



Lecture 1

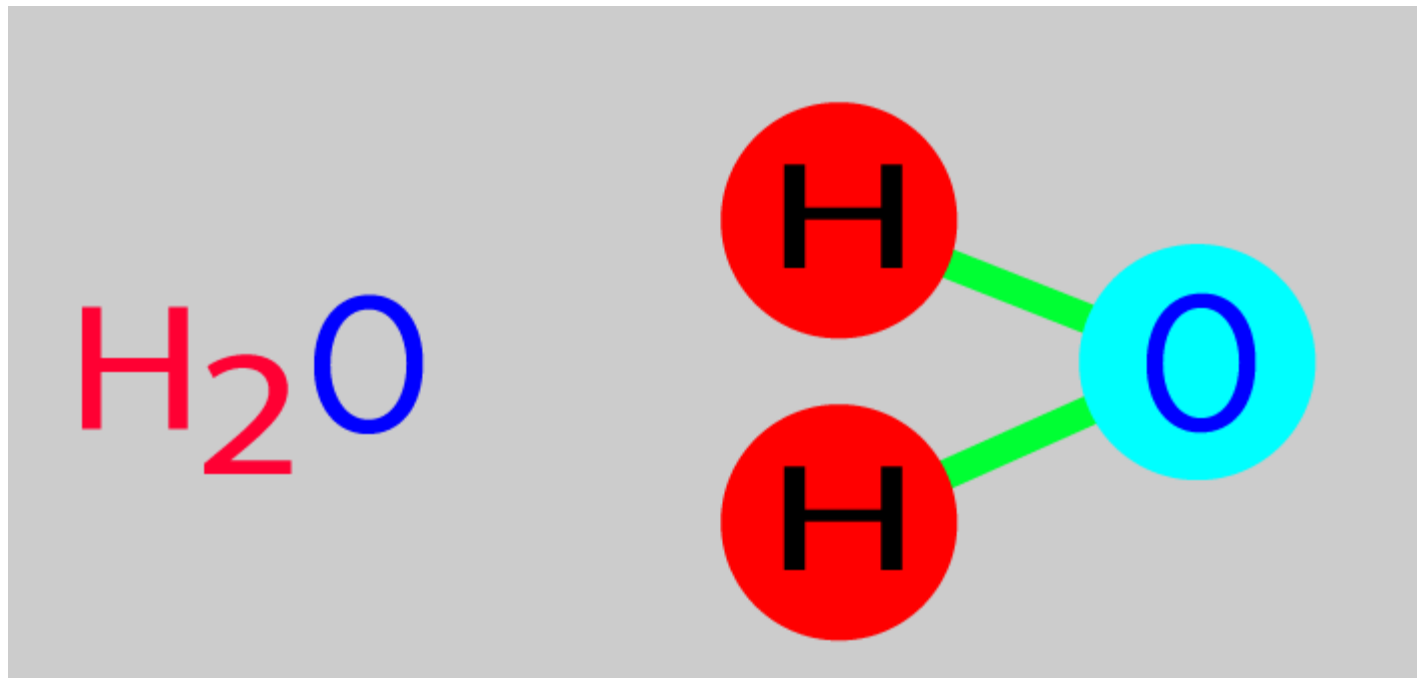
Introduction of MRI Device

Third stage

Dr. Mustafa Karim A. Mohammed
Al-Mustaqbal University College

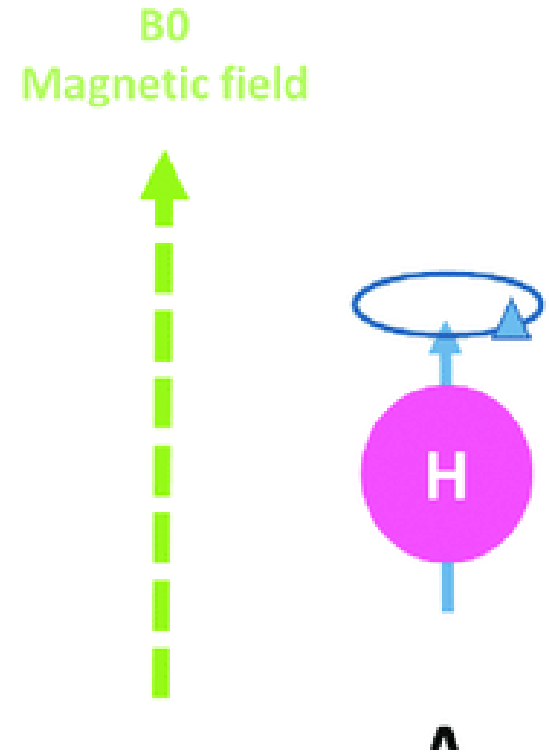
- ✚ MRI device deals with Hydrogen atom 1H that exists in water molecule

