WINTER 2020

Diabetes Dialogue

GET READY TO BE INSPIRED

Are veggie burgers really better for you?

Boost your health in 20 minutes a day

PLUS: Digital diabetes care, multicultural comfort food, diabetes and driving

Tristan Lim (second from right), who lives with type 1 diabetes, has had ongoing support from his family.

An official publication of
Diabetes Canada

DIABETES CANADA

WINTER 2020

Diabetes Dialogue

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Diabetes Dialogue

WINTER 2020

Diabetes Dialogue, the official publication of Diabetes Canada, is published online quarterly (Spring, Summer, Autumn, Winter). Its mission is to deliver current, reliable information about diabetes to people affected by diabetes.

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VIEW point

LET'S END DIABETES TOGETHER

Tackling the diabetes epidemic is a team effort

There are no better examples of the difference working together makes than the stories in our first feature, "Motivated to Make a Difference." This story describes the impact of several people and organizations that are working tirelessly in the fight against diabetes. These include a physician/researcher, the parents of a young man with type 1 diabetes, and an organization that supports Indigenous Canadians who are living with diabetes. All three stories are inspirational, and will help all of us to consider how we can contribute to improving the lives of Canadians who are living with or are somehow affected by the disease.

We live in an age of ever-changing technological developments. One of the benefits of these developments is that they allow us to connect with others no matter the distance. In the case of diabetes, these innovations can change self-management in the future in a positive way. "Digital Diabetes Care," our second feature, describes how digital (or virtual) health care works and how it can help people living with diabetes. For example, it could decrease the need for face-to-face visits—as well as the cost and time associated with them—while still providing the support needed to maintain good blood sugar control and avoid complications. It may not be beneficial for everyone (from patients, to physicians and diabetes educators), but it will provide options for some. The number of new technologies is exploding, and only time will tell us how beneficial they are.

Winter came early in most parts of Canada, reminding us that there is nothing more comforting than food that warms your heart and body—comfort food. It is not always the healthiest choice; however, in "Nutrition Matters," Rosie Schwartz offers tips for comfort food makeovers and delicious recipes that represent the diverse country in which we live.

One of the latest food trends is plant-based burgers, which look and taste like beef but are meatless. Read more about them in "On the Shelf."

It's not surprising that many people are more sedentary in the winter months, but it is important to continue some form of exercise to boost your health. In "Fit Tip," find out how just 20 minutes of exercise a day can be beneficial.

Finally, "Know Your Rights" looks at the issue of driving when you live with diabetes. The article points out that driving is not a right but a privilege, and provides guidelines and tips to ensure you are driving safely.

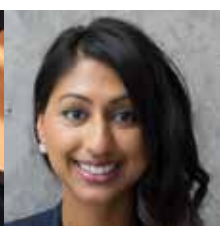
Wishing all of our readers good health and a wonderful start to the new year!

Diane Donat MD MSc MEd FRCPC
Editor-in-Chief

LETTERS TO THE EDITOR
We welcome your ideas and opinions about what you read in *Diabetes Dialogue*. We would also like to hear about your activity routine and, in future, may feature a collection of your ideas. Write to us at **dialogue@diabetes.ca**.







Even brief inactivity can cause diabetes symptoms

Blood sugar levels do not bounce back in older adults

By Elizabeth McCammon

Regular physical activity improves the way the body uses sugar (glucose), and can help delay or even prevent type 2 diabetes. So what happens when people who are risk for the disease suddenly become inactive?

In a **study** funded by Diabetes Canada, 22 participants were asked to reduce their daily steps to no more than 1,000 steps per day for two weeks. That is about the same as being housebound due to illness.

The participants, who had **prediabetes**, were 65 to 73 years of age and were living with overweight. Researchers found that participants had higher blood sugar levels during this brief period of inactivity, and even when they were active again, their blood sugar did not fully return to the levels seen before the study.

These results suggest that people at risk for type 2 diabetes because of age, weight, or prediabetes could be at even higher risk if there are times when they are not active—for example, due to illness, hospitalization, or bed rest. To help them recover their blood sugar control, "strategies such as active rehabilitation, dietary changes, and perhaps medication might be useful," says Chris McGlory, a Diabetes Canada post-doctoral fellow in the Department of Kinesiology at McMaster University and lead author of the study, which was published in *The Journals of Gerontology* (August 2018).

DID YOU KNOW?

The cause of diabetes depends on your genes, family history, ethnic background, and other factors, such as the environment and your health. Diabetes Canada offers information to end myths and misinformation. Read more in **"Causes" of Diabetes**.

Blood tests could give five-year warning of type 2 diabetes

Regular screening could prevent or delay diabetes

A study by U.S. Veteran Affairs suggests that regular blood tests could predict whether a person will develop type 2 diabetes within the next five years.

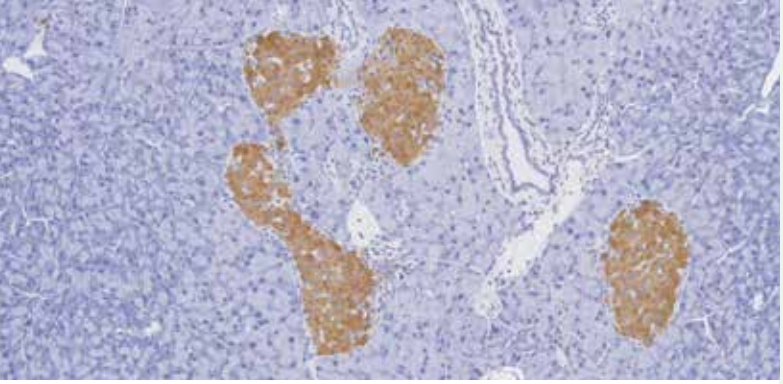
Researchers looked at records for more than 900,000 American veterans without diagnosed diabetes. Each had had at least three random plasma glucose (RPG) tests over five years. The test checks how much sugar (glucose) is in the blood; unlike a fasting plasma glucose test, an RPG test can be done at any time, and people can eat beforehand.

During the study period, about 10 per cent of the total group developed type 2 diabetes.

The researchers found that raised RPG levels accurately predicted the development of diabetes within the following five years. Factors that are known to increase the risk of diabetes—including older age, higher weight, smoking, and high cholesterol—also predicted the development of the disease. However, the RPG tests did a better job of predicting type 2 diabetes than these other risk factors, alone or combined.

The study, which was published in **PLoS ONE**, concludes that regular RPG tests done during doctor visits would be a good first step for further testing. With earlier diagnosis, people and their health-care teams can take steps to prevent or delay type 2 diabetes and any related complications for as long as possible.

Photos by: Ljupco/iStockphoto (top right), AlexRaths/iStockphoto (bottom left)



Immunotherapy may delay type 1 diabetes

DRUG EXTENDS INSULIN PRODUCTION

A drug that targets the immune system may help delay type 1 diabetes in children and adults at high risk for the disease. This is the finding of the TrialNet Teplizumab Prevention Study, which is part of the largest clinical trial network ever to research prevention of type 1 diabetes.

