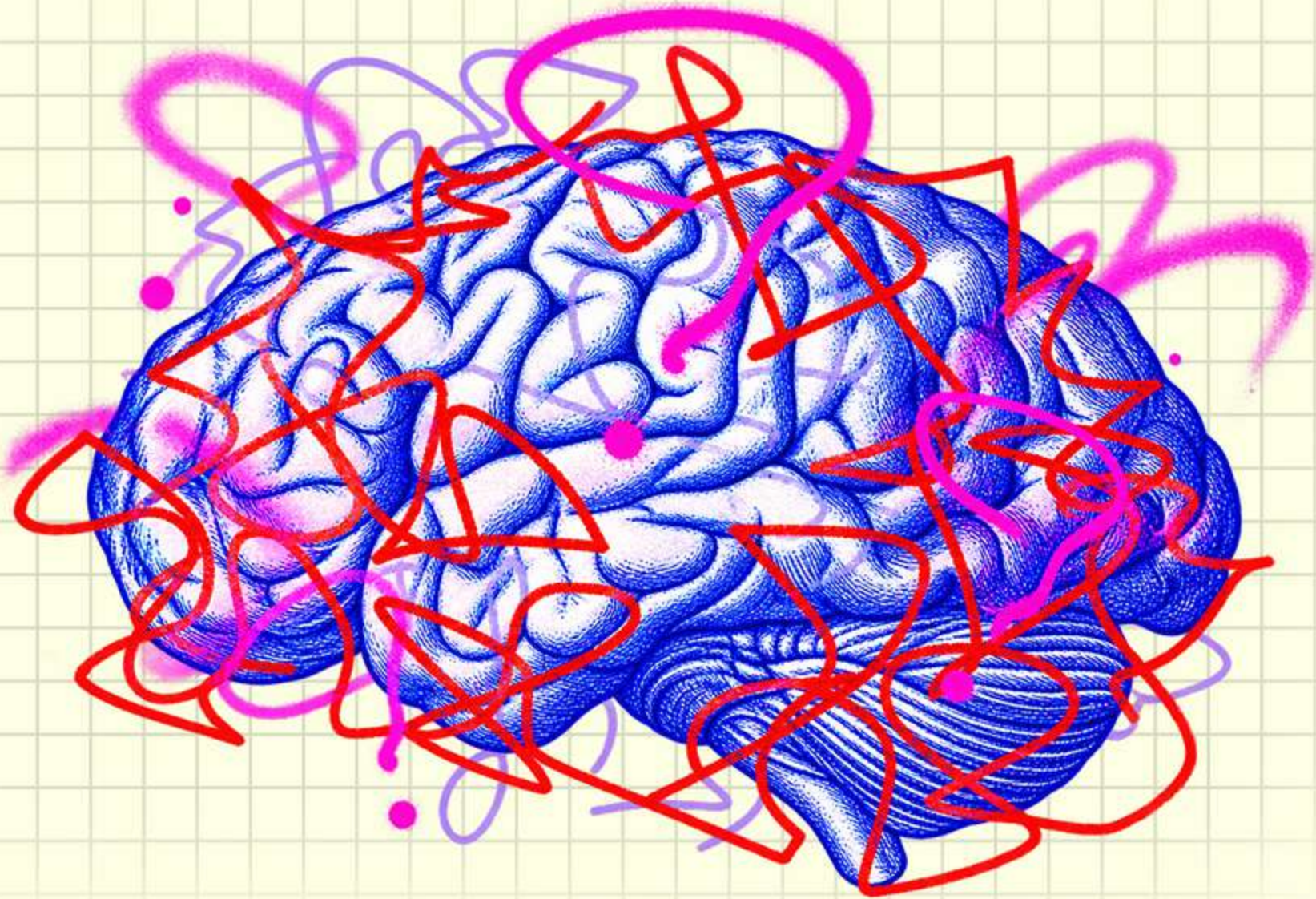




BRAIN

MAPPING TECHNIQUES

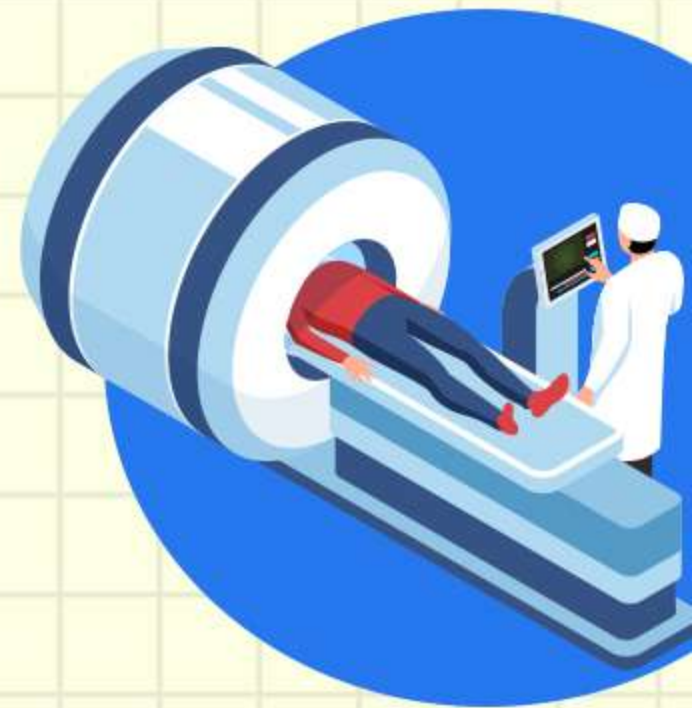
1

STRUCTURAL TECHNIQUES

CT Scan | Computed Tomography

Uses multiple X-ray images to create cross-sectional views of the brain.

Useful for detecting **bleeding, tumours, strokes and structural injuries.**



MRI | Magnetic Resonance Imaging

Uses magnetic fields and radio waves to produce highly detailed images of brain structures.

It provides a much greater **structural detail.**



2

FUNCTIONAL TECHNIQUES

EEG | Electroencephalography

Records the brain's **electrical activity** using electrodes placed on the scalp.

It has excellent **temporal resolution**, making it useful for tracking rapid changes in brain activity.



MEG | Magnetoencephalography

Measures the tiny **magnetic fields** produced by neural activity.

Like EEG, it offers excellent temporal resolution while providing better localisation of activity.

PET | Positron Emission Tomography

Uses radioactive tracers to measure **metabolic activity** in different brain regions.

It can show which areas are using more glucose or other labelled substances.



fMRI | Functional Magnetic Resonance Imaging

Measures changes in **blood oxygenation and blood flow** associated with neural activity.

This is known as the **BOLD signal** (Blood Oxygen Level-Dependent signal).

It has excellent **spatial resolution**, allowing researchers to identify where activity is occurring in the brain.





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