A Guide to Cerebrovascular Disease

DEPARTMENT OF
NEUROLOGICAL SURGERY
AT WEILL CORNELL MEDICAL COLLEGE

WHERE EXPERIENCE AND TWENTY-FIRST CENTURY TECHNOLOGY UNITE...

The Department of Neurological Surgery is a leader in technology-driven neurosurgical and neuroendovascular patient care. Treatments offered cover the full range of cerebrovascular conditions, from all versions of a stroke, cerebral aneurysms, and carotid stenosis, to less common conditions such as hemifacial spasm, trigeminal neuralgia, Moya Moya, and vascular malformations of the brain, spine and skin.

Neurosurgeons and neuroendovascular surgeons on staff are internationally recognized in their areas of expertise with a proven track record of success in treating even the most complex of cases. Using state-of-the-art diagnostic tools, they will pin-point a diagnosis and then work with a multidisciplinary team to construct a comprehensive patient care plan. The team includes neurosurgeons, neurointerventional radiologists, physician assistants, nurse practitioners, nurses, and social workers, who will explain treatment options, their risks and benefits, and guide you in the decision making process.

We know that the recovery period can be a physically and emotionally challenging time. Our medical care team of intensivists, nurses and rehabilitation specialists will monitor your progress and conduct tests to evaluate the success of your therapy.

"We believe that trust and cooperation, which is developed over the weeks leading up to the surgery, is just as important during the post-treatment phase." — Dr. Philip E. Stieg

The brain is nourished by blood that carries essential oxygen and nutrients to its cells. When the intricate networks of arteries and veins are blocked, ruptured, or at risk of rupturing, a surgical or endovascular procedure is often required.

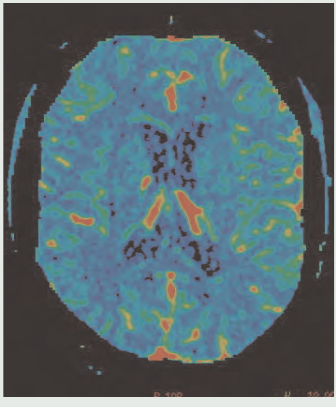
CEREBROVASCULAR CONDITIONS

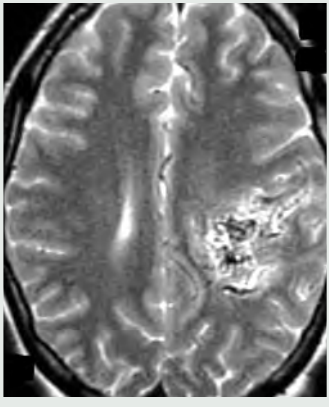
- Stroke/Ischemic Stroke/ Hemorrhagic Stroke
- TIA (Transient Ischemic Attack)
- Cerebral Aneurysm
- Vascular Malformations of the Brain, Spine and Skin
- Carotid & Vertebral Arterial Disease
- Hemifacial Spasm & Trigeminal Neuralgia
- Glossopharyngeal Neuralgia
- Moya Moya
- Vein of Galen Malformations

Stroke, a general term meaning a vascular injury to the brain. When treated early a stroke* can be reversed. The most common type is an ischemic stroke caused by an obstruction of an artery that carries blood to the brain. An acute ischemic stroke can be treated with clot busting medication given intravenously, but is only effective when administered shortly after the onset of symptoms. Three to eight hours after the onset of symptoms, endovascular treatment to reestablish blood flow can still be performed. The less common Hemorrhagic stroke results from a rupture of one of the cerebral arteries. Having a mini-stroke (TIA), may be a warning sign that a major stroke could be coming. **We participate in clinical trials for stroke. Please ask for information.*

Image *(right)* is a blood flow study showing a blockage in an artery which may lead to a stroke.

This image *(shown middle)* is of an arteriovenous malformation (AVM), an abnormal tangle of blood vessels.





The hematoma or blood clot that may form as a result of a brain artery rupturing is particularly dangerous due to the pressure that the bleeding exerts on brain tissue. Our neurosurgeons and neurointerventional radiologists are expertly trained to use the latest technologies to restore blood flow to the brain and to remove blood clots.

Stenosis, the narrowing of the arteries caused by atherosclerosis or plaque, reduces blood flow to the brain, which may result in a stroke. Stenosis often occurs in the carotid artery. Carotid stenosis can be treated by surgical and endovascular techniques, such as carotid stenting, to prevent a stroke.

Cerebral Aneurysm, caused by a weakness in the walls of an artery that causes the vessel walls to balloon out into an adjacent area. The aneurysm is at risk for leaking or rupturing. If a ruptured aneurysm releases blood into the space surrounding the brain, then a subarachnoid hemorrhage occurs. Treatment options include surgical, endovascular surgery, or a combination of both.

Arteriovenous Malformation (AVM) occurs when the interface between the body's arterial and venous circulation is abnormal. Left untreated, it can rupture and cause a hemorrhage. Treatment may include surgery, filling the vessel with glue (endovascular/minimally invasive), and/or stereotactic radiosurgery, such as Gamma Knife Therapy, a virtually pain-free single beam of focused radiation.

