



NYU CARDIOTHORACIC SURGERY

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Langone Medical Center
Department of Cardiothoracic Surgery

NYU CARDIOTHORACIC SURGERY

PREMIER SURGICAL CARE FOR
DISEASES OF THE HEART AND CHEST



From Our Patients:

“I went with NYU because it had much more experience with minimally invasive surgery than other hospitals... Three weeks after my operation, I was almost 90 percent back to normal, which was amazing.”

—MIKE IONESCU
(atrial septal defect surgery)

“My visit to NYU was most reassuring. [The surgeon] was so engaging and confident, and remarkably willing to answer every question.”

—LARRY ANDERSON
(aortic valve surgery)

“[My daughter’s] surgery was performed on a Monday morning and Ella was home playing in her room on Wednesday. The recovery was so fast... It has taken her longer to get over ear infections.”

—KIM BROCKWAY
mother of Ella (atrial septal defect surgery)

“What words can convey the undying gratitude and heartfelt affection I have for my doctors and nurses? When he had coronary bypass surgery, David Letterman brought his entire surgical team to the stage of his late-night show so that they could be applauded. I’d like to do that too. Bravo.”

—LESLIE LIPTON MORELLI
(mitral valve surgery)



Welcome to Cardiothoracic Surgery at NYU Langone Medical Center, one of the nation's premier facilities for the care of patients with diseases of the heart and chest. We offer virtually every treatment option—including the latest minimally invasive surgical techniques—using an individualized approach that returns patients to their daily routines as safely, comfortably, and quickly as possible. Many aspects of minimally invasive surgery and other innovations in the field were pioneered here at NYU Langone, and through our research programs, we are actively pursuing the next generation of therapies. Our expert clinicians, all of whom are members of NYU School of Medicine's Department of Cardiothoracic Surgery, stand ready to help you with their unique blend of scientific knowledge and compassionate care.

Aubrey Galloway, M.D.

Aubrey C. Galloway, MD

Seymour Cohn Professor and Chairman
Department of Cardiothoracic Surgery



THE NYU LANGONE DIFFERENCE

The Cardiothoracic Surgery program at NYU Langone is a nationally recognized leader in the treatment of adult and congenital heart disease and disorders of the thoracic cavity. Our team's multidisciplinary approach to patient-centered care, wealth of experience, commitment to research, location in a world-class medical center, and our dedication to education and outreach are just a few of the many factors that set NYU Langone apart from other practices. This unusual combination of knowledge and know-how—including the latest techniques and technologies—ensures that we provide every patient with the highest quality of care.

Consistently at the profession's leading edge, our surgeons have helped pioneer many of the treatments that are now a routine part of cardiothoracic care, including minimally invasive heart and chest surgery, mitral valve repair, "off-pump" surgery, and surgical treatment of pulmonary metastases.

Our goal is to lead through innovation, while delivering highly personalized, world-class care.

Our Approach to Care

Rare among cardiothoracic surgery practices, NYU Langone employs every significant treatment approach—for example, mitral valve repair as well as valve replacement, minimally invasive as well as traditional open-chest procedures, and "off-pump" as well as conventional arrested-heart techniques.

We maintain such a large treatment repertoire because there is rarely just one intervention that is ideal for a given condition. At NYU Langone, therapy is tailored to meet the needs and concerns of the individual patient, rather than trying to fit the patient to a particular treatment. In crafting a personalized plan of care, we rely on our years of experience and lessons learned from our one-of-a-kind clinical database, gleaned from the tens of thousands of patients we have treated over the years.

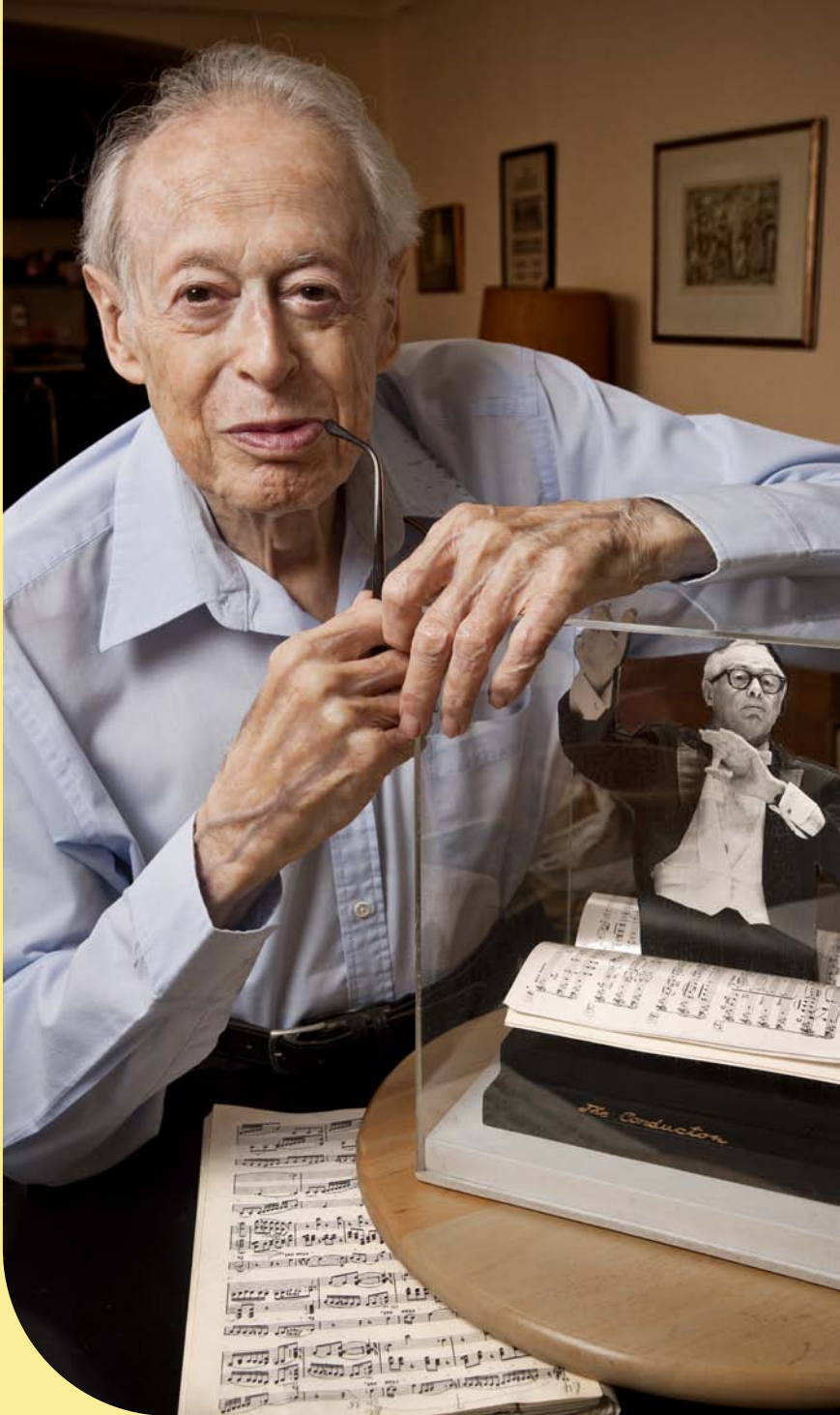
The majority of our patients are treated with minimally invasive techniques, allowing us to send patients home as healthy as possible, and as soon as possible. Compared with conventional approaches, minimally invasive surgery results in smaller incisions, fewer complications, fewer blood transfusions, shorter hospital stays, and less post-operative pain.



