جامعة الإمام عبدالرحمن بن فيصل
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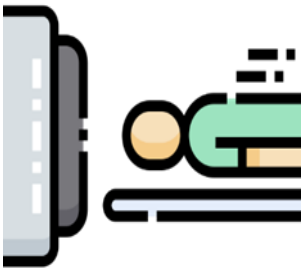
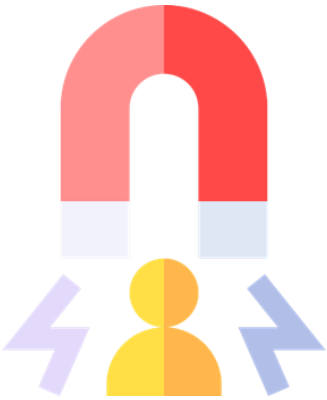
MRI of the Brain and Blood Vessels



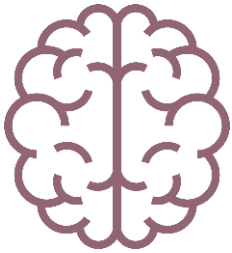
What is magnetic resonance imaging?

It is a magnetic force field, radio waves, and a computer device used to image the brain and blood vessels, and it does not require any kind of radiation. The contrast material used in this type of medical imaging is hypoallergenic compared to the contrast material used in a CT scan.



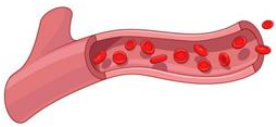
What are the common uses of magnetic resonance angiography?

- Stroke and assessment of vasoconstriction and occlusion.



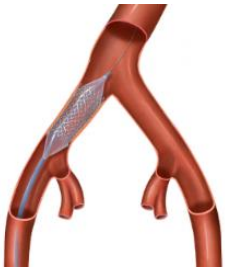
- Examining individuals likely to have arterial diseases, especially patients with a history of this.

- It is used as an alternative to CT angiography when iodized contrast material cannot be used

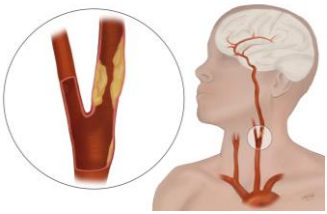


What are the common uses of magnetic resonance angiography?

- Instructing interventional radiologists and surgeons to perform repairs to damaged blood vessels, such as implantation of stents or evaluation of stents after implantation.



- Detection of injury to one or more of the arteries in the neck.



- Looking at congenital anomalies in blood vessels, especially arteries in children.

What are the steps should be taken before imaging?

- You should wear comfortable, loose-fitting clothes suitable to the examination. You are permitted to wear your clothes if they are fitted, spacious and have no metal fasteners. Follow your regular daily routine and take medications as usual, unless instructed otherwise by your doctor.

- Resonance angiography may require an injection of contrast material into a vein in your arm.

What are the steps should be taken before imaging?

- Inform the radiologist and the technologist about any serious health problems and the operations you have performed before.

- Some patients with severe kidney or liver disease may not be able to accept the pigment during an MRI process.

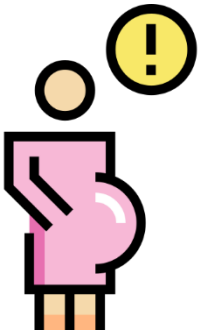
What are the steps should be taken before imaging?

- A woman should always inform the doctor and technologist if there is a possibility of pregnancy.

  MRI has been in use since the 1980s without any reports of any ill effects on pregnant women or their unborn babies.

  However, the child will be exposed to a strong magnetic field.

  Therefore, a pregnant woman should not undergo an MRI in the first trimester of her pregnancy unless there is an urgent need for imaging.



What are the steps should be taken before imaging?

- If you are breastfeeding at the time of the scan, ask your doctor how to continue. It is best to pump breast milk early and keep it on hand for use until the colorants are gone from your body, about 24 hours after the scan.

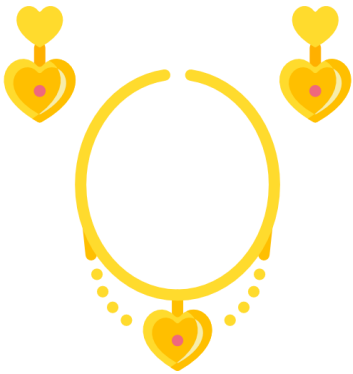
- If you suffer from claustrophobia (fear of enclosed spaces) or anxiety, you may need to ask your doctor to prescribe a mild sedative before the scan.

What are the steps should be taken before imaging?

- Infants and young children often need sedation or anesthesia to complete the MRI process without moving, this depends on the child's age, intellectual awareness, and the type of imaging. In case this is needed, a pediatric anesthesia specialist should be available during the imaging for the safety of your child.

What are the steps should be taken before imaging?

