

HEARTLINE

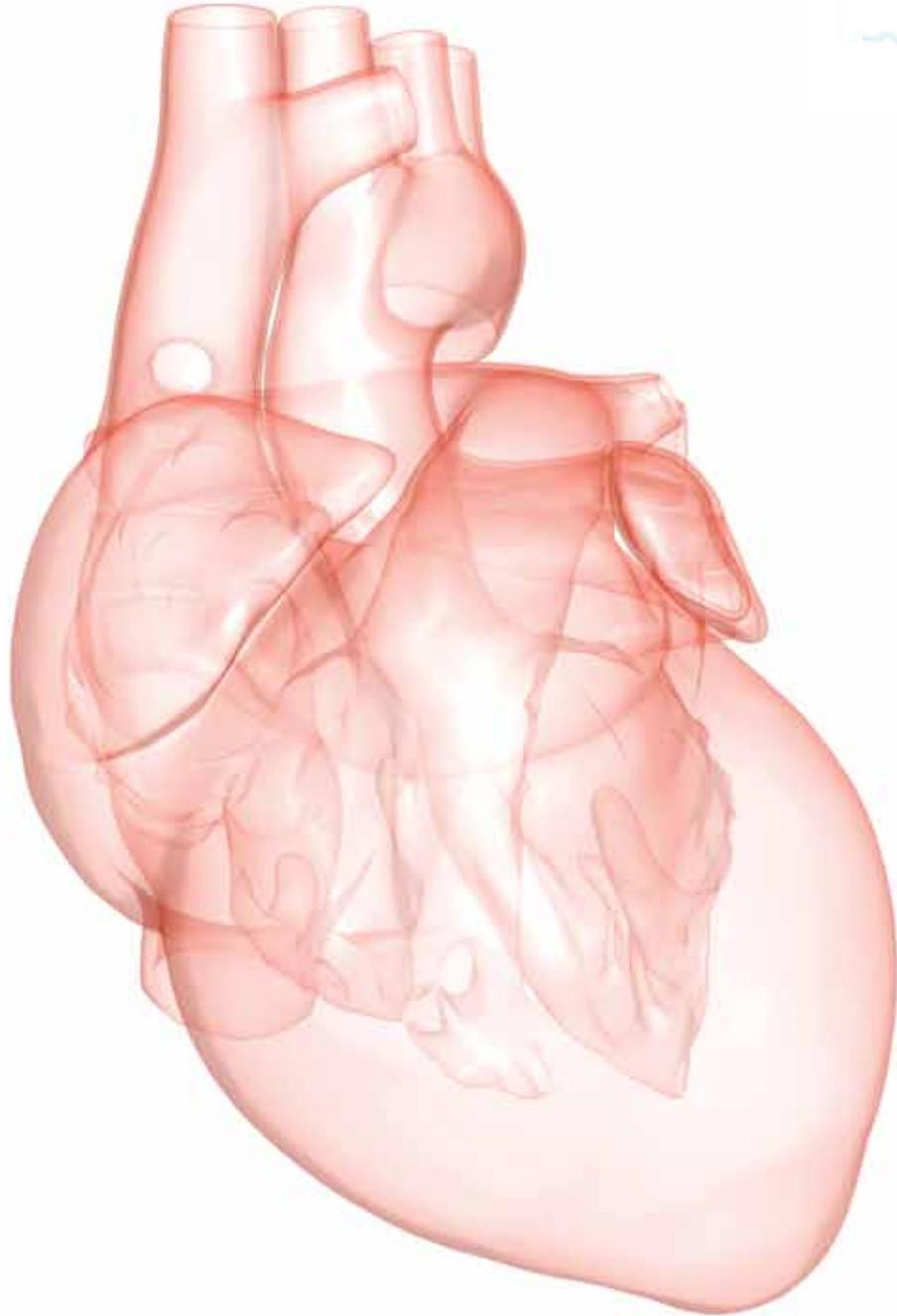
V1 / No. 1 / Fall 2011

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Comprehensive Care for
Complex Valve Disease