The drug teplizumab is designed to stop the immune system from destroying the beta cells (the brown spots pictured above), which is what happens in type 1 diabetes. Earlier research showed that teplizumab can extend insulin production in people recently diagnosed with type 1 diabetes. The goal of this study, which was published in the **New England Journal of Medicine**, was to test whether the drug could delay or even stop type 1 diabetes from developing in people at high risk.

The study involved 76 people, 55 of whom were under age 18. They were considered high risk because they all had a relative with type 1 diabetes and had two or more type 1 diabetes autoantibodies (proteins that mistakenly attack the body), as well as abnormal blood sugar levels. They were divided into two groups: One group received teplizumab for 14 days, while the control group received a placebo (a drug with no active ingredient).

Almost three-quarters of people in the control group developed type 1 diabetes (in an average of just over two years), compared to less than half of those in the teplizumab group (who, on average, took four years before the disease was diagnosed).

"We are excited to be part of this groundbreaking research and its potential to impact people at risk for type 1 diabetes," says Dr. Diane Wherrett, staff endocrinologist and principal investigator for TrialNet at the Hospital for Sick Children in Toronto, one of the sites involved in the study. "These findings highlight that type 1 diabetes is an autoimmune disease that can be delayed with immunotherapy."

With more than 200 centres worldwide, TrialNet offers free screening to relatives of people with type 1 diabetes who want to find out their personal risk of developing the disease. This unique screening can identify the early stages of type 1 diabetes years before any symptoms appear. It also helps researchers to learn more about how the disease develops and to plan new studies exploring ways to prevent it. For more information, visit **trialnet.org**.

Photos by: MT Ciudad PhD (top left), michaeljung/iStockphoto (bottom right)

INTENSIVE BLOOD PRESSURE THERAPY MAY LOWER DEATH RISK IN TYPE 2 DIABETES

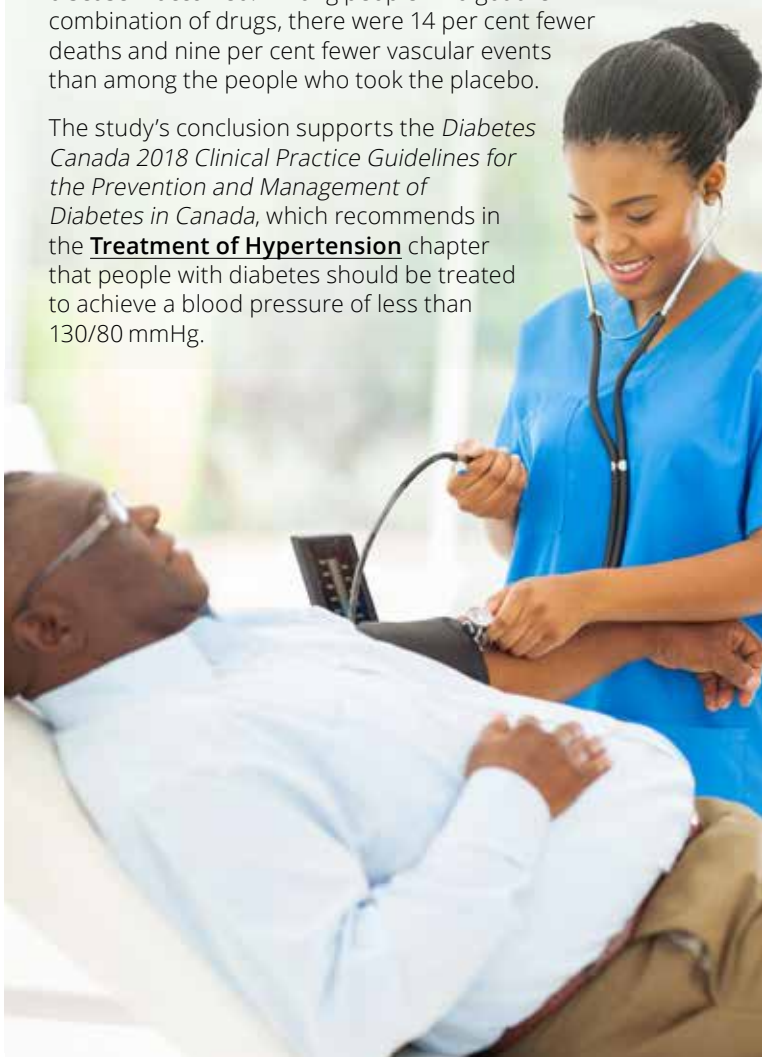
Results support Diabetes Canada blood pressure target

According to a study published in the American Heart Association's journal **Hypertension**, people with type 2 diabetes who received intensive treatment to keep their blood pressure levels at 130/80 mm/Hg or below had fewer heart attacks, strokes, and other diabetes complications compared to those who did not get intensive treatment.

A research team with the ADVANCE (Action in Diabetes and Vascular Disease) trial looked at data for 11,000 people at 215 clinical centres in 20 countries. Everyone in the study had type 2 diabetes and high blood pressure. Half received a combination of drugs (perindopril and indapamide) to keep their blood pressure levels at 130/80 mm/Hg or below. The other half received a placebo (a drug with no active ingredient).

Over the four-year study, more than 800 deaths and 950 major vascular events—including heart attacks, strokes, diabetic kidney disease, and diabetic eye disease—occurred. Among people who got the combination of drugs, there were 14 per cent fewer deaths and nine per cent fewer vascular events than among the people who took the placebo.

The study's conclusion supports the *Diabetes Canada 2018 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada*, which recommends in the **Treatment of Hypertension** chapter that people with diabetes should be treated to achieve a blood pressure of less than 130/80 mmHg.



DIABETES champions

KAREN OMICHINSKI: Inspiring and motivating with compassion

Dietitian brings life lessons to both her volunteer and professional work

By Mark Witten

Early in her career as a dietitian, Karen Omichinski learned a big lesson from her own family about what motivates people with diabetes to change their eating habits and lifestyle. Her mother, Evelyn, was diagnosed with type 2 diabetes in her 50s, while Omichinski was pregnant with twins, now 29.

"People will only change if they can see the reason for change and how it will benefit them. They need to believe it's worth putting in the time and effort," says Omichinski, a registered dietitian and certified diabetes educator with the Interlake-Eastern Regional Health Authority in Beausejour, Man., and a long-time volunteer with Diabetes Canada.

"My mom wanted to be here for her grandchildren for a long time," says Omichinski. So Evelyn attended diabetes education sessions, became more aware of what she ate, carefully monitored her blood sugar (glucose) levels, took her prescribed medications, worked with her health-care team, and stayed fit through walking, bowling, and resistance band exercises. "Mom's now well into her 80s, living in her own home, and keeps in touch with family and friends through email, Facetime and, of course, going for coffee."

EDUCATING AND ADVOCATING FOR CHANGE

Omichinski has volunteered with Diabetes Canada (formerly the Canadian Diabetes Association) for more than 20 years. She started by hosting education sessions and speaking to groups in smaller rural communities across Manitoba to raise awareness. "I got involved because of the Canadian Diabetes Association's commitment to bring education and information to rural communities, which sometimes get missed," she says.

