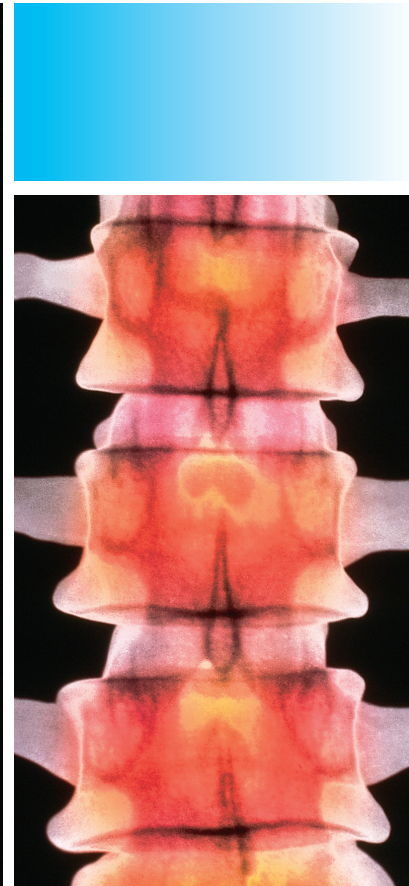
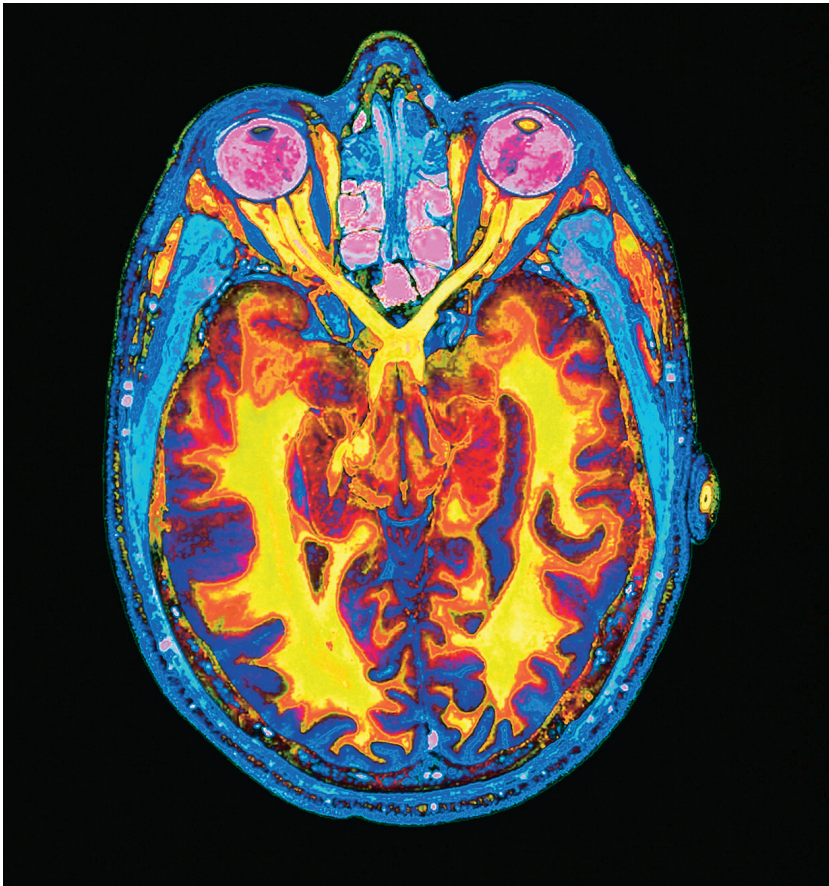


# The Institute for NEUROSCIENCES



**nym**  
NEW YORK METHODIST HOSPITAL

**T**he Institute for Neurosciences at New York Methodist Hospital brings together a unique team of specialists and medical services to offer diagnosis and treatment of a broad range of neurological conditions.

The Institute's panel of physician specialists includes neurologists (most of whom have special expertise in specific neurological diseases), neurosurgeons, interventional neuroradiologists, psychiatrists, psychologists, radiation oncologists, physiatrists, and specialists in geriatric medicine. Physical, occupational, and speech/language therapists are also involved in patient care. Referrals to these specialists or to programs and services available at New York Methodist Hospital, can be made through an individual's primary care physician or can be requested directly through the Institute's referral service.

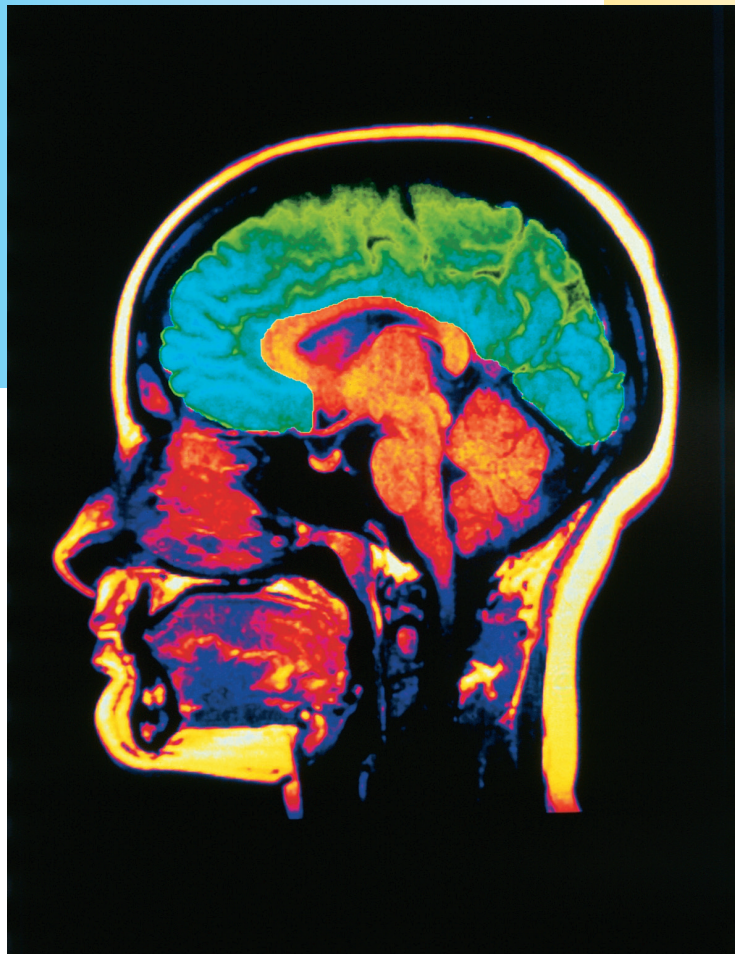
All diagnostic and therapeutic procedures are performed at New York Methodist Hospital or at individual physicians' offices. State-of-the-art equipment to perform computerized tomography (CT), magnetic resonance imaging (MRI), and magnetic resonance angiography (MRA) is located in the Hospital's Radiology Department. In addition, equipment and specialists trained to perform neurological diagnostic tests, such as electroencephalography (EEG), electromyography (EMG), DaTscan (an imaging technology used to measure dopamine levels) and evoked potential examinations are available at New York Methodist.

