TEST

Arm MRI scan

An arm MRI scan uses a strong magnet to create detailed pictures of bones and soft tissues in your arm.

WHAT IT MEASURES
Detailed pictures of arm bones and soft tissues

SAMPLE
None

FASTING NEEDED?
Sometimes, if sedation is planned or your centre requires it

HOW LONG IT TAKES
Usually 30 to 60 minutes

RESULTS IN
Several days; reporting time varies by laboratory or imaging service

USED FOR
Diagnosing and monitoring arm conditions

MAIN LIMITATION
Movement blurs images, and findings may not explain symptoms

Overview

An arm MRI scan creates detailed pictures of structures inside your arm. MRI stands for magnetic resonance imaging. It uses a powerful magnet, radio waves and a computer, but no X-rays or ionising radiation.

The scan may focus on your upper arm, elbow, forearm or another specified area. It can show muscles, tendons, ligaments, nerves, blood vessels, bone marrow and other soft tissues.

Some scans use a contrast agent called gadolinium, given through a small tube in a vein. Contrast can make inflammation, blood vessels or abnormal tissue easier to see, but many arm MRI scans do not need it.

Why the test is ordered

An arm MRI may be ordered when an examination or another test has not fully explained your symptoms. It may investigate:

MRI is not always the first test. X-rays may be more useful for many fractures, while ultrasound can assess superficial lumps or tendons during movement. The choice depends on the suspected problem and earlier results.

- Persistent pain, swelling, weakness or reduced movement
- Muscle, tendon or ligament injuries
- Bone marrow problems or difficult-to-see fractures
- A lump or other soft-tissue change
- Possible infection, inflammation or nerve compression
- A known condition before or after treatment

Who should have the test

You may be offered an arm MRI if it could clarify a diagnosis, guide treatment or monitor an identified injury, mass or inflammatory condition.

MRI safety must be checked if you have a pacemaker, implanted heart device, medicine pump, cochlear implant, metal fragments or another implant. An implant does not always prevent MRI, but many devices are safe only under specific scanner settings. The exact model matters.

Tell the imaging centre if you might be pregnant, have kidney disease, have previously reacted to MRI contrast, cannot lie still or have severe claustrophobia.

How to prepare

Follow your imaging centre's instructions. For most arm MRI scans without sedation, you can eat, drink and take your usual medicines normally.

Before the scan:

Coffee is generally allowed unless you are being sedated or have been told to fast. If sedation is planned, follow the instructions about when to stop eating and drinking, and arrange for someone to take you home.

If you are anxious about enclosed spaces, contact the centre beforehand. Support, a wider scanner or prescribed medicine may be available. Do not take someone else's sedative.

- Remove jewellery, watches, piercings and other metal items as directed
- Tell staff about all implants, operations and possible metal fragments

- Bring implant cards or device details
- Tell staff about pregnancy, kidney problems and previous contrast reactions
- Wear loose clothing without metal, or change into a gown

What happens during the test

A radiographer completes a safety questionnaire with you. You may need to change clothes and leave metal objects outside the scanner room.

You lie on a padded table with your arm in or beside a special receiver called a coil. Depending on the area examined and scanner design, some or all of your body may enter the scanner.

The machine makes loud tapping, knocking and buzzing sounds. You receive ear protection, and staff can see and speak with you. You are usually given a call button.

You must keep your arm still while images are taken. The appointment usually lasts 30 to 60 minutes, although complex scans can take longer.

If contrast is needed, a small intravenous line is placed in your hand or arm. Images may be taken before and after the injection.

Understanding your results

A radiologist reviews the scan and sends a report to the healthcare professional who requested it. There is no single number or reference range for an arm MRI. Findings are interpreted according to the area examined, your symptoms, medical history and previous treatment.

The report may describe:

"Oedema" means excess fluid or swelling. "Signal change" means an area looks different from nearby tissue on a particular MRI sequence; it does not by itself identify the cause.

An incidental finding is something noticed unexpectedly. It may be harmless, need comparison with older scans or require another test. Results should be considered alongside your symptoms, examination and other investigations.

