

MRI

Seeing Your Way to Orthopaedic Health

Physicians order magnetic resonance imaging (MRI) studies for a variety of diagnostic reasons. MRI provides information, especially about soft tissues, that isn't visible in other forms of imaging, including an x-ray. In the knee, for example, MRI helps visualize the bones, ligaments, tendons, and meniscus of the knee. These images, along with a careful physical examination and medical history, can help diagnose a variety of knee conditions from meniscal tears to ligament injuries. Since there is no radiation involved, virtually anyone who passes the appropriate screenings can safely and comfortably have an MRI scan.

MRI uses a very strong magnet. That means there are patients who cannot have an MRI because of certain devices they have implanted in their body. People who have a pacemaker or defibrillator are not able to have an MRI because the machine will stop the device or cause it to malfunction. Patients who have ever had a piece of metal caught in their eye, no matter how small and even if it was removed, need to have an eye x-ray before the MRI to make sure it is safe for them to go near the magnet.

Other implanted medical devices that are cause for concern are aneurysm clips, cochlear ear implants, and neurostimulation systems. It may be safe for some implants to be scanned, depending on recommendations



St. Croix Imaging provides quality images efficiently, quietly and comfortably



SCI is certified by the American College of Radiology and maintains quality standards set by the ACR.

provided by the manufacturer. These include, but are not limited to infusion sets, pumps, and heart stents. Most orthopaedic implants, even if they are ferromagnetic, are safe because they are securely imbedded in bone. If a patient does have an implant or metallic object in their body, the St. Croix Imaging (SCI) technologist checks to make sure it is absolutely safe for them to have an MRI scan. If it is determined that it is unsafe for that patient to have an MRI scan, there are alternative methods of imaging that may also be diagnostic.

Your MRI Experience at St. Croix Imaging

The technologists at SCI scanned their first patient on a Siemens Espree on May 10, 2005. This MRI scanner is unlike many others in the Twin Cities. The scanning unit opening is about 27.5 inches in diameter and the length is less than four feet. Though the unit is not large, many patients are pleasantly surprised at the roominess and report that the extra space makes them feel much more at ease than other MRI scanners they have experienced. While the extra space provides more comfort for the patient, it does not affect the quality of the image or the types of scans that can be performed. The scanner is a 1.5 Tesla

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machine, which means the field strength is greater than that of open-sided MRI machines. This translates to higher quality images.

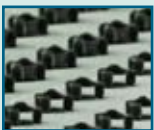
When you arrive at SCI, you will be asked to complete a safety screening form and provide a brief history of your current problem. You will be escorted by the MRI technologist to the changing room to secure your valuables and change, if necessary. It is best to wear comfortable clothing containing no metal. The technologist will bring you into the scan room and help you get comfortable in the position that is necessary for your type of scan. The technician will explain what to expect during the scan. You will be given headphones to wear to protect your ears from the normal loud pounding and knocking sounds of the scanner as well as provide you with satellite radio for your enjoyment. The technologist will talk to you through the headphones and can see you at all times during your scan. If you have a concern and need attention immediately, you can squeeze the call ball provided to you. A typical scan takes about 25 minutes to complete.

After your scan is complete, the images are sent to a radiologist who specializes in reading and interpreting musculoskeletal MRIs. The radiologist's report, as well as the images obtained, will be sent to your physician to review with you. □

MRI Technology Throughout the Years

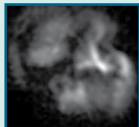
1946

Concept of using magnets to produce images of living things developed by Felix Bloch and Edward Purcell.



1967

The first MR images of inside of a human body were taken.



1971

It was discovered that MR images could be used to detect diseases based on the different nuclear magnetic relaxation times between healthy tissue and tumors.



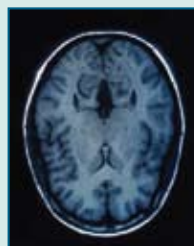
1977

The first whole body MRI scanner named "Indomitable" was completed by Dr. Raymond Damadian. This scan lasted 4 hours and 45 minutes!



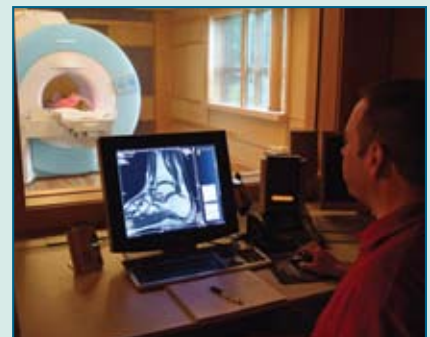
1993

Images showing different regions of the brain produced by the first functional MRI scanner.



2005

St. Croix Imaging scans its first patient.



2006

St. Croix Imaging earns ACR accreditation.