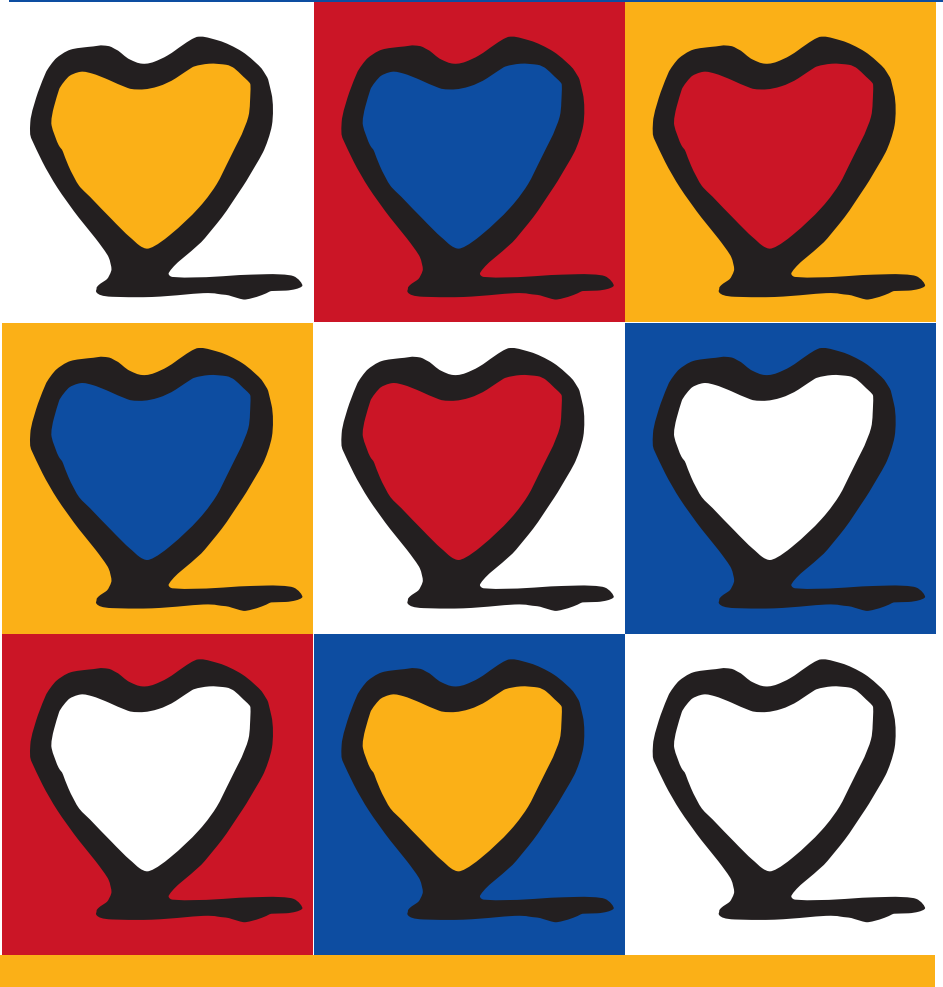


Healing Hearts

# Adult Cardiac Surgery



COLUMBIA UNIVERSITY

*College of Physicians  
and Surgeons*

NewYork-Presbyterian Hospital  
Columbia University Medical Center

# Welcome to Cardiac Surgery at NewYork-Presbyterian Hospital/ Columbia University Medical Center

## Table of Contents

Introduction . . . . .	1
Our New State-of-the-Art Facilities . . . . .	3
What are My Surgical Options . . . . .	4
Procedures . . . . .	6
The Heart's Gateways . . . . .	7
Repairing the Aorta . . . . .	10
Advances in Treating Heart Failure . . . . .	12
Patient and Family Support . . . . .	14
Resources . . . . .	16

## INTRODUCTION

If you are searching for the best possible cardiac care for yourself or a loved one, care that is delivered by the world's most experienced cardiac surgeons using the most advanced techniques and technology, you've come to the right place. At NYPH/Columbia, we help patients from all over the world with every cardiac condition, from the most common to the most rare and complex, with outcomes that set the standard for excellence. Our program is consistently ranked as one of the very best in the nation, and was most recently named #6 in America by *U.S. News* and *World Report*, the highest ranking in the New York metropolitan area.

