Getting a grip on blood pre

Mac exercise study may lead to new therapy and less dependence

BY SUZANNE MORRISON

Exercising three times a week with a simple hand-grip device may turn out to be almost as effective as drugs in reducing high blood pressure.

Researchers at McMaster University's Centre for Health Promotion and Rehabilitation are currently investigating the potential of this non-medical means of managing blood pressure and believe it holds significant promise.

To test its merits, they recruited volunteers from McMaster's seniors' exercise and wellness program, all of whom had been on anti-hypertension medication for a long time.

Volunteers were divided into two groups.

One group did controlled hand isometric exercises regularly three times a week for 10 weeks. Their blood pressure readings were compared with those in a control group.

Researchers found systolic blood pressure dropped 19 points in those using the hand-grip device. (Systolic is the top number in a blood pressure reading and represents the force of blood in the arteries as the heart beats).

If a patient, for example, had a systolic reading of 140, which is approaching hypertension, this exercise would drop it to 121, well below new guidelines which suggest blood pressure readings should be 130/85 or less.

"That drop (in blood pressure) is as good as you can get with most medications," said kinesiology professor Neil McCartney, program director of McMaster's cardiac exercise rehabilitation program.

Why or how this happens, no one is sure but McCartney said there are many possibilities.

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>
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To explore this further, McMaster researchers, using patients with and without high blood pressure, are now trying to see if substances released from the lining of the artery make it relax.

He said the hope is research may show the hand-grip exercise is all some people need to keep their blood pressure under control.

"We don't know that yet," he said. "For other people it could be a supplemental therapy to go along with drugs and perhaps they won't need as much (medication)."

According to the Heart and Stroke Foundation of Canada, uncontrolled hypertension can double or even triple the risk of stroke or heart disease and is a leading cause of kidney disease. In Canada, approximately one in five adults have high blood pressure. Of those, only 13 per cent are treated and controlled.

When the hand-grip device is switched on, it guides the person to register their maximum hand-grip strengths with both their right and left hands.

Once it has those strengths, it sets exercise targets based on those strengths. As the person gets stronger, the exercise targets always remain correct for that individual.

After measuring hand strength, the device shows a target force which the person must squeeze and hold. This squeeze-and-hold effort lasts two minutes.

Then, the device times out a rest period before repeating a similar squeeze-and-hold effort with the other hand.

After another rest period, the same effort is repeated in the first hand. Finally, after a third rest period, the last squeeze-and-hold effort is done.

At the end of the sequence, and during each rest period, the device scores the person's performance, indicating how well they are doing.

The discovery that hand exercises could reduce blood pressure was made by chance by Dr. Ronald L. Wiley, a professor of cardiopulmonary physiology at Miami University in Ohio. Wiley, who is working with the McMaster researchers, made the discovery in the late 1960s.

Airline pilots use the hand-grip isometric exercises today to reduce their blood pressure just before going in for tests to ensure they remain fit to fly.

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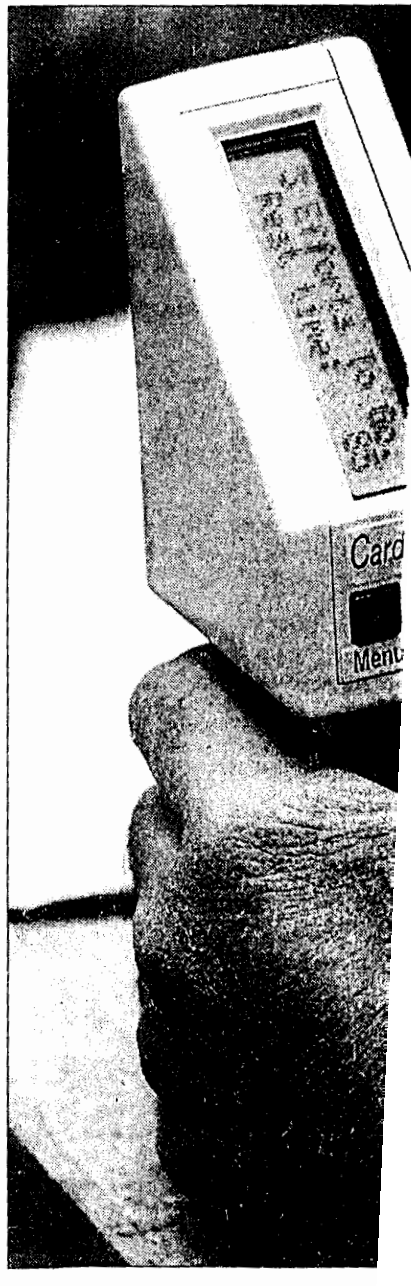

A hand-grip blood pressure machine Centre for Health Promotion and Re