

Evaluating the Risk of Hypertension, Fatigue, Sleeping Disorders, and Back or Neck Symptoms in 41,277 Low-Fit Workers With Varying Occupational Physical Activity

Karin Olsson¹, Elin Ekblom-Bak^{1,2}, Daniel Väisänen¹

¹ Department of Physical Activity and Health, The Swedish School of Sport and Health Sciences, Stockholm, Sweden

² Faculty of Health and Occupational Studies, University of Gävle, Gävle, Sweden

Purpose: To study whether the risk of hypertension and perceived health symptoms increases with increased occupational physical activity (OPA) among low-fit individuals in low-skilled occupations.

Methods: Data from a total of 41,277 individuals (mean age 46, standard deviation ± 11 , years; 55% women) who underwent occupational health profile assessments in Sweden between 1988 and 2020 were included. Individuals were selected from nine occupational groups (according to SSYK/ISCO classification) with generally low educational requirements, containing ‘office assistants’, ‘mobile plant operators and vehicle drivers’, ‘shop staff’, ‘heavy truck and lorry drivers’, ‘assemblers, machine operators, and related’, ‘assistant nurses and home care’, ‘cleaners’, ‘construction craftsmen and related trades’, and ‘construction workers’ (presented with increased OPA, defined in PMID:38129646). Fitness ($\dot{V}O_{2\max}$) was estimated by a submaximal cycle test, and low-fit was defined as $<35 \text{ ml} \cdot \text{min}^{-1} \cdot \text{kg}^{-1}$. Hypertension was defined as $\geq 140/90 \text{ mmHg}$, and perceived symptoms of fatigue, sleeping disorder, and back/neck symptoms were dichotomised into ‘very often/often’ or ‘sometimes/rarely/never’. Logistic regression, adjusted for age and sex (and in hypertension analyses additionally for use of blood pressure medication), provided odds ratio (OR) across occupations using office assistants as reference.

Results: No consistent gradient was found linking higher OPA to increased risk. However, some notable variations emerged. Compared to reference, hypertension was significantly more common among most occupations with higher OPA, e.g. mobile plant operators and vehicle drivers and cleaners, adjusted OR (95% confidence interval): 1.18 (1.05–1.33) and 1.27 (1.16–1.40). Lower odds of fatigue were seen in construction craftsmen and related trades and construction workers, OR: 0.82 (0.73–0.93) and 0.84 (0.73–0.97). Sleeping disorders were less common among cleaners, OR: 0.83 (0.71–0.97), but more common among assemblers, machine operators, and related, OR: 1.15 (1.01–1.32). Back/neck symptoms were prevalent in most groups, e.g. mobile plant operators and vehicle drivers and construction workers, OR: 1.47 (1.29–1.68) and 1.52 (1.33–1.73).

Conclusion: Hypertension and perceived back/neck symptoms were more prevalent in most groups with higher OPA, compared to office assistants with low OPA. However, future research needs to address longitudinal analyses with objective measures of OPA to better understand the causal influence of OPA on health.

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