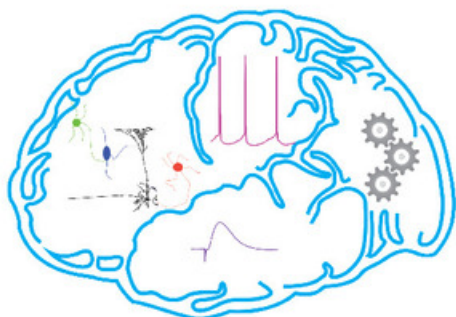


ΚΥΡΙΑΚΗ ΣΙΔΗΡΟΠΟΥΛΟΥ  
Επίκουρη Καθηγήτρια Νευροφυσιολογίας  
Τμήμα Βιολογίας, Πανεπιστήμιο Κρήτης

## Βασικές αρχές λειτουργίας του νευρικού συστήματος

Από τη νευροφυσιολογία στη συμπεριφορά



Ελληνικό Ακαδημαϊκό Ινστιτούτο  
Συντάκτες και Βοηθός  
www.kallipos.gr

HEALLINK  
Ελληνικό Ακαδημαϊκό Ινστιτούτο

ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ, ΕΡΕΥΝΑΣ ΚΑΙ ΘΡΗΣΚΕΥΜΑΤΩΝ  
ΙΝΣΤΙΤΟΥΤΟ ΤΕΧΝΟΛΟΓΙΑΣ ΥΠΟΛΟΓΙΣΤΩΝ ΚΑΙ ΕΚΔΟΣΕΩΝ  
ΔΙΟΙΚΗΤΙΚΗ ΥΠΗΡΕΣΙΑ ΤΗΣ ΠΑΙΔΕΙΑΣ

## METADATA

**Title:** Basic principles for the functioning of nervous system

**Other Titles:** From neurophysiology to behavior

**Language:** Greek

**ISBN:** 978-960-603-476-3

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

**Keywords:** Neurobiology / Neuroimaging / Sensory Systems  
/ Motor System / Learning And Memory

**Bibliographic Reference:** Sidiropoulou, K. (2015). Basic principles for the functioning of nervous system [Undergraduate textbook]. Kallipos, Open Academic Editions. <http://dx.doi.org/10.57713/kallipos-549>

### Abstract

Neurobiology is a multidisciplinary science to which many disciplines contribute, including molecular biology, computational sciences, physiology, pharmacology, photonics, physics and others. The purpose of this book is to introduce students/readers to some basic principles of neurobiology, to introduce them to some innovative developments that are occurring very rapidly, and to give them the opportunity to explore the field of the sciences underlying neurobiology on their own through a presentation and assignment. The book includes the following topics: Fundamentals of neuroanatomy, types of neurons, physiological properties of neurons, ion channels, energy potential, transmission of energy

potential, neurotransmitters, mechanism of neurotransmitter release, neurotransmitter receptors, synaptic potentials, integration of synaptic potentials, structure and organization of sensory systems, transmission and processing of somatosensory stimuli, transmission and processing of visual stimuli, perception of visual stimuli, generation of motor programs, the brain's reward system focusing on the actions of the neurotransmitter dopamine, neurobiological basis of motor disorders, cellular mechanisms of memory and learning, neurobiological basis of psychiatric diseases such as schizophrenia, depression, bipolar disorder, and addiction, and neurological diseases such as epilepsy.

