



## What is an MRI (Magnetic Resonance Imaging) scan?

A MRI scan is a specialised scanning technique that uses the radio waves and powerful magnetic fields of obtain detailed images of the body like a CT scan but without any ionising radiation. As a result, it can be used in specialised circumstances where the use of radiation would not be indicated such as young children or pregnant women, but more commonly for producing very detailed images of the internal anatomy of the body which allows the detection of abnormal conditions or for assessing (or staging) the condition or disease.

## How does an MRI scan work?

A MRI scan uses a highly specialised scanning machine to generate a detailed image of your bodies internal structure. It does this by using a highly powerful electromagnet and radio waves to excite the hydrogen atoms in the water in your cells. These cells then relax and emit the energy as new radio waves which the scanner detects.

The scanner has a powerful computer which interpret the radio waves detected and converts them into a picture which can be analysed in different planes. The radiologist can then look at the images generated or ask the computer to look at other aspects of the data and produced highly detailed images which maximises the value of the scan.

MRI scans are valuable in assessment of:

- Pelvic infection/sepsis
  - MRI scans are very useful in looking at fistulas and pelvic infection to aide in the planning of treatment.
- Assessment of pelvic tumours/cancers
  - MRI scans are used to assess the local spread of rectal and anal cancers and to assess the presence of lymph nodes which may have been involved by the tumour. This allows the tumours to be treated in the best way.
- Bowel assessment
  - MRI scans can be used to assess the small and large bowel for the presence of inflammatory diseases such as Crohn's disease and Colitis. This is particularly useful in the assessment of small bowel Crohn's



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disease where stricture and segments of small bowel disease would otherwise have gone undetected and potentially untreated.

- Liver Assessment
  - MRI is often used to clarify the nature of liver lesions which may be seen on other scans but where it is not clear as to what they are and why they may be there?
- Muskuloskeletal conditions
  - MRI are very useful at looking at the muscles and bone and are often used in our practice to demonstrate the presence or absence of a 'Sportsmans' hernia.

## What does an MRI scan involve?

To undertake an MRI scan requires the patient to be placed inside a magnetic tunnel in order to obtain the images. It also needs the patient to lie still whilst the scan images are obtained.

The duration of each scan varies according to the part of the body to be scanned and the level of detail needed for the radiology doctor to interpret the scan appropriately. Typically it takes between 20 and 45 minutes for the scan images to be obtained in total often broken down into several sequences.

The patient in the scanner can listen to music or rest whilst the scan takes place. However it will not be possible to take any personal items into the scanner room due to the risks from exposure of the items to a powerful magnet.

Similarly, if patients have been exposed to metallic foreign bodies or certain implants such as pacemakers an MRI may not be appropriate. If you think this may apply to you please let your doctor know as soon as possible so that appropriate investigations and checks can be made prior to you being booked for an MRI scan.

## What Happens after my scan?

After the MRI scan the images are carefully examined by a radiologist who specialises in reporting MRI scans. Following this a report is written, typed and checked for accuracy by the reporting radiologist. The report is then authorised for release to the requesting doctor.

Once your report has been received, your doctor may contact you to discuss this



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further either by phone or by seeing you back in the outpatient clinic. Occasionally the doctor may write to you and your General Practitioner with the results of the scan and possibly with further advice or a recommendation for further assessment or treatment.