

Peter Munk Cardiac Centre

CLINICAL AND RESEARCH REPORT



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New clinic addresses complex genetic syndrome

ONE-OF-A-KIND FACILITY OFFERS HOPE FOR PATIENTS

The very name of the condition - *22q11.2 Deletion Syndrome* - hints at its many complexities. For individuals with this syndrome and their families, these complexities manifest as life-long and life-altering challenges. For these people, **The Dalglish Family Hearts and Minds Clinic for 22q11.2 Deletion Syndrome** at University Health Network will offer innovative ways of meeting these challenges.

The Dalglish Family Hearts and Minds Clinic was made possible by The W. Garfield Weston Foundation's \$4 million donation. The Clinic officially opened on December 11, 2012 and is scheduled to receive patients in early 2013.



(L to R) The Honourable Deborah Matthews, Minister of Health and Long-Term Care; Mr. Peter Dalglish; Dr. Anne Bassett, Director, The Dalglish Family Hearts and Minds Clinic; Mrs. Camilla Dalglish; Mr. John Warren, Chair, Toronto General & Western Hospital Foundation Board of Directors, and His Excellency the Right Honourable David Johnston, Governor General of Canada officially open The Dalglish Family Hearts and Minds Clinic.

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ABOUT THE PETER MUNK CARDIAC CENTRE

The Peter Munk Cardiac Centre is the premier cardiac centre in Canada. Since it opened in 1997, the Centre has saved and improved the lives of cardiac and vascular patients from around the world. Each year, approximately 55,000 patients receive innovative and compassionate care from multidisciplinary teams in the Centre. The Centre trains more cardiologists, cardiovascular surgeons and vascular surgeons than any other hospital in Canada. It is based at the Toronto General Hospital and the Toronto Western Hospital, members of University Health Network, which also includes the Princess Margaret Cancer Centre and Toronto Rehabilitation Institute. All four sites are research hospitals affiliated with the University of Toronto. For more information please visit www.petermunkcardiaccentre.ca

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22q11.2 Deletion Syndrome (22q11.2DS) is not an easy condition to explain. People born with this condition are essentially missing a small piece of DNA from chromosome 22. This 'microdeletion,' as it is termed, affects the expression of many individual genes, each of which plays a number of roles in human physiology. As a result, 22q11.2DS can affect virtually every organ in the body, with particular impact on cardiovascular, endocrine and neuropsychiatric functions.

Experts estimate that 15,000 to 30,000 Canadians have this microdeletion; however, many individuals go undiagnosed, or their symptoms are erroneously attributed to other conditions.

A moving target

"There can be a multitude of chronic and serious medical issues for people with 22q11.2DS," explains Dr. Anne Bassett, the newly-named Dalglish Chair in 22q11.2 Deletion Syndrome, who will lead the clinic. "The average patient will have nine important medical issues, and these issues can change over the years."

"It's very much a moving target," she continues. "Patients, families and their clinicians cope with one thing, such as congenital heart disease in infancy, then they may be presented with others, such as developmental delays or learning difficulties as the child learns to talk or goes to school. And after that, there may be neuropsychiatric issues, like anxiety, schizophrenia and seizures, in adolescence and adulthood."

Dr. Bassett, who holds a joint appointment at University Health Network and the Centre for Addiction and Mental



Members of the Dalglish and Weston families and Board Members were joined by distinguished guests to celebrate the official opening of The Dalglish Family Hearts and Minds Clinic.

Health (CAMH), is an internationally renowned expert in this condition and an Associate Member of the Canadian College of Medical Geneticists. Since the early 1990s, her genetic research program at CAMH has seen more adults with 22q11.2DS than any other single centre in the world.

"Dr. Bassett is the perfect fit to run the Hearts and Minds Clinic," says Dr. Barry Rubin, Chair and Program Medical Director of the Peter Munk Cardiac Centre. "She has world-leading expertise with this condition, plus extensive experience. Like me, she is excited by the vision of The Dalglish Family Hearts and Minds Clinic as a truly integrated, patient-centred facility for the treatment of 22q11.2DS."

Dr. Alan Fung, Co-Director, Jan Lackstrom, Senior Clinical Director and Sarah Flogen, Nurse Manager, join Dr. Bassett on the Clinic's leadership team.

