In a Canadian first, Sunnybrook brain scientists have pioneered the use of MRI-guided focused ultrasound to successfully treat patients who suffer from debilitating tremors in their arms and hands.

“This new non-invasive procedure is revolutionizing medicine,” says Dr. Michael Schwartz, principal investigator of an early stage clinical trial of the therapy and head of Sunnybrook's Division of Neurosurgery. “Our goal was to evaluate the safety and initial effectiveness of MRI-guided focused ultrasound in treating patients with disabling tremor, and we are optimistic about the results we are seeing thus far. This technology could have far-reaching implications for many brain conditions, including brain tumours and other movement disorders.”

The outpatient procedure is described as scalpel-free surgery because no incision is made. There is no general anesthetic required and the patient remains awake and alert during treatment and can go home the next day. Although only five patients have been treated so far in Canada, the procedure appears to be safe, and associated with limited side-effects.

The technology allows investigators to focus ultrasound waves under MRI guidance through a patient’s skull to reach an area deep in the brain, destroying the cells responsible for the tremor but leaving surrounding areas untouched.

The study enrolled patients with a condition known as chronic essential tremor. In these cases, medication had failed to control the condition. A significant portion of patients with the condition have reduced quality of life related to impairment in the use of their dominant hand for eating, drinking, writing and other activities requiring fine movements. Trial participants had only one side of the body treated.

“There was a clearly visible and dramatic improvement in tremor in the patient cases seen so far,” says Dr. Andres Lozano, a neurosurgeon at the Krembil Neuroscience Centre at Toronto Western Hospital, and co-investigator on the study.

“Improvement in the dominant hand is seen while the patient is still in the MRI scanner. Three months post-procedure there were significant improvements in activities such as writing and drinking from a cup, which were not possible prior to surgery.”

Dr. Neal Kassell, chairman of the Focused Ultrasound Surgery Foundation, says “because the brain is the most difficult organ to treat, we believe that one of the best ways to validate and advance the entire field of MRI-guided focused ultrasound is to support the rapid development of promising brain applications.

“We are delighted to be collaborating with the team at Sunnybrook, which is one of the world’s pre-eminent focused ultrasound sites.”

Other collaborators come from the Platform of Physical Sciences and departments of Medical Imaging, Neurology, and Anaesthesia at Sunnybrook, and the Division of Neurosurgery at University of Alberta.

Trials are currently planned or underway at Sunnybrook to apply MRI-guided focused ultrasound to treat cancers and tumours of the brain, breast, bone, neck, and rectum, as well as benign uterine fibroids.

Nadia Norcia Radovini
Online gift shop offers same-day delivery

Sending something special to a friend or loved one at Sunnybrook is now just a click away. The Sunnybrook Volunteer Association (SVA) launched its new online gift shop, offering added services and convenience.

“This is the latest patient care and comfort initiative from the SVA, making us the first Canadian hospital volunteer association to launch an online store,” says Dan Christians, SVA president. “We hope this will provide patients, their loved ones and families an added level of comfort when they really need to stay connected.”

The site will allow anyone in the world to order a gift for a Sunnybrook patient and have it delivered the same day if ordered by 3 p.m. Orders placed after that time will be delivered the next day. The site is open 24 hours a day. Local residents can use the site to order gifts for their colleagues that will be delivered directly to their workplace.

A wide range of products are available to order, including baby gifts, flower arrangements, clothing, books and get-well gifts. Special seasonal items will also be offered on the site throughout the year.

The online gift shop officially opened on November 26. Visit sunnybrookgiftshop.ca to have a look at the new site or to place an order 24 hours a day.

Babies in Stockings brings holiday joy to Veterans and newborns alike

There were newborn babies received early Christmas gifts on Dec. 21 when Sunnybrook Veterans made a special trip to the maternal and newborn unit to present them with hand-crafted stockings.

Second World War Veterans Lorne Renaud and Betty Garbutt visited each of the babies — Kira, Connor and Nivea — and their families to give them the stockings, part of an annual tradition at Sunnybrook.

As part of an art therapy program, 40 stockings were created for babies born on Christmas Day.

Each stocking is one-of-a-kind, with a small tag sewn inside containing the words, “decorated by a Sunnybrook Veteran.”

