



**Report on process and implementation of
participatory ergonomic interventions:
A systematic review**

VOLUME 2 - Appendices

sharing **best evidence**

About this report:

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Please cite this report as: Van Eerd D, Cole D, Irvin E, Mahood Q, Keown K, Theberge N, Village J, St. Vincent M, Cullen K. Report on process and implementation of participatory ergonomic interventions: a systematic review. Toronto: Institute for Work & Health, 2008.

Acknowledgements: Dan Shannon, Shanti Raktoc, Dan Robinson, Andrew Dolhy, Shane Dixon, WorkSafeBC, Manitoba WCB, WSIB, and all of the stakeholders from British Columbia, Manitoba and Ontario (listed in Appendix A).

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Appendix A

Stakeholder attendees in British Columbia, Manitoba and Ontario

British Columbia

Name	Organization
Aine Kirk	Providence Healthcare
Andrew Laing	Simon Fraser University
Anne Kristina Arnold	Simon Fraser University
Arlene Decaire	UBC
Bruce Johnson	FARSHA
Carmel Murphy	Healthcare Benefit Trust
Catherine Murphy	Howe Sound Pulp & Paper
Chloe Eaton	WorkSafeBC
Chris Back	Occupational Health & Safety Agency for Healthcare
David Coates	Ergo Risk Management Group
Deanna Harrison	Fraser Health
Dina Sikorski	WorkSafeBC
Emma Christensen	WorkSafeBC
Gina Vahlas	UBC
Helen Tam	Vancouver Coastal Health
Ian Bennie	CAW
Joji Yamashita	CAW
Jonathan Cargo	Howe Sound Pulp & Paper
Lara Acheson	BC Nurses Union
Larry Stoffman	UFCW
Liz Ball	Providence Healthcare
Marty Clausen	Safety & Health in Arts, Production & Entertainment
Nermin Helal	Fraser Health
Pam Taylor	CAW
Peter Goyert	WorkSafeBC
Rob Long	CAW
Ron Corbeil	United Steelworkers

Manitoba

Name	Organization
Alice Sayant	Manitoba Workers Compensation Board
Andrew Dolhy	MFL Occupational Health Centre
Barb Kowalski	B.A. Kowalski Group
Carol Loveridge	MFL Occupational Health Centre
Christine Panas	Red River College
Chuck Davidson	Winnipeg Chamber of Commerce
Dean Forster	Impact Health
Diane Gagnon	MFL Occupational Health Centre
Douglas Perrin	Manitoba Conservation / Water Stewardship
Heather Emslie	Manitoba Workers Compensation Board
Jeff Baxter	Workplace Safety & Health Division
Judy Shields	University of Manitoba
Ken Wasyliv	Winnipeg Free Press
Monique Trudeau	Manitoba Infrastructure and Transportation
Norma McCormick	Corporate Health Works Inc
Pete Walker	Manitoba Federation of Labour
Rob Chase	MFL Occupational Health Centre
Sarrah Hayter	Manitoba Tourism Evaluation Council
Tracey McIntosh	Work-Able Solutions

Ontario

Name	Organization
Alice Peters	Workplace Safety and Insurance Board
Anne Duffy	Ontario Ministry of Labour
Carrie Boyle	Electrical & Utilities Safety Association
Conny Glenn	Work Wellness
Dan Robinson	Robinson Ergonomics Inc.
Don Patten	Industrial Accident Prevention Association
Ilene Stones	Workplace Safety and Insurance Board
Jim Martin	Ontario Power Generation
John Vander Doelen	Ontario Ministry of Labour
Jonathan Tyson	Pulp and Paper Health and Safety Association
Lisa Beech-Hawley	Workplace Safety and Insurance Board
Vern Edwards	Ontario Federation of Labour

Appendix B

Literature search terms

Group 1: intervention, change, process terms:

• intervention(s/studies)	• barrier(s)
• program(s)	• accommodation(s)
• change(s)	• change management
• modif(ication/iers)	• employee assistance program(s)
• implement(s/atons)	• EAP program(s/mes)
• process	• Human resources management
• method(s)	• Professional management
• approach(es)	• Kaizan
• safety management	• LEAN manufactur(ing, er, ers)
• program evaluation	• LEAN production(s)
• prevention	• LEAN team(s)
• intervention stud(y/ies)	• 5s intervention(s)
• facilitator(s)	

Group 2: ergonomic terms

• ergonomic(s)	• human factor(s)
• human engineering	• workplace(s)
• work design	

Group 3: participatory terms

• participat(ion/ory/ive)
• ergonomic(s) group
• ergonomic(s) team
• labor-management/labour-management
• consultative
• action research
• interprofessional relation(s)
• total quality management
• collaborative process(es)
• collaborative change(s)

Group 4: health outcome terms

- musculoskeletal
 - injur(y, ies)
 - disorder(s)
 - pain
 - shoulder
 - extremity
 - occupational accident(s)
 - occupational health
 - occupational disease(s)
 - musculoskeletal disease(s)
 - Wounds and Injuries
 - Back injur(y, ies)
 - Absenteeism
 - Cervical vertebrae
 - Neck muscle(s)
 - Neck
 - Cervical
 - Spine/Spinal
 - Spinal injur(y/ies)
 - Back pain
 - Low back pain
 - Backache
 - Lumbar trauma
 - Lumbar pain
 - Lumbosacral
 - Sacrum
 - Sacroiliac
 - Coccyx
 - Coccydynia
 - Shoulder impingement syndrome
 - Shoulder joint
 - Soft tissue injur(y/ies)
 - Rotator cuff
 - Whiplash injur(y/ies)
 - Return to work
 - Shoulder pain
 - Reemployment
 - Work disability
 - Injured worker(s)
 - Functional limitations
 - Physical capacity
-

-
- Work capacity
 - Work limitation(s)
 - Biomechanical risk factor(s)
 - Psychological risk factor(s)
 - Injury experience(s)
 - Workplace injur(y/ies)
 - Work injur(y/ies)
 - Workers compensation
 - Compensation Cost(s)
 - Compensation claims cost(s)
 - Time on benefit
 - Benefit duration
 - Sick listed
 - Sick leave
 - Sickness absence(s)
 - Sickness related absence(s)
 - Time lost/loss
 - Lost workday(s)
-

Appendix C

Content and quality appraisal questions and scoring

Content Questions:

1. Does the paper describe *(please check all that apply and provide examples)*

- the context of the PE process?
- facilitators of the PE process?
- barriers to the PE process?
- none of the above

2. Did the PE intervention focus on changes to: *(please check all that apply and provide examples)*

- tools and equipment
- work processes/organization
- workplace organization
- unclear/not specified

3. Please indicate which type of paper(s) are involved.

- Quantitative research report.
- Qualitative research report
- Combination of qualitative and quantitative research methods.
- Technical paper/description of practice.

4. Based on your answers to questions 1 and 2, did the paper contain both of the essential elements required for inclusion in this review? *(i.e. include some information on both (1) context/barriers/facilitators, and (2) planned changes)*

- Yes (continue with the remaining quality questions)
- No (do not continue beyond this point)

Quality questions and scoring*:

Question and <i>answer categories (score)</i>	Description
Q1 Was the purpose of the paper clearly stated? <i>Yes (2) Partially (1) No (0)</i>	If the objectives/purpose of the paper is not clearly evident, then results are likely of limited value. An answer of “yes” to this question requires that a clear, explicit statement of the purpose be included.
Q2 Was the rationale for implementing a PE intervention described? <i>Yes (2) Partially (1) No (0)</i>	If there is a reasonable explanation for why participatory ergonomics was undertaken, the rationale is justified.

<p>Q3 Were the various steps of the intervention clearly outlined? <i>Yes (4) Partially (2) No (0)</i></p>	<p>To achieve a “Yes” on this question, the intervention strategy must be described comprehensively enough to allow for its replication in another population. Important aspects include: where the intervention was carried out; specifically what was changed and how this was done.</p>
<p>Q4 Was the duration of the intervention documented? <i>Yes (2) Partially (1) No (0)</i></p>	<p>An answer of “Yes” requires that the duration of the intervention be clearly described. “Partial” means that information provided is not comprehensive. “No” means no information is given.</p>
<p>Q5 Was the length of follow-up greater than 1 month? <i>Yes (2) Unclear/not reported (1) No (0)</i></p>	<p>Length of follow-up refers to the time between an intervention implementation and an evaluation of outcomes takes place. An answer of “Yes” requires that the length of follow-up be clearly described. “Unclear” means that some information is provided, but it’s not clear/comprehensive, or information is not given. “No” means that length of follow-up is not more than one month.</p>
<p>Q6 Does the paper describe the impact of the PE intervention? <i>Yes (2) No (0)</i></p>	<p>For this question to be answered “Yes,” there must be a description of the intervention’s impact on at least one of the following: psycho-social factors; workplace relationships/climate; behaviours/attitudes; risk factors/exposures and/or health outcomes. This can involve positive or negative outcomes, or findings of no significant difference in outcomes. In studies reported in more than one publication, evidence in one of these publications is sufficient.</p>
<p>Q7 Was the potential influence of any co-interventions or any other concurrent activities/trends considered? <i>Yes (2) No (0)</i></p>	<p>This question involves changes that are not part of the intervention, but that are applied to study participants either deliberately or inadvertently during the course of the intervention. Examples could include: the introduction of an on-site clinic, or the introduction of a new lifting device that was not part of the PE process, changes in company ownership, plant downsizing, and industry trends. Effects that are in fact due to such co-interventions and/or trends may be falsely attributed to the intervention.</p>
<p>Q8 Do you think that this paper should proceed to DE? <i>Yes1. The paper has met many of the quality criteria</i> <i>Yes2. Even though not many criteria have been met, there is sufficient detail present in</i></p>	<p>Yes1. The paper has met many of the quality criteria (e.g., scored of at least 10/16 on questions 5-11) and should be included in the DE process.</p> <p><input type="checkbox"/> Yes2. Even though not many criteria have been met, there is sufficient detail present in the paper to make it useful for the purposes of this review.</p>

<p><i>the paper to make it useful for the purposes of this review</i></p> <p>No.</p>	<p><input type="checkbox"/> No. The article does not meet enough of the quality criteria to be included. (In answering this question, your decision should be based on: the quality score it achieved (e.g. less than 10/16), whether the research papers contain any serious flaws^o that would cast doubt on the results achieved; your feeling, overall, that the paper(s) did not represent a clear and credible report.)</p>
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*Quality question scoring: For all but question 3, a Yes was given a score of 2, Partial (if applicable) was given a score of 1 and No was given a score of 0. The team felt that question 3 was a very important aspect of the articles and therefore a Yes was given a score of 4, Partial was given a score of 2 and No was given a score of 0.

^o Serious flaws in quantitative papers might include sources of bias such as confounding, loss to follow-up, inappropriate statistical analyses. Serious flaws in qualitative papers might include extremely “thin” or superficial reporting of results.