While there are currently clinics caring for patients with 22q11.2DS, including one at Toronto's Sick Kids Hospital, The Dalglish Family Hearts and Minds Clinic is the first in the world focused solely on adults with this condition. The Dalglish Family Hearts and Minds

Clinic will collaborate with Sick Kids to improve the care of youths with 22q11.2DS as they transition from paediatric to adult care.

But it is more than just its focus on adults that makes The Dalglish Family Hearts and Minds Clinic unique – it is also the approach to care. The clinic will provide treatment, education and counselling for patients and their families in a single facility with the appropriate medical resources. For the first time, patients with 22q11.2DS will have access to expert integrated care with an in-house clinical team – including a nurse, dietitian, social worker, and specialists including cardiologists, endocrinologists, neurologists, psychiatrists and geneticists.

A "one-stop shop"

"We'll be a one-stop shop for patients with 22q11.2DS and their families – providing them with the specialized, collaborative and multidisciplinary care that meets their unique needs under one roof," says Dr. Bassett.

"Before, patients would have to visit multiple sites to receive comprehensive care," explains Dr. Rubin. "They



would be assessed, and then would have to go somewhere else for an echocardiograph, come back, then be referred elsewhere to another specialist. Here, there is a full array of medical specialists and healthcare professionals on site, and they come to the patient. All the necessary expertise is here and the clinic is specifically designed to allow us to do testing on-site. The care provided will be truly patient centred, as the psychiatrists, cardiologists, endocrinologists, social workers and dietitians that care for these patients will all do so in the Clinic.”

Of course, The Dalglish Family Hearts and Minds Clinic will offer much more than convenience.

Building on knowledge

“There is so much expertise here,” says Dr. Bassett. “There is an incredible base of knowledge gathered already via the Peter Munk Cardiac Centre’s Adult Congenital Heart Disease program, which has been a world leader for over 50 years. There is the vision to treat this as the multi-system disease it is, and work towards a better

care model – a model that, for the first time, individualizes care and treatment for each patient.”

Along with its clinical focus, The Dalglish Family Hearts and Minds Clinic will also focus on research and education, as well as the innovative Biobank (below). Researchers will explore the range of clinical challenges that 22q11.2DS presents, particularly in psychiatric, cardiac and neurological specialties, with the ultimate goal of developing cutting-edge treatments to directly benefit patients and families.

Biobank could hold keys to future treatments

Scientists and clinicians have long struggled to understand the causes and mechanisms of 22q11.2 Deletion Syndrome. However, a new initiative at The Dalglish Family Hearts and Minds Clinic at UHN could provide a valuable tool to help researchers unravel some of the mysteries of this condition..

Support from The W. Garfield Weston Foundation for the Peter Munk Cardiac Centre Biobank and Database will allow the Clinic to significantly advance its 22q11.2DS research platform.

Previously referred to as Velo-cardio-facial or DiGeorge syndrome, 22q11.2DS is a genetic condition associated with a missing piece of DNA on chromosome 22. The effects of the syndrome vary from patient-to-patient but are commonly linked to more than 40 health conditions. These conditions can involve birth defects of the heart and palate; psychiatric and neurological conditions such as anxiety, schizophrenia and seizures; as well as endocrinological conditions like thyroid disease, low-calcium and diabetes. Learning difficulties are also common with 22q11.2DS.

Banking tissue samples may allow researchers to identify potential molecular therapies for patients with 22q11.2DS.

“By having the vision to invest in research, The W. Garfield Weston Foundation provides us with the resources to sequence all of the genes in hundreds of patients with 22q11.2DS,” says Dr. Barry Rubin, Chair and Program Medical Director of the Peter Munk Cardiac Centre. “This may give us insights into why some patients are born with heart defects, while others go on to develop psychiatric disorders, like schizophrenia.”

The gift will also support The Dalglish Family Fellowship in 22q11.2DS, allowing clinicians or scientists to pursue advanced research training in 22q11.2DS.

CARDIAC REHABILITATION

Investing in heart health

COLLABORATION TARGETS INNOVATIVE APPROACH TO CONTINUUM OF CARE



Celebrating a new collaboration. From left: Dr. Barry Rubin, Dr. Sherry Grace, Dr. Bob Bell, GoodLife Founder and CEO David Patchell- Evans, and Dr. Caroline Chessex

Canadians suffering from heart disease will have greater access to cardiovascular rehabilitation thanks to a \$5 million donation by GoodLife Fitness to the Peter Munk Cardiac Centre (PMCC). The donation will fund the **GoodLife Fitness Centre of Excellence in Cardiovascular Rehabilitation Medicine**, and marks the beginning of an innovative private/public collaboration between the PMCC and GoodLife, Canada's largest fitness company.