Omichinski also enjoyed sharing her nutrition know-how in the kitchen at summer D-camps in Manitoba. "I helped the cooks figure out what the kids need to eat. It was very satisfying to see young people with type 1 diabetes become more self-confident and competent in self-care," she says.

She eventually took on a leadership role, serving as volunteer regional chair for the Manitoba and Nunavut Region from 2010-2014, and has also been an active member of Diabetes Canada's Manitoba Advocacy Committee since 2009. During her time, the committee's work resulted in the Manitoba government providing insulin pump coverage for children and youth with type 1 diabetes.

Omichinski received a Diabetes Canada National Volunteer of the Year award in 2018 and a Regional Volunteer of the Year award in 2013. "Karen is a very compassionate person and dedicated volunteer, who has a passion for making a difference and embracing change," says Andrea Kwasnicki, Diabetes Canada's regional director for Manitoba and Nunavut, who nominated Omichinski for the award.

"She's travelled throughout the province, representing Diabetes Canada in countless speaking engagements," says Kwasnicki. "She has the gift of making complex, difficult topics easy to understand, and her soft-spoken, personable demeanour is welcoming and comforting for people struggling with managing diabetes or newly diagnosed."

LISTENING, LEARNING, AND MOTIVATING

Whether Omichinski is speaking to a group of people at a Diabetes Canada event or talking with one individual, she connects in a way that leads to practical solutions. "I look at the whole person. What do they hope to see in their life, and how can they feel better? I help the person figure out what would be the easiest change to make first. The goal needs to be achievable and they can then build on success," she says.

Growing up in rural Manitoba as a youth in 4-H club, Omichinski learned how to lead and lend a hand from the home economists who ran the program. "Volunteering is rewarding because I get to meet, help, and learn from so many different people whom I wouldn't know otherwise, and I have fun doing it," she says.

DID YOU KNOW?

Volunteering with Diabetes Canada gives you a chance to make a difference in the lives of Canadians affected by diabetes. Visit **Volunteer With Us** to learn more about rewarding opportunities that can be matched to your skills, interests, and availability.

Do you know someone who you think is a Diabetes Champion? Let us know at **dialogue@diabetes.ca**.

Karen Omichinski

RESEARCH brief

CURBING BLOOD SUGAR LOWS

Dr. Rémi Rabasa-Lhoret explores ways to reduce hypoglycemia for people with type 1 diabetes

By Rosalind Stefanac

WHO: Dr. Rémi Rabasa-Lhoret, professor, Department of Nutrition, University of Montreal; director, Diabetes Clinic and Metabolic Diseases Research Unit, Montreal Clinical Research Institute

RESEARCH HIGHLIGHTS/DISCOVERIES:

- Co-developed an external artificial pancreas for the treatment of diabetes
- Researching ways to reduce the frequency and consequences of low blood sugar in people with type 1 diabetes
- Received three awards for excellence in teaching from the University of Montreal; has published more than 300 manuscripts and book chapters

How did you end up becoming a diabetes researcher in Montreal?

I'm from Paris, France, and started my work in diabetes in 1991. My interest was sparked while working with people living with diabetes as a young resident. I came to Quebec to complete my PhD in 1995 and when I was offered a job in Montreal in 2002, I moved here permanently.

Are you a practising physician as well as a researcher?

Yes, as a physician I follow close to 1,000 patients, 50 per cent of whom have type 1 diabetes, 40 per cent have type 2 and the rest have cystic fibrosis-related diabetes. A typical week would include two days in the clinic [seeing patients] and three days dedicated to research, teaching, and administration.

What are you currently researching?

My team is looking at the risk factors that can cause hypoglycemia [low blood sugar], the consequences [fear of future low blood sugar events, cardiac problems], and ways to better assess and prevent these episodes to improve overall treatment. Hypoglycemia can happen often, especially when exercising. It can impair one's driving ability, efficiency at work, sleep. It can happen day [or] night, leaving patients worried, frustrated, and tired. Supported by Diabetes Canada, we are looking to better understand the best strategies to reduce and prevent exercise-induced hypoglycemia in [people with] type 1 diabetes.

Dr. Rémi Rabasa-Lhoret

How do you do this?

We are looking at how much and when patients should reduce insulin and/or eat snacks before and after different types of exercise to reduce hypoglycemia frequency. For example, we recently showed that for patients using an insulin pump, reducing basal insulin infusion rate [the amount of insulin given as a continuous infusion, which is set per hour] by 80 per cent should be done 90 minutes before they start exercising. In collaboration with a large group of partners, we recently launched the **BETTER** project to develop a registry of people with type 1 diabetes in Quebec to understand patients' perceptions about hypoglycemia. We are also investigating if online training and new therapies [such as new insulins] and technologies [such as continuous glucose monitoring] can reduce hypoglycemia. We also try to answer questions that aren't often addressed, such as how to manage diabetes technology [insulin pumps] during intercourse.

What is your long-term goal?

Given my experience both as a clinician and researcher, I hope to be a bridge from the lab to the bedside. Hopefully, combining patients' experience together with medical and research knowledge can bring new perspectives to hypoglycemia prevention and treatment. If I can minimize the burden of type 1 diabetes by reducing at least a bit of the frequency and consequences of hypoglycemia, I will be extremely proud.

THE LAST WORD

"Dr. Rabasa-Lhoret is searching for ways to reduce and prevent hypoglycemia, a concern for all people living with type 1 diabetes. His research could greatly benefit their lives." — Seema Nagpal, vice president, Science & Policy, Diabetes Canada

Visit **Research** to read about the research projects and awards funded by Diabetes Canada.

How can you help us fund research that changes lives? **Donate** now!

DR. RÉMI RABASA-LHORET AT A GLANCE

- > Awarded Diabetes Canada's Brian Dufton Memorial Manuscript Award (2017)
- > Appointed Professor, University of Montreal (2016)
- > Received Young Investigator Award, Canadian Society of Endocrinology and Metabolism (2010)
- > Recruited by the University of Montreal (2002)
- > Completed his medical degree, Faculty of Medicine, Paris, France (1990)

MOTIVATED TO MAKE A DIFFERENCE

Parents fundraising for a cure, a doctor taking Canada to the top of diabetes research, and a partnership supporting First Nations communities—these people and organizations are having an impact in the fight against diabetes

By Elizabeth McCammon

Left to right: Tristan Lim (second from the right) is surrounded by his grandparents David and Susan Lim, and his parents, Dan Lim and Suzy Johnston.

Photo by: Liz Gareri

DAN LIM AND SUZY JOHNSTON: FEARLESS SUPPORT FOR DIABETES CANADA

There is perhaps nothing a parent fears more than hearing that their child has a life-changing illness. Dan Lim and Suzy Johnston came face to face with that fear 13 years ago when their son Tristan, then a very active six-year-old, suddenly started to lose weight and go to the bathroom a lot. Within hours of a visit to his pediatrician, they had the diagnosis: type 1 diabetes.