A Maestro's Return to Carnegie Hall

One might expect that a nonagenarian would slow down a bit after undergoing aortic valve replacement surgery. But conductor David Randolph, 95, is having none of it. Just three days after his operation, he was up till all hours, reviewing scores from his ICU bed. Weeks later, he was planning his next performance, conducting the St. Cecilia Chorus and Orchestra at Carnegie Hall. Already, he's the oldest conductor ever to have performed at the hallowed hall, outlasting the likes of Toscanini. The secret to his longevity: "My work is absolutely like play," he says. While Mr. Randolph may be exceptional, his case is not—at least at NYU Langone, where heart surgery for the oldest of the old has become relatively routine. "Many doctors write off these high-risk patients, believing they won't survive heart surgery," says

Mr. Randolph's surgeon, Dr. Greg Ribakove. "But our data shows otherwise. You have to weigh the risks and benefits, and consider each patient individually." Mr. Randolph spent 13 days at Tisch Hospital and another 13 in rehab at the Rusk Institute—a length of stay not unusual for a patient his age. "The treatment was exceptional, but those are 26 days I'd like to forget," he says with a grin. Fair enough—he'd rather be playing.



Our services and expertise do not begin and end in the operating room. We strive to provide continuous, coordinated care, starting with your initial visit to our offices, extending through your stay in the hospital, your rehabilitation, and your discharge home—providing a full circle of care for cardiopulmonary health.

We also work to keep you and your family fully informed and actively involved. Our staff is always available to address your questions and concerns and arrange your appointments and tests. Moreover, one of our nurse practitioners—registered nurses with advanced education and extensive clinical experience with diseases of the heart and chest—will coordinate your care plan during your hospital stay and prepare you for discharge.

Our Clinical Experience

At NYU Langone, our strength is our extensive surgical experience. Studies have consistently shown that hospitals that perform the highest volume of surgeries achieve the best outcomes, particularly when complex operations are involved. As the old saying goes, practice makes perfect. Our cardiothoracic surgeons perform over 2,000 operations a year, with some of the highest success and lowest complication rates in the country. We have particular expertise in treating high-risk patients, including infants and the elderly (even those in their eighties and nineties) and people with complex health issues.

Our surgical program is built on a long legacy of caring and innovation. NYU Langone Medical Center and Bellevue Hospital Center, its primary clinical affiliate, have stood at the forefront of cardiothoracic care for decades. In the 1940s, Bellevue cardiologists Drs. Andre Cournaud and Dickinson Richards pioneered the technique of cardiac catheterization, which transformed the practice of cardiology and earned the pair the 1956 Nobel Prize in Physiology or Medicine.

In the decades that followed, NYU Langone physicians made key contributions to the advancement of coronary artery bypass surgery, including the first use of internal mammary artery grafts (which are taken from the chest), a significant improvement over saphenous vein grafts (which are taken from the leg). Members of our staff also contributed to the development of off-pump cardiac surgery, which eliminates the need to place the patient on a heart-lung machine. In 2003, NYU Langone completed a landmark clinical trial demonstrating numerous benefits from off-pump bypass surgery in high-risk patients, including a lower risk of mortality and a lower incidence of stroke and other complications.



Our surgeons helped refine mitral valve repair—which offers considerable advantages over valve replacement—and then introduced the procedure nationally. The NYU Langone experience with valve repair in over 4,000 patients is one of the largest series in the world. In 1996, NYU Langone surgeons were instrumental in developing techniques for minimally invasive valve surgery. The world's first minimally invasive mitral valve repair was performed here at NYU Langone, and our team has now performed minimally invasive mitral valve repairs or valve replacements in over 2,500 patients.

NYU Langone's thoracic surgeons have also made seminal contributions to minimally invasive surgery, including the use of video-assisted instrumentation for removing lung cancers and for treating other conditions of the chest cavity. These procedures avoid spreading of the rib, which lessens the impact of the operation and speeds recovery. NYU Langone is one of only a handful of centers to perform the majority of lung cancer surgeries in this manner.

In addition, our thoracic surgeons pioneered the treatment of mesothelioma (malignant growths of the covering of the lung or the lining of the pleural and abdominal cavities, commonly associated with asbestos exposure) as well as surgical treatment of various types of pulmonary metastases (cancers that spread to the lung from a primary tumor located elsewhere in the body). Our surgeons were also among the first to study photodynamic therapy, a novel light-based treatment for thoracic cancers, and to use endobronchial ultrasound to biopsy lymph nodes in the chest. Recently, our team has been influential in securing FDA approval of two novel thoracic cancer therapies,

including photofrin-based photodynamic therapy for endobronchial lung cancer and an autofluorescence bronchoscopy system for the detection of precancerous cells in the lung.

A Commitment to Research

The Department of Cardiothoracic Surgery's tradition of excellence and innovation is sustained by an extensive program of basic and clinical research in both cardiovascular and thoracic surgery.

Recognizing that the ultimate solution to many heart problems rests at the genetic and molecular

levels, the Department of Cardiothoracic Surgery conducts a variety of basic research investigations. In the Seymour Cohn Cardiovascular





The Race of Her Life

Young, healthy, and fit, Marni Baum was racing through life when a routine checkup revealed a severe case of mitral valve prolapse—a condition in which the valve on the heart’s left side doesn’t close completely, allowing blood to leak backward from the ventricle to the atrium. “It came out of the blue,” recalls the thirty-something mother of three. “I was asymptomatic, running eight-minute miles at the time.” Ms. Baum was told that she would eventually have to undergo surgery to rebuild the weakened valve. Rather than wait, she immediately sought out a surgeon who could do a minimally invasive repair, allowing for minor incisions and a speedy recovery. After an extensive search, Ms. Baum selected

Dr. Aubrey Galloway at NYU

Langone, based on his extensive track record and “easy-going” bedside manner. “He was the obvious choice,” she says. The surgery, which took place in April 2006, was uneventful. Two weeks later, she was back in the gym, doing light workouts. “You think about heart surgery—it’s so overwhelming. But by June, I was running around on the beach with my kids,” says Ms. Baum. Less than two years later, she gave birth to her third child, and today she remains symptom free. “I forget that I even had heart surgery,” she says.

