

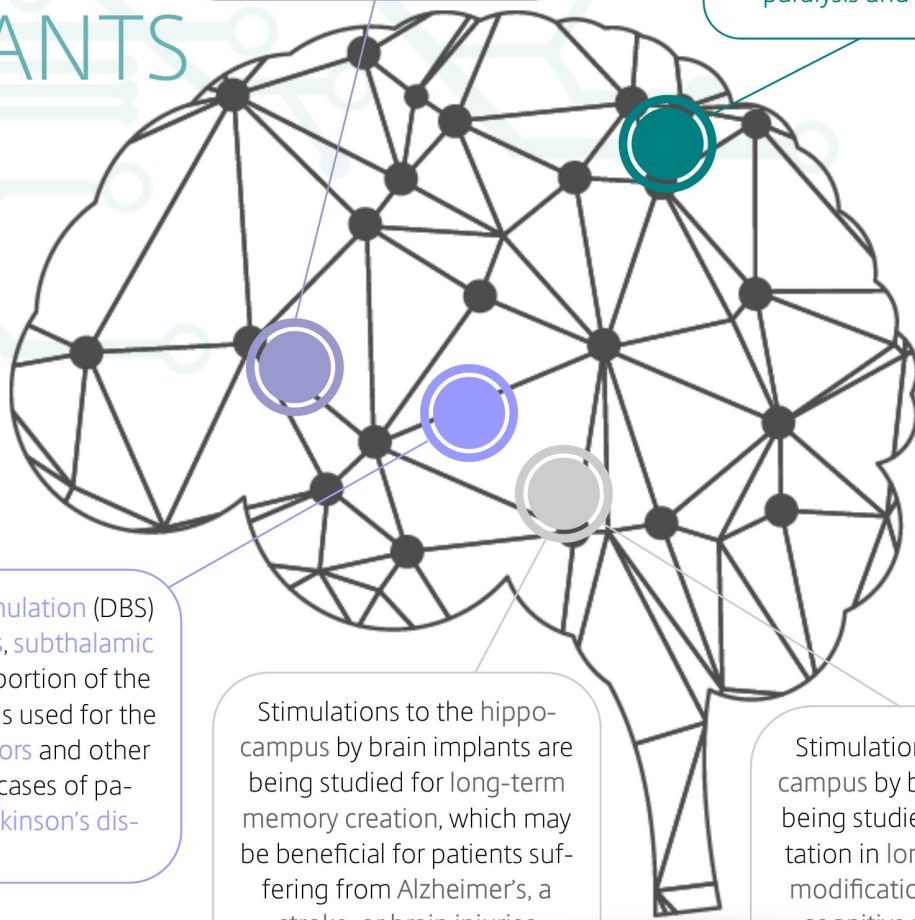
THE SCIENCE BEHIND BRAIN IMPLANTS

Brain implants are devices that provide electrical stimulation to a specific region in the brain, to produce a desired outcome

TYPES OF BRAIN IMPLANTS

Deep Brain Stimulation (DBS) to the **subgenual cingulate gyrus** and the **ventral striatum** is used in cases of **severe depressive disorder**

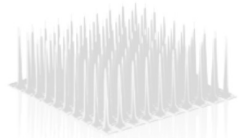
Brain implant stimulation to the **parietal lobe** is being implemented to help **restore the sense of feeling** in cases of **paralysis and prosthesis**



Deep Brain Stimulation (DBS) to the **thalamus, subthalamic nucleus**, and a portion of the **globus pallidus** is used for the **control of tremors** and other symptoms in cases of patients with **Parkinson's disease**

Stimulations to the **hippocampus** by brain implants are being studied for **long-term memory creation**, which may be beneficial for patients suffering from **Alzheimer's, a stroke, or brain injuries**

Stimulations to the **hippocampus** by brain implants are being studied for implementation in **long-term memory modification and improved cognitive function**, which may be beneficial for patients suffering from **PTSD** such as **Servicemen**



Beneficence

Treatment can restore previously lost function

Autonomy

Potential to give or remove a patient's abilities

Justice

Brain enhancements can provide unfair advantage

Maleficence

Long term risks are unclear