"We were shocked," says Lim. "We had no familiarity with diabetes, so it was a whirlwind for our family to learn about the disease." But they soon found that they had "awesome" medical care and encouragement to help them not just learn about life with diabetes, but thrive. The family is grateful for the support they received from Diabetes Canada, especially **Camp Huronda**. Tristan started attending the summer camp, two hours north of their Toronto home, at age 8.

"At Camp Huronda, Tristan learned that he could do anything, regardless of his diabetes. It was very empowering," says Johnston. Tristan continued attending camp into his teens. As he got older, he began fundraising and giving speeches at diabetes awareness events.

> "When Tristan was diagnosed with type 1 diabetes, we didn't know anyone with the disease. Through our show, we constantly meet people who have diabetes or have a family member with diabetes. We are realizing that so many people live with this disease and need support."
>
> —Suzy Johnston, mother of a child with type 1 diabetes

Lim is a highly regarded photographer who is a fan of motorcycles; Johnston is his agent. In 2016, they decided to create their own **fundraising** event, **Fearless TO**, which raises funds for Diabetes Canada. The one-night charity auction features Lim's prints that celebrate riders, their machines, and their fearless embrace of life.

> "Dan and Suzy continue to support Diabetes Canada and those affected by diabetes by raising funds and awareness, and creating connections in numerous communities. This year we were so pleased and honoured to present the Fearless team with Diabetes Canada's Outstanding Regional Partnership Award."
>
> —Maria Petri, Ontario regional director, Diabetes Canada

Maria Petri

The couple has held Fearless TO for the past three years, and is planning an even bigger event for 2020. "Fearless TO has grown in size and spectacle each year and has raised over $35,000 to date," says Maria Petri, Diabetes Canada's Ontario regional director. "Dan and Suzy's commitment to and passion for Diabetes Canada is evident with all they do."

Tristan, who helps plan the exhibits, is now a young man and self-managing his diabetes well with an insulin pump. He is currently travelling the world, working as a model—and modelling a fearless life with diabetes.

Left and right: Examples of Dan's work from the Fearless TO exhibition. Centre: Dan and the team from Diabetes Canada at the 2018 event.

Image (tire imprint) by: enjoynz/iStockphoto
Photos by: Raquel Dominguez (middle); Dan Lim | The Moto Foto (bottom)

DR. PETER SENIOR: **RESEARCH THAT WILL IMPROVE LIVES**

In 2002, Dr. Peter Senior came to the University of Alberta from Newcastle, England, to spend a year learning about the Edmonton Protocol, the revolutionary procedure in which insulin-producing islet cells are transplanted from the pancreas of a donor into a person with type 1 diabetes.

More than 17 years later, the endocrinologist is still there. As the director of the Division of Endocrinology and Metabolism at the University of Alberta, and medical director of Alberta Health Services' Clinical Islet Transplant Program, Senior is at the cutting edge of diabetes research. In addition to his work to refine islet transplantation, he and his team are also looking at ways to "reboot" the immune system in type 1 diabetes. The idea is to use highly targeted drugs to knock out the parts of the immune system that attack insulin-producing cells, then use other drugs to help the immune system recover and create healthy cells.

> "Canadian research into islet biology and transplant is pushing the boundaries of scientific knowledge. Researchers from around the world want to come here to learn from us. Canadians should be really proud of that."
> —Dr. Peter Senior, endocrinologist

"This is very exciting and important work," says Senior. "Although rebooting the immune system might not be the final answer, this research moves our knowledge forward."

He compares diabetes research to a horse race. Various treatments—cell transplant, the artificial pancreas, immune system reboot—move back and forth for the lead. "I don't mind which one wins. I just want to see life for people with diabetes become longer, healthier, and less complicated," he says.

He is encouraged by a new trend in diabetes research in which patients work with researchers to ensure the research has practical value. He co-leads the Innovations in Type 1 Diabetes Goal Group, which is part of **Diabetes Action Canada,** a research organization that partners with Diabetes Canada and others to identify and address the health concerns of those living with diabetes. "If the research doesn't improve patients' lives, then we have missed a trick," says Senior.

> "Dr. Senior is always quick to lend his time and expertise to Diabetes Canada. We are so thankful to him for his thoughtful guidance and leadership."
> —Tracy Barnes, director of guidelines and research knowledge translation, Science & Policy, Diabetes Canada

In addition to his research and work with patients, he also volunteers with Diabetes Canada. "Dr. Senior has contributed countless hours to our Professional Section Executive and our clinical practice guidelines, ultimately helping to improve the lives of the millions of Canadians living with diabetes," says Tracy Barnes, director of guidelines and research knowledge translation, Science & Policy, Diabetes Canada.

Dr. Peter Senior with Dr. Tessa Laubscher (middle), recipient of Diabetes Canada's 2019 Dr. Gerald S. Wong Service Award, and Shelley Jones, co-chair of the Professional Section, at the Diabetes Canada/CSEM Professional Conference.

Photo by: Raquel Dominguez (bottom)

Dakota Dunes CDC was awarded the 2018 Saskatchewan Partnership Award from Diabetes Canada. Celebrating this achievement are (from left): Lorri Arcand and Tara Kyle, Dakota Dunes; Faith Rowland and Helen Tootoosis, Diabetes Canada; and Lisa Fan, Dakota Dunes.

Dakota Dunes Community Development Corporation: **A WINNING PARTNERSHIP**

Indigenous peoples living in Canada are among the groups at highest risk for type 2 diabetes and related complications. In Saskatchewan, the **Dakota Dunes Community Development Corporation** (CDC) is offering valuable support to help prevent the development of diabetes and promote the well-being of First Nations people, who make up almost 20 per cent of the province's population.

"The partnership with Diabetes Canada has been very positive. They have done what they said they would do, and we are starting to see results. People in our community are beginning to educate themselves and acknowledge the alarming impact of diabetes on our people."
—Shirley Greyeyes, director, Dakota Dunes Community Development Corporation

Since 2014, Dakota Dunes CDC has contributed $70,500 to assist Diabetes Canada–North Saskatchewan in delivering programs to reduce the risk of diabetes and its complications among the province's First Nations people. The corporation, which consists of the seven-member First Nations of the Saskatoon Tribal Council, distributes 25 per cent of the net profits from the Dakota Dunes Casino to charitable organizations and groups around the Whitecap Dakota First Nation. For its efforts, Dakota Dunes CDC was awarded Diabetes Canada's 2018 National Collaboration Award.

Dakota Dunes CDC Director Shirley Greyeyes knows that Indigenous people in Canada have higher rates of diabetes. She herself was diagnosed with type 2 diabetes almost five years ago. Yet, she rarely comes across people in First Nations communities who talk openly about living with the disease. "There appears to be a stigma about having type 2 diabetes. People do not want to acknowledge that they have it," she says.

Recognizing that prevention begins with awareness, Greyeyes is pleased to see Dakota Dunes CDC support Diabetes Canada in offering programs that focus on educating people about healthy lifestyles, nutrition, and exercise. "It is so important to share the information that Diabetes Canada has with our community, so that people become more educated and aware about how they can prevent and manage diabetes," she says.

