

LANCASTER RADIOLOGY ASSOCIATES, LTD.

MRI

What it is:

Magnetic Resonance Imaging (MRI) uses magnetic fields and radio frequency waves to form detailed pictures of tissues and organs in the human body. It is useful in diagnosing conditions in virtually all parts of the body, including cancer, heart and vascular disease, stroke, and joint and musculoskeletal disorders. MRI requires specialized, expensive equipment and a high level of operator expertise, but it allows evaluation of some body structures that may not be as visible with other imaging methods.

Because the MRI technique can produce very clear pictures of soft-tissue structures near and around bones, it is the most sensitive exam for spinal and joint problems. For that reason, it is widely used to diagnose sports-related injuries, especially those affecting the knee, shoulder, hip, elbow, and wrist. The images allow the physician to see even very small tears and injuries to ligaments and muscles.

Not limited to spinal and joint problems, MRI of the heart, aorta, coronary arteries, and blood vessels is a fast, noninvasive tool for diagnosing coronary artery disease and heart conditions. Physicians can examine the size and thickness of the chambers of the heart, and can even determine the extent of damage caused by a heart attack or progressive heart disease.

What you need to know:

MRI scans are harmless to patients, and an average scan only takes 35 to 45 minutes to perform. Prior to and during the procedure, you will hear noises from the MRI scanner and the refrigeration system needed to maintain the superconductivity of the powerful MRI magnet. You will likely be given the option of earplugs or headphones to drown out these external noises. The MRI technologist will position you on the scanning table in such a way that the body part to be imaged is in the center of the scanner. The scanning will begin, and you will be instructed to remain motionless for three to five minutes at a time while the images are being acquired. Shorter sequences requiring breath holding may be performed, depending on the area of diagnosis.

How to prepare:

No solids or liquids should be ingested for 4 hours prior to the examination. In addition, a member of our staff will ask you to complete a detailed patient questionnaire, which inquires about prior metal or shrapnel injury to your eyes and body, and recent surgery within the last six weeks or prior surgery for placement of cardiac pacemakers, cerebral aneurysm clips, cochlear or other metallic implants, implanted electronic devices, or neurostimulators. If any of these conditions apply to you, you will be required to undergo additional screening protocols to assess if it is safe for you to enter the strong magnetic field of the MRI scanner. In some of these circumstances, you may not be able to have an MRI exam.