Physicians and other health professionals affiliated with the Institute are also available to speak to community groups on a variety of topics related to the detection and treatment of neurological disorders. Other community outreach activities of the Institute include the distribution of informational materials, support groups and screening programs.

## PROGRAMS AND SERVICES

*Physicians affiliated with the Institute treat numerous disorders and diseases, ranging from frequent headaches to syncope to multiple sclerosis. Special programs and services offered by the Institute include:*

- THE BACK AND NECK PAIN CENTER
- BRAIN AND SPINAL CORD CANCER PROGRAM
- THE EPILEPSY CENTER
- THE MEMORY AND ATTENTION CENTER
- MULTIPLE SCLEROSIS CENTER
- NEUROPATHY AND NEUROMUSCULAR DISEASE PROGRAM
- PARKINSON'S DISEASE AND MOVEMENT DISORDERS PROGRAM
- PEDIATRIC NEUROLOGY PROGRAM
- PSYCHIATRY
- REHABILITATION
- STROKE PROGRAM



## THE BACK AND NECK PAIN CENTER

Neck pain and back pain are two of the most common symptoms for which patients seek medical treatment. Pain may come on strongly and suddenly or it may develop gradually; it may be felt in just one area or throughout the lower back or even radiate down through the legs and feet. There are dozens of causes for spinal pain, including damage to the bones, disks, muscles or joints of the spine, all of which may result from injury or degenerative disease.

The NYM Back and Neck Pain Center is dedicated to providing patients with the best clinical treatment for disorders of the spine. It achieves this goal with a multidisciplinary approach that affords patients the greatest number of treatment options.

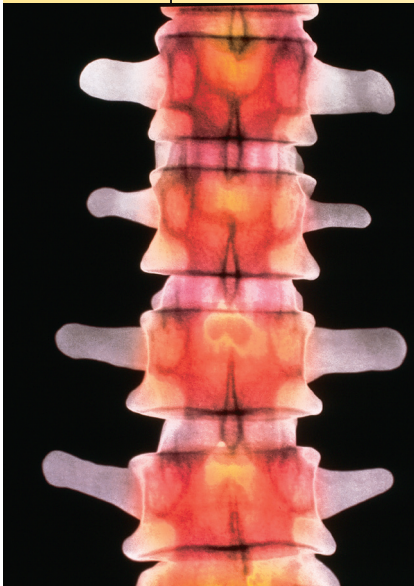
### DIAGNOSIS

To identify the specific cause of pain, a comprehensive medical history is taken and a physical examination is administered. If any tests are necessary for diagnosis, they will be ordered by the Center's staff. Depending on the symptoms displayed, testing may include x-rays, CT scans, MRI scans, nuclear scans, electromyograms (EMGs) and/or simple blood work. All tests can be performed on the campus of New York Methodist Hospital, where the Center is located, and results will quickly be available for the Center's medical director to review, via the Hospital's clinical information system.

In most cases, the medical director will be able to provide a preliminary diagnosis during this first visit and may be able to begin treatment immediately.

### CONDITIONS TREATED

All major spinal disorders are treated at the Center. These include:



- *Muscle spasms, which can cause acute pain.*
- *Fractures to the spine or spinal cord injury, caused by spinal trauma.*
- *Osteoporotic compression fractures and other fractures to the spinal column.*
- *Scoliosis, a congenital deformity that causes curvature of the spine.*
- *Spinal tumors, which may be secondary to other forms of cancer.*
- *Spinal stenosis, narrowing of the spinal canal, which may cause pain radiating into the legs.*
- *Herniated or slipped disks, which put pressure on spinal nerves, causing leg or arm pain.*
- *Spondylolysis, a stress fracture of the vertebrae or spondylolysis, which occurs when one vertebra slips out of alignment.*
- *Arthritis of the spine.*
- *Disk disease.*
- *Compression of the spinal cord that causes weakness in the hand or leg.*

## TREATMENT

The Center focuses on non-operative treatment, which will most commonly include medication and/or rehabilitation (physical or occupational) therapy. Depending on the condition being treated, bed rest, corticosteroid injections, bracing, radiation therapy, neuropsychology techniques, surgery—including minimally invasive procedures, or even alternative medicine techniques, such as chiropractic medicine or acupuncture, may be recommended. All of these treatments are available on the campus of New York Methodist Hospital.

If it is determined that surgery is necessary, both traditional and minimally invasive techniques will be considered. The goal of surgical intervention is to take pressure off nerves, and if necessary, stabilize and fuse the bones of the spine. This improves symptoms such as pain, numbness, and weakness.

Minimally invasive techniques performed at New York Methodist Hospital, using very small incisions with minimal tissue dissection and live x-ray guidance, result in a faster recovery, less tissue damage, and less pain than traditional open spinal fusion surgery.

Decisions about the best course of treatment will be made with consideration for the nature and severity of the condition, as well as the individual patient's lifestyle and preferences.

## PAIN MANAGEMENT

Some conditions of the spine can cause acute pain. Although most back and neck pain resolves on its own over time, physicians at the Center believe that it is important to treat pain quickly once the condition is diagnosed. Pain management for spinal injuries and disorders is designed both to mitigate acute pain and to provide long-term management that will lessen or eventually eliminate it.



## BRAIN AND SPINAL CORD CANCER PROGRAM

Medical oncologists, radiation oncologists and neurosurgeons affiliated with the Institute offer a comprehensive interdisciplinary approach to the diagnosis and treatment of cancers of the brain and the spinal cord. Along with other specialists, they work to develop the best management plan for each patient. The objective is always to extinguish cancer, while maintaining the best possible quality of life.

### DIAGNOSIS

Symptoms of brain or spinal tumors include headaches, nausea and vomiting, changes in speech, vision, or hearing, problems balancing or walking, changes in mood, personality, or ability to concentrate, problems with memory, seizures, numbness, pain, or tingling in the arms or legs, muscle weakness, urinary incontinence or some degree of paralysis. Most often, these symptoms are not due to a brain tumor but to another health problem.

