

PhD student Megan MacPherson hopes to harness the power of push notifications — reminders on your phone to increase healthy habits.

# Better health? There could be an app for that

By Gail Johnson

A new research project is looking at how to reduce missed work days from chronic illnesses such as type 2 diabetes, by harnessing the power of apps and push notifications.

Type 2 diabetes is one of B.C.'s most prevalent health conditions and over half of all new cases of diabetes affect people of working age, according to Medavie Blue Cross.

It tops all chronic diseases for treatment costs, and medication costs are on the rise. There are additional expenses associated with loss in productivity due to absenteeism and presenteeism (coming to work while sick). Research shows that employees with diabetes are absent 2 to 10 days more per year than their co-workers. Left unmanaged, diabetes can lead to other complications, many of which drive workplace disability claims, such as heart disease, kidney failure, and depression.

Thankfully, many symptoms can be kept at bay by exercising regularly, eating a nutritious diet, maintaining a healthy weight, and not smoking. While those kinds

of steps will boost our overall well-being, they sometimes fall by the wayside when stress is piling up.

## Helping people stick with their healthy plans

Enter Megan MacPherson, a PhD student at the School of Health and Exercise Sciences at the University of British Columbia (UBC) — Okanagan. Her research, funded in part by WorkSafeBC, focuses on occasional, unobtrusive reminders — whether it's to go for a short walk, the benefits of drinking more water, or what makes for a nutrient-dense snack — sent via a push notification that they can receive at home or at work.

In her work as a registered occupational therapist, she has found that clients better adhere to plans for physical activity, for example, when she sends follow-up text messages.

While helping people in a diabetes-prevention and lifestyle-modification program offered through the local YMCA, she noticed that, although they found the three-week course extremely helpful, there seemed to be a void once it wrapped up.

“The feedback we've been getting from all participants

is that they're learning so much about prevention strategies, but what happens after those three weeks? One of the most effective ways we've seen to keep that education going, even though it's the lowest cost and easiest to implement, is through text messages," MacPherson says. "My work is backed by existing research but builds on it to promote adherence."

Maybe it's a brief, friendly nudge to go for a short walk or a reminder of where sugar likes to hide — say, in juices, granola bars, yogurt, and fried foods.

MacPherson sees potential benefits in the app being implemented in workplaces throughout B.C., especially in those where people spend a lot of time at a desk or are otherwise sedentary. Whether you have diabetes or not, current health research suggests that breaking up a long period of sitting at a desk or standing at a work station with a short period of movement can be very beneficial. While the recommended 30 minutes of exercise daily might seem daunting, those 30 minutes can be broken up into three 10-minute breaks.

There's a business case to be made for the use of everyday technology to deliver this kind of motivational, educational information.

## Giving people autonomy

"If we're able to send messages while people are working to remind them of the benefits of walking around for five minutes or changing postures, it could have a big impact," MacPherson says. "Everybody has a phone."

MacPherson is delving deeper into details like how often messages should be sent and whether certain times of day to send texts are more effective than others. The goal is for the texts to be helpful, practical, and useful, not bothersome.

She's also carefully considering exactly how the texts will be worded. The aim isn't to make anyone feel guilty about snacking on chocolate instead of veggie sticks, but to be encouraging and informative. Drawing on behavioural-change theories and counselling-style motivational techniques, MacPherson hopes to craft content that's inspiring and powerful, not preachy or condescending.

"It's really about autonomy," MacPherson says. "We're never telling people what they should be doing, but giving them options and ideas that could fit within their own life."

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—Lori Guiton, director, Policy, Regulation and Research, WorkSafeBC

While she hopes to have proof-of-concept completed within a year, MacPherson has presented results to date at several UBC conferences and at the International Society of Behavioral Nutrition and Physical Activity Conference in Prague. She is also writing a paper for the Journal of Medical Internet Research.

To support her project and improve worker well-being on and off the job, MacPherson received a Research Training Award from WorkSafeBC.

Finding novel ways of addressing diabetes has implications for the health of individual workers and also for workplaces overall, with considerations such as managing employee drug plans and leave from work due to illness, says Lori Guiton, director, Policy, Regulation and Research, at WorkSafeBC.

"This project uses the kind of technology we have all become so used to in an innovative way," Guiton says. "Using a simple app on your smart device can transform awareness of your health and make you think about it differently. We encourage other students and early-stage researchers working with new technology to come to us with their ideas. You never know when the next transformative scientific moment will come." ☺



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