Systematic reviews for occupational safety and health: 

The PEROSH Clearinghouse 


EPICOH 2011, Oxford 
7 September 2011
Clearinghouse for Systematic Reviews

What does this mean?

• Searching reviews on topics in occupational safety and health (OSH)
• Selecting high-quality reviews
• Presenting them to the public

⇒ Overview of reviews
Background: What is PEROSH?

- Partnership for European Research in Occupational Safety and Health (PEROSH)
- Network of OSH institutes from 12 European countries
- Joint collaboration on OSH topics

→ Efficient use of resources and knowledge
→ www.perosh.eu
The partnership for European Research in Occupational Safety and Health (PEROSH)

PEROSH coordinates and cooperates on European research and development in occupational safety and health. It is a high-level research network aiming at improving the quality and dissemination of working life research via joint collaboration on priority topics, sharing of knowledge and resources and a proactive dialogue with the EU, national and international partners. The network comprises 13 Occupational Safety and Health (OSH) institutes, all playing key roles in their national affiliations to governmental authorities and health and accident insurance systems.

Proceedings Lunch Workshop 'Future OSH Priorities and the role of research'

On the 20th of June, PEROSH held a lunch Workshop entitled 'Future OSH Priorities and the role of research' within the context of OH&IS Forum 2011 in the Hanasaari Cultural Center in Espoo (Finland).

Proceedings PEROSH Seminar Research In Action

On 25 November 2010, European researchers and policymakers came together to reflect on how to improve the transfer of evidence-based research with regard to the working environment and the practical implementation at the workplace.
Members

PEROSH comprises 13 Occupational Safety and Health institutes in 12 Member states.

Belgium: Prevent - Institute for Occupational Safety and Health

Czech Republic: Occupational Safety Research Institute (VUBP)

**Denmark**: National Research Centre for the Working Environment (NRCWE)

**Finland**: Finnish Institute of Occupational Health (FIOH)

France: Institut National de Recherche et de Sécurité (INRS)

**Germany**: Federal Institute for Occupational Safety and Health (BAuA)

**Germany (IFA)**: Institute for Occupational Safety and Health of the German Social Accident insurance

Italy: National Institute for Occupational Safety and Prevention (ISPESL)

Netherlands: TNO Work and Employment

Norway: National Institute of Occupational Health (STAMI)

Poland: Central Institute for Labour Protection - National Research Institute (CIOP-PIB)

Spain: Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT)

United Kingdom: Health and Safety Laboratory (HSL)
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Studies  ->  Reviews  ->  High quality reviews

--> overview of reviews

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What is a systematic review?

Systematic methods are used for:

- Comprehensive literature searches for studies
- Selection of studies according to defined criteria
- Critical summary of results

→ Minimized bias
→ Reliable findings
→ Evidence-based OSH
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Objectives:

- Exchange of expert knowledge among partner institutions on experiences with systematic reviews
- Improving methodology for writing systematic reviews
- Easy access to reviews on relevant OSH topics
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Target group:

• Practitioners
• Professionals
• Researchers
• Policy makers
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Status quo:

Clearinghouse methods document was developed including

- Recommendations for searching reviews  Example
Example: Extract from methods document

**Recommended search strategy in PubMed:**

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Status quo:

Clearinghouse methods document was developed including:

- Recommendations for searching reviews
- List of literature databases and sources for OSH reviews
- Definition of selection/inclusion criteria for systematic reviews
Systematic OSH Reviews: Inclusion Criteria

• A clearly defined question with reference to Participants, Interventions or exposure, Comparisons, Outcomes and Study design (PICOS)

• Research question on the following aspects of occupational diseases and injuries are included and categorized:
  - Intervention: therapy and prevention
  - Prognosis
  - Diagnosis
  - Etiology
  - Prevalence/incidence

• Inclusion of an electronic search of at least one database

• Publication date 2000 to present
  (unless the type of exposure warrants older reviews)
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Status quo:

Clearinghouse methods document was developed including

- Recommendations for searching reviews
- List of literature databases and sources for OSH reviews
- Definition of selection/inclusion criteria for systematic reviews
- Forms for searching, selection and evaluation
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Method paper was developed based on:

Quality assessment and critical appraisal of systematic reviews

• SIGN http://www.sign.ac.uk → SIGN Checklist

Scottish Intercollegiate Guidelines Network

• PRISMA http://www.prisma-statement.org/

Preferred Reporting Items for Systematic Reviews and Meta-Analyses → evidence-based minimum set of items for reporting in systematic reviews and meta-analyses
## APPENDIX 1: SIGN Checklist for Systematic Reviews and Meta-analyses

### Methodology Checklist 1: Systematic Reviews and Meta-analyses

<table>
<thead>
<tr>
<th>Study identification (Include author, title, year of publication, journal title, pages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guideline topic:</td>
</tr>
</tbody>
</table>

**Checklist completed by:**

### Section 1: INTERNAL VALIDITY

<table>
<thead>
<tr>
<th>In a well conducted systematic review</th>
<th>In this study this criterion is:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 The study addresses an appropriate and clearly focused question.</td>
<td>Well covered Adequately addressed Poorly addressed Not addressed Not reported Not applicable</td>
</tr>
<tr>
<td>1.2 A description of the methodology used is included.</td>
<td>Well covered Adequately addressed Poorly addressed Not addressed Not reported Not applicable</td>
</tr>
<tr>
<td>1.3 The literature search is sufficiently rigorous to identify all the relevant studies.</td>
<td>Well covered Adequately addressed Poorly addressed Not addressed Not reported Not applicable</td>
</tr>
<tr>
<td>1.4 Study quality is assessed and taken into account.</td>
<td>Well covered Adequately addressed Poorly addressed Not addressed Not reported Not applicable</td>
</tr>
<tr>
<td>1.5 There are enough similarities between the studies selected to make combining them reasonable.</td>
<td>Well covered Adequately addressed Poorly addressed Not addressed Not reported Not applicable</td>
</tr>
</tbody>
</table>

