



The
INSTITUTE
for
ADVANCED
and
**MINIMALLY
INVASIVE
SURGERY**



The

INSTITUTE

for

ADVANCED
AND
MINIMALLY
INVASIVE
SURGERY

at

NEW YORK
METHODIST
HOSPITAL

New York Methodist Hospital was one of the first surgical teaching hospitals in the United States. Its Department of Surgery was founded by a pioneer surgeon, Lewis S. Pilcher, who also founded the *Annals of Surgery*. The Hospital's Institute for Advanced and Minimally Invasive Surgery at New York Methodist Hospital continues a proud tradition.

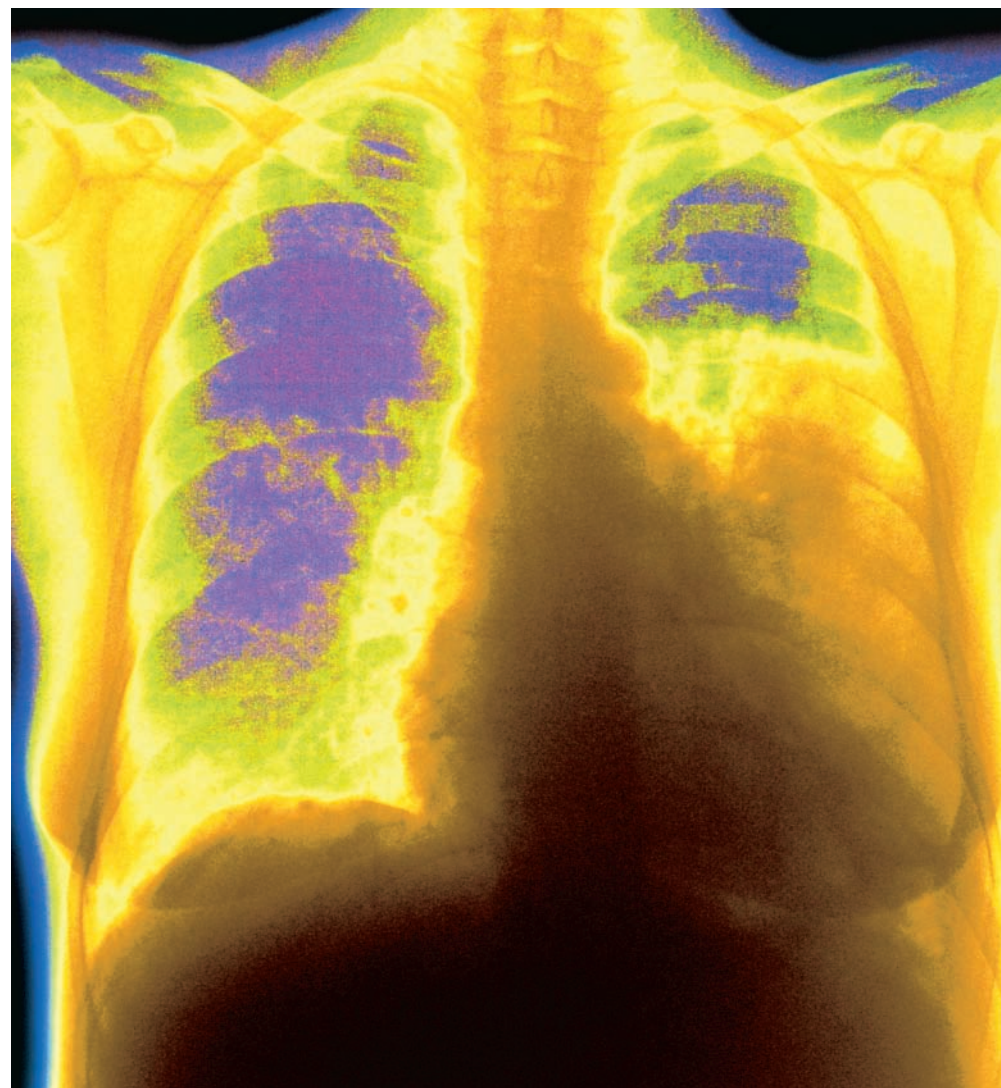
The Institute offers a range of advanced procedures involving surgical techniques that include laparoscopy, endoscopy and robotic-assisted surgery. Surgeons on the Institute's panel specialize in many disease entities and areas; all of them are trained experts in advanced and/or minimally invasive surgical techniques. They include specialists in cardiac surgery, endovascular surgery, thoracic surgery, neurosurgery, urology, orthopedic surgery, laparoscopic surgery and podiatry. Referrals to these specialists can be made through an individual's primary care physician or can be requested through the Institute's referral service.

