

Lab Tests and Results

Cerebrospinal fluid culture

What is this test?

This test detects organisms in cerebrospinal fluid. It is used to diagnose or rule out bacterial meningitis[1].

What are related tests?

[Blood culture](#)

CSF gram stain method

Why do I need this test?

Laboratory tests may be done for many reasons. Tests are performed for routine health screenings or if a disease or toxicity is suspected. Lab tests may be used to determine if a medical condition is improving or worsening. Lab tests may also be used to measure the success or failure of a medication or treatment plan. Lab tests may be ordered for professional or legal reasons. The following is a possible reason why this test may be done:

Anthrax meningitis

Bacterial meningitis

When and how often should I have this test?

When and how often laboratory tests are done may depend on many factors. The timing of laboratory tests may rely on the results or completion of other tests, procedures, or treatments. Lab tests may be performed immediately in an emergency, or tests may be delayed as a condition is treated or monitored. A test may be suggested or become necessary when certain signs or symptoms appear.

Due to changes in the way your body naturally functions through the course of a day, lab tests may need to be performed at a certain time of day. If you have prepared for a test by changing your food or fluid intake, lab tests may be timed in accordance with those changes. Timing of tests may be based on increased and decreased levels of medications, drugs or other substances in the body.

The age or gender of the person being tested may affect when and how often a lab test is required. Chronic or progressive conditions may need ongoing monitoring through the use of lab tests. Conditions that worsen and improve may also need frequent monitoring. Certain tests may be repeated to obtain a series of results, or tests may need to be repeated to confirm or disprove results. Timing and frequency of lab tests may vary if they are performed for professional or legal reasons.

How should I get ready for the test?

A lumbar puncture is a procedure that requires your written consent. Review the consent form with the healthcare worker and ask any questions that you have before signing the consent form. You may receive certain medications and need imaging tests done prior to the procedure.

Tell the person doing the lumbar puncture if you have a medical condition or are using a medication or supplement that causes excessive bleeding. Contact the healthcare worker if you have a history of chronic back pain, structural defects in your spine, or a past spinal surgery. Tell the healthcare worker if you have an infection on your back or if you have any psychiatric or neurological (nerve) conditions. You should also report if you have a history of allergic other reactions to local anesthetics.

How is the test done?

Cerebrospinal fluid is the fluid that surrounds the brain and spinal cord tissues. The procedure that collects a sample of cerebrospinal fluid is called a lumbar puncture. For this procedure, you may need to lie on your side facing away from the person performing the procedure. You may be asked to roll up into a ball with your knees brought close to your chest. This position allows your spine to spread apart slightly and helps direct needle placement. This procedure may also be done while you are in an upright sitting position, with your knees drawn up toward your chest.

An area in the lower back will be chosen for the needle insertion site. This is about at the level of the top of your hip

bone. Your skin will be cleaned with antiseptic and the area will be draped with sterile cloth. Local anesthetic will be injected with a small needle to numb the area. Anesthetic cream may also be applied. After the anesthetic has taken effect, the lumbar puncture needle is inserted between the vertebrae and into the spinal column. Cerebrospinal fluid is drawn out for testing and the needle is removed. You may need to change positions during the procedure if the healthcare worker is having difficulty collecting a sample of fluid. This procedure may be done more than one time if collecting cerebrospinal fluid is difficult.

How will the test feel?

The amount of discomfort you feel will depend on many factors, including your sensitivity to pain. Communicate how you are feeling with the person doing the procedure. Inform the person doing the procedure if you feel that you cannot continue with the procedure.

Before a lumbar puncture, a local anesthetic is given to the procedure site to numb the area. You may feel mild discomfort or stinging when the numbing medicine is injected. You may feel a pressure, a popping sensation, and discomfort when the procedure needle is inserted. Tell the person doing the test if you feel pain or numbness down your leg during the procedure. You may have back discomfort for several days after the procedure.

What should I do after the test?

After the lumbar puncture is complete, a bandage will be placed over the site and pressure held until the bleeding or drainage has stopped. You will need to lie flat for at least 1 to 2 hours after the lumbar puncture. Healthcare workers will monitor for drainage from the puncture site for a period of time after the test. You may be able carefully turn from your back to your side. You will be offered fluids to drink.

What are the risks?

Cerebrospinal fluid: Cerebrospinal fluid is collected by a procedure called a lumbar puncture. The most common risk of a lumbar puncture is spinal fluid leakage from the puncture site. This procedure may cause a mild to severe headache, which may last for several days. Although rare, other risks include infection, nerve injury, bleeding in the spinal canal, and damage to the discs in between your spine. If you have a medical condition, or are using a medication or supplement that causes excessive bleeding, you are at a higher risk of bleeding from the puncture site. If you have a condition where you have increased pressure within your skull, such as a traumatic head injury or a large brain tumor, this procedure carries a risk of brain herniation (where the skull contents are pressed down on to the spinal cord causing brain damage). The person doing this test may need to perform it more than once. Talk to your healthcare worker if you have any concerns about the risks of this procedure.

What are normal results for this test?

Laboratory test results may vary depending on your age, gender, health history, the method used for the test, and many other factors. If your results are different from the results suggested below, this may not mean that you have a disease. Contact your healthcare worker if you have any questions. The following are considered to be normal results for this test:

Adults and Children: Negative or no growth

What follow up should I do after this test?

Ask your healthcare worker how you will be informed of the test results. You may be asked to call for results, schedule an appointment to discuss results, or notified of results by mail. Follow up care varies depending on many factors related to your test. Sometimes there is no follow up after you have been notified of test results. At other times follow up may be suggested or necessary. Some examples of follow up care include changes to medication or treatment plans, referral to a specialist, more or less frequent monitoring, and additional tests or procedures. Talk with your healthcare worker about any concerns or questions you have regarding follow up care or instructions.

You may experience headaches for hours to days, or even weeks after a lumbar puncture. The headaches are usually worse when sitting or standing upright and are relieved by lying down. Headaches are often associated with nausea, a stiff neck, tinnitus (ringing in the ears), photophobia (abnormal sensitivity to or intolerance of light), vertigo (dizziness), and blurred vision. Contact your healthcare worker if your symptoms worsen.

Where can I get more information?

Related Companies

[Centers for Disease Control and Prevention \(CDC\)](#)

References

1. Tietz NW (Ed): Clinical Guide to Laboratory Tests, 3rd ed. W. B. Saunders, Philadelphia, PA, 1995.