- Muscles, tendons and ligaments
- Bone or bone marrow changes
- Swelling, fluid or inflammation

- Pressure on a nerve
- The size and features of a lump
- Changes after injury, surgery or treatment

What affects the results

Movement can blur images, even when it is slight. Pain, tremor, coughing or an uncomfortable position can make staying still difficult.

Metal near the scanned area may distort images. Plates, screws and joint replacements can obscure nearby tissue even if they are safe in the scanner.

Recent strenuous exercise can cause temporary muscle changes that resemble injury or inflammation. Recent surgery, biopsy, injection or injury may also cause swelling, bleeding or scar tissue. Tell staff about recent exercise or procedures and provide relevant dates.

MRI captures still images, so a problem that occurs only during movement may not appear. Anti-inflammatory medicines or steroids like prednisone or hydrocortisone may reduce visible inflammation. Kidney function affects whether gadolinium is appropriate, not the quality of a non-contrast scan.

Accuracy and limitations

MRI is particularly useful for examining muscles, tendons, ligaments, nerves, bone marrow and soft-tissue masses. However, it cannot always determine the cause of an abnormal appearance.

Small or early problems may be missed, especially if the wrong area is covered or movement reduces image quality. Some findings may be unrelated to your symptoms.

MRI cannot reliably identify every lump as harmless or cancerous from appearance alone. Follow-up imaging or a biopsy may be needed.

Other tests may be more suitable for some questions:

- X-ray or CT for certain fractures and calcium deposits
- Ultrasound for superficial structures and movement
- Nerve conduction tests for nerve function
- Biopsy to identify tissue within an uncertain mass

Risks and complications

MRI does not use ionising radiation. However, the magnetic field can move unsafe metal objects or interfere with certain implants, so safety screening is essential.

The scan is painless, although lying still may worsen discomfort temporarily. Some people feel confined or anxious.

An intravenous line can cause brief discomfort, bruising or occasional leakage into nearby tissue. Allergic-like reactions to gadolinium are uncommon, and serious complications are rare.

Gadolinium requires extra consideration if you have significantly reduced kidney function. Staff may check recent kidney blood-test results. Contrast is generally avoided during pregnancy unless important for care.

Sedation has separate risks and can affect coordination and judgement. Follow all fasting, supervision and driving instructions.

What happens next

The radiologist sends the report to the healthcare professional who requested the scan. Results may be discussed at an appointment, by telephone or through a secure patient portal. Reporting times vary.

Next steps may include reassurance, physiotherapy, another test, specialist referral or treatment. An uncertain result does not necessarily mean something serious; comparison or more information may be needed.

Do not wait for a routine result if your arm or hand suddenly becomes cold, pale or blue, or you develop rapidly worsening weakness or numbness. Severe swelling and pain after an injury, uncontrolled bleeding, or fever with spreading redness and feeling very unwell also require urgent medical assessment. Do not delay emergency care while waiting for imaging.

Common questions

Can I drink coffee before an arm MRI?

Usually, yes, if no sedation is planned. Follow your centre's instructions if asked to fast.

Does the time of day matter?

Usually not. Choose a time when you can remain still. Tell the radiographer if pain or stiffness changes during the day.

Can I exercise beforehand?

Avoid unusually strenuous arm exercise unless your healthcare team wants images after activity. Exercise can temporarily change how muscles look.

Can I drive home afterward?

Yes, if you have not received sedation and feel well. After sedation, do not drive and arrange for someone to take you home.

Will I need an injection?

Not always. Contrast may be used to assess a mass, infection, inflammation, blood vessels or changes after treatment.

Can I have an MRI with metal in my body?

Possibly. Many implants are MRI-compatible only under specific conditions. Give staff the exact device or implant details so they can confirm safety.

Sources

- RadiologyInfo.org: Musculoskeletal MRI , American College of Radiology and Radiological Society of North America
- NHS: MRI scan , National Health Service
- Benefits and Risks of MRI , US Food and Drug Administration
- ACR Manual on MR Safety , American College of Radiology
- ACR Manual on Contrast Media , American College of Radiology
- American College of Obstetricians and Gynecologists. Committee Opinion No. 723: Guidelines for Diagnostic Imaging During Pregnancy and Lactation . Obstetrics & Gynecology. 2017;130:e210-e216, reaffirmed 2021