Surgical Laboratory,—one area of focus is a phenomenon called restenosis—the reclosing of arteries after angioplasty or bypass surgery. Since more than a million patients undergo these procedures each year, determining why restenosis happens and how to prevent it is one of the great challenges of modern-day cardiology. We are also performing novel molecular- and genomic-based studies to better understand aortic stenosis and mitral valve prolapse, two of the most common heart valve disorders worldwide. Our researchers are also investigating ways to repair and potentially regenerate the heart following a heart attack using stem cell therapies.



As for clinical research, our investigators in cardiac surgery are currently conducting FDA-approved trials of new surgical procedures and contributing to the development and application of new, advanced surgical devices.

Also noteworthy is the Department's ever-expanding research database, which we have amassed by following virtually every one of our patients for life. From this unique store of data, we are constantly learning better ways to tailor surgery to the individual patient, in a process called risk stratification, which greatly reduces complications and improves outcomes.

In the Thoracic Surgical Research Laboratory, we have several notable research projects, including a study of early detection of lung cancer and mesothelioma. We are investigating gene-, protein-, and immune-based biomarkers for early detection of benign and malignant diseases of the chest. In addition, we are validating novel proto-





cols for measuring the contents of the air that we exhale, in order to determine whether a breath test can predict if a person has lung cancer. Other investigators are studying the use of autofluorescence bronchoscopy for early detection of cancer cells taken from the sputum of patients at high risk for lung cancer. Another team is investigating nonsurgical techniques of destroying lung cancers, including radiofrequency ablation and stereotactic radiotherapy, which could provide treatment options for patients with early stage lung cancers, especially those who cannot safely undergo surgery.

NYU Langone Medical Center: World-Class Tertiary Care

The strengths of the Department of Cardiothoracic Surgery extend beyond our offices and operating rooms. Our practice is an integral component of NYU Langone Medical Center, one of the nation's foremost centers of excellence in health care, biomedical research, and medical education. The Medical Center consists of NYU School of Medicine and the three hospitals of NYU Hospitals Center, including Tisch Hospital, a 726-bed acute-care general hospital; Rusk Institute of Rehabilitation Medicine, the first and largest facility of its kind; and NYU Hospital for Joint Diseases, a leader in musculoskeletal care.

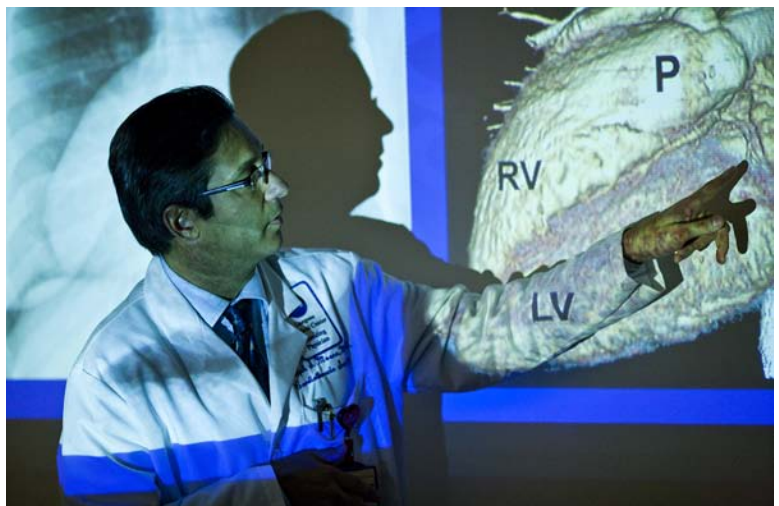
Our patients benefit from NYU Langone's vast expertise every day. Our cardiac surgeons regularly consult and collaborate with specialists in NYU's Cardiac & Vascular Institute, including faculty from the Leon H. Charney Division of Cardiology, the Interventional Radiology and Endovascular Surgery Service, the Cardiac Rehabilitation and Prevention Center (a component of the Rusk Institute of Rehabilitation Medicine), the Electrophysiology and Arrhythmia Service, the Echocardiography Laboratory, the Pediatric Cardiology Service, the Cardiac Intensive Care Service, and the Cardiac Anesthesia Service.

On the thoracic side, our surgeons regularly consult and collaborate with specialists in NYU Langone's renowned Clinical Cancer Center and Cancer Institute, the Division of Medical Oncology, the Department of Radiation Oncology, the Division of Pulmonary and Critical Care Medicine, the Pulmonary Function Laboratory, and the Thoracic Anesthesia Service.

With ready access to the resources of NYU Langone Medical Center, we can offer our patients many treatment options not available at other institutions, as well as the opportunity to participate in exclusive clinical trials.

Education and Outreach

As a part of an academic medical center, our staff is actively involved in teaching and training, including residency and fellowship programs in cardiac and thoracic surgery. We also participate in distance learning and teleconferencing, using innovative tools such as high-definition video for visualizing the heart and chest during minimally invasive





surgery, a technique pioneered here at NYU Langone. Additionally, our surgeons are regularly invited to lecture on advances in cardiothoracic surgery around the world.

Our team also makes a point of reaching out to communities down the street and around the globe. Situated in a multicultural community in the world's most diverse city, we are closely attuned to health-care needs of different cultures.

For years, we have been sponsoring the care of sick children from medically underserved regions the world over, bringing them to NYU Langone for heart surgery and other advanced treatment. Expanding upon this work, several members of our practice formed a nonprofit venture called Project Kids Worldwide, whose mission is to make life-saving surgery available to, and improve medical treatment for, impoverished children with congenital and acquired heart disease around the globe.

Moreover, our thoracic surgeons are actively involved in advocacy for patients with lung cancer and mesothelioma, serving on the medical advisory board of the Lung Cancer Alliance, the scientific advisory board of the Mesothelioma Applied Research Foundation, and the board of the International Association for the Study of Lung Cancer.



