

Summary of brain imaging techniques

Technique	What it measures	Spatial Resolution	Temporal Resolution	Invasiveness
EEG (Electroencephalography)	Electrical activity from neuronal populations via scalp electrodes	Low (~1-3 cm)	Excellent (milliseconds)	Non-invasive
MRI (Magnetic Resonance Imaging)	Brain anatomy and tissue structure	Excellent (~0.5-1 mm)	Not designed for measuring brain activity	Non-invasive
fMRI (Functional MRI)	Measures changes in blood oxygenation and blood flow associated with brain activity	High (~1-3 mm, sometimes sub-mm)	Poor (seconds)	Non-invasive
PET (Positron Emission Tomography)	Metabolism, blood flow, or neurotransmitter activity using radioactive tracers	Moderate (~4-10 mm)	Very poor (tens of seconds to minutes)	Minimally invasive (requires radioactive injection)
MEG (Magnetoencephalography)	Magnetic fields generated by neural electrical activity	Moderate to high (~2-5 mm to 1 cm, depending on source localization)	Excellent (milliseconds)	Non-invasive