The NYPH/Columbia cardiac surgery program has a proven record of innovation, having revolutionized the care of cardiac patients for almost 75 years. In the last decade alone, our surgeons have been among the first to perform pioneering procedures in several areas, including:

- Heart failure, mechanical support devices, artificial hearts, and transplantation
- Aortic diseases
- Mitral and aortic valve repair
- Hybrid and endovascular therapies
- Minimally invasive and robotic surgery
- Surgical and hybrid treatments for atrial fibrillation
- Adult congenital heart disease
- Coronary artery bypass, including off-pump techniques

Our renowned surgical team treats the full range of cardiac conditions and routinely cares for high-risk patients, many of whom are considered inoperable at other centers. Patients are routinely transferred to us for life-saving care from hospitals across the Northeast, and even as far away as Japan.

We are also known for our unparalleled commitment to complete patient care—we know that having a cardiac operation is a major life event, and our team of surgeons, cardiologists, therapists, and coordinators will walk you through every step of your evaluation, treatment, and recovery. Our goal is to make you feel comfortable and confident right from the start, and keep you informed and involved in every aspect of your care throughout your stay with us.

Whenever possible, we use the latest interventional, hybrid, or minimally invasive approaches to minimize risk, decrease discomfort, and shorten hospital stay and recovery time. Over the last decade, our cardiac surgeons and interventional cardiologists have worked together to develop procedures that combine surgical and catheter-based techniques, resulting in safer, less invasive “hybrid” treatments. Examples of new collaborative procedures include percutaneous aortic valve replacement, percutaneous mitral valve repair, and hybrid approaches for addressing aortic aneurysms, atrial fibrillation, and hypertrophic cardiomyopathy.

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Because the treatment of cardiac disease by these novel approaches involves so many professionals, we have created centers that bring together expert teams focused on specific disease categories. The Center for Valve Disease provides comprehensive evaluation and care of patients with valvular problems, including the latest surgical and percutaneous treatment options. The Hypertrophic Cardiomyopathy Program brings together a world-class team of surgeons, cardiologists, and geneticists to manage this condition at every stage. The Atrial Fibrillation Program offers the full spectrum of treatments for this common affliction, from medications to catheter ablation to surgical Maze procedures.

Our new facilities at The Seymour and Vivian Milstein Family Heart Center bring these specialty programs and all of our patient services together in one convenient location. In fact, by bringing world-class physicians of every specialty and the most advanced diagnostic and surgical equipment together under one roof, the Heart Center sets a new standard in comprehensive cardiac disease management.



**Emile Bacha, MD**  
*Chief, Division of Cardiothoracic Surgery  
NewYork-Presbyterian Hospital/  
Columbia University Medical Center*

As we work to provide the very best treatment to each of our patients, our clinical research team works tirelessly to study new and improved techniques and technologies. Because of our world-renowned clinical research program, we have access to the newest and most advanced treatments available anywhere.

Finally, we also focus on disease prevention, offering programs to educate you about risk stratification, screening, heart-healthy habits and ways to improve your quality of life. Because we have access to the full spectrum of preventative and treatment options, we tailor our recommendations to each individual, helping some patients avoid the need for any surgical procedure.

In the pages that follow, we hope to give you a glimpse of the truly amazing, innovative work that goes on at NYPH/Columbia every single day, all with the same goal; to provide the very best evaluation and treatment of patients with heart disease, utilizing the safest, most effective, and least traumatic techniques available.



**Michael Argenziano, MD**  
*Chief, Section of Adult Cardiac Surgery  
NewYork-Presbyterian Hospital/  
Columbia University Medical Center*

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## OUR NEW STATE-OF-THE-ART FACILITIES

The Vivian and Seymour Milstein Family Heart Center, at 173 Fort Washington Avenue in upper Manhattan, contains all the recent breakthroughs in cardiovascular medicine—a new diagnostic center, an expanded intensive care unit, and eight new state-of-the-art operating rooms equipped with the most advanced minimally invasive technologies, as well as special areas for pre- and post-operative care.



