

Occupational exposure to noise and incident stroke and myocardial infarction risk in Sweden

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ABSTRACT

Objective: To investigate the association between occupational noise exposure and incidence of stroke and myocardial infarction (MI) one year later.

Methods: We utilized data from the longitudinal SNOW cohort, comprising all persons born between 1930 and 1990 in Sweden. Information on demographic, occupational, and outcome data were extracted from the national register. For this study, we included all persons with at least one occupational code registered in the years 1985-2013. Occupational codes were matched to an occupational noise job-exposure matrix. Noise exposure was characterized in five categories (LAeq8h): <70, 70-74, 75-79, 80-84, 85+ dB(A). MI and stroke status in the year following exposure were ascertained using the national patient register. A discrete-time proportional hazards model adjusted for year, age, sex, marital status, income, country of birth, whole body vibrations, decision authority, and occupational exposure to particles was used to calculate hazard ratios (HR). Because of the correlation of exposures, analyses were further restricted to those with low physical workload exposure.

Results: Results show an elevated risk for MI the year following occupational noise exposure levels over 80 dB(A) after adjusting for all confounders and restricted to those exposed to low physical workload (HR 1.06, 95% Confidence Interval (CI): 1.02-1.11 for 80-84 dB(A) and 1.19 95% CI: 1.10-1.29 for 85+ dB(A)). We observed no increased risks for stroke exposure among this group.

Conclusion: Exposure to occupational noise was associated with an increased risk for MI, but not stroke, among this younger, working population, when separated from co-exposures.

Keywords (3-6): Occupation, Myocardial infarction, Stroke, Register

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