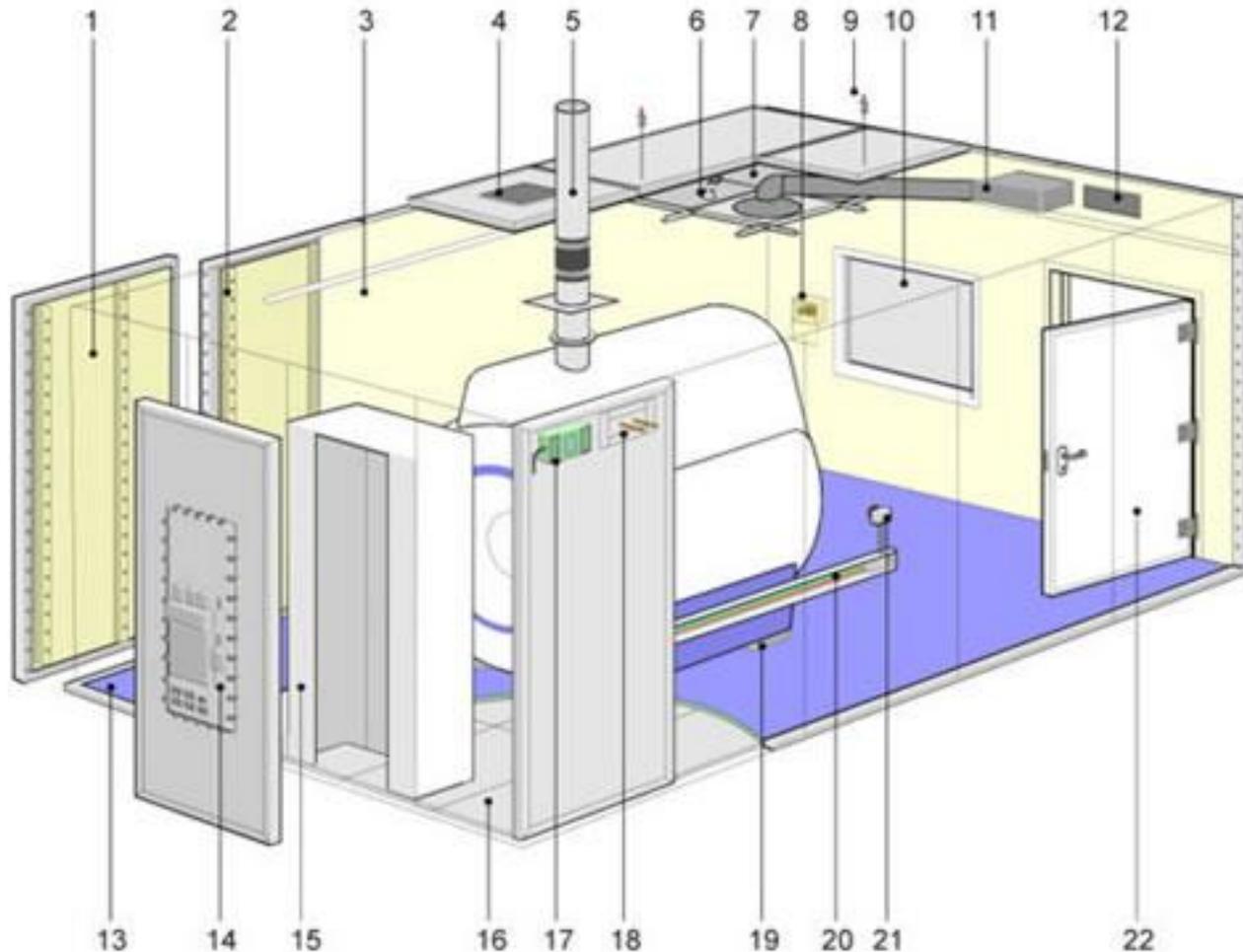


# fMRI Basic Experimental Setup

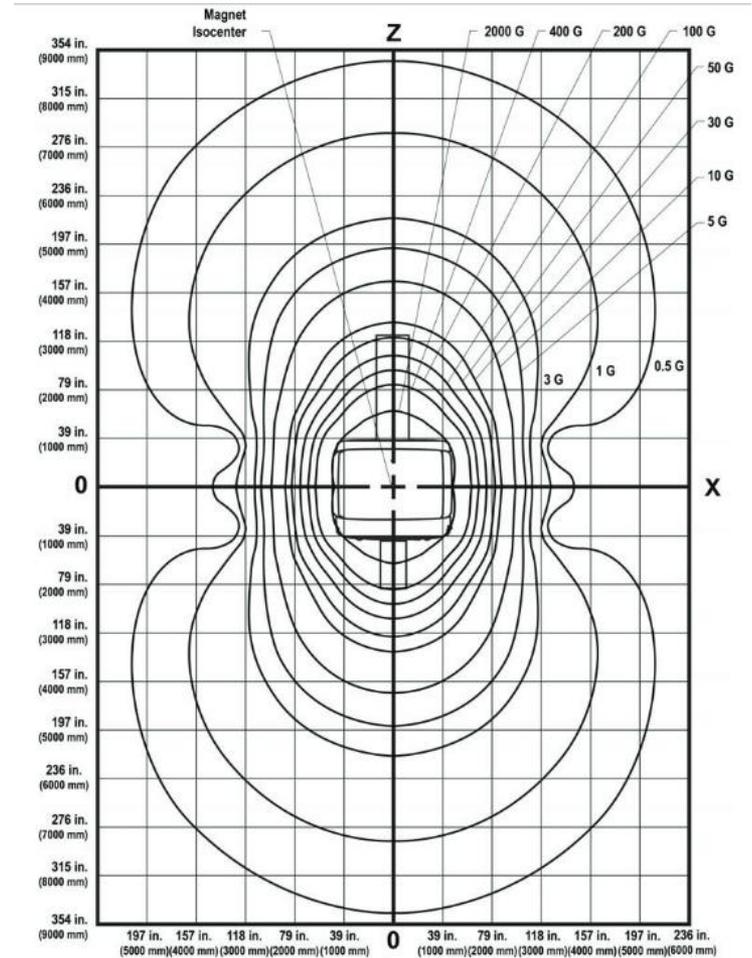


# The MRI suite



# The MRI suite

- Superconducting Magnet
- RF Coil, Gradient Coil, Head/Surface Coil



# What you'll need apart from a MRI scanner

- Pulse sequence
- Stimulus presentation
- Peripheral recordings
- Advanced settings