*The Vivian and Seymour Milstein Family Heart Center*

This striking six-level facility is connected to the Herbert Irving Pavilion, allowing us to provide comprehensive, seamless service to all of our patients. Our team of exceptional clinical cardiologists, interventional cardiologists, electrophysiologists, and cardiothoracic surgeons address all levels of heart disease. Our aim is to bring you the highest level of innovation combined with exceptional patient care.

**Take a virtual tour of our new building online at:**  
[www.nypheart.org/milstein](http://www.nypheart.org/milstein)

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## WHAT ARE MY SURGICAL OPTIONS?

Our surgeons are continually improving existing surgical procedures and at the same time pioneering new approaches to every type of cardiac disease.

NYPH/Columbia offers a full range of surgical options including open surgery, minimally invasive and robotic surgery, and off-pump/beating heart surgery. In addition, our surgeons collaborate closely with our interventional cardiologists and other disciplines to provide combined or hybrid treatments, tailoring care to each patient's specific needs.

### Open Cardiac Surgery

A world leader in the development of traditional open surgery, our division has laid the groundwork for many new procedures in wide use today. Columbia surgeons successfully conduct surgery on individuals with multiple risk factors who often cannot find care elsewhere. This includes patients who have had strokes or previous heart operations, the frail and elderly, and those who suffer from kidney disease. Performing over 1,600 open-heart procedures per year in patients of all levels of risk, the cardiac surgery section stands alone in the region and among the best in the world.

### Minimally Invasive Cardiac Surgery

Our surgeons offer the full range of minimally invasive procedures available today and are recognized as leaders in this field. Since 2000, we have performed over 1,400 minimally invasive cardiac operations. Thanks to our pioneering surgeons, many procedures that were traditionally accomplished with large chest incisions can now be performed with minimally invasive techniques. We use a variety of approaches depending on the specific disease process and patient anatomy such as special surgical instruments including high-tech cameras inserted through tiny incisions. Patients who qualify for one of these options typically have faster recovery, reduced risk of infection, and a better cosmetic outcome.

In addition, our surgeons and scientists have invented new tools and techniques that allow for a minimally invasive repair of the mitral valve as well as the aortic root, reducing the need for open surgery. Known for innovation, our surgeons also run one of the premier training centers for minimally invasive surgery in the U.S. today.

## Robotic Cardiac Surgery

NYPH/Columbia was the site of several historic robotic operations, including the very first closed-chest cardiac operations ever performed in the United States for treatment of coronary artery disease and atrial septal defect. Our surgeons have led clinical trials resulting in the approval of robotics for many of these procedures. We have also used a robotic approach for mitral valve repair, removal of cardiac tumors, and the correction of abnormal heart rhythms.

## Percutaneous Cardiac Procedures

Percutaneous or interventional procedures are performed using the smallest possible incisions. A specially trained cardiologist, known as an interventionalist, inserts a tiny tube called a catheter into a vein or artery in the leg or arm, threading it to the site of the problem. Once these instruments are in place, the interventionalist can open blocked vessels, insert stents to prevent new blockages, control cardiac arrhythmias, close heart defects, and even repair or replace damaged heart valves.

We are pleased to offer this alternative therapy in collaboration with our world-renowned colleagues at the NYPH Center for Interventional Vascular Therapies. Several of our cardiac surgeons are also trained in interventional techniques, allowing us to perform hybrid procedures—mixing traditional and interventional approaches, according to each patient's needs.



©2012 Intuitive Surgical, Inc.

*The Minimally Invasive and Robotic Cardiac Surgery Program seeks to surgically treat cardiac disease through smaller incisions, resulting in a faster recovery with less discomfort.*