### SECTION 2: OVERALL ASSESSMENT OF THE STUDY

| 2.1 How well was the study done to minimise bias? | |

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Method paper was developed based on:

Quality assessment and critical appraisal of systematic reviews

- **SIGN** [http://www.sign.ac.uk](http://www.sign.ac.uk) → SIGN Checklist
  - Scottish Intercollegiate Guidelines Network
  - Preferred Reporting Items for Systematic Reviews and Meta-Analyses
    → evidence-based minimum set of items for reporting in systematic reviews and meta-analyses
- **AMSTAR** Assessment of Multiple Systematic Reviews (Shea et al. 2009)
- Jos Verbeek: Experience from Cochrane OSH Group
- Experience of working group
- Literature
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Status quo:

Methods document was developed

Reviews on certain major OSH topics have been selected
→ referring review citations are on the PEROSH website
### Database of Systematic Reviews of Occupational Safety and Health

Here you can find answers to your question by type of question (intervention, etiology etc), type of worker involved, type of intervention or exposure or type of outcome involved. By clicking on the number of reviews you get access to the full references and documentation.

<table>
<thead>
<tr>
<th>Question</th>
<th>Question Type</th>
<th>Type of workers</th>
<th>Intervention</th>
<th>Exposure</th>
<th>Prognosis</th>
<th>Outcome</th>
<th>Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does physical work lead to coxarthrosis?</td>
<td>Etiology</td>
<td>Any</td>
<td>Physical work</td>
<td></td>
<td>Osteoarthritis</td>
<td>7 reviews</td>
<td></td>
</tr>
<tr>
<td>What interventions are effective in preventing early retirement in older workers?</td>
<td>Intervention</td>
<td>Older</td>
<td>Any</td>
<td></td>
<td>Early retirement</td>
<td>1 review</td>
<td></td>
</tr>
<tr>
<td>What factors predict prognosis of sick leave in workers with musculoskeletal disorders?</td>
<td>Prognosis</td>
<td>Musculoskeletal Disorders</td>
<td>Any</td>
<td></td>
<td>Sick Leave</td>
<td>13 reviews</td>
<td></td>
</tr>
<tr>
<td>Psychosocial stress at work and cardiovascular disease</td>
<td>Etiology</td>
<td>Any</td>
<td>Psychosocial stress</td>
<td></td>
<td>Cardiovascular disease</td>
<td>5 reviews</td>
<td></td>
</tr>
<tr>
<td>How can needlestick injuries in health workers be prevented?</td>
<td>Prevention</td>
<td>Health care workers</td>
<td>Any</td>
<td>Viral infections</td>
<td>Needlestick injuries</td>
<td>3 reviews</td>
<td></td>
</tr>
<tr>
<td>Is aggression more frequent among health care workers compared to other workers in public function?</td>
<td>Health care workers</td>
<td>Any</td>
<td></td>
<td></td>
<td>Aggression</td>
<td>3 reviews</td>
<td></td>
</tr>
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Database of Systematic Reviews of Occupational Safety and Health

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<td>Sick leave</td>
<td>7 reviews</td>
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<td>Intervention</td>
<td>Older</td>
<td>Any</td>
<td></td>
<td>Early retirement</td>
<td>Sick leave</td>
<td>1 review</td>
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<tr>
<td>What factors predict prognosis of sick leave in workers with musculoskeletal disorders?</td>
<td>Prognosis</td>
<td>Musculoskeletal Disorders</td>
<td>Any</td>
<td></td>
<td>Sick Leave</td>
<td>12 reviews</td>
<td></td>
</tr>
<tr>
<td>Psychosocial stress at work and cardiovascular disease</td>
<td>Etiology</td>
<td>Any</td>
<td>Psychosocial stress</td>
<td>Cardiovascular disease</td>
<td>5 reviews</td>
<td></td>
<td></td>
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<tr>
<td>How can needlestick injuries in health workers be prevented?</td>
<td>Prevention</td>
<td>Health care workers</td>
<td>Any</td>
<td>Infectious</td>
<td>Needlestick injuries</td>
<td>2 reviews</td>
<td></td>
</tr>
<tr>
<td>Is aggression more frequent among health care workers compared to other workers in public function?</td>
<td>Health care workers</td>
<td>Any</td>
<td></td>
<td>Aggression</td>
<td>Sick leave</td>
<td>3 reviews</td>
<td></td>
</tr>
</tbody>
</table>
# Research question: Psychosocial stress at work and cardiovascular diseases

## Recommend list of systematic reviews

(according to the methodology of the PERO SH Clearinghouse of Systematic Reviews)

<table>
<thead>
<tr>
<th>Number</th>
<th>Reference</th>
</tr>
</thead>
</table>

**Study grading** (according to the adopted [SIGN Checklist](#) for PERO SH Clearinghouse of Systematic Reviews):

- **++** All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions of the study or review are thought very unlikely to alter.

- **+** Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or not adequately described are thought unlikely to alter the conclusions.

- **-** Few or no criteria fulfilled. The conclusions of the study are thought likely or very likely to alter.

For search details see the [Search Documentation Form](#)
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Future:

• Improvement of methodology
• More overview of reviews on OSH topics
• More members in working group
• Platform for open calls for review projects
• More collaboration of PEROSH members

→ Better answers to research questions
→ Transfer of knowledge from science to practice
→ Evidence-based policy making in OSH
www.perosh.eu

Thank you!