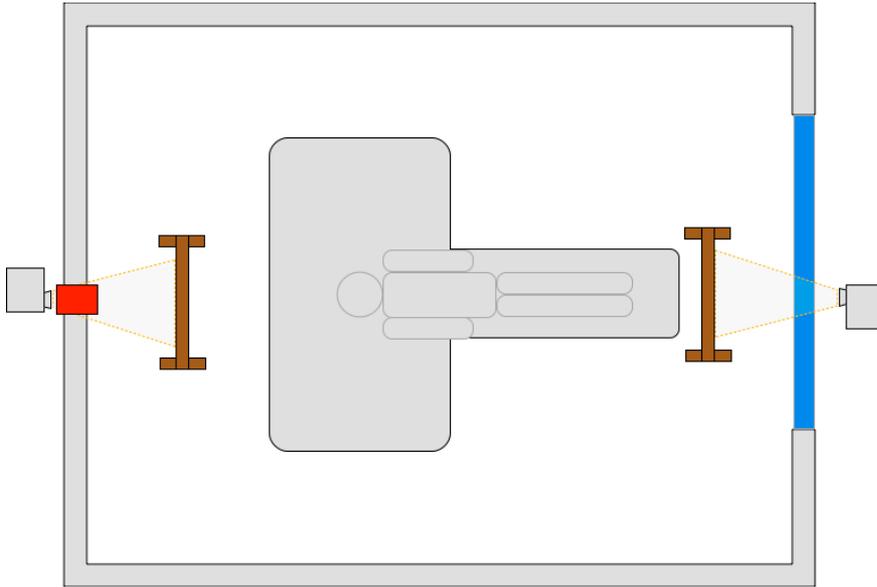
# Pulse sequence

- Contrast: T2\* BOLD, ASL
- Scanning parameters: phase encoding direction, spatial resolution (slice thickness, in-plane resolution), slice orientation, temporal resolution, etc.
- Must be sensitive to the brain regions you're trying to get signals from
- You'll need to consult an MR physicist!