# PROCEDURES

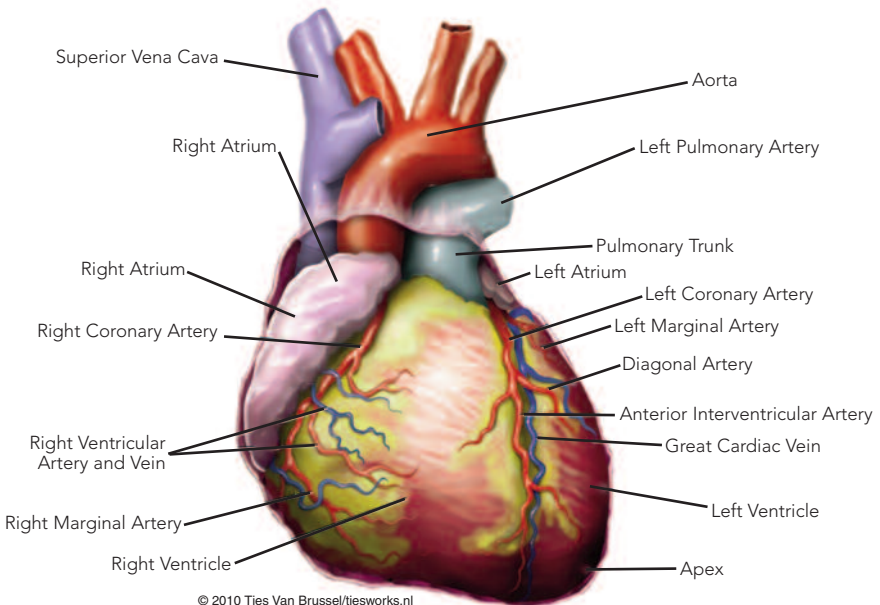
You and your cardiac team will determine which procedure is best for you based on your cardiac condition and your overall health.

## Helping the Heart's Vessels

### Bypass Surgery

When arteries that feed oxygen to the heart are blocked, the heart muscle is at risk for damage. The result may be a heart attack and even death. In an operation known as coronary artery bypass grafting (CABG), an artery or vein from another part of the body is used to reroute blood flow around the blockage. Surgeons use chest wall arteries (known as internal mammary arteries) and segments of the patient's own veins to construct new pathways for blood and oxygen to reach the heart. The veins used for this reconstruction are usually taken from the patient's legs, using a minimally invasive technique that leaves only a few tiny incisions.

In certain situations, NYPH/Columbia surgeons can perform CABG operations "off- pump", meaning that the heart is not stopped, and there is no need to place the patient on a heart-lung machine. By avoiding the machine and clamping of the major arteries of the heart, off-pump CABG (or OPCAB) can reduce bleeding. It is often a safer alternative for certain patients, such as those with advanced age, kidney disease, or severe hardening of the arteries.





# THE HEART'S GATEWAYS

## Valve Repair and Replacement

In 2011, we launched the Columbia Valve Center, in collaboration with the Center for Interventional Vascular Therapies, to bring together all the latest and most advanced techniques for valve replacement and repair. Our multidisciplinary team includes cardiac surgeons, anesthesiologists, interventional cardiologists, and physicians specially trained in hybrid approaches, allowing us to combine both surgical and non-surgical techniques.

The heart has four valves that open and close alternately with each heartbeat. All four valves are

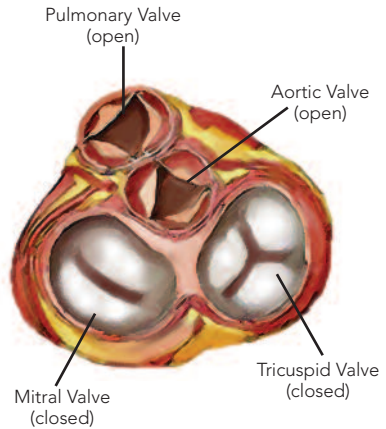
made of thin leaflets that prevent the blood from flowing backward into the heart and allow it to move forward, feeding the rest of the body.

When a valve leaks (regurgitation), there is backflow of blood which can cause enlargement and weakening of the heart's chambers and eventually heart failure. In contrast, when a valve fails to open properly (stenosis), blood cannot move across the valve, and the heart may not be able to pump enough blood to the body. In both cases, the malfunctioning valve can lead to heart damage and failure.

Valvular disease has many causes including coronary artery disease, congenital defects, advanced age, and infection. Columbia surgeons now use open surgery, minimally invasive approaches and percutaneous approaches to repair a valve or replace it with a tissue substitute.

