



Active lifestyle protects against incident low back pain in seniors: a population-based 2-year prospective study of 1387 Danish twins aged 70-100 years

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**STUDY DESIGN:** Prospective cohort study of twins. **OBJECTIVES:** To investigate associations between physical activity, physical function, and incident low back pain (LBP) in an elderly population. **SUMMARY OF BACKGROUND DATA:** The relationship between an active lifestyle and LBP in seniors is unknown. **METHODS:** Participants in the population-based Longitudinal Study of Aging Danish Twins free from LBP at baseline (no LBP during the past month) were included, and interview data on physical activity, overall physical function, and LBP at baseline and follow-up were obtained. Associations between levels of physical activity and LBP were estimated using logistic regression for the entire cohort, and using a matched case-control design for twin pairs discordant for physical activity. Absolute risk and relative risks for incident LBP in relation to physical activity were calculated for participants with higher or lower than average physical function at baseline. Absolute risk for LBP was also calculated for participants based on whether they remained active or inactive between baseline and follow-up or changed activity level. **RESULTS:** A total of 1387 persons aged 70-100 at baseline were included in the analyses, including 86 twin pairs discordant for physical activity at baseline. In the total sample, 83% were engaged in light physical activity, and 42% of men and 35% of women were engaged in strenuous physical activity at least weekly. Being engaged in strenuous physical activity at baseline was strongly protective in relation to both having had any LBP (odds ratio 0.21, 95% confidence interval 0.12-0.37 for intra-pair analysis) and having had LBP lasting more than 30 days altogether during the past year at follow-up (odds ratio 0.08, 95% confidence interval 0.03-0.18 for intra-pair analysis). Statistically significant dose-response associations between increasing frequency of strenuous physical activity and magnitude of this protective effect were found. Participants with poor initial physical function experienced the strongest protective effect of strenuous physical activity. Finally, LBP does not appear to be an important factor affecting whether participants remained engaged in strenuous physical activity at baseline and follow-up or vice versa.

**CONCLUSIONS:** Strenuous physical activity at least once a week is protective for incident LBP in seniors.

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