Appendix D

The Participatory Ergonomics Framework (PEF) by Haines and Wilson, 1998

Dimensions	Categories	Criteria (taken from text and Table 6 of Haines et al, 2002)*
Permanence**	Ongoing	Ongoing participatory mechanisms ... more integrated into the structure of the organization
	Temporary	Participatory ergonomics mechanisms functioning on a temporary basis
	Unclear	No indication of permanence
Involvement	Full Direct	Each employee participates directly in decisions about their work
	Direct Representative	Employee representatives are selected to represent viewpoints of a large number of workers
	Delegated	Representatives not actively representing the views of others but represent a typical subset of a larger group
Level of Influence	Group of Organizations	The PE process takes place across a number of organizations working or belonging to a group (such as a professional association)
	Entire Organization	The PE process takes place at a single organization or workplace
	Department/Work Group	The PE process takes place in a department or workgroup within a single organization
Decision Making	Group Delegation	Management gives employees increased discretion and responsibility to organize ... their jobs without reference back
	Group Consultation	The PE team is encouraged to make their views known on work-related matters but management retains the right to take action or not
	Individual Consultation	An individual worker is encouraged to make their views known on work-related matters but management retains the right to take action or not
Mix of Participants	Operators	Workers involved in teams
	Line Management (Supervisors)	Managers/supervisors involved in teams
	Senior Management	Senior managers involved in teams
	Internal specialist/ Technical Staff	Internal specialist or technical staff (such as engineers, or health a safety specialists) involved in team
	Union	Union members or representatives involved in team
	External Advisor	External advisor (such as ergonomic consultant from outside of company) involved in team
	Supplier/Purchaser	Supplier or purchaser of equipment involved in team

Dimensions	Categories	Criteria (taken from text and Table 6 of Haines et al, 2002)*
	Cross-Industry Organization	Cross industry or organization personnel (such as industry association representative) involved in team
Requirement (for participation)**	Compulsory	Participation required as part of job specifications
	Voluntary	Voluntary participation in PE process
	Not reported	No indication of requirement for participation
Focus**	Tools & equipment	Changes to “tools and equipment” involve physical changes to the workstation or tools/equipment used by workers.
	Work processes	“Work processes may include, for example, changing the order or way of doing things, and may include job rotation and scheduling changes.
	Workplace organization	Examples of “workplace organization” include changes in management reporting, structure of departments or workgroups, or upper management changes (macro ergonomics).
Remit	Problems Identification	Involved in identification of problems
	Solution Development	Involved in generating solutions to problems identified
	Implementation of change	Involved in implementing change
	Set-up/ Structure Process	Involved in setting up or structuring the process
	Monitor/ Oversee Process	Involved in monitoring or overseeing the process of the initiative
Role of Ergonomic Specialist	Initiates and Guides Process	Ergonomist is key in initiating and guiding process as integral part of duties
	Acts as Expert	Ergonomist is part of the team to provide expertise in ergonomic matters
	Trains Members	Ergonomist primarily focuses on training
	Available for Consultation	Ergonomist is available for consultation as needed (therefore may not be member of team)
	Not Involved	Ergonomist is not involved in the PE process

** we adapted these definitions.

***Intervention components from PEF framework (DE question #).**

Explanations of intervention's dimensions are from Haines et al. (2002) p. 310-313

Dimension 1: Permanence of initiative (Q15)

The first dimension considers the permanence of participatory ergonomics within an organization. Participatory ergonomics mechanisms may function on a temporary basis and may take place outside the normal organizational structures. Alternatively, ongoing participatory mechanisms may be developed which may well be much more integrated into the structure of the organization.

Categories for permanence: Temporary - Ongoing

Dimension 2: Involvement (Q16)

The second dimension of participatory ergonomics considers whether people participate directly or indirectly (via representatives). Cotton (1993) refers to work by Dachler and Wilpert (1978) in which direct involvement is seen as 'immediate personal involvement of organizational members' (p. 12) Cotton goes on to describe this as 'typically face-to-face involvement where workers can have an immediate and personal impact' and contrasts this with indirect involvement which 'incorporates some type of employee representation in which, rather than the employee interacting, his or her representative is involved' (p. 28). Liker et al. (1989) used the distinction between direct and representative participation coined by Coch and French (1948) 'Direct participation means each employee participates directly in decisions about their own work. Representative participation means that employee representatives are selected to represent the viewpoints of a large number of workers' (Liker et al. 1989: 187). Examples of both direct and representative participation may be found in the participatory ergonomics literature. In developing this framework, it was important to look more closely at how the term representative may be interpreted. There seems to be two possible meanings. On the one hand, representatives may allow a wider group to participate by proxy (as in the case of elected representatives). Alternatively, representatives may not set out to actively represent the views of others, but instead participate because they represent a typical subset of a larger group. To recognize this latter form of representation a category has been introduced into this dimension, termed 'partial direct participation'.

Categories for involvement: Full Direct - Direct Representative - Delegated

Dimension 3: Level of influence (Q17)

A further dimension considers the organizational level at which participatory ergonomics takes place. There are mechanisms that operate at the level of a particular department or work group, and there are cross-organization mechanisms.

Categories for level of influence: Group of Organizations - Entire Organization - Department/Work Group

Dimension 4: Decision-making power (Q18)

The fourth dimension of participatory ergonomics considers the question: who has the power to make decisions? This is an important consideration as, although employees are frequently asked to express their views, in many participatory ergonomics initiatives the

authority to make decisions still remains with someone other than the participants. To clarify this, the framework makes the distinction between consultative participation and delegative participation which has been used by (amongst others) the European Foundation for the Improvement of Living and Working Conditions, as follows: consultative participation - management encourages employees to make their views known on work-related matters, but retains the right to take action or not. Delegative participation - management gives employees increased discretion and responsibility to organize their jobs without reference back.

Categories for decision-making power: Group Delegation - Group Consultation /- Individual Consultation

Dimension 5: Composition (Q19)

The fifth dimension considers the occupational groups involved in the participatory process, and is self-explanatory.

Categories for composition: Operators - Line Management (Supervisors) - Senior Management - Internal specialist/ Technical Staff - Union - External Advisor - Supplier/Purchaser - Cross-Industry Organization

Dimension 6: Requirement (Q20)

The sixth dimension of participatory ergonomics concerns the requirement for participation: is it voluntary or compulsory? Although, in some cases, participation will be entirely voluntary, some participatory ergonomics mechanisms such as quality circles or production groups require involvement in troubleshooting and continuous improvement as a part of the job specifications.

Categories for requirement: Compulsory / Voluntary

Dimension 7: Focus (Q21)

The next dimension identifies the topics addressed by participants, and is self explanatory.

Categories for focus: Physical design/ Specification of Equipment/ Workplaces/ Work tasks - Design of Job Teams or Work Organization - Formulation of Policies or Strategies

Dimension 8: Remit (Q22)

The eighth dimension of participatory ergonomics describes the broad activities that fall within participants' remit, and by extension how extensive is their involvement in the change process. Process development refers to being involved in setting up or structuring the participatory process. Process maintenance refers to any involvement in monitoring or overseeing the progress of the initiative. Involvement in problem identification, solution generation and evaluation, if this is on-going, means being part of a continuous improvement process.

Categories for remit: Problems Identification - Solution Development - Implementation of change - Set-up/ Structure Process - Monitor/ Oversee Process

Dimension 9: Role of 'ergonomics specialist' (Q23)

The final dimension describes the nature of ergonomists' involvement in a participatory process. Many participatory ergonomics initiatives will involve an 'ergonomics

specialist', although the roles they play in the process may differ and can evolve over time.

Categories for role of specialist: Initiates and Guides Process - Acts as Expert - Trains Members - Available for Consultation - Not Involved

Appendix E

Data Extraction questions and instructions to reviewers

Guide to the “Inclusion Check” step for PE2 systematic review. The guide to the DE form follows below.

The depth of reading required to extract the data we will need to answer our question often reveals more about the article than we could see in previous review steps. This was evident in our pilot of the DE form when we as a team decided that an article should be excluded from the DE step! We, as a team, have been quite inclusive in the articles that we included in our review steps. Therefore it is possible that during the DE step we will discover some of the articles may not be relevant and should have been excluded. If you and your review partner feel that the article should be excluded we will suggest that the rest of the review team have the option to consider it so that we can make a decision as a team about excluding an article for DE.

Relevance/Inclusion Question (level 4)

Considering the Data Extraction questions, please indicate whether the article meets all of our relevance and inclusion criteria and answer the following question:

1. Does the article describe a participatory ergonomics intervention AND describe the context as well as the barriers and/or facilitators of the process?

Remember our original criteria (see below) as you answer the question.

PARTICIPATORY: Practical ergonomics with the participation of necessary actors in problem solving

Excludes: Interventions with no direct involvement of the end users of the intervention in the intervention process

ERGONOMIC: Contributing to the design and evaluation of tasks, jobs, products, environments and systems in order to make them compatible with the needs, abilities and limitations of people

Includes: cognitive ergonomics

Excludes: Health promotion, training alone

INTERVENTION: An intervention must be attempted and described

CONTEXT: Includes type of business/work done, geographical location(s) of the organization(s) involved, information about the organization(s), how the intervention originated.

FACILITATORS/BARRIERS: For example, “Barriers to the PE process” means barriers to the process itself, not barriers to other workplace goals such as work efficiency or employee satisfaction. If an article has details about barriers and/or facilitators, this

would be a strong indication to include it, regardless of the amount of information on context.

Guide to the Data Extraction form for PE2 systematic review.

Please read this guide before beginning the data extraction. It may be helpful to print this guide and have it available to refer to while doing the data extraction. Please extract the data from the articles you review by completing the form on SRS and entering text in the provided areas. Please read the questions carefully especially the instructions in italics which provide details on how to enter the data. In the table below, the blue text provides some additional instructions that will help to ensure that the answers from different reviewers are consistent – please read this before beginning the data extraction. Also the text in red font provides some examples to illustrate specific responses.

All of the questions in the SRS form should have an answer when you are complete. If an article does not have the information necessary to answer a particular question then enter “NR” (for not reported) in the text box for that question. It is important that all questions have answers because we will not know if an article did not have the information or a reviewer forgot to enter it if we allow blank answers. Remember, try not to interpret or extrapolate just provide the data that is presented in the article.

Data Extraction questions (level 5)

Study identification

1. Write the last name of the first author and the year of publication
(*Author's last name, yyyy*)

_____ **Give the first author's last name and the year (4 digits) the article was published.**

Context questions

2. List the jurisdiction where the study was completed
(Provide information regarding the country, region, province, city, etc. where the study was carried out - type “NR” where applicable)

Country _____
Province/State _____
City _____

Enter “NR” in all comment boxes where information is not available in article.

3. What Industry/Sector was the study conducted in?
(*Check all that apply*)

Agriculture, Forestry, Fishing and Hunting
Mining and Oil and Gas Extraction
Utilities
Construction

Manufacturing
Wholesale Trade
Retail Trade
Information and Cultural Industries
Finance and Insurance
Real Estate and Rental and Leasing
Professional, Scientific and Technical Services
Management of Companies and Enterprises
Administrative and Support, Waste Management and Remediation Services
Educational Services
Health Care and Social Assistance
Arts, Entertainment and Recreation
Accommodation and food Services
Other Services (except Public Administration)
Public Administration

Provide details in the comment boxes to support your response. Please refer to the NAICS 2002 classification system so that all reviewers are responding to this question in the same way.

<http://www.statscan.ca/english/Subjects/Standard/naics/2002/naics02-menu.htm>.

4. State the Research Question/Objective

Please use the exact wording from the article or enter “NR”

5. What was the origin of the PE intervention? (*the reason PE intervention was undertaken - Examples could be: increased WCB costs, injury claims, job satisfaction*).

Provide the level of detail given in the study or enter “NR”

6. Are there other aspects of context that are considered important in the article? (*examples may include: demographics of individuals or company, reorganization of workplace, labour unrest, job stability, economic climate*)

Please list other aspects of context here that the authors of the article felt were important to report. Indicate “NR” if this information is not available in the article.

Organizational structure of process questions

7. What was the organizational structure of the PE process? Indicate what type of committees and/or teams were described in the article. (*check all that apply*)

Steering committee _____
Change team (across dept) _____
Dept or work group _____
Other (describe) _____

Provide details in the comment boxes to support your response(s). Indicate “NR” if this information is not available in the article.