The two organizations are also partners in attracting and training Diabetes Ambassadors within First Nations communities. "Having role models who we can relate to—who eat the same types of food and participate in similar activities—sends the message that you can still live a full and healthy life with diabetes," says Greyeyes.

In 2018, with the financial support of Dakota Dunes CDC, Diabetes Canada hosted a two-day conference that brought together academics, medical professionals, and traditional healers to share ideas on how to combine today's medical interventions with traditional methods, practices, and lifestyle. Dakota Dunes CDC has also supported other fundraisers such as the Diabetes Walk and the No Sugar Tonight Gala.

"The programming that Dakota Dunes CDC supports is very well aligned with Diabetes Canada's commitment to health promotion, diabetes prevention, reducing complication risk, and reaching diverse communities. We truly appreciate all that Dakota Dunes CDC does to help us support people living with diabetes."
—Faith Rowland, community development account manager, Diabetes Canada

Faith Rowland

"The mutual respect and learning provided through this partnership has been of great value," says Faith Rowland, community development account manager with Diabetes Canada. "As we grow in understanding of the true potential in reconciliation, the value of our partnership with organizations such as Dakota Dunes CDC only grows."

Want to learn more about volunteer opportunities at Diabetes Canada? Visit **Volunteer with Us**.

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DIABETES CANADA

DIGITAL DIABETES CARE

HOW TECHNOLOGY COULD CHANGE YOUR SELF-MANAGEMENT IN FUTURE

By Anne Bokma

Welcome to the new world of digital diabetes care, where medical help is as close as your smartphone. Here are a few examples of people with diabetes who have had "e-visits" with a health-care professional, using their computer, cellphone, or tablet to connect through a secure network.

HOW DOES DIGITAL CARE WORK?

A woman living with type 1 diabetes thought the insertion site of her insulin pump might be infected. She made a video and sent it to her doctor, who watched it in real time, diagnosed an infection, and arranged for a prescription for an antibiotic to be sent to the patient's pharmacy.

An elderly woman with type 2 diabetes was confused about when to take all her medications. Her daughter arranged them on the dining room table and took a video. After watching the video, her mother's doctor asked the mother's pharmacy to prepackage all her medications in a specially designed blister pack to ensure the woman took the right dose at the right time of day.

For a first-year university student with type 1 diabetes who was living away from home for the first time, one of the challenges was unpredictable blood sugar levels. She checked in with her dietitian via video on her cellphone; the dietitian was then able to offer food suggestions based on what the video showed was in the student's fridge and cupboards.

These examples are from a pilot study being carried out with the Ontario Telehealth Network by Dr. Janine Malcolm, an endocrinologist and clinical investigator at the University of Ottawa and the Ottawa Health Research Institute. While such virtual e-visits are still rare so far, she says this type of care will transform how diabetes is treated and managed. "Canadians are looking for ways to integrate technology with their health care," she says, noting that 88 per cent of Canadians own a mobile phone and that a recent **survey** by Ipsos Reid shows 69 per cent say they would use digital strategies to improve their health care if this option was available to them.

Photo by: solidcolours/iStockphoto

WANT TO REDUCE YOUR DIABETES RISK?
A 12-month digital coaching program that empowers people to reduce their risk of developing type 2 diabetes has been introduced by Diabetes Canada and LMC Healthcare. Learn more about the **Canadian Diabetes Prevention Program** now.

Dr. Janine Malcolm

HOW WOULD DIGITAL DIABETES CARE HELP?

Virtual care can provide much-needed support for people living with chronic diseases such as diabetes, who often need to see their doctor many times in a year. It can reduce emergency room visits. It also means you would not necessarily need to leave your home or office to get health care. You would not need to spend hours waiting to see your doctor, or pay for parking. Innovations such as videoconferencing, remote patient monitoring, apps, and web-based solutions such as the **Canadian Diabetes Prevention Program** (CDPP) are changing health care in Canada. And digital innovation is not just for patients: Technology will also allow family doctors to connect online with specialists to get faster access to professional advice.

"Virtual care is another tool in our toolbox to help provide care to patients when they need it."
—Dr. Janine Malcolm, endocrinologist and clinical investigator

"The average person is not actually aware of how many digital tools and technologies are out there—these tools will become the future of diabetes care," says Shivani Goyal, a scientist at Toronto's University Health Network. Goyal is currently heading a $1 million four-year study at Toronto's SickKids hospital to examine how the use of personalized text messaging can better support young people with diabetes as they move from pediatric to adult care.

There has been an explosion in the number of digital tools—from fitness trackers to calorie counters—that can help people lead healthier lifestyles. Some are specifically designed to help people with diabetes measure their carb intake, offer reminders to check their blood sugar (glucose), calculate insulin dosages, and track blood sugar levels and blood pressure. Some are designed to sync with a glucose monitor to provide data and charts to a doctor who can then provide feedback by phone, text, email, or video.

"New technologies can enhance the patient's sense of being in control."
—Dr. Jan Hux, president and CEO, Diabetes Canada

NEW DIABETES TECHNOLOGY

Virtual care also encompasses new forms of digital glucose monitoring, such as a first-of-its-kind flash glucose monitor recently introduced in Canada. It tracks blood sugar levels for up to 14 days, using a sensor worn on the back of the upper arm. A one-second scan of the sensor with a hand-held reader or smartphone provides a real-time glucose reading and a complete picture of the user's recent blood sugar history.

"Instead of someone coming in with a handwritten logbook and a doctor or nurse trying to make sense of it, now—with the click of a button—a chart can show glucose levels for the past month on a physician's screen. The ability to transmit that information and make judgments based on richer patient information is appealing," says Dr. Jan Hux, president and CEO of Diabetes Canada.

Photo by: Poike/iStockphoto (top)

THE REALITY OF DIGITAL DIABETES CARE

This all sounds exciting, but there are still many questions and concerns about virtual care. Hux points out that face-to-face appointments can help doctors address health issues that might not be obvious during an e-visit. For example, mental health challenges are common for people with diabetes, and may be easier to detect in person. "There's the risk that digital health care may reduce opportunities to address these aspects of patient care," Hux says.

As well, there are many questions about virtual care: Can digital tools be shown to be effective, with science to back them up in the same way as with drugs? What happens to those Canadians who cannot afford expensive cellphone plans or are nervous about using technology? How do doctors and patients ensure private health information stays private? How will physicians be paid for e-visits and e-consultations?

"The best digital tools are those that reduce how much time you spend worrying about your diabetes."
—Shivani Goyal, digital health strategist and scientist

Experts are trying to determine how to identify and make the various changes that will be required to support virtual care. The World Health Organization recently released its guidelines for the adoption of digital health care. In Canada, the Virtual Care Task Force was created earlier this year. It is a joint initiative of the Canadian Medical Association, the Royal College of Physicians and Surgeons of Canada, and the College of Family Physicians of Canada.

Malcolm has found that in her study of e-visits, patients may be enthusiastic about digital care, but most still want the opportunity to meet in person with their doctor. "Patients like the technology but don't want to give up seeing their doctor. They like it as an alternative to an in-person appointment or if they need a quick touchpoint."

