

News We welcome news items of less than 300 words; we may edit them for clarity and length. News items should be emailed to journal@doctorsofbc.ca and must include your mailing address, telephone number, and email address. All writers should disclose any competing interests.

Ketone supplement may control glucose by mimicking aspects of ketogenic diet

Research from UBC's Okanagan campus suggests that ketone monoester drinks may help people with diabetes and prediabetes who are looking for strategies to help control blood sugar that don't require taking medications or that are less invasive than injectable insulin. Ketone drinks and supplements have been on the market and available to consumers for a few years. Because they're so new, there's very little research on how they can influence metabolism, and this study is among the first to look at their use in nonathletes.

The study's lead author, Dr Jonathan Little, is an associate professor at UBC Okanagan's School of Health and Exercise Sciences. Little suggests that there is mounting evidence that a low carbohydrate ketogenic diet is effective in controlling blood sugar and even reversing type 2 diabetes. Ketone supplements are proving fertile ground for research into type 2 diabetes because, according to Little, ketones are the natural fuel source of the body when it's in ketosis—the metabolic by-product of consuming a low carbohydrate, ketogenic diet.

Study authors wanted to know what would happen if artificial ketones were given to those with obesity and at risk for type 2 diabetes but who haven't been dieting. To test the idea, Little

and his team asked 15 people to consume a ketone drink after fasting overnight. After 30 minutes, they were then asked to drink a fluid containing 75 grams of sugar while blood samples were taken.

The ketone drink seemed to launch participants into a sort of pseudo-ketogenic state where they were better able to control their blood sugar levels with no changes to their insulin.

Little is quick to point out that ketone supplements are not a magic bullet in managing the disease, and that there are a number of problems still to be worked out, including the long-term effects of consuming ketones. He suggests that for those who aren't able to follow a strict ketogenic diet or for those looking for a new way to control blood sugars, this may be another strategy in helping to manage type 2 diabetes.

The study was published in the December 2019 issue of the *American Journal of Clinical Nutrition* with funding from the Heart and Stroke Foundation of Canada. It is available at <https://doi.org/10.1093/ajcn/nqz232>.

Preventing knee osteoarthritis in youth who play sports

When kids injure their knees playing sports like soccer, not many of us think about how that injury will manifest itself 10 or 15 years down the road. Millions of Canadians currently live with the pain and disability of osteoarthritis. It is estimated that by 2040, 25% of all Canadians will have osteoarthritis. This percentage will be higher in those who suffer a traumatic knee injury.

Dr Jackie Whittaker is a research scientist of musculoskeletal rehabilitation at Arthritis Research Canada. The focus of her research is understanding the connection between youth sport knee injuries and early onset osteoarthritis, as well as osteoarthritis prevention.

Soccer is the highest participatory sport in Canada, and it is a sport with a high injury risk. While very good injury prevention programs exist, such as the 11+ Injury Prevention Program that can reduce knee injuries by up to 50%, it isn't known what someone can do

after an injury to minimize their risk for developing osteoarthritis.

Whittaker also describes that obesity and muscle weakness have been identified as risk factors, so keeping muscles strong and staying active after an injury to avoid weight gain are important. She points out that the red flag isn't when you have swelling and pain, it's when you are becoming less and less active because of your knee. The last thing you want someone to do is stop sport or physical activities altogether. However, it can be challenging and sometimes support is needed.

Currently, the treatment of young athletes who suffer a knee injury focuses on returning them to sport. Few seek care beyond their injury, and little effort is made to prevent osteoarthritis. Further research with a team of patients and clinicians is expected to improve treatment outcomes and reduce the burden of osteoarthritis and related conditions for young



Canadians who suffer a sport knee injury.

For more information about Dr Whittaker's upcoming research study, "Preventing osteoarthritis after a sport knee injury; Stop OsteoARthritis (SOAR)," visit www.arthritisresearch.ca/research/stop-osteoarthritis-soar.

Traumatic brain injury in survivors of intimate partner violence

While the diagnoses and treatment of sport-related concussion have well-established guidelines and protocols, a new study from UBC's Okanagan campus is looking at a previously understudied group—women survivors of intimate partner violence. The hope is to develop a simple screening tool to help front-line services, like women's shelters, identify traumatic brain injury earlier.