Diagnosis begins with a physical exam and intake of your personal and family health history. You may have one or more of the following tests: a neurologic exam, an MRI (magnetic resonance imaging) scan, a CT (computed tomography) scan, an angiogram, a spinal tap or a biopsy.

### TREATMENT

The Hospital has supported its neuro-oncology team with state-of-the-art equipment and technology. Several advanced approaches to cancers of the nervous system are available at the Hospital.



### Brain Tumor Surgery

Tumors of the brain may arise from the brain tissue itself, or metastasize to the brain from a cancer in another part of the body. Common tumor types treated include: meningioma, glioma, ependymoma, vestibular schwannoma and pituitary tumor. The goal of surgery is to remove as much of the tumor as possible while minimizing risks to the patient. One of the ways risks are minimized is by using a computerized guidance system that allows for smaller openings and a more direct route to the tumor thereby minimizing unnecessary brain manipulation — a “GPS” system for the brain. In addition, other techniques such as neurophysiologic monitoring, make the surgery safer. If surgery is not indicated, highly focused radiation, also called stereotactic radiosurgery, is available.

### **Stereotactic Radiosurgery and Radiotherapy**

New York Methodist Hospital was one of the first in the New York area to offer the techniques of stereotactic radiosurgery and radiotherapy. The procedures, which are sometimes referred to as “brain surgery without the knife,” utilize highly advanced technology for treating some kinds of brain tumors and vascular malformations of the brain. These lesions may be inaccessible or unsuitable for conventional neurosurgery. Stereotactic radiosurgery can also be used to obtain stereotactic biopsies.

Neurosurgeons work together with radiation oncologists and physicists from New York Methodist Hospital’s Regional Radiation Oncology Center to plan the procedures, which are usually performed in a single session (stereotactic radiosurgery) or in a series of sessions (stereotactic radiotherapy). Both stereotactic radiosurgery and stereotactic radiotherapy are usually performed as outpatient procedures.

Stereotactic radiosurgery and radiotherapy use high energy, pencil-thin x-rays from a linear accelerator to destroy deep-seated brain tumors and other lesions. With the aid of a stereotactic frame, which is attached to the patient’s skull, the rays are rotated around a center with less than one millimeter of variation, so that lesions can be destroyed without the risk of an open-skull procedure and without general anesthesia. Surrounding healthy tissue is preserved.

### **Intensity Modulated Radiation Therapy (IMRT)**

IMRT delivers radiation using a computer-driven sharp beam. The intensity is varied to either block or allow the passage of radiation. This technique allows for more specific targeting of the cancer, thus confining it to the target cancer cells and sparing normal cells from exposure.

### **Bone Seeking Isotopes**

Sumarium-153 is an isotope that localizes to the bone and can destroy local disease that a surgeon cannot safely remove. It can be embedded in a special cement and injected into the area of the spine in order to provide palliative and/or therapeutic results.



## THE EPILEPSY CENTER

Approximately 25 million people in the United States have epilepsy. Forty percent of those people experience the disease in a severe or intractable form. Epilepsy is produced by abnormal electrical discharges in the brain and is typically manifested by loss of consciousness or convulsions.

The disease can be classified as either idiopathic or symptomatic. Idiopathic epilepsy has no known cause, and the patient has no other signs of neurological disease or mental deficiency. Symptomatic epilepsy results from a known condition such as stroke, head injury, tumors, congenital abnormality or infection. In most cases the cause of the disease is unknown, but this does not preclude diagnosis and treatment.

The Epilepsy Program at New York Methodist Hospital provides both acute care and long-term treatment and supervision for the complex medical and social needs of patients with seizures. The program serves adults and children with seizures, as well as those with other epilepsy-related diagnoses and problems.

Seizures may vary in type and severity, but they are often frightening—for the patient, the family, and any onlookers. They may last anywhere from a few seconds to several minutes and may recur frequently (several times within a day) or infrequently (not for several months). Symptoms of seizures include confusion, behavior changes, an “aura” that provides a warning that a seizure is coming, convulsions, and a sudden loss of consciousness. There are two main categories of seizures: partial and generalized seizures. A partial seizure can evolve into a generalized seizure. There are several subtypes of each.

## DIAGNOSIS

Patients should be evaluated thoroughly after their first seizure. A physician at our Center will obtain a thorough medical history, including details of birth, childhood, and family history. A detailed description of the seizures is important to distinguish seizure types. Eyewitness accounts are very helpful.

Electroencephalogram (EEG) monitoring is the foundation of an epilepsy diagnosis. The EEG measures electrical activity on the surface of the brain through small electrodes that are placed on the scalp. An EEG recording can identify abnormal electrical activity in the brain, provide information about the type of seizure disorder, and locate the area of seizure focus. Some of the findings from an EEG are specific to particular disorders and subtypes of epilepsy. Activity during a seizure can be identified by a pattern on the recording. Correlating this type of data with clinical symptoms of seizures often helps make an accurate diagnosis. Additionally, the EEG recording between seizures is often abnormal in patients with epilepsy.

Routine EEGs can record between 30 minutes and a few hours of activity on an inpatient or outpatient basis. An ambulatory EEG records activity over one to three days in a patient's home environment. A video EEG consists of simultaneous continuous EEG and video recording. When the patient experiences a seizure, the clinician can compare the clinical manifestation recorded by video with the brain's electrical activity recording. This process assists in characterizing and treating the seizure disorder. Video EEG monitoring can be performed on an inpatient or outpatient basis.

The results of these monitoring tests are supplemented by other diagnostic procedures, including magnetic resonance imaging (MRI), single photon emission computerized tomography (SPECT), neuropsychological tests, the Wada test, and positron emission tomography (PET). In addition to these services, the Epilepsy Center provides EEG monitoring in a variety of settings, for example, in the operating room or while undergoing procedures like interventional radiology.