Advanced Valve Procedure
Preserves Quality of Life
for Aneurysm Patients

Stem Cells May Offer
Treatment Alternatives for
Heart Failure Patients



Montefiore
Montefiore Einstein
Center for Heart &
Vascular Care

A Message from Robert E. Michler, MD, and Mario J. Garcia, MD

If we had to use one word to describe the current state of the Montefiore Einstein Center for Heart and Vascular Care, it would be "thriving." The Center for Heart and Vascular Care is experiencing tremendous growth in many areas, ... [continued on page 1](#)

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for Heart & Vascular Care

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A Message from Robert E. Michler, MD, and Mario J. Garcia, MD

...from expanding our services and research portfolio, to increasing our procedures volumes, to recruiting nationally renowned physicians—all of which significantly strengthen our abilities to deliver the highest quality care to patients in the Bronx and beyond.

Several accomplished cardiologists have joined our team and will be part of a new outreach program providing consultative services to patients in the Bronx, northern Manhattan and Westchester County. Drs. Julie Ramos, Maria Alexandra Rodriguez, Hector Medina, Njeri Thande, Gurkan Taviloglu and other Montefiore cardiologists will work closely with primary care physicians in the region. These partnerships will bring premier cardiac care directly to more communities, reaching underserved patients, as well as Hispanic, African American and Jewish populations.

This year we also welcomed Ileana Piña, MD, MPH, and David Slovut, MD, PhD, to our staff. Dr. Piña, Associate Chief of Cardiology for Academic Affairs, is a national leader in the field of heart failure and transplantation. Dr. Slovut joins us as Director of Advanced Interventional Therapy and specializes in cardiac catheterization and percutaneous coronary intervention. Both are valuable additions to our already strong team.

Heart failure and transplantation remain a dominant focus of our efforts. We recently added the SynCardia Total Artificial Heart™ to our cache of mechanical assist devices, thereby providing a life-saving alternative for patients whose only option has been a heart transplant. By replacing both failing heart ventricles and the four heart valves, the SynCardia Total Artificial Heart™ eliminates the symptoms and source of end-stage biventricular failure. We are currently evaluating heart failure patients who may be appropriate candidates for this treatment. To better support our heart failure patients in their journey to recovery, we have also added longitudinal heart failure clinics that help us follow these individuals closely and ensure they receive continuous, seamless care.

Patients with complex heart valve disease continue to benefit from the expertise of our Comprehensive Heart Valve Repair Program. Our specialists use the most advanced imaging

tools and treatment approaches to provide patients with a greater chance of full recovery. Our focus is on valve repair, and the results have been outstanding.

Under the leadership of Evan Lipsitz, MD, Chief, Division of Vascular and Endovascular Surgery, our vascular team has greatly expanded its services and volumes. The noninvasive vascular lab now sees close to 15,000 cases a year, and the team is treating more patients who have thoracic aortic pathology, carotid artery disease and peripheral artery disease.

Research is an invaluable component of our program, and we are actively involved in many prestigious clinical trials supported by the National Institutes of Health and the National Heart, Lung and Blood Institute. Chief among these are the studies run as part of the Cardiothoracic Surgical Trials Network—trials that aim to advance the treatment of cardiovascular disease through research and innovation. We are also conducting pioneering research in the use of stem cells for myocardial regeneration as a possible treatment for heart attack victims and heart failure patients. While our investigations are ongoing, preliminary results suggest that a person's native stem cells can be cultivated to grow into new heart muscle and blood vessels to replace damaged cells. Our hope is that in less than 10 years, stem cells will be an effective treatment for these patients.

The momentum at the Center for Heart and Vascular Care is palpable. We look forward to keeping you apprised of our work as we continue to grow. Thank you for your past and continued support and for the trust you put in our team.

Sincerely,



Robert E. Michler, MD
Surgeon-in-Chief,
Professor and Chairman,
Department of Cardiovascular and
Thoracic Surgery and the
Department of Surgery
Samuel I. Belkin Chair
Co-Director, Montefiore Einstein
Center for Heart and Vascular Care



Mario J. Garcia, MD
Professor and Chief,
Division of Cardiology
Pauline Levitt Chair in Medicine
Co-Director, Montefiore Einstein
Center for Heart and Vascular Care





New artificial chord inserted.