Hemifacial Spasm/Trigeminal Neuralgia Hemifacial Spasm, or a tic, usually involves irritation of a facial nerve via pressure from a blood vessel resulting in spasm on one side of the face. Trigeminal Neuralgia is also typically caused by pressure from a blood vessel, which irritates a cranial nerve resulting in facial spasm. Both of these are treated with Microvascular Decompression to relieve the pressure from the blood vessel.

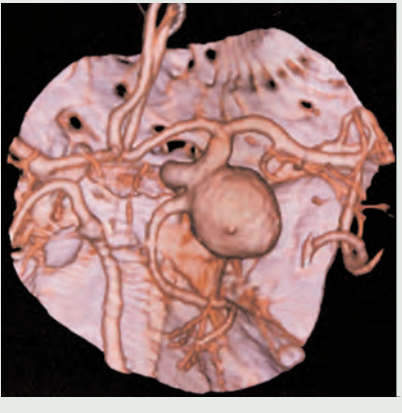


Image *(left)* shows a giant aneurysm in the base of the skull.

Research is a hallmark of the department. Laboratory studies and clinical trials are underway in search of novel and effective therapies for stroke, vascular malformations and more.

Glossopharyngeal Neuralgia involves the irritation of a nerve that lies deep within the neck, usually caused by pressure from a blood vessel, resulting in a pain syndrome of the throat, tongue, tonsils and middle ear. This condition is treated with Microvascular Decompression to relieve the pressure from the blood vessel.

Moya Moya, a rare disorder found mostly in children, although sometimes in adults, involving blockage of the carotid arteries to the brain, tending to cause strokes or seizures. Bypass surgery is the treatment.

PROCEDURES PROVIDED

Treating a full range of Cerebrovascular conditions our procedures provided are:

- Clipping & Coiling of Aneurysms
- Revascularization/Bypass Surgery
- Microvascular Decompression
- Carotid Endarterectomy
- Carotid Stenting
- Stereotactic Radiosurgery
- Skull Base Surgery
- Gamma Knife Radiosurgery
- Embolization of Vascular Malformations
- Blood Clot Retrieval in Acute Stroke

DIAGNOSTIC TESTS

Sophisticated technologies are used for precise and accurate diagnosis such as CT, CTA, CT Perfusion, PET, MRI, fMRI, MRA, Angiography, Supra-angiography, Intraoperative angiography, Doppler Ultrasound.

Once diagnostic tests are complete, our neurosurgery team will meet with you and your family to discuss your test results and answer any questions that you may have.

Philip E. Stieg, Ph.D., M.D. is the Chairman of Neurological Surgery and Neurosurgeon-in-Chief at NewYork-Presbyterian Hospital. He received his Ph.D. in anatomy and neuroscience from Union University and a M.D. from the Medical College of Wisconsin. He trained at the University of Texas Southwestern Medical School (Parkland Memorial Hospital) and completed a fellowship at the Karolinska Institute in Stockholm, Sweden.

Howard A. Riina, M.D. is the Co-Director of Neuroendovascular Services, as well as the Director of the Residency Training Program in Neurological Surgery. He received his medical degree from Temple University. He trained at the University of Pennsylvania, Beth Israel Medical Center and the Barrow Neurological Institute.

Y. Pierre Gobin, M.D. is the Director of Interventional Neuroradiology. He received his medical degree and training from the University of Paris, France and trained in Interventional Neuroradiology at Hôpital Lariboisière, Paris.

Athos D. Patsalides, M.D., M.PH. After receiving his M.D. from the University of Athens, Greece, he moved to the United States and trained at the National Institutes of Health, Georgetown University, and Weill Cornell Medical College. He received his Master's in Public Health from Johns Hopkins University.

DIRECTIONS TO THE DEPARTMENT OF NEUROLOGICAL SURGERY

By Car Coming from FDR North, take the 61st Street exit and make a right turn onto York Avenue. Coming from FDR South, take the 71st Street exit and make a left turn onto York Avenue. The main entrance is located at 525 East 68th Street, directly east of York Avenue.

Parking Valet parking is available at the East 68th Street entrance and at garages located on York Avenue between 68th and 70th Streets.

By Subway Take the 6 train to the 68th Street/Lexington Avenue Station. Walk four blocks east to York Avenue. The main entrance is located at 525 East 68th Street, directly east of York Avenue.

Department of Neurological Surgery
Weill Cornell Medical College
Starr Building, Room 651
525 East 68th Street, Box 99
New York, New York 10065

24-hour Toll-Free Number:
1-866-4CNS-SURG (1-866-426-7787)
Website: www.cornellneurosurgery.org

By Bus Via York Avenue, take the M31 to 69th Street. Via 1st Avenue, take the M15 to 67th Street. Walk one block east to York Avenue. The M66 crosstown bus arrives on the corner of 68th Street and York Avenue. The main entrance is located at 525 East 68th Street, east of York Avenue.

Inside the Building Once inside the 68th Street entrance, proceed straight until you are in the main lobby and see the Information Desk. Walk past the Desk and straight to the end of the hallway. Take the Starr (ST) elevators to the 6th floor. Room 651 is on your left.

Overnight Accommodations are available next door at the Helmsley Tower of NewYork-Presbyterian Hospital 212-472-8400 or at The Bentley 212-644-6000.

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