Shivani Goyal

Goyal believes that new technologies have the potential to offer better patient care. However, there is no one-size-fits-all approach. "Once you find the technology or app that best suits your daily routines and unique needs, those tools become indispensable, the default," she says. Her mother lives with multiple chronic diseases, including diabetes, and at age 32 herself, Goyal wants to do all she can to stay healthy. "Given my family history, I am very aware of my risk for type 2 diabetes, and I am in prevention mode." Her family history has also motivated her to choose a career in researching digital health. "I've been a caregiver to my mother since I was 10, and have witnessed all sorts of health-care interactions that were frustrating to her as a patient and to me as a caregiver. I am motivated to change that experience so other people don't have to live through this."

DID YOU KNOW?

You can find resources—from webinars to carb-counting tips, meal planning guidelines, and information on how to reduce diabetes-related complications and much more at Managing My Diabetes.

Photo by: visualspace/iStockphoto

Multicultural comfort food

FOOD THAT WARMS YOUR HEART AND FITS A HEALTHY LIFESTYLE

By Rosie Schwartz, RD, FDC

At this time of year, nothing hits the spot quite like comfort food—it warms you up and keeps you satisfied. In Canada, with its rich multicultural tradition, that can mean anything from cabbage rolls, to rice and peas, to congee (rice porridge). Comfort foods can range from a favourite dish that provides comfort when you are feeling tired or stressed, to one that takes you back to your childhood or a particular celebration marked by wonderful memories.

Unfortunately, many comfort foods, no matter what culture they celebrate, can be high in calories, fat, and/or carbohydrates. However, "all foods can fit within a healthy lifestyle," says Erin Krusky, a registered dietitian at Diabetes Canada and a certified diabetes educator. "Not allowing yourself to have a food you really enjoy can result in overeating that food once you allow yourself to have it."

Rather than viewing certain foods as bad—which can lead to feelings of guilt when you eat them—It can be helpful to give yourself permission to eat those foods once in a while. "Even though most people may say ice cream isn't healthy, it can be healthy for a person with diabetes to go out for an ice cream cone on a hot day with a friend, as this activity could satisfy emotional and social needs," says Krusky. "Feeling more connected to others can lead to better overall health."

She adds, "If your comfort food is high in carbohydrates, try to have it with other foods that are low in carbohydrates, like vegetables, and lean sources of protein like fish. That way you will be able to enjoy your comfort food without a spike in your blood sugar levels."

Or give your comfort food an update: Be adventurous and explore new flavours and ingredients. Many traditional dishes include fibre-rich ingredients such as pulses (beans and lentils).

COMFORT FOOD MAKEOVERS

Changing up a few ingredients can make comfort foods a healthier option that does not affect your blood sugar so dramatically. Here are some tips for updating your favourites:

- If you do not have time to make your broth from scratch, choose a store-bought one with no added salt, or at least with reduced sodium.
- Instead of a filler like breadcrumbs (which are used in meatloaf and other dishes), substitute oats or whole-grain breadcrumbs.
- Adding more veggies (especially those with low carb counts) to your comfort foods is always a good idea for people with diabetes. When making dishes such as macaroni and cheese, stews, or chili, add zucchini or dark leafy greens and reduce higher-carb ingredients, such as potatoes. This is also a way of keeping meat portions down to the recommended amounts.
- To cut down on saturated fat in dishes such as creamy mashed potatoes, use buttermilk and less butter. Also consider substituting sweet potatoes in fare such as baked stuffed potatoes, for higher nutritional counts.
- Baked goods made with refined flours can be tempting, but they can also send your blood sugar soaring. Instead, choose recipes that use whole-grain flours or smaller amounts of refined flours. If you are updating a favourite, start with small substitutions on your first try, increasing the amounts each time you make it.
- You can also try lighter options for baked goods, such as a phyllo dough instead of a premade pie crust (you can find phyllo in the freezer section at the supermarket). Another option: Instead of a fruit pie, try a fruit crumble made with less topping.

DID YOU KNOW?

Making too many changes to your diet at once can be difficult. Instead, start small. For more tips, visit **Basic Meal Planning**.

Photo by: Sarsmis/iStockphoto

NUTRITION matters

Here are three comfort food dishes you will want to put on your menu this winter.

Chana Masala

This recipe from **CanolaInfo** is featured in the **recipe** section of Diabetes Canada's website. It is low in sodium and fat, and full of fibre, and the spicy flavours will warm you up on a cold day. You can also enjoy it with a roti shell or a whole-wheat chapati.

2 tbsp (30 mL) canola oil

1 tsp (5 mL) cumin seeds

1 small onion, finely chopped

1 tbsp (15 mL) grated fresh ginger

2 tsp (10 mL) garam masala

1 tsp (5 mL) curry powder

2 cans (each 540 mL/19 oz.) chickpeas, drained and well rinsed

1 can (796 mL/28 oz.) diced tomatoes, no salt added

2 tbsp (30 mL) lemon juice

¼ cup (60 mL) coarsely chopped fresh cilantro

In a saucepan, heat oil over medium heat and sauté cumin seeds for about 1 minute. Add onion, ginger, garam masala, and curry powder, and cook for 3 minutes, stirring constantly. Add chickpeas, tomatoes, and lemon juice. Cover and cook for 10 minutes, using a spatula periodically to scrape bottom of pan to get all cooking juices.

Serve hot with basmati rice, naan bread or dosa, and a side salad. Garnish with cilantro.

Makes 4 servings

Nutritional breakdown per serving (without a side dish):
25 g carbohydrate, 7 g protein, 5 g total fat, 0 g saturated fat, 6 g fibre, 165 mg sodium, 170 calories

For more ideas, including a healthier option for **cabbage rolls,** visit **Recipes.**

Root Vegetable Mash with Coriander

This dish offers a nutritious and fibre-packed way to enjoy mashed potatoes with a Caribbean touch. The recipe, also from **CanolaInfo**, is featured in the **recipe** section of Diabetes Canada's website.

2 medium (each 250 g) russet or Yukon Gold potatoes

1 large (250 g) sweet potato

1 large (250 g) parsnip

1 large (250 g) turnip

2 tbsp (30 mL) canola oil

2 tbsp (30 mL) coriander seeds

4 dried red chiles (such as chile de arbol), stems discarded

¼ cup (60 mL) finely chopped fresh cilantro

½ tsp (2 mL) coarse kosher or sea salt

Peel potatoes, sweet potato, parsnip, and turnip, and cut each into large pieces. Add to a large saucepan filled halfway with water. Bring water to boil; lower heat to medium and cook, partially covered, until vegetables are very tender, 15 to 20 minutes. Drain vegetables. Transfer to medium bowl and coarsely mash. Cover to keep warm.

While vegetables cook, in a small skillet, heat oil over medium-high heat. Add coriander and chiles, and stir-fry until coriander seeds are reddish-brown and chiles are blackened, about 1 minute. Turn off heat. Using a slotted spoon, transfer coriander and chiles to a mortar. Reserve spiced oil. Grind coriander and chiles with pestle, scraping spice blend into centre with spatula until it has the consistency of finely ground black pepper.

