

MRI IN ACTION



Drawing upon the wide experience in magnet, gradient and RF technology that has made Hitachi the recognized design innovator in patient-friendly MRI, OASIS delivers high-field clinical utility for today's advanced imaging environment. OASIS is backed by Hitachi Medical Corporation, a recognized leader in imaging technology.

- 1 The magnetic field is used to align hydrogen protons in the body.
- 2 Radio frequency waves are absorbed by the protons and then emitted as a signal.



- 3 A radio frequency coil picks up the signal and transmits it to the computer.
- 4 The computer processes the data and an image is generated.

HITACHI
Inspire the Next

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WHAT ELSE DO I NEED TO KNOW?

During your MRI examination, a technologist will be with you and will be able to see you at all times. For your convenience, an intercom system is built into the MR imager so that if you need anything, the technologist will be right there.

In certain instances, a contrast agent may be administered to enhance the study. There are no extra precautions if your physician requires this type of study. Consult the physician or technologist if you have any questions.

WHAT IS MRI?



MAGNETIC
RESONANCE
IMAGING

HOW DOES MRI HELP ME AND MY MEDICAL TEAM?

Magnetic Resonance Imaging (MRI) is one form of imaging used by physicians to obtain clinically useful diagnostic information. Incorporating advanced technology, MRI produces images of anatomy without the use of radiation required with other imaging modalities, such as x-ray or computed tomography.

MRI combines the physical properties of strong magnetic fields with radio waves to produce computer-generated soft tissue images within any plane of the body. This popular imaging technique can be used as a primary diagnostic tool to provide a quick and accurate diagnosis for your physician. In some situations, this procedure can reduce the need for further diagnostic procedures or invasive procedures, such as exploratory surgery, that may have associated complications.

MRI is a noninvasive procedure with no known side or after effects. The procedure is painless; in fact, you won't see or feel anything. A knocking sound will be heard from the machine, which is simply the imaging process in operation.

The benefits of magnetic resonance imaging are many, and new applications are being continually developed through ongoing research. The procedure is used for all parts of the body and is effective in the clinical evaluation of the following conditions:

- Brain Disorders
- Traumatic Injuries
- Eye Abnormalities
- Spine Diseases
- Tumor Detection
- Liver and Other Abdominal Diseases
- Knee and Shoulder Injuries
- Musculoskeletal Disorders
- Facial/Neck Abnormalities
- Infection
- Cardiac Malformations
- Blood Flow and Vessel Disorders

HOW DOES MRI OPERATE?

MRI images are formed when signals emitted by body tissue are processed by software and turned into clinical images. These signals are generated using a safe magnetic field in combination with radio waves of a specific frequency. Different tissue characteristics are translated into different contrast levels on the image.

A typical procedure averages 30 minutes or longer, depending on the type of information required by your physician. You can help to make your images as clean as possible by relaxing and remaining still during the exam. Some patients even fall asleep during the MRI exam.



No special preparation is required prior to the MRI exam. You may eat normally and go about your daily routine. Continue to take any medication prescribed by your doctor unless otherwise directed.

Prior to entering the scan room for your exam, you will be asked to leave those items that are not compatible with a magnetic field in a safe place outside the scan room. Some of these items is listed below.

- | | |
|----------------|-----------------------|
| • Coins | • Hair pins |
| • Hearing aids | • Glasses |
| • Jewelry | • Other Metal Objects |
| • Keys | • Credit cards |
| • Watches | |

You may also be asked to remove make-up and dentures and to wear a hospital gown to avoid magnetic interference from belt buckles and zippers.

Once you are situated on the table, make sure you are comfortable so that it is easy to remain still for the duration of the examination. Breathe normally. Once the examination has begun, you will hear a knocking sound that represents changes in the magnetic field. This is a normal part of the imaging process. At the conclusion of the exam, the technologist will assist you out of the scan room.

WHAT DO I HAVE TO DO TO PREPARE FOR THE MRI?



As mentioned previously, you will be asked to leave items that are incompatible with the magnetic field outside of the scan room. Other items that may be incompatible are implants and similar items. Check with your physician or MRI technologist if you have had any brain, ear, or eye surgeries or have any of the following:

- Pacemaker
- Neurostimulator (Tens unit)
- Metal implants
- Intrauterine device (IUD), etc.
- Aneurysm clips
- Surgical staples
- Implanted drug infusion device
- Foreign metal objects in the eye
- Shrapnel or bullet wounds
- Permanent eyeliner

If you are pregnant, please notify your physician.