WHAT is magnetic resonance imaging (MRI)?

It is a way to look inside the body without using X-rays.

It Uses:
- A large magnet (Large enough to surround the person)
- Radio waves
- A Receiver coil
- A computer

WHY is MRI Research Important?

MRI can produce 2-or-3-dimensional images. The pictures are extremely precise so that researchers can get as much information from MRI as they would looking directly at the tissue.

HOW does an MRI Work?

Your body is composed of tiny particles called atoms. Under normal conditions, the protons inside these atoms spin randomly.

1. The Magnet
   
   creates a strong steady magnetic field. This causes the protons to line up together and spin in the same direction, like an army of tiny tops.

2. A Radio Frequency (RF) Signal
   
   is beamed into the magnetic field. The RF signal makes the protons move out of alignment – similar to what happens to a spinning top when someone hits it. When the signal stops, the protons move back to the aligned position and release energy.

3. A Receiver Coil
   
   measures the energy released by the disturbed protons. The time it takes the protons to return to their aligned position is also measured. These measurements provide information about the type of tissue in which the protons lie, as well as its condition.

4. A Computer
   
   uses this information to construct the image on a TV screen which can be recorded so that there is a permanent copy.

IS an MRI Safe?

Yes. The magnetic fields the MRI uses aren't known to be harmful. MRI uses no radiation or contrasts; no needles or special drinks.

To join a research study or get more information

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