Magnetic Resonance Imaging

Magnetic resonance (MR) imaging is a sophisticated diagnostic technique that uses a strong magnetic field, radiowaves and a computer to produce cross-sectional images of different parts of the body. MR creates better soft-tissue scans than x-rays and is most commonly used to image the brain, spine, organs in the chest and abdomen, the heart and blood vessels and structures near bones, such as muscles and ligaments.

Patient Preparation

Because of the strong magnetic field, patients who have a pacemaker, ear implants or aneurysm clips should check with a physician before having an MR exam. Patients who have other types of metal implants and patients who have been exposed to shrapnel or whose eyes have been exposed to metal shavings also might not be candidates for MR; it’s important to let your physician know if these conditions apply to you. Also, eyeshadow should not be worn during an MR exam because it sometimes contains metallic substances.

Although MR is a safe procedure for most patients, you should let your physician know if you are pregnant. If you are claustrophobic or experience pain when lying on your back for more than 30 minutes, let your doctor know. He or she may prescribe a relaxant or pain medication for you.

Before your exam, an MR technologist will explain the procedure to you and answer any questions you might have. An MR technologist, also known as a radiologic technologist, is a skilled medical professional who has received specialized education in the areas of anatomy, patient positioning, patient care, imaging techniques and MR procedures.

During the Examination

Examination time depends upon the part of the body being examined, but typically ranges from 30 minutes to an hour. You will be asked to undress, put on a hospital gown and remove all jewelry, hairpins, eyeglasses, hearing aids and dentures. Keep in mind that the magnet will damage wristwatches and erase credit and bank cards. The imaging facility will provide a secure place to store these items during your exam.

For most types of MR exams, the technologist wraps a special coil around the body part that is being examined. Depending on the area being examined, you may be given a contrast agent to make internal organs and structures more visible. The technologist will position you on a padded, moveable table that slides into the opening of the scanner.

You won’t feel anything during the scan, but you may hear humming, thumping, clicking and knocking sounds from the equipment. MR centers provide headphones or earplugs to help mask the noise. Also, the examination room may be dimly lit and cold.

The technologist will not be in the room during the procedure, but will be able to see you and you will be able to communicate through an intercom system. The technologist will tell you when each scan sequence is beginning and how long it will last. You will be asked to remain as still as possible throughout the sequence.

When the exam is complete, your MR images will be given to a radiologist, a physician who specializes in the diagnostic interpretation of medical images.

Postexamination Information

After your images have been reviewed, your personal physician will receive a report of the findings. Your physician then will advise you of the results and discuss what further procedures, if any, are needed.

Magnetic resonance imaging is a non-invasive procedure, and there are no known side effects or after effects.