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Pedalling on dialysis fuels health improvements: study

AHS boasts one of the largest renal exercise programs in Canada

CALGARY — New research shows dialysis patients experience substantial health benefits if they exercise while undergoing dialysis.

Patients who use a stationary bicycle for a portion of their regular dialysis sessions significantly improve leg strength and avoid some of the declines in health that other patients can experience, according to a study to be presented at a November conference of the American Society of Nephrology.

“Improving leg strength may not sound that important, but it promotes mobility, helps maintain independence, and substantially decreases the risk of falls, which can be devastating for this patient population,” says Dr. Jennifer MacRae, Alberta Health Services nephrologist and principal investigator in the study.

“The research also shows those who cycle while dialyzing maintain their overall health. This, too, is significant since other studies have shown a more steady decline in health over time in those renal patients who do not exercise.”

Dialysis is the process of cleansing the blood of toxins and excess fluid when normal kidney function is reduced. A patient’s blood is filtered through a dialyzer and then returned to the body. Patients undergo dialysis in hospitals or community facilities three times a week, with each typical session lasting about four hours.

Previous research has shown that exercise during hemodialysis helps clean the blood more effectively and leads to improvements in blood pressure control and cardiac function.

Early research from the Calgary group also suggests there may be a reduction in hospitalizations among those who participate in the exercise program.

The Southern Alberta Renal Program has one of the largest exercise programs for dialysis patients in the country, with close to 230 patients cycling weekly at nine different sites. Specialized stationary bicycles that can be used while patients are semi-reclined in dialysis chairs are available at six sites in Calgary, as well as in Drumheller, Olds and Lethbridge.

In Calgary, the program is offered at hemodialysis units at Foothills Medical Centre, Alberta Children’s Hospital, Northland Village Mall, Sunridge Mall, South Calgary Health Centre and Sheldon Chumir Health Centre. The program is set to expand to Peter Lougheed Centre.

The program was piloted in Lethbridge in 2005 then came to Calgary shortly after. Two exercise kinesiologists travel between the urban and rural sites and provide guidance to staff and patients on using the stationary bikes.

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“Patients at the community hemodialysis sites (the units not attached to a hospital) tend to have fewer health issues and so participation rates are much higher in those facilities,” says Nathalie Tang, one of the exercise kinesiologists.

For example, 64 per cent of hemodialysis patients at South Calgary Health Centre and 62 per cent at Sheldon Chumir currently spend some of their sessions exercising.

Jakob Vandenbrink, 84, has been cycling during dialysis at Sheldon Chumir Health Centre almost since he started receiving treatment there in 2011. He lost his eyesight in 2001 due to macular degeneration.

“I find it really helps pass the time,” he says. “Most people start with 30 minutes and advance from there if possible, but I’ll go for two hours if I feel up to it. I feel like I’ve accomplished something, rather than just sitting here.”

Vandenbrink raises money each year for the Kidney Foundation’s Kidney March and this year he was among the top five fundraisers with more than \$12,000 pledged. His goal was to cycle 800 kilometres between June and September; his total wound up being 840 kilometres.

The research study, which was also presented earlier this year at the Canadian Society of Nephrology conference, looked at functional improvements in a group of about 45 northwest Calgary hemodialysis patients over a 12-week exercise program. In the next phase, researchers plan to participate in a multi-centre study involving patients from Calgary, Edmonton, Saskatoon and Winnipeg.

In the Southern Alberta Renal Program (south of Red Deer), there are about 725 patients on hemodialysis in clinical units. Another 80 are on home hemodialysis and 228 patients are on home peritoneal dialysis.

Alberta Health Services is the provincial health authority responsible for planning and delivering health supports and services for more than four million adults and children living in Alberta. Its mission is to provide a patient-focused, quality health system that is accessible and sustainable for all Albertans.

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