Comprehensive Care for Complex Valve Disease

While heart valve surgery has become common—approximately 100,000 surgeries are performed each year in the United States—the most complex cases still require the expertise and range of treatment options found at a major academic medical center.

The Comprehensive Heart Valve Repair Program at Montefiore Medical Center excels in treating patients with the most complex valve disease. This multidisciplinary program performed nearly 1,400 valve procedures in the past five years, and it consistently offers the most advanced interventional and minimally invasive surgical treatments.

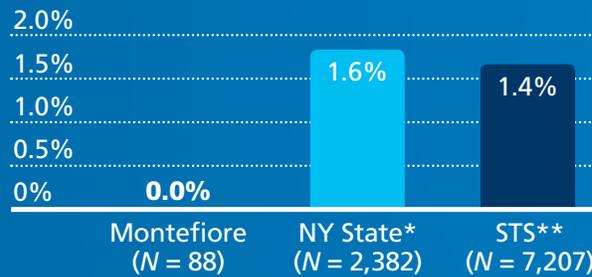
“Valve repair is an area where our team excels,” says Robert E. Michler, MD, Surgeon-in-Chief, Professor and Chairman, Department of Cardiovascular and Thoracic Surgery and Department of Surgery, and Co-Director, Montefiore Einstein Center for Heart and Vascular Care. “In addition to complex procedures such as mitral valve repair, we also specialize in aortic valve-sparing surgery and aortic aneurysm repair.”

Montefiore’s risk-adjusted operative mortality rates for mitral valve repair and replacement are among the lowest in the nation. Another distinguishing factor of the program is its multidisciplinary approach to care.

“Every patient who has a valvular condition is evaluated by both a senior cardiothoracic surgeon and a cardiologist,” says Mario J. Garcia, MD, Professor and Chief, Division of Cardiology, and Co-Director, Montefiore Einstein Center for Heart and Vascular Care. “Together, we determine what course of action we will offer the patient to achieve the best outcome and highest quality of life.”

Dr. Michler emphasizes that this approach helps the Comprehensive Heart Valve Repair Program achieve

Isolated Mitral Valve Repair Procedures OBSERVED OPERATIVE MORTALITY



Source:
*Based on New York State Department of Health Adult Cardiac Surgery data 2006–2008
**Based on Society of Thoracic Surgeons data from January 2010 to December 2010

Montefiore is a regional and national leader in mitral valve repair and replacement procedures, with among the lowest risk-adjusted operative mortality rates for these procedures.

consistently strong results. “Performing a technically sound operation is only the beginning of a great outcome,” says Dr. Michler. “The care of these patients requires that all players—surgeons, cardiologists, imaging specialists, nurses, the patient and family members—be on the same page, driving toward a unified goal.”

To ensure that patients with valve disease are accurately diagnosed and treated, the members of the valve team turn to Montefiore’s advanced imaging program. This program is among the largest in New York City and offers a dynamic combination of state-of-the-art digital technology and highly skilled imaging experts.

“Our imaging program offers the full range of tests required to make complex management decisions, including 3-D transesophageal echocardiography and multi-slice cardiac computed tomography (CT),” explains Dr. Garcia. “Additionally, the program’s ability to provide accurate,

completely electronic imaging reports in less than 24 hours is particularly advantageous.”

Research plays a dominant role in advancing the treatment of patients at the Comprehensive Heart Valve Repair Program. Montefiore is a recipient of the prestigious National Institutes of Health (NIH)/Cardiothoracic Surgery Network (CTSN) grant and is a top enroller for two studies focused on the repair of the mitral valve.

“When you pair our research endeavors with our strong clinical services,” says Dr. Michler, Principal Investigator of the NIH/CTSN award, “the result is a robust program that consistently delivers exceptional care for patients with even the most complex valve disease.”

To learn more about Montefiore’s Comprehensive Heart Valve Repair Program, visit: www.montefiore.org/valverepair.



Advanced Valve Procedure Preserves Quality of Life for Aneurysm Patients

The introduction of effective surgical interventions for aortic aneurysms several decades ago has helped to increase the life expectancy of patients with Marfan syndrome by an additional 30 years.¹ These interventions included composite graft and aortic valve replacement surgery.

