

## Participation in cardiac rehab program can result in gains for recovery in stroke patients

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Stroke patients who participate in a cardiac rehabilitation program for six months make rapid gains in how far and fast they can walk, the use of weakened limbs and their ability to sit and stand, according to a study presented today at the Canadian Stroke Congress.

On average, participants saw a 21-per-cent improvement in the strength and range of motion of weakened limbs; a 19-per-cent improvement in walking speed; and a 16-per-cent improvement in the distance they could walk.

"There should be a seamless referral of patients with mild to moderate effects of [stroke](#) to the network of established outpatient cardiac rehab programs in Canada," says lead researcher Dr. Susan Marzolini of Toronto Rehabilitation Institute/University Health Network. "Early referral is also important. In our study, those who started the cardiac rehab program earlier had the strongest results."

Cardiac [rehabilitation](#) incorporates [exercise](#) training (aerobic and resistance/strength training), nutrition counseling, risk factor counseling and management (lipids, blood pressure, diabetes, weight management, smoking cessation and psychosocial management,) delivered by an interprofessional health care team.

All of the 120 patients who participated in the study saw improved recovery.

The largest gains in walking function were among those who were referred to the program the earliest. Participants were, on average, two years post-stroke but the study included people who had experienced a stroke from three months to five years previously.

In most cases, rehabilitation ends at three months post-stroke, when it has been assumed that spontaneous recovery is over and people reach a plateau, Dr. Marzolini says.

For those who entered the six-month cardiac rehab program after standard care, "we didn't see a plateau, we saw a huge improvement in the group. We're finding even more benefits from exercise alone than we ever thought."

"We have manufactured these three-month plateaus with our biases about how the brain works," says Dr. Dale Corbett, Scientific Director of the Canadian Partnership for Stroke Recovery (CPSR), a joint initiative of the Heart and Stroke Foundation and Canada's leading stroke research centres, which funded the study. "Recovery continues for months and years after stroke."

A 2011 audit of stroke services in Canada found that only 37 per cent of stroke patients with moderate to severe impairments receive standard rehabilitation in the weeks after stroke, despite overwhelming evidence of its benefits.

"The results of this study are exciting because this exercise program is a very cost-effective intervention for improving the quality of life for those living with the effects of stroke," says Canadian Stroke Congress Co-Chair Dr. Mark Bayley, noting that there are 50,000 strokes in Canada every year.

Although standardized outpatient rehabilitation programs have been in

place for cardiac patients across Canada for more than 40 years – and are usually associated with a hospital or community facility – structured programs are not widely available or accessible for stroke patients.

Participants in the study attended one 90-minute session a week and received an "exercise prescription" for personalized walking and strength training exercises to complete four times a week at home.

Besides physical improvements, the study found stroke patients reported big social gains and began to attend more activities in their communities, partly because they could walk better and get in and out of cars more easily. An earlier study by the research team found increased fitness led to improvements in cognition and mental health.

"The key message here is to open up existing outpatient [cardiac rehab](#) programs, which are already in place, to stroke patients," says Ian Joiner, director of stroke for the Heart and Stroke Foundation. "Stroke recovery is a journey that continues throughout life. And programs such as this can be an integral part of that journey."

The next phase of the study will identify the barriers to referral for [stroke patients](#). Other CPSR researchers involved in the study include Dr. Ada Tang of McMaster University, Dr. William McIlroy of the University of Waterloo, Dr. Paul Oh of Toronto Rehab/UHN and senior author Dr. Dina Brooks of the University of Toronto.

The value of exercise on the brain is a key research focus of the Canadian Partnership for Stroke Recovery. An award-winning CPSR study presented at the Canadian Stroke Congress by Dr. Walter Swardfager of Sunnybrook Research Institute uses new imaging technology to measure the impact of exercise on blood flow to the brain following stroke. Preliminary results indicate that fitness has a protective effect and primes the brain for recovery.

Provided by Heart and Stroke Foundation of Canada

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