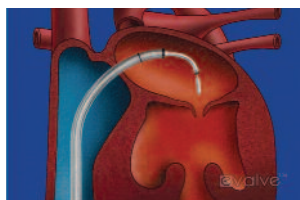
## Mitral Valve Procedures

Most patients in the United States with mitral valve regurgitation are treated with valve replacement and have to choose between two types of artificial valves, each with its own problems. Mechanical valves (made from plastic-like materials) require blood-thinning medications, that can cause serious bleeding. Bioprosthetic (animal) valves wear out and may need replacement



after only 8 or 10 years. Mitral valve repair avoids these drawbacks, since it doesn't require blood thinners and lasts much longer than animal valves. Only a fraction of surgeons nationwide have experience with mitral valve repair. However, Columbia surgeons have such extensive experience that most of our patients with mitral regurgitation are treated with valve repair rather than replacement.

Columbia surgeons and interventional cardiologists have also pioneered the use of the E-Valve MitraClip™, which allows mitral valve repair without surgery. In appropriate patients, our physicians guide a catheter, or thin tube, through the vascular system to the mitral valve, using x-ray and echocardiographic imaging to show the way. The MitraClip™, located on the tip of the catheter, is placed at the center of the valve leaflets to hold them together. Patients have a brief recovery time and are able to resume their normal activities within days of this procedure. This technology was developed at Columbia and is based on a surgical procedure known as the "Bow-Tie Repair." Our physicians are currently participating in clinical trials testing this device in high-risk patients.

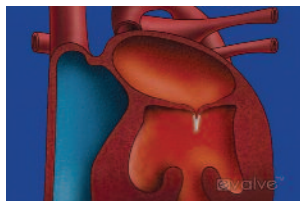


COURTESY OF E-VALVE®

*Positioning of E-Valve MitraClip™ over heart valve*



*Leaking heart valve before clip is placed*



*Procedure completed, clip in place, and leaking resolved*

## Aortic Valve Repair and the Ross Procedure

Traditionally, patients with leaky aortic valves—known as aortic regurgitation – have had no choice other than valve replacement with mechanical, animal, or human homograft valves. Recently, techniques have been developed to repair these aortic valves, avoiding the need for blood thinners or early reoperation. One such procedure is known as the David Procedure, in which the aortic valve and root are reconstructed and reshaped. Columbia surgeons are world-renowned for performing the David Procedure, and offer this as a routine treatment of aortic regurgitation in appropriate patients.

In another advanced aortic valve operation known as the Ross Procedure, a diseased aortic valve (which is either leaking or stenotic) is removed, and the patient's own pulmonary valve is substituted. Columbia is one of the few institutions in the world specializing in this complex operation. Using a patient's own valve tissue, the Ross Procedure eliminates the need for a replacement for up to 10 years and also eliminates the need for blood thinners. This procedure is especially well suited for children and adolescents for whom artificial valve options are limited.

## Transcatheter Aortic Valve Replacement— A Non-Surgical Approach

For patients with aortic valve stenosis, Columbia surgeons and interventionalists have made exciting new advances. We now offer a new, non-surgical option to qualifying patients.

NYPH/Columbia was one of the first institutions in the U.S. to perform percutaneous (through the skin) transcatheter aortic valve replacement (TAVR). During this procedure, a catheter, or tube, is advanced through a very small incision in the femoral artery, or through the chest wall and left ventricle, until it reaches the aortic valve. Through the tube, a tissue valve encased in a metal stent is positioned at the site of the diseased aortic valve. The stent then expands, anchoring the new valve in place. This technique completely avoids the need for the heart-lung bypass machine and open surgery. The multicenter trial that tested this device was directed by two of our surgeons, and the results have led to the approval of this technology for selected patients. This operation has proven especially successful for high-risk patients, such as the very elderly.

