100 years of care and research in neuroscience
Patient care as a result of research development and innovation

At the Fondazione Mondino, care and research are firmly intertwined. Our projects, conducted with major international networks, are aimed at finding new treatments for neurodegenerative diseases, such as Parkinson’s disease and Alzheimer’s disease, and for common neurological disorders, such as headache, but also for rarer diseases such as epilepsy and neuroophthalmological disorders in children. Thanks, in part, to our use of the most advanced diagnostic technologies, we are able to offer our patients the most innovative treatments and excellent care services.

In recent years we have developed original treatment models in the field of child neuropsychiatry, too, aimed in particular at counteracting eating disorders, including anorexia nervosa. Finally, but not least in importance, neurorehabilitation is playing an increasingly important role in ensuring that our patients regain the best possible quality of life and level of autonomy.

Livio Pietro Tronconi, CEO
A national and international reference centre

**NEUROLOGY**
- Parkinson’s disease
- Dementia and Alzheimer’s disease
- Multiple sclerosis
- Neuro-oncology
- Headache
- Epilepsy in adults
- Rare diseases in adults
- Sleep disorders
- Genetics Centre

**CHILD AND ADOLESCENT NEUROPSYCHIATRY AND NEUROLOGY**
- Child neuroophthalmology
- Epilepsy
- Eating disorders in children and adolescents
- Psychosis and personality disorders
- Rare diseases of childhood and adolescence
- Autism spectrum disorders

**NEUROREHABILITATION**
Fondazione Mondino.
100 years of care and research in neuroscience

The Fondazione Mondino is a national and international reference centre for the treatment of, and research into, the most common neurodegenerative diseases, such as Parkinson’s disease, Alzheimer’s disease, multiple sclerosis, ALS and brain tumours.

It operates through specialised centres dealing with headache, epilepsy, neuromuscular disorders, rare diseases, neuroophthalmological disorders, neonatal pathologies, anorexia nervosa and mental disorders of childhood and adolescence.

100,000 yearly patients
74 rooms
64 resident doctors
90 in-house nurses
304 full-time staff
Pavia, a city of science and medicine

**Pavia** is a historic city of art, situated 30 km from Milan. It is home to the **University of Pavia**, one of Italy’s leading universities. The city also boasts a network of top-rate hospitals and research institutes. The **Fondazione Mondino** is the oldest Italian National Neurological Institute. It was founded in Pavia in 1917 by Casimiro Mondino, who was a pupil of Camillo Golgi, winner of the 1906 Nobel Prize in Medicine. In 1973, the Fondazione Mondino was formally recognised as a Scientific Institute for Research, Hospitalisation and Healthcare (*Istituto di Ricovero e Cura a Carattere Scientifico*, IRCCS) by the Italian Health Ministry.
**Multiple sclerosis**
- Centre of excellence for advanced specific research involving the experimentation of innovative drugs
- In-depth investigation of various aspects, namely genetic, biochemical and environmental (pollutants) factors and vitamin D deficiency, and provision of specific diagnostic neuroimmunology services
- Established care model: **short stay** (6 days) for diagnosis and treatment of the acute inflammatory phase with continuation of care at home
- Specific aspects are addressed, such as **fatigue, cognitive deficits, neurogenic dysphagia**
- **Scheduled disease monitoring carried out on a day service basis**, i.e. intensive delivery (in six hours) of all diagnostic services, including laboratory examinations, MRI (also with 3T), evoked potentials and other accessory examinations, neurological examination and provision of drugs for the period until the next follow-up visit (around 3 months later)
- Patients may be hospitalised periodically for physiotherapy and neurocognitive rehabilitation

**Parkinson’s disease**
- Parkinson’s Disease and Movement Disorders Unit, a **unique facility in Italy: 15 years’ experience, 350 admissions per year, 2,000 outpatients seen per year**
- Experimental drugs and innovative high-tech solutions for neuromodulation (directional, rechargeable, adaptive DBS and surface cortical stimulation devices, such as tDCS and tMS devices)
- Neuroradiation with specific dietary and spinal and cortical neuromodulation protocols; management of “orphan” symptoms such as postural abnormalities of the trunk and freezing of gait
- In cases with onset before the age of 40 years, DNA screening can be performed to detect genetic mutations in disease-causing genes (Parkinson’s disease panel)
- Inpatient stays: for diagnosis 3-7 days, for treatment 7-10 days, for DBS 3 weeks (on average)
- Cycles of intensive rehabilitation, both motor (also robotic) and cognitive
- Team of patient-oriented specialists who can also be consulted remotely (telemedicine)