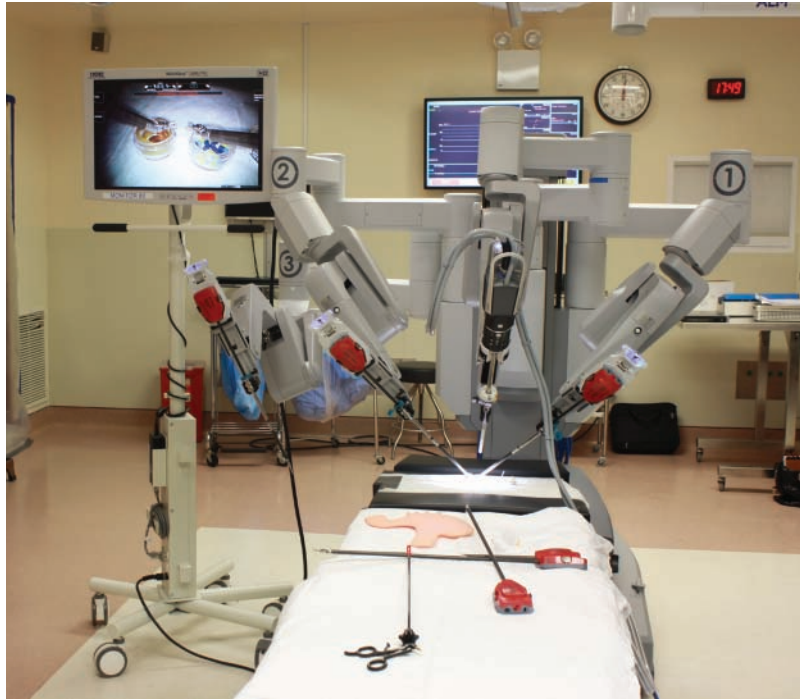
Physicians and other health care professionals affiliated with the Institute are also available to speak to community groups on a variety of topics related to disease prevention and treatment. Other community outreach activities of the Institute include the distribution of informational materials and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

SERVICES

- Robotic-Assisted Surgery
- Minimally Invasive Cardiac Surgery
- Minimally Invasive Endovascular Surgery
- Laparoscopic Surgery
- Minimally Invasive Thoracic Surgery
- Advanced Neurosurgery
- Advanced Orthopedic Surgery
- Minimally Invasive Podiatric Surgery

Experts on the Institute's panel of Hospital-based and private practice surgeons are available to provide consultative services regarding surgical options for the treatment of disease or disability, or to provide a second opinion for patients who are deciding on a course of treatment.





ROBOTIC-ASSISTED SURGERY

New York Methodist is part of a group of elite hospitals that offer cutting edge robotic surgery technology to their patients. The robotic system—the da Vinci Surgical System—is very versatile, with a wide range of surgical applications, including cardiothoracic, prostate, gynecologic, gynecologic oncology and urologic surgeries. Using the robotic system, surgeons are able to have three-dimensional visualization of the surgical area, more flexible instrumentation, and the ability to access the surgical site through tiny incisions rather than larger, more invasive openings. The robotic-assisted surgery program reflects a commitment to the safest and most innovative technology.

Patients who undergo robotic-assisted surgery have experienced benefits including shorter hospital stays, less pain and risk of infection, less blood loss and scarring, and a quicker return to normal daily activities. At NYM, the following conditions can be treated using robotic-assisted surgery:

UROLOGIC CONDITIONS

- *Prostatectomy – removal of the prostate gland*
- *Nephrectomy – removal of the kidney*
- *Pyeloplasty – reconstruction of the kidney pelvis*
- *Ureter reimplants – to improve drainage from the kidney*
- *Cystectomy – removal of the bladder*
- *Adrenalectomy – removal of the adrenal glands*
- *Sacrocolpopexy – restoring shape to the vaginal canal*