Add reserved spiced oil to mashed vegetables along with ground spice blend, cilantro, and salt. Stir well to combine, and serve warm.

Makes 8 servings

Nutritional breakdown per serving:
15 g carbohydrate, 2 g protein, 4 g total fat, 0 g saturated fat, 4 g fibre, 210 mg sodium, 90 calories

Polenta with Tomatoes and Black Beans

This Italian dish is adapted from a new book, *The 30-Minute Heart Healthy Delicious Recipes for Easy, Low-Sodium Meals*, by Cheryl Strachan RD, and published by Rockridge Press. Polenta is made from cornmeal; the dish is originally from northern Italy. Adding beans and vegetables is an example of how you can boost the fibre for a comfort food makeover.

1 tbsp (15 mL) extra-virgin olive oil

1 small yellow onion, chopped

2 garlic cloves, minced

1 tsp (5 mL) dried thyme

1 can (398 mL/14 oz.) no-salt-added black beans, rinsed and drained

1 can (398 mL/14 oz.) no-salt-added diced tomatoes

⅔ cup (150 mL) cornmeal

2⅔ cups (650 mL) water, divided

1 bunch spinach, large stems removed

½ cup (125 mL) grated Parmesan cheese

Heat oil in a large sauté pan over medium heat. Sauté onion, garlic, and thyme until onion is soft, 3 to 5 minutes. Add beans and tomatoes, and simmer over low heat. Meanwhile, in a small bowl, combine cornmeal with ⅔ cup (150 mL) of water. Set aside.

In a small saucepan, bring remaining 2 cups (500 mL) of water to a boil over high heat. Reduce heat to low, and stir in cornmeal-water mixture. Stir frequently until cornmeal is smooth and creamy, about 10 minutes, adding more water if needed.

When cornmeal is ready, stir spinach into beans and tomatoes. Cover, and cook until spinach is wilted, about 2 minutes. Stir to mix. Spoon cornmeal into bowls, and top with beans, tomatoes, and spinach. Sprinkle with Parmesan.

Makes 3 servings

Nutritional breakdown per serving:
57 g carbohydrate, 18 g protein, 10 g total fat, 3 g saturated fat, 11 g fibre, 263 mg sodium, 387 calories

Photos by: canolainfo.org (top left and middle), lvinst-/iStockphoto (top right)

Plant-based burgers

WEIGHING THE BENEFITS OF NEW MEATLESS OPTIONS

By Alyssa Schwartz

Everywhere from fast food chains to local supermarkets, Canadians are seeing a new wave of burgers that look like beef, taste like beef, and yet are missing one crucial ingredient: the beef.

This new plant-based burger craze could not come at a better time. Canada's new Food Guide encourages Canadians to eat more plant-based proteins rather than proteins from other sources (such as meats). And last year, in the first comprehensive **study** of the impact of various diets on our nutrition and on the planet, researchers at the University of Oxford found that plant-based diets can improve both our health and the planet's health. Canadians are listening: According to a **survey** from Dalhousie University, more and more Canadians are eating (or at least thinking about eating) less meat.

ARE MEATLESS BURGERS HEALTHY?

So the new meatless burgers in your grocery aisle and in restaurants would seem to be a win-win. But it is worth a closer look to determine whether the hype about these new products is all sizzle. "Meatless burgers are not necessarily unhealthy," says Stephanie Boutette, a registered dietitian and education coordinator with Diabetes Canada. "[But] they may not be more healthy than a regular beef burger.

"The nutrition profile for the new plant-based burgers are slightly better, if not similar, when compared to other burgers," she explains. "They are still high in saturated fats and sodium—they are similar or higher in these values when compared to lean meat burgers, but compared to regular meat burgers they are lower." Saturated fat can increase both cholesterol levels and the risk of heart disease, while sodium can increase blood pressure, upping the risk of heart disease, stroke, and other health problems.

As examples, Boutette points to the Beyond Meat Beyond Burger, which has 250 calories, six grams of saturated fat, and 390 milligrams—or 16 per cent of the daily value—of sodium. Gram for gram, that is more calories, saturated fat, and sodium than a PC Blue Menu Angus Thick & Juicy Lean Beef Burger, which is roughly 10 per cent larger by weight and contains only 200 calories, 4.5 grams of saturated fat, and 370 milligrams of sodium.

It is not just the burger itself; you also need to consider the toppings you will be adding, says Boutette. That is especially true if you are eating at a fast-food restaurant, where high-sodium toppings are automatically included on the burger unless you specifically request otherwise. "When you make them at home, you can control what is added to them," she says.

TAKE YOUR PICK

It is important to comparison shop with all plant-based burgers. "There are a lot of different types of veggie burgers...[with] ingredients like black beans, chickpeas, corn, quinoa, oats, kale, or sweet potato," says Boutette. Whatever your choice, she says, read the Nutrition Facts Table and the ingredient list. Compare the saturated fat, calories, sodium, and, if you are carb counting, the number of carbs.

As well, people with diabetes should consume more fibre compared to the general public, as it is important for blood sugar and cholesterol control—so check that number in the Nutrition Facts table too. For example, the PC Beef Burger contains one gram of fibre, compared to the two grams in the smaller Beyond Burger.

DID YOU KNOW?

You can make tasty, plant-based burgers at home with our recipe for Falafel Burgers with Creamy Sesame Sauce. Looking for other tasty meal ideas? Visit **Recipes**.

Photo by: Foxys_forest_manufacture/iStockphoto

FIT tip

How to get moving, and keep moving

Just 20 minutes of exercise at home or work can boost your health

By Barb Gormley

Adding physical activity to your day—even just a small amount—is one of the most empowering steps you can take to help lower your blood sugar (glucose) and control your diabetes. And you do not have to buy a pricey gym membership or put in a lot of time to see the benefits; you can easily add exercise to your daily routine.

"People with **prediabetes**, type 1 diabetes, or type 2 diabetes can see amazing results once they get active," says Sarah Lord, health and wellness coordinator at Jean Coutu Pharmacy in Riverview, N.B., and co-chair of the Diabetes Canada Professional Section, Southeast New Brunswick Chapter. "People with diabetes in my exercise programs often see improvements in their balance, mobility, blood pressure, and blood glucose and **A1C** readings. Many of them are motivated to keep exercising to avoid starting medication or to reduce their current dose."

Ready to get started? Try this simple 20-minute (or less) activity routine that can be done at home or at work. Do the exercises together in one session or throughout the day, depending on your time.

1 **WALKING** (helps muscles absorb blood sugar and helps manage weight): The simple act of walking is one of the best exercises you can do. Work walking into your daily routine by doing errands or taking a lunchtime stroll. Start with five to 10 minutes, and add one to two minutes each week. Increasing your pace (the speed at which you walk) is also beneficial.

2 **SIT TO STAND** (strengthens legs): Sit at the front edge of a chair (one with a firm seat) with your feet flat on the floor and hip-width apart. Extend your arms forward parallel to the floor. Keeping your chest lifted, shift your weight forward and stand up. Still keeping your chest lifted, bend your knees and reach your hips back to return to the chair. Repeat eight to 12 times.