“The stockings are a special remembrance and ensure that each newborn will never forget their birthplace and who their first Christmas gift was from. A small poppy is also featured at the top of each stocking,” Renaud said.

Renaud also visited the babies last year, and says participating in the Babies in Stockings tradition is his “favourite Christmas gift.”

“The Veterans just love visiting the maternal and newborn unit. This tradition is a heartfelt way of connecting Sunnybrook’s past to tiny newborns,” says Lorrie Clarke, art therapist at the Veterans Centre.

Baby in Stockings brings holiday joy to Veterans and newborns alike

Veteran Lorne Renaud with baby Kira, born only three hours earlier.

Grey Cup champion lifts spirits during Chemo Unit visit

Alex Meida, 38, is an avid football player who is also battling cancer. The recent appearance of the Grey Cup and Toronto Argonaut Matthew Black at the Odette Cancer Centre’s Chemo Unit was not only inspirational for Midea and fellow patients.

Black, a defensive back for the 100th Grey Cup champion Argonauts, is a family friend of the Meidas.

At 6-foot-1, Meida is an honour roll student in his second year at York University and a line-man for the Lion’s York.

During summer football training camp he was diagnosed with cancer and has since had to set activities aside to focus on treatment and recovery.

Black, who is an attacker for Midea’s local junior team, brought the historic Grey Cup, which the Argos captured in November after defeating the Calgary Stampeders.

Midea smiled as he held the four-foot-long cup, engraved with the names of champions dating back to 1909.

“Two years ago when I was so exhausted I didn’t think I’d make it,” Black says.

“Now, looking back – the struggle was definitely worth the big win,” adds Black, who hopes his energy and story of determination will help strengthen Midea’s resolve.

“No doubt is as pleasing to go every day to a cancer centre. It can be extremely draining, physically and psychologically,” Dr. Pignol agrees.

There are other radiation side-effects beyond boredom, including burning on the skin. Roughly 30 per cent of patients will experience it, but this side-effect disappears typically after a week or two. There have also been concerns that those who have radiation to the left breast may have a higher chance of coronary artery disease and heart attack than those whose right breast is irradiated.

But according to Dr. Pignol, this seems untrue today as technological advances — in the form of CT imaging — help doctors better see what they are treating.

There is an additional radiation exposure, the chance of developing a secondary cancer due to radiation treatment is almost undetectable.

Recognizing that the arduous length of time for radiation treatment is a barrier for patients across Canada — especially those in remote areas who must travel to urban centres — doctors are studying ways to provide it in a shorter period of time. For instance, treatment in a single session using implanted radioactive seeds or delivery of radiation during surgery.

“We’re working on solutions,” Dr. Pignol notes. “And since we cannot select who should receive radiation and who should not, the best thing is to simplify the radiation treatment and make it more patient-friendly.”

Forgoing radiation treatment after breast cancer: not optional

The question: I have a friend who just had a lumpectomy (surgical removal of a breast tumour) and sentinel lymph node biopsy for a small invasive lobular breast cancer. She has not yet met with the surgeon for her final report but knows radiation to her breast will be one of the next steps. She is quite reluctant to have radiation treatment and wonders about the risk of the treatment if she does not have radiation. Can you refer us to information that would help her with this decision — like what the likelihood of recurrence is without radiation and the long-term effects of radiation?

The answer: Cancer treatment is an area where strict adherence to the rules is paramount if you want to ensure the best possible outcome — in this case, cure is the aim, so we should ensure we meet our goal. Radiation treatment after lumpectomy is not an option but part of a package. Otherwise, there is a risk of the cancer returning.

“Many patients ask if they can choose to receive radiation,” says Dr. Jean-Philippe Pignol, a Sunnybrook radiation oncologist. In this case, “cancer treatment is not like choosing options when you buy a car. It is more a black or white thing. Not receiving the appropriate treatment is a serious decision.”

Patients who have undergone breast-conserving surgery, such as your friend, require radiation treatment. That’s because no matter how good a surgeon is at removing the tumour and surrounding tissue, there is always chance a couple of cancer cells can go undetected. Radiation treatment after lumpectomy is an option to ensure that each patientachieves cure.