Dr Paul van Donkelaar is lead researcher and a professor with the School of Health and Exercise Sciences. He reports that there is currently little direct evidence for the potential link between intimate partner violence and traumatic brain injury-induced brain dysfunction. In many cases, survivors of intimate partner violence don't necessarily know they have had a traumatic brain injury, and yet they are suffering from chronic symptoms including headaches, dizziness, and difficulty remembering. Further, if a brain injury is diagnosed, it might be several months or years after the initial damaging blow took place. And was it caused by one blow, multiple attacks over several months, or from being shaken or even strangled?

While diagnosis is a challenge, there also remains a social stigma with intimate partner violence. Van Donkelaar says many women who do seek medical help may not tell the truth when asked how the injury occurred. For these reasons alone, van Donkelaar and his research team want to make concussion assessments and care for survivors of intimate partner violence accessible and straightforward.

For this latest research, the team used two brain injury questionnaires—the Brain Injury

Severity Assessment tool (BISA) and the Sport Concussion Assessment Tool (SCAT5)—to get a better sense of the symptoms experienced by survivors. Eighteen women took the part in the study.

The research, published in *Brain Injury*, determined that by using the BISA test, which asks questions about symptoms resulting from episodes of intimate partner violence, more brain injuries were reported by the survivors. The study determined that each participant had suffered at least one previous traumatic brain injury, and most had suffered many.

The findings from the current investigation can be used to develop informed screening tools to help front-line staff at women's shelters identify a brain injury as a possible factor in the symptoms experienced by survivors of intimate partner violence. Van Donkelaar says providing these practical support resources to survivors will improve their chances of breaking the cycle and enable them to move forward into an abuse-free future.

The study is available at <https://doi.org/10.1080/02699052.2019.1658129>.

Many Canadians live with multiple chronic conditions; efforts to improve lifestyle needed

A lack of physical activity, a poor diet, and too much stress are taking their toll on the health of Canadians, says a new UBC study. Researchers from UBC's Faculty of Medicine caution that too many Canadians live with a number of health issues that impact their ability to lead healthy lifestyles.

Dr Brodie Sakakibara is an assistant professor with the Centre for Chronic Disease

Prevention and Management based at UBC Okanagan. He and colleagues from UBC's Department of Physical Therapy recently published a study examining how common it is for Canadians to have multiple, and serious, health conditions.

Stroke, heart disease, and diabetes are three of the most prevalent chronic diseases worldwide. These cardiometabolic diseases, mostly caused by lifestyle behaviors, are the leading causes of health resource use, hospitalizations, morbidity, and mortality in Canada. Using data from a 2016 Canadian Community Health Survey with 689 300 respondents, researchers investigated cardiometabolic multimorbidity (CM) and its connection to physical activity, diet, and stress. The study reports that the number of Canadians with CM or at risk of CM is high, and an increasing onset of cardiometabolic conditions is associated with higher chances of physical inactivity and stress. Sakakibara adds that health care management for people with multiple chronic diseases is traditionally based on disease-specific strategies often independent of one another, leading to fragmented care with multiple care providers and systems.

While becoming more active, lowering stress, and eating well won't cure all ailments, Sakakibara says it would certainly be a step in the right direction. The study suggests the time has come for greater efforts to prevent CM in individuals at high risk, as well as efforts to help people with CM better manage their health and well-being. This study, partially funded by the Canadian Institutes of Health Research and the Michael Smith Foundation, was published in *BMC Public Health*. It is available at <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-019-7682-4>.



Medical Meditation app

Medical Meditation is a free mobile app created to improve the lives of people suffering from chronic illnesses through guided meditation tracks for a variety of illnesses and symptoms, supporting the listener to find relaxation and awareness of breath through mindfulness techniques. The Medical Meditation app was founded by Dr Nikhil Joshi, who used meditation as a coping mechanism after being diagnosed with cancer. Mindfulness is believed to reduce the impact of stress and anxiety on patients and their families, a part of treating a person holistically. The app is available for download at www.medicalmeditation.ca.