Alive and Well

It's every patient's worst nightmare: You go for a regular checkup, feeling perfectly fine, and the doctor spots a mass on your chest X-ray—it's lung cancer. This bad dream came true for Joyce Cantone. "I was numb and frightened," she recalls. "You always hear that lung cancer is fatal. Goodbye!" However, her doctors at NYU Langone—Drs. Abraham Chachoua and Harvey Pass—found that the cancer had not spread and, even though it was advanced, it was treatable. After undergoing three surgeries at NYU Langone—two minimally invasive procedures to remove affected lymph nodes in the chest, followed by a lobectomy, an "open" operation to remove the tumor itself and a part of the lung—Ms. Cantone is alive and well. A life-long smoker, she quit the habit immediately after her diagnosis and eventually returned to work. Today, four years later, she remains cancer free, enjoying a healthy, happy retirement. "I've since become a grandparent, and one daughter has gotten engaged," she says. "Everything's good."



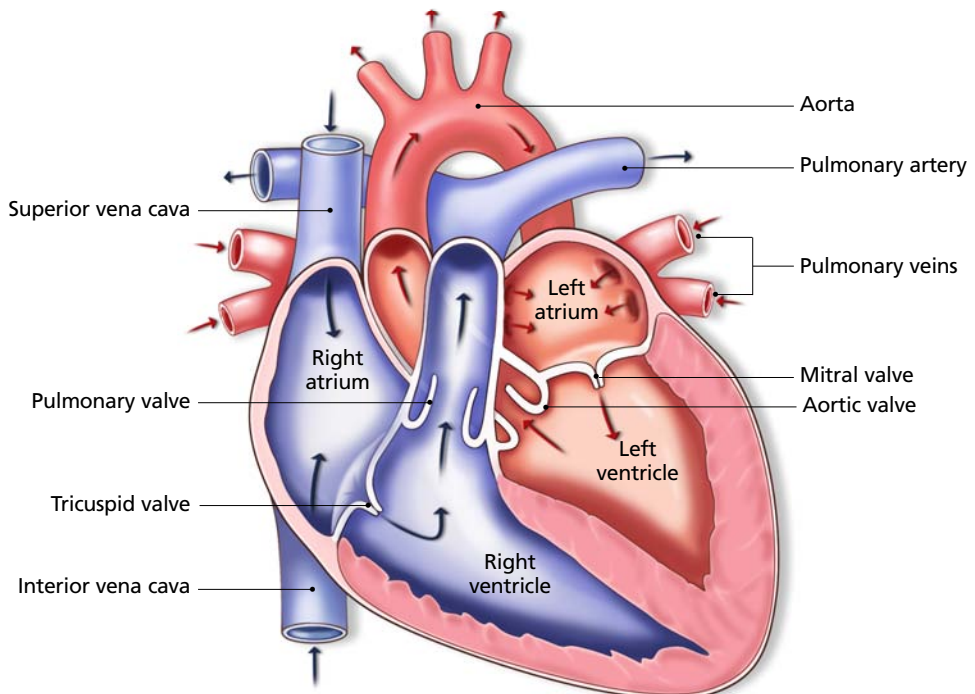
OUR CLINICAL SERVICES



Cardiac Surgery

We treat all manner of heart disease in adults and children, with dedicated programs in Valvular Disease, Coronary Artery Disease, Arrhythmias, Thoracic Aneurysms, and Heart Failure.

Valvular Disease Program. NYU Langone is a world leader in the treatment of heart valve disease, having performed more than 4,000 mitral valve repairs, most of them involving minimally invasive approaches. Normal heart valves are designed to keep the blood going forward. In valve disease, one or more of the valves fail to open or close properly, causing resistance to blood flow (stenosis) or allowing blood to flow backward in the heart (regurgitation). In most cases, patients experience only mild symptoms even with severe valve disease, since the heart can compensate by working harder. When the heart muscle contraction begins to weaken, patients will start to have symptoms, such as shortness of breath. We advise patients to have their valves repaired or replaced before this occurs. Early intervention permits the heart to return to normal after the surgery. However, when surgery is postponed for too long, the heart is less



likely to recover. Although the valves can still be repaired, the heart's ability to contract may remain weak after surgery and deteriorate further over time.

The most common valve problems are mitral valve prolapse with mitral regurgitation, mitral stenosis, aortic stenosis, and aortic regurgitation. Most of our patients with valve disease are treated with minimally invasive surgery. For those with mitral valve disorders, we offer valve repair or replacement (using natural tissue or artificial valves). Valve repair offers considerable advantages over replacement, as it eliminates the need for long-term anticoagulant therapy and lasts longer. For those with valve disorders that are not amenable to repair, we now offer replacement with improved natural tissue valves, which results in fewer complications than traditional mechanical valves.



Coronary Artery Disease Program. NYU Langone offers the full range of therapies for coronary artery disease, a condition in which the blood supply to the heart muscle is partially or completely blocked. Our treatments include a variety of revascularization procedures, including coronary balloon angioplasty and stenting, as well as leading-edge coronary artery bypass graft (CABG) surgery. Nationwide, most surgeons use primarily vein grafts when performing CABG surgery. At NYU Langone, however, many of our CABG operations are performed primarily with arterial grafts, which have been shown to remain open longer and to improve survival rates, compared to vein grafts. Moreover, many of our CABG surgeries are performed “off pump”—that is, without the use of a heart-lung machine—considerably lowering surgical risks, particularly among the elderly. Our faculty have one of the largest experiences with CABG surgery in the country, with more than 20,000 coronary bypass operations performed at NYU Langone over the last three decades.

Heart Failure Program. We take an aggressive, multidisciplinary approach to the treatment of patients with heart failure, a life-threatening condition in which the heart muscle grows progressively weaker and cannot pump enough blood to meet the body's needs for oxygen and nutrients. Every patient is managed by a team of surgeons and heart failure cardiologists, who in turn are backed by a team of specialists in cardiac imaging, cardiology, interventional cardiology and cardiac rehabilitation. Using this team approach, we are

What is minimally invasive surgery?

In traditional open-heart surgery, the heart is reached by cutting open the chest and dividing the breast bone (the most traumatic aspect of the operation), giving the surgeon room to connect the heart to the heart-lung machine and to repair the heart. In minimally invasive surgery, the surgeon accesses the heart via a small incisions in the patient's chest. A pair of tubes (or catheters) for the heart-lung machine are threaded to the heart, while the repair itself is performed through a small incision between two ribs. As a result, patients experience less postoperative pain, are less likely to need blood transfusions, and have dramatically quicker recoveries. In some patients, minimally invasive operations are now performed with robotic assistance.