The negative effects of radiation of course can be significant; however, these are well known and balanced against the benefits of reducing the risk of cancer recurrence. Radiation side-effects can include fatigue, muscle weakness, and skin eruptions. For patients who have been treated with radiation, a significant proportion (70 per cent) report some level of fatigue during and after treatment. However, fatigue usually reduces with time. Other short-term side-effects of radiation include mild skin changes, such as dryness and skin irritation. These usually improve with time. Long-term side-effects can include fatigue and reduced muscle strength.

The benefits of radiation treatment are clear. Undertaking such therapy in a timely manner can increase the chances of achieving a cure. However, this is only true provided the tumour, which has not been completely removed during surgery, is made smaller by radiotherapy. The radiation is able to kill the remaining cancer cells, increasing the chance of cure.

There is no question that radiation treatment is a necessary component of breast cancer treatment. Patients and doctors must work together to determine whether radiation treatment is the right choice for each patient.
Ingredients (makes one serving):

- 1 cup cooked rice
- ¾ cup canned kidney beans (rinse and drained)
- ⅓ cup frozen corn
- ⅛ cup diced green bell pepper
- 2 tbsp finely chopped onions
- ⅛ cup ½ tbsp chili powder

Preparation:

1. In a container, combine rice, beans, corn, onions, green pepper, onion and chili powder. Stir until combined.
2. Microwave on high, loosely covered, for 2-3 minutes or until hot. Stir before serving.

Tips: Margarine and yogurt containers, plastic (polycarbonate) dishes and polyurethane foam containers are not appropriate for cooking and reheating in the microwave. These types of containers may release chemicals into food when heated.

Nutrients per serving:

- Calories: 429
- Protein: 15 g
- Fat: 19 g
- Carbohydrates: 90 g
- Saturated fat: 0.4 g
- Fibre: 14 g
- Sodium: 466 mg
- Very high in: vitamin C, niacin, folacin, magnesium, fibre.
- High in: thiamine, vitamin B6, pantothentic acid, iron, zinc.
- Source of: vitamin A, riboflavin, calcium.

Recipe courtesy of Cook! Dietetics of Canada.

Alliance ready to take on dementia

International neuroscience powerhouses at the University of Toronto (U of T) and its affiliated hospitals – including Sunnybrook – are joining forces to advance research into dementia to a degree never seen before.

With 500,000 Canadians suffering from dementia and an aging population, the number will double in a generation. The staggering impacts on society and health care as a whole, and the current annual cost of $15 billion is expected to increase 10-fold in the next 25 years.

Experts stress treatments are urgently needed to prevent or delay dementia’s onset, and to slow progression once symptoms begin to appear. The current plan of action at U of T is the Toronto Dementia Research Alliance. The timing for this initiative is ripe for several reasons:

- There is a large pool of neuroscience expertise to tap into at U of T, which has the largest collaborative neuroscience graduate program in Canada.
- The current state of technological capabilities is advanced and sophisticated.
- There is potential for research to be increasingly embedded in care, now more than ever – an economically sensible, continuous quality improvement plan within the Canadian health-care system that is feasible and socially responsible.

Dr. Sandra Black, who last year received the Order of Ontario and was elected to the Royal Society of Canada, has consistently been at the forefront of this push for collaboration to improve care and advance dementia research.

Dementia includes a variety of diseases. Beyond Alzheimer's disease, there are also vascular cognitive disorders and other major neurodegenerative diseases such as Parkinson-Lewy body spectrum disease and frontotemporal degeneration.

“Patients often have a complex mix of these diseases, and we need to better understand and address this murky reality,” says Dr. Black. “We need to move away from oversimplifying the dementia and instead embrace their heterogeneity and complexity in order to treat them as effectively as possible.”

Dr. Black adds that “the alliance aims to set the standard for the kind of collaboration we should strive for in all fields of medicine and at all levels. Together, we can do so much more.”

Sunnybrook taking a team approach to reducing wait times

When Sunnybrook’s head of surgical oncology, Dr. Calvin Law, talks about reducing wait times for cancer surgery, he focuses on a single image.