Depression linked to nutrition in middle-aged and older Canadians

Researchers from Kwantlen Polytechnic University, the University of Toronto, the University of Victoria, and MacEwan University find that

nutrition plays a major role in depression. The study also found that the likelihood of depression is higher among middle-aged and older women who are immigrants to Canada when compared to Canadian-born women.

Dr Karen Davison, Health Science program chair at Kwantlen Polytechnic University, led

the study. She describes that lower intakes of fruits and vegetables were found to be linked to depression for both men and women immigrants and those born in Canada. Additionally, men were more likely to experience depression if they consumed higher levels of fat or lower levels of omega-3 eggs. For all participants,

Screening for thyroid dysfunction in patients without symptoms: Don't check that box routinely

A new guideline from the Canadian Task Force on Preventive Health Care found no benefit to routine screening for thyroid dysfunction in adults without symptoms or risk factors. Based on the latest evidence, the Task Force guideline recommends against routine screening for thyroid dysfunction in nonpregnant adults; the guideline is published in the CMAJ (www.cmaj.ca/content/191/46/E1274).

Routine screening for thyroid dysfunction in people without symptoms or risk factors is commonly ordered, but practice varies by primary care practitioner. According to the recommendation, the evidence isn't there to suggest a health benefit for this type of screening as a routine part of care. This recommendation does not apply to patients with symptoms, including unexplained fatigue or weight change, sensitivity to heat or cold, hair loss, and irregular heart rhythms. People on medications such as lithium or amiodarone or with risk factors for thyroid dysfunction, such as previous thyroid disease or surgery, radiation to head or neck or pituitary or hypothalamic diseases, are also exempt from this guideline.

The Task Force conducted a rigorous systematic review of the latest evidence. Although no screening trials were identified, 22 studies on the effectiveness of treatment for abnormal thyroid-stimulating hormone (TSH) findings in asymptomatic adults were included. The Task Force did not find evidence of benefits from screening and treatment in people without symptoms, but highlighted that screening requires patients to undergo testing.

Given the lack of benefit to patients, as well as the need to take medication unnecessarily and have regular medical visits and follow-up blood tests to check TSH levels, the Task Force strongly recommends against routine TSH screening in asymptomatic adults.

Clinicians should be aware of symptoms, signs, and conditions associated with thyroid dysfunction so that patients with these can be tested, particularly symptomatic postmenopausal women, given the higher prevalence of hypothyroidism in that population.

Alignment with other guidelines

The British Columbia Ministry of Health and Toward Optimized Practice from Alberta recommend against testing for TSH in asymptomatic patients. The College of Family Physicians of Canada, the Nurse Practitioner Association of Canada, and the Canadian Society of Endocrinology and Metabolism have endorsed the guideline.

Canadian Task Force on Preventive Health Care

Thyroid Dysfunction Screening Guideline

Question
Does routine screening for thyroid dysfunction in adults without symptoms or risk factors result in clinical benefit?

The Issue
Blood tests measure thyroid-stimulating hormone (TSH) levels and may show:
• underactive thyroid gland (hypothyroidism)
• overactive thyroid gland (hyperthyroidism)

Recommendation
STRONG
The Task Force recommends against routine screening for thyroid dysfunction in asymptomatic patients.

Applies to:
Nonpregnant adults with no symptoms or relevant risk factors

Does not apply to:
Adults with:
Risk factors including:
• Diagnosed thyroid disease
• Exposure to certain medications
• Head or neck radiation
• Pituitary or hypothalamic disease

Symptoms of thyroid dysfunction such as:
• Unusual fatigue
• Unexplained weight loss or gain
• Atrial fibrillation or unexplained tachycardia
• Sensitivity to cold or heat
• Hair loss
• Tremor

Why?
Early detection of asymptomatic thyroid dysfunction does not improve outcomes.
Burden on patients:
• regular blood tests
• unnecessary life-long medication

Clinicians
• Do not routinely order TSH in all patients

Talk to your doctor.

Find guidelines, tools and resources at www.canadiantaskforce.ca

For an additional overview and tools, visit <https://canadiantaskforce.ca/guidelines/published-guidelines/asymptomatic-thyroid-dysfunction>. To listen to a related podcast about the guideline, visit <https://soundcloud.com/cmajpodcasts/190395-guide>. To read the systematic review published in the journal *Systematic Reviews* visit <https://link.springer.com/article/10.1186/s13643-019-1181-7>.