Today, Montefiore surgeons are using a newer procedure called aortic valve-sparing root replacement. The procedure has many advantages for younger Marfan patients as well as many individuals with an aneurysm.

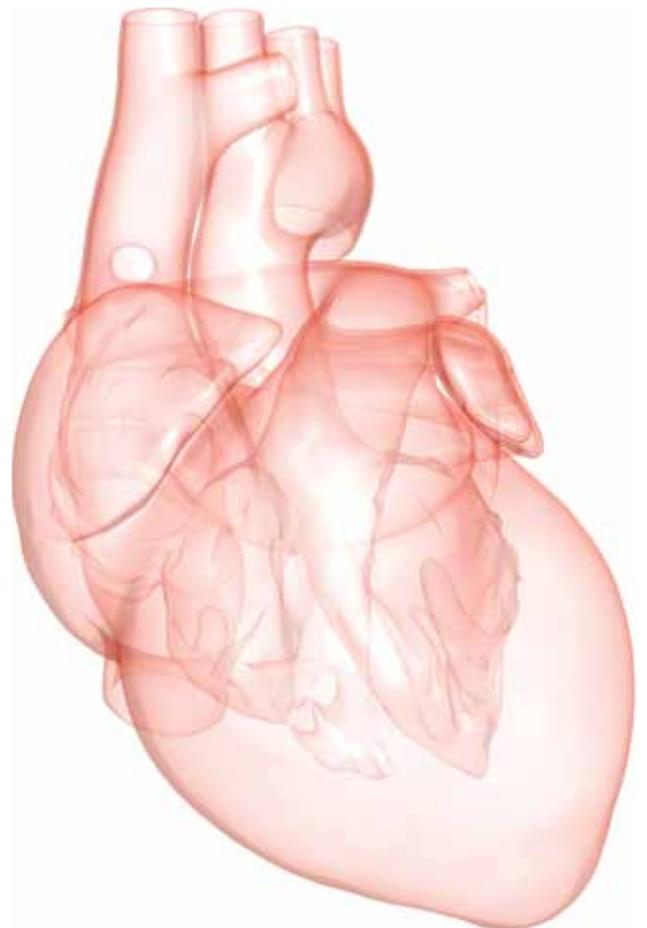
“Preserving a patient’s own aortic valve avoids the need for lifelong use of anticoagulants and often reduces the chance that a patient will develop endocarditis.”

“Preserving a patient’s own aortic valve avoids the need for lifelong use of anticoagulants and often reduces the chance that a patient will develop endocarditis,” explains Robert E. Michler, MD, Surgeon-in-Chief, Professor and Chairman, Department of Cardiovascular and Thoracic Surgery and Department of Surgery, and Co-Director, Montefiore Einstein Center for Heart and Vascular Care. “Because anticoagulants can pose a danger to unborn babies, the procedure is also advantageous for women who want to become pregnant following surgery.”

During aortic valve-sparing surgery, surgeons remove the aortic tissue immediately around the aortic valve and extending up into the ascending aorta. The aortic valve is then re-suspended within a soft, synthetic tube graft. The coronary arteries are also reattached to the synthetic graft.

This procedure may be performed minimally invasively. Following surgery, patients rapidly return to normal activities.

Dr. Michler adds that this procedure is not necessarily an option for every patient. “My team and I are committed to preserving and repairing heart valves whenever possible,” he says.



¹ Finkbohner, Rebecca, et al. Long-Term Survival and Complications After Aortic Aneurysm Repair. *Circulation* 1995;91:728-733.

Improving Outcomes for Patients with Critical Limb Ischemia

Revascularization has long been considered the preferred treatment alternative to amputation for individuals with chronic critical limb ischemia (CLI). A condition that severely impairs patients' function and quality of life, CLI affects a significant portion of the eight to 12 million people with peripheral artery disease in the United States each year, and is defined by an increased risk of limb loss and cardiovascular mortality. CLI carries a 25 percent risk of mortality, and in the absence of successful revascularization, the majority of these patients will undergo amputation over the next year.

