

MEDICAL IMAGING: A DEEPER LOOK

X-Ray, CT Scan, MRI and Ultrasound are all well-known as effective tools used for diagnostic purposes. Many patients tend to feel apprehensive when their medical provider recommends additional testing. This guide will help you to educate your patients on available diagnostic tools and their purpose, the diseases and problems they can detect and how your patients can benefit from the procedure.

01 | Diagnostic Tools & Purpose

X-Ray – also called radiography, X-Rays are the oldest and most common form of medical imaging. A controlled beam of radiation is directed at the area being examined. After passing through the body, the beam falls on a special plate where it casts a type of shadow. X-Ray imaging is not recommended for pregnant women.

CT Scan – these are special X-Ray tests that produce cross-sectional images of the body using radiography and a computer. CT Scans provide a detailed image of the bone, soft tissue and blood vessels. As with X-Ray imaging, CT Scans should not be performed on pregnant women and are used with caution in children.

MRI – this technique uses a magnetic field and radio waves to create detailed images of the body's organs and tissues. It provides a more detailed image than the other methods listed and can be done in any direction; however, it cannot be used in patients with implanted metals (i.e. pacemaker, mechanical heart valve).

Ultrasound – also referred to as a sonogram. High frequency sound waves are used to create an image of a section of the body, such as the liver, heart or fetus. Ultrasound scans are generally recognized as a safe form of imaging, but do not provide the same level of detail as the other options listed above.

02 | Disease Detection

The use of one or more of these tools can be critical to the early detection of many life-threatening conditions. MRIs can detect tumors in their very early stages and lead to prompt treatment. CT Scans give doctors an eye into the body and can eliminate the risk of more

invasive exploratory surgery. Ultrasounds can help determine a baby's size and development as well as alert the physician to any potential concerns. X-Rays are a go-to imaging method in the trauma room and have helped doctors save thousands of lives.

03 | Next Steps

Each of the medical imaging methods discussed have been invaluable resources in assisting medical professionals in detecting, analyzing and treating a number of diseases and other health conditions. If your medical provider has recommended one or more of these diagnostic tests, it is important to follow all pre-test instructions and to follow up with your physician as directed.

For more information on medical imaging and radiology, visit:

<http://www.nlm.nih.gov/medlineplus/ency/article/007451.htm>

*Did You Know? X-Ray
imaging was discovered
on November 8, 1895*

References

http://www.diffen.com/difference/CT_Scan_vs_Ultrasound

http://www.cyberphysics.co.uk/topics/medical/comparingMRI_CT_US.htm

http://www.radiologyinfo.org/en/safety/index.cfm?pg=sfty_hiw_04