

Procedure	How does it work?	What are the benefits?	What are the problems?
Animal experiments	Animals have their brains damaged (lesioned). This can involve starving areas of oxygen or applying chemicals to kill brain cells. Scientists then observe how the damage affects the animal's behaviour, movement or memory. When the experiment is finished, the animals are killed.	Scientists can target specific areas of the animal brain to see what effect this has.	Animal brains are very different to human brains, so the results do not always apply to people. Studying animals can't tell us about things that are unique to humans such as complex language . The ethical issue of causing pain and suffering to animals
Studying patients with brain damage	Patients with brain damage can be observed to see what changes occur in their behaviour, memory or abilities. We can use brain imaging to find out which area of the brain is damaged and observe what happens when that area does not function the way it should.	The results of these observations are human-relevant , so they reveal things about how the human brain functions.	We rely on accidents or injuries so cannot target specific areas. We can only study atypical, damaged or diseased brains.
Electrical stimulation	Stimulation causes electrical activity in specific areas of the brain. Stimulating different areas results in different responses . For examples, if the motor area is stimulated, the patient makes an involuntary movement .	Brief, reversible and safe. Allows us to study typical or atypical brains. Using brain imaging we can stimulate specific areas of the brain.	Can cause mild discomfort during process.
Brain imaging	MRI scans use magnetic fields and radio waves to produce detailed image of brain. CT scans fire x-rays from different angles at the brain to build up a picture of it. PET scans: Use a small amount of radioactive material to track activity in the brain and show how it is functioning.	Can be used to diagnose or monitor brain disease . Non-invasive. Safe.	Radio waves can heat the body if exposed for too long.