Vascular specialists at the Montefiore Einstein Center for Heart and Vascular Care take an aggressive approach to treating chronic CLI. In these cases, Montefiore specialists may use open, endovascular or hybrid approaches to establish pulsatile straight-line flow to lower extremities, thereby relieving ischemic pain, healing ischemic ulcers and ultimately saving the limb.

"We treat hundreds of CLI patients annually, many of whom have significant medical conditions," says Evan Lipsitz, MD, Chief and Associate Professor, Division of Vascular and Endovascular Surgery, Department of Cardiovascular and Thoracic Surgery. "In the vast majority of cases we are able to successfully salvage the limb using

revascularization with a low incidence of complications."

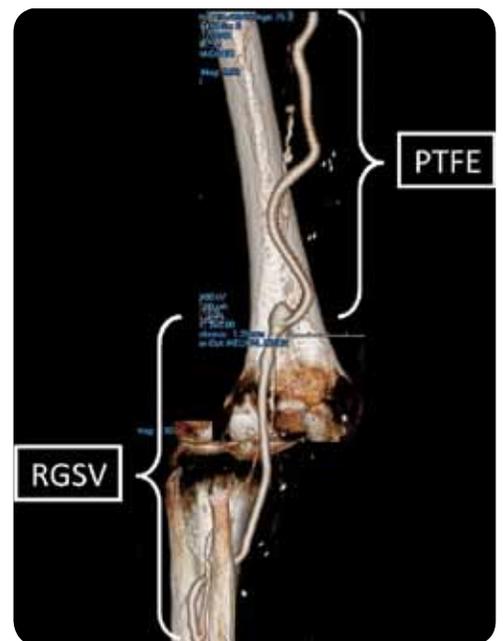
Revascularization has proven very successful. Dr. Lipsitz and David Slovut, MD, PhD, Director of Advanced Interventional Therapy, indicate that if CLI is detected early enough, patients with chronic CLI may ultimately avoid amputation.

"There are many people in the Bronx community whose peripheral arterial disease has advanced to chronic CLI," says Dr. Slovut. "We wish to better understand CLI patients who have had a bypass or amputation in order to improve their access to limb-salvage surgery."

Together, Drs. Lipsitz and Slovut are conducting a retrospective study of CLI patients at Montefiore over 10 years to develop an understanding of how risk factors such as ethnicity, education, socioeconomic status and access to healthcare directly impact treatment options and outcomes.

This effort builds upon findings of a 2009 study involving Dr. Lipsitz that showed Hispanics were 1.4 times more likely to have an amputation or die following infra-inguinal bypass, a factor that was significantly associated with lower socioeconomic status.

"Patients in the Bronx have access to high-quality care, but they present late in their CLI diagnosis and may end up undergoing amputation," says Dr. Slovut. "In an ideal world, we would have a system where we are able to intervene in the patient's care before limbs are threatened. The goal of our research is to identify specific points in the care process where improvements can be made."



CT angiogram of a composite sequential bypass that successfully saved the limb of a 76-year-old woman with toe gangrene. The proximal prosthetic (PTFE) portion of the graft is seen in the upper portion of the image and is anastomosed to the distal reverse saphenous vein (RGSV) seen in the lower portion of the image. The vein anastomosis to the tibial artery is seen at the bottom of the image.



Focus on: Ileana Piña



Ileana Piña, MD, MPH, had a personal reason for choosing her specialty. “When I was nine, my father died of a heart attack—he was 42 years old,” she says. “I was always interested in science, but my decision to choose cardiology was influenced by my father’s death at an early age.”

Since her decision to pursue cardiology, Dr. Piña has made quite a name for herself. Over her 35-year medical career, she has been a leader in the field of heart failure, cardiac rehabilitation, and transplantation. Her research in the rehabilitation and recovery of patients with heart failure has been internationally recognized and included in more than 70 publications. Dr. Piña recently joined Montefiore Medical Center as an Attending Cardiologist and Associate Chief of Cardiology for Academic Affairs. In this role, she will mentor fellows and young faculty who are interested in an academic career and guide them in their research. Dr. Piña will also focus on improving outcomes for heart failure patients by adapting treatment protocols and applying the latest interventions to elevate the quality of care.

