Magnetic Resonance Imaging (MRI)

What is MRI?

*Magnetic resonance imaging* (MRI) uses radio waves and a strong magnetic field instead of X-rays to take clear and detailed pictures of the body’s organs and tissues.

How does the exam work?

MRI is a unique exam. MRI does not use radiation like X-rays and other imaging techniques do. Instead, MRI uses radio waves and a strong magnetic field to create sharp pictures. Even different types of tissue within the same organ can easily be seen. An MRI exam usually involves 2 or more sets of pictures that last 2 to 15 minutes each. Each set shows a cross-section of the body part.

How should I prepare for the exam?

Please tell us if you have any problems with your liver or kidneys, need a liver or kidney transplant, or if you are on dialysis. Because of the strong magnetic field used, MRI will pull on any ferromagnetic metal object, such as iron, in the body. This can cause injury in the body and can distort the image. Tell the MRI staff if you have:

- Aneurysm clips, a heart pacemaker (or artificial heart valve), an implanted port, an infusion catheter (with brand names such as Port-o-cath, Infusaport, or Lifeport), an intrauterine device (IUD), any metal plates, clips, pins, screws, or surgical staples, a prosthetic hip, or any implanted metal object in your body.
- Tattoos or permanent eyeliner.
- Medicine patches.
- A bullet or shrapnel in your body.
- Ever worked with metal.
- Tooth fillings or braces. These items are usually not affected by the MRI, but they may distort pictures of the face or brain.
- Drug or contrast allergies.
- Had any surgeries.

Also, be sure to tell staff if you are or may be pregnant.
In most cases, surgical staples, clips, plates, pins, and screws are not a risk during MRI if they have been in place for more than 4 to 6 weeks. If there is any question of metal fragments, an X-ray may be done to check for them. Remove any items that might affect MRI pictures. This includes hairpins, jewelry, glasses, hearing aids, and any removable dental work.

**How is the MRI done?**

- You will lie on a sliding table and be positioned comfortably.
- The MRI technologist will then leave the room, and the individual MRI pictures are taken.
- You will be able to talk with the MRI technologist at any time using an intercom.
- The exam usually takes 30 to 60 minutes. A very detailed study may take longer.
- You will be asked to stay still while the MRI pictures are taken to avoid blurring the images. You will need to hold still for only a few seconds to a few minutes at a time.
- Some patients will need an injection of a contrast material to make some tissues or blood vessels easier to see. The contrast material is injected about halfway through the exam. If you need the contrast, it will be injected through a small needle and an intravenous (IV) line in an arm or hand vein.
- After the exam, you will be asked to wait until the pictures are checked for quality. More pictures will be taken if needed.

**What will I feel during the MRI exam?**

- MRI does not cause pain.
- Some patients who have an MRI in an enclosed unit may feel confined or uneasy (claustrophobic). Please tell the doctor who referred you for the MRI if you are claustrophobic. You may receive medicine to help you relax.
- You may notice a warm feeling in the target area. This is normal, but if it bothers you, tell the MRI technologist.
- If a contrast injection is needed, you may feel discomfort at the injection site. You may also feel a cool sensation at the site during the injection.
- For many patients, the loud tapping or knocking noises at certain times of the exam are annoying. Earplugs or music will be provided.

**Who interprets the results and how do I get them?**

A radiologist skilled in MRI will review and interpret your MRI images. The radiologist will not discuss the results with you, but will send a report to your primary care or referring doctor. This doctor will give you the results.