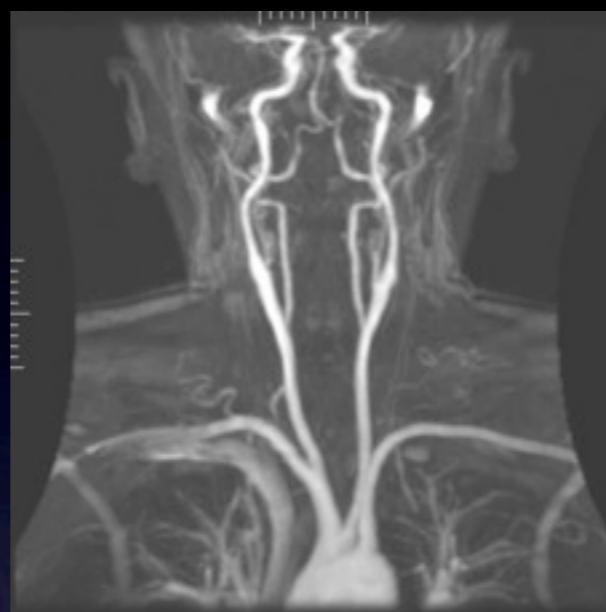
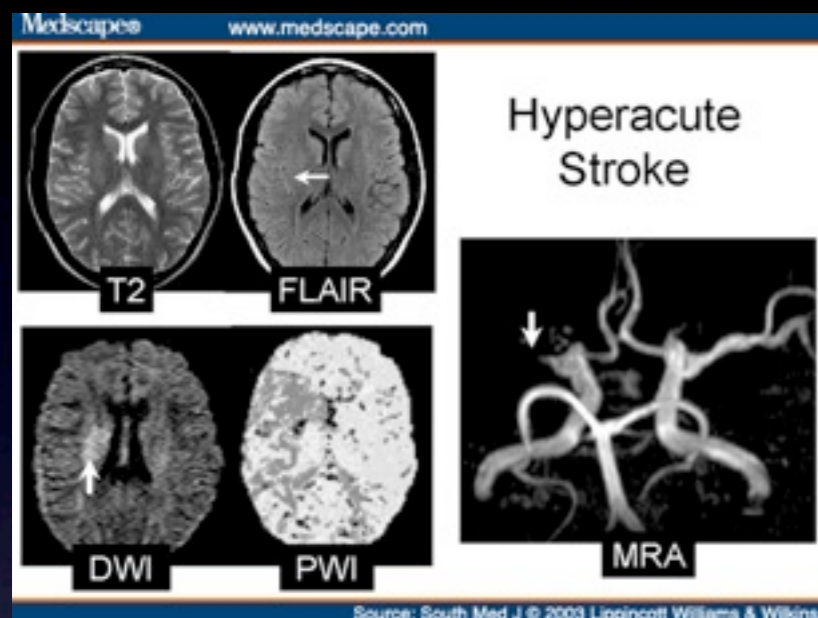


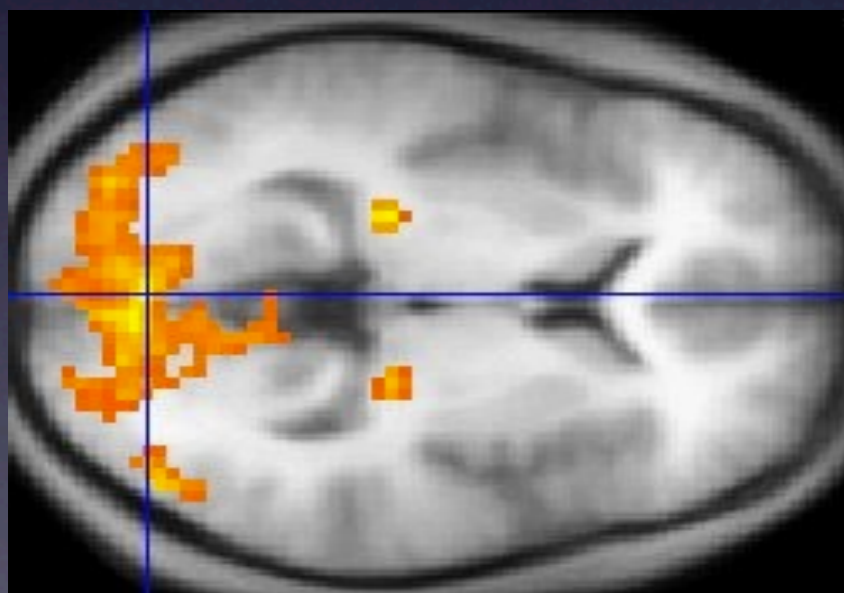
Various applications of MRI



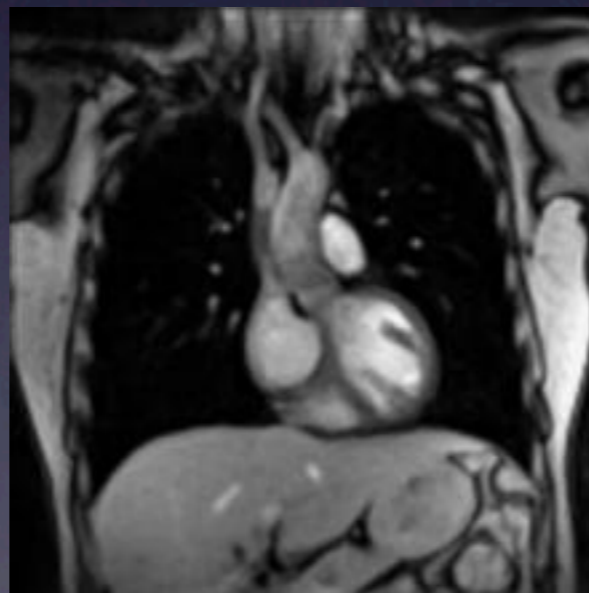
Ask Mish



Magnetic resonance angiography



A fMRI scan showing regions of activation in orange including the [primary visual cortex](#)



Real-time MRI of a [human heart](#) at a resolution of 50 ms

- **DIFFUSION MRI:** measures diffusion of **water** molecules in biological tissues; used for Dx of **strokes** and **multiple sclerosis**. Strokes appears in **5-10 min** on **DWI** opposite to **4-6h** :CT scan
- **MRI Angiography:** evaluate arteries for **stenosis** and **aneurysms**. Similar for veins there is **MR venography**.
- **MR Spectroscopy:** measures levels of **tumor metabolites** in brain. MRI signals produces a spectrum of resonances for different arrangements of metabolite molecules to be excited. Used in **Dx** of **tumors**.
- **FUNCTIONAL MRI** measures signals in brain due to **neural activity**. Increased neural activity produce an increased demand for oxygen and vascular system compensates for it (**BOLD= blood oxygen level dependant**). Oxygenated hemoglobin produces an increased BOLD MRI signal while deoxygenated Hb produces a decreased signal.
- **REAL TIME MRI** is a continuous filming in real time is used for **diseases of joints and heart**.
- **INTERVENTIONAL MRI:** used during minimal invasive procedures for guidance