“In medicine, and particularly in heart failure, there is a tremendous gap between what we know works and what practice actually does,” she says. “For example, we know that certain therapies and interventions are effective, such as ACE inhibitors and beta-blockers, but they are not being consistently applied. It’s very difficult to change long-term care patterns, but we must if we are going to improve outcomes.”

Dedicated to Research and Patient Care

At the Montefiore Einstein Center for Heart and Vascular Care, research drives clinical care and clinical care drives research. Currently, the Center has more than 100 clinical trials in process, with 80 percent actively enrolling and 20 percent in follow-up. Within this robust research portfolio are several efforts sponsored by the National Institutes of Health and the National Heart, Lung and Blood Institute, such as the Cardiothoracic Surgical Trials Network (CTSN), which includes investigator-initiated trials that are pioneering new treatment

approaches using progenitor stem cells, and device trials that are testing advanced technology such as the SynCardia Total Artificial Heart™.

Leading this research enterprise are Auris Browne, Director of Clinical Trials and Regulatory Affairs in the Division of Cardiology, and Roger Swayze, RN, BSN, MBA, Director of Clinical Research and Regulatory Affairs in the Department of Cardiovascular and Thoracic Surgery and in the Department of Surgery. Together, they leverage their extensive clinical trial

experience and work closely with a 16-person team to increase both Montefiore’s research involvement and patient enrollment.

“We’re on 24/7,” says Swayze. “I’ve consented patients for trials on weekends and Christmas Eve. It’s what we do to provide patients with the best care possible.”

“It’s very satisfying to know that I’ve potentially helped improve a patient’s quality of life by facilitating his or her access to clinical trials,” adds Browne.

One of Dr. Piña's goals is to reduce the 30-day readmission rate by 20 percent. "I hope to collaborate with hospitals around Montefiore to form a heart failure network that will improve the care patients receive," she says. "Linkages among hospitals need to exist so that we can help each other by knowing data, patterns of the patient's journey and the epidemiology of this syndrome."

"I have been an admirer of Dr. Piña's work for many years," says Robert E. Michler, MD, Surgeon-in-Chief, Professor and Chairman, Department of Cardiovascular and Thoracic Surgery and Department of Surgery, and Co-Director, Montefiore Einstein Center for Heart and Vascular Care. "Dr. Piña's clinical investigations have helped shape how we care for patients with heart failure. She is a great asset to our team and will drive our efforts in providing more comprehensive, targeted care for patients with heart failure."

"Heart disease remains the leading cause of morbidity and premature death in this country, and Dr. Piña will help us develop innovative strategies designed to curb this trend," says Mario J. Garcia, MD, Professor and Chief, Division of

Cardiology, and Co-Director, Montefiore Einstein Center for Heart and Vascular Care.

Prior to joining Montefiore, Dr. Piña was an Attending Physician at University Hospitals Case Medical Center and Professor of Medicine and Professor of Epidemiology/Biostatistics at Case Western Reserve University. While in Cleveland, she also served as Director of Heart Failure and Transplantation at University Hospitals of Cleveland. She previously served in leadership roles at Temple University Hospital and Hahnemann University Hospital in Philadelphia.

Dr. Piña earned her medical degree from the University of Miami School of Medicine and completed her residency and a cardiology fellowship at the University of South Florida. She also completed a VA Quality Fellowship in 2009 at the Louis Stokes VA Medical Center in Cleveland and earned a master's degree in public health from Case Western Reserve University. In 1995, Dr. Piña and a colleague established the National Heart Failure Training Program (N-Heft), which seeks to educate healthcare professionals in best practices for treating heart failure.

Montefiore was one of the first centers to enroll patients in CTSN clinical trials and continues to lead the United States and Canada in overall enrollment volumes. Patient retention is also a hallmark of Montefiore's research program.

"We have a lot of success with patients staying with us through a clinical trial," says Browne. "I think this speaks to the relationships we build with our patients."

The bonds with patients, the infrastructure, and a commitment to research that begins with leadership and extends to the staff keep the momentum of these clinical trials going. "People here eat, sleep and breathe research," says Swayze. "Our clinical equipoise is plainly evident and is what lets us break through barriers to ensure that patients get access to a treatment that may be beneficial."