Another recent innovation is "off-pump," or "beating heart," surgery. In this technique, certain areas of the heart are immobilized with cardiac stabilizers, allowing the surgeon to operate while the heart is still beating. This avoids the need to place the patient on a heart-lung machine, a major benefit for high-risk cases, particularly the elderly.

Minimally invasive techniques have also revolutionized thoracic surgery. A major advance is video-assisted thoracoscopy, in which the surgeon operates through small openings between the ribs, while viewing the patient's internal organs on a video monitor. Each opening is less than one inch in diameter, compared to a six-to-ten-inch incision in the traditional open surgical approach.



What's the difference between valve repair and valve replacement?

When a mitral valve is diseased or damaged, the most crucial decision for patients and physicians is whether to repair or replace the valve. In the past, it was standard practice to replace a weakened mitral valve with a mechanical or natural tissue valve. A better option, for the majority of patients, is valve repair, in which the patient's own valve is surgically reshaped, restoring the valve's normal function. At NYU Langone, over 90 percent of patients with mitral valve prolapse have their valve repaired rather than replaced.

A major drawback of valve replacement is that patients have to take anti-coagulants for the rest of their lives in order to prevent blood clots. Such

medications can have significant side effects. Also, replacement valves tend to wear out after 10 to 15 years. For a young adult, that could mean two or three additional operations.

Patients who undergo valve repair have better heart function and better long-term survival compared to those who undergo valve replacement and are much less likely to have complications in the years to come.

NYU Langone surgeons were among the first to perform valve repair in the United States and now have experience with more than 4,000 patients over the past 25 years.

What is high-risk heart surgery?

While heart surgery has become relatively routine, certain patients stand a higher-than-usual risk of complications. These include infants, the elderly, patients with end-stage heart failure, and those with multiple health issues.

Fortunately, various techniques, such as minimally invasive surgery and off-pump surgery, can effectively reduce the trauma of heart surgery, improving complication and survival rates—even for patients in their eighties or nineties.

A major challenge in managing high-risk patients is distinguishing between those who might benefit from surgery and those who might not have enough residual cardiac function to survive the operation. The first step in this process is to assess the patient's cardiac reserve—the heart's ability to function beyond what is required under normal circumstances. The next step is to evaluate and optimize any associated or unrelated medical conditions, minimizing the chance of complications or cardiac failure.





able to offer patients the widest range of treatment options—including medical therapy, catheterization procedures, electrophysiology procedures, and reconstructive surgery—greatly improving their prospects for survival as well as their quality of life. Among our advanced surgical therapies for heart failure are mitral valve repair, atrial fibrillation surgery, ventricular restoration surgery, and ventricular assist devices, with referral for heart transplantation.

Thoracic Aneurysm Program. We specialize in the treatment of aneurysms that occur in the thoracic aorta (the portion of the body's main artery that runs through the chest). Aneurysms—weak bulging areas in the wall of a blood vessel—are a serious health risk. Without warning, they can rupture, causing severe internal bleeding, which in turn can lead to shock or death. Aneurysms are typically treated using conventional “open” surgical approaches in which the weakened portion of the aorta is replaced with a fabric tube, called a graft. More and more aneurysms, depending on their location and complexity, can be repaired with a minimally invasive procedure known as an endovascular stent-graft. In this procedure, instead of opening the chest, a catheter is inserted into a groin artery and guided up into the aorta, where a special stent is placed at the site of the aneurysm. We also perform surgical repairs of aortic dissections (tears in the wall of the aorta).

Arrhythmia Surgery/Electrophysiology Program. NYU Langone offers the most advanced treatments for arrhythmias (heart rhythm disorders) available anywhere in the world. Each patient is treated using a team approach, developed by the Cardiac Rhythm Center, including specialists in electrophysiology, cardiac surgery, and heart failure. Among the conditions we treat are atrial fibrillation, atrial flutter, bradycardia, tachycardia, and Wolff-Parkinson-White syndrome. Most of our patients with atrial fibrillation are treated by eradicating the source of the arrhythmia, either with radiofrequency energy (similar to microwave heat), performed by our electrophysiologists in the catheterization laboratory, or with minimally invasive surgical approaches. In certain patients with atrial fibrillation, namely those already requiring surgery for other cardiac disease, such as valvular stenosis or insufficiency, a minimally invasive modified Maze ablation procedure is routinely used. In this procedure, the surgeons make a precise pattern of lesions around the source of the arrhythmia, ultimately forming scar tissue that prevents the abnormal electrical patterns from passing through the heart.



Pediatric and Adult Congenital Cardiac Surgery

The Division of Pediatric and Adult Congenital Cardiac Surgery at NYU Langone Medical Center treats patients of all ages with inherited and acquired cardiac defects. Such heart defects are typically complex, requiring the care of surgeons with extensive experience with complicated reconstructive procedures. To ensure the best-possible outcomes, our surgeons work in conjunction with specialists in pediatric and adult cardiology, neonatal and pediatric cardiac intensive care, pediatric cardiac anesthesiology, nursing, and extracorporeal perfusion.

Newborns and Infants. Approximately 40 percent of our congenital service is dedicated to the care of newborns and infants with congenital heart disease. Common conditions include transposition of the great arteries, hypoplastic left heart syndrome, truncus arteriosus, and patent ductus arteriosus. Our team includes specialists in fetal and neonatal echocardiography and in obstetrics and maternal-fetal medicine, ensuring accurate diagnoses and comprehensive support of mothers and babies. As a result of our multidisciplinary approach, our surgical results rank among the best in the nation.



A Normal Boy

"I had such a spectacular pregnancy—no morning sickness, textbook weight gain. I exercised up until the day I went into labor. So, I couldn't believe that this was happening," says Emily Rassner, a certified personal trainer from Brooklyn. Shortly after giving birth on June 16, 2009, at NYU Langone, Ms. Rassner learned that her newborn son, Saxon, was turning blue. The diagnosis: transposition of the great arteries, in which the aorta and pulmonary artery are reversed, starving the body of oxygen. Surgery was the only remedy, according to a team of neonatologists, pediatric cardiologists, and pediatric cardiac surgeons called to consult on the case. "As you can imagine, those first days were a blur, absolutely brutal," says Doug Rassner, Saxon's dad.

"But by the day of the operation, Emily and I were very calm,

confident that Saxon would be alright. We knew we were in the perfect place." In late June, Saxon's heart, barely bigger than a walnut, was successfully repaired by Ralph Mosca, MD, using a procedure called an arterial switch. A week later, Saxon was home, healing nicely. "According to his doctors, he has no limitations," says Ms. Rassner. "He's a normal boy."