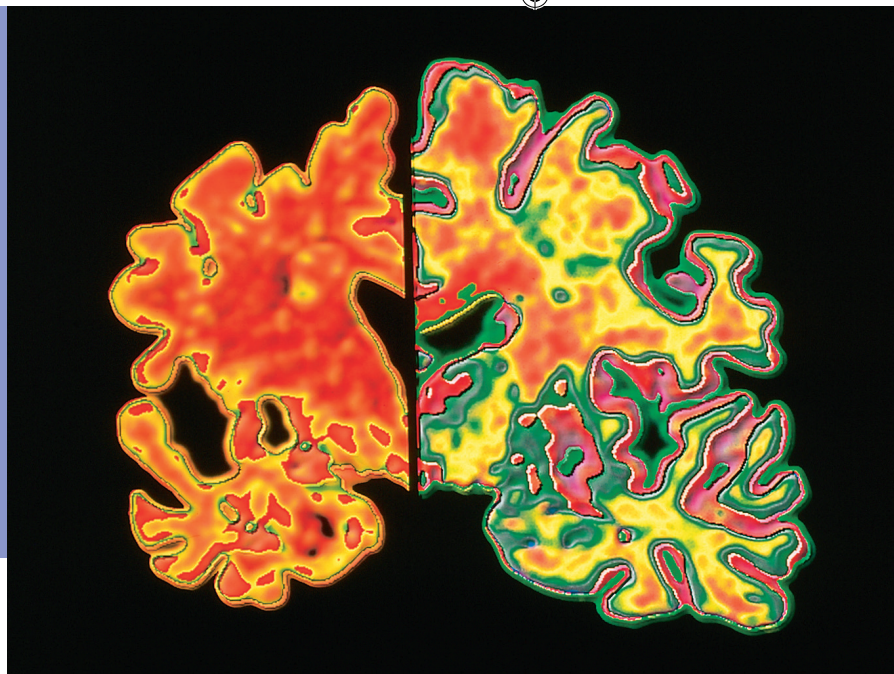
## TREATMENT

Depending on the specific diagnosis, medications and/or treatments may be recommended for the treatment of epilepsy. Antiepileptic drugs (AEDs) can prevent seizure activity by altering neurotransmitter activity in nerve cells, but cannot correct the underlying condition. Approximately seventy percent of patients successfully control seizures with AEDS. Sixty percent of these require multiple drugs to be seizure free.

If medical treatment fails to control seizures, the patient may benefit from epilepsy surgery. In some patients, after extremely careful evaluation, it may be concluded that a small area of the brain can be resected without compromising any functions. This selective surgery can have an extremely successful outcome.

Certain patients may benefit from insertion of a device called a vagal nerve stimulator (VNS). The VNS is a small device that is surgically inserted under the skin in the chest area. It can act as a generator of a small electrical current that can abort seizure activity. This is a simple and highly effective procedure which can enable patients to reduce the number of medications they take for epilepsy, while reducing the number and severity of seizures.





## THE MEMORY AND ATTENTION CENTER

More than 10 percent of American adults over the age of 65 display signs of dementia. Among those over the age of 85, the prevalence is approximately 50 percent. However, dementia is not considered a normal part of aging.

Many conditions can cause dementia. The leading cause (responsible for about half of all cases) is Alzheimer's disease. Other causes include brain injury, vascular abnormalities, Parkinson's disease and numerous other disorders such as depression, thyroid disease, Creutzfeldt-Jakob disease, normal pressure hydrocephalus, Pick's disease, Lewy body disease and Huntington's disease. Some types of dementia are reversible if detected and treated at an early stage. The Center offers multidisciplinary and comprehensive care for Alzheimer's disease patients and patients with other forms of dementia.

## DIAGNOSIS

All patients are initially assessed and evaluated to diagnose dementia and to determine its cause. The diagnostic procedures include: determination of medical history (including mental and physical conditions of both the patient and the patient's family members), mental status examination/formal cognitive testing, physical examination, neurological examination, laboratory tests and psychiatric, psychological and neuropsychological testing.

## TREATMENT

Once the patient has been fully evaluated, a specific program of therapy will be prescribed. Depending on the cause of dementia, the treatment may include medication, psychotherapy, short-term stay in the Hospital's dedicated geriatric psychiatry unit, rehabilitation therapy or, in some cases, a surgical procedure. In many cases, social services, day treatment centers, support groups for caregivers and/or home care may also be suggested. In cases where no definitive treatment has yet been discovered, patients will continue to be followed with ancillary care for associated syndromes and other neurological complications of dementia. The patient may also be provided with the opportunity to participate in medical research.

## THE MULTIPLE SCLEROSIS CENTER

Multiple sclerosis is the most widespread disabling neurological condition seen in young adults around the world, with most people diagnosed between the ages of 20 and 40. Although this autoimmune disease most commonly affects young female adults, children, older adults and men may also be affected.

### DIAGNOSIS

Diagnosing multiple sclerosis is often difficult because its symptoms can mimic other illnesses and tend to come and go. There is a wide range of symptoms, among them weakness, muscle spasms, tingling, numbness, double vision, blurred vision, fatigue, and urinary dysfunction. Fortunately physicians now have many new techniques to aid diagnosis and treatment.

Multiple sclerosis is divided into three main subtypes. The most common is relapsing-remitting MS (RRMS), in which neurological dysfunction lasts for weeks and then resolves. Secondary progressive (SPMS) follows RRMS in many people. In these cases, relapses are less common; instead there is a slow progression of the disease. The least common type of MS is primary progressive MS (PPMS), in which the disease progresses actively from the start.

### TREATMENT

Treatment options vary depending on the type of MS diagnosed. After a complete evaluation, treatment is tailored for each individual patient, based on the type of MS, the symptoms, and the patient's lifestyle. Treatments available at NYM include inpatient and home infusions (steroids, natalizumab, IVIG), immunomodulatory therapies (interferons and glatiramer acetate), chemotherapy (cyclophosphamide, mitoxantrone), spasticity management (oral and intrathecal baclofen, botox injections) and alternative therapies such as acupuncture, massage, qigong and yoga. In some cases, deep brain stimulation may also be an option. This procedure is available at NYM and is more fully described in the Parkinson's Disease section later in this brochure.



## THE NEUROPATHY AND NEUROMUSCULAR DISEASE PROGRAM

Millions of Americans suffer from some form of peripheral neuropathy, yet public awareness of this condition is very low. The symptoms include weakness, poor balance, numbness, paresthesias (burning, pricking, tingling sensation/"pins and needles"), and pain in the legs, arms and feet. Some diseases can also cause dizziness, constipation, diarrhea, visual difficulty and sexual dysfunction. Symptoms may appear suddenly or gradually over a period of years.

These conditions may represent a primary disorder of the muscle, nerve or neuromuscular junction (Lou Gehrig's disease, chronic inflammatory demyelinating polyneuropathy or myasthenia gravis). They may also be the first sign of a previously undiagnosed case of diabetes or another disease (AIDS, cancer, rheumatologic disease) or side effects of medication or chemotherapy. Other causes include mechanical pressure resulting from repetitive motion or staying in one position, a tumor, direct trauma or genetic abnormalities.