The new Centre of Excellence will spur advances in care and research in post-acute cardiovascular health and secondary prevention. In keeping with the overall vision of the PMCC, its goal is to be internationally recognized for excellence in heart health and exercise. Funds will also help revitalize the existing rehabilitation facilities at the Toronto Western Hospital site to better match the standard of care offered by the

cardiovascular rehabilitation services in the PMCC and Toronto Rehab's Rumsey Centre. In addition to growing and revitalizing the current space, GoodLife is providing state-of-the-art cardiovascular exercise and monitoring equipment.

"At GoodLife, we are excited to enter into this collaboration with UHN and the Peter Munk Cardiac Centre," said Founder & CEO, David Patchell-Evans. "As a leader in the health and fitness industry in Canada and global advocate for exercise as an important contributor to overall health, this collaboration is an excellent opportunity to venture into new areas of care. Knowing our donation will have a positive impact on patients and their families while also improving the health care system as a whole, means that we are one step closer to fulfilling our vision to give Canadians the opportunity to live fit and healthy lives. We are united with the Peter

Munk Cardiac Centre in the belief that activity and exercise are of vital importance as a main component of any treatment plan."

Increased access to care

The collaboration brings together two leading health and wellness organizations in Canada to develop an innovative approach to the continuum of care for patients with cardiac disease. For PMCC patients, this means greater access to the latest cardiac rehabilitation and preventative techniques and equipment; a supportive environment to strive towards their rehabilitation goals; an enhanced continuum of care extending into the community; and, as a result, overall improved health and wellness and a significantly decreased likelihood of another cardiac episode.

In addition to creating the Centre of Excellence, GoodLife's donation will also fund the GoodLife Fitness Chair in Cardiovascular Rehabilitation and Prevention. This Chair will lead a comprehensive research program that will include investigations into best practices in cardiac rehabilitation along with analysis of cardiovascular databases to better understand long-term patient outcomes. In addition, PMCC cardiac rehabilitation experts along with fitness experts from GoodLife Fitness will work together to build a program to help patients transition into the community and achieve life-long success in their cardiac rehabilitation and health.

"This knowledge will be translated to GoodLife Fitness Clubs as well as



cardiac rehabilitation clinics from coast-to-coast,” notes Dr. Rubin, Chair and Program Medical Director of the Peter Munk Cardiac Centre. “We envision that patients will seamlessly transition from in-patient and then out-patient cardiac rehabilitation to a sustained exercise program designed to meet each individual’s needs.”

“The GoodLife Fitness Centre of Excellence in Cardiovascular Rehabilitation Medicine will foster knowledge and innovation in cardiac health, reduce re-admissions of current patients and prevent cardiac episodes from the outset,” Dr. Rubin continues. “This will save lives and help to reduce the cost of care in Ontario.”

A life-saving tool, cardiac rehabilitation offers a comprehensive approach to health by combining medical treatments and lifestyle modification. Patients are able to benefit from a variety of services, including: education sessions, nutritional assessment with a dietitian, risk factor treatment (hypertension, cholesterol and smoking cessation) by physicians and nurse practitioners, medication review with a pharmacist, targeted exercise prescription by an exercise physiologist, nurse or kinesiologist and supervised exercise.

“Cardiac rehab is a life-saver – it’s as powerful as aspirin,” says Dr. Caroline Chessex, Clinical Director of the Cardiovascular Rehabilitation and Prevention Program at the PMCC. “If you go through cardiac rehab your chances of survival are 25 per cent greater than if you do not.” Dr. Chessex is leading a multi-disciplinary team who treat patients

by developing a personalized exercise program tailored to each patient’s cardiac risk profile.

“Cardiac rehab also helps prevent readmissions to hospital, and so saves the system health care costs and resources,” she continues. “In spite of this evidence, only 20 to 30 percent of patients are referred to a cardiac rehabilitation program after hospital discharge, a phenomenon observed in many countries.” Researchers at the Peter Munk Cardiac Centre are exploring multiple strategies to increase referrals to cardiac rehabilitation programs at 11 hospitals across Ontario, including using a discharge checklist for doctors, electronic referral in medical records and talking with patients at the bedside.

