When it comes to neurological conditions—from Alzheimer’s disease and autism to headache, epilepsy and sleep-wake disorders—you want to seek care from pioneers in the field, such as Montefiore Medical Center’s state-of-the-art subspecialty care coupled with cutting-edge clinical trials and innovative disease-oriented research.

INTEGRATED NEUROLOGICAL CARE ACROSS THE LIFESPAN
Montefiore Medical Center, located in the Bronx, N.Y., has the expertise and unique ability to treat all varieties of neurological diseases affecting pediatric, adult and older patients in an integrative and comprehensive way.

“Few neurologic disorders are unique to a specific subspecialty area, or even a single medical or surgical field,” said Mark F. Mehler, M.D., M.G.C., chairman of neurology at both Montefiore Medical Center and Albert Einstein College of Medicine. “What is increasingly well recognized is that the vast majority of neurologic disorders have systemic co-morbidities. If you have Alzheimer’s or Parkinson’s diseases, for example, you are likely to have other medical conditions that greatly influence treatment options and quality of life,” Mehler added. “We provide integrated, versatile and compassionate care. The hospital and medical school environments foster an extraordinary degree of interdisciplinary cooperation and biomedical scholarship.”

It is no surprise that Montefiore Medical Center, with one of the oldest and most distinguished neurology departments in the country, has also been the site of many firsts. The Headache Center at Montefiore was the first center in the world devoted to diagnosing and treating headaches. “We have a world-class headache center where people come from great distances to seek care,” said Mehler. “Many headache syndromes were first identified by our neurologists. The Headache Center’s patient services are being expanded to include an interdisciplinary infusion center to treat all types and severity of migraine and associated headache disorders.” The Montefiore Sleep-Wake Disorders Center was the first accredited sleep disorders center in the United States and treats the full range of sleep problems associated with every type of pediatric and adult neurological condition. “There is almost no neurological disorder in which people do not have a significant sleep co-morbidity that can be treated to ease patient suffering,” said Mehler.

In the past, when memory disorders such as dementia and Alzheimer’s disease were considered a natural form of aging and senility, Montefiore and Einstein initiated the first program to study the scientific foundations of degenerative dementia and disorders of the aging brain. “Our groundbreaking research programs and associated clinical care models were instrumental in setting the national agenda for sophisticated studies of the aging brain, and our department was instrumental in the founding of the National Institute of Aging on the National Institutes of Health,” according to Mehler. “At Montefiore, we treat the broad spectrum of disorders of aging that go well beyond Alzheimer’s disease, extending to numerous subtypes of degenerative dementia. Having that specialized expertise allows us to offer better targeted therapies and stay abreast of developments, such as drugs in the pipeline that will revolutionize the treatment of these insidious and still epidemic diseases.”

Researchers in the department are studying whether the seeds of neurodegenerative diseases, such as Alzheimer’s disease, actually start during early development, as well as why certain cells are vulnerable to premature death, such as with Alzheimer’s and Huntington’s diseases. Said Mehler: “The earlier we can define the pre-clinical phases of these diseases, the earlier we can introduce treatments employing novel therapeutic targets. This includes taking advantage of major advances we and others are pioneering in the fields of stem cell biology as well as a new branch of genetics, termed ‘epigenetics,’ that has unique relevance for understanding how the human brain evolved and how true disease-modifying therapies can be developed.”

Montefiore has created a special synergy between neurology and geriatrics, with programs in Aging and Dementia, Gait and Frailty, and Healthy Aging, including a newly chartered and highly innovative multidisciplinary clinical practice. “Gait disorders literally can incapacitate people and cause falls, and pathologic fractures can rain lives,” said Mehler. “We’re very involved in examining gait disorders and the concept of frailty where people become less robust as they age. These disorders have been robotically difficult to treat because their causes are complex and their scientific underpinnings were poorly understood. We’re looking at the genetics of gait and frailty, as well as dynamic gene-environmental interactions to allow us to fashion novel therapeutic interventions.”

Montefiore has one of the largest and most distinguished pediatric neurology programs in the nation, with pioneering initiatives addressing epilepsy, neuromuscular diseases and communication disorders, such as autism. “Our Autism and Neurodevelopmental Disorders Center has a long history of sophisticated and interdisciplinary care and research in the area of autism spectrum disorders and other pediatric communication disorders that affect hearing, language and non-verbal interpersonal interactions.” Montefiore also has one of the largest and most comprehensive programs in the country for frailty syndrome, an early neurodevelopmental disorder in which patients are severely impaired, often much more profoundly than in autism. “Our FRT program highlights the extraordinary cooperative care model that is epitomized by The Children’s Hospital at Montefiore, and it spans all pediatric subspecialty areas,” said Mehler.

Montefiore Comprehensive Epilepsy Center, with pediatric and adult epilepsy monitoring units, helps to diagnose and develop individualized treatment strategies for both subtle as well as severe forms of epilepsy, including those in need of surgical management. “Our department has been a singular leader in the study of developmental antecedents and gender selectivity of different forms of epilepsy, including the generation of novel animal models for advanced drug discovery efforts,” said Mehler.

Montefiore is also recognized for its strengths in adult and pediatric neuromuscular disorders, including one of the largest and most comprehensive Muscular Dystrophy Clinic programs. The neuromuscular program specializes in disorders of peripheral nerves, the neuromuscular junction and primary muscle disorders, including a variety of inflammatory and immune-mediated disorders, such as myasthenia gravis, Guillain-Barre syndrome and polymyositis, as well as a broad-based program in movement disorders with an emphasis on Parkinson’s disease, dystonias and essential tremor. “The allied field of neuromolecular biology was inaugurated in our department and the definitive textbook in the field was developed by our faculty members who have served as consultants for major industrial accidents worldwide and as arbitrators of stricter environmental safety standards,” offered Mehler.

The Stem Stroke Center at Montefiore serves as a model for advanced care and research in the areas of cerebrovascular diseases and neurological intensive care, helping to define vascular risk factors in underrepresented populations and establish the making links between stroke, dementia, headache and metabolic and inflammatory disorders. “These programs represent unique and vibrant collaborations between multiple medical and surgical subspecialty areas, including critical care medicine, neurological surgery and interventional neuroradiology,” said Mehler.

“We also have comprehensive programs in multiple sclerosis and immunology and in partnership with Montefiore Einstein Center for Cancer Care, in adult and pediatric neuro-oncology, including advanced diagnostic and treatment initiatives for primary tumors, brain metastasis and nervous system complications of non-neural cancers.”

The department takes seriously its role in contributing to the future of the neurosciences. With comprehensive residency and fellowship training programs, Montefiore has trained generations of academic leaders, including numerous departmental chairs and renowned physician-scientists.

“At the root of everything we do,” said Mehler, “is our mission and values—we are committed to treating the whole individual, from all strata of society, with a single standard of care and with a history of social responsibility and innovative community partnerships across the lifespan.”