

Physical strenuousness of occupation is risk factor for intervertebral disc degeneration.

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Introduction

Occupational lumbar spine load has been linked to intervertebral disc degeneration in the lumbar spine. The aim was to study the relationship between physical strenuousness of occupation (PSO) and intervertebral disc degeneration (IDD) in postmenopausal women.

Material and Methods

The study population consisted of 160 postmenopausal women (aged 61.9 – 78.0 years, mean 70.22 years) from the OSTPRE and OSTPRE-FPS study cohorts. Information on PSO was based on self-report questionnaires and it was divided into three groups: 1) heavy, 2) moderate and 3) sedentary or light. Severity of IDD was graded from T2-weighted MRI images using 5-grade Pfirrmann classification. Five intervertebral levels (L1-L2 to L5-S1) were studied. A mean IDD grade of all five discs was calculated for each woman separately.

It was categorized into three groups: slight (mean grade less than 3), moderate (mean grade 3 or more, but less than 4) and severe (mean grade 4 or more). Logistic regression was used in the analysis to calculate odds ratios (OR). Potential confounders including height, weight, age, smoking duration in years, use of postmenopausal hormone therapy, L2-L4 BMD and femoral neck BMD were used as covariates in the analysis

Results

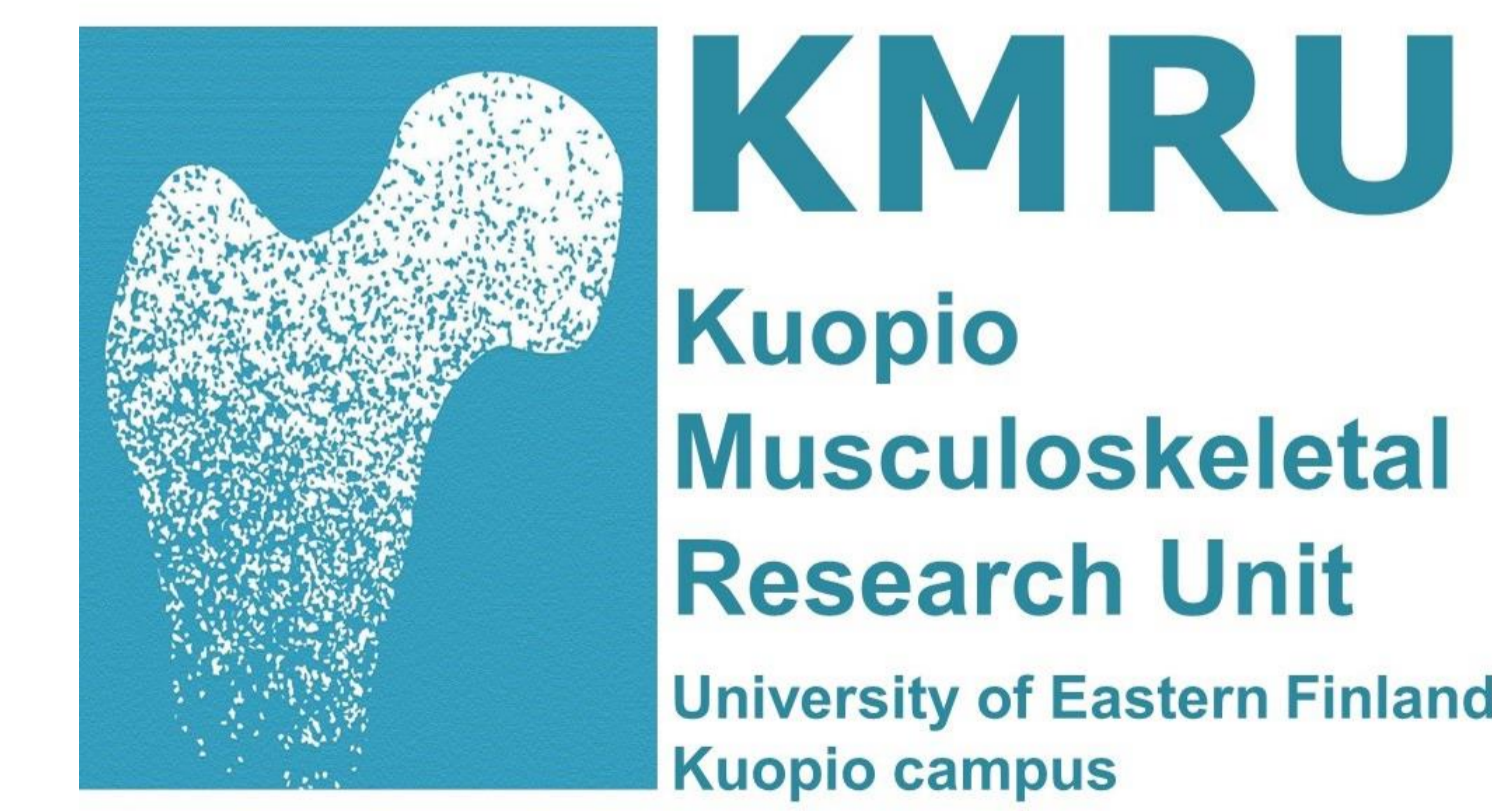
The heavy PSO group had higher odds for severe disc degeneration (OR = 5.07, 95% CI: 1.37-18.79, p=0.015) in comparison to slight IDD. Adjustment strengthened this association (OR = 15.31, 95% CI: 2.97-78.97, p=0.001). Age (OR = 1.33, 95% CI: 1.14-1.56, p<0.001), L2-L4 BMD (OR = 36.50, 95% CI: 1.41-947.10, p=0.030) and smoking history in years (OR = 1.08, 95% CI: 1.01-1.15, p=0.035) were statistically significant covariates in the analysis.



Picture 1. Example from grade 4. degenerated disc from L1-L2 level. According to Pfirrmann classification moderately decreased disc height, nonhomogeneous structure of the disc, with an hypointense dark gray signal intensity. The distinction between annulus and nucleus is impossible to observe.

Conclusions

Physical strenuousness of work seems to be a significant risk factor for intervertebral disc degeneration in postmenopausal women.



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