Children and Adolescents. We offer comprehensive care of children and adolescents with all types of congenital heart disease, including atrial and ventricular septal defects, aortic coarctation, atrioventricular canal, tetralogy of Fallot, and cardiac valve diseases. Our team, in discussion with your family, will determine the best therapy, choosing from a wide spectrum of treatments options including traditional open-heart surgery, minimally invasive techniques, or catheter-based interventional procedures. In conjunction with our anesthesiologists and child-life experts, we are able to ensure maximum comfort for our patients and the shortest-possible recovery times.

Adults. Thanks to advances in care, more and more adults are living with congenital heart disease. However, these patients often face considerable health challenges, including problems related to their congenital heart disease and the effects of the heart brought about by aging. We offer treatment for all forms of adult congenital heart disease, including atrial septal defects, tetralogy of Fallot, Ebstein's anomaly, and all cardiac valvular diseases. We also offer a robust antiarrhythmia program for patients with congenital heart disease who suffer from abnormal heart rhythms.



Thoracic Surgery and Thoracic Oncology

Our Division of Thoracic Surgery and Thoracic Oncology specializes in the diagnosis and treatment of the full range of benign and malignant disorders of the chest, including the lungs, esophagus, trachea, mediastinum, and chest wall.

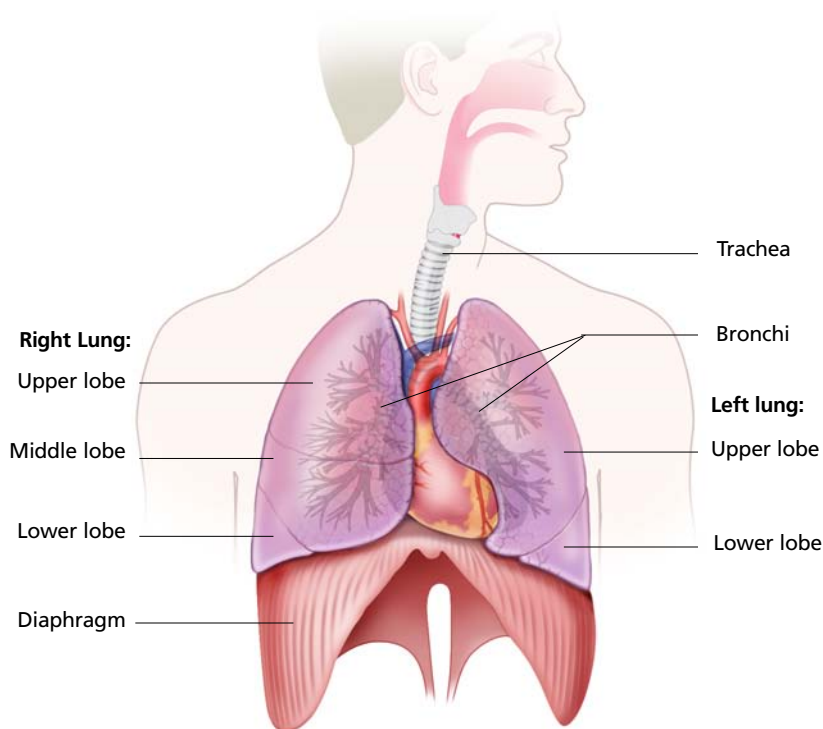
Thoracic disorders are typically complex, necessitating a multidisciplinary approach to treatment. At NYU Langone, each case is reviewed by an integrated team of specialists, including experts in thoracic surgery, medical oncology, radiation oncology, pulmonary medicine, and radiology, as necessary.

We employ the full range of treatment strategies, including chemotherapy, radiation therapy, and surgery, as well as a number of advanced therapies found at only a handful of academic medical centers. We are constantly incorporating innovative technologies into our practice. Whenever possible, we employ minimally invasive approaches to diagnosis and therapy, including video-assisted thoracoscopy (VATS) and laparoscopy, which greatly reduce postoperative pain and shorten recovery times.

Lung Cancer. NYU Langone is highly regarded for its expertise in treating primary lung cancer and pulmonary metastases (cancers that spread to the lung from a primary tumor located elsewhere in the body). We offer the latest diagnostic and treatment approaches,

including real-time endobronchial ultrasound, a new technique for lymph node biopsy that does not require an incision in the skin or an overnight hospital stay, and radiofrequency ablation, which employs heat from radio waves to destroy lung tumors. As appropriate, we offer patients access to the latest treatment technologies, such as stereotactic body radiation therapy and targeted molecular therapies.

Mesotheliomas. NYU Langone is also well known as a referral center for patients with mesotheliomas. Commonly associated with asbestos exposure, mesotheliomas are malignancies in tissues that cover the lung or line the chest and abdominal cavities. Our expertise covers all aspects of the disease, from diagnosis to medical therapy and surgical management. We offer two advanced surgical options, including pleurectomy/decortication (removal of the pleura without removing the entire lung) and extrapleural pneumonectomy (removal of the pleura, diaphragm, pericardium, and the whole lung involved with the tumor). Our research laboratory is designated by the National Cancer Institute as the Biomarker Discovery Laboratory for mesothelioma, which supports studies to find novel gene or protein signals in the blood to detect the disease earlier or monitor the disease while patients are receiving treatment.



Esophageal Disease. Our team also specializes in cancer of the esophagus. Many of our patients are treated with a minimally invasive approach, using laparoscopy and thoracoscopy. We have expertise in using stents to relieve blockages in the esophagus due to cancer or benign strictures, restoring one's ability to swallow. In addition, we have extensive experience treating achalasia (a benign disease of the esophagus that leads to difficulty swallowing), gastroesophageal reflux disease, and esophageal and hiatal hernias. In most cases, treatment can be performed with minimally invasive approaches, allowing patients to recover in a matter of days.

Tracheal Disease. Our surgeons have expertise in managing difficult airway problems, using laser techniques, stenting of the trachea, and surgery. We employ innovative endobronchial techniques, such as autofluorescence bronchoscopy, in which conventional and fluorescent light sources are used to detect precancerous cells, and photodynamic therapy, a laser-activated drug treatment for cancers that obstruct the airway.





THE ROAD TO RECOVERY

After Surgery

After surgery, patients are sent directly to one of our intensive care units, which are staffed 24 hours a day, seven days a week by critical care specialists who are part of our multidisciplinary team. These physicians work closely with our cardiothoracic surgeons, cardiologists, pulmonary specialists, and nurse practitioners to ensure that our patients are as comfortable as possible. They also deliver regular daily updates to patients and their families and oversee transfers to general patient floors—preparing patients for the next phase of care: rehabilitation.

