

MRI / CT demos -

Pin the scan, guess the fruit & veg or chocolate, MRI Lego model

Equipment

- Life size cardboard cut out (of Sheldon Cooper, Yoda etc)
- Table
- Printed laminated scans (NOTE: You could use different modalities here)
- Velcro (if not already applied) to fix scans to cardboard
- Set of chocolates
- Laptop / computer with PowerPoint quiz or printed poster version
- Optional: hand out
- Lego model of MRI scanner

Safety / Risk assessment notes

Main danger is the cardboard cut-out toppling over as it is not very stable. However it is very light so any injury is extremely unlikely.

The Lego model can fall off the table.

Allergic reaction: some of the chocolates contain nuts so do not open the packaging of the bar (until after the event if you want to eat them 😊)

Background

Here are few simple but engaging and effective ways to talk about MRI and / or CT scans. Tell the participants that the physics and engineering have contributed significantly to medicine and without it imaging to diagnose disease would not be possible.

MRI is a non-invasively (non-surgically) method to look inside the body using powerful magnetic field combined with specific radio frequencies. The magnetic fields force most of the hydrogen atoms inside our bodies to align. A specific radiofrequency forces the remaining ones to spin and the machine notes the rates at which these change their orientation.

And from that information it can create an image that represents how it looks inside. It is excellent for detecting very slight differences in soft tissues, like tendons and muscles.

Ask them if they ever had a scan or know somebody who has.

Details

Sheldon: We have printed and laminated a set of body parts and organs which you can ask the audience to pin to the correct area of the cardboard Sheldon.

Quiz: There are two versions of this – a chocolate and a fruit & vegetable quiz. They work the same way, people probably like the chocolate one more but the fruit & vegetable one is more appropriate in a hospital setting...

1. Lay out the real chocolates or fruit & vegetables on the table (tip: Use sticky tape to tape down the chocolates as they sometimes disappear 😊).
2. Open the PowerPoint presentation or use the poster (The first option works better)
3. Ask the audience to guess which chocolate bar or piece of fruit / veg is represented on the image.
4. Explain (possibly using the handout) why different body parts look different on the scan (water content, density etc)

Lego model: Is just really there to draw people in (everyone likes a bit of Lego) and to demonstrate the set up of a scan.