TEST

Cervical MRI scan

A cervical MRI scan creates detailed images of the spine, spinal cord, and nerves in your neck.

WHAT IT MEASURES
Detailed images of neck vertebrae, discs, spinal cord, and nerves

SAMPLE
None; imaging only

FASTING NEEDED?
Sometimes, if sedation is planned

HOW LONG IT TAKES
Usually 30 to 60 minutes

RESULTS IN
Usually 1-7 days; varies by radiology service

USED FOR
Diagnosis and monitoring

MAIN LIMITATION
Visible abnormalities may not explain symptoms

Overview

A cervical MRI scan is an MRI of the cervical spine, the part of your spine in your neck. Here, "cervical" refers to the neck rather than the cervix.

MRI stands for magnetic resonance imaging. It uses a strong magnet and radio waves to create detailed pictures without X-rays or ionising radiation.

The scan shows the neck bones, discs, spinal cord, nerve roots and surrounding soft tissues. Most scans are performed without contrast dye. A gadolinium-based contrast agent may be injected when more detail is needed, such as after surgery or when looking for infection, inflammation or a mass.

Why the test is ordered

A cervical MRI may help investigate persistent or worsening neck symptoms, particularly when a nerve or the spinal cord may be affected.

It may be ordered to look for:

MRI is not always needed for short-term, uncomplicated neck pain. Age-related changes are common, including in people without pain, so findings must be compared with your symptoms and examination.

- A slipped or herniated disc pressing on a nerve
- Narrowing around the spinal cord or nerve roots
- Spinal cord compression or injury
- Changes following significant neck trauma
- Infection, inflammation or a mass
- Congenital differences present from birth
- Changes after cervical spine surgery
- Progression of a previously identified condition

Who should have the test

A healthcare professional may recommend cervical MRI if your symptoms or examination suggest a problem involving the spinal cord, a nerve root or another structure that MRI shows well. It may also be used when symptoms have not improved, another test is abnormal, or treatment or surgery is being planned.

MRI safety screening is required. Tell the imaging service if you have:

An implant does not automatically prevent MRI. Many newer devices can be scanned under specific conditions, but staff need the exact make and model whenever possible.

- A pacemaker, implanted defibrillator or other electronic implant
- A cochlear implant, aneurysm clip, infusion pump or nerve stimulator
- Metal fragments in your body, especially near your eyes
- Previous spine surgery or implanted metalwork
- Kidney disease or dialysis
- A current or possible pregnancy
- Severe claustrophobia or difficulty lying flat

How to prepare

For a routine scan without sedation, you can usually eat, drink and take regular medicines as normal. Follow the imaging service's instructions, especially if contrast or sedation is planned.

Remove metal objects, including jewellery, hearing aids, hairpins, removable dental work and clothing with metal fasteners. Some medication patches, cosmetics and clothing fibres may contain metal, so tell the radiographer about them.

Bring implant details and previous neck imaging if requested. Earlier scans can help show whether a finding is new or unchanged.

If you are anxious in enclosed spaces, contact the service beforehand. Options may include additional support, a wider scanner or prescribed sedation. If you receive sedation, you may need to fast and arrange for someone to take you home.

What happens during the test

You will lie on a padded table, usually on your back, with a receiver called a coil positioned around your neck. The table moves into the scanner.

The scanner makes loud tapping, knocking and buzzing sounds. You will receive ear protection and can communicate with the radiographer by intercom. You are usually given a call button.

You must keep your head and neck still while several sets of images are taken. You may be asked to avoid swallowing briefly. If contrast is needed, a small tube is placed into a vein in your arm or hand.

The scan commonly takes 20 to 45 minutes, although the appointment may last 30 to 60 minutes. Contrast, sedation or specialised images can take longer.

Understanding your results

A radiologist reviews the images and sends a report to the healthcare professional who requested the scan.

Terms you may see include:

Mild or moderate age-related changes may not be causing symptoms. MRI cannot determine a finding's importance by appearance alone; its location must match your symptoms, examination and medical history.

Cervical MRI has no universal numerical reference range. Interpretation depends on factors such as age, symptoms, previous surgery and the imaging protocol.

- Disc degeneration: Wear-related changes in a spinal disc
- Disc bulge or herniation: Disc material extending beyond its usual position
- Canal stenosis: Narrowing around the spinal cord
- Foraminal stenosis: Narrowing where a nerve leaves the spine
- Cord compression: Pressure on the spinal cord
- Cord signal change: An altered appearance within the spinal cord
- Osteophytes: Extra bone growth, sometimes called bone spurs

What affects the results

Movement is a main cause of blurred or incomplete images. Pain, coughing, swallowing, anxiety or difficulty lying flat can make it harder to remain still.

Other factors include:

MRI produces still images, so narrowing or instability that mainly appears while standing, bending or moving may be less visible. Standing or bending X-rays may sometimes provide additional information.

Food, coffee, recent exercise and time of day usually do not affect the structures shown. Kidney function may influence whether gadolinium contrast is used.

- Metal implants, dental hardware or surgical clips causing distortion
- Scanner strength and the image sequences used
- Positioning, because routine MRI is performed lying down
- Previous surgery altering normal anatomy
- Whether contrast was used
- Missing earlier scans needed for comparison

Accuracy and limitations

MRI is particularly good at showing the spinal cord, discs, nerve roots and soft tissues. However, accuracy varies with the condition, image quality, scanning protocol and interpretation.

It may show abnormalities that do not cause symptoms. Disc bulges and degenerative changes are common in people without neck or arm pain. MRI can also miss small, subtle or

position-dependent problems, especially if movement reduces image quality. A normal scan does not rule out every cause of pain, weakness, tingling or numbness.

Other tests may sometimes be more useful. CT generally shows bone and some acute fractures better. X-rays can assess alignment or movement. Nerve conduction studies and electromyography assess nerve and muscle function, while MRI mainly shows structure.

Risks and complications

MRI does not use ionising radiation. However, the strong magnet can move or interfere with unsafe metal objects and devices, making safety screening essential.

An intravenous line may cause brief discomfort, bruising or faintness. Reactions to gadolinium contrast can occur, although serious reactions are uncommon.

People with severe kidney disease need individual assessment before certain gadolinium agents are used. Sedation has separate risks and may affect alertness and coordination for the rest of the day.

What happens next

Results may be discussed at an appointment, by telephone or through an online record. Your healthcare professional will compare the scan with your symptoms and examination before recommending monitoring, physiotherapy, medicines, another test or specialist review.

Seek urgent medical assessment rather than waiting for routine follow-up if you develop new or rapidly worsening weakness, major difficulty walking, or loss of bladder or bowel control. Call emergency services for severe breathing difficulty or facial or throat swelling after contrast.

Common questions

Can I drink coffee before a cervical MRI?

Usually, yes. Avoid it if you must fast for sedation, and limit caffeine if it makes lying still difficult.

Does the time of day matter?

Usually not. Choose a time when you can arrive without rushing and lie still comfortably.

Can I exercise beforehand?

Gentle activity generally does not affect the images. Avoid exercise that worsens pain or makes it difficult to remain still.

Will I need contrast dye?

Most scans for disc problems or nerve pressure do not need contrast. It may be used after surgery or when investigating infection, inflammation or a mass.

Can I have an MRI if I have metal in my body?

Possibly. Many implants can be scanned under specific conditions. Give the imaging service the implant's exact details before your appointment.

What if I am claustrophobic?

Tell the imaging service in advance. Support, a wider scanner or sedation may be available. Sedation requires extra preparation and usually means you cannot drive yourself home.

Sources

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