The Canadian Task Force on Preventive Health Care is an independent panel of health professionals who are experts in clinical preventive health care and guideline methodology. The Task Force's mandate is to develop and disseminate evidence-based clinical practice guidelines for primary and preventive care.

lower grip strength and high nutritional risk were associated with depression.

Various minerals and vitamins (e.g., magnesium, zinc, selenium) present in fruits and vegetables may reduce plasma concentrations of C-reactive protein, a marker of low-grade inflammation associated with depression. Researchers were interested to learn that omega-3 polyunsaturated fats were inversely associated

with depression among men. They note that future research is needed to explore the pathways, but it is plausible that increased omega-3 fatty acid concentration in the diet may influence central nervous system cell membrane fluidity and phospholipid composition, which may alter the structure and function of the embedded proteins and affect serotonin and dopamine neurotransmission.

The study also found depression to be associated with having chronic pain and at least one chronic health condition for both men and women.

Researchers assert that it is important to consider influences earlier in life, including immigration status, education, and income, in addition to nutritional intake, as these are also crucial to older Canadians' mental health.

Updated national framework for advance care planning in Canada

The Advance Care Planning (ACP) in Canada initiative, led by the Canadian Hospice Palliative Care Association (CHPCA) has released an updated National Framework for ACP that now includes an updated plan for implementing ACP in Canada.

The 2019 Pan-Canadian Framework builds on the first version of the National ACP Framework, created in 2012, and its influence on new developments and accomplishments. The new framework is restructured to focus more on broadening partnerships and promoting further collaboration among different jurisdictions (local, provincial/territorial, national) and systems (health, law, social services, life planning). Its development was funded by Health Canada to help people living in Canada prepare for their future health care needs.

The updated framework reframes the four main action pillars as interconnected activities that have the potential to normalize, support, and promote ACP in Canada. These activities, in turn, can be integrated with other life planning activities, such as financial planning and estate planning, to create a kind of safety net for people throughout their lives.

The 2019 National Framework and other resources and tools for patients, families, and health care providers are available in the Advance Care Planning resource library at www.advancereplanning.ca/acp-framework.

Resources to support the legal processes of advance care planning in Canada

The Advance Care Planning (ACP) in Canada initiative has released two Living Well, Planning Well resources to support the legal processes of ACP in Canada. Every province and territory has laws to help protect the right to do ACP and to choose a substitute decision maker to speak on a person's behalf if they cannot speak for themselves. The two resources explain the legal requirements and lawyers' involvement in their clients' ACP.

Lawyer's toolkit

The Living Well, Planning Well legal toolkit is designed to help lawyers and their clients go through the process of ACP. It highlights the importance of ACP and its role in life planning in general (e.g.,



estates and wills, life insurance, investment planning), and it covers different scenarios, prompts, and precedent clauses that lawyers can use to start ACP conversations with their clients. The legal toolkit, funded by Health Canada and created with input from two Canadian law firms, is available at www.advancereplanning.ca/resource/living-well-planning-well-lawyers-resource.

Public toolkit

A complementary Living Well, Planning Well resource for the public was created with support from a national advisory committee of legal professionals, health care providers, and patient and caregiver representatives. This resource provides plain language summaries of the processes of health care consent, capacity, ACP, and substitute decision making in Canada. It begins with an overview of the national legal norms for ACP, followed by short infographic summaries of the legal requirements for each province and territory (except for Nunavut, which does not have ACP legislation). It is relevant for anyone who is unfamiliar with the laws where they live, or who has moved to a new province/territory, or is concerned about having their ACP rights respected. Funding for this resource was provided by the Canadian Bar Association's Law for the Future Fund grant program. It is available at www.advancereplanning.ca/resource/living-well-planning-well-resource.

According to the authors, immigrant status was associated with depression among women. Older immigrant women in the study may have reported depression as a result of the substantial stress associated with settling in a new country; immigrant men, who face many of these same settlement problems, did not have higher levels of depression than their Canadian-born peers. Although the authors did not have the data to explore why there was a gender difference, they posit that it may be that in these older married couples it was the husband who initiated the immigration process and the wives may not have had as much choice about leaving their homeland.