GYNECOLOGIC CONDITIONS

- *Hysterectomy – removal of the uterus*
- *Oophorectomy – removal of the ovaries*
- *Salpingo-oophorectomy – removal of ovaries and fallopian tubes*
- *Pelvic and paraaortic lymphectomy – removal of lymph nodes for gynecologic cancer*
- *Myomectomy – removal of uterine fibroids*
- *Sacrocolpopexy – restoring shape to the vaginal canal*
- *Uterine suspension – treatment for uterine prolapse*
- *Treatment of adhesions*
- *Resection of endometriosis*



THORACIC AND LUNG CONDITIONS

- *Pneumonectomy – removal of the lung*
- *Lobectomy – removal of one lobe from the lung*
- *Tumorectomy – removal of a tumor from the lung*
- *Thymectomy – removal of the thymus gland*
- *Endoscopic sympathectomy – alteration of the sympathetic nervous system to help regulate body temperature*
- *Lymphectomy – removal of lymph nodes*
- *Heller myotomy – treatment for swallowing disorder*
- *Nissen fundoplication – treatment for GERD (acid reflux) and hiatus hernia*
- *Esophagectomy – removal of the esophagus*





MINIMALLY INVASIVE CARDIAC SURGERY

CORONARY BYPASS SURGERY

Although medication and interventional cardiology often function to keep arteries to the heart from becoming clogged and impeding blood flow, surgery to bypass damaged arteries is sometimes the best option for preventing an imminent myocardial infarction (heart attack) or for avoiding the recurrence of one. In some cases, it is now possible to approach coronary bypass surgery as a minimally invasive procedure, involving very small incisions and/or the elimination of the use of the heart-lung machine during surgery. The advantages of this approach include a quicker recovery, decreased need for blood transfusions and reduced pain. When vein is required for the bypasses, it is removed from the leg with a video-assisted minimal incision.

MINIMAL INCISION MITRAL VALVE SURGERY

The mitral valve is the “inflow valve” for the main pumping chamber of the heart, the left ventricle. Blood flows from the lungs, where it picks up oxygen, across the open mitral valve into the left ventricle. If all is functioning well, when the heart squeezes, the valve closes and prevents blood from backing up to the lungs. If the valve leaks (causing regurgitation of blood into the lungs) or narrows (stenosis), a mitral valve repair may be needed.

In the past, surgeons treated mitral valve disease by removing the diseased valve and implanting an artificial valve (valve replacement). However, in many cases, it is now possible to repair, rather than replace, the mitral valve. This can often be accomplished through a small, minimally invasive incision rather than traditional “open” surgery where the breast bone is divided in order to reach the heart. The advantages of this approach include improved long-term survival rates, a decreased need for repeat surgery and reduced risk of stroke and infection, as well as the ability to avoid long-term treatment with blood thinners.

AORTIC VALVE SURGERY

Blood is directed out of the heart to the rest of the body through the aortic valve. If this valve is blocked (stenosis), the work of the heart is increased, and if the blockage is severe, the aortic valve needs to be replaced or the heart will fail. The aortic valve can also leak (aortic insufficiency). It may also be involved in patients who have aortic aneurysms. The aneurysm may stretch the valve, causing it to leak. Depending on the individual circumstances, the valve may need replacement or it may be possible to repair it. In either case, surgeons at NYM are able to use minimally invasive approaches to provide the appropriate treatment.

