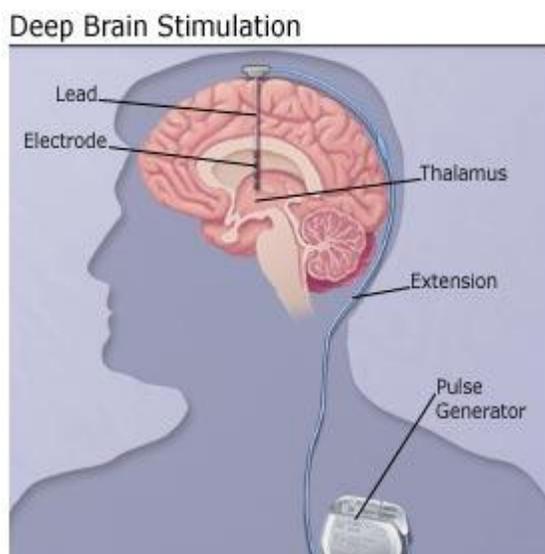


Deep Brain Stimulation

Deep brain stimulation (DBS) is a surgical procedure by which leads that have been implanted into specifically targeted areas in the brain deliver controlled electrical stimulation. This procedure may be considered for those who have focal onset seizures and have not gained seizure control with medication.

Leads consisting of thin wire with electrode contacts on them are implanted into the brain by the neurosurgeon. Two small incisions are made in the scalp about an inch above the ears and thin extensions are put under the skin. These extensions connect the leads in the brain to a pulse generator (or neurostimulator) which is implanted beneath the skin in the chest, below the collarbone.



The pulse generator can then be programmed to adjust the intensity and rate of the electrical stimulation to the leads in the brain. Whilst this procedure will not cure epilepsy, it is hoped that settings can be adjusted to maximise the reduction of seizures and minimise any side effects such as a tingling sensation near the pulse generator.

The patient is given a hand held programmer that is similar in size to a mobile phone. This allows the patient to turn the therapy on and off, check the battery status, adjust programmed parameters and log a seizure event. If the patient feels that a seizure is about to occur, this programmer allows them to immediately activate the stimulation.

In trials Medtronic have reported that during a clinical study half of patients with deep brain stimulation achieved at least a 41% reduction in seizures the first year, improving to a 56% reduction in the second year. The clinical study also reported a reduction in the most severe seizure types.

For more information on Deep Brain Stimulation visit: www.medtronic.com