### DIAGNOSIS

Clinical examinations and tests are used to evaluate and diagnose peripheral neuropathy, determine its severity and, if possible, its cause, as well as the most promising course of treatment. The Program at New York Methodist Hospital offers uniquely qualified physicians, specializing in the field of neuropathy, as well as the highly advanced technology needed for its diagnosis. Following a general examination and thorough medical history and depending on a patient's specific symptoms and general medical condition, one or more of the following diagnostic techniques may be employed: electromyography (EMG, a test done in the office, that

assesses the health of the muscles and the nerves controlling the muscles), laboratory testing, or skin, muscle or nerve biopsy.

### TREATMENT

Therapy may involve treatment of an underlying condition, pain management, surgery or immune system modifying agents, including steroids and intravenous immunoglobulin. Physical therapy, splinting, lifestyle changes and gait and balance training may be part of the treatment. While recoveries are often slow, many patients recover partially or even fully without residual effects.



## PARKINSON'S DISEASE AND OTHER MOVEMENT DISORDERS PROGRAM

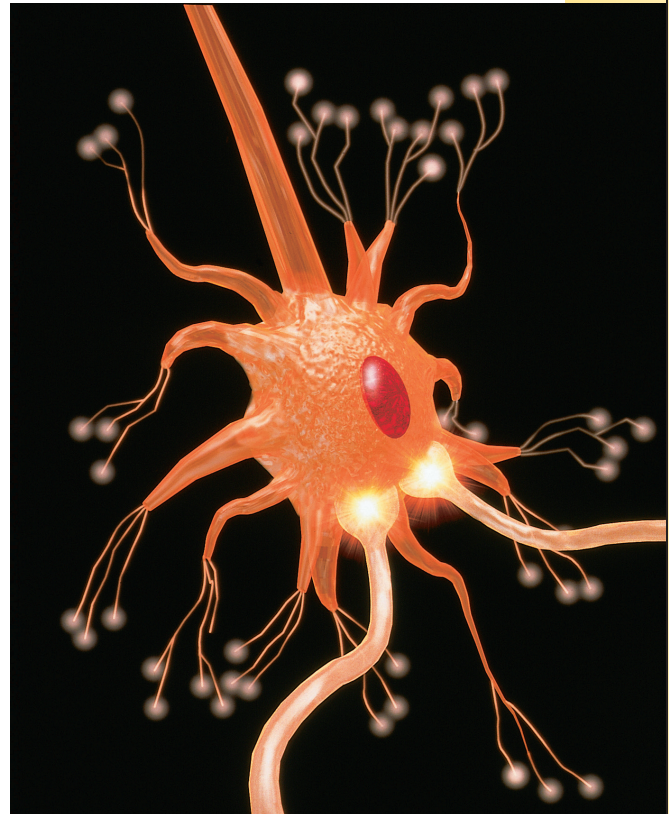
The Parkinson's Disease Program at New York Methodist Hospital offers a specialized diagnostic and treatment program for Parkinson's and other movement disorders in Brooklyn. Parkinson's disease is a disorder of the central nervous system, involving the degeneration and loss of nerve cells in the basal ganglia of the brain. With the loss of these cells an individual loses the ability to coordinate normal movement. The disease occurs in both men and women and, while symptoms may occur as early as age 40, they are usually not apparent until patients are in their 60s or 70s.

### DIAGNOSIS

Parkinson's is diagnosed through a clinical examination and medical history. Although there are no radiological or laboratory tests for the disease, PET (positron emission tomography) scans and DaTscan can assist in the diagnosis. Patients who exhibit symptoms of Parkinson's disease or other tremor disorders receive a diagnostic examination, performed by a neurologist. Those who have already been diagnosed with Parkinson's or a related tremor disorder may also use this service to get a second opinion.

There are many common symptoms of the disease, but there is no way of knowing which ones a patient will have, or in what order they will occur. The most characteristic feature of Parkinson's disease (which was once called "shaking palsy") is a slow and rhythmic tremor at rest. Usually the tremor begins in one hand and then later spreads to the other. Feet, legs, the lips and jaw may also shake.

Other common symptoms of Parkinson's include rigidity in the limbs, neck or trunk, bradykinesia (slow movement that involves a decrease in both large and fine motor coordination), impaired gait, which may eventually result in slow, small, shuffling steps, balance problems, and impairment of posture.



## TREATMENT

Parkinson's is a chronic disease; once symptoms appear, it can be treated, but it will not go away. It usually progresses slowly, but the rate of progression varies from one case to another and is unpredictable. Because there is not yet a cure for Parkinson's disease and because there is no medication that can stop or slow the progression of symptoms, treatment is designed to suppress or reduce the symptoms that are present.

### Medication

While there is currently no cure, there are many available treatments that can improve quality of life, sometimes to the point where the disease has little impact. In the earliest stages of Parkinson's, if quality of life is not significantly impacted, there may be no reason to use medication. When the disease symptoms result in a functional disability that interferes with everyday activities, it is usually time to begin medication.

### Deep Brain Stimulation

Patients with Parkinson's disease, essential tremor, or multiple sclerosis who can no longer be helped with medication can often be treated for tremors with deep brain stimulation (DBS). This procedure is performed to reduce tremor, rigidity and dystonic muscle pain and, to a lesser extent, bradykinesia.

DBS involves the implantation of electrodes that are placed in a small region of the brain that contributes to the symptoms. These electrodes are placed through a minimal opening in the skull. A computer-guided brain navigation system, along with microelectrode recording—a highly advanced brain mapping method—are used to maximize accuracy. The electrodes are then connected by wires to a type of pacemaker device (called a pulse generator) that is implanted under the skin of the chest, below the collarbone. Once activated, the device sends continuous electrical pulses to the target areas in the brain, blocking the impulses that cause tremors. The stimulation can be turned on or off by the patient with a hand-held magnet or an access control device. When necessary, the stimulator can be adjusted by the physician via a "remote control" device, which works painlessly through the skin, thereby maximizing the benefits while minimizing the side effects.

## REHABILITATION

Rehabilitation is another treatment option for patients with Parkinson's disease or other movement disorders. The Institute offers an inpatient rehabilitation program that gives patients the opportunity to participate in concentrated, individually tailored therapy during a brief admission to the Hospital. In addition, patients receive ongoing medical management and, if necessary, diagnostic testing. Patients

are generally admitted to the rehabilitation program for a period of one to two weeks. In cases where dysphagia (swallowing disorders) have occurred as a result of Parkinson's, experts at the Hospital's Center for Swallowing and Speech-Language Pathology may be able to offer therapy to alleviate symptoms.

