

Psychosurgery

Psychosurgery is a subspecialty of [functional neurosurgery](#).

Also called neurosurgery for [mental disorders](#) (NMD), is the neurosurgical treatment of mental disorders.

Psychosurgery has always been a controversial medical field.

The modern history of psychosurgery begins in the 1880s under the Swiss psychiatrist Gottlieb Burckhardt.

The first significant foray into psychosurgery in the twentieth century was conducted by the Portuguese neurologist Egas Moniz who during the mid-1930s developed the operation known as leucotomy. The practice was enthusiastically taken up in the United States by the neuropsychiatrist Walter Freeman and the neurosurgeon James W. Watts who devised what became the standard prefrontal procedure and named their operative technique lobotomy, although the operation was called leucotomy in the United Kingdom.

In spite of the award of the Nobel prize to Moniz in 1949, the use of psychosurgery declined during the 1950s. By the 1970s the standard Freeman-Watts type of operation was very rare, but other forms of psychosurgery, although used on a much smaller scale, survived. Some countries have abandoned psychosurgery altogether; in others, for example the US and the UK, it is only used in a few centres on small numbers of people with depression or obsessive-compulsive disorder (OCD); in others it is also used in the treatment of schizophrenia and other disorders.

Psychosurgery is a collaboration between psychiatrists and neurosurgeons. During the operation, which is carried out under a general anaesthetic and using stereotactic methods, a small piece of brain is destroyed or removed. The most common types of psychosurgery in current or recent use are capsulotomy, cingulotomy, subcaudate tractotomy and limbic leucotomy. Lesions are made by radiation, thermo-coagulation, freezing or cutting.

About a third of patients show significant improvement in their symptoms after operation.

Advances in surgical technique have greatly reduced the incidence of death and serious damage from psychosurgery; the remaining risks include seizures, incontinence, decreased drive and initiative, weight gain, and cognitive and affective problems.

Currently, interest in the neurosurgical treatment of mental illness is shifting from ablative psychosurgery (where the aim is to destroy brain tissue) to deep brain stimulation (DBS) where the aim is to stimulate areas of the brain with implanted electrodes.

Indications

Has been used in the treatment of psychiatric illness, intractable pain, and, controversially, as a means to control and modify violent human behavior. Prefrontal lobotomy, a procedure developed in the 20th century, arose as a result of pioneering research, including work done at Yale University in New Haven. Prominent clinicians throughout Connecticut contributed to the development of modern psychosurgery. Neuroethics or ethics of neuroscience is essential to the study and practice

of psychosurgery. New technology has provided improved accuracy with less morbidity. The progressive replacement of ablative procedures with deep-brain stimulation and restorative neurosurgery offers new perspectives in the treatment of some psychiatric conditions ¹⁾.

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Nijensohn DE, Goodrich I. Psychosurgery: past, present, and future, including prefrontal lobotomy and Connecticut's contribution. Conn Med. 2014 Sep;78(8):453-63. PubMed PMID: 25314884.

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