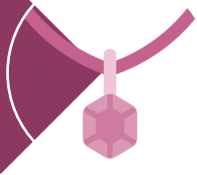
- All jewelry and other accessories should be left at home and removed before MRI process. This is because the metal and electronic elements can interfere with the magnetic field of the imaging unit, so it is not allowed to enter the imaging room. They may cause burns or harmful shrapnel inside the MRI room.



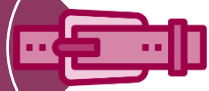
What are the steps should be taken before imaging?

Such items may include:

Jewelry, watches, credit cards, and hearing aids



Pins, hairpins, metal zippers and metal materials

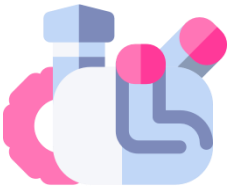


Dentures and dental fillings that are not fixed

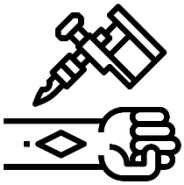
Cell phones, electronic watches, and tracking devices

What is method to be ready before imaging?

- Tell the technician if you have medical or electronic devices in your body.

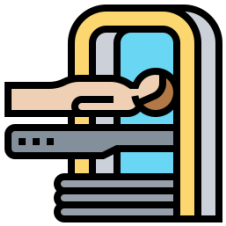


- Colors used in tattoos may contain iron and may heat up during an MRI, but this is rare.



- Dental fillings, braces, eye shadow and other cosmetic products are not affected by the magnetic field. However, it may distort the images of the face or brain area (tell the radiologist about it).

How is this scan performed?



- You will lie on a bed or a table that slides into the magnetic field.

- MRI does not use radiation. Instead, hydrogen atoms align the radio waves that are naturally inside the body. This does not cause any chemical changes in the tissues.

- When the hydrogen atoms return to their usual alignment, they emit different amounts of energy depending on the type of body tissue they are in.

How is this scan performed?

- The scanner captures this energy and creates an image using this information.

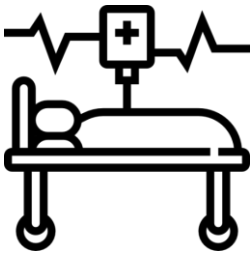
- The computer processes the signals and creates a series of images, each showing a thin slice of the body.

- These images can be studied from different angles by radiologists

What encounters me during this process?

- This examination is usually done in outpatient clinics.

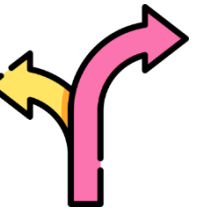
- The patient will be placed on a movable imaging table. Straps and stents may be used to help keep the patient's posture stable.



- Devices containing coils capable of transmitting and receiving radio waves may be located around or near the area of the body being scanned.

What encounters me during this process?

- MRI scans generally include several pathways (sequences), some of which may last for several minutes.



- If a colored contrast material is used, the doctor, nurse, or technologist will insert a catheter through an IV into the patient's hand or arm that will be used to inject the contrast material.

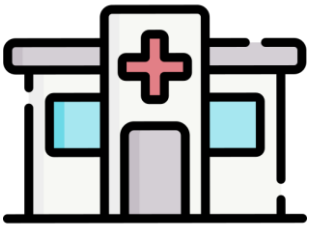
- The patient will be placed in the magnet of the MRI unit.

What encounters me after the process?

- After the process completion: The patient may be asked to wait while the radiologist checks the images if more is needed.
- The patient's intravenous injection will be removed after the end of imaging.
- Usually, the entire process completes in 30 - 60 minutes after the start of imaging.
- You can resume your usual activities and follow a normal diet right after the process.

Who will read the results and how could I receive a copy of that results?

A radiologist who is a doctor trained in supervising and reading radiology results, will analyze your images to make a diagnosis. The radiologist will send a signed report to the primary care or physician in charge, who will share the results with the patient.



What are MRI benefits?

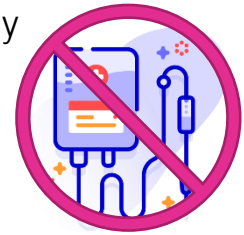
- No exposure to radiation in MRI.

- It is possible to obtain detailed images of many blood vessels and blood flow without the need for a catheter insertion into the blood vessels.

- MRI takes less time than conventional catheter angiography and does not require any recovery period in case of non-anesthesia.

What are MRI benefits?

- Low cost than catheter angiography



- It provides high-quality images for many blood vessels even without contrast agents. This makes it very valuable for patients with allergies or patients of liver and kidney decreased function.

What are MRI risks?

MRI procedure has no risks on the normal patient if suitable safety guidelines followed properly.

Review and audit:

The content of this booklet has been reviewed by consultants of the Neurology department at King Fahad University Hospital

Health Awareness Unit

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