



A Review of How Exercise Improves Fitness in People with SCI

Purpose

To review the research on how exercise improves the fitness of people with SCI

Summary

- An extensive review of the current research found that for adults with chronic SCI, exercise performed 2-3 times per week at a moderate to heavy intensity improves:
 - Muscular strength
 - Physical capacity---i.e., aerobic capacity (oxygen consumption) and power output (rate at which energy is burned)

Research Abstract

The effects of exercise training on physical capacity, strength, body composition and functional performance among adults with spinal cord injury: a systematic review

Objectives: To conduct a systematic review of evidence surrounding the effects of exercise on physical fitness in people with spinal cord injury (SCI)

Methods: The review was limited to English-language studies (published prior to March 2010) of people with SCI that evaluated the effects of an exercise intervention on at least one of the four main components of physical fitness (physical capacity, muscular strength, body composition and functional performance). Studies reported at least one of the following outcomes: oxygen uptake/consumption, power output, peak work capacity, muscle strength, body composition, exercise performance or functional performance. A total of 166 studies were identified. After screening, 82 studies (69 chronic SCI; 13 acute SCI) were included in the review. The quality of evidence derived from each study was evaluated using established procedures.

Results: Most studies were of low quality; however, the evidence was consistent that exercise is effective in improving aspects of fitness. There is strong evidence that exercise, performed 2-3 times per week at moderate-to-vigorous intensity, increases physical capacity and muscular strength in the chronic SCI population; the evidence is not strong with respect to the effects of exercise on body composition or functional performance. There were insufficient high-quality studies in the acute SCI population to draw any conclusions.

Conclusions: In the chronic SCI population, there is good evidence that exercise is effective in improving both physical capacity and muscular strength, but insufficient quality evidence to draw meaningful conclusions on its effect on body composition or functional capacity.



Hicks, AL, Martin Ginis, KA, Pelletier, CA, Ditor, DS, Foulon, B, & Wolfe, DL (2011). The effects of exercise training on physical capacity, strength, body composition and functional performance among adults with spinal cord injury: a systematic review. *Spinal Cord*, 49, 1103-1127.