3 **BICEPS CURLS** (strengthens the front of your arms): Stand with a light hand-held weight (or soup can) in each hand. Keep your arms by your sides, with your palms facing forward and your shoulders relaxed. With your upper arms at your sides, lift the weights toward your shoulders. Pause, and lower the weights to the start position. Repeat eight to 12 times.

4 **KNEE LIFTS** (strengthens your abdominals): Sit in a chair, with both feet flat on the floor and hip-width apart. Tighten your abdominals and lift one knee so that it is a few inches higher than the opposite knee. Pause, and then return to the start position. Repeat with the other leg. Repeat eight to 12 times.

TIPS FOR SUCCESS

- Avoid any exercise that causes pain or that makes any current injuries worse (for example, a sore hip or shoulder).
- Repeat each exercise eight to 12 times twice a week. Gradually work up to three sets of each exercise three times per week.
- Keep each exercise movement slow and controlled; take three seconds for the up phase and three seconds for the down phase.
- Pace yourself so you feel energized, not exhausted, when you are finished.
- Get help from a diabetes health-care provider, a qualified exercise professional, or a trusted resource if you are unsure of how to perform any exercise and to avoid injury.

DID YOU KNOW?

Think safety first. If you take insulin or medications that increase insulin levels, track your blood sugar before, during, and many hours after your activity to see how it affects your blood sugar levels. If you are not sure how to get started or have concerns about exercising with diabetes, visit **Physical Activity and Diabetes**.

Do you have a story about the difference physical activity has made for you and your health? Please let us know at **dialogue@diabetes.ca**.

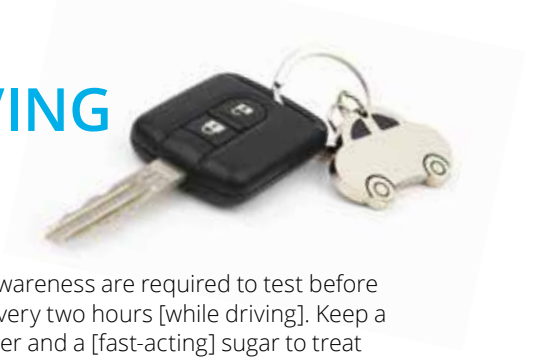
Photo by: kali9/iStockphoto

KNOW your rights

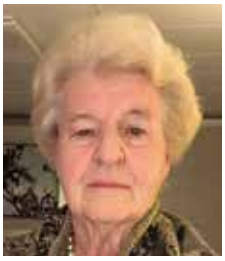
DIABETES AND DRIVING

Learn about your rights and responsibilities as a driver

By Laura Tennant



If you live with diabetes, you can still get a driver's licence—as long as you are considered "medically fit to drive." For those with type 1 diabetes, the increased risk of low blood sugar (hypoglycemia) is the biggest challenge to getting a licence, as it can affect a person's ability to safely operate a vehicle.



Dr. Anne Kenshole

Diabetes Dialogue spoke with Dr. Anne Kenshole, professor emerita of medicine at the University of Toronto, and Sergeant Murray Campbell, supervisor of traffic services for the Toronto Police Service. Part of the medical advisory board for the Ministry of Transportation in Ontario, Kenshole reviews medical cases in which a person has had a major hypoglycemic episode, to determine if it was a one-off or if the driver has a history of episodes. Campbell, who lives with type 1 diabetes himself, investigates serious traffic accidents.

What are the medical risks that affect a person's ability to drive if they have type 1 diabetes? What about type 2?

Kenshole Some drivers may experience "hypoglycemia unawareness," where they are unable to tell when they are becoming hypoglycemic. This is usually only a problem for a small number of drivers, typically those who have lived with type 1 for many years who no longer get the warning symptoms of **hypoglycemia**. The good news is that by totally avoiding all hypoglycemia for a few months, they can usually begin to detect low blood sugars again.

The main hazards for people with type 2 are associated with complications, including neuropathy, amputation, heart disease, and eye problems, all of which can affect driving.

What happens when a person experiencing hypoglycemia gets behind the wheel?

Campbell Many of the calls we get are from people reporting suspected impaired drivers. In some instances, it is found out later that they're in fact not impaired by drugs or alcohol, but they are hypoglycemic. These drivers exhibit the same symptoms, and show exactly the same effects: combative and argumentative [behaviour], slurred speech, glassy eyed. Hypoglycemic drivers can be involved in collisions—some of them serious. Some of them fatal.

What can people with diabetes do to prevent trouble while driving?

Kenshole People who use insulin to manage their diabetes should check their blood sugar before getting into the driver's seat and at least every four hours while driving. That's not necessary for people who manage their diabetes through diet or are using the newer diabetes pills that do not cause hypoglycemia. People with a history of hypoglycemia unawareness are required to test before driving and then every two hours [while driving]. Keep a blood glucose meter and a [fast-acting] sugar to treat hypoglycemia within easy reach in your vehicle. When you pull over to check your blood sugar, take the keys out of the ignition. [If you are having a low,] the law requires that you do not turn the engine on again for 45 minutes. Although this may seem bizarre, studies have shown that hypoglycemia affects the brain's function, and it can take this long for the brain to get back to normal.

Sergeant Murray Campbell

Campbell When I get into the car, I [check] my blood sugar before I drive, every single time. When you're driving for long periods, make it a habit to [check] your blood sugar frequently. Set a reminder on your phone or watch.

Keep a fast-acting carb in your car. I have a bottle of [dextrose] tablets in mine, plus I usually have one in my pocket, and one in my bag that I carry back and forth to work. The worst time to find out you don't have anything with you to treat [a low] is when you're in your car, confused and away from home.

What should people with diabetes do if they feel unwell while driving?

Kenshole Just like you would stop and check the car if the steering did not feel right, you should also do so if your body does not feel right. If someone else in the car asks if you are okay, you are probably not. If you feel drowsy or if other drivers are honking at you, something is not right. Always pull over and check your blood sugar in these situations.

How does responsibility come into play with the topic of diabetes and driving?

Campbell The ability to drive is not a right, it's a privilege, and the responsibility, both civilly and criminally, is that of the person behind the wheel. There is no justification for driving while the physical and mental effects of diabetes are affecting any part of a person's ability. This is just another piece of our lives that we need to give an extra effort to, in order to survive.

DID YOU KNOW?

All people with diabetes have the right to apply for a driver's licence. For practical information about driving with diabetes, see Diabetes Canada's **guide to driving safely with diabetes**. For more from Kenshole and Campbell, watch the webinar **Stay Safe While Driving with Type 1 Diabetes**.

How can you help us fund research, projects, and campaigns that change lives? **Donate** now!

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DIABETES 360°

Diabetes hurts all Canadians.

With 11 million Canadians now living with diabetes or prediabetes, and health care costs nearly $30 billion per year, diabetes is a disease that impacts every Canadian. Without a nation-wide plan, the toll diabetes takes will continue to grow.

Help us end the epidemic.
Call on federal political parties to support a nation-wide diabetes strategy now.

Diabetes 360° is the solution!
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DIABETES CANADA