

**HAND ARM
VIBRATION**



Hand–Arm Vibration Exposure Trends among the Workforce in Sweden

International conference

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Introduction

- Hand-arm vibration (HAV) common among construction, industry, forestry, and manufacturing workers
- HAV could cause vascular, neurological, and musculoskeletal injuries
- 400 000 workers in Sweden exposed to HAV more than 2 hours per day (Swedish Work Environment Authority)
- Understand changes in HAV exposure over time among the workforce in Sweden



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Aim

- To study trends of HAV exposure among the Swedish workforce from 1980 to 2010

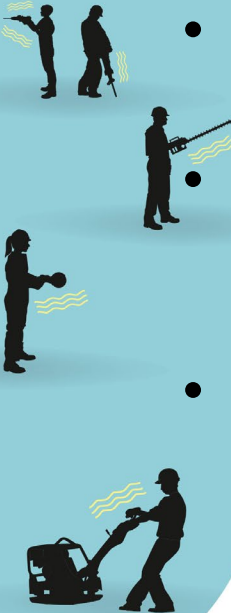
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Materials and Methods

Inclusion

- Worker in Sweden for one year during study period 1980-2010
- Above 18 years old
- An occupation with an occupational code.
- Information on age was gathered from the Register on the Entire Population (Registret över totalbefolkningen) at Statistics Sweden.
- Every occupation in Sweden is classified according to occupational classifications of the National Labour Market Board and based on ISCO-88-code system
- Information on employment and job was gathered from FOB 1980 and 1990 and SSYK-96.



SWEJEM

- Jenny Selander, Karolinska Institutet; Sweden
- Project to develop a National Job Exposure Matrix (JEM) on common occupational exposures in Sweden
- Includes physical, chemical, psycho-social as well as precarious employment
- Will be publicly available (Karolinska Institutet home page)



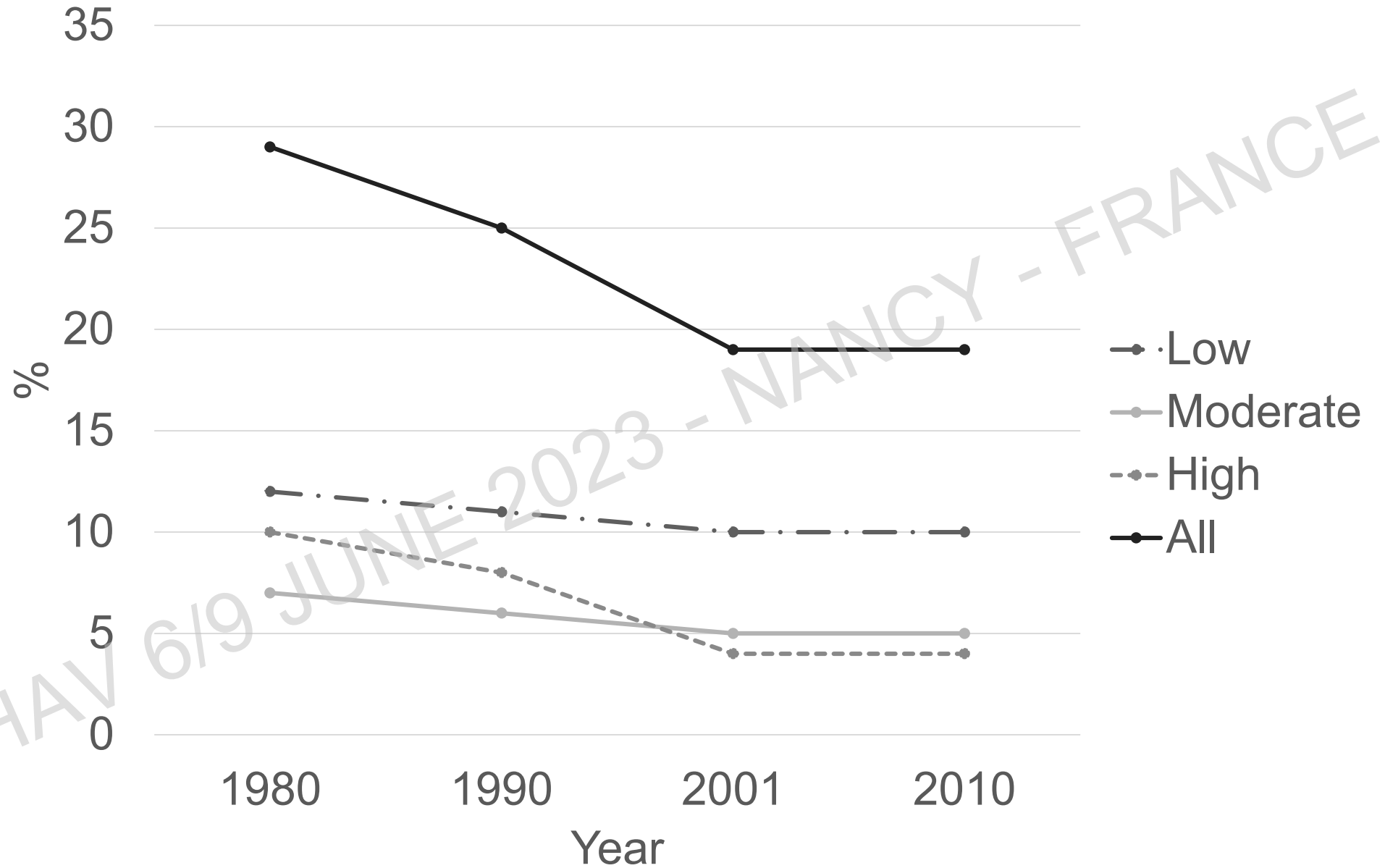
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SWEJEM

- The JEM on HAV consists of the eight-hour equivalent HAV exposure (5349-1) connected to each occupational code.
- HAV levels from earlier measurements (scientific articles, measurement reports, and vibration data-bases, $n = 90$).
- Exposure categories for the A(8) value were:
 - low (range: above 0 to ≤ 1 m/s²)
 - moderate (range: above 1 to < 2.5 m/s²)
 - and high (range: ≥ 2.5 m/s²).



Results



Discussion

- The proportion of workers exposed to high HAV levels in Sweden declined during the study period.
- During this time, an EU directive was implemented to reduce workers' exposure to HAV.
- Some machines have better designs to reduce the vibration levels.
- Additionally, there are less workers in occupations in which they use hand-held vibrating tools
- Manufacturing in Sweden has declined during the study period.