*Columbia is the national leader in conducting beating-heart valve repair and replacement procedures.*

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*Columbia has performed more transcatheter valve procedures than any other center in the country and has created a unique multidisciplinary approach that provides the highest level of patient care.*

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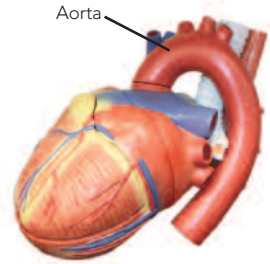
*Columbia conducts the most percutaneous aortic valve operations in the region, procedures in which the valve is changed without stopping the heart or opening the chest.*

• • • • •

*Mortality for mitral valve repair at Columbia is consistently below the average for U.S. academic medical centers.*

# REPAIRING THE AORTA

The aorta, the largest artery in the body, receives oxygen-rich blood from the left ventricle of the heart and distributes it to the body. The aortic root, containing the aortic valve, is in a critical place—where the artery exits the heart.



## Aortic Root Replacement

Columbia surgeons have one of the largest practices in North America focusing on the aortic root. In many cases, we can now repair or replace the aortic root without harming the aortic valve itself. This advanced procedure is known as valve-sparing root replacement, and a major advantage of this technique is that it avoids valve replacement and the use of blood thinners. For patients who require replacement of both the aortic root and the aortic valve, one of our surgeons has invented the Columbia Bioroot. This replicates the characteristics of normal aortic root tissue and thus has an important advantage over other artificial root replacement techniques. The Columbia Bioroot Procedure is a major advance because it reduces the time that patients must spend on the heart-lung machine. It also reduces bleeding, and decreases the need for subsequent valve repair.

## Treating Aortic Aneurysms

When the aorta weakens, the result may be an aneurysm (an enlargement of the artery wall) or dissection (a tear in the artery wall). Both of these can be life-threatening.

To deal with straightforward aneurysms, our surgeons insert an endovascular stent graft—a stiff mesh tube that provides “scaffolding” for the artery. Columbia surgeons have also pioneered a hybrid endovascular procedure, incorporating some minimally invasive techniques, to address complex aneurysms in a single trip to the operating room.

*Mortality for aortic valve replacement at Columbia is consistently below the national average for U.S. academic medical centers.\**

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*For aortic aneurysm repair, modern techniques make it possible to replace the aorta without harming the native valve. Columbia is a national leader in these valve-sparing operations. Our volume for these procedures more than doubled over the last two years.*

\* University Health System Consortium, an alliance of 97 academic medical centers and 149 of their affiliated hospitals representing nearly 90% of the nation's non-profit academic medical centers

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## Treating Cardiac Arrhythmias

Atrial fibrillation (AF) is a form of arrhythmia, or irregular heartbeat. In patients with AF, the two upper chambers of the heart (the atria) quiver instead of beating effectively. The Surgical Atrial Fibrillation Program at NYPH/Columbia, one of the most experienced in the nation, offers a variety of solutions for this condition, and our experts have performed over 1,000 procedures for AF.

### The Maze Procedure and Surgical Atrial Fibrillation Ablation (SAFA)

These operations treat AF by interrupting the electrical impulses that cause the abnormal heart rhythm. This is accomplished in a variety of ways including incisions in the atrial walls, heating of the heart tissue with radiofrequency probes, or freezing with cryotherapy probes. Columbia surgeons have also developed several atrial fibrillation ablation procedures, including minimally invasive and off-pump versions, totally closed-chest (robotic) ablation, and hybrid ablations.

Hybrid procedures are less invasive because they combine surgical and catheter-based ablation techniques. The specific approach used is determined by each patient's unique characteristics and anatomy. These ablations can be performed for those with "lone AF" or those having another cardiac operation, such as coronary bypass or valve surgery.

### Adult Congenital Heart Disease

Innovations have dramatically extended the lives of patients with congenital heart disease. As a result, we now have a growing adult population requiring surgical repairs and "updates" of earlier procedures. As the body matures, we may need to revise childhood operations for septal defects (holes in the walls separating the upper and lower chambers of the heart) or other abnormalities. Adults may also develop new lesions surrounding earlier repairs. In addition, newly recognized congenital defects and complex arrhythmias may require surgical attention. Columbia surgeons are known for treating the most complex of these defects, and have special expertise in caring for adults with congenital heart disease.

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# ADVANCES IN TREATING HEART FAILURE

Heart failure occurs when one or more chambers are unable to pump enough blood to meet the body's demands. Columbia has one of the largest and most extensive heart failure programs in the world.

