

SPRING 2011

The Best Medicine Matters



**Research Creates
The Best Medicine**
A focus on research
by clinicians and
scientists is inspiring
discoveries that are
making a difference
to women, infants
and families across
the province

*Dr. Candice Silversides, Head of Obstetric
Medicine, holds a picture of Janita Files,
the daughter of a patient*



MESSAGE FROM MARK

Hello, and welcome to *The Best Medicine Matters!*

In this edition, our focus is on research in women’s and infants’ health. Since joining the Foundation in January, I’ve learned a lot about the breadth of expertise that Mount Sinai Hospital provides to women and babies. I’ve learned ours is the largest such program in the country, offering a continuum of care, from obstetrics to menopause. As a fundraiser, I’ve learned that our future Frances Bloomberg Centre for Women’s and Infants’ Health is going to be a showstopper of a facility — built to match the excellence that distinguishes Mount Sinai each and every day.

I’ve learned that Mount Sinai’s researchers have dedicated their lives to improving the odds for women and infants. As you’ll read, scientists at our Samuel Lunenfeld Research Institute collaborate closely with our clinicians to understand complications of pregnancy. Their work has launched new standards of clinical care that are enabling new families to thrive.

These are inspirational stories. As inspirational as your exceptional support of our research initiatives. Thank you.

Warmest regards,

Mark Gryfe
President and CEO
Mount Sinai Hospital Foundation

Mount Sinai’s Tweets Prove Popular

We’ve grown quite the following on Twitter. More than 5,000 followers are taking advantage of the ability to exchange messages with our staff, learn about the latest Hospital news and research updates, find out about upcoming events and read stories about The Best Medicine in action. We want to hear from you. Join our online family, share your story and help us tell the world about the great work done at your Hospital. Follow us on Twitter at twitter.com/mountsinai and Like us on Facebook at facebook.com/mountsinaihospital, or click through from our home page.

Chef’s Challenge™ Wins Title

On March 25, Mount Sinai’s inaugural *Chef’s Challenge™* with Gordon Ramsay beat out six candidates for the coveted title of “Best Event for a Charitable Organization in Canada” at the 14th annual Star Awards, held by Canadian Special Events. The foodie fundraiser was also nominated for “Best Overall Event”. Please visit chefschallengeforacure.com

for updates and information about the 2011 registration.

Ministry Funds Ontario Peritoneal Malignancy Program

A surgery that uses intra-operative heated chemotherapy to treat patients with cancer affecting their peritoneal cavity is now being offered by Mount Sinai — the only hospital in the province to deliver the special therapy. Dr. Andrea McCart, a surgical oncologist, runs the pilot project, which will treat approximately 40 patients over the next two years.

The Ontario Peritoneal Malignancy Program was established after the Ministry of Health and Long-Term Care provided \$2.4 million in funding. Prior to its creation, patients were referred to the United States, where they would have to stay for some weeks. Housing the new program at Mount Sinai enables patients and their families to stay closer together and closer to home.

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Sara, Rowan and Gabriel, and their dog Billie



Gabriel Ryan Smulowitz

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Placenta Research Shapes Screening Program

DR. KINGDOM'S RESEARCH:

- Has uncovered the genetic cause of pre-eclampsia, a severe type of high blood pressure that can cause serious medical problems for mother and baby
- Has discovered that the size of a pregnant woman's placenta can determine whether her fetus is at a high risk of stillbirth

Tracking placental health is only part of the equation at Mount Sinai Hospital's Placenta Clinic. Comprehensive monitoring, keeping patients informed and tending to their emotional health produces the best outcomes for mothers and babies. Having experienced this first-hand, Sara Handler-Smulowitz attributes the healthy birth of her son Gabriel to the breadth of care and expertise given by Dr. John Kingdom, Rose Torno Chair in Obstetrics and Gynaecology, and the Clinic at the Special Pregnancy Program.