Continuum of care

Dr. Sherry Grace, principal investigator and Director of Research for the Cardiovascular Rehabilitation and Prevention Program at the PMCC and Associate Professor in the School of Kinesiology & Health Science at York University, also believes in the value of cardiac rehab.

“Every patient discharged from the hospital with a heart condition should be referred to a cardiac rehab program,” says Dr. Grace. “Cardiac rehab is a key component of the continuum of cardiac care. We shouldn’t just discharge patients from the hospital without ensuring there is a link to these proven rehab services to support patients in their recovery”.



GoodLife’s collaboration will expand to providing exercise expertise to cardiac rehab patients across Canada.

“We envision that patients will seamlessly transition from in-patient and then out-patient cardiac rehabilitation to a sustained exercise program designed to meet each individual’s needs.”

INTERVENTIONAL CARDIOLOGY

New device extends boundaries of angioplasty

BIOABSORBABLE 'SCAFFOLD' OFFERS ADVANTAGES OVER TRADITIONAL STENT

A new device for use in treating Coronary Artery Disease (CAD) is being put through its clinical paces at the Peter Munk Cardiac Centre, with Dr. Vlad Dzavik already preparing to expand its treatment boundaries.

Dr. Dzavik, Deputy Head, Division of Cardiology and Director of Interventional Cardiology Research at the Centre, views the bioabsorbable vascular scaffold as a potentially revolutionary new way to treat patients with CAD.

Heart disease is the leading cause of death around the world, and CAD is the most common form.

Current approaches limiting

One of the standard ways to treat CAD is through angioplasty, a procedure that opens narrowed or blocked blood vessels.

Commonly in this procedure, a coronary artery stent is employed. This is a small, metal mesh tube that expands inside the vessel to help keep it open and the blood flowing smoothly. However, this approach does have its limitations.

"Even the advanced drug-eluting stents [stents which also deliver a drug to prevent vessel re-narrowing present a problem], by the simple fact that they stay in the vessel forever," notes Dr. Dzavik. "This can be a source of future complications, and the metal used in the stent could preclude the use of a coronary bypass."

That's exactly where the new device comes in.



The Peter Munk Cardiac Centre is a leader in interventional cardiology research

"Instead of being a traditional stent, it is actually a scaffold that is designed to be temporary," Dr. Dzavik explains. "The vital difference between this and a traditional stent is that once the blood vessel is able to stay open on its own and blood flow is restored, the scaffold essentially dissolves in the body."

Made of a special polymer of lactic acid (a substance that occurs naturally in the body) the scaffold is metabolized by the body and fully absorbed. The patient is left with a blood vessel free of a permanent metallic stent. The blood vessel returns to a more natural state and is able to move, expand, contract and flex as it did before the blockage. The new device is also coated with drugs that help the artery heal

without abnormal tissue build-up after the procedure.

Long-term benefits

The potential long-term benefits of a scaffold that dissolves are significant: the vessel may expand and contract as needed to increase the flow of blood to the heart in response to normal activities such as exercising; treatment and diagnostic options are broadened; the need for long-term treatment with anti-clotting medications may be reduced; and future interventions would be unobstructed by a permanent implant.

Dr. Dzavik was involved when the new bioabsorbable scaffold was used for the first time in Ontario, and only the



second time in Canada, at the PMCC in the fall of 2012. The new device is the only bioabsorbable stent available for clinical use right now and is currently only available by special access from Health Canada.

Challenging patients

Dr. Dzavik is now focused on employing the scaffold in a somewhat more challenging patient population.

“One of the difficulties we face is when the blockage is in the smaller blood vessels that branch off the main arteries,” he notes. “It is a more tricky and complicated procedure when you are dealing with branching vessels. I’d say about 20-25 per cent of the patients we treat with stent angioplasty fall into this category. Right now I am working with some techniques I have developed to use the bioabsorbable scaffold in branch blockage repair.”

Dr. Dzavik has recently worked with the device’s manufacturer, Abbott Vascular, on models to determine the best way to apply these techniques and is now analyzing the results of



Dr. Vlad Dzavik and his team successfully used the new bioabsorbable device to treat coronary artery disease last fall.

these tests to determine how to best proceed with future studies in patients.