# Stimulus presentation

- Visual
  - Front/Rear Projection, MR-compatible LCD, Goggle
- Auditory
- Tactile
- Pain
- Olfaction

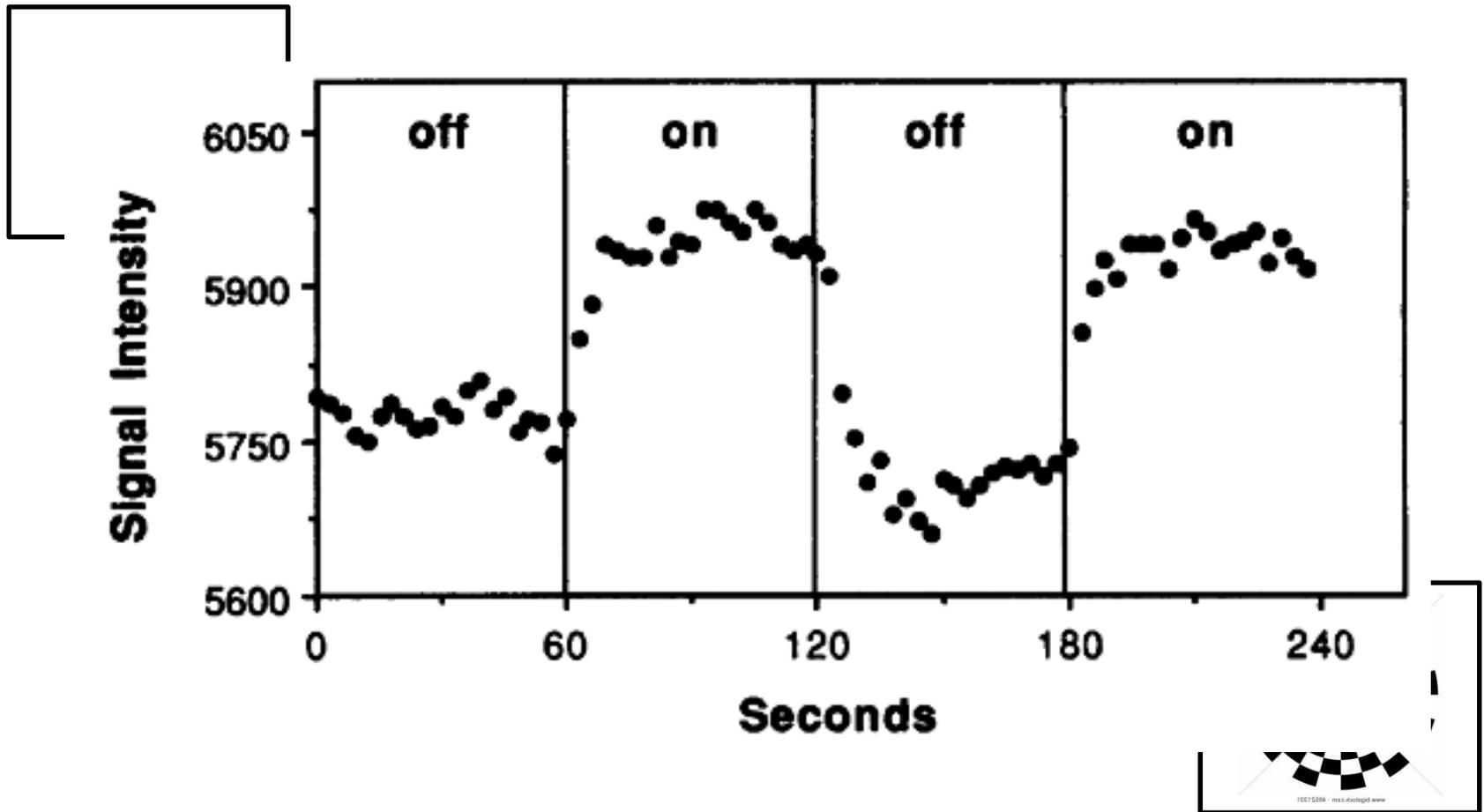
# Visual Presentation



# Peripheral recordings

- Pulse rate
- Breathing
- Electrocardiogram (ECG)
- Galvanic skin conductance
- Electromyogram (EMG)
- Grip strength

# A very simple fMRI experiment...



# More advanced version...