Things didn't begin so well for Sara and her husband Rowan. Her first pregnancy ended tragically at 37 weeks when the baby was stillborn at another hospital. "Our whole world, our hopes and dreams, suddenly crashed. We delivered the baby, but no explanation was given. We didn't know why this happened."

Sara took maternity leave after the loss to heal emotionally. She met a doula who "had a friend who had gone through a similar situation and then went on to have healthy kids. She told me about Dr. Kingdom." Sara and Rowan decided to seek his assistance with their next pregnancy.

Based on his research into placental diseases, Dr. Kingdom has pioneered a program that embeds placental screening into the care of high-risk pregnancies. He determined that Sara would benefit from this program because of the placental problems she experienced in her previous pregnancy.

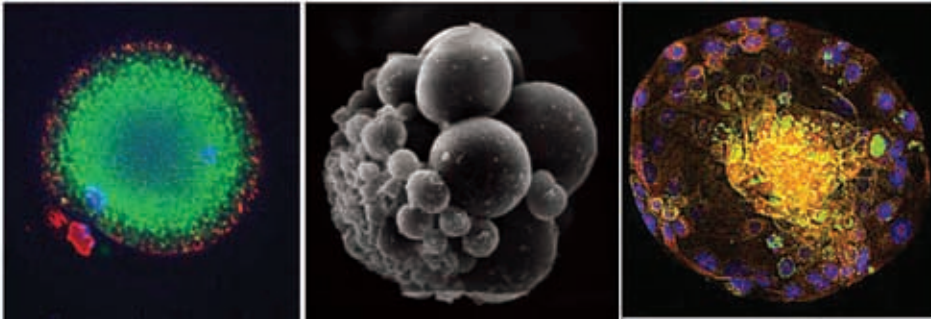
Sara was monitored closely by Dr. Kingdom and an integrated

professional team. "Having everyone working together all in one environment was amazing. They gave us so much hope and reassurance when we were afraid that something would go wrong," says Rowan. Fortunately, Sara's pregnancy went very well. "We joked they were going to kick us out of the program for being so boring!" she laughs.

"Dr. Kingdom really helped me through my anxiety and fear of being re-traumatized," says Sara, who also participated in a research initiative to track her emotional state. Dr. Kingdom and Psychiatrist Dr. Eileen Sloan are "sampling people's emotional health to see if we can ease anxiety through holistic care in conjunction with placental screening," says Dr. Kingdom.

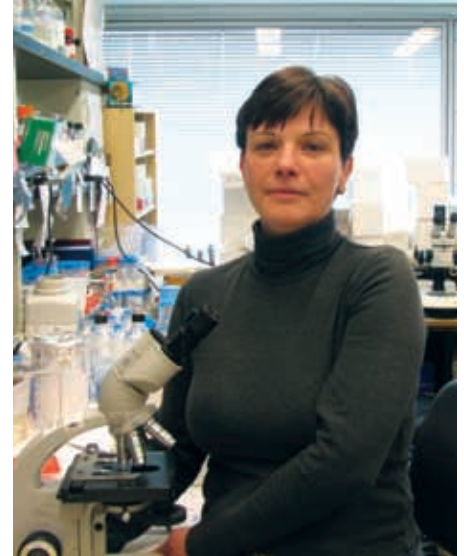
The outcome of Sara's first pregnancy may have been different if screening had been available. First-time mothers are the second highest risk group for placental diseases. To address this, the Placenta Clinic has received a grant to expand Dr. Kingdom's research. "We're going to recruit 5,000 first-time moms and do placental screening to determine the strength of the association between abnormal tests and abnormal outcomes," he explains.

While this research can't change the past, Sara and Rowan are comforted knowing it could save lives in the future. For now, they are focused on the future of their family, which includes Gabriel Ryan Smulowitz. "He's my dream come true, an amazing miracle," says Sara.



Left to right: Blastocyst, an early stage of embryonic development, stained red for cell survival protein and green for mitochondria; fragmenting 8-cell embryo; oocyte, or a cell in the ovary

Unlocking the Mysteries of Female Infertility



Dr. Andrea Jurisicova investigates causes of female infertility

One in eight Canadian couples seeks medical treatment for infertility, most often requiring the help of assisted reproductive technologies such as in vitro fertilization (IVF). Even after these treatments, pregnancy rates average just 30 per cent.