### SUPPORT SERVICES

The Parkinson's Program offers additional support and wellness services that include a patient navigator, patient and caregiver support groups, as well as dance and yoga classes specifically geared to the emotional and physical improvement of both patients and caregivers. Outpatient physical, occupational, speech and neuropsychological therapies aimed at improving Parkinson's symptoms are also available on the Hospital campus.

### OTHER MOVEMENT DISORDERS

There are a number of related movement disorders, sometimes called Parkinsonian syndromes or atypical "Parkinsonisms," as well as other unrelated movements disorders that are not considered Parkinsonisms.

The most common related Parkinsonism syndromes include essential tremor, which differs from Parkinson's because shaking is induced by intentional action movements (in Parkinson's patients experience shaking and stiffness while at rest); progressive supranuclear palsy, which may cause gait disorders, frequent falls, visual abnormalities, speech or swallowing problems; and multiple systems atrophy, which is a lump term for several disorders that manifest with a slight tremor, gait and balance problems. Other involuntary movement disorders include hemifacial spasms, Huntington's chorea, Tourette's and other tic syndromes.

It is important to differentiate between these disorders and Parkinson's in order to plan treatment appropriately. In some cases, deep brain stimulation surgery used to treat Parkinson's disease may be a viable treatment for these movement disorders as well.





## PEDIATRIC NEUROLOGY PROGRAM

The Division of Pediatric Neurology treats a variety of pediatric neurological disorders. Treatment for these conditions is often complicated by the demands of the growing and developing brain. Neurodevelopmental disorders are very different from the neurological disorders typically seen in adults, and require a very different approach and management. Our highly trained staff specializes in the evaluation and care of neurological disorders of neonates, children and adolescents. The inpatient units are comprised of active neonatal and pediatric intensive care units and a pediatric unit for less acute illnesses. In addition, the Hospital's Emergency Department includes a separate pediatric emergency room. Pediatric neurology patients are also seen in the Hospital's outpatient facilities.

All major pediatric neurology disorders are treated, including:

- *Epilepsy: seizure disorders, including generalized and partial seizures, benign and malignant childhood epilepsies*
- *ADHD (attention deficit hyperactivity disorder)*
- *Developmental delays, hypotonia (low muscle tone)*
- *Learning disabilities, intellectual disability*
- *Autism spectrum disorders*
- *Sleep disorders (difficulty falling asleep or staying asleep, excessive daytime somnolence)*
- *Headaches/migraines*
- *Neonatal disorders: problems of newborn infants, including Erb's palsy (weakness of one arm related to birth events), consequences of prematurity, macro/microcephaly (large or small heads)*

## DIAGNOSIS

Children referred for diagnosis are evaluated and tests are ordered as needed. These may include imaging studies of the brain (MRI, CT, ultrasound studies), EEG studies (inpatient and ambulatory video EEG and routine outpatient EEGs), genetic tests (chromosomal microarray, specific DNA studies, etc.) or other tests as needed.

A review of educational records is important for children with developmental delays, ADHD, learning disorders and autism spectrum disorders.

## TREATMENT

Treatment may include medication, rehabilitation therapy and/or referral for neurosurgical procedure. Sometimes reassurance that a condition is benign is all that is needed.

## PSYCHIATRIC ILLNESS

Mental illnesses are currently among the most common health-related conditions. It is estimated that one out of five American adults experiences some type of mental illness during any six-month period. Nearly all of these people can improve or recover if they get treatment.

In recognition of the frequent association between psychiatric and neurological disorders, psychiatry at New York Methodist Hospital is a division of the Department of Neurosciences. Patients with neurological disorders who suffer from depression and/or anxiety can benefit from psychiatric care that is closely coordinated with the treatment for their primary condition. The Division of Psychiatry brings together the best of contemporary biological psychiatry and the most effective psychotherapy strategies.

The psychiatric inpatient units at New York Methodist Hospital have been among the most highly regarded in Brooklyn for many years. The Division of Psychiatry includes a 25-bed inpatient adult unit and a 25-bed inpatient geriatric unit. Board certified psychiatrists and licensed clinical psychologists are joined by a specialized team of skilled psychiatric nurses, social workers, nutritionists, physical therapists and neurologists. The units are designed and staffed to create a sense of warmth and safety. In this comfortable environment, patients can focus on getting well. Patients can be admitted 24 hours a day.

## ADULT INPATIENT SERVICES

NYM's adult inpatient unit is a safe haven where the symptoms of psychiatric illness can be effectively managed. In combining the precision of contemporary psychiatry with respect for patients' dignity, the aim is to be a reassuring presence



in a time of crisis. Medications are selected only after a careful assessment of symptoms has taken place. Related medical problems are also addressed. In addition to medical treatment, the most effective state-of-the-art psychotherapeutic techniques, psychological testing, neuropsychological assessment, group psychotherapy and activity therapies are offered. An educational program about psychiatric illness is also an integral part of treatment.

#### **GERIATRIC INPATIENT SERVICES**

NYM's geriatric inpatient unit was one of the first of its kind in New York. The unit meets the special needs for safety, comfort and familiarity that are required by elderly patients. The furniture and décor, daily activities and family-style meals are all designed to reflect a home-like atmosphere and facilitate continuity.

#### **OUTPATIENT PSYCHIATRY PROGRAM**

The Hospital's Outpatient Psychiatry Service provides outpatient and consultation services. Psychiatrists and other physicians treating mental illnesses have a wide variety of treatments available to care for their patients. Usually psychiatrists work with their patients to develop a treatment plan that includes a psychiatric medication. The medication—combined with other treatments like as individual psychotherapy, group therapy, behavioral therapy or self-help groups—help most people to continue, or return to, their everyday lives.

## REHABILITATION THERAPY

Many patients with neurological illnesses or injury need rehabilitation therapy. Patients who have suffered brain damage caused by traumatic injury or stroke benefit greatly from physical, occupational and speech/language/swallowing therapy that is started as soon as possible. Through education on how to use strong muscles in lieu of weak ones, patients learn to function with new challenges and move toward a normal lifestyle.

### INPATIENT REHABILITATION UNIT

Hospitalized patients receive therapy at bedside or at the dedicated rehabilitation unit's acute care or rehabilitation gym. Patients who have recovered enough to focus primarily on rehabilitation may be admitted to the Hospital's 25-bed rehabilitation therapy unit.

Occupational therapists help patients master daily activities, such as transfers to and in the bathroom, lower body dressing and fine motor control. Physical therapists help patients with strengthening, range of motion activities and relearning to walk following surgery or injury. Often physical therapy is begun during a hospital-stay and then continued on an outpatient basis in a long-term care facility, in the home or with visits to an outpatient physical therapy center.