Cardiac and Pulmonary Rehabilitation. Rehabilitation is an essential phase in the recovery from cardiopulmonary disease. We encourage our patients, when appropriate, to obtain care at the Joan and Joel Smilow Cardiac and Pulmonary Rehabilitation and Prevention Center at NYU Langone or at another rehabilitation program.

The Smilow Cardiac and Pulmonary Rehabilitation and Prevention Center, a component of the renowned Rusk Institute of Rehabilitation Medicine, offers the most comprehensive cardiopulmonary wellness and rehabilitation services in the tri-state area. Both inpatient and outpatient services are provided, helping patients move seamlessly into the recovery phase of their care. Facilities include a 22-bed inpatient unit, a state-of-the-art cardiopulmonary rehabilitation gym, and dedicated space for patient education.

NYU Langone’s rehabilitation program takes a multidisciplinary, individualized approach to patient care, aimed at enhancing activity and functional independence, reducing symptoms, improving overall health, modifying health risk factors, promoting awareness of healthy lifestyles, and encouraging appreciation of mind-body interactions in health and illness.

In support of these goals, the Center offers a host of a la carte services, including acupuncture, anger and stress management, diabetes management, fitness consultations, individualized psychotherapy, massage therapy, nutrition, occupational and cognitive therapy, smoking cessation, Tai Chi, weight management, and women’s heart-health education and assessment programs.

NYU CARDIOTHORACIC SURGERY: PHYSICIAN PROFILES

LEADERSHIP

Aubrey C. Galloway, MD

Chairman, Department of Cardiothoracic Surgery
Seymour Cohn Professor of Cardiothoracic Surgery
Director, Thoracic Surgery Residency Program
NYU School of Medicine



SPECIALTY INTERESTS: Minimally invasive cardiac surgery, mitral valve repair, aortic valve and aortic root surgery, coronary artery bypass surgery, adult congenital heart surgery, surgery for thoracic aneurysms and aortic dissections, and reconstructive surgery for congestive heart failure and ventricular aneurysms.

Ralph S. Mosca, MD

Vice Chairman-Clinical Affairs
Professor of Cardiothoracic Surgery
Chief, Division of Pediatric and Adult Congenital Cardiac Surgery
NYU School of Medicine



SPECIALTY INTERESTS: Congenital heart disease, reparative and palliative surgery in neonates and children with complex cardiac malformations including hypoplastic left heart syndrome and other single ventricle lesions, adult congenital heart disease, and reoperative surgery.

Harvey I. Pass, MD

Vice Chairman-Research
Professor of Cardiothoracic Surgery
Chief, Division of Thoracic Surgery
NYU School of Medicine
Chief, Thoracic Oncology, NYU Cancer Institute



SPECIALTY INTERESTS: All aspects of thoracic oncology, including surgical management of lung cancer, mesothelioma, pulmonary metastases, esophageal cancer, and neoadjuvant therapy for Stage III lung cancer as well as tumors of the mediastinum, thymus, diaphragm, and chest wall; minimally invasive surgical procedures, including lobectomy, and lung sparing options including segmentectomy; and extrapleural pneumonectomy and treatment options for mesothelioma.

CARDIAC SURGERY

Leora B. Balsam, MD

Assistant Professor of Cardiothoracic Surgery
Director, Ventricular Assist Device Program
Associate Director, Cardiac Surgical Research



SPECIALTY INTERESTS: Adult cardiac surgery, coronary artery bypass surgery, valve repair and replacement, aortic surgery, and ventricular assist devices for heart failure.

Alfred T. Culliford, MD

Professor of Cardiothoracic Surgery
NYU School of Medicine



SPECIALTY INTERESTS: Coronary artery bypass surgery, aortic valve and aortic root surgery, and mitral valve surgery.

Abe DeAnda, Jr., MD

Associate Professor of Cardiothoracic Surgery
Director, Thoracic Aortic Aneurysm Program
Associate Director, Thoracic Surgery Residency Program
NYU School of Medicine
Chief, Cardiothoracic Surgery, Bellevue Hospital Center



SPECIALTY INTERESTS: Surgery for thoracic aortic aneurysms and aortic dissection, adult cardiac surgery including valve repair and replacement, valve sparing aortic root surgery for Marfan's Syndrome, coronary artery bypass surgery, and surgery for heart failure.

Eugene C. Grossi, MD

Professor of Cardiothoracic Surgery
Director, Cardiac Surgical Research
NYU School of Medicine
Chief, Cardiothoracic Surgery
NY Harbor Healthcare Veterans Administration Hospital



SPECIALTY INTERESTS: Minimally invasive surgical treatment of arrhythmias, adult and pediatric pacemakers and automatic implantable cardiac defibrillators, valve repair and replacement, and coronary artery bypass surgery.

THORACIC SURGERY

Didier F. Loulmet, MD

Associate Professor of Cardiothoracic Surgery
Chief, Cardiac Surgery, Tisch Hospital
Director, Surgical Robotics and Transcatheter Valve Surgery
NYU School of Medicine



SPECIALTY INTERESTS: Minimally invasive cardiac surgery, robotic surgery, non-surgical transcatheter therapies, mitral valve repair and replacement surgery, aortic valve surgery, coronary artery bypass surgery, surgery for chronic atrial fibrillation and heart failure, and surgery for adult congenital heart diseases.

Charles F. Schwartz, MD

Assistant Professor of Cardiothoracic Surgery
Associate Director, Thoracic Aortic Aneurysm Program
NYU School of Medicine



SPECIALTY INTERESTS: Stent graft repair for thoracic aortic aneurysms and aortic dissections, coronary artery bypass surgery, minimally invasive cardiac surgery, valve repair and replacement, and robotic surgery.

Elias Zias, MD

Clinical Associate Professor of Cardiothoracic Surgery
NYU School of Medicine



SPECIALTY INTERESTS: Coronary artery bypass surgery, minimally invasive cardiac surgery, valve repair and replacement, automatic implantable cardiac defibrillator and pacemaker insertion, and general thoracic surgery.

Costas Bizekis, MD

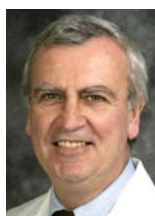
Assistant Professor of Cardiothoracic Surgery
Director, Esophageal Surgery Program
NYU School of Medicine



SPECIALTY INTERESTS: Minimally invasive pulmonary and esophageal surgery, lung cancer with video-assisted minimally invasive techniques, esophageal cancer, benign esophageal disorders, endoscopic palliation of esophageal cancer, stents, photodynamic therapy, and radiofrequency ablation of Barrett's esophagus and lung cancer.