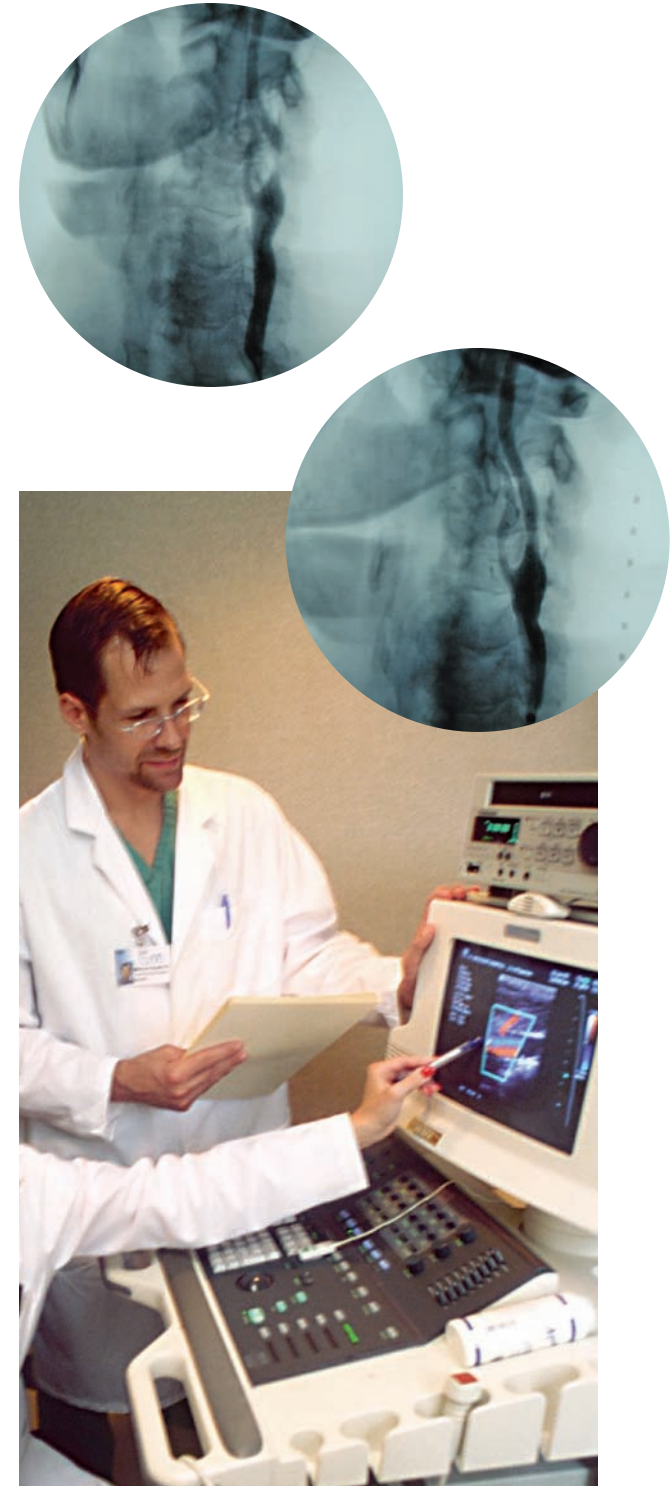
MINIMALLY INVASIVE ENDOVASCULAR SURGERY

CAROTID ENDARECTOMY, ANGIOPLASTY AND STENTING

A significant portion of the blood that is supplied to the brain comes from the carotid arteries, which are located on either side of the neck. Blockages in one of these arteries, which are usually composed of calcified plaque, can lead to strokes. A carotid endarectomy is performed to remove the blockage. Patients with severe heart or lung disease, those who have had neck surgery or radiation or have had previous carotid endarectomies, may not be able to undergo additional surgery. For these patients, carotid angioplasty and stenting, in which a catheter is inserted in the groin artery and threaded up through to the carotid artery, may be used to treat carotid artery disease. A tiny balloon at the end of the catheter is inflated to open the narrowed area and a metal stent is then inserted to keep the artery open.

ENDOVASCULAR AORTIC ANEURYSM REPAIR

Abdominal and thoracic aortic aneurysms represent a serious health problem and are a common cause of death in elderly patients. The aorta, the main blood vessel in the body, may dilate with time as a result of weakening of its wall.





Such dilation is referred to as an aneurysm. This “bulge” may rupture, leading to internal bleeding, an often lethal complication. Traditionally, such aneurysms required extensive open surgical procedures in which the dilated segment of the aorta was replaced with an artificial blood vessel. Today, many of these aneurysms can be fixed from within the blood vessel, using state-of-the-art imaging equipment and grafts. This procedure is referred to as “stent grafting” or “endovascular grafting” and can be accomplished through two small groin incisions. Because of its less invasive nature, the hospital stay and recovery time are significantly reduced from those necessary for open surgery.

ENDOASCULAR LOWER EXTREMITY ARTERIAL RECONSTRUCTION

A blockage in a peripheral artery (of the legs, pelvis or abdomen) may result in foot or leg sores and in leg pain while walking or at rest. Because of the lack of blood flow, healing of wounds may be prevented and, eventually, this may lead to the loss of a limb. Blood flow may be restored with a procedure that uses either a synthetic tube or the patient’s own veins to “bypass” the blockage, so that blood may reach the extremities.



