



Factors that increase the risk of heart disease and diabetes

Purpose

To examine factors that can raise the chance of heart disease and diabetes, and the impact of daily exercise on those factors among people with SCI. These factors were observed over 18 months.

Summary

- Over the 18-month study period, BMI* decreased for women and waist circumference increased for men.
- Women who exercised had lower BMI* and waist circumference than women who did not exercise.

*BMI measures body fat based on your height and weight.

Possible Applications

- Future studies should continue to look at the factors that can raise the chance of developing heart disease and diabetes in this population over longer periods of time.

Research Abstract

This study examined whether levels of chronic disease risk factors change over time, and whether leisure-time physical activity (LTPA) can explain any of the variation in those risk factors that change, in a sample of community-dwelling people living with spinal cord injury (SCI) in or near Hamilton, Ontario, Canada. LTPA was measured using the Physical Activity Recall Assessment for People with SCI at baseline (n = 76 adults with chronic (1 year) paraplegia or tetraplegia), at 6 months (n = 71) and at 18 months (n = 63). Body mass index, waist circumference at the lowest rib ($WC_{\text{lowest rib}}$) and iliac crest ($WC_{\text{iliac crest}}$), fat mass, blood pressure, and biochemical data were collected at all 3 time points. Women's BMI was higher at baseline (least square means (LSM) = $26.2 \pm SE = 1.56 \text{ kg}\cdot\text{m}^{-2}$, $p = 0.0004$) and 6 months (25.9 ± 1.6 , $p = 0.0024$) than at 18 months (22.1 ± 1.72). Men's $WC_{\text{lowest rib}}$ increased from baseline ($92.1 \pm 1.87 \text{ cm}$) to 18 months (93.6 ± 1.87 , $p = 0.0253$). Women who were active vs. inactive at baseline had a lower BMI at 6 months (23.1 ± 2.91 vs. 29.7 ± 2.52 , $p = 0.0957$) and $WC_{\text{iliac crest}}$ at 6 months (82.8 ± 6.59 vs. 97.7 ± 5.10 , $p = 0.0818$). Women who were active vs. inactive at 6 months had a lower $WC_{\text{iliac crest}}$ at 18 months (73.4 ± 14.3 vs. 102.5 ± 6.41 , $p = 0.0723$). There was little change in

traditional risk factors over 18 months. Future studies should extend beyond 18 months in a larger sample, and explore traditional vs. novel risk factors and onset of cardiovascular disease and diabetes in the SCI population.

Buchholz, A., Martin Ginis, K.A., Bray, S. R., Craven, B.C., Hicks, A.L., Hayes, K. C., Latimer, A. E., McColl, M. A., Potter, P. J., Smith, K., & Wolfe, D. L. (2012) Changes in traditional chronic disease risk factors over time and their relationship with leisure-time physical activity in people living with spinal cord injury. *Applied Physiology Nutrition and Metabolism*, 37(6), 1072-1079.