

Myelogram

Overview

A myelogram is an invasive diagnostic test that uses x-rays to examine the spinal canal. A special dye is injected into the spinal canal through a hollow needle. An x-ray fluoroscope then records the images formed by the dye. Myelograms can show conditions affecting the spinal cord and nerves within the spinal canal.

How does a myelogram work?

Regular x-rays of the spine only give a clear picture of bones. The dye (contrast agent) used in a myelogram shows up white on the x-ray allowing the doctor to view the spinal cord, exiting nerves, and canal in detail. The doctor inserts a hollow needle through your skin into the spinal canal. The dye is injected into the space surrounding the spinal cord and nerve roots (Fig. 1). This dye is radiopaque, meaning it's impenetrable by x-ray. Then x-rays and/or a CT scan are done (Fig. 2). The scan can see fine details and can tell your doctor how your bones are affecting your nerves.

What does a myelogram show?

A myelogram can detect conditions affecting the spinal cord and nerves within the spinal canal, including disc herniations, bone spurs, spinal stenosis, tumors, and infection.

Who performs the test?

A radiologist will perform the test in the radiology department of the hospital or at an outpatient imaging center.

How should I prepare for the test?

There are certain medications, such as aspirin, blood thinners (Coumadin, Plavix), antidepressants, and Glucophage for diabetes that may interfere with the dye used in the test. You will need to stop these medications several days prior to the date of the test. You should contact your primary care doctor's office when the test is scheduled to discuss your medications. They will give you specific instructions for taking or holding medications on the day of the myelogram.

- Drink as much clear fluids as possible the day before your myelogram. Hydration is important.

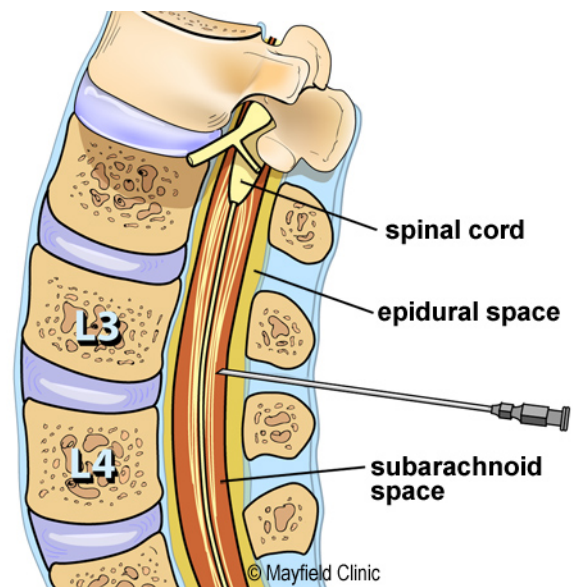


Figure 1. A needle is placed in the fluid-filled subarachnoid space to inject the contrast dye.



Figure 2. The contrast dye makes the spinal canal clearly visible on an x-ray (left). Stenosis and scoliosis can be seen compressing the spinal nerves on the CT scan (right).

- Follow instructions about when to **stop** eating and drinking as it varies by center (typically after midnight or at least 6 hours before test). Diabetics may have different instructions.
- Make arrangements to have someone drive you to and from the hospital. You will **not** be able to drive yourself home.

Before the test, you will be asked to change into a hospital gown. The radiologist or nurse will discuss the test with you, explain the risks, answer any questions, and have you sign consent forms.

What happens during the test?

Step 1: prepare the patient

A doctor and a technician will be in the room. You will lie on your stomach with a pillow under your abdomen. After cleaning your lower back with antiseptic, the doctor will numb the area where the needle will be inserted.

Step 2: insert the needle and inject dye

Next, a hollow needle is inserted into your spinal canal to draw out some cerebrospinal fluid for testing. The contrast dye is injected through the hollow needle into the fluid space around your spinal nerves. You will likely feel pressure, though some people feel a stinging sensation. Tell the doctor if you are feeling pain.

Step 3: take X-ray pictures

After the dye is injected, the needle is removed. The table may be tilted to move the contrast dye through your spinal canal. You may be asked to roll side to side to help spread the dye. X-ray pictures will be taken of your back. At this point you should remain very still so that the x-ray images will not be blurred. Most patients will have a CT scan following the myelogram.

What happens after the test?

After the x-rays and CT scans, you will be taken to a room and observed for a few hours with your head raised. Do NOT lie flat. Once the doctor releases you, a friend or family member may drive you home.

Discharge instructions

1. Rest in bed or a recliner for 24 hours after your myelogram. **Keep your head elevated.** You can lie on your back or side with your head elevated 30 degrees or use 2 pillows. You may get up for short periods (bathroom and meals).
2. Drink lots of fluids for 18 hours, at least 8 ounces every 2 hours while awake. If possible,

drink caffeinated beverages, which increase urination and helps eliminate the dye used during the myelogram.

3. If your headache, nausea, or vomiting persists after 48 hours of bed rest, call your doctor.
4. In general, you can resume normal activities the next day.

What are the risks?

A CT myelogram is safe for most people, though pregnant women shouldn't have one.

Be sure to tell the doctor if you are pregnant or have a history of allergies (to medications, previous iodine injections, or shellfish), diabetes, asthma, a heart condition, kidney problems, or thyroid conditions. Also tell them if you take any blood thinners such as aspirin, Plavix, or Coumadin.

Risks include:

- A spinal headache.
- Bleeding around your spine.
- Spinal fluid infection (meningitis).
- An allergic reaction to the contrast dye.

About 5% to 10% of patients experience side effects caused by the dye that include headache, nausea, and vomiting. Spinal fluid leak from the injection site can cause prolonged headache. A 'blood patch' may be used to seal the leak if the severe headache does not get better.

In rare cases, reaction to the dye may cause a seizure or inflammation of the meninges.

How do I get the test results?

The radiologist will promptly review your images and communicate directly with your referring doctor, who in turn will discuss the results with you.

Sources & links

If you have further questions about this diagnostic test, contact the doctor that ordered the test or visit www.radiologyinfo.org.

Glossary

contrast agent: a liquid (usually iodine-based) that is injected into your body to make certain tissues show up clearly during diagnostic imaging (angiography, CT, myelogram, MRI).

blood patch: a small amount of the patient's blood is injected above a hole in the dura sac to seal a CSF leak and relieve spinal headaches.

thecal sac: the protective dura covering of the spinal cord and nerves containing cerebrospinal fluid.



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