

# WORK-RELATED CARDIOVASCULAR DISEASE

Akademisk avhandling

Som för avläggande av medicine doktorexamen vid Sahlgrenska akademien,  
Göteborgs universitet kommer att offentlig försvaras i Arvid Carlsson,  
Medicinaregatan 3, den 26 september, klockan 09.00

av Helena Eriksson

Fakultetsopponent:

Professor Susanna Toivanen

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## Avhandlingen baseras på följande delarbeten

- I. Eriksson HP, Andersson E, Schiöler L, Söderberg M, Sjöström M, Rosengren A, Torén K. Longitudinal study of occupational noise exposure and joint effects with job strain and risk for coronary heart disease and stroke in Swedish men. *BMJ Open* 2018;8e019160.doi:10.1136/bmjopen-2017-019160.
- II. Eriksson HP, Söderberg M, Neitzel RL, Torén K, Andersson E. Shift work, noise exposure and risk of cardiovascular mortality in a Swedish cohort of female industrial workers. Submitted.
- III. Eriksson HP, Forsell K, Andersson E. Mortality from cardiovascular disease in a cohort of Swedish seafarers. Submitted.
- IV. Eriksson HP, Torén K, Rosengren A, Andersson E, Söderberg M. Adverse psychosocial job exposure and risk of coronary artery calcification. Manuscript.

**SAHLGRENKA AKADEMIN  
INSTITUTIONEN FÖR MEDICIN**



# WORK-RELATED CARDIOVASCULAR DISEASE

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## **Abstract**

The overall aim of this thesis was to study occupational risk factors for cardiovascular disease, particularly, occupational noise, job strain and shift work. Incidence of cardiovascular disease was analysed in a general population sample, the Primary Prevention Study, in relation to exposure to noise and job strain. The results indicated that exposure to noise increased the risk of developing coronary heart disease. Simultaneous exposure to job strain further increased the risk. We could not demonstrate an increased risk of stroke. Female workers in the paper industry exposed to shift work and noise were analysed regarding mortality from cardiovascular disease in a longitudinal cohort study. Female workers exposed to noise  $\geq 90$  dB(A) or the combination of shift work and noise had an increased mortality from acute myocardial infarction but not from stroke. A cohort study of Swedish seafarers was performed. There was no increased mortality for seafarers who had worked on passenger ferries only. However, seafarers who had worked on different types of vessels had an increased total mortality and in addition an increased mortality from cardiovascular disease among relatively younger seafarers. The association between exposure to job strain and presence of coronary calcium was studied in the SCAPIS pilot study, a general population sample. The power of the study was limited, but exposure to high strain job or active job could potentially increase the risk in men, but not in women, where it could rather be exposure to passive job, however the results were insignificant.

The results of the thesis strengthen earlier observations of a health hazardous effect from exposure to noise, job strain and shift work. The results are also in parity with international studies on increased mortality among seafarers.

**Keywords:** Occupational noise, shift work, job strain, seafarer, cardiovascular disease