



## METADATA

**Title:** Stereotactic and functional neurosurgery

**Other Titles:** -

**Language:** Greek

**Authors:** Alexiou, G., Assistant Professor, UOI, Voulgaris, S., Professor, UOI

**ISBN:** 978-618-228-142-0

**Subject:** MEDICINE AND HEALTH SCIENCES, LIFE SCIENCES, BIOLOGICAL SCIENCES

**Keywords:** Stereotactic neurosurgery / Functional neurosurgery / Movement disorders / Psychosurgery / Epilepsy

**Bibliographic Reference:** Alexiou, G., & Voulgaris, S. (2023). Stereotactic and functional neurosurgery [Undergraduate textbook]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-376>

### Abstract

Stereotactic and Functional Neurosurgery is the most evolving part of Neurosurgery. It is directly related to the specialties of Neurology, Radiology, Radiotherapy and Psychiatry and it includes the treatment of a wide range of disorders of the Central and Peripheral Nervous System. Neurosurgical intervention concerns the restoration of malfunctioning neural circuits of the brain or the spinal cord. Its applications cover a wide range of pathological conditions, such as deep brain stimulation for movement disorders (essential tremor, Parkinson's disease, dystonia), chronic pain (neuralgia, neuropathic pain), mental disorders

(pharmacoresistant depression, obsessive-compulsive disorder), treatment of spasticity after traumatic brain injury or multiple sclerosis. Furthermore, it has a role in the treatment of medically intractable epilepsy. Stereotactic biopsy is a precise method of sampling almost all areas of the brain through imaging guidance. In addition, stereotactic radiosurgery ( $\gamma$ -knife, cyberknife) is rapidly evolving for the non-invasive treatment of diseases, beyond intracranial tumours (acoustic neuromas, meningiomas), such as Parkinson's disease, obsessive-compulsive disorder, vascular disorders and trigeminal neuralgia.