Dr. Andrea Jurisicova, a scientist at the Samuel Lunenfeld Research Institute of Mount Sinai Hospital, is giving new hope to women wishing to conceive through her research into the underlying causes of female infertility.

Dr. Jurisicova trained in Slovakia as an embryologist, and conducted post-doctoral research at Harvard Medical School. She was awarded a \$500,000 federally funded Canada Research Chair so she and other Lunenfeld researchers can expand their search for genes linked to female infertility. Within the next few years, Dr. Jurisicova hopes to identify genes tied to repeat failures of IVF and, ultimately, boost the success rate of embryo development to full term.

According to Dr. Jurisicova, one of the biggest hurdles preventing full-term pregnancy is poor embryo quality. "Very little is known about molecular deficits that lead to poor embryo quality and viability," says Dr. Jurisicova.

"We are focusing on genes involved in the regulation of cell survival and how they contribute to developmental defects in the eggs and embryos of patients with repeated IVF failure."

Dr. Jurisicova's earlier work focused on toxins that affect a woman's fertility and that of her offspring. "When females are exposed to hazardous compounds in cigarette smoke or car exhaust, for example, the number of eggs in their offspring's ovaries is reduced by up to two thirds. These compounds can also trigger early embryo loss (miscarriage), and compromise fetal growth."

In collaboration with Dr. Robert Casper, Dr. Jurisicova is also studying the energy-producing 'power stations' inside the eggs (or 'oocytes') of older females. It is these specialized structures, called mitochondria, that become less metabolically active with age, putting the offspring at greater risk of developing obesity and metabolic syndrome, and predisposing them to diabetes. However, Drs. Jurisicova and Casper have found that giving coenzyme Q10 (a vitamin-like substance found in mitochondria) can reverse the effects of mitochondrial changes in oocytes, improve fertility and potentially reduce the risk of chromosomal abnormalities.

"We hope to improve the chance of pregnancy in older women, while preventing genetic abnormalities including Down syndrome in infants," says Dr. Jurisicova.

RESEARCH IN EARLY EMBRYO DEVELOPMENT

- Dr. Jurisicova investigates placenta abnormalities that occur during embryonic development which may lead to pre-eclampsia, a common pregnancy-related complication, and/or miscarriages, as well as intrauterine growth restriction
- She studies the effect of toxins on a woman's fertility and that of her offspring
- Other focuses include genetic and environmental pathways that may trigger premature ovarian failure, and the impact of radiation therapy on a woman's eggs

The Heart of the Matter

Jaya Surve had rheumatic fever when she was a child. The disease damaged her heart and, she later learned, her chances of having children. Open heart surgery in 1987 repaired her heart, with a metal valve replacing her own damaged mitral valve. But three miscarriages, the last one in 2004, all but convinced Jaya that her body simply couldn't cope with pregnancy.

However, in 2009, Jaya became pregnant again, and she contacted Dr. Candice Silversides, a cardiologist who specializes in caring for pregnant women with heart disease. Dr. Silversides heads Mount Sinai's Obstetric Medicine Program, part of the Medical Disorders of Pregnancy Program. A relatively new medical subspecialty, Obstetric Medicine focuses on the care of pregnant women with medical conditions such as diabetes, hypertension, heart disease, kidney disease and hematologic conditions.

Pregnancy can put stress on the heart. Jaya's husband, Joseph Files, and her family were understandably concerned. "They were worried that the valve couldn't tolerate the pregnancy; they thought it would be too complicated. But Dr. Silversides was very supportive. She said, 'We'll help you.'"

The heart disease and pregnancy team follows approximately 150 pregnant women with cardiac conditions every year. "That number is increasing, because children whose lives were saved by surgical interventions are young women now, and pregnancy is an important issue for many of them," says Dr. Silversides.