### OUTPATIENT REHABILITATION SERVICE

New York Methodist Hospital's affiliate, Metro SportsMed, offers outpatient physical therapy on the Hospital campus.



## CENTER FOR SWALLOWING AND SPEECH-LANGUAGE PATHOLOGY

Each year, millions of people are affected by acute or chronic swallowing disorders (dysphagia). The causes of these disorders may include neurological conditions, such as stroke, Parkinson's disease or mechanical problems, such as those related to head/neck surgery. In children, the causes may be related to prematurity or developmental disorders.

The Center for Swallowing and Speech-Language Pathology provides evaluation and treatment services to adult and pediatric inpatients and outpatients. The services include swallowing evaluation for the assessment of dysphagia, which may include a clinical examination followed by an instrumental exam, as well as swallowing therapy—direct neuromuscular treatment, and state-of-the-art biofeedback techniques.

Speech-language evaluation for the assessment of language, motor speech and voice and speech-language therapy to treat a variety of communication disorders are also available. Specialized services include augmentative communication devices, and use of the Lee Silverman Voice Treatment (LSVT) technique. Bilingual/multicultural staff are also available; English, Spanish, Russian, Chinese/Mandarin are languages spoken by staff members; and access to student clinicians who speak a variety of other languages may also be available.



## THE STROKE PROGRAM

A stroke occurs when a blood clot or ruptured vessel prevents oxygen-rich blood from reaching the brain. Just as the heart muscle is damaged when a clot causes a heart attack, so brain cells are destroyed during a “brain attack.” Half a million Americans experience strokes each year.

As many as two-thirds of all strokes are fatal or cause a permanent disability. The remaining third have no long-term effects. Individuals with the best odds for a full recovery are those who recognize and respond to symptoms in a timely manner. Awareness of factors that increase the risk of having a stroke can be the key to survival.

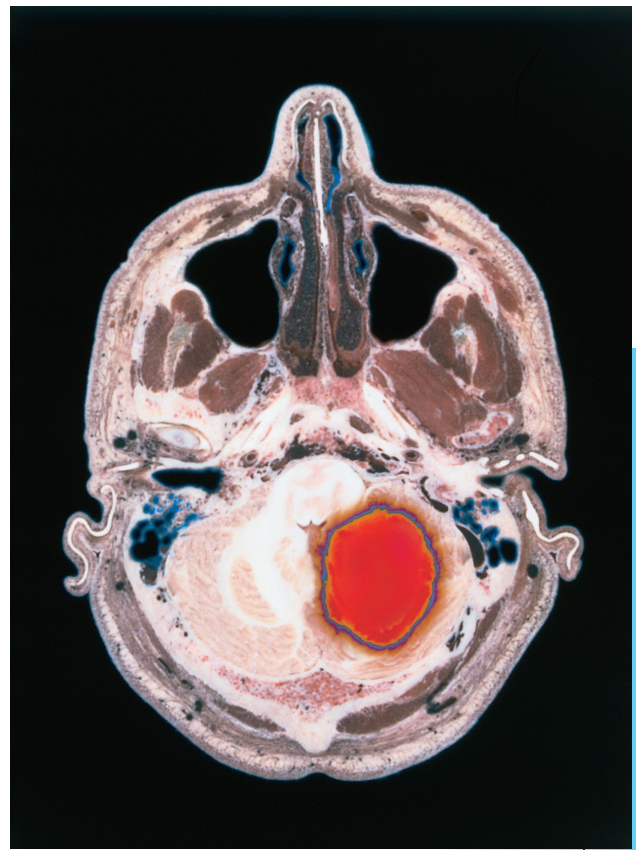
Over 25 percent of all stroke patients are under 65. However, the risk of having a stroke increases with age and is higher for men and for those with a family history of stroke. Therapies to prevent strokes are based on individual risk factors, but in general they include keeping blood pressure, cholesterol and weight at healthy levels through diet and exercise, taking medication for heart disease if directed to do so by a doctor, controlling diabetes, if it has been diagnosed, tobacco cessation and, for patients who use estrogen oral contraceptives, discussing possible side effects with a doctor.

## RISK AND PREVENTION

Individuals with risk factors may be referred for testing to determine whether there are blockages of the carotid arteries, the neck arteries that carry blood to the brain. New York Methodist Hospital’s Vascular Laboratory is fully equipped to provide these non-invasive studies. Advances in surgery and neuroradiology now offer highly effective treatments for blocked carotid arteries that significantly reduce the risk of a stroke. NYM neurologists work with patients to control secondary stroke risk factors and optimize medical management as well as to provide interventional treatment options.

Strokes occur suddenly, but not without warning. Usually, one or more of the following symptoms will signal a stroke:

- *Numbness, weakness or paralysis of the arm or leg on one side*
- *A sudden and severe decline in consciousness*
- *Difficulty understanding or speaking*
- *A sudden, severe headache for no apparent reason*
- *Blurred or decreased vision*
- *Loss of balance, dizziness and vomiting*



Many stroke victims have previous experience with these symptoms. Transient ischemic attacks (TIAs) are “ministrokes” and frequently precede major attacks. TIA symptoms subside quickly, but a full-blown stroke may soon follow. Initially, it is impossible to know whether stroke symptoms signal a TIA or a full-blown stroke.

#### DIAGNOSIS: EMERGENCY DEPARTMENT EARLY WARNING PROGRAM

New York Methodist Hospital is a New York State certified Stroke Center. The Hospital’s Emergency Department is fully equipped to diagnose strokes quickly. Patients with stroke symptoms should let the triage nurse know this immediately. Patients with stroke symptoms are quickly seen by physicians who are board certified in emergency medicine and trained in neurological emergencies. A state-of-the-art spiral CT scanner produces almost immediate images, which provide physicians with information about whether a stroke has occurred and which course of treatment would be best.

Patients diagnosed with strokes are admitted to the Hospital’s dedicated Neurology Unit or to the Intensive Care Unit, depending on their condition. Additional diagnostic tests to determine the cause of the stroke and the extent of any brain damage are performed. Treatment plans are determined and begun as soon as patients have been stabilized and evaluated.