“The most important thing is to visualize a patient at home, with no cancer, smiling,” he says. “The faster we can get patients through their treatment, the faster they can get on with their lives.”

Thanks to the efforts of entire health-care teams in the Odette Cancer Centre and the Department of Medical Imaging, Sunnybrook has made great strides in making this a reality. In most cases, Sunnybrook is greatly below the wait times target set by the Toronto Central Local Health Integration Network for cancer surgeries and for MRI and CT scans.

“What’s important is that there is motion on reducing wait times at every level,” Dr. Law says. He describes the work invested by all staff, including surgeons and their administrativa, each nurse on the ward involved in enhanced recovery after surgery, a special nurse navigator who acts as a sort of traffic control centre for cancer care, all the way up to the senior leadership team.

While Sunnybrook leadership found ways to move the first surgery of the day along, the Odette Cancer Centre team also began to look for ways to reduce surgery cancellations. One strategy has been to move to a data-driven process where performance metrics guide decisions and are provided for each cancer surgeon and are viewable by all, making the process transparent, accountable and educational.

“We could see the whole picture. We found ways to work together as a team and we started to share tips and tricks for getting patients the care they needed as quickly as possible,” adds Dr. Law.

Teamwork has also been the key to success in Sunnybrook’s Department of Medical Imaging, where wait times for MRI and CT scans are well below the provincial target. The department’s staff members have worked together with the goal of making the process as efficient as possible.

Expanding role for nurse practitioners

Recent changes to the scope of the nurse practitioner role will mean increased responsibility and accountability for such nurses in Ontario, both in community and hospital settings.

As a result of the changes introduced by Bill 179, nurse practitioners will now be able to independently order lab tests and other diagnostic procedures, prescribe medications and communicate a diagnosis, and admit and discharge patients from hospitals.

“This is a positive change for health care in Ontario that will improve access to care, decrease wait times and help clients navigate complex health systems,” says Jo Watson, nursing executive & health professions and accountability for such nurses in Ontario, “This is a positive change for health care in Ontario that will improve access to care, decrease wait times and help clients navigate complex health systems,” says Jo Watson, nursing executive & health professions and accountability for such nurses in Ontario.

“Our nurse practitioners are essential members of our health-care team, and these important changes will help them to maximize their scope of practice. I am proud that Sunnybrook’s nurse practitioners are making such an important impact on clinical practice,” adds Dr Taggar, vice president, chief nursing executive & health professions and quality & patient safety at Sunnybrook.

“With our nurse practitioners being essential members of our health-care team, and these important changes will help them to maximize their scope of practice, I am proud that Sunnybrook’s nurse practitioners are making such an important impact on clinical practice,” adds Dr Taggar, vice president, chief nursing executive & health professions and quality & patient safety at Sunnybrook.

Ontario’s nurse practitioners are registered nurses with advanced university education and training in a broad range of patient care settings. The Ontario’s nurse practitioners are registered nurses with advanced university education and training in a broad range of patient care settings.

Dr. Peter Kertes, ophthalmologist-in-chief at Sunnybrook’s John and Liz Torrey Eye Centre, speaks to some people on Nov. 29 during the Sunnybrook Speaker Series event, “A Focus On Eye Health: What You Need To Watch For.”

Dr. Peter Kertes, ophthalmologist-in-chief at Sunnybrook’s John and Liz Torrey Eye Centre, speaks to some people on Nov. 29 during the Sunnybrook Speaker Series event, “A Focus On Eye Health: What You Need To Watch For.”

Several topics were covered by leading Sunnybrook ophthalmologists.

Dr. Radha Kohly began the evening with her talk on eye health relating to diabetes. Dr. Carol Schwartz touched on age-related macular degeneration, while Dr. John Lloyd provided an overview of LASIK (laser eye surgery). Dr. William Dixon highlighted the essentials of cataract surgery.

A full webcast of the event can be viewed by going to Sunnybrook’s “speaker series” at www.sunnybrook.ca.

The next Speaker Series talk takes place Jan. 31 and will focus on psychological treatment for mood and anxiety.

Dr. Sandra Black heads up the alliance.

Dr. Sandra Black heads up the alliance.

Speaker Series: focusing on eye health

Speaker Series: focusing on eye health

Dr. Sandra Black heads up the alliance.