**Dementia and Alzheimer’s disease**
- **Intensive integrated activity: diagnosis, research and pharmacological testing of innovative drugs**
Neurology Area

for dementia (pathological brain aging)

- Highly specialised diagnostic procedures: neuroradiological investigations using advanced MRI techniques, measurement of markers in blood and cerebrospinal fluid (CSF), genetic tests
- Neuropsychological assessment and support for patients and family members
- Neuropsychological rehabilitation interventions

Neuro-oncology

- **Differential diagnostic pathway** for brain tumours involving the use of conventional and advanced non-conventional MRI techniques; serum and CSF analysis (immunological and for infectious diseases) in cases of diagnostic uncertainty between cancer and encephalitis; molecular biology analysis of biopsy tissue
- **Targeted treatment options**: Stupp’s protocol, classical or modified with particles (protons); only radiotherapy with photons; only radiotherapy with protons; only chemotherapy with temozolomide; molecular targeted therapies (depending on available experimental protocols); chemotherapy with nitrosourea drugs; re-irradiation with photons/ortoni
- Follow-up: short hospital stays lasting a maximum of 3 days for restaging, diagnosis and treatment of complications; post-surgical inpatient rehabilitation treatment
- Surgical treatment at partner facilities and no wait for operations
- For the treatment of radioresistant or inoperable tumours, the institute has a partnership with CNAO (National Centre for Oncological Hadrontherapy) in Pavia: www.fondazionecnao.it

Headache

- Since 1975 the **Pavia Headache Centre** has been a reference centre for the diagnosis and treatment of headache, both primary forms (cluster headache, migraine, tension-type headache, menstrual, hormonal), and secondary forms, which are a symptom of other acute conditions
- 1-day diagnostic framing, followed by the monitoring phase (headache diary) and contact with the reference neurologist
- Treatment options also include botulinum toxin treatments for resistant forms
- For medication overuse headache, short hospital stays (6 days) for medical withdrawal treatment (detoxification) and resetting of pain thresholds
- Remote consultations with the headache specialist (telemedicine)
Neurology Area

**Epilepsy in adults**
- Centre for the Diagnosis and Treatment of Epilepsy in adults: **1,500 outpatients and 2,000 neurological examinations per year**
- Diagnostic procedures: electrophysiological (routine and monitoring EEG examinations, using different modalities), neuroradiological (MRI and CT), and laboratory (measurement of levels of antiepileptic drugs)
- Mainly outpatient diagnosis and follow-up pathways, with ready availability of remote communication (telemedicine)
- Inpatient stay for diagnosis: 3-4 days

**Sleep disorders**
- Clinical and instrumental assessment: diagnosis based on home polysomnography and daytime vigilance testing
- Clinical and polygraphic evaluation of sleep apnoea, with integrated diagnostic and therapeutic activity carried out in collaboration with local pneumological and ENT services
- Drug treatments (also for detoxification in cases of medication overuse) and behavioural therapies
- Ventilation therapy and expedition of referrals for any other specific assessments at partner facilities
- Treatment of associated risk factors (e.g., obesity) through a special targeted pathway and online advice
- Inpatient stays (30 days), with the possibility of following a rehabilitation pathway in a dedicated environment

**Genetics Centre**
- Many neurological diseases are diagnosed using innovative techniques and technologies from the field of neurogenetics and neurobiology; these methods are designed to study the pathogenetic processes underlying the diseases of the central nervous system. The data they provide are processed, using bioinformatics methodologies, in partnership with the University of Pavia
- Use of next-generation sequencing technology for solving genetic cases
- Use of proteomics for biomarker discovery to define pathways related to the pathogenesis of major neurodegenerative diseases and identify potential biomarkers
- Use of cellular and tissue analysis methods, to prepare and characterise cellular models for the study of basic mechanisms
**Neuroophthalmology**
- Reference centre for childhood visual disorders (perceptual, oculomotor and visuocognitive) which are treated by a multidisciplinary team
- Disorders most frequently treated: retinal dystrophy, nystagmus, ocular malformations, septo-optic dysplasia, Joubert syndrome and cerebral visual impairment
- Types of access: outpatient, inpatient (5-6 days), day hospital.
- Specific investigations for Leber’s congenital amaurosis, Joubert syndrome, septo-optic dysplasia and nystagmus
- 15-day rehabilitation interventions: visual rehabilitation activities and promotion of neuropsychomotor development also through the use of aids and support software