Caring for pregnant women with medical conditions is a team endeavour because of the medical complexities for the mother and the baby. For women like Jaya, specialists from cardiology, neurology, hematology, high-risk obstetrics, obstetric anesthesia and neonatology all come together to provide optimal care.

RESEARCHING PREGNANCY AND THE HEART

Dr. Silversides' research interests include:

- Pregnancy outcomes in women with heart disease
- The long-term effects of pregnancy on the heart



Jaya, Janita and Joseph celebrate their first Christmas



Above: Janita — her name is Hebrew for 'gift from God'

Left: Dr. Candice Silversides heads Mount Sinai's Obstetric Medicine Program

"I saw a lot of doctors!" recalls Jaya. There were regular ultrasounds and injections. A few months into the pregnancy, she had two mini-strokes and was admitted to hospital. "It was stressful," she says. "We took things one day at a time."

At 38 weeks, Jaya was back in Mount Sinai, this time for the best of all possible reasons. On August 6, 2010, after an uncomplicated, natural birth, her daughter was born weighing 7 pounds 1 ounce. "We named her Janita; it's Hebrew for 'gift from God'.

"It's been a difficult and exciting journey," says Jaya. "But I've never experienced people who care as much as the people at Mount Sinai. The doctors, the nurses — every step of the way they held my hand. You need that mental support to go through such a complicated pregnancy."

"As a high-volume and high acuity obstetric centre, Mount Sinai has an extraordinary number of specialists with expertise in the care of pregnant women with medical conditions," says Dr. Silversides. "This fosters clinical excellence, fuels our research and improves outcomes for women and their babies."

Birthplace of New Research



Dr. Stephen Lye (left) and Dr. Alan Bocking (right): a history of clinician-scientist collaboration has led to the new Ontario Birth Study

“Within five years, this will be a new standard of care for pregnant women,” says Dr. Stephen Lye, Senior Investigator and Mount Sinai Hospital Auxiliary Chair in Women’s and Infants’ Health Research at the Samuel Lunenfeld Research Institute. He’s talking about the Ontario Birth Study (OBS), a new research initiative that has been developed to look at health during pregnancy and its impact on fetal growth and development, and ultimately, on a child’s lifelong health.

The study will also examine how women respond to the ‘challenge’ of pregnancy. “For example,” explains Dr. Lye, “pregnancy causes changes in a woman’s metabolism and cardiovascular system. Some women will be at increased risk of cardiovascular disease, and therefore pregnancy is like a stress test that can send out an important warning.”

“Mount Sinai is particularly well situated to do this kind of study because of the close collaboration between clinicians and scientists,” says Dr. Alan Bocking, Chief of Obstetrics and Gynaecology. He is one of the study’s founders, along with Dr. Lye and Dr. Lyle Palmer, Senior Investigator at the Lunenfeld and scientific director of the Ontario Health Study (OHS), which is based at Mount Sinai.

The proximity of the OHS created “an alignment of the stars,” says Dr. Bocking. Mothers and, eventually, children will be studied in the OBS, while fathers will be asked to participate in the OHS.

According to Dr. Bocking, the focus on genetic and environmental factors comes from the recognition that individuals may be genetically predisposed to conditions, but that environmental interventions, such as nutrition, can have an impact on whether those conditions actually develop.

The OBS is an ongoing initiative, embedded into clinical practice, and as such, a valuable source of insights into many aspects of health. “With this new data, we can look at the genetics of pre-term birth, for example,” says Dr. Lye. “We’ll also be assessing a child’s ability to learn, socialize and interact.”

RESEARCH EMBEDDED IN CLINICAL PRACTICE

- Ontario Birth Study begins summer 2011
- All pregnant women admitted to Mount Sinai for prenatal care can participate
- Recruits will answer questions about nutritional health, emotional state, family history of pregnancy-related complications
- Blood samples will provide genetic and biochemical data



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In Motion for a Cure



The third annual *Yoga in Motion™* was held on April 10 at the Liberty Grand Entertainment Complex. The event raised over \$190,000 in support of life-saving breast cancer research at the Samuel Lunenfeld Research Institute of Mount Sinai Hospital.