## Hypertrophic Cardiomyopathy (HCM)

Hypertrophic Cardiomyopathy (HCM) patients have a genetic predisposition to an abnormal thickening of the heart muscle that affects the pumping action of the heart. This condition can be diagnosed at any age and has been linked to serious arrhythmias, conduction problems, and heart failure.

The HCM Center has the depth and breadth of experience to provide seamless care for these patients and their families; at every age, and at every stage of this disease. Our multidisciplinary team screens first-degree relatives for HCM-related genes and offers patients the full spectrum of treatment options.

Our interventional cardiologists are known for their expertise in septal ablation, a minimally invasive technique performed in the catheterization lab. In this procedure, a small amount of alcohol is injected into the septal artery, destroying only that very small portion of heart muscle that's responsible for the obstruction. This results in improved blood flow exiting the heart.

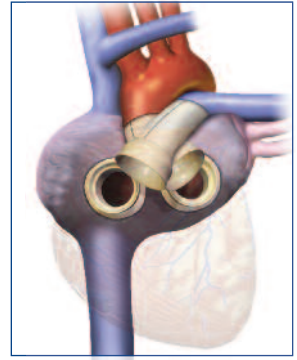
In septal myectomy, a surgeon cuts out damaged muscle tissues on the ventricular wall. This operation has long been considered the gold standard to relieve obstruction in the hypertrophic heart with long lasting results.

## Heart Transplantation

Heart failure usually develops slowly over time and some loss in pumping capacity is natural as people age. With end-stage heart failure, the loss of pumping capacity becomes life threatening and is no longer manageable with medical therapy. For over 30 years, the heart transplant program at NYPH/Columbia has been at the forefront of research leading to safe and successful cardiac transplantation. Our program continues to be one of the top in the nation by volume, usually performing more transplants than any other institution.

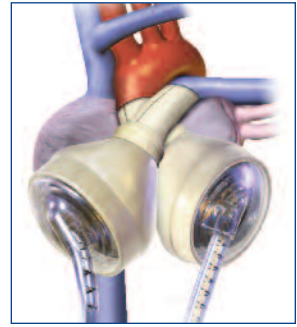
## Mechanical Assist Devices and the Total Artificial Heart

To overcome long waiting lists for donor organs and other limitations, our surgeons have spearheaded an international effort to develop devices that provide mechanical support for failing hearts. NYPH/Columbia has long been a leader in mechanical assist devices, advancing the technology and improving their reliability and durability. Ventricular assist devices, or VADs, can be used to support patients with heart failure until they can get a transplant, or they can be the definitive therapy for patients who are not transplant candidates. Columbia has also been active in the area of artificial heart development, and this past summer our surgeons were the first in the New York metropolitan area to successfully implant the Syncardia Total Artificial Heart. Unlike VADs, which only partially replace the function of the failing heart, the Total Artificial Heart takes over 100% of the pumping action, completely relieving the patient's native heart.



Courtesy: syncardia.com

*Quick connects are sewn into the left and right atria, aorta and pulmonary artery*



Courtesy: syncardia.com

*The Total Artificial Heart is implanted and attached via four quick connects..*

## Cardiac Resynchronization Therapy

Columbia also offers a new approach to heart failure known as cardiac resynchronization therapy, or CRT. This technique uses special pacing electrodes that are inserted into the right and left ventricles, and an implantable computer that synchronizes electrical conduction so the two chambers can beat more efficiently. The electrodes can be inserted either percutaneously, or through a minimally invasive operation.

## ECMO

Our Mechanical Circulatory Assist Program also includes experts in ECMO (extracorporeal membrane oxygenation). This technology provides short-term heart and lung support for those suffering from heart or lung failure, and it buys valuable time to further assess patients, treat the underlying disease, or arrange for heart or lung transplantation.

# PATIENT AND FAMILY SUPPORT

## Your Cardiac Care Team

After you consult with your surgeon and decide on the procedure that's right for you, you'll be introduced to your cardiac care team who will tend to your needs before, during, and after your surgery. This group will include your surgeon, a cardiologist, a physician assistant, an anesthesiologist, nurses, pulmonary and physical therapists, and a social worker.