To learn more about the clinical trials that are currently available to patients at the Center, visit www.montefiore.org/montefioreheartcenter/.



Stem Cells May Offer Treatment Alternatives for Heart Failure Patients

Myocardial regeneration is being increasingly considered as a possible treatment option for heart attack victims and heart failure patients.

Investigations led by Robert E. Michler, MD, Surgeon-in-Chief, Professor and Chairman, Department of Cardiovascular and Thoracic Surgery and Department of Surgery, and Co-Director, Montefiore Einstein Center for Heart and Vascular Care, and colleagues show promising results indicating that a person's native stem cells can be cultivated to grow into new heart muscle and blood vessels to replace dysfunctional cells.

patients new hope because these underdeveloped cells form new heart muscle and blood vessels.

In a recent animal study, Dr. Michler and his team injected native stem cells taken from dogs undergoing heart transplantation back into the donor dogs' coronary arteries following the procedure. The results showed the potential of this novel approach; overall, injury in the transplanted heart was decreased by more than 50 percent through cardiac stem cell treatment.

"The stem cells targeted areas of rejection and injury within the transplanted hearts and formed new blood vessels and muscle cells," says Dr. Michler. "The results suggest that cardiac stem cells restored a significant portion of damaged donor heart tissue. It's possible that cardiac stem cell therapy could be delivered locally and repeatedly to a donor heart over the years as a way to stave off damage to the donor heart. We certainly need longer-term studies, but ultimately, this approach could help save more lives and reduce the need for immunosuppressive drugs. Of course, the larger application of this treatment would be in victims of heart attacks to prevent heart failure."

Dr. Michler and his team also recently identified a population of human cardiac stem cells—those expressing receptors for insulin-like growth factor (IGF)-1—that work well in regenerating diseased heart muscle. Working through the National Heart, Lung and Blood Institute, Dr. Michler is now leading an effort to begin human trials using stem cells in heart transplant patients. "In less than 10 years, stem cells could be used to counteract heart-muscle damage," he predicts.

The interest in myocardial regeneration comes at a time when the need to employ innovative ways to treat damaged heart tissue is dire.

The interest in myocardial regeneration comes at a time when the need to employ innovative ways to treat damaged heart tissue is dire. Heart attacks can lead to heart failure. There are over 650,000 new cases of heart failure in the United States each year. Many of these patients will require a heart transplant. Physicians would prefer to intervene with stem cells before the onset of heart failure. But if a heart transplant is necessary, heart transplants save lives. Unfortunately, a donor heart can start to fail 10 to 12 years after implantation, having succumbed to tissue rejection, atherosclerosis or muscle damage. Stem cells may offer

The Montefiore Einstein Center for
Heart & Vascular Care invites you to

The Cardiology Alumni Welcome Reception during the American Heart Association's Scientific Sessions 2011

Meet **Mario J. Garcia, MD,**
our new Professor and Chief,
Division of Cardiology
Co-Director, Montefiore Einstein
Center for Heart & Vascular Care

and **Robert E. Michler, MD,**
Surgeon-in-Chief, Professor and Chairman,
Department of Cardiovascular and Thoracic
Surgery and Department of Surgery
Samuel I. Belkin Chair
Co-Director, Montefiore Einstein
Center for Heart & Vascular Care

