

What is MRA or Magnetic Resonance Angiography?

What is Magnetic Resonance Imaging?

Magnetic resonance imaging (MRI) is a diagnostic test that creates images of structures inside the body to help the physician make a diagnosis. For imaging certain parts of the body, MRI is superior to other diagnostic imaging tests like x-rays and CT scans. The MRI produces 2- or 3-dimensional images using a large magnet, radio waves, and a computer. It does not use x-rays. Contrast dye may be used in some cases to improve our ability to see certain structures in the body. (Also see MRI Patient Education Sheet).

What is Magnetic Resonance Angiography and Why is it Used?

Magnetic resonance angiography, or MRA, is a MRI study used to detect and diagnose problems with blood vessels. Common uses include the following:

- To detect if there is blockage or narrowing in the neck arteries that provide blood to the brain, called carotid arteries.
- To detect problems with arteries in the head, called intracranial arteries.
- To determine if there is disease in the aorta, major artery of the body.
- To determine if there is disease in the blood vessels that supply the kidneys, lungs, and legs.
- To detect the presence of an aneurysm, a condition in which there is a ballooning out of a part of the wall of an artery.

Are there any contraindications to having an MRA?

An MRA may not be done if your body contains:

- An implanted electronic device, such as a pacemaker
- Metallic aneurysm clips, certain artificial heart valves and metallic hearing implants
- Certain vascular stents and certain metal objects that contain iron

You should also alert your doctor if:

- You have a history of working with metals
- You are a diabetic or have kidney failure
- You have had previous allergic reactions to contrast dye or media.
- You are pregnant

Let your doctor, nurse and/or the MRA technologist know if you have any of the devices in your body mentioned above. This may determine that you cannot have an MRA.

For female patients, if there is any possibility you may be pregnant or if you are breast feeding, it is important to tell this to the technologist before the procedure.

How do I prepare for an MRA?

- Depending on your physician and the testing required, you may be asked not to eat solid foods for 4 to 8 hours prior to the procedure. You may be allowed clear liquids during this time period.

- Inform your doctor and the technologist ahead of time if you have had previous allergic reactions to contrast dye.
- You may have an intravenous line started in one of your arms prior to going to the diagnostic area.
- You must remove all metallic personal belongings and devices that you may have on such as watches, jewelry, pagers, cell phones, body jewelry, metallic drug delivery patches, and any clothing items that contain metal fasteners, hooks, zippers, or metallic threads. You must also remove any cosmetics that contain metallic particles, such as eye make-up.
- The technologist may also ask you if you have any iron-containing objects in your body, such as a pacemaker; metal plate, pins, or screws; or if you have ever worked with metals.
- You may be asked to put on a hospital gown that does not have snaps.

How is the MRA performed?

- The technologist will help position you on the scanning table, usually on your back.
- If contrast dye is needed, you will be given a simple injection during the exam
- The scanning table will slide into the opening of the imaging scanner.
- The area of your body undergoing the imaging must be in the middle of the scanner where the magnet is located.
- You must hold still during the exam or the images will come out blurred.
- The scanner has a built in microphone so that you will always be able to communicate with the technologist.

- The length of the exam depends upon what part of your body is being scanned. Most exams take from 30 to 60 minutes.

What will I experience during the exam?

The procedure itself is painless. The magnet makes a loud knocking sound while scanning and is silent between scans. Ear plugs or ear phones will be provided to you and it is recommended that you use them. If contrast dye is used, some people experience nausea, flushing, a warm sensation, or a headache from it. If you experience itching or shortness of breath after the injection, this could indicate an allergic reaction and it is important to tell the technologist right away.

Is there any special follow-up after the MRA?

If you are sedated for the procedure and you are having the test done as an outpatient, you must have a family member or friend available to drive you home.

Is an MRA safe?

There are no known risks or side effects associated with MRA. Unlike traditional X-rays and CT scans, MRA does not require the use of radiation. Therefore, MRA scans can be performed repeatedly without adverse effects.

Source: American College of Radiology. Retrieved 05/2007 from RadiologyInfo.org

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