

Magnetic Resonance Imaging (MRI):

MRI is a testing modality that uses pulses of energy and magnetic fields to image the body. MRI is highly sensitive and can provide more specific information regarding the nervous system than other testing modalities such as ultrasound, X-ray, or computed tomography (CT). Please note, MRI does NOT expose a patient to radiation. In neurology, we use MRI most commonly to look at detailed anatomy of the brain and spinal cord.

Magnetic Resonance Angiography (MRA):

MRA is a testing modality that is utilized to image arteries. From a patient standpoint, it is very similar to having an MRI. MRA does NOT expose a patient to radiation. In most cases, contrast is not needed. MRA can provide more specific information about the vascular system than other testing modalities including computer tomography (CT), X-ray, and ultrasound. In neurology, we use MRA most commonly to look at arteries of the brain and neck to assess for abnormalities such as aneurysms, malformations, and narrowing.

Magnetic Resonance Venography (MRV):

This is very similar to MRA, but in this case the study focuses on the veins. As with MRA, the patient is NOT exposed to radiation and in most cases, contrast is not needed.

Additional information about the test:

During an MRI/MRA/MRV, the area being imaged is placed inside a machine containing a powerful magnet. The images from the scan are then sent to a computer to be interpreted by a board-certified Radiologist. In some situations, an intravenous (IV) Gadolinium-based contrast agent may be used to enhance the quality of the images and look for specific concerns.

The internal part of the magnet produces repetitive tapping, thumping, and other noises. Earplugs or music may be provided. You will be provided with an alarm button to alert the technologist of any discomfort you may experience during the exam. The magnet is permanently open on both ends and is equipped with a two-way intercom system for communication with the technologist. The duration of the procedure averages between 25 minutes to one hour depending on the body part and if contrast material is needed.

For patients who are claustrophobic, a sedative can be prescribed. Please alert your neurology provider if you feel you need one. In the event sedation is prescribed, someone other than yourself must drive you home.

Patients with metallic objects or devices in/on their body may not be eligible to receive this examination. Please see below.

After the procedure you may request a copy of the images to keep for your records.

Preparation:

- Typically, there are no dietary, medication, or activity restrictions for a non-contrast MRI performed without sedation.
- If you are receiving contrast, you may be instructed to hold certain medications.
- If you were prescribed sedation, please take it as prescribed and make arrangements in advance for someone to drive you home.
- For some patients receiving contrast, blood work must be done in advance.
- Please leave children who require assistance at home.

Bloodwork is required for any MRI/MRA/MRV ordered **with contrast material** if you have a history of:

- Hypertension
- Diabetes
- Liver problems
- Kidney problems
- Or if you are older than 60.

Please arrive at least 20 minutes prior to your exam and check in with the receptionist. You will need to complete the screening questionnaire. You will be asked to change into a gown. You may choose to wear loose clothing without zippers or metallic parts. It is recommended to leave any valuables at home. A locker will be supplied for your personal belongings.

The following need to be removed before entering the MRI room.

- Jewelry
- Hairpins
- Eyeglasses
- Watches
- Wigs (including hair extension)
- Dentures
- Hearing aids
- Underwire bras
- Wallets, credit/debit cards
- Cell phones and any digital devices

IMPORTANT PRECAUTIONS:

Because of the strong magnetic field used during the exam, certain conditions may prevent you from having an MRI. When scheduling your appointment, please alert our staff and technologist to the following conditions. You will be informed whether you can have the MRI or whether the exam needs to be modified for your particular condition.

- Aneurysm (clips)
- Cardiac pacemaker
- Implanted cardioverter defibrillator
- Electronic implant or device
- Magnetically-activated implant or device
- Neuro-stimulation system
- Spinal cord simulator
- Cochlear implant or implanted hearing aid
- Insulin or other medication infusion pump
- Implanted drug infusion device
- Any type of prosthesis or implant
- Artificial or prosthetic limb
- Any metallic fragment or foreign body
- Any external or internal metallic object, including hearing aids
- History as a metal worker
- History of gunshot wound
- Skin tattoos
- Pregnancy
- Claustrophobia
- Allergy to iodine or gadolinium