VNUS CLOSURE PROCEDURES FOR VENOUS INSUFFICIENCY

The VNUS closure procedure is a minimally invasive treatment alternative for patients with a condition known as superficial venous reflux, which often results in varicose veins and other painful symptoms. The procedure results in relief of symptoms with minimal scarring.

The closure procedure is an outpatient treatment, which does not require overnight hospitalization. Local anesthesia is typically used to numb the treatment area. Using a thin needle, a tiny catheter is inserted into the vein. The catheter delivers radiofrequency energy to the vein wall, causing it to heat, collapse and shut down. Following the procedure, the catheter is removed, a bandage is placed over the insertion site and the leg is usually wrapped for one day to aid healing. Many patients are able to resume normal activity within a day or two.

LAPAROSCOPIC SURGERY

Laparoscopic or “keyhole” surgery became available during the last decade of the twentieth century with the development of small, lightweight, high resolution video cameras.

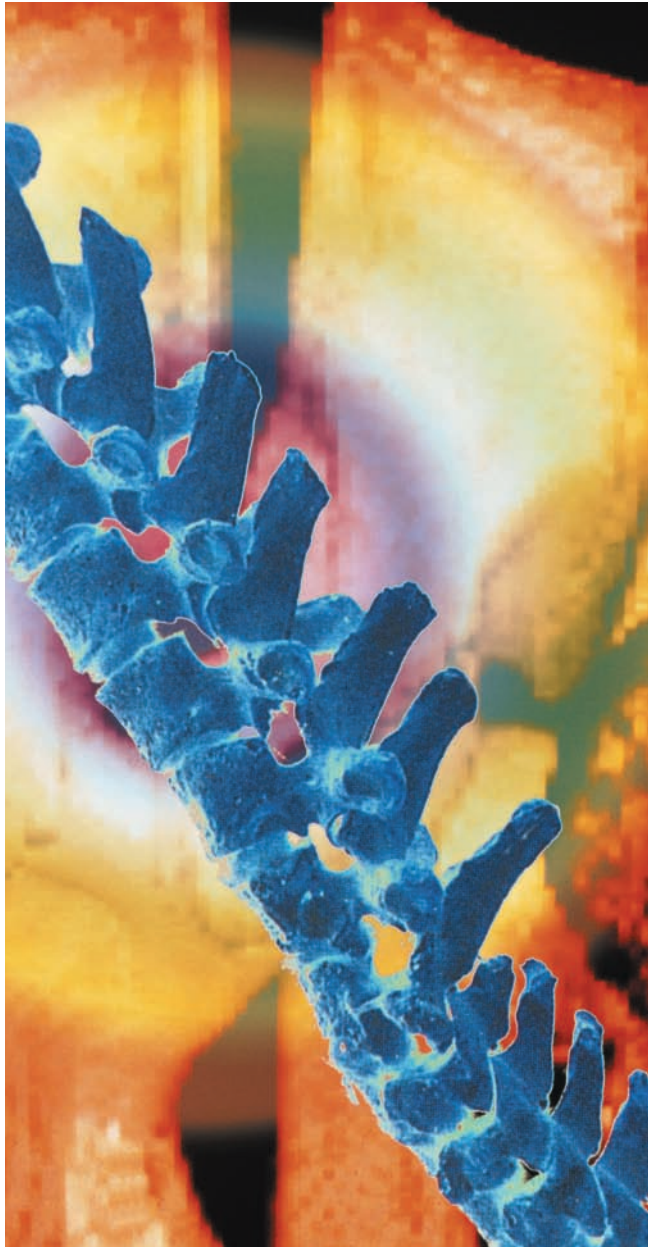
Laparoscopy is performed with the use of a laparoscope, a telescopic camera that allows the surgeon to view a magnified picture of the internal organs. The picture is then projected from the video camera onto a television monitor and the operation is performed using special instruments, which are inserted into the abdomen through small incisions in the skin.

This technique enables faster patient recovery, less post-operative pain, a shorter hospital stay, fewer wound complications and a better cosmetic outcome. Many conditions can be treated laparoscopically, if the surgeon determines that the circumstances are appropriate.