Bernard K. Crawford, Jr., MD

Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine
Director, General Thoracic Surgery
Tisch Hospital
NY Harbor Healthcare Veterans Administration Hospital



SPECIALTY INTERESTS: General thoracic surgery, video-assisted minimally invasive and traditional surgical treatment of lung cancer, tumors of the mediastinum, thymus, esophagus, diaphragm, and chest wall.

Jessica S. Donington, MD

Assistant Professor of Cardiothoracic Surgery
Director, Thoracic Surgery Translational Research Laboratory
Associate Director, Thoracic Surgery Residency Program
NYU School of Medicine
Director, General Thoracic Surgery, Bellevue Hospital



SPECIALTY INTERESTS: All aspects of thoracic oncology, including surgical management of lung cancer, mesothelioma, pulmonary metastases, esophageal cancer, and neoadjuvant therapy for Stage III lung cancer, and tumors of the mediastinum, thymus, diaphragm, and chest wall.

Michael D. Zervos, MD

Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine



SPECIALTY INTERESTS: General thoracic surgery, including thoracic oncology, tracheal surgery, minimally invasive pulmonary and esophageal surgery, video-assisted thoracoscopy, chest-wall surgery, and thoracic spine exposure with open and thoracoscopic approaches.

RESEARCH FACULTY

Margaret Huflejt, PhD

Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine



SPECIALTY INTERESTS: Novel antibodies against cell-surface sugars for assessing a patient's risk for thoracic cancers and response to treatment.

Paolo Mignatti, MD

Associate Professor of Cardiothoracic Surgery and Cell Biology
NYU School of Medicine



SPECIALTY INTERESTS: Molecular and cellular mechanisms that control both tumor and vascular cell functions, growth factor interactions and intracellular signaling mechanisms that control the formation of blood vessels (angiogenesis), and non-proteolytic functions of metalloproteinases in vascular and tumor cell biology.

Giuseppe Pintucci, PhD

Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine



SPECIALTY INTERESTS: Molecular mechanisms of tissue remodeling in injured blood vessels, interaction of inflammatory proteases and angiogenic growth factors in the cardiovascular system, and intracellular signaling secondary to cardiac and vascular injury.

FACULTY AT AFFILIATED HOSPITALS

MAIMONIDES MEDICAL CENTER, BROOKLYN, NEW YORK

Greg H. Ribakove, MD

Chief, Cardiothoracic Surgery, Maimonides Medical Center
Associate Professor of Cardiothoracic Surgery
NYU School of Medicine

Gregory A. Croke, MD

Cardiac Surgeon, Maimonides Medical Center
Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine

ATLANTICARE REGIONAL MEDICAL CENTER, ATLANTIC CITY, NEW JERSEY

James G. Dralle, MD

Chief, Cardiothoracic Surgery, Atlanticare Regional Medical Center
Clinical Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine

Howard I. Axelrod, MD

Cardiac Surgeon, Atlanticare Regional Medical Center
Clinical Assistant Professor of Cardiothoracic Surgery
NYU School of Medicine

OUR SPECIALTIES

Cardiac Surgery

CONDITIONS

- ❖ Anomalous pulmonary venous return
- ❖ Aortic dissections
- ❖ Aortic insufficiency (leaking aortic valve)
- ❖ Aortic stenosis (narrowing of aortic valve)
- ❖ Arrhythmias
- ❖ Atrial septal defects
- ❖ Cardiac tumors
- ❖ Coarctation of the aorta
- ❖ Congenital heart defects (adult and children)
- ❖ Coronary artery disease
- ❖ Cor triatriatum
- ❖ Ebstein's anomaly
- ❖ Heart failure
- ❖ Mitral regurgitation (leaking mitral valve)
- ❖ Mitral stenosis (narrowing of mitral valve)
- ❖ Hypoplastic left heart syndrome
- ❖ Interrupted aortic arch
- ❖ Patent ductus arteriosus
- ❖ Pulmonary stenosis and atresia
- ❖ Tetralogy of Fallot
- ❖ Thoracic aortic aneurysms
- ❖ Tricuspid atresia
- ❖ Truncus arteriosus
- ❖ Ventricular septal defects

TECHNIQUES

- ❖ Aortic dissection repair
- ❖ Aortic valve replacement
- ❖ Atrial septal defect repair
- ❖ Automatic implantable cardiac defibrillators
- ❖ Beating heart, or off-pump, coronary artery bypass surgery
- ❖ Bidirectional Glenn procedure
- ❖ Coarctation of the aorta repair
- ❖ Congenital heart defect repairs
- ❖ Double-outlet right ventricle repair
- ❖ Double switch operation
- ❖ Extracardiac fontan
- ❖ High-risk adult surgery
- ❖ Minimally invasive surgery
- ❖ Multi-vessel coronary artery bypass grafting
- ❖ Mitral valve repair, reconstruction, or redo
- ❖ Pediatric surgery
- ❖ Radiofrequency tissue ablation
- ❖ Total arterial coronary revascularization
- ❖ Tricuspid valve repair
- ❖ Ventricular restoration (Dor procedure)



Faculty of the Department of Cardiothoracic Surgery

Thoracic Surgery

CONDITIONS

- ❖ Achalasia
- ❖ Aortic aneurysms
- ❖ Airway diseases: benign and malignant
- ❖ Chest wall defects
- ❖ Endobronchial and tracheal obstructions
- ❖ Esophageal disease
- ❖ Gastroesophageal reflux disease
- ❖ Hiatal/esophageal hernias
- ❖ Hyperhidrosis (excessive sweating)
- ❖ Infectious lung disease
- ❖ Pulmonary emboli
- ❖ Pulmonary metastases
- ❖ Mesothelioma
- ❖ Myasthenia gravis
- ❖ Severe emphysema
- ❖ Swallowing disorders
- ❖ Thoracic aneurysms
- ❖ Thoracic trauma
- ❖ Tumors of the chest wall, diaphragm, esophagus, lung, or thymus

TECHNIQUES

- ❖ Endobronchial stents
- ❖ Endobronchial ultrasound
- ❖ Fluorescence bronchoscopy
- ❖ Lung transplantation
- ❖ Lung volume reduction surgery
- ❖ Minimally invasive biopsies
- ❖ Minimally invasive surgery
- ❖ Nd:Yag laser surgery
- ❖ Pediatric surgery
- ❖ Photodynamic therapy
- ❖ Radiofrequency tissue ablation
- ❖ Video-assisted thoracoscopy, laparoscopy, and mediastinoscopy

CREDITS

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