8. Was there evidence of cooperation/trust during the process among committee/team members? (*refer to the various teams and committees you listed in Question 7 to answer*)

Yes _____
Mixed _____
No _____
Not reported _____

Please indicate whether there was an issue of trust indicated in the article. Yes means that there was trust among members of each team/committee, mixed means that there was trust in some but not others and no means there was a lack of trust among the members of each team.

9. Was there a champion or a committee/team chair described?

Yes
Unclear
No
Not reported

Provide details in the comment boxes to support your response(s). Please indicate which committee/team you are referring to in the text boxes provided.

10. Was there an issue about scheduling/ time for team meetings described in the article?

There were no issues about scheduling/ time to attend meetings _____
Issues of scheduling/ time to attend meetings were not reported _____
There were issues about scheduling/ time reported in the paper (please describe) _____

For this question choose the “no issues” response if you felt that meetings were scheduled to allow all team members to attend and that they had adequate time to attend the meetings. Choose the “not reported” response if there is no information about scheduling or time to attend meetings in the paper. If there were issues of scheduling/ time reported in the paper, please describe what the issues were in the text box provided. Provide information to support your response in the text boxes provided.

11. Was there an issue of time to implement changes for team members?

Team members had adequate time to implement changes _____

Unclear whether team members had adequate time _____

Team members did NOT have adequate time to implement changes _____

The issues of time to implement changes was not reported _____

Implementation not completed or not described in the paper _____

Provide information to support your response in the text boxes provided.

12. How often did the committees/teams meet? *(please provide information about which committees/teams you are reporting on)*

Indicate the frequency of the committee/team meetings over the entire intervention period. If no information is presented on team meetings then enter “NR”

13. How long did each committee/team meeting last? *(please provide information about which committees/teams you are reporting on)*

Indicate the length of the meetings in hours. Enter a range of lengths if that is presented in the study. Be clear about which team/committee you are reporting on. If no information is presented on team meetings then enter “NR”

Training questions

14. Was training in ergonomics provided?

Yes

Unclear

No

Provide details in the comment boxes to support your response(s).

15. Who provided the ergonomics training?

List the individual(s) involved in training, indicate “not provided” if ergo training not provided and “not clear” if it is not clear who provided training. Indicate “NR” if this information is not available in the article.

16. Who received the ergonomics training?

List the individual(s) attending the training sessions, indicate “not provided” if ergo training not provided or “not clear” if it is not clear who received training. Indicate “NR” if this information is not available in the article.

17. What was the nature of the ergonomics training?

Describe what was taught/covered and how it was taught at the training sessions. Indicate “not provided” if ergo training not provided and “not clear” if it is not clear what the nature of the training was. Indicate “NR” if this information is not available in the article.

18. How long did the training last?

Provide the number of training sessions, how long each session lasted and over how many days the training was completed. Indicate “not provided” if ergo training not and “not clear” if it is how long the training lasted. Indicate “NR” if this information is not available in the article.

PEF questions – Please refer to the description of these questions from Haines et al (2002) below*

19. What was the permanence of the intervention? (PEF Q1) *Please choose the best response*

Temporary
Ongoing
Unclear

Provide details in the comment boxes to support your response(s) REFER to Haines et al PEF article for instructions for these questions

20. What was the level of involvement? (PEF Q2) *Please choose the best response*

Full Direct
Direct representative
Delegated

Provide details in the comment boxes to support your response(s)

21. What was the level of influence? (PEF Q3) *Please choose the best response*

Group of organizations
Entire organization
Department/work group

Provide details in the comment boxes to support your response(s)

22. How was decision making accomplished? (PEF Q4) *Please choose the best response*

- Group delegation
- Group consultation
- Individual consultation

Provide details in the comment boxes to support your response(s)

23. What was the mix of participants? (PEF Q5) *Please choose all that apply*

- Operators/workers
- Line management (supervisors)
- Senior management
- Internal specialist/technical staff
- Union
- External advisor
- Supplier/purchaser
- Cross-industry organization

Please indicate which team or committee each was involved in and provide details in the comment boxes to support your response(s)

24. What was the requirement for participation? (PEF Q6) *Please choose the best response*

- Compulsory
- Voluntary
- Not reported

Provide details in the comment boxes to support your response(s)

25. What was the remit? (PEF Q8) *Please choose all that apply*

- Set-up/ structure process
- Monitor/ oversee process
- Problems identification
- Solution development
- Implementation of change

Provide details in the comment boxes to support your response(s)

26. Who were the key PE facilitators? *Please check all that apply*

- Ergonomists _____
- Physiotherapists _____
- Occupational therapists _____
- Other (please specify) _____

Provide details in the comment boxes to support your response(s)

27. What was the role of the PE facilitators? (PEF Q9) *Please choose all that apply and indicate which facilitator was involved for each task listed below.*

- Initiates and guides process
- Acts as expert
- Trains members
- Available for consultation
- Not involved

Provide details in the comment boxes to support your response(s)

Process and implementation questions (not covered by PEF)

28. Were material resources or funds addressed to implement changes addressed in the article? *Please indicate what material resources were allocated in the text boxes provided.*

- Yes _____
- Unclear _____
- No _____

Provide details in the comment box to support your response.

29. Were workers involved (observed or consulted) directly in: *Please check all that apply*

- Describing the nature and concern of their work _____
- Risk analysis _____
- Solution development _____
- Solution implementation _____
- Unclear _____
- Not involved _____

Provide details in the comment box to support your response.

30. What changes were implemented as a result of the PE process?

- Tools & equipment _____
- Work processes _____
- Workplace organization _____
- Unclear _____
- No changes implemented _____

Provide details about changes that were implemented as a result of the PE process in the article in the comment boxes to support your response(s).

Facilitator & Barrier questions

31. Provide a list of all facilitators described in the article. (*We define facilitators as affecting the PE process in a positive manner*).

Enter “none” in text box if no facilitators described.
Please give sufficient details for each facilitator.

32. Provide a list of all barriers described in the article. (*We define barriers as affecting the PE process in a negative manner*).

Enter “none” in text box if no barriers described.
Please give sufficient details for each barrier.

Effect of intervention question

33. Describe the observed effect of the intervention. (*Please check all that apply and indicate which outcomes you refer to in the appropriate text box.*)

Positive effect _____
Negative effect _____
No effect _____

Here we want to indicate whether the study reported a positive, negative or no effect of the intervention. We can use this to stratify on positive versus no (or negative) effect and use our quality rating as the “confidence” we have in whether we believe the effectiveness.

If there is more than one outcome of interest please identify them in the text boxes provided. Please indicate the outcome(s) that were reported in the appropriate text boxes (i.e. if there was a positive effect on a health outcome check positive and type in health outcome in the text box. If there is more than one outcome described list all in the appropriate text box(es).)

The outcomes we are interested in are:

- health outcomes
- physical risk factors
- psycho-social risk factors
- productivity/output
- cost/benefit analysis

Open ended question about article

34. Remark on the findings or enter information that is unique about the study that may not be adequately captured in the other DE categories

Here’s your chance to have your say about the article! Be clear and concise.

Reviewer and consensus questions

35. Check the names of both DE reviewers for this article

Donald Cole

Heather Widdrington

Judy Clarke

Nancy Theberge

Marie St. Vincent

Emma Irvin

Judy Village

Kiera Keown

Dwayne Van Eerd

36. Is this the consensus version of the DE form (Final version)?

Yes

No

Please select “no” until consensus has been completed.

Appendix F Detailed document summaries

Document: Laing, 2005 (34)

Research Question:	
To investigate the effectiveness of a quasi-experimental participatory ergonomics process in reducing pain severity levels through interventions aimed at reducing workers' physical demands using an approach that would allow a detailed understanding of the intervention process and outcomes.	
Document Characteristics:	
Jurisdiction	Ontario Canada
Industry / sector	Manufacturing
Reason for PE intervention	Management interest
Context of Document	Co-interventions due to business demands between intervention and referent plant. The plant manager from the referent plant transferred to the intervention plant. Partway through the intervention, conveyance speeds were increased at the referent plant and positions were increased from 8 to 9 workers resulting in a small decrease in overall physical demands of each worker at the post questionnaire.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team	
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Training provider:	Research team
Training recipient:	ergonomics change team
Nature of training	Initial training: anatomy, principles of ergonomics, physical and psychosocial risk factors, ergonomic assessment tools, PEI Blueprint, methods for calculating injury incidence and severity rates, NIOSH lifting equation, Snook & Ciriello manual materials handling tables, surveys on psychosocial factors, physical demands analysis tool, and pain/symptom survey.
Length of training	Initially 3 days, then 6 hours once per week for 3 weeks, then occasional tutorials afterward

Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Steering committee by teleconference at 6 week intervals	
Meeting length	Steering committee spent 14 hours total per member over 11 months Research team spent 300 hours facilitating the process change team spent 125 hours per member on training, meetings and projects	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Additional training stressing the steps in the participatory ergonomics model may have enhanced ECT effectiveness	
<input checked="" type="checkbox"/> Communication		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Communication needs to be frequent and to all workers	

<input checked="" type="checkbox"/> PE facilitator/champion	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Lack of knowledgeable ergonomics champion within the plant level or corporation. A plant or union-based ergonomics champion might enhance ECT sustainability
<input checked="" type="checkbox"/> Organizational training	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Training for conducting effective meetings
<input checked="" type="checkbox"/> Change resistance	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Resistance to change
<input checked="" type="checkbox"/> Other	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Insufficient direct involvement of workers Duration of intervention may not have been long enough. Workforce may not have had sufficient time to adapt to the change projects resulting in less positive responses. A longer intervention may have resulted in additional change projects

Research Question:	
The main objective of this study was to evaluate the effect of the implementation strategy using participatory ergonomics to adjust work height and mechanize the transport of materials in bricklaying teams in a cluster randomized controlled design.	
Document Characteristics:	
Jurisdiction	The Netherlands
Industry / sector	Construction
Reason for PE intervention	Risk factor
Context of Document	Not applicable
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown
<input type="checkbox"/> Change team	
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Training provider:	Unclear
Training recipient:	Unclear
Nature of training	Information strategies (written, oral and visual) were applied to ensure that knowledge was disseminated about the physical work demands of bricklaying and possible measures to reduce them (step 2). In step 3, special attention was paid to tailored information about the ergonomic measures and any obstacles to the implementation. Two essential activities involved the selection of specific ergonomic measures (e.g. using trestles or bricklaying scaffolds for adapting work height) by workers (>20%) and the anticipation of obstacles hindering the implementation process.
Length of training	not reported
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization <input checked="" type="checkbox"/> Group of Organizations

<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	steering committees met at least 3 times	
Meeting length	steering committee each meeting lasted a maximum of 2 hours	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program	Lack of commitment from stakeholders: "Perhaps the most important aspect of an implementation strategy that applies participatory ergonomics is getting and maintaining committment from different stakeholders in the implementation process. It is recommended that committment be increased among different stakeholders within the applied strategy. More attention to activities that discuss and share the pros and cons of the use of ergonomic measures could be an effective strategy to increase overall worker committment to these consequences."	
<input checked="" type="checkbox"/> Facilitator		
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training	Additional education or info about best practices and the compulsion for employers or planners; Additional experience with ergonomic measures for foremen or bricklayers	
<input checked="" type="checkbox"/> Facilitator		
<input type="checkbox"/> Barrier		

Research Question:		
#53 (Primary paper) p 469: This article presents recent information on health-care workers who have experienced a participatory organizational intervention aimed at reducing the work constraints and creating a healthy workplace. #38 abstract: This paper reports a pilot project to evaluate the effectiveness of a participatory organizational intervention to improve the psychosocial work environment in one long-term care unit.		
Document Characteristics:		
Jurisdiction	Quebec City, Quebec Canada	
Industry / sector	Construction, Health Care and Social Assistance	
Reason for PE intervention	Injury rate	
Context of Document	The health care system during the past decade has been characterized by restructuring and changing of the work environment to improve its efficiency. The Government of Quebec has recognized that restructuring the healthcare system has modified the work environment and also has the consequence of increasing problems with attracting and retaining nurses.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported

<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	6 times between Oct 2000 and Apr 2001.	
Meeting length	1 day	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> None reported		

Research Question:		
The goals of this project were to: (1) introduce an ergonomic innovation to decrease the risk of low-back disorder (LBD) group membership, (2) quantitatively assess exposure, and (3) apply a participatory intervention approach in construction. Labourers manually moving a hose delivering concrete to a placement site were evaluated. The hypothesis tested was that skid plates would prevent hose joints from catching on rebar matting, and the hose would slide more easily. This would decrease the need for repetitive bending and use of excessive force.		
Document Characteristics:		
Jurisdiction	Not reported	
Industry / sector	Not reported	
Reason for PE intervention	Injury rate	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	the research team	
Training recipient:	crew of 10 labourers	
Nature of training	Presented a review of basic ergonomic principles and common risk factors associated with musculoskeletal injuries to supplement workers' knowledge and to provide a context for discussion about aspects of moving concrete hose that place them at risk for low-back injury.	
Length of training	not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Research team
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	All aspects of the implementation and evaluation process require supervisory support and crew involvement to maximize effectiveness.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Supervisors may need some training, both in ergonomic fundamentals and in particular techniques of eliciting ideas and evaluating impact.	
<input checked="" type="checkbox"/> Other		
<input checked="" type="checkbox"/> Facilitator	Timing is critical and researchers or ergonomic practitioners must be creative in accessing craft workers and finding collaborative opportunities.	
<input type="checkbox"/> Barrier		

Research Question:	
This project was undertaken to evaluate whether an E-MAT (Employee-Management Advisory Team) approach among health care workers was effective in the identification of health and safety problems, the identification of control strategies, and to evaluate the implementation of these controls. This paper reports on the preliminary results of this ongoing demonstration project.	
Document Characteristics:	
Jurisdiction	USA
Industry / sector	Health Care and Social Assistance
Reason for PE intervention	Injury rate
Context of Document	Not unionized (p 191), no formal labor representation for H&S issues. Necessity to investigate new approaches, given changes in technology and increase in economic stresses. (p 190-1) Downsizing trend in industry is mentioned (p 195). Job stability and high rates of turnover mentioned.
Organizational structure of PE teams:	
<u>Team structure:</u> <input type="checkbox"/> Steering committee <input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input type="checkbox"/> Change team	
<u>Worker involvement:</u> <input type="checkbox"/> Describing nature of work <input type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input type="checkbox"/> Risk analysis <input type="checkbox"/> Solution implementation <input checked="" type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Mixed <input type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	Not reported
Training recipient:	ECT Teams from 3 departments (dispatch; ICU and clinical laboratories). "Membership of each team relied heavily on the recommendations from administrative contacts in each of the three work areas. Membership was based on the requirements that the teams be composed of four to six members, that representation from both management and employees was necessary, and that the individuals have an interest in participating in the project."
Nature of training	The major focus of training should be considered the development of effective skills for working as a group. A primary objective for training was thus to engage participants in learning experiences in order to establish rapport with other team members, to begin to recognize individual strengths and differences, and to experiment with various communication techniques. Basic technical information consisted of an overview of ergonomics terminology, risk factors for musculoskeletal disorders, and the process for analyzing tasks. This initial session was meant to provide an introductory level of technical information that would establish a basis for ongoing education that could be provided to individual E-MATs in the context of problems identified. Opportunities for applying the basic technical concepts were provided during the training sessions. Our goal in this application process was to reinforce group skills. We

	<p>hoped to reduce some boundaries related to worker–supervisor relationships by involving the team members in activities that facilitated collaborative effort. It was important, for our purposes, that each E-MAT member feel like an equal partner in the analytical and decision-making process. Procedural and logistical information for implementing the E-MAT approach was integrated into all aspects of training. Each team member received a resource manual designed to provide basic information regarding the logistics of the project, suggestions for team process, technical info. Each team member received a resource manual designed to provide basic information re the logistics of the project, suggestions for team process, technical information, suggested forms and methods of documentation, and lists of facility resources.</p>
Length of training	For dispatch and ICUY groups - one 8-hour session; For lab group - one 4-hour session (p 192)
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary <input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>	
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation <input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>	
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist <input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union <input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor
<u>Requirement for participation:</u>	
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary <input type="checkbox"/> Not reported
<u>Focus:</u>	
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes <input type="checkbox"/> Workplace organization
<u>Remit:</u>	
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification <input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development
<u>Role of PE facilitators:</u>	
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input checked="" type="checkbox"/> Ergonomists	<input checked="" type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Others: MD/Epidemiologist
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	Orderlies (dispatch department) met weekly (p 359 in 2nd paper)
Meeting length	NOT REPORTED
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear

<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Capacity of two of the three teams to establish "protected" time each week for meetings/activities.
<input checked="" type="checkbox"/> Barrier	For ICU nurses, shiftwork made it difficult to meet at a specific time, time of meeting had to fluctuate, depending on participants' schedules. Inadequate funding for additional staff made members unable to establish meeting times free from patient responsibilities. Patient responsibilities caused delays of meetings, absences from meetings, cancellations of meetings, and frustrations of team members. Above-mentioned problem, along with project's inability to form team of sonographers due to their clinical responsibilities, suggests problems establishing such a program in clinical work areas. (Times of downsizing - time pressures are likely to become even more acute).
<input checked="" type="checkbox"/> Organizational training	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Implementation of some solutions has sometimes been hampered by the inability of a large hospital system to respond to the format of the E-MAT process in such areas as purchasing equipment, repairing or altering work environments, and implementing new procedures. Implementation of solutions has been slower than anticipated as each team has struggled with learning the channels within the hospital structure for accessing the equipment and personnel needed. Early frustrations of team members have dampened some of the initial enthusiasm of the team members.
<input checked="" type="checkbox"/> Working relations	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Lack of response by maintenance department for changes that they were required to make.
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	"Worth of group" suggested as facilitator: "Success in sustaining team efforts seems critically dependent on whether the worth of the group is felt by the individual members as well as those colleagues they represent." "As the systems for implementation adapt to the E-MAT process, it should facilitate the E-MAT activities and afford team members more evidence of success in changing the work environment" (implication: and therefore increase it's worth in their eyes, which is critically important) (p. 195).
<input checked="" type="checkbox"/> Barrier	Frustrations of team members

Research Question:	
P 279: The aim of this paper was to describe the content, process, and implementation of a PE program as part of a multidisciplinary disability management intervention. We evaluated the content, process, satisfaction, and implementation of the program and ergonomic interventions.	
Document Characteristics:	
Jurisdiction	The Netherlands
Industry / sector	Manufacturing, Health Care and Social Assistance, Accommodation and food Services, Other Services (except Public Administration)
Reason for PE intervention	Injury rate
Context of Document	This program is adjusted to the Dutch socio-economic context, i.e. the Dutch health care and social security system. In the Netherlands, for example ergonomic interventions cannot be applied by one research ergonomist, but have to be carried out by several ergonomists from different private Occupational Health Services (OHS).
Organizational structure of PE teams:	
<u>Team structure:</u> <input type="checkbox"/> Steering committee <input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input type="checkbox"/> Change team	
<u>Worker involvement:</u> <input checked="" type="checkbox"/> Describing nature of work <input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input checked="" type="checkbox"/> Risk analysis <input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Mixed <input type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	Participating ergonomists
Training recipient:	Workers
Nature of training	How to adjust work situation.
Length of training	The entire "PE Program" was completed in up to two weeks. A maximum of 6 hrs is available for advise, including two sessions of contact (p 275)
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u> <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Unclear	
<u>Involvement</u> <input checked="" type="checkbox"/> Full Direct <input type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated	
<u>Level of Influence:</u> <input checked="" type="checkbox"/> Department/Work Group <input type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations	
<u>Decision Making:</u> <input checked="" type="checkbox"/> Individual Consultation <input type="checkbox"/> Group Consultation <input type="checkbox"/> Group Delegation	

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: OH nurses trained in ergonomics
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Once, "the ergonomist organizes a meeting with the worker, supervisor, and possible other persons involved to brainstorm about possible solutions for the problems prioritized."(p275)	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Commitment of the worker (66.7%) and of the supervisor (56.7%) to the prioritized ergonomic solutions.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Motivators: making an inventory of the problems with the worker (80.0% of the cases) and with the supervisor (60.0%), making an inventory of the solutions with the worker (73.3%)and with the supervisor (65.5%). Compliance to protocol: "...there was a significant relationship between the ergonomists' satisfaction about the effectiveness of the intervention and the compliance to the protocol (P<0.05)." (p 278-9)	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Organizational training	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Obstacles for implementation were mostly related to technical or organizational difficulties for work adjustments
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	Amount of time involved (60.0%). Adjustments concerning work design and organization are prioritized as return-to-work intervention because they have to be implemented on a short-term or temporary basis in order to achieve a return-to-work as soon as possible and/or until the worker's disabilities are gone (p. 280).
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Production requirement	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Financial situation of the employer.
<input checked="" type="checkbox"/> Nature of work	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Due to high physical workload
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Observation of the workplace (76.6%), Functional disabilities of the worker.
<input checked="" type="checkbox"/> Barrier	It seems that in general employers are reluctant to adapt work to one individual worker when the adjustment has a major impact on the workplace or work design or a worker has more functional disabilities.

Research Question:	
A PE intervention model was designed and applied during an 18 month period with the following objectives: improving working conditions (reducing musculoskeletal disorders and improving the physical and chemical environment), improving quality (the quality of working life and the quality of products) and increasing productivity.	
Document Characteristics:	
Jurisdiction	Tehran, Iran
Industry / sector	Manufacturing
Reason for PE intervention	Not reported
Context of Document	not reported
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team	
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Training provider:	Supportive expert team (SET) members
Training recipient:	action groups
Nature of training	The objectives of this program were to acquire new knowledge and skills, to change the attitude towards more safe and healthy behaviours, and finally to develop ergonomics awareness among employees to improve working conditions collectively. The key feature of the program was the introduction of ILO ergonomics checkpoints as a basic document for learning applied ergonomics and then improving working conditions. Workshops and on-the-job training.
Length of training	100 hours over 18 months
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary <input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations

<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Management committment and support was a vital prerequisite for continuous improvement.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Ergonomics training was a key factor in continuing the ergonomic process	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Good communication	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	Establishment of the steering committee was one of the vital requisites for adopting a PE approach	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Shortage of time due to the work overload of AGs members
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Training of the people involved
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
	Endurance and persistence of the SET
<input checked="" type="checkbox"/> Facilitator	Forming AGs and allowing them to learn and think about their working conditions and deciding to change them if necessary, with the help of a supportive expert team as facilitator, has been shown to be among the most successful strategies
<input type="checkbox"/> Barrier	

