



A breakthrough in lowering systolic blood pressure

A new e-counselling program is proving that with the right self-help support and education, people can make healthier lifestyle choices and – hopefully – live longer

By **Bryan Borzykowski**

EVERYONE KNOWS THAT A HEALTHY DIET AND REGULAR EXERCISE CAN LEAD TO A LONGER LIFE, but for most people, it's nearly impossible to break bad lifestyle habits. In 2010, Dr. Robert Nolan, Director of the Cardiac eHealth and Behavioural Cardiology Research Unit at Peter Munk Cardiac Centre (PMCC), set out to change that by helping patients connect heart-healthy lifestyle change to their personal goals for living well.

Over the last seven years, Dr. Nolan has been devising ways to help patients with hypertension create meaningful and long-lasting lifestyle changes. In the past, people would have consultations with a specialist

and then be left to fend for themselves. Some might change their behaviours for a short period, but most would revert to old habits.

"They'd get educational sessions that would last a few weeks, but giving people information was not sufficient to help them feel ready and confident to sustain lifestyle change," says Dr. Nolan. "Without support to develop skills for putting a change plan into action, it was hard to shift old habits beyond a few weeks."

For patients with hypertension, short-term changes aren't good enough. If high blood pressure is not treated with a better diet, more physical activity, smoke-free living and taking medications as prescribed, then it could lead to

a stroke or a heart attack. The best way to beat the problem is through meaningful change, he says.

While many hospitals and private centres have tried to help people kick bad habits through internet-based programs, most of these haven't been designed to provide the type of support patients receive in face-to-face counselling, says Dr. Nolan. Many Web-focused counselling programs are either interactive or automated – not both.

With the interactive programs, someone might instant message with a counsellor and discuss their issues, but when the conversation ends, the patient is left without support about what to do next. With the automated education, someone might input personal information on a website and get articles and data tailored to them, but when the reading ends, there's no clear idea on how to apply the information to their personal situation.

"Our programs often fail to provide guidance as someone interacts with a program within a single log-on session, or as we log on time after time," says Dr. Nolan. "We had to create a

balance of the two."

Dr. Nolan developed REACH (Reducing risk with E-based support for Adherence to lifestyle Change in Hypertension), a comprehensive e-counselling program to help people make permanent changes to their lifestyle or "self-care behaviours". Their team included numerous experts, such as dietitians, psychologists, doctors, fitness experts, pharmacists and scientists, to create self-help videos that covered every aspect of a person's lifestyle.

Key questions that patients might have about lifestyle change were answered in this program. Not sure how to read nutrition facts on labels? Then take a video tour of a grocery store with a dietitian who shows people how items are categorized, what labels mean, how to navigate nutritional guidelines and more. Need an exercise regime? Watch a fitness expert give step-by-step instructions on how to set up a plan.

Virpi Kononen, a Toronto-based IT worker, swears by the program. In 2015, she was suffering from high blood pressure and a ringing in her ears. She was told that if

she didn't eat better and get more exercise then she'd have to start taking pills. "And I didn't want to do that," she says.

The program was designed as a series of counselling sessions that take place once a week for the first four months, then once every two weeks for the next four months and then once a month for the last four months. The goal was to break old habits by the end of the year.

For Ms. Kononen these regular sessions were key. Reminders – through instructional videos, e-mails and other forms of communication – on how to eat better and exercise more allowed her to slowly change her habits. No one made her feel badly when she stumbled, which made her want to improve even more.

"You can't change everything overnight, but this program gave me control and empowered me," she says. "They gave me a series of small things to change that, over time, made a huge difference."

Starting in 2012, the program was in the testing stage for four years via a controlled trial, where some people received regular counselling and others followed Dr. Nolan's program. He wanted

to see if people's blood pressure dropped and cholesterol levels improved. That would indicate that lifestyle changes had been made.

The results were fascinating, says Dr. Nolan. Systolic blood pressure, which measures the pressure in one's arteries during heart contractions, was lower by 10 millimetres of mercury, as compared to six for the control group. Another kind of blood pressure, pulse pressure, was also significantly reduced in the e-counselling group.

Patients' Framingham Risk Score, which measures the risk of experiencing cardiovascular disease (such as heart attack or stroke), was also down by about 2 per cent, while people in the e-counselling program increased their activity by walking about 1,200 steps per day more than the control group.

"We saw significant differences," he says. "We wanted to increase the degree to which people adhered to self-care behaviours [in order] to manage hypertension, and that's exactly what they did."

Ms. Kononen saw big changes, too. After a year, her blood pressure went back to normal, the ringing stopped, she's walking an average of 7,000 steps a day – 2,000 more than she did during the trial – and she says she's healthier than she has been in years.

For Dr. Nolan, the next step is to enroll all patients with hypertension into the program, but he also wants his program to be used nationally.

"Our goal is to look for partners who want to work with us, who can offer this on a population-wide basis," he says. "We want to continue making sure that we can demonstrate the effectiveness of this for not just reducing risk factors for heart disease, but also that we can help improve everyone's quality of life." ▽

01 Dr. Robert Nolan, second from the left, and his team at the PMCC work to find ways for patients to deal with hypertension by creating important and long-lasting lifestyle changes.

02 For Toronto IT worker Virpi Kononen, regular sessions were the key to success in managing her high blood pressure.

