



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA

---

## **BRAIN AGEING AND NEURODEGENERATION**

*Understanding and fighting the challenges of brain ageing and neurodegeneration by basic science and clinical research to improve the patient's health and quality of life.*



The University of Bologna has a wide network of research groups focusing on basic science and clinical research tackling central and peripheral nervous system disorders.

- **The main research areas in neuroscience** include neurodegeneration with special reference to prion and rare mitochondrial and neuro-genetic diseases, movement and neuromuscular disorders, disorders of the autonomic nervous system, headaches, sleep medicine with particular focus on narcolepsy, epilepsies, epidemiology of neurological diseases and innovative aspects of neurosurgical and neuroimaging procedures, as well as Parkinson's disease, Alzheimer's disease, Autism Spectrum Disorders and brain longevity
- **Research expertise across different departments** also includes the harmonization of healthcare data collection, the development of tools for population-level detection of cognitive impairment and the investigation of animal models of addiction, neuropathic pain, and brain-related diseases
- **Research expertise are not only related to biological and biomedical skills**, but encompass also psychophysiology of sleep and dream, chronobiology and chrono-psychology for the identification of individual differences in circadian rhythms, psychosomatic medicine and psycho-neuroendocrinology

## HIGHLIGHTS

**Excellence in neurosciences** at the University of Bologna strongly lies on the close relationship with the **Institute of Neurological Sciences (ISNB)**, whose laboratories host facilities for cell and molecular biology, microscopic imaging, next generation sequencing, with large collections of brain pathology, muscle and skin biopsies, cell lines, DNA/RNA, cerebrospinal fluid and plasma/serum repositories from patients with rare disorders. The University also encompasses a **Joint Research Laboratory** provided with an animal facility authorized to operate as medical laboratory and a bio-molecular diagnostic facility.

**Neuroscience research activity is reflected in several EU funded projects**, e.g. H2020 [PROPAG-AGEING](#) - The continuum between healthy ageing and idiopathic Parkinson Disease within a propagation perspective of inflammation and damage: the search for new diagnostic, prognostic and therapeutic targets, JP Neurodegenerative Disease Research [ADAGE](#) - Alzheimer's disease+AGEing, IMI-2 JU [PRISM and PRISM 2](#) - Providing quantitative biological measures to facilitate the discovery and development of new treatments for social and cognitive deficits in Alzheimer's disease, schizophrenia and depression.