Research Question:	
"The goals of this project were to identify the current rates of musculoskeletal clinic visits and limited duty days and to implement and track strategies to reduce clinic visits and limited duty days. Secondary goals were to create ongoing, internal structures and policies, which would continuously enhance soldiers' health." (p 193) The purpose of this paper is to describe methods of tracking the participation of supervisors during the intervention program.	
Document Characteristics:	
Jurisdiction	Texas USA
Industry / sector	Construction, Public Administration
Reason for PE intervention	Injury rate
Context of Document	Student soldiers must pass army physical fitness test; drill sergeants play an important role in this training. Supervisors "did not appear to believe in the relatedness of AIT physical training and injury prevention, despite surveillance data results." Authors feel that this is due, in part, to "tightly held cultural beliefs."
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group
<input checked="" type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input type="checkbox"/> Solution development
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Not involved
<input type="checkbox"/> No	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Unclear/not reported
<input type="checkbox"/> No	
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Unclear/not reported
<input type="checkbox"/> No	
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Unclear/not reported
<input type="checkbox"/> No	
Training provider:	"Members of Operation Aegis, as well as representatives from the health care system"
Training recipient:	Drill sergeants and cadres.
Nature of training	P 194: 1) evaluating current physical training and offering suggestions to the training schedule which could potentially reduce overuse injuries, 2) new physical training system which concentrates on building core body strength, coordination and agility of soldiers, 3) providing injury research results in terms of trends, causes, and the most up-to-date information on reducing injuries, 4) instruction on how to evaluate the age and proper fit of running shoes , 5) predictive factors for injury, 6) developing progressive running program based on recent research.
Length of training	Program lasted 18 mos; not clear how long training lasted
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary
<input type="checkbox"/> Unclear	

<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Members of Operation Aegis & representatives from health care system
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Coordinating meetings: 4x/week during months 1-6; 3.5x/wk during months 7-12 (estimated from graph, Fig 1); 2x/wk during months 13-18. ICAC meetings: monthly. Meetings of Operation Aegis staff and Battalion Commander: monthly.	
Meeting length	Coordinating meetings: Not reported ICAC meetings: one hour (p 196) Operation Aegis staff with the Battalion Commander: approximately two hours.	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Middle managers' involvement with ICAC committee increased visibility of the suggestions to reduce injuries, and thus the likelihood of acting on them. (p 193)	
<input checked="" type="checkbox"/> Barrier	No immediate benefit to supervisors for their efforts.	
<input checked="" type="checkbox"/> Ergonomics training		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Having educational seminar limited the amount of time available for discussion of issues (p. 196)	

<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Identification of community health nurses to facilitate communication around medical issues; establishment of open chain of communication between battalions and clinic personnel. (p. 196)
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Create appropriate team	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Participation in the committee represented an extra requirement on people's time (199)
<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	In one battalion, battalion commander championed the effort leading to a higher level of program acceptance and positive regard. p 194: "Strong, direct supervision" dealt with drill sergeants' non-compliance, brought companies under a singular umbrella of training methods (p. 201).
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Training in meeting facilitation, via mentoring or specific classes (p. 196).
<input checked="" type="checkbox"/> Barrier	Lack of expertise of ICAC representatives, in terms of group process and technical knowledge.
<input checked="" type="checkbox"/> Climate of workplace	
<input checked="" type="checkbox"/> Facilitator	Top management support in terms of resources and policy; All levels of the organization must understand and commit to injury reduction/control; Cultural beliefs that conflict with injury prevention efforts must be dealt with/perception of conflict eliminated (p. 203).
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Change resistance	
<input checked="" type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Resistance of middle management (perceived threat to their authority). Attempt to resolve this by having them on ICAC committee or in close communication with committee resulted in preserved the normal hierarchical structure... did not encourage optimal involvement by drill sergeants. Resistance by drill sergeants, who felt they were already the subject matter experts, and that their role was being undermined.
<input checked="" type="checkbox"/> Personnel turnover	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	High staff turnover and shedding demands prevented assessment of change, and of sharing of perceptions about the process. (Anecdotal reports suggest the program may have encouraged more participation than commanders desired.)
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Tracking the perceptions and participation of workers and supervisors can make the process more acceptable and successful (p. 203).
<input checked="" type="checkbox"/> Barrier	ICAC ws difficult to administer, time consuming and did not achieve high acceptance

Research Question:		
This paper evaluates a step by step participatory approach to better work, applied in reducing the musculoskeletal workload in installation work		
Document Characteristics:		
Jurisdiction	Netherlands	
Industry / sector	Construction	
Reason for PE intervention	Injury rate	
Context of Document	Large variety of work - installations in different settings	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training:		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	The steering group met to define the major types of work. A solution session was organized. Results were presented to 200 employees. A special meeting was arranged for management and health and safety specialists to launch the book.
Meeting length	Not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Support of PE program	
<input checked="" type="checkbox"/> Facilitator	Health and safety specialists and safety executives and management played an important role in the adoption of solutions and their support during the process was necessary. The CEO of the company opened this meeting (with 200 employees) to show commitment of top management.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Ergonomics training	
<input checked="" type="checkbox"/> Facilitator	Further in this process, the importance of informing these people was shown. Step 2 was valuable, especially showing clearly 3 major hazards. Step 3 was seen as worthwhile as here the new ideas were developed; and the usability tests in step 4 were evaluated positively as data were obtained that could be used in promotion and 3 solutions were found not to be feasible.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	The ideas book fulfilled a worthwhile role as new ideas could be added and it could be consulted whenever needed. The result of the solution session as well as the ergonomics knowledge was presented in a meeting to 200 employees.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Detailed plan	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Implementation and evaluation was uncontrolled.
<input checked="" type="checkbox"/> Research methods	
<input checked="" type="checkbox"/> Facilitator	The introduction of the study was received positively and the meeting with health and safety specialists and management was important in this.
<input type="checkbox"/> Barrier	

<input checked="" type="checkbox"/> Change resistance	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Applicability and acceptance of solutions.
<input checked="" type="checkbox"/> Production requirement	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Large differences in work between business units.
<input checked="" type="checkbox"/> Other	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Evaluating data from a limited number of subjects. Solutions were implemented at employee level. There were no system solutions. No organizational measures were studied. The process of implementing 60 additional solutions was unstructured and difficult to monitor. The effects on health or musculoskeletal loading were not measured. The project was not focused on a specific type of work. Effect could be larger with more direct participation by employees.

Research Question:		
The implementation of products to reduce the physical load in heavy work is a well-known strategy to attack this problem. The success of these products depends not only on the product itself, but also on the process of product development and implementation. In this paper, seven cases are described where products have been developed to reduce the physical load on scaffolders, bricklayers, bricklayers' assistants, roofworkers, aircraft loaders, glaziers and assembly line workers.		
Document Characteristics:		
Jurisdiction	the Netherlands	
Industry / sector	Manufacturing	
Reason for PE intervention	Risk factor	
Context of Document	Not reported	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input checked="" type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input checked="" type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization

<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Case Study 1: steering committee met 4 times plus 2 brainstorming sessions and a final session Case Study 5: Working group had 8 meetings Other case studies not reported	
Meeting length	not reported 1-7	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	A strong commitment of the management of the enterprise.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	A broad analysis of the occupational tasks and potential health problems in the beginning. In case study 1 there was a late discovery of physically stressful activities in disassembly.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	A stepwise approach is recommended, even though the main risks as well as the solutions might be quite obvious at first glance.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Production requirement		
<input checked="" type="checkbox"/> Facilitator	Obviously, products that lead to a higher productivity beside a reduced physical load on workers are very attractive both for workers and management	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Other		
<input checked="" type="checkbox"/> Facilitator	One should seriously analyse the possibility of negative side effects that may occur. As direct worker participation as possible. Where worker participation was low, the products were not judged as being optimal by the ergonomists or the workers	
<input type="checkbox"/> Barrier		

Research Question:	
The main objective of the trial was to assess the effectiveness of a comprehensive model of management of occupational back pain, linking a clinical and rehabilitation intervention and an occupational intervention including the participatory ergonomics program. However, beyond the effectiveness of the participatory ergonomics program on return-to-work, it is not known if such a program was perceived by the participants as having actually led to ergonomic modifications of the worker's job. The present paper presents a detailed description of the participatory ergonomics program used in this study, evaluates the perceptions of participants on the implementation of ergonomic solutions in the workplace and assesses the reasons for implementation or non-plementation.	
Document Characteristics:	
Jurisdiction	Sherbrooke, Quebec Canada
Industry / sector	Manufacturing, Health Care and Social Assistance, Other Services (except Public Administration)
Reason for PE intervention	Injury rate
Context of Document	To be included in the study workers had to be suffering from a back pain episode compensated by the Quebec Workers Compensation Board. This study was set up in the vicinity of Sherbrooke, a 100,000 inhabitant town in the province of Quebec, Canada. All workplaces with more than 175 workers and located in a radius of 30 km from the study back pain clinic were eligible to the study. Half of the eligible workplaces were randomized to receive a participatory ergonomics program applied to the job tasks of any worker subsequently declaring a work-related back pain episode. Workers from these workplaces received the participatory ergonomics intervention when they were absent from regular work for 6 weeks due to a back pain episode occurring in the workplace.
Organizational structure of PE teams:	
<u>Team structure:</u> <input type="checkbox"/> Steering committee <input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input type="checkbox"/> Change team	
<u>Worker involvement:</u> <input checked="" type="checkbox"/> Describing nature of work <input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input checked="" type="checkbox"/> Risk analysis <input type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	not reported
Training recipient:	One employer representative, one union representative
Nature of training	Course topics included the basics of back anatomy and function, risk factors for back pain, cognitive aspects of work activity, principles of changes to lay out, the theoretical basis of the participatory process and examples of job analysis and job task modification.

Length of training	Two days	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Two to three meetings	
Meeting length	One or two meetings lasting 2 hours	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input checked="" type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Upper management must be aware and understand the value of proposed ergonomics changes if these are to be implemented.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Costs (19%), technical difficulties (10%), modification of the injured worker's job type (10%), limited company resources (for example human resources, motivation of the employer) (4%),
<input checked="" type="checkbox"/> Climate of workplace	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Mistrust between workers and employers.
<input checked="" type="checkbox"/> Production requirement	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Disruption of work procedures (53%). The existence of competing priorities in the workplace
<input checked="" type="checkbox"/> Awareness of PE program	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	However, despite the agreement signed by the employers and unions of the participating workplaces with the study team, middle management (e.g. supervisors, production managers) was generally not informed of this agreement, which could have led to partial or non-implementation of some solutions.
<input checked="" type="checkbox"/> Intervention history	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Previous involvement of the company in health and safety management.
<input checked="" type="checkbox"/> Other	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Influence on other job sites (3%), and other reasons (1%). This short duration (of the intervention) may have precluded an in-depth analysis of work organizational risk.

Research Question:	
The purpose of this 18-month demonstration project was to assess the integration of a participatory ergonomics process as a strategy to control WMDs. This article reports the results of an effort to implement a participatory ergonomics process through the use of action research methodology.	
Document Characteristics:	
Jurisdiction	USA
Industry / sector	Manufacturing, Information and Cultural Industries
Reason for PE intervention	Research
Context of Document	3 phases to this study sponsored by the newspaper association of America. This reports on the second, implementation, phase. The newspaper company involved in the project is responsible for production of a daily metropolitan newspaper with a current circulation of 75,200 and 102,000 Sunday editions. There are 455 employees. Approximately 90 percent of the workforce is hourly (non-supervisory) , 75 percent are male, and 15 percent are minorities. There was no organized labour representation at the facility at the time of the project.
Organizational structure of PE teams:	
<u>Team structure:</u> <input type="checkbox"/> Steering committee <input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Change team	
<u>Worker involvement:</u> <input checked="" type="checkbox"/> Describing nature of work <input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input checked="" type="checkbox"/> Risk analysis <input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> Mixed <input type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	The researchers (the investigators)
Training recipient:	The ergonomic committee members recieved complete training and all employees recieved additional ergonomic awareness training
Nature of training	The ergonomic education program for the committee members consisted of approximately 20 hours of lectures, demonstrations, and problem-solving sessions relating to ergonomic principles and the ergonomics process. Additional ergonomic awareness education was provided to all company employees and consisted of a one-hour didactic presentation to groups of 12 to 20 employees. The investigators provided the ergonomic training.
Length of training	20 hours and additional ergonomic awereness education
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u> <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Temporary <input type="checkbox"/> Unclear	
<u>Involvement</u> <input checked="" type="checkbox"/> Full Direct <input type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated	

<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	once a month during 18 month	
Meeting length	between 30 minutes and 2 hours	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input checked="" type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	75% indicated that the pace (or change?) was about right	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	All respondents felt that the size of the committee was about right. 75% felt the committee was appropriately balanced. 67% indicated that all newspaper departments were adequately represented.	
<input checked="" type="checkbox"/> Barrier	Lack of direct representation from the press area on the ergonomics committee.	

