

Strength training for seniors provides cognitive function, economic benefits: study

December 13 2010

A one-year follow-up study on seniors who participated in a strength training exercise program shows sustained cognitive benefits as well as savings for the healthcare system. The research, conducted at the Centre for Hip Health and Mobility at Vancouver Coastal Health and the University of British Columbia, is published today in the *Archives of Internal Medicine*.

The study is the first to examine whether both cognitive and [economic benefits](#) are sustained after formal cessation of a tailored exercise program. It builds on the Brain Power Study, published in the January 2010 issue of [Archives of Internal Medicine](#), which demonstrated that 12 months of once-weekly or twice-weekly progressive [strength training](#) improved executive cognitive function in women aged 65- to 75- years-old. Executive cognitive functions are [cognitive abilities](#) necessary for independent living.

Both studies were led by Teresa Liu-Ambrose, principal investigator at the Centre for Hip [Health](#) and Mobility and Brain Research Centre at Vancouver Coastal Health and UBC, and assistant professor in the Department of Physical Therapy at UBC's Faculty of Medicine. The one year follow-up study found the cognitive benefits of strength training persisted, and with two critical findings.

"We were very surprised to discover the group that sustained cognitive benefits was the once-weekly strength training group rather than the twice-weekly training group," says Liu-Ambrose, who's also a Michael

Smith Foundation for Health Research scholar. "What we realized was that this group was more successful at being able to maintain the same level of physical activity achieved in the original study."

In fact, the researchers found that while both the once-weekly strength training group and the control group – which performed twice-weekly balancing and toning exercises – were able to maintain higher levels of activity than when they first began the original study, individuals in the twice per week strength training group showed a reduction in physical activity. This reduction may be due community factors, both a lack of strength or weigh training programs tailored for older adults and the perception from seniors that they may need to undertake an activity program multiple times per week to receive any benefit.

The second important finding relates to the economic benefits of once-weekly strength training. Using the data from the Brain Power Study and the one-year follow-up study, health economists Jennifer Davis and Carlo Marra, research scientists with the Collaboration for Outcomes Research and Evaluation at St. Paul's Hospital and UBC Faculty of Medicine, were able to show that the economic benefits of once-weekly strength training were sustained 12 months after its formal cessation. Specifically, the researchers found the once-weekly strength group incurred fewer health care resource utilization costs and had fewer falls than the twice-weekly balance and tone group.

"This suggests that once-weekly resistance training is cost saving, and the right type of exercise for seniors to achieve maximum economic and health benefits," says Davis.

Cognitive decline among seniors is a pressing health care issue and a key risk factor for falls. Approximately 30 per cent of B.C. seniors experience a fall each year and fall-related hip fractures account for more than 4,000 injures each year at a cost of \$75 million to the

healthcare system.

The number of seniors in B.C. is expected to increase by 220 per cent by 2031, representing 23.5 per cent of B.C. population. Effective strategies to prevent cognitive decline are essential to improving quality of life for older British Columbians and to save the healthcare system millions in associated costs.

Provided by University of British Columbia

Citation: Strength training for seniors provides cognitive function, economic benefits: study (2010, December 13) retrieved 27 April 2024 from <https://medicalxpress.com/news/2010-12-strength-seniors-cognitive-function-economic.html>

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