



Hong Kong Sanatorium & Hospital

# Magnetic Resonance Imaging (MRI)



Department  
of  
Diagnostic Radiology

## What is MRI?

Magnetic Resonance Imaging or MRI is an advanced imaging method using a magnetic field, radio waves and a computer system to form diagnostic images of the body in significant details.

The advantages of MRI include superior soft tissue contrast, multiplanar scanning capabilities and the absence of ionizing radiation. It can clearly demonstrate the location, morphology and extent of disease processes. It is most useful for imaging the brain, spine, spinal cord, muscles, joints, breasts, prostate, heart, abdominal organs and blood vessels.

## Who needs an MRI scan?

Your doctor generally decides whether a MRI scan is needed. Some common indications are patients with:

- **Cancer:** MRI diagnoses and stages tumour, and monitors tumour change during and after chemotherapy or radiotherapy. We also offer MR Bone Scan to see if the cancer has spread to the bones. We can look at the soft tissues as well.
- **Heart disease:** MR cardiac examination is a 1-stop-shop, enabling evaluation of cardiac anatomy, cardiac functions, and myocardial viability (i.e. looking for infarction) in one examination.
- **Stroke:** A complete stroke package, consisting of MR brain with diffusion imaging specifically for stroke identification, MR angiography of brain and MR angiography of neck, is available
- **Musculoskeletal problems** such as back pain or knee injury: MR is the state-of-the-art evaluation of the entire spine, muscles and joints of the body.

With fast scanning capabilities, MR Body Check and MR Whole Body angiography is now a reality for people who are asymptomatic but prefer to check the body. With the installation of the 3T scanner, we can now do the MR functional brain studies.

## Services

Our MR scanners, GE Twinspeed Excite and Siemens Magnetom Trio, are the most advanced 1.5T and 3T scanners in Hong Kong.

### GE Signa Excite 1.5T Twinspeed system

This is GE's top-of-the-line 1.5T scanner with 23mT/m and 40mT/m gradients, capable of doing cardiac imaging and whole body imaging at high resolution and speed.

### Siemens Magnetom Trio 3T

This is the first 3 Tesla field strength Whole Body MRI scanner in Hong Kong (installed in November 2003). It heralds a new generation of MRI scanners and provides a quantum leap in image quality and standard, capable of Whole Body imaging and gold standard Functional MRI Brain scanning.

## Precautions

### Who cannot have an MRI scan ?

- Patients with cardiac pacemaker, aneurysm clips in the brain, and metallic foreign body in the eye cannot undertake MRI.
- Patients with other prostheses or implants should inform our staff to check the compatibility of these devices with MRI scanning.

## Procedures

### What should I do prior to the examination ?

No preparation is required.

### How long will it take?

It normally takes about 30 minutes for the examination, while longer time is required for scanning more than one part of the body.

### What should I do during the examination ?

The only thing is to stay still and relax throughout the examination.

### What happens during the examination ?

1. In the scanning room, you will be required to lie awake and very still on a sliding couch inside the scanner. Blankets will be provided to keep you warm and comfortable.
2. During the examination, you can communicate with our staff via an intercom.
3. You will not feel any discomfort but hear a constant drumming noise during scanning. Ear plugs or ear phones will be provided if necessary.
4. You may also have a pulse monitor and/or electrocardiogram sensor attached.
5. You may receive an injection of a MR contrast medium, a colourless liquid that enables the radiologist to better see the structures being studied and to better diagnose your condition.

### What should I do after the examination ?

You can eat or drink as usual after the examination. The result of your scan will be communicated to your referring doctor.

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