<input checked="" type="checkbox"/> PE facilitator/champion	As researchers from the university we were viewed as a “neutral party” which helped facilitate cooperation between salaried and hourly committee members.
<input checked="" type="checkbox"/> Facilitator	Though both hourly employees and management were initially skeptical of each other’s motives, they eventually became convinced that they could have shared goals that would be mutually beneficial
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	It is important that participants are given adequate time for the additional responsibilities associated with the integration of the ergonomics process
<input checked="" type="checkbox"/> Barrier	Major obstacles were lack of time to devote to the project and an insufficient budget. Insufficient resources.
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	After some initial success with interventions the committee developed an identity and gained recognition and respect.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Working relations	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Production employees enjoyed being “off the floor” and attending meetings, but they quickly became frustrated feeling that nobody listened to them. Hourly employees and management members initially blamed the company’s ergonomic problems on each other (p. 261). There was role-related tension among organization members and researchers
<input checked="" type="checkbox"/> Change resistance	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	The reluctance by some to admit there are problems and attitudes of some of the employees are the problem and complain too much.

Document: Steinbrecher, 1999 (56)

Research Question:		
Case Report. P 310: "This case report focuses on an ergonomics team facilitated by an occupational health nurse at a glass-manufacturer (XYZ Plant) with under 200 employees, located in the midwestern United States."		
Document Characteristics:		
Jurisdiction	USA	
Industry / sector	Manufacturing	
Reason for PE intervention	Not reported	
Context of Document	P 314 - old plant, without ergonomic design considerations, so difficult situation. Due to 24-hour production schedule, mtgs had to be scheduled flexibly.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input checked="" type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	P 312 - OHN, ergo consultant.	
Training recipient:	Ergo team (p 313)	
Nature of training	Tour of another plant that had done ergo program; presentations by local rehab vendors. Content: general and formal ergonomics awareness information, including job specific training; training in job analysis and controlling risk factors; training in problem solving and the team approach.	
Length of training	Not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input checked="" type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input checked="" type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: OHN
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Previous training of employees in CQI was transferrable to work on this team. (Recognition of convergent elements of two processes by management helped maintain success).	
<input checked="" type="checkbox"/> Barrier	Inadequate training in ergonomics for team members.	
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Adherence to an agenda format contributed to productivity by using time wisely.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	The diversity of the XYZ team (variety of educational backgrounds, work experiences).	
<input checked="" type="checkbox"/> Barrier	Team selection resulted in some problems with: members having difficulties applying knowledge due to skill mismatch; personality and interpersonal skills; passivity and reluctance to participate	
<input checked="" type="checkbox"/> PE facilitator/champion		
<input checked="" type="checkbox"/> Facilitator	Positive attitude of team leader, coupled with persistence and genuine concern for employees' physical discomforts.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Flexibility in scheduling meetings on various days and times so members could attend. Flexibility to deal with emergencies as they arose.
<input checked="" type="checkbox"/> Barrier	Lack of funding would prevent fixing the problems recognized; Suggestion of need for more funding and time allocation by management.
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	Tackling some obvious easy problems first, to publicize successes and gain acceptance early from workforce and mgmt
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Production requirement	
<input checked="" type="checkbox"/> Facilitator	Production demands would be missed due to time on project; Coworkers would resent having to cover for them.
<input type="checkbox"/> Barrier	

Research Question:		
This paper presents findings from the implementation of an 'in-house', continuous improvement participatory ergonomics program in a public service agency. The research goal was to develop a theoretical model and related design principles as guides for designing and implementing permanent participatory programs. The goal for the organization was to create and develop an ongoing internal participatory ergonomics program to continuously improve working conditions and enhance employee health and well-being.		
Document Characteristics:		
Jurisdiction	Wisconsin USA	
Industry / sector	Public Administration	
Reason for PE intervention	Not reported	
Context of Document	No	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input checked="" type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	university researchers	
Training recipient:	12 employee reps	
Nature of training	'Hands on' training by researchers at mock-up workstations and assigning practice measurements in the field gave the EC group the opportunity for action and feedback of various to enhance their learning. Practicing ergonomics evaluations, performing workstation adjustments with a variety of individuals, training and educating co-workers, and providing presentations to work areas during Stage 4 of the intervention provided further opportunities for action, feedback, and learning.	
Length of training	over a period of 5 months	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated

<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Management support is necessary for providing participants with time, access and opportunities to exercise their gained knowledge and expertise for improving ergonomic work conditions and continuing program initiatives over time.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Adhere to established training principles	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Incorporate behavioural cybernetic principles; Provide both structure and flexibility; Plan for the future.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Be a flexible, dynamic expert
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Provide the necessary resources for both the implementation and continuation of the participatory program; Secure time and effort commitments.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Incorporate organizational design and management factors into the implementation process.
<input type="checkbox"/> Barrier	

Research Question:		
To develop an ergonomic pilot project that could identify ergonomic health-related problems, effectively make changes, scientifically measure progress, determine training needs, develop and implement strategy for the plants, and institutionalize the program. P 283: "... intervention centred on developing the capacities of frontline workers to perform shop-floor surveillance in their work areas and implement job improvements... curriculum included components intended not only to teach employees methods of ergonomics assessment but, also, methods or organizational systems analysis and implementing change."		
Document Characteristics:		
Jurisdiction	Michigan USA	
Industry / sector	Manufacturing	
Reason for PE intervention	Injury rate	
Context of Document	P 284: Overall economic problems of the American automobile industry and General Motors resulted in the closing of two EPP plants during the project and created a general atmosphere of uncertainty about the future. P 291: Shortly after implementation sites chosen, GM experienced a significant downturn in car sales, and the ensuing volume reductions resulted in budget cuts and layoffs in the EPP facilities. Midway through the project the assembly plant was closed. These events created negative effects on both the EPP implementation process and the evaluation research design.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	Multidisciplinary university team (Occ physician, occ epidemiologist, industrial engineers, social scientists, several labour educators, and doctoral students) developed training content; university team piloted project at 3 GM plant departments; in-plant	
Training recipient:	P1. 30-minute Awareness Program for all employees 2. Introductory Ergonomics for Ergonomic Monitors and supervisors 3. Train-the-Trainer for for Plant Ergonomic Coordinators 4. Intermediate Ergonomics for Ergonomic Coordinators, Plant Ergonomic Committees and Departmental Ergonomic Committees.	

Nature of training	Awareness program introduced employees to the project and the importance of ergonomics in the design of work environments. Train the trainer goal was to prepare in-house trainers who could effectively deliver the introductory ergonomics training program. Introductory ergonomics program involved use of assessment tools and techniques developed for the project, such as basic job checklist and symptoms questionnaire. Intermediate ergonomics program included comprehensive overview of ergonomics plus practical experience analyzing jobs using quantitative models for evaluating energy expenditure, lifting and biomechanics.	
Length of training	TTT program lasted for 10 days. Introductory Ergonomics used 5-day curriculum design. Intermediate Ergonomics was an 8-day training program. "Awareness" program lasted 30 min.	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input checked="" type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Unclear
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear

<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> Not reported/unclear	
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Support of PE program	
<input checked="" type="checkbox"/> Facilitator	Clear policy mandate and guidelines from decision-making level of both company and union (to convince managers/union officials of programs's importance, in their juggling of many priorities). Role of union leaders is especially crucial in monitoring implementation/insisting on conformance. (p 301)
<input checked="" type="checkbox"/> Barrier	Supervisors not included in introductory programs, did not become familiar with risk factors of area jobs, and were less supportive of EM's role. Perceived lack of organizational support led to resignations, frustrations.
<input checked="" type="checkbox"/> Ergonomics training	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Curriculum on managing change and problem solving seen as too vague, abstract and theoretical, and did not reflect the context of the plant environment, not tailored to ergonomics issues, not politically sensitive to their role in the plant, and a lack of synthesis between ergonomics content and problem solving/change content. Late arrival of labour educators (not becoming involved until after many design decisions had been made), caused problems (due to more limited understanding of ergonomics technical material) Lag time between training and time when actual changes could be implemented created frustration and lack of support among EMs. Likely affected knowledge retention.
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Economic problems lead to 2 plant closings and atmosphere of uncertainty, decreased commitment and disrupted implementation. EMs had time conflicts between regular job and EM job.
<input checked="" type="checkbox"/> Organizational training	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Inability of workers and supervisors to make simple changes to production system; required complex system changes. Unsuccessful experiences with implementing changes lead to apathy, cynicism and "learned helplessness."
<input checked="" type="checkbox"/> Working relations	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Implementation process challenged traditional roles and authority relations/created tensions EPP staff's dual role as change agents and data collectors for evaluation caused tensions
<input checked="" type="checkbox"/> Research methods	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Research protocol prevented university staff from providing technical and intervention expertise to plant staff; leading to conflict on research team, whose opinions varied.

<input checked="" type="checkbox"/> Personnel turnover	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	High turnover slowed development of governance structure and fewer participants participating in evaluation Downsizing caused EMs difficulty obtaining release time to conduct ergo surveillance activities
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	PAR design WOULD HAVE helped in designing materials (p 300) Worker-centered, bottom-up approach in setting such as this (with conflicting interests) requires a top-down implementation procedure to create supporting environment for change (p 301).
<input checked="" type="checkbox"/> Barrier	Time-frame: 3-year time frame too short to fully implement/document the effects of an intervention of this magnitude. Evaluation of pilot project too brief to capture full story.

Research Question:	
To describe and evaluate the realization of the co-education programme, where the programme is a tool of change.	
Document Characteristics:	
Jurisdiction	Uddevalla, Sweden
Industry / sector	Manufacturing
Reason for PE intervention	Production
Context of Document	The Volvo Udevalla plant organization was based on the notion of few hierarchial organizational levels, small self-piloting teams and delegation of responsibilities and decision-making in order to create an environment which was both physically and psychologically of high quality. One goal of the plant was to make the development of the production technology a joint venture between operators and manufacturing engineers. One overall aim was to re-create professional craftsmanship. p 417 Individuals at all levels within the organization seemed hesitant about the new concept. p 418
Organizational structure of PE teams:	
<u>Team structure:</u> <input type="checkbox"/> Steering committee <input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input checked="" type="checkbox"/> Change team	
<u>Worker involvement:</u> <input checked="" type="checkbox"/> Describing nature of work <input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input checked="" type="checkbox"/> Risk analysis <input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	The two pilot courses were administered by the project group from the department with involvement from the occupational health centre. After the pilots it turned to the OHC of the plant to continue the education programme. University based 'expert'
Training recipient:	operators, engineers and their respective managers
Nature of training	The relative strengths and weaknesses of the human being. Anthropometry demonstrated and consequences analyzed. Rating scales (Borg), checklists and systematic method of documenting body positions (OSWA) taught. Dialogue - iterative process of problem analysis, identifcaiton of user (operator) requirements, ideas for solutions, requirements in technical terms (mech eng), ideas for solutions & concept proposal (mech eng), concept decision (op), development of prototype (mech eng), evaluation of prototype wrt goals & requirements plus proposal for change (op & me). i.e. continuous cooperative development in a concrete but formalized way. p 419
Length of training	One half day a week for 6 weeks (total 24 hours). Six weeks, formally for each group. Two groups.

Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: safety engineer & occ health nurse in house after first two courses
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	One half day/week x six weeks formal training plus change & development time on practical trial projects to be included in their normal daily work. p 418	
Meeting length	Formal training sessions - half day. Unclear re project groups development work on trial projects	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	An enclosed truly participative internal change process is needed; Support for one of the actors with less experience/training; Man eng - management support all positive. Operators spread over positive and negative.	
<input type="checkbox"/> Barrier	Spontaneous comments concerning the need for more support from their managers.	

<input checked="" type="checkbox"/> Ergonomics training	
<input checked="" type="checkbox"/> Facilitator	Ergonomic expert knowledge must be readily available; Having the course administered by the Occ Health Centre.
<input checked="" type="checkbox"/> Barrier	Course too easy, not enough precise criteria and levels of acceptability re loads.
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Wanted management to confirm dialogue model.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Create appropriate team	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	OHC never managed to become an integrated part of development activities, despite support for the idea, role unclear and should have been more specified. Managing engineers - too dominant in groups, so operators frustrated re cooperation.
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Expertise of the operators and manufacturing engineers beneficial to the development of the plant - so Kaizen projects initiated.
<input checked="" type="checkbox"/> Barrier	Further development concerning roles and responsibilities needed.

Document: Halpern, 1997 (7)

Research Question:	
The case study documents the design, implementation and ultimately the performance of a participatory ergonomics program.	
Document Characteristics:	
Jurisdiction	US - Western
Industry / sector	Manufacturing
Reason for PE intervention	Injury rate
Context of Document	Increased operations and production volume rapidly, resulting in increased claims. Change in compensation system. The 50 workers performing manual sewing tasks - repetitive tasks in assembly line process
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group
<input type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
<input type="checkbox"/> Not involved	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
Training provider:	Ergonomist
Training recipient:	2 groups - design committee had 2 days and workers in assembly received awareness education
Nature of training	For design committee - ergonomic principles, risk analysis and workstation design guidelines. For awareness education for workers the content was how to use equipment properly, proper posture and techniques
Length of training	2 days for design committee. For awareness training it is unclear
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary
<input type="checkbox"/> Unclear	
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
<input type="checkbox"/> Delegated	
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization
<input type="checkbox"/> Group of Organizations	
<u>Decision Making:</u>	
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation
<input type="checkbox"/> Group Delegation	

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input type="checkbox"/> Problems Identification	<input type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input checked="" type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Analysis and design committee working in conjunction with medical and claims management team led to coordinated effort that was successful	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Personnel turnover		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Increased awareness led to increased reporting of symptoms turnover and movement of workers from one process area to another	
<input checked="" type="checkbox"/> Other		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Increased reporting of symptoms	

Research Question:		
The purpose of this paper is to study (1) the initiation of the change process with the TUTTAVA programme in the case of poorly developed co-operation between the management and workers and (2) to study the possibilities of combining ergonomic improvements in the work environment with the participatory behaviour programme.		
Document Characteristics:		
Jurisdiction	Finland	
Industry / sector	Manufacturing	
Reason for PE intervention	Injury rate	
Context of Document	Employment in the case company was more secure in 1994 than in the years before (p305). About 300 employees worked in the shop; 60 of them were white-collar workers. In 1989 the Finish railways was reorganized and became a state-owned company. This meant growing competition with private sector for the workshop, and the need to improve competitiveness in prices.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	Not reported	
Training recipient:	supervisors, designers and workers	
Nature of training	lectures and practical exercises focusing on solving concrete problems of the participants	
Length of training	5 days	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Not reported
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Resources		
<input checked="" type="checkbox"/> Facilitator	Time is needed for technical improvements, especially when the people at the shop themselves design and produce new equipment. The willingness to give money and working time for technical improvements.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Easy changes first		
<input checked="" type="checkbox"/> Facilitator	Focusing into order of tools and materials in work stations; an area in which both the management and the workers are very interested in, and where it is fairly easy and cheap to get rapid and visible changes.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Working relations	<p>The management and the workers together solved many practical problems, and got results which they both wanted. Management and union agreed about the need for improving the competitiveness of the engineering shop. They also agreed that the developing of work methods and practices was one way to do this. This might be one precondition for success. Together with the management they also were able to carry out many of their ideas to develop working conditions. This seemed to change the climate. Both the workers, supervisors and the management expressed that the project had improved co-operation.</p>
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Climate of workplace	<p>There was a strong sceptical climate among the employees. Positive experiences improve trust and co-operation.</p>
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	<p>Three or four departments were the maximum number of departments under development project at one time in this case.</p> <p>One explanation for the success of TUTTAVA projects may be the subject itself. Both the management and the workers are interested in developing industrial housekeeping.</p>
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	

Research Question:	
This article describes how a program was developed to fit the organizational needs and budgetary constraints of the Library of Congress and summarizes some of the lessons learned about implementation.	
Document Characteristics:	
Jurisdiction	Washington DC, USA
Industry / sector	Information and Cultural Industries
Reason for PE intervention	Injury rate
Context of Document	Strong upper management and union support due to increase in injury rate; library concern with ergonomics since 1980 when increase in VDT workstations/early efforts to train staff in prevention, esp in two depts with active and interested union; program expanded to cover staff across all departments.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown
<input type="checkbox"/> Change team	
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed <input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Training provider:	External ergonomists AND key trainers (I think these are trained by external ergos)
Training recipient:	1. Staff designed to write program document. 2. Staff expected to implement the ergonomics process (departmental committee members and design staff) , and 3. Staff designated to become key trainers.
Nature of training	For 1 (above): Seminar and hand-on surveillance/analysis experience to prepare staff to write the program document. For 2 (above): Seminars on surveillance and job analysis and design (half of which time devoted to hands-on experience). For 3, train the trainers on surveillance and analysis
Length of training	1. 18-hour seminar 2. 3 4-day seminars 3. unclear how long it took to train the trainers
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary <input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations

<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: librarian of congress
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	coordinating (steering) committee met monthly p 141. Unclear how often other groups met	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Buy-in by top level management is critical to success. There were no dramatic changes at the Library until that occurred. Buy-in brought resources.	
<input checked="" type="checkbox"/> Barrier	Surveillance and analysis in an environment is not productive if management will not follow through with implementation.	
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Consultation throughout the ergonomics process with staff and management is important for the success of the interventions and provides a boost to morale in times of constraint. Sharing information for change throughout the organization and equalizing access to information are both important features.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Detailed plan	
<input checked="" type="checkbox"/> Facilitator	Moving slowly and implementing a program in pieces gives both staff and management time to accept new ideas and to evaluate and modify program elements.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Professional assistance scheduled at regular intervals during start-up and periodically thereafter.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Clerical assistance is needed to support the volunteers who manage such a program.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	Selection of surveillance and analysis projects in offices where there will be a high probability of success.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Change resistance	
<input checked="" type="checkbox"/> Facilitator	Rational change can be a persuasive tool to bring reluctant managers and staff on board.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Bottom-up empowers workers to effect change in their environment and results in employee commitment and involvement.
<input type="checkbox"/> Barrier	

Research Question:	
The purpose of the project was to evaluate the effectiveness of the participatory approach to solving ergonomics problems in a demonstration project in the red meat packing industry.	
Document Characteristics:	
Jurisdiction	USA
Industry / sector	Agriculture, Forestry, Fishing and Hunting
Reason for PE intervention	Injury rate
Context of Document	Not an experimental design, they are not able to draw definite correlations although program started in 1986, written program not completed until 1992 - delay due to decision to use OSHA ergo guide as template and it wasn't finished until 1990
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group
<input type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
<input type="checkbox"/> Not involved	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Unclear/not reported
Training provider:	for committees training is given by corporate ergonomics coordinator; for all employees - the trainer is not reported
Training recipient:	training of all members of each ergonomics committee to develop ergonomic skills -all employees receive training about ergonomics principles and injury prevention and topics about how employees can participate in the program - also engineering and maintenance, supervision, management and health care providers
Nature of training	proper and safe work methods; the physiology and symptoms of cumulative trauma disorders and means of prevention, coping and treatment. proper and safe work methods, the physiology and symptoms of CTDs and means of prevention, coping or treatment (for hourly workers), for ergo committees training to develop ergo skills - for others the nature of training is unclear
Length of training	Not reported
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary
	<input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
	<input type="checkbox"/> Delegated

<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	In supplemental paper (#91) the team met 5 times	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Crude incidence rate increased with program - likely due to training on early recognition and reporting of MSD.	
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Brainstorming part of process; Ability to work with engineers to develop tools; Meetings were focused, had a scientific approach and were cooperative	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	Teams were a good size, properly balanced between labour and management and representative of all parties; Info from workers performing the jobs was adequately represented in the teams activities.
<input checked="" type="checkbox"/> Barrier	Attendance problems, team dynamics
<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Effective team leadership appeared to be important Good leadership and things did get done; One team leader was more personable and more accommodating and appeared more interested in program therefore there was better communication, participaiton and enthusiasm in this group
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Scheduling meetings.
<input checked="" type="checkbox"/> Research methods	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	A few times solutions were proposed prior to data collection being completed
<input checked="" type="checkbox"/> Other	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Reporting of injuries in U.S. meat products industry may have increased following OSHA citations in 1987 and 1988 There was a suggestion of a downward trend prior to the ergo program which may be from other significant interventions the corporation was implementing

Research Question:	
The purpose of this study is to outline the role of the industrial doctor in planning and implementing ergonomic measures for reducing low-back pain, and in fostering worker participation in the improvement process	
Document Characteristics:	
Jurisdiction	Japan
Industry / sector	Manufacturing
Reason for PE intervention	Injury rate
Context of Document	In Japan, QC circles are a popular method of small-group quality control of production, and are characterized by: (1) worker participation in the improvement process; (2) small-groupwork, (3) multi-faceted solutions for existing problems, (4) practical, simple, low-cost measures.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group
<input type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
	<input type="checkbox"/> Not involved
	<input checked="" type="checkbox"/> Unclear
<u>Champion described:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input checked="" type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Unclear/not reported
Training provider:	Not reported
Training recipient:	The working group
Nature of training	(A) Education program. (a) The structure and function of the low back. (b) The main causes of low-back pain in the workplace: (1) The handling of heavy materials. (2) Poor low-back posture; i.e. bending forward, squatting, bending backward and sideways. (3) Sitting in a restricted posture for long periods of time. (4) Vibration of the whole body, etc. * (1) and (2) were the main topics of education in this case. (c) The main practical ergonomic principles to reduce low-back pain: (1) Reduce the load of heavy materials handled. * Minimize the transport and handling of heavy materials. * Minimize and improve the efficiency of heavy lifting. * Change heavy materials to lighter ones. * Use carts/put wheels on containers and equipment. * Move materials at working height. * Use mechanical aids for more efficient and safer lifting. (2) Reduce the load being handled while bending forward and/or squatting. * Change work height (height of work or worker) to work at elbow height. * Keep working position close to a body. * Use a chair for work rather than a bending posture. * Place materials in special storage units, not on the floor. * Use multi-level racks. * Use mechanical aids to avoid a bending posture. (d) Prioritizing the ergonomic measures. * Focus on practical, simple, low-cost improvements. (e)

