The Effects of a Home-Based Strength Training Program on Independence and Immune Function of Older Nova Scotians

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The mere mention of "endurance training" and "strength/resistance training" conjures up images of someone bench-pressing 100 kilograms or preparing for Hawaii's grueling Iron Man Triathlon. But moderate intensity strength and endurance exercise training also contributes to healthy aging. Endurance training is important for cardiovascular and heart health while strength/resistance training helps maintain and increase muscle mass and strength and is the most important type of exercise for older individuals. Moderate-intensity strength/resistance training can easily be designed to benefit older people. And it seems that it's almost never too late to start.

Dr. René J.L. Murphy and his colleagues at the Centre of Lifestyle Studies at Acadia University study a variety of behaviors that can improve health. Their recently completed research revealed that a year of home-based strength training for older individuals increased muscle strength and mass, improved mobility, and had a positive impact on the ability to perform activities of daily living. In addition, the home-based training programs improved the immune function of participants, suggesting that this type of exercise could be an effective prevention tool. The regular exercise program also reduced the risk of heart attacks by reducing such things as "bad cholesterol" or LDL (low-density lipoprotein), which sticks to blood vessel walls.

Dr. Murphy's team devised a home-based strength training program for 32 retired people (10 men, 22 women), who were monitored before, during and after 11 months of training. The purpose of the study was to examine the effects of a long-term, moderate-intensity resistance-training program on immune function, muscle strength and lipid profile in

older adults. The researchers found muscle strength increased significantly, while total cholesterol and LDL substantially decreased. They also measured natural killer cell activity (NKCA) and neutrophil cytotoxicity as well as several hormones and cytokines (powerful chemical substances secreted by cells) that influence immune function, among other things. The results suggested that after training, the immune function was significantly better at fighting off bacteria and viruses.

The results of the training program clearly indicate that an inexpensive exercise program monitored by kinesiologists can reduce cardiovascular risk factors and significantly improve muscle strength, immune function, and independence of older people. Such programs could be an effective strategy to reduce the health care costs associated with an aging population.

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