These conditions include

- *Gall stones and bile duct stones*
- *Groin and abdominal hernia*
- *Reflux disease (heartburn)*
- *Esophageal disease*
- *Bowel and colon disease*
- *Removal of diseased organs such as the spleen, adrenal glands or kidneys*
- *Morbid obesity*
- *Diagnostic surgery to determine the cause of abdominal pain, inflammation, tumors or adhesions*
- *Abdominal emergencies such as perforated peptic ulcer or appendicitis*





MINIMALLY INVASIVE THORACIC SURGERY

The standard approach for thoracic surgery includes a large, rib spreading incision. At NYM, it is now possible to provide less invasive procedures for certain patients, including robotic-assisted thoracic surgery (see Robotic-Assisted Surgery, page 3), and video assisted thoracic surgery (VATS).

VIDEO ASSISTED THORACIC SURGERY (VATS)

A minimally invasive thorascopic lobectomy, called video assisted thoracic surgery (VATS), allows the surgeon to use laparoscopic techniques to view the chest cavity and remove a portion of a lung or the entire lung. Patients who have this less invasive procedure can expect improved breathing function earlier, as well as less pain and a shorter hospital stay.

MINIMALLY INVASIVE AND ADVANCED NEUROSURGERY

MINIMALLY INVASIVE SPINAL SURGERY

Traditional spinal surgery for back pain and sciatica ranges from removal of herniated or slipped discs, to decompressing constricted nerves, to spinal fusion. The goal of surgical intervention is to take pressure off the nerves, and if necessary, stabilize and fuse the bones of the spine. This improves symptoms such as pain, numbness, and weakness.

Traditional surgical techniques often involve extensive muscle dissection, resulting in significant patient discomfort and prolonged recovery times. Minimally invasive spinal fusion is now possible, using small poke-hole incisions with minimal tissue dissection and live x-ray guidance, resulting in a faster recovery, less tissue damage, and less pain than traditional open spinal fusion surgery.

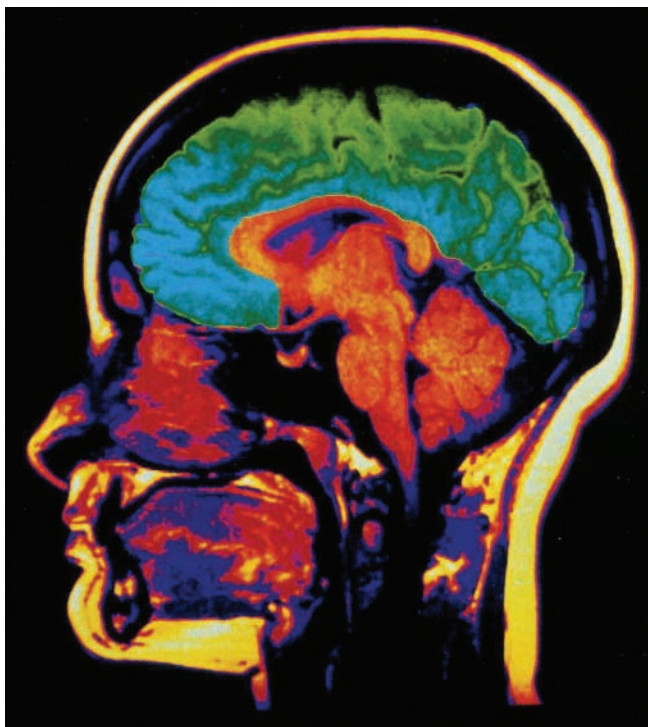
LUMBAR SPINAL STENOSIS

Lumbar spinal stenosis (narrowing of the spinal canal) often results from bone overgrowth that places pressure on spinal nerves, in turn causing pain and/or discomfort. In the United States, lumbar spinal stenosis is the primary reason for back surgery in people over the age of 65. As an alternative to traditional surgery, which requires the removal of various parts of the vertebrae, leaving a part of the spinal cord exposed, a less invasive alternative is available. The procedure involves placement of an implant between two bones in the back of the spine to widen the canal and alleviate the symptoms of spinal stenosis. Once the implant is in place, the bone overgrowth no longer comes in contact with the nerves and the symptoms are alleviated. This new procedure decreases the risks of medical complications associated with traditional surgery used to treat lumbar spinal stenosis and can be performed in under an hour with the use of local anesthesia.

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 involves the implantation of electrodes that are placed in a small region of the brain that contributes to the symptoms. The 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—is 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.