**principle
work of MRI**



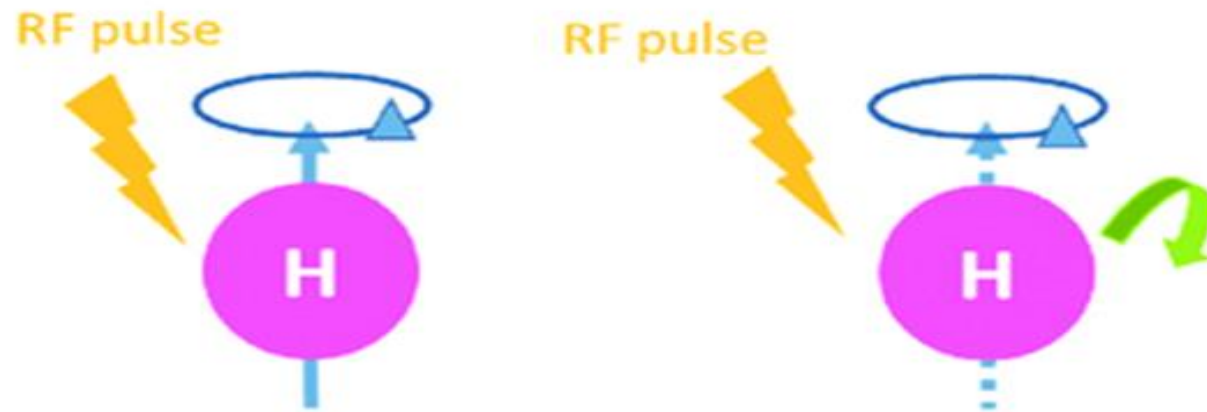
principle work of MRI

- All the hydrogen protons aligned in the direction or opposite to the external applied magnetic field (B_0).



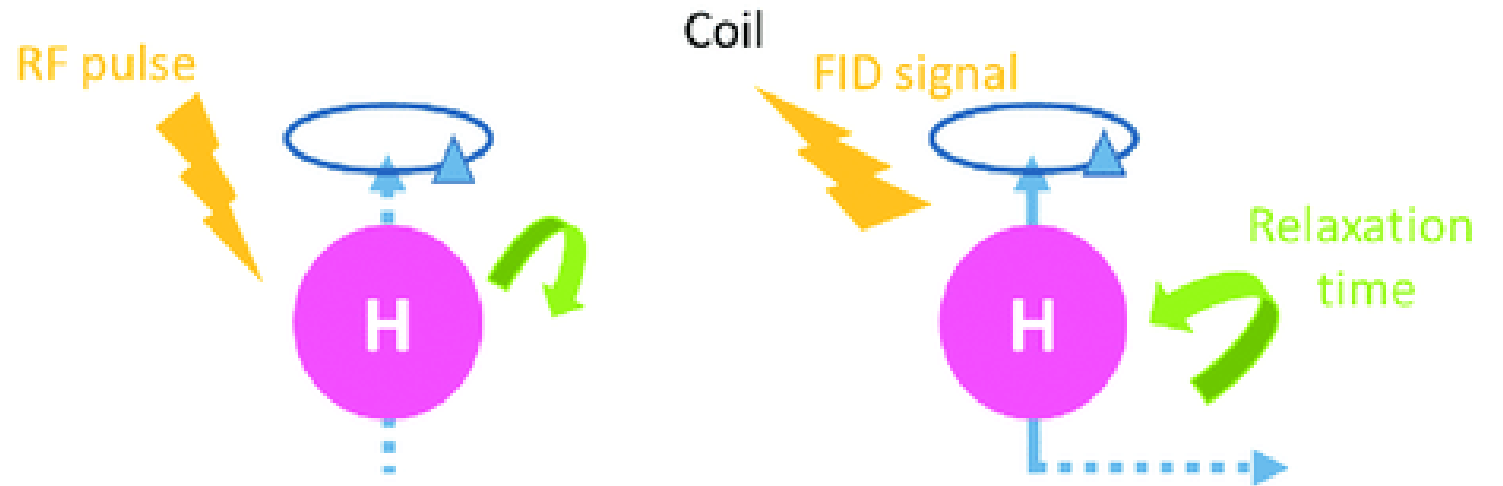
principle work of MRI

- ✚ When the radiofrequency (RF) pulse is applied perpendicular to the magnetic field, the proton nuclei absorb energy and change the direction of spinning in the opposite direction. This process is called *resonance*.



principle work of MRI

- ✚ When the RF pulse is finally turned off, the unmatched hydrogen atoms gradually return to their original position and emit a certain kind of energy. This process is called **Relaxation**.



Magnetic Resonance Imaging (MRI)



Discussion

Q1: Why sometimes use dye in an MRI experiment?

Q2: Why is it not safe to have an MRI with some medical devices such as a pacemaker?

Q3: Why should you remove all the metal objects before MRI testing?

Q4: What are the types of MRI devices, and which one is the best?

Q5: Why is the MRI bore scanner nosy?