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Meningioma - Diagnosis [1]

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ON THIS PAGE: You will find a list of common tests, procedures, and scans that doctors use to find the cause of a medical problem. To see other pages, use the menu.

Doctors use many tests to find, or diagnose, a tumor and learn if it is cancerous. They also do tests to learn if it has spread to another part of the body from where it started. If this happens, it is called metastasis. For example, imaging tests can show if the tumor has spread. Imaging tests show pictures of the inside of the body. Doctors may also do tests to learn which treatments could work best.

For most tumor types, a biopsy is the only sure way for the doctor to know whether an area of the body has a tumor. In a biopsy, the doctor takes a small sample of tissue for testing in a laboratory. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis.

This list describes options for diagnosing meningioma, and not all tests listed will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- The type of tumor suspected
- Your signs and symptoms
- Your age and medical condition

- The results of earlier medical tests

Sometimes, meningioma is found accidentally while having a procedure for another reason. More commonly, meningioma is often not diagnosed until a person starts having symptoms. A neuro-oncologist is a doctor who specializes in diagnosing and treating brain and nervous system tumors. The neuro-oncologist uses a patient's symptoms as clues to the location of the tumor. In addition to a detailed medical history and physical examination, the following tests may help the doctor find and diagnose meningioma:

- **Neurological, vision, and hearing tests.** These tests help find out how a possible tumor is affecting the brain. An eye examination can find changes to the optic nerve caused by pressure from a meningioma.
- **Stereotactic neurosurgery/biopsy.** A [biopsy](#) [3] can be performed during a procedure called a stereotactic technique. This technique uses a needle guided to the tumor with computers and imaging tests. A biopsy can also be done during surgery when the surgeon can look at the tumor directly. However, most meningiomas are removed rather than doing a separate biopsy. This means that surgery for meningioma is usually done by an open craniotomy instead of with stereotactic techniques. An open craniotomy is surgery where part of the skull is removed to provide access to the brain.
- **Imaging tests.** Sometimes, meningioma is diagnosed using only the imaging tests below because the location of the tumor may make a biopsy risky. Imaging tests are most useful when the results are combined with the patient's medical history, physical examination, and neurological tests. This combination helps to more accurately find out where the tumor began and whether or where it has spread. The most common imaging tests used for diagnosing meningioma include:
 - **Magnetic resonance imaging (MRI).** An [MRI](#) [4] uses magnetic fields, not x-rays, to produce detailed images of the body. A special dye called a contrast medium is injected into a patient's vein before the scan to create a clearer picture. MRIs may create more detailed pictures than CT scans (see below) and often show changes in the brain caused by the tumor, such as swelling or areas where the tumor has spread. MRI is the preferred way to diagnose meningioma.
 - **Computed tomography (CT or CAT) scan.** A [CT scan](#) [5] creates a 3-dimensional picture of the brain by using x-rays of the head from many different angles. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumors. A CT scan can also be used to measure the tumor's size.

Sometimes, a special dye called a contrast medium is injected into a patient's vein before the scan to provide better detail on the image. A CT scan is best for finding changes in the skull that can be caused by meningioma. These changes may include the hardening of the area near the tumor, which can mean that the tumor has been there for a long time.

- **X-ray.** A general x-ray is a way to create a picture of the structures inside of the body using a small amount of radiation. An x-ray of the head can sometimes help doctors determine the presence and location of meningioma, but is not sufficient to diagnose the type of tumor.
- **Cerebral angiogram.** A cerebral angiogram is a type of x-ray, or series of x-rays, of the head that shows the arteries and veins in the brain. X-rays are taken after a contrast medium is injected into the main arteries of the head. Because a meningioma can block important veins that drain blood from the brain, it is sometimes important to get an angiogram to plan surgery. In addition, there may be abnormal blood vessels that feed the tumor and these can be seen with the angiogram. Sometimes, material is injected into the tumor before surgery to reduce bleeding during surgery.
- **Positron emission tomography (PET) scan.** A PET scan is usually combined with a CT scan (see above), called a [PET-CT scan](#) [6]. However, you may hear your doctor refer to this procedure just as a PET scan. A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into the patient's body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body. A PET scan is rarely used for meningioma.
- **Electroencephalography (EEG).** An EEG is a noninvasive test in which electrodes are attached to the outside of a person's head to measure electrical activity of the brain. Specifically, EEGs are used to detect seizures. Because meningiomas can cause seizures in some patients, EEGs are occasionally needed for patients with this tumor.

After diagnostic tests are done, your doctor will review all of the results with you. If the diagnosis is meningioma, these results also help the doctor describe the tumor; this is called staging and grading.

The [next section in this guide is Stages and Grades](#) [7]. It explains the system doctors use to describe the extent of the disease. Or, use the menu to choose another section to continue reading this guide.

Links

[1] <http://www.cancer.net/cancer-types/meningioma/diagnosis>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/24406>

[4] <http://www.cancer.net/node/24578>

[5] <http://www.cancer.net/node/24486>

[6] <http://www.cancer.net/node/24565>

[7] <http://www.cancer.net/node/19272>