**Epilepsy**
- Integrated electrophysiological (EEG), radiological (MRI, CT) and laboratory diagnostic work-up, sometimes including experimental studies
- Well established care models: over 1,000 children under treatment for childhood epilepsy
- Short stays for in-depth examinations such as electroencephalography and genetic testing
- Innovative treatments, such as the ketogenic diet in drug-resistant epilepsy: short stay followed by single-day follow-ups
- Treatment of epilepsy linked to rare diseases such as: Lafora disease, Glut1 deficiency, West syndrome, Dravet syndrome, Lennox-Gastaut syndrome, Landau-Kleffner syndrome, CSWS
- Online or phone support provided by medical dietitians

**Eating disorders in children and adolescents**
- A complete course of care that takes into account both the somatic and the psychological dimensions including the family relationships
- Hospitalisation in cases of severe weight loss
- An inpatient stay to establish the diagnosis or course of treatment is followed by a stay in a specific rehabilitation facility (from 3 to 6 months) and a subsequent daytime treatment option (3 months)
- Dedicated multidisciplinary team, comprising neuropsychiatrists, psychologists, educators, teachers
Psychoses and personality disorders
- A dedicated department dealing with psychoses of childhood and adolescence and equipped with an area for acute cases. The facility allows immediate admissions
- Rehabilitation in dedicated facilities, even for long periods until the patient is autonomous

Rare diseases of childhood and adolescence
- Diagnosis of and research into 77 rare diseases affecting children/adolescents and also adults
- Diagnosis with advanced techniques: MRI, 3T, genetic analyses on the child and family members
- Diagnostic pathway with investigations tailored to the individual disease
- Dedicated team of physicians and researchers, able to implement experimental research protocols

Autism spectrum disorders
- Patients with autism are followed up and supported through to adulthood with rehabilitation interventions that involve parents and schools, in accordance with the most advanced care pathways
Neurorehabilitation

- **Neurorehabilitation facility** for neurological patients (both post-acute and chronic with worsening symptoms) affected by stroke, Parkinson’s disease, multiple sclerosis, polyneuropathy, spinal cord injury, severe neuropathic pain, myopathy and vegetative states
- 30 to 60 day course of rehabilitation care, with the application of protocols designed to promote *multifunctional recovery* (motor, cognitive, psychological)
- **Cutting-edge** aids, supported by robotic technology, virtual reality rehabilitation, sensory conditioning, rehabilitation with body weight support systems
- Currently during the activation phase, a technological *teleneurorehabilitation* platform to allow continuation of the rehabilitation treatment, and a *home telecare* system using advanced technologies
Fondazione Mondino’s International Department, supported by TMI

For patients coming from abroad, the Fondazione Mondino’s International Department, supported by the company TMI (Turismo Medico Italia), organises an all inclusive service, making travel arrangements for patients and their companions, to ensure that their journey is safe and comfortable, and also managing the pre-treatment and the after-care processes. All this is possible thanks to network of contacts in the various countries of origin and the availability of telemedicine facilities. The Fondazione Mondino is well aware of the difficulties that can be encountered when seeking to obtain medical care in another country, and in a foreign culture. Supported by TMI, a medical tourism company whose mission is to be a point of reference in matching patient needs with the right healthcare facilities, the all-inclusive “door2door” service allows us to support our patients every step of the way: with the initial treatment plan and quotation requests, on their arrival in Italy through to their departure, and, through the network of contacts, also during the follow-up in their own country. Patients can be assured that they will feel “at home” at every stage of the treatment.

Fondazione Mondino International Department contacts:

Roberto Gardinali
Purchasing, Logistic and Customer Service Director
roberto.gardinali@mondino.it  |  +39 0382 380399

Jacopo Leonardelli
International Department Manager
jacopo.leonardelli@mondino.it  |  +39 0382 380314

Skype: skype.idm@mondino.it

The Fondazione Mondino can provide rooms offering the comfort of a hotel. New rooms providing an even higher standard of accommodation are currently being built for greater patient satisfaction.
The Fondazione Mondino guarantees complete and integrated management of the entire treatment pathway, from the initial enquiry through to the follow-up, whatever the patient’s needs and country of origin.