Mount Sinai One of Best Employers for New Canadians

For the second year in a row, Mount Sinai Hospital has been named one of Canada's Best Employers for New Canadians. The award recognizes employers who are addressing the practical challenges that new Canadians face when seeking employment.

Ambulatory Clinics Expanded

Mount Sinai's Urogynecology, Gynaecology and Women's Unit ambulatory clinics have moved into new premises on the 8th floor of 700 University Avenue. Designed in shades of light green, grey, brown and honey, the new clinics provide a tranquil environment, as well as significantly expanded space. Features include a resource

centre and spacious classroom. Exam rooms are larger, as are the procedure rooms. A new recovery room has been incorporated to care for women after procedures in either Urogynecology or the Women's Unit.

The increased space, as well as the physical separation from the 3rd floor Obstetrics ambulatory clinic, provides improved privacy. "This dedicated environment is really appreciated by our patient population," says Dr. Lisa Allen, Head of Gynaecology.

Mount Sinai Home of Toronto's First ACE Unit

On April 27, donors, staff and patients gathered to celebrate the opening of the Ben and Hilda Katz Acute Care for Elders (ACE) Unit. Mount Sinai is the first hospital in Toronto to open a dedicated patient care unit specifically for older adults.

The ACE Unit is one of a number of inter-professional initiatives that are transforming Mount Sinai into an elder-friendly hospital. The Unit will streamline patient care across the Hospital and put Mount Sinai at the forefront of geriatric care. The 28-bed unit will support people over 65 who have acute illnesses, and who demonstrate decreased function or have other challenges such as falls, dementia or complex social situations. The Unit is a tailor-made environment focusing on the individual needs of patients, with elder-friendly equipment and furnishings and a team of specially trained nurses and allied health professionals.

"In Your Own Words,"

"I am a mom of four beautiful and healthy children, three of whom were born at Mount Sinai Hospital under the care of Dr. John Kingdom and his Placenta Clinic. Words cannot even begin to express the thankfulness I have towards Dr. Kingdom, the Placenta Clinic and Mount Sinai Hospital. As my youngest daughter's 3rd birthday approaches, it takes me back in time and my gratefulness bubbles over the top and I can't help but get teary.

Without Dr. Kingdom, his staff and clinic we would never have had Samantha, Matthew and Grace. It's been 10 years since my journey began at Mount Sinai, but when I try to convey my thanks it seems like just yesterday. Words will never be enough."

— Kelly and Ken Rae

"When I had my first son David in 1973 I knew absolutely nothing about babies. Gordon and I had no family in the city and had to rely on Mount Sinai Hospital staff. Everyone did everything so beautifully. The doctors were caring and compassionate and the nurses really took time to provide one-on-one education. They taught me everything, from how to hold my son and nurse him, to how to properly diaper.

"We really feel so grateful and fortunate to have had healthy sons. Not everyone is so lucky with the health of their children. That's why we've decided to leave a gift in our will to Mount Sinai Hospital in support of Women's and Infants' Health. We hope it will help ensure that women undergoing more difficult pregnancies and births will receive the best care possible."

— Joan Stevenson

Upcoming Events

AUGUST 12
Samantha Flannigan Memorial Tournament

SEPTEMBER 15
George Knudson Oakdale Pro-Am Golf Tournament

SEPTEMBER 22
Leadership Sinai's Autumn Ball

OCTOBER 16
Scotiabank Toronto Waterfront Marathon 2011

For information about these and other events, please call 416-586-8203 or visit the Calendar of Events at mshfoundation.ca

Share your story with us! Send an email to foundation@mtsinai.on.ca or contact us via Facebook or Twitter. We look forward to your comments.



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Help give birth to our Mother & Baby Unit.

Purchase life-saving equipment for our new David & Stacey Cynamon Mother & Baby Unit, opening this Fall, by making a donation. Visit supportsinai.ca or call **416-586-8203**.