“These tests will help us to perfect the techniques and develop the appropriate protocols for using the scaffold in branch vessel repair,” he says. “Based on the results of these tests, we hope to start treating patients early in 2013.”

Improving quality of life

The goal is an improved method of treating CAD and improving the

symptoms of angina (chest pain caused by CAD) – one that doesn’t leave ‘hardware’ in the body, with all of the associated risks and complications.

“Angina can cause pain, and restriction of function, often to the point where the person can’t exercise or earn a living,” says Dr. Dzavik. “The aim is to eliminate these and improve quality of life through the best treatments possible.”

UNDERSTANDING CAD

Coronary Artery Disease – (CAD) is - the most common form of heart disease and is the number one cause of death worldwide among both men and women.

CAD occurs when the arteries that supply blood to heart muscle become narrowed and hardened, as a result of the buildup of cholesterol and plaque along the interior walls. As this buildup (termed atherosclerosis) continues, the amount of blood flowing through the arteries is reduced. As a result, the heart muscle cannot get the blood or oxygen it needs. This can result in numerous, potentially serious conditions, ranging from angina and arrhythmias to heart failure and heart attack.

NURSING

A passion for excellence

LINDA FLOCKHART BRINGS LEADERSHIP EXPERIENCE TO NEW ROLE



As the new Clinical Director of the Peter Munk Cardiac Centre and the Medical-Surgical ICU, Linda Flockhart believes all efforts, "should support the patient and family experience, as well as clinical outcomes."

Leadership comes naturally to Linda Flockhart. With this quality, and a long history of pioneering programs to improve patient care, she is sure to step seamlessly into her new role as Clinical Director of the Peter Munk Cardiac Centre and the Medical-Surgical ICU.

"I have always been passionate about involving staff to make improvements and lead change. I'm very excited to have the opportunity to work with physicians and staff to strengthen our focus on quality improvement," Linda comments.

A nurse at the Peter Munk Cardiac Centre for nearly 16 years, Linda has worked as both a Patient Care Coordinator and Nurse Manager of the Cardiovascular ICU and the Vascular Step-Down unit for more than six years.

A Canadian first

Under her leadership, the Centre's Carlo & Angela Baldassarra and Family Cardiovascular Intensive Care Unit became the first ICU in Canada to achieve the American Association of Critical Care Nurses' *Beacon Award for Excellence* in 2011. The team was awarded the Gold level Beacon Award in recognition of their healthy work environment, support of leadership and education, and patient outcomes. (See sidebar)

"The staff wear their Beacon pins with pride and hold themselves accountable to Beacon standards of care," she says. "The process created a lasting commitment to excellence and employee engagement."

Her new role as Clinical Director is diverse and includes aligning the

Centre's goals with University Health Network's (UHN), assisting with contracts, ensuring the program meets volume and financial targets and succession planning.

"In addition to the other responsibilities, the most important aspect of this role for me is ensuring that staff and physicians have the appropriate resources, processes and education to provide patients with the best evidence-based care," she explains. "Everything we do should support the patient and family experience, as well as clinical outcomes."

Building relationships

Linda is also responsible for creating and facilitating external relationships with organizations and communities that need access to the expertise found in the Peter Munk Cardiac Centre, particularly with patients' family physicians.

"These relationships go both ways," Linda notes. "As many of our patients have complex care needs, we have to ensure we have strong community support for these patients so they can go home and get back to functioning independently. We want to create a seamless process for our patients and their families."

In addition to her Peter Munk Cardiac Centre portfolio, Linda also oversees critical care at Toronto General Hospital, which includes MSICU, CICU and CVICU. The ICUs have worked together to increase capacity, reduce cancellations and ensure consistency in practice.

“I have always been passionate about involving staff to make improvements and lead change. I’m very excited to have the opportunity to work with physicians and staff to strengthen our focus on quality improvement.”

“Healthcare technology is changing constantly and it is usually expensive to purchase and replace; as a result, funding all the changes will be a challenge,” Linda says. “We are setting up a central process to review and evaluate proposed technology and procedures and we are working together to make conscious decisions on how we will move forward.”

However, Linda is taking it one step at a time. To help familiarize herself with the program and become a more visible leader, she will begin shadowing staff in the new year to learn what they are most proud of, what they think is working and where they see room for improvement.