In addition, you will receive personalized, one-on-one attention from our cardiac coordinator. She will guide you through the surgery, recovery, and rehabilitation process. She will also provide you with educational materials and direct you to a class on nutrition, exercise and stress management, and other aspects of your at-home care. Your family will also have an opportunity to participate in a class for caregivers.

Diane Amato, our cardiac surgery administrator, is another valuable resource. With over 30 years' experience working in medical practices, she is a tremendous source of information and support. She will make sure that your entire experience—from your pre-op care to your discharge and post-op rehabilitation—reflects the first class care for which NYPH/Columbia is known.

## Taking Care of your Emotional Health

Depression and anxiety are common among patients who have heart surgery. We consider emotional health an important part of the healing process. That's why we offer ongoing support groups to help patients and their families move more swiftly toward recovery. Consisting of one-hour of education and one hour of support, these group meetings take place monthly.





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## Rehabilitation

After your surgery, we offer a comprehensive rehabilitation program that will also help you maintain a heart healthy lifestyle. These programs are described in the *Resources* section of this brochure.



*The New York-Presbyterian Hospital/Columbia  
Vivian and Seymore Milstein Family Heart Center.*

## Advantages of a Teaching Hospital

As one of the world's leading teaching and research hospitals, Columbia is among the first to develop and offer new surgical techniques and treatments. As a patient, you may also have the opportunity to participate in clinical trials focusing on new approaches to heart disease, if you so desire.

We are able to draw on the full resources of New York-Presbyterian Hospital/Columbia University Medical Center to provide the highest level of patient care. This includes Columbia surgeons that not only practice but teach as well; always aware of the latest findings and best practices.

In addition, our surgeons and cardiology colleagues are among the best in the world. We are often able to help patients with complex, multiple or rare illnesses, providing a level of care unavailable at other hospitals.

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## RESOURCES.

If a member of your family is having a heart procedure at NYPH/Columbia, we want to make sure you're healthy, too. The PASSPORT to Heart Health program offers free screening to relatives of patients having surgery at Columbia and serves as a national model for comprehensive heart care.

For more information, please call 212.305.4255

Or visit [www.hearthealthtimes.com](http://www.hearthealthtimes.com)

**The Columbia Center for Heart Disease Prevention** is a specialized medical service for patients who would like to reduce their risk factors for heart disease and improve their lifestyle.

For more information, please call 212.305.4866

Or visit [www.hearthealthtimes.com](http://www.hearthealthtimes.com)

**NewYork-Presbyterian Hospital** provides inpatient and outpatient cardiac rehabilitation services.

For outpatient appointments, please call 212.305.4695

Or visit [www.nyprehabmed.org](http://www.nyprehabmed.org)

**The Schneeweiss Center for Adult Congenital Heart Disease** cares for adult patients who had cardiac surgery earlier in life, as well as those with newly diagnosed congenital heart disease.

For more information, please call 212.305.6936

**The Valve Center at NYPH/Columbia** has developed the latest surgical and interventional approaches to valve disease and now draws patients from all over the world.

For more information, please call 212.342.0444

**The Hypertrophic Cardiomyopathy Program** brings together leading experts on this genetically transmitted heart condition, treating patients and their entire families; at every stage of this disease.

For more information, please call 212.305.9268

or visit [www.columbiasurgery.org/hcm](http://www.columbiasurgery.org/hcm)

**Patient Referrals: 1.855.CUSURGE (1.855.287.8743)**

Visit our web site: [www.columbiaheart.org](http://www.columbiaheart.org)

# Contact Us:

For further information, please call 212.305.2633

To learn more about the Section of Adult Cardiac Surgery, its clinical trials, and cardiac surgery at NYPH/Columbia, please visit: [www.columbiaheart.org](http://www.columbiaheart.org)

Patient Referrals 855-CUSURGE (855.287.8743)

Physicians requesting emergency patient transfer, please call 800.NYP.STAT 800.697.7828



## We are located at:

NewYork-Presbyterian Hospital/Columbia  
Section of Adult Cardiac Surgery  
Milstein Hospital Building 7-435 GN  
177 Fort Washington Avenue  
New York, NY 10032  
212.305.2633  
[www.Columbiaheart.org](http://www.Columbiaheart.org)