# The Society Of Radiographers Of Trinidad & Tobago

The Society of Radiographers of Trinidad & Tobago was founded in 1973 with Wilma Collins becoming the first President elect of the Society.

Since its beginning, the Society has held numerous seminars and conferences to help update its members and promote the profession. This academic role has been mandated by its constitution together with its objectives. One of the Society's first stated objectives according to it's Memorandum of Association is:

*"To encourage and promote the establishment and maintenance of high professional, technical and ethical standards in the Science of Medical Imaging and Radiotherapy."*

The Society became internationally recognized when it gained full membership status into the International Society of Radiographers and Radiological Technologists (ISRRT) four years after its inception.

As part of its constitution an annual general meeting must be held to elect a new leadership or *Executive Committee* to comprise of eight Registered Radiographers, one of whom is chosen to be a Council Member to the ISRRT.

In 2008, the Society developed a website which carries the society's history, local/international news and events, forums and more. It is intended to keep viewers up-to-date with the progress of the association.

*To become a Radiographer you can apply to the College of Science, Technology and Applied Arts of Trinidad & Tobago (COSTAATT) to earn a Bachelor of Science Degree in Radiography or Radiation Therapy. Radiographers through this course of study have gone on to practice locally, regionally and internationally as far as Europe, USA and Canada. Post graduate qualifications in other imaging modalities (e.g. CT, Ultrasound, MRI, etc.) can be done via local and/or foreign institutions or even by distance learning.*

**www.soradtt.com**





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# What is Magnetic Resonance Imaging (MRI)...

# Magnetic Resonance Imaging (MRI)


*Magnetic Resonance Imaging Unit*

Magnetic Resonance Imaging (MRI) is by far the most important diagnostic imaging discovery in medicine since the discovery of X-ray by Roentgen in 1890. The first clinical use of MRI took place in Nottingham University Hospital in England in 1967. Since then its importance in radiology continues to grow at a tremendous pace and is now established beyond doubt.

MRI is short for Magnetic Resonance Imaging. Magnetic resonance imaging (MRI) is a noninvasive medical imaging test that helps physicians diagnose and treat medical conditions.

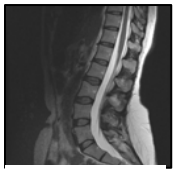
It uses a powerful magnetic field, radio frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures. The images can then be examined on a computer monitor, transmitted electronically, printed or copied to a CD.

Detailed MR images allow physicians to better evaluate various parts of the body and determine the presence of certain diseases that may not be assessed adequately with other imaging methods such as x-ray, ultrasound or Computed Tomography (CT).

Trinidad & Tobago saw the introduction of the first low field MRI unit in the early 1990's and the first high field unit later in that decade. Prior to this, patients had to travel to South or North America for their MRI's which was a costly venture and which was not accessible by all who needed it. Today, MRI is available in both the public and private health facilities for many to benefit from. Qualified MRI Radiographers are specially trained with the knowledge, expertise and safety practices that are necessary to work in such a high magnetic field environment.

## So how does MRI work?

A strong magnetic field is created by passing an electric current through the wire loops. While this is happening, other coils in the magnet send and receive radio waves. This triggers protons in the body to align themselves.



*MRI of the Lower Spine*

Once aligned, radio waves are absorbed by the protons, which stimulate spinning. Energy is released after "exciting" the molecules, which in turn emits energy signals that are picked up by the coil. This information is then sent to a computer which processes all the signals and generates it into an image. The final product is a 3-D image representation of the area being examined. Unlike CT scanning or general X-ray studies, no ionizing radiation is involved with an MRI.

## How long does an MRI last?

The MRI exam itself takes about 30 - 45 minutes. However, this may vary depending on the number of body parts being examined and what is required.

## How safe is MRI?

MRI is quite safe in the majority of patients. Certain patients may not be able to have an MRI. These include people who get nervous in small spaces (claustrophobic) and those with implanted medical devices such as aneurysm clips in the brain, heart pacemakers and cochlear (inner ear) implants. Also, people with pieces of metal close to or in an important organ (such as the eye) may not be scanned. There are a few additional safety considerations and some exceptions based on individual circumstances.

Also, certain metal objects that we commonly have on our persons like watches, credit cards, hair pins, writing pens, etc. may be damaged by the MRI scanner or may be pulled away from our bodies if we go into an MRI room. Also, metal can sometimes cause poor pictures if it is close to the part being scanned. For these reasons, patients are asked to remove these objects before entering the MRI scanner.

While there are no known hazards, MRI is not proven to be safe during pregnancy.

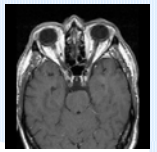
## What will a patient experience during the MRI?

You will most likely be lying on a special table that moves into the center of the magnet. Prior to going into the magnet you will be offered earplugs to reduce the noise that you hear. You will then hear some "hammering" noises while the scanner is preparing for scanning and taking the pictures. During this hammering noise, it is important not to move, as this would blur the pictures. You may also feel some vibration during the hammering noise and some slight movement of the table during the examination. Some patients will be given an injection in their arm of a substance that improves certain types of pictures. This substance, called a "contrast agent" or "dye", is very safe and is unrelated to the iodine used for CT scans and special Kidney X-rays called IVP's.

*MRI of the Knee*

## The Future of MRI

The future of MRI seems limited only by our imagination. This technology is still in its infancy, comparatively speaking. It has been in widespread use for less than 20 years (compared with over 100 years for X-rays).
Very small scanners for imaging specific body parts are being developed. For instance, scanners that you simply place your arm, knee or foot in are currently in use in some areas. Our ability to visualize the arterial and venous system is improving all the time.



*MRI of the Brain*

Functional brain mapping (scanning a person's brain while he or she is performing a certain physical task such as squeezing a ball, or looking at a particular type of picture) is helping researchers better understand how the brain works. Research is under way in a few institutions to image the ventilation dynamics of the lungs through the use of Hyperpolarized Helium-3 gas. The development of new, improved ways to image strokes in their earliest stages is ongoing.
Predicting the future of MRI is speculative at best, but I have no doubt it will be exciting for those of us in the field, and very beneficial to the patients we care for. MRI is a field with a virtually limitless future.

Currently, MRI programs (Certificate or otherwise) are not locally available to Radiographers but it can be done overseas or via distance education. Of course a clinical component is essential to complete any such technical program. Radiographers have a lot to look forward to in this area of specialization.

***Prepared by Registered Radiographer Shantee Mongroo, B.Sc.(Rad Sci), MRI/CT***