“The Peter Munk Cardiac Centre is a large multi-site program and I think it is important to take the time to learn all the various aspects of the program as well as the stakeholders before making any plans to change anything,” she comments. “We’ve been very proud of all the services we offer and will continue to look at innovative ways to provide this care.”

Linda’s leadership experience extends beyond her units and includes initiatives across UHN and Ontario. As Chair of the Ventilator Associated Pneumonia and Central Line Infection Prevention Taskforce, she led the development of UHN’s protocols and standardized processes, equipment, data collection and interprofessional education. These standards also helped the Critical Care Secretariat develop their provincial ICU guidelines.

She received both her Nursing Diploma and Critical Care Certificate from Ryerson Polytechnical Institute and her Bachelor of Science in Nursing at Ryerson University. A lifelong learner, Linda has enrolled at Athabasca University in the Masters in Health Studies program, from which she hopes to graduate in 2013.

In the meantime, she is excited for the future of the Peter Munk Cardiac Centre.

“I continue to be amazed by the enthusiasm of our team to evaluate what we do and I have heard many

suggestions from the team on what they think will make the Centre even better,” says Linda. “The opportunities are endless when you bring so many brilliant people together to address a common goal and knowing we can make a difference in patients’ lives is an incredible feeling.”

THE BEACON AWARD FOR EXCELLENCE

In healthcare organizations, excellence is the sum of many complex parts. The American Association of Critical-Care Nurses (AACN) created the Beacon Award for Excellence to recognize individual units that distinguish themselves by improving every facet of patient care.

Recipients of a Gold Beacon Award demonstrate excellence in sustained unit performance under the following criteria.

- Leadership Structures and Systems.
- Appropriate Staffing and Staff Engagement.
- Effective Communication.
- Knowledge Management and Best Practices.
- Evidence-based Practice and Processes.
- Patient Outcomes.

For patients and their families, the Beacon Award signifies exceptional care through improved outcomes and greater overall satisfaction.

FOCUS ON RESEARCH

Study shows benefits of bypass surgery

DIABETES PATIENTS LIVE LONGER WITH FEWER COMPLICATIONS

An international, clinical research trial co-led by researchers at the Peter Munk Cardiac Centre and New York's Mount Sinai Hospital has shown that patients with diabetes whose multi-vessel coronary artery disease is treated with bypass surgery live longer and are less likely to suffer severe complications like heart attacks than those who undergo angioplasty.

The findings of the research – known as the FREEDOM trial – were recently published in the prestigious *New England Journal of Medicine*.

“We’ve shown that bypass surgery saves one extra life for every 20 patients with diabetes who are treated for multi-vessel coronary artery disease,” says lead author, Dr. Michael Farkouh, Chair & Director, Peter Munk Cardiac Centre of Excellence in Multinational Clinical Trials.

Coronary artery disease is the buildup of plaque in the coronary arteries. It’s the most common form of heart disease and can lead to chest pain, heart failure and heart attack. According to the Public Health Agency of Canada, almost 2.4 million Canadians live with diabetes.

The study showed that five years after treatment, patients who received coronary artery bypass grafts (CABG) had lower combined rates of strokes, heart attacks, and deaths (18.7 per cent) than those who underwent angioplasty (26.6 per cent). Strokes were slightly more common among the CABG group (5.2 per cent) than in the angioplasty group (2.4 per cent), however, more angioplasty patients died from any cause (16.3 per cent) than CABG patients (10.9 per cent).



Dr. Michael Farkouh’s new study clearly shows that coronary artery bypass surgery should be standard therapy for patients with diabetes who have more than one diseased vessel.

Saving lives, reducing complications

“Based on these results, we believe that coronary artery bypass surgery should be standard therapy for the millions of patients worldwide with diabetes who have more than one diseased vessel,” says Dr. Farkouh, who is also the Director, Cardiology Research at the University of Toronto and Associate Professor of Medicine at the University of Toronto.

A total of 1,900 patients were enrolled at 140 international centres from 2005-2010. All participants had diabetes and more than one diseased artery, and 83 percent had three-vessel disease. Half the participants received bypass surgery and the other group received angioplasty – which includes percutaneous coronary intervention and drug-eluting stents.

The study followed patients for a median of four years and a minimum of two.