Speaker Series: focusing on eye health

Dr. Sandra Black heads up the alliance.

Speaker Series: focusing on eye health

Dr. Sandra Black heads up the alliance.

Speaker Series: focusing on eye health

Dr. Sandra Black heads up the alliance.

Speaker Series: focusing on eye health

Dr. Sandra Black heads up the alliance.
Researchers discover gene that predicts time of death

Researchers have discovered a gene associated with the timing of one's sleep-wake cycle, as well as one's likeliest time of death.

“This gene variant influences both the earliness or lateness of one's sleep and activity rhythms as well as the clock time of day one is likeliest to die,” says Dr. Andrew Lim, lead author of the study and a Sunnybrook neurologist. “This information could be potentially helpful in the scheduling of shift work or schooling, and if we know when a person is likeliest to die we can act to prevent this by administering medical treatments at more optimal times, and better monitor vulnerable patient populations.”

Published in the November 2012 issue of Annals of Neurology, the findings emerged from research that initially set out 15 years ago to investigate risk factors for Alzheimer's disease.

As part of this larger study, investigators measured sleep/wake and activity rhythms in a large number of older individuals and obtained DNA from them. They used this opportunity to search for common gene variants that might play a role in the internal biological clock. In so doing, they discovered a gene variant associated with as much as one hour difference in the timing of people's internal biological clock.

Everybody carries two copies of this gene—one from their mother and one from their father. The 16 per cent of individuals with two copies of the “late” version of the gene have sleep/wake and activity timings more than one hour later than the 36 per cent of individuals with two copies of the “early” version of the gene, with the 48 per cent of individuals with one copy of each version of gene lying in between.

Once that link was made, researchers went back to the database to compare the times of death and DNA of those who had passed away during the course of the study, and also found an association between this gene and the time of death.

“This is exciting because it is the first gene variant shown to influence the timing of directly recorded human sleep and activity rhythms and also time of death,” adds Dr. Lim.

Whereas most people were likeliest to die in the late morning or early afternoon, people with two copies of the “late” version of the gene were likeliest to die later in the day, in the early evening around 6 p.m. Nadia Norcia Radovini

Community of Care integration website launches

Sunnybrook’s new physician referral search tool is now available, providing for the first time the names, clinical focus and contact information for specialists most commonly referred by family doctors in the community.

It is part of a new, virtual Community of Care (accessible at sunnybrook.ca/integration), which offers physicians a one-stop shop for information on primary care integration—including news, tips, a rounds calendar and a place to chat about integration. In December, Sunnybrook and its community partners were selected by Ontario as one of the first 19 Health Links, starting us formally on the path to providing seamless care to those patients most in need.

It builds on work we began in the spring, engaging family physicians in the community to understand their needs, conducting surveys and holding outreach interviews, focus groups and open houses. As a result, family doctors asked for a database of specialists to help them better navigate care for their patients.

Dialysis staff host shower to celebrate successful patient pregnancy

Sunnybrook’s renal team hosted a baby shower in early October to celebrate the first baby born to an existing dialysis patient at the hospital.

Gabrielle Ivy was born last Sept. 25 to Racquel Delacruz, who has been a home hemodialysis patient at Sunnybrook since 2010.

“Racquel is the first dialysis patient we’ve cared for before, during and after her pregnancy,” says Dr. Michelle Hladunewich, head of Sunnybrook’s Obstetric Medicine and Nephrology divisions.

Typically, a pregnant woman on dialysis requires meticulous care by a dedicated team, including nephrology, obstetrics and a full multidisciplinary staff. Team members are available around the clock to provide care for a pregnancy like Delacruz’s, which is considered to be high-risk.

Medical complications associated with kidney disease mean that pregnancies in dialysis patients are very uncommon. “There have only been 20 babies born in the Greater Toronto area to women on dialysis,” Dr. Hladunewich notes.

As for Delacruz, she and her husband Randy are enjoying parenthood and are very excited about the new addition to their family. “Everybody has been so helpful, and I’m so grateful to everyone, especially to Dr. Hladunewich and [home dialysis nurse] Raquel Bersamira, for the care they provided,” Delacruz says. Sybil Edmonds