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.

ADVANCED ORTHOPEDIC SURGERY

MINIMALLY INVASIVE TOTAL KNEE AND HIP REPLACEMENTS

In minimally invasive joint replacement surgery, the same artificial hip and knee devices are used as in traditional knee and hip replacement surgery. However, the minimally invasive procedure involves smaller incisions and less muscular dissection. The advantages of the minimally invasive procedure include a lower infection rate, a smaller risk of implants malfunctioning after surgery, less pain, a shorter hospital stay and a lower hospital readmission rate.

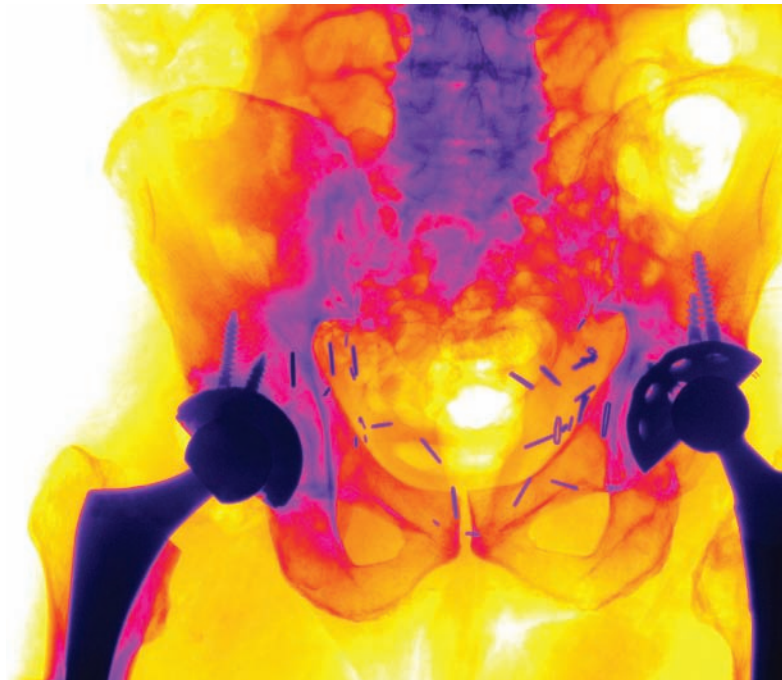
In addition, muscle strength returns more quickly with this type of surgery. Patients are able to begin walking without walkers or crutches much more rapidly than those who have an open surgical procedure. The time for a full recovery is shortened to about six weeks, down from three months.

ARTHROSCOPIC SURGERY

Arthroscopic surgery involves the use of a special camera attached to a long, narrow surgical telescope through which the surgeon visualizes the inside of a joint. Working through small incisions, the surgeon uses specially created instruments to repair damaged cartilage, capsule, tendon, and other tissues. With new technology and refined techniques, arthroscopic surgery has become quite common in treating many knee, shoulder, elbow, wrist, hip, ankle, and foot problems. This is generally an ambulatory procedure with no hospital stay required.

ARTHROSCOPY OF THE ROTATOR CUFF

Arthroscopic treatment of the rotator cuff allows surgeons to fix relatively small tears by inserting anchors, passing sutures and tying knots.





MINIMALLY INVASIVE PODIATRIC SURGERY

ARTHROSCOPY OF THE ANKLE AND FOOT

Arthroscopic surgery of the foot or ankle joint may be used to confirm a diagnosis or to perform a surgical procedure.

ENDOSCOPIC PLANTAR FASCIOTOMY

Plantar fasciitis is one of the most common foot problems. In general, this condition responds to one of several available conservative treatments, but when these treatments fail, the remaining option is surgical intervention for the release of the fascia. Endoscopic plantar fasciotomy is a minimally invasive and minimally traumatic surgical treatment for chronic plantar fasciitis. As with other forms of minimally invasive surgery, complications are reduced in comparison with traditional open procedures. Patients are able to return to regular activities sooner and with less pain and discomfort than with other techniques.

ADVANCED RECONSTRUCTIVE SURGERY OF THE FOOT

Podiatric surgeons are trained to address pain and discomfort in the feet and ankles with reconstructive surgical techniques when conservative treatment, such as protective padding, is insufficient. Advanced reconstructive foot surgery can correct conditions that are congenital, caused by improper footwear, physical stress, accidents, infections, disease or arthritis. These conditions include sprains, fractures, bunions, warts, corns and flat feet. Foot surgery is nearly always performed on an outpatient basis.