The study was based on analysis of the Canadian Longitudinal Study on Aging data and included a sample of 27 162 men and women aged 45 to 85 years, of whom 4739 are immigrants. The study was published in *BMC Psychiatry*. It is available at <https://bmcp psychiatry.biomedcentral.com/articles/10.1186/s12888-019-2309-y>.

Shape the future of epilepsy research

The Epilepsy Research Program of the Ontario Brain Institute has launched a national survey to identify and prioritize unanswered questions about epilepsy and seizures. They have teamed up with the Ontario Brain Institute and the James Lind Alliance to bring together patients,

caregivers, and clinicians to agree on a top-10 list of research priorities for epilepsy.

About 300 000 Canadians are living with epilepsy. Depending on location and access to care, epilepsy patients in Canada may be treated by family doctors, pediatricians, internists, neurologists, or epileptologists. As clinicians on the front lines, your questions about the diagnosis, treatment, or management of epilepsy will help direct researchers toward finding solutions that better reflect your needs and will help you provide better care to your patients with epilepsy.

This is your chance to shape the epilepsy research agenda in Canada by helping researchers better understand the needs of people living with epilepsy and seizures. Researchers are interested in your perspective on the unanswered questions or treatment uncertainties that, if answered, will have the greatest impact on your patients and their quality of life.

You are eligible to complete the survey if you are:

- A health care provider working with people with epilepsy.
- A person with epilepsy or seizures.
- A caregiver, friend, or family member of someone with epilepsy or seizures.
- A Community Epilepsy Agency representative.

Share what matters to you by completing the short survey at braininstitute.ca/epilepsy-ppsp (survey is available in French and English).



Reducing falls in seniors

Each year, 30% of seniors have at least one fall—half of whom fall more than once. In fact, 9 out of 10 hip fractures result from falls. These falls can have dire consequences, 20% lead to death and a further 20% result in seniors being admitted to care homes for the balance of their life. Fortunately, falls are preventable, and there is evidence that the Otago Exercise Program, which consists of strength and balance training delivered by a physiotherapist, can reduce falls in seniors.

Arthritis Research Canada's senior research scientist Dr Linda Li is co-leading a team of fellow scientists, arthritis research trainees, and patient experts in a 3-year study and randomized trial using the traditional Otago program or an enhanced version that includes an exercise coach. The research team recently demonstrated that exercise coaching with the use of a consumer wearable, such as a Fitbit, was feasible and could help older adults with chronic disease to stay active. A key element was to empower the person to develop realistic exercise goals.

In this project, the team will test two methods of delivering the Otago program, which includes a new coaching approach by a physiotherapist and the use of a Fitbit to provide feedback (versus the traditional delivery, which is the current standard). The team will measure success by the degree to which the program is delivered as intended, and the degree to which it is followed by seniors at 12, 18, and 24 months. The number of falls, risk of falling, and participation in walking activities between the two groups will also be assessed over time. In addition, the team will assess whether the coaching approach is a cost-effective option for delivering the Otago program. To read more about Dr Li and her work, visit www.arthritisresearch.ca/linda-li.

Billing webinar series: Winter 2020 schedule

All family physicians are invited to participate in the GPSC's winter 2020 billing education webinar series about GPSC incentive fees and select MSP fees. The series will have six 90-minute webinar sessions led by physician educators. Physicians are encouraged to join the live scheduled webinars to receive information that is up-to-date, advice that is relevant, and opportunities for real-time engagement. Webinars are not recorded.

- Session 1: MSP Basics—Introduction to Billing for Family Practice. Monday, 27 January 2020, 6 p.m.
- Session 2: GPSC Billing Part 1. Tuesday, 28 January 2020, 6 p.m.
- Session 3: GPSC Billing Part 2. Tuesday, 18 February 2020, 6 p.m.
- Session 4: GPSC Billing Part 3. Wednesday, 19 February 2020, 6 p.m.
- Session 5: GPSC Billing Part 4. Tuesday, 3 March 2020, 6 p.m.
- Session 6: Case-based exercises. Monday, 30 March 2020, 6 p.m.

Space is limited. For registration links and details about content covered in each session, visit www.gpsc.bc.ca.