Neuro Facts

World leader in neuroscience research and neurological patient care

The Neuro is brain research, patient care, and training

The Montreal Neurological Institute and Hospital – The Neuro, is a world-leading destination for brain research and advanced neurological patient care. Since its founding in 1934 by renowned neurosurgeon Dr. Wilder Penfield, The Neuro has grown to be the largest specialized neuroscience research and clinical centre in Canada, and one of the largest in the world. The integration of research, patient care, and training further positions The Neuro at the forefront of nervous system disorder research and treatment. The Neuro’s ground-breaking Open Science Initiative will help advance neuroscience with the commitment to make all research – and all of the data associated with that research – widely available on a global level. The Neuro is also leading the way through McGill's Healthy Brains for Healthy Lives, which unites The Neuro’s strengths in clinical and research neuroscience with pioneering work in neuroinformatics from other departments across the University.

Mission

* To understand the nervous system, discover mechanisms of disease, and develop abd deliver effective treatments for neurological conditions
* To foster an outstanding research and clinical atmosphere by promoting interaction and collaboration
* To train and mentor new generations of scientists and skilled health care professional, and foster clinician scientists

**Research**

The Neuro is the future of brain research

Research Highlights

* Researchers' CIHR grant success rate is 3X the Canadian average.
* Stellar publication record: 200+ peer reviewed articles each year.
* Highest publication impact for neuroscience in Canada

Research Groups

* Brain Tumours
* Cognitive Neuroscience
* Epilepsy
* Neuroimmunological Diseases
* Neural Circuits
* Neurodegenerative Disorders
* Neuroimaging & Neuroinformatics
* Neuro Development
* Rare Neurological Diseases
* Interdisciplinary Neuroscience Programs:
  + Open Science
  + Ludmer Centre for Neuroinformatics and Mental Health
  + The Sandra and Alain Bouchard Intellectual Disability Research Program (BIDRP)
  + NeuroEngineering Program
  + The Neurophotonics Centre
  + Centre for Research on Brain, Language and Music (CRBLM)

Research Profile

$30+ million total funding: grants and contracts per year

50+ research teams

72 principal investigators

100+ faculty

$245 million in grant operation and infrastructure support over 5 years

Research Facilities

* Microscopic Cellular Imaging Facility
* McConnell Brain Imaging Centre (BIC) – Top-three brain imaging research group in the world
* Neurosurgical Simulation Research Centre
* Cyclotron and Radiochemistry Facility
* Centre for Neurological Disease Models
* Neuro OpenScience Clinical Biologic Imaging and Genetic Repository (NeurO C-BIGR)
* Brain Canada iPSC/CRISPR Facility

**Clinical Care**

The Neuro is pioneering clinical care for neurological disease

Clinical Care Highlights

Highest concentration ofclinician-scientists in Canada.

State-of-the-art technology

* MRI, CT, PET, angiosuite, TARGIT, ROSA

Top recruiter through the Clinical Research Unit, for clinical trials in Canada and worldwide for:

* Amyotrophic Lateral Sclerosis (ALS)
* Brain cancer
* Multiple Sclerosis (MS)

140 trials have given 1000+ patients access to new treatments.

Clinics and Programs

* Amyotrophic Lateral Sclerosis (ALS)
* Brain Tumour
* Epilepsy
* Movement Disorders
* Multiple Sclerosis (MS)
* Pain and Neuromodulation
* Neurovascular
* Traumatic Brain Injuries
* Rare Neurological Diseases
* Stroke
* Specialized Neurological Clinics
* Neuro Critical Care
* Neuro Palliative Care

Clinical Care Profile

14 Neurosurgeons

32 Neurologists

300 Specialized nurses and allied health care professionals

3 Neuropathologists

2 Interventional Neuroradiologists

7 Neuro-anaesthesiologists

4 Neuropsychologists

3 Neuropsychiatrists

86 Acute care beds + 12 Neuro intensive care beds

2,150 Admissions/year

1,800 Surgeries/year

4 Operating rooms

28,000 Neuroradiology interventions/year

40,000 Ambulatory visits/year

4,500 Neuro Day Treatment Centre treatments/year

7,000 EEG and EMG exams/year

**Training**

Training the next generation of scientists and clinicians

350+ trainees (postdoctoral fellows, residents, and graduate students) from

60+ countries.

2000+ nurses from

20+ countries have graduated from the Neuroscience Nursing Program.

**A selection of neuro firsts leading neuroscience in Quebec, Canada, and the world**

* First to map primary somatosensory cortex (Penfield Homunculus).
* First to develop a comprehensive repository of brain imaging, cellular, clinical, demographic, genetic and clinical data and samples from patients with neurological disorders.
* First to offer a Neuroscience Nursing program.
* Electroencephalography (EEG) was largely introduced and developed in Canada by Neuro scientist Herbert Jasper.
* Major neuroimaging technologies, including computer axial tomography(CAT), positron emission tomography (PET), and magnetic resonance imaging (MRI) were first used in Canada at The Neuro.
* K.A.C. Elliott identified y-aminobutyric acid (GABA) as the first inhibitory neurotransmitter.
* Brenda Milner revealed new aspects of brain function and through her ground-breaking studies, pioneered the field of neuropsychology.
* Wilder Penfield's revolutionary technique for epilepsy neurosurgery became known as the Montreal Procedure.

The Neuro is award-winning researchers, healthcare professional and trainees

11 Vanier Scholars

9 Royal Society of Canada Fellows

8 James McGill Professors

8 Killam Scholars

5 Prix du Quebec – Prix Wilder Penfield

4 Canadian Medical Hall of Fame Laureates

3 Canada Research Chairs

3 Orders of Canada

3 Orders of Quebec

2 Royal Society of London Fellows

2 American Academy of Arts and Science Members

2 Killam Professors

1 Killam Chair

1 Foreign Associate of the National Academy of Sciences (USA)

World-famous scientist Dr. Brenda Milner awarded major prizes for her pioneering memory research at The Neuro:

1 Balzan Prize

1 Dan David Prize

1 Gairdner Award

1 Kavli Prize

1 Killam Prize