OUR FACILITIES

New York Methodist Hospital, located at 506 Sixth Street, is one of the most modern and well-maintained hospitals in the metropolitan area.

Some of the specialty surgeons and podiatrists affiliated with the Institute have offices on the Hospital campus, but many maintain private practices in the neighborhoods of Brooklyn. Surgery is performed at New York Methodist Hospital's state-of-the-art operating facilities, which, in addition to a nine-room operating suite, include an eight-room ambulatory surgery center and a separate cardiac surgery center with two dedicated cardiac operating rooms.

REFERRAL

For referral to an appropriate specialist affiliated with the Institute for Advanced and Minimally Invasive Surgery or to schedule an appointment for a diagnostic procedure, please call (toll free) 877.DOCS.14U.

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

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

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 FAMILY CARE
866.432.CARE / 866.432.2273

INSTITUTE FOR NEUROSCIENCES
866.DO.NEURO / 866.366.3876

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

INSTITUTE FOR VASCULAR MEDICINE
AND SURGERY
866.438.VEIN / 866.438.8346

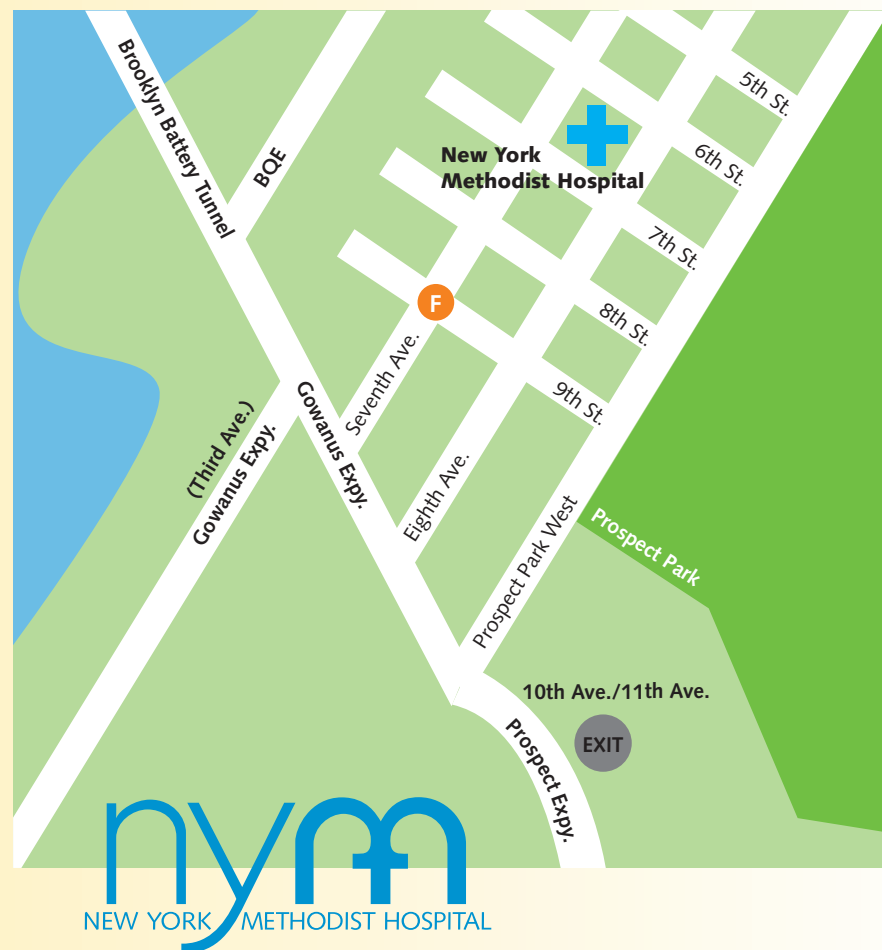
INSTITUTE FOR WOMEN'S HEALTH
877.41.WOMAN / 877.419.6626

OUR LOCATION

By Bus: #67 runs along Seventh Avenue.

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

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



Member
NewYork-Presbyterian Healthcare System
Affiliate: Weill Cornell Medical College