings and leave all jewelry and valuables at home

EAT/DRINK: Try to increase your fluid intake (such as water and juice) for the two days leading up to your procedure unless a medical condition does not allow you to safely do so. If you are not sure if it is safe for you, contact your primary care provider or referring provider.

MEDICATION: All patients can take their prescribed medications as usual unless instructed to hold certain medications such as blood thinners. Please bring a current list of your medications and allergies with you.

TRAVEL: You must have an adult driver accompany you so they can drive you home after the procedure. This is for your safety and comfort.

Arrive 30 minutes prior to the scheduled procedure time for check-in and to be prepped for the procedure.

LUMBAR PUNCTURE DISCHARGE EDUCATION

What should I expect after the Lumbar Puncture?

- You will be monitored and asked to lie flat (either on your back, stomach, or side) for approximately 1 hr immediately after the procedure to decrease the risk of developing a post-lumbar puncture headache.
- You must have someone drive you home after the procedure and avoid driving for the remainder of the day.
- Plan to rest the day of your procedure and avoid strenuous activities for 24 hrs. Discuss your activities with your doctor if you have questions.
- If needed, a nonprescription pain-relieving medication that contains acetaminophen can help reduce a headache or back pain.
- You may develop a post-lumbar puncture headache during the first few hours after your procedure that can last for several days. The headache may be mild to severe and may get worse when you sit or stand. If you develop a severe headache lasting multiple days and not relieved by conservative measures (see below), please contact your primary care or referring provider to discuss other treatment options.

The following may help ease a post-lumbar puncture headache:

- Lie down and rest, as these kinds of headaches are usually exacerbated by standing, sitting upright, or bending over.
- Over the counter pain-relieving medication.
- Stay hydrated and drink more liquids than usual (unless restricted by a medical condition).
- Caffeine including drinks such as coffee, tea, or some soft drinks.
- Avoid alcohol as this can make your headache worse.

Bathing & Wound Care:

- You may shower the morning after your lumbar puncture; do not tub bath or submerge in water for 3 days (bath tub, hot tub, swimming pool, river or any other body of water). Band-aid may be removed the next day and should be changed when wet or soiled.
- Apply a warm compress to affected area for comfort as needed.
- If the site(s) become red, tender, swollen, or starts to drain, contact us.

If you experience any of the following symptoms, please seek urgent medical attention from your primary care or referring provider, or your nearest emergency room:

- Severe, persistent headache that is not relieved by recommended treatments given above.
- Fever of 100.3 or higher.
- Stiff neck or trouble thinking clearly.
- Significant numbness or weakness in your legs, feet, or other parts below the waist.
- Significant bleeding or a discharge coming from the area where the needle was put into your back.
- Severe, persistent pain in your back or neck that is not relieved by recommended treatments given above.

For any other specific questions or concerns please feel free to contact us. 509-363-7985