#### TREATMENT

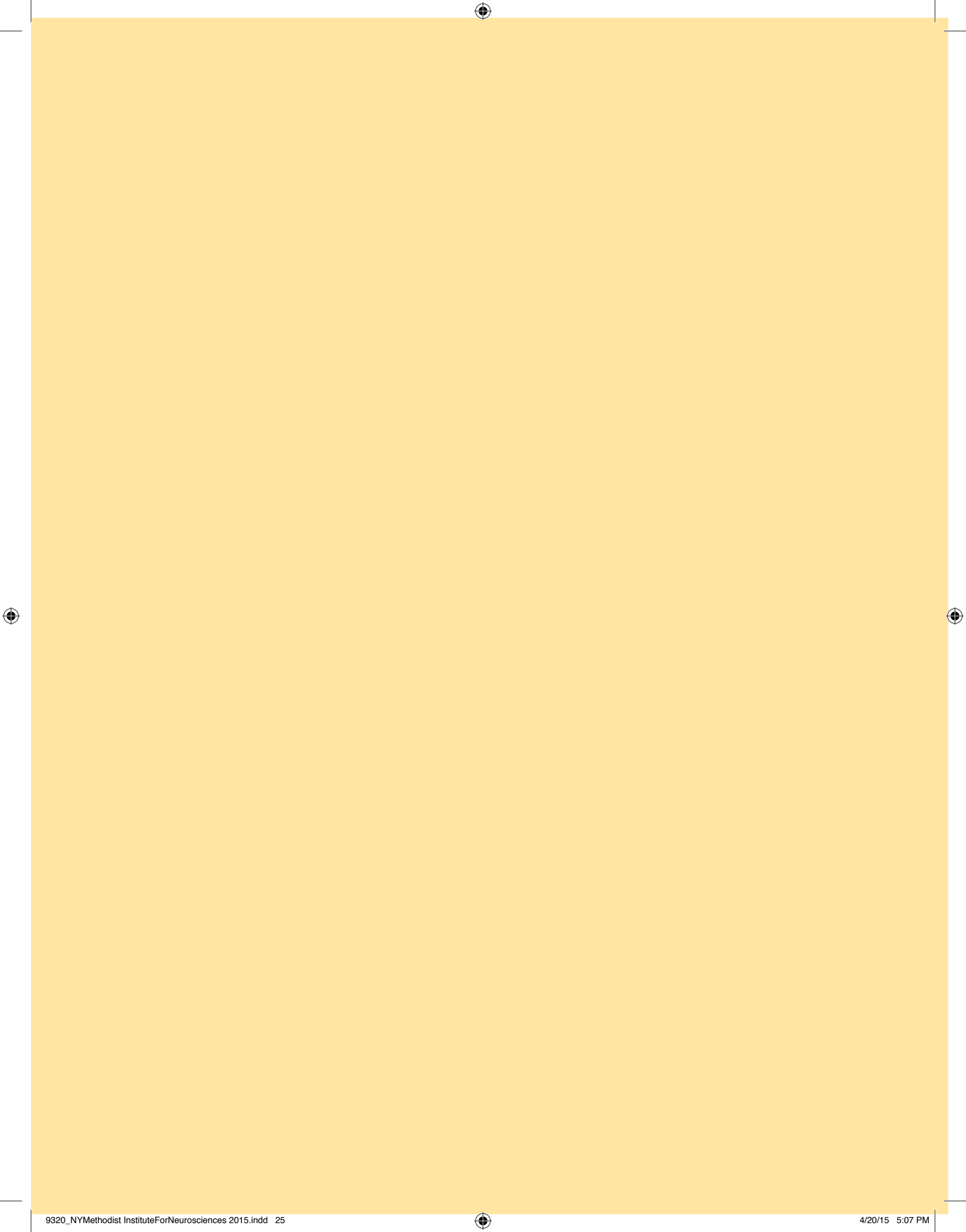
In many cases, the use of clot-dissolving drugs may restore blood flow to the brain and minimize the damaging effects of a “brain attack.” Furthermore, new advanced surgery or neuroradiology, available at NYM, may also be used to reverse a stroke or to reduce its effects. Treatment is most effective if it is initiated within hours of the

start of symptoms. Therefore, individuals who have any actual symptoms of stroke should go to an emergency department immediately.

#### REHABILITATION

Rehabilitation under the direction of a full-time physiatrist (physician specializing in rehabilitation medicine) generally begins as soon as a patient’s vital signs are stable, usually within 48 hours. Rehabilitation therapy continues in the Hospital or at a long-term care facility and may include physical, occupational and speech/language therapy. Follow-up care through a home care agency may also be provided.





## REFERRAL

For referral to a physician affiliated with the **INSTITUTE FOR NEUROSCIENCES** or to schedule an appointment for a test procedure, please call (toll free) **866.DO.NEURO (866.366.3876)**.

For community support services (printed materials, community lectures, support group information), call **718.780.5367**.

INSTITUTE FOR ADVANCED  
AND MINIMALLY INVASIVE SURGERY  
**877.DOCS.14U / 877.362.7148**

INSTITUTE FOR ADVANCED  
OTOLARYNGOLOGY  
**844.ENT.DOCS / 844.368.3627**

INSTITUTE FOR ASTHMA  
AND LUNG DISEASES  
**866.ASK.LUNG / 866.275.5864**

INSTITUTE FOR CANCER CARE  
**866.411.ONCO / 866.411.6626**

INSTITUTE FOR CARDIOLOGY  
AND CARDIAC SURGERY  
**866.84.HEART / 866.844.3278**

INSTITUTE FOR DIABETES AND  
OTHER ENDOCRINE DISORDERS  
**866.4.GLAND.2 / 866.445.5262**

INSTITUTE FOR DIGESTIVE  
AND LIVER DISORDERS  
**866.DIGEST.1 / 866.344.3781**

INSTITUTE FOR HEALTHY AGING  
**844.780.9355**

INSTITUTE FOR ORTHOPEDIC  
MEDICINE AND SURGERY  
**866.ORTHO.11 / 866.678.4611**

INSTITUTE FOR VASCULAR  
MEDICINE AND SURGERY  
**866.438.VEIN / 866.438.8346**

INSTITUTE FOR WOMEN'S HEALTH  
**877.41.WOMAN / 877.419.6626**



### OUR LOCATION

**506 Sixth Street, Brooklyn, NY 11215**

**By Bus:** #67 runs along Seventh Avenue.

**By Subway:** Take the **F** or **G** to the Seventh Avenue station. Walk two blocks to the Hospital. You can transfer to the **F** or **G** from the **R** at the Fourth Avenue/Ninth Street station. Transfer to the **F** from the **A** at the Jay Street/MetroTech station.

**For Cars:** The parking garage entrance is on Sixth Street opposite the Hospital, between Seventh and Eighth Avenues.



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