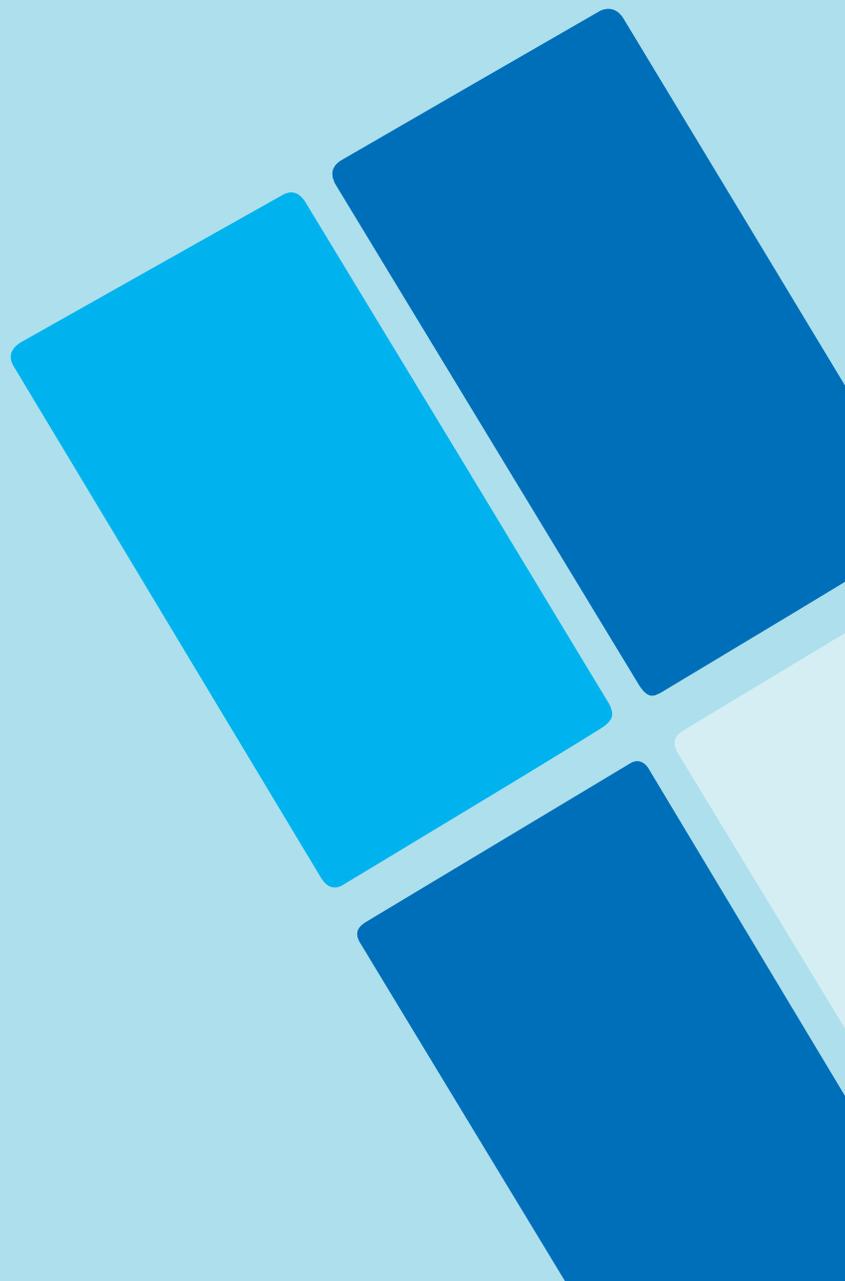
The Rosen Plaza Hotel

9700 International Drive
Orlando, Florida 32819

Sunday, November 13, 2011

6:00 – 8:00 pm

RSVP Lisandra Lamboy
718-920-4595 or
llamboy@montefiore.org



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Heart & Vascular Care**

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Consolidating and Improving Care

Montefiore's Hyperbaric Medicine Program recently opened its renovated hyperbaric medicine suite at the medical center's North Division. Instead of two chambers scattered across the different campuses, there are now five state-of-the-art chambers, all at one location.

This expansion comes at a time when the need for comprehensive wound services, including hyperbaric oxygen therapy, is growing; there are an estimated 1.8 million new cases and approximately 6 million Americans suffering from chronic wounds—and many of them are patients with diabetes and ulcers. Hyperbaric oxygen therapy helps the body's innate wound-healing mechanisms function more efficiently by saturating patients' blood levels with pure oxygen.

The Hyperbaric Medicine Program is co-directed by Evan Lipsitz, MD, Chief, Division of Vascular and Endovascular Surgery, and by Francis Porreca, MD, FACS, RPVI, Director of Vascular Surgery, Weiler Division; the program's Medical Director is Anna Flattau, MD, Director of the Wound Healing Program in the Department of Family and Social Medicine.

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