Patients in both streams of the study were prescribed optimal medical management for control of high LDL cholesterol, high blood sugar levels and high blood pressure. The result assessed all-cause mortality, non-fatal heart attacks, and non-fatal stroke.

The study focused on diabetes because patients with diabetes have cardiac events more often than patients who do not have diabetes, and require more follow-up care than other patients.

Cardiovascular disease is a major complication of diabetes and the leading cause of early death among people with this disease – about 65 per cent of people with diabetes die from heart disease and stroke. Adults with diabetes are two to four times more likely to have heart disease or suffer a stroke than people without diabetes.

“This study will challenge the prevailing ambiguity between bypass surgery and angioplasty for multi-vessel coronary artery disease,” says Dr. Farkouh.

“Bypass surgery saves lives and reduces the chance of complications in a high-risk group of patients with diabetes.”

“The benefits of bypass surgery are so significant that they’re what you’d expect to see between a patient who is and a patient who isn’t taking medication to control cholesterol,” Dr. Farkouh adds.

The research was supported by grants from the National Heart, Lung, and Blood Institute, as well as Toronto General and Western Hospital Foundation’s Peter Munk Cardiac Centre Campaign.



Journey to the bottom of the earth

Dr. Heather Ross, the Ted Rogers and Family Chair in Heart Function and Director of Advanced Heart Failure and Cardiac Transplant at Peter Munk Cardiac Centre, and the *Test Your Limits* team are heading into the snow and wind once again – this time taking part in a grueling ski trip to the South Pole in order to raise awareness for heart failure research, cardiac transplantation and heart health.

Dr. Ross will be joined by Peter Munk Cardiac Centre cardiologist Dr. Diego Delgado, Dale Shippam, a heart transplant recipient and retired firefighter, and Montreal Heart Institute’s Dr. Michel White.

The Test Your Limits program was first created out of the inspiration the Centre’s doctors get from their patients as they persevere through their treatments and push themselves to their limit, just to survive. The program grew from the simple idea by Dr. Ross, that we should all be taking the opportunity to be active and push ourselves to live life to the fullest. This idea turned into a challenge for a group of PMCC doctors and transplant patients to climb a mountain to raise awareness and support for advanced heart failure research. The Test Your Limits Program has continued for almost a decade testing limits, taking on challenges, and raising support.

The program raises awareness and support for: research, education and patient care for the Advanced Heart Failure Program; Heart Failure; Organ Donation and Transplantation; Heart Disease Prevention; and Replacement strategies for Advanced Heart

Since their first trek – to Antarctica in 2006 - more than \$1 million has been raised through the Test Your Limits initiatives for the Peter Munk Cardiac Centre.

To make a donation, or for more information, visit www.testyourlimits.ca



The Test Your Limits team (L to R) Dr. Diego Delgado, Dale Shippam, Dr. Heather Ross and Dr. Michel White.

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In the news

Canada's first Research Fellowship for Vascular Surgery and Interventional Radiology established at Peter Munk Cardiac Centre

Thanks to a \$1-million donation from the Black Family Foundation, a new Fellowship has been established that will offer a combined training opportunity in Vascular Surgery (VS) and Interventional Radiology (IR).

The *Black Family Vascular Surgery-Interventional Radiology Research Fellowship* will give either a Vascular Surgeon or Interventional Radiologist the opportunity to focus on a year of protected research time, followed by a year of clinical work in IR, VS, or a combination of both. Research will concentrate on analyzing current clinical data sets to identify areas of improvement as well as assessing the application of new medical technology and its impact on patient care.

"The opportunity to offer this Research Fellowship each year will enhance the academic experiences we can offer to highly qualified trainees from around the world and further the research goals of the collaborative practice between IR and VS," said Dr. Thomas Lindsay, Head of the Division of Vascular Surgery at the Peter Munk Cardiac Centre.

Having completed their medical degrees and residencies, Black Family Fellows will train in a highly complex sub-specialty by working under the guidance of experienced Vascular Surgeons and Interventional Radiologists who practice in an integrated team environment.

BROMPTON
FUNDS

Brompton Funds is proud to celebrate
the accomplishments of
the Peter Munk Cardiac Centre

The Peter Munk Cardiac Centre gratefully acknowledges the generosity of Judy and Peter Braaten and the Brompton Group for their generous sponsorship of this Clinical and Research Report.

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