	Information on example of improvements. * Provide examples of improvements made in other workplaces. (f) Method of evaluating the improvements. * Provide a simple method of self-evaluation. (g) Group work and participation. * Educate the necessity of group discussion of improvement actions. * Facilitate workers in making the improvements for themselves. * Present their proposals and improvements to their department. (B) Action program. (a) Continuous advice for workers. * Continuously advise workers on the improvements. * Continuously remind workers of the goal of the measures. * To minimize the load of materials being handled and the time spent bending forward. (b) Advice for managers * Advise management to help workers develop the improvements. * Advise management to budget for the improvements.
Length of training	Not reported
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u> <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Temporary <input type="checkbox"/> Unclear	
<u>Involvement</u> <input type="checkbox"/> Full Direct <input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated	
<u>Level of Influence:</u> <input checked="" type="checkbox"/> Department/Work Group <input type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations	
<u>Decision Making:</u> <input type="checkbox"/> Individual Consultation <input checked="" type="checkbox"/> Group Consultation <input type="checkbox"/> Group Delegation	
<u>Mix of Participants:</u> <input checked="" type="checkbox"/> Workers/Operators <input checked="" type="checkbox"/> Internal/technical specialist <input type="checkbox"/> Supplier <input type="checkbox"/> Supervisors/ Line Mgmt <input type="checkbox"/> Union <input type="checkbox"/> Cross-industry rep <input type="checkbox"/> Senior Management <input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u> <input type="checkbox"/> Compulsory <input type="checkbox"/> Voluntary <input checked="" type="checkbox"/> Not reported	
<u>Focus:</u> <input checked="" type="checkbox"/> Tools/equipment <input checked="" type="checkbox"/> Work processes <input type="checkbox"/> Workplace organization	
<u>Remit:</u> <input type="checkbox"/> Set-up/ Structure Process <input type="checkbox"/> Problems Identification <input checked="" type="checkbox"/> Implementation of change <input type="checkbox"/> Monitor/ Oversee Process <input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u> <input checked="" type="checkbox"/> Initiate and Guide Process <input checked="" type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved <input checked="" type="checkbox"/> Acts as Expert <input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u> <input type="checkbox"/> Ergonomists <input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Others: Industrial doctors	
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	Not reported
Meeting length	Not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u> <input checked="" type="checkbox"/> Tools and equipment <input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented <input type="checkbox"/> Work processes <input type="checkbox"/> Unclear	
<u>Effect of intervention:</u> <input checked="" type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> No effect	
<u>Material resources addressed:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear	

<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Not reported/unclear	
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Ergonomics training	
<input checked="" type="checkbox"/> Facilitator	Stressed to workers in education that main causes of low-back pain are not individual but environmental ones. This adequate education facilitated ergonomic improvements.
<input checked="" type="checkbox"/> Barrier	Workers knowledge of individual causes of low-back pain such as lack of exercise and obesity slowed the development of ergonomic improvements
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Repeatedly discussed improvement measures with workers.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	Emphasized effectiveness of participatory involvement with small work groups
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Industrial doctor advised manager to cooperate on implementation of measures and approval of budget.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Almost all workers had been previously trained in participatory improvement actions (quality control circles)
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	Stressed practical, simple, low cost measures should have priority.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Proposed practical ergonomic principles like facilitators.
<input type="checkbox"/> Barrier	

Research Question:		
To evaluate a PE approach to reduce mental and physical workload. (p. 390)		
Document Characteristics:		
Jurisdiction	Netherlands	
Industry / sector	Public Administration	
Reason for PE intervention	Risk factor	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	apparently the ergonomists	
Training recipient:	all of the staff	
Nature of training	how to adjust their workplace once they got new equipment	
Length of training	not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input checked="" type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported

<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Important to have workers identify the problems and develop ideas for improvement along with managers; Discussions with all workers.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Time consuming - central purchaser could have been a part of the steering committee	
<input checked="" type="checkbox"/> Resources		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Approach is very time consuming; it took about a year to implement the improvement (p. 395)	
<input checked="" type="checkbox"/> Working relations		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Process slowed down because central purchasers not convinced of need for items (3.7)	
<input checked="" type="checkbox"/> Change resistance		
<input checked="" type="checkbox"/> Facilitator	Resistance to change led to priorities of the project, maybe a willingness to accept change?	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Without worker participation the additional ideas would not have been invented
<input checked="" type="checkbox"/> Barrier	With more direct participation, more workplaces could have been improved

Research Question:	
Case study 1: The purpose of the NIOSH cooperative agreement with the university group directing this demonstration was to create functional ergonomic teams that could develop, document and validate ergonomic activities that could reduce cumulative trauma disorders and other related injuries and illnesses in the meatpacking industries. Case study 2: The proposed goal of the program was to establish a company-wide employee-involved continuing program to: reduce the amount of physical stress in the workplace; prevent internal damage to the body; and reduce the cost of work-related injuries and illnesses. Case study 3: An ergonomics program was set up, consisting of teams that would attempt to decrease the severity and cost of CTD illnesses among plant employees.	
Document Characteristics:	
Jurisdiction	USA
Industry / sector	Manufacturing
Reason for PE intervention	Injury rate
Context of Document	Above
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown
<input type="checkbox"/> Change team	
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed <input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
<input type="checkbox"/> No	
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Training provider:	Case study 1: The ergonomist assisted with this training. Case study 2: corporate ergonomics coordinator. Case study 3: principal investigator
Training recipient:	Case study 1: The ergonomic task force members. Case study 2: all staff for general training, then the ergonomics committee received additional training
Nature of training	Case study 1: Team building sessions designed to enhance their ability to work together. Ergonomics instruction in defining risk factors for CTD and ways to prioritize jobs for ergonomic solutions. Case study 2: proper and safe work methods, the physiology and symptoms of CTD, and means of prevention, coping, or treatment. Ergo team training: MSD risk factors,
Length of training	Case study 1: not reported Case study 2: not reported Case study 3: 1.5 hours of training
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary <input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated

<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Case study 1: The ergonomic teams met formally at least twice every month Case study 2: Teams submit monthly reports, but meeting numbers not explicit Case study 3: 10 meetings overall	
Meeting length	Case study 1: not reported. Case study 2: not reported. Case study 3: one hour meetings	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Strong in-house direction and support	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Ergonomic expertise. Training must develop both teamwork and ergonomic skills.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Realistic measurable goals need to be set and communicated. Evaluation criteria must be planned.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	Teams should include supervisors, maintenance and/or engineering staff (who will actually implement the recommended changes), as well as production workers engaged in the job being studied.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Time
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Ergonomic expertise. Training must develop both teamwork and ergonomic skills.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Access to information such as illness and injury data is vital to proper team functioning.
<input type="checkbox"/> Barrier	

Research Question:	
This study evaluates the impact of employee ergonomics training within a large industrial setting. It examines the effects of three different training methods upon employees' knowledge, attitude and behaviour.	
Document Characteristics:	
Jurisdiction	Midwestern State, US
Industry / sector	Manufacturing
Reason for PE intervention	Research
Context of Document	Factory at a large midwestern manufacturing industry. The researcher was allowed access to all workers within five processing lines. These lines were identified as having recorded physical injuries within the past 6 months. The percentage of employees having sustained injuries...ranged from 14 to 32%. These positions were regarded as high risk jobs.
Organizational structure of PE teams:	
<u>Team structure:</u> <input type="checkbox"/> Steering committee <input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input type="checkbox"/> Change team	
<u>Worker involvement:</u> <input checked="" type="checkbox"/> Describing nature of work <input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input checked="" type="checkbox"/> Risk analysis <input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	Not clear: occupational therapist and safety professional?
Training recipient:	Groups 2, 3, 4
Nature of training	The second group received lecture-based ergonomics training only. Group 3 received the same lecture-based training with the addition of ergonomic job redesign improvements. Group 4 comprised the line workers, their supervisors and an occupational therapist. Members received the same lectures as the other two groups plus participatory training in which they attended a series of weekly meetings
Length of training	Not indicated
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u> <input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Unclear	
<u>Involvement</u> <input checked="" type="checkbox"/> Full Direct <input type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated	
<u>Level of Influence:</u> <input checked="" type="checkbox"/> Department/Work Group <input type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations	

<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input checked="" type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input checked="" type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input checked="" type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Safety professional
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	a series of weekly meetings (group 4)	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Job design changes in the form of purchasing new equipment and rearranging the work area, and the allotment of time on the job to discussion surrounding job improvements could have been perceived (by groups) as a serious commitment on the part of management to effect change and promote their well-being (p. 253)	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Communication		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Other factors such as the short length of time in which the employees participated in discussions, the discontinuation of the meetings following three weeks of intervention and the fact that not all of their issues were addressed may have affected their perception of lack of empowerment.	

<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Not all of the changes recommended by the researchers for Group 3 or the changes recommended by members of Group 4 were implemented. Primary reasons for this were financial and organizational constraints within the organization.

Document: Vink, 1997 (49)

Research Question:		
To apply and evaluate the participatory ergonomics approach to reduce the physical workload in scaffolding.		
Document Characteristics:		
Jurisdiction	Netherlands	
Industry / sector	Construction	
Reason for PE intervention	Risk factor	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input checked="" type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input checked="" type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	Not reported
Meeting length	Not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative <input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Feedback in meetings gave the workers the opportunity to influence the process
<input checked="" type="checkbox"/> Barrier	Limited evaluation - perhaps a discussion on results of the evaluation would stimulate the implementation more; by more direct participation in this phase more improvements could be implemented due for instance to communicating positive experiences.
<input checked="" type="checkbox"/> Detailed plan	
<input checked="" type="checkbox"/> Facilitator	Stepwise approach with strong enterprise participation step by step process structured the process and gave feed forward information
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Worker involvement led to additional improvements (cleaning the scaffolding)
<input type="checkbox"/> Barrier	

Research Question:	
The broad goal of this research was to reduce the incidence and prevalence of injuries and illnesses to construction workers. The imminent question is not so much what to change, but how to change and who will affect [sic - effect] that change. [implicit] Multi-method evaluation of a participatory method of identifying, evaluating and controlling health hazards in construction.	
Document Characteristics:	
Jurisdiction	Boston, Massachusetts USA
Industry / sector	Construction
Reason for PE intervention	Injury rate
Context of Document	Large, ongoing publicly-owned public works construction project Multiple sites and contractors. Appears unionized [stewards mentioned in several committees] though not explicitly stated.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group
<input type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
<input type="checkbox"/> Not involved	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
Training provider:	researchers? (not explicitly stated)
Training recipient:	Health Trak committee members, including site safety people, foremen +/- other managers, stewards +/- other workers - latter sometimes in toolbox meetings
Nature of training	Risk mapping of hazards in the workplace, design of a data collection instrument
Length of training	Part of one hour HT cttee meetings each week - unclear how much overall
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary
<input type="checkbox"/> Unclear	
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
<input type="checkbox"/> Delegated	
<u>Level of Influence:</u>	
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization
<input type="checkbox"/> Group of Organizations	
<u>Decision Making:</u>	
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation
<input type="checkbox"/> Group Delegation	

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Weekly over 8 week cycle	
Meeting length	one hour	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Participant observation by researchers very important for suggesting interventions and evaluating HT.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Communication		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Limited communication across shifts. Poor communication on a construction site.	
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Scope of goals for each cycle has to be laid out in advance and in proper perspective. Focused agenda on particular kind of work (after going through two previous HT cycles).	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	A strong committee is needed to generate change. Stewards and foreman play key leadership roles on site and are responsible for the day-to-day negotiations that resolve the constant contradictions arising between production pressure and safety and health.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Eight weeks was too short to implement many changes.
<input checked="" type="checkbox"/> Easy changes first	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Too large goals, unsuccessful; too small, little impact.
<input checked="" type="checkbox"/> Working relations	
<input checked="" type="checkbox"/> Facilitator	Good collaboration of stewards and foremen across trades in the development of intervention ideas.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Climate of workplace	
<input checked="" type="checkbox"/> Facilitator	Main barrier: Culture of construction made implementing solutions hard. 'The workers have the knowledge but feel they do not have the power and are willing to put up with the status quo. The managers have the power but are unwilling to spend money unless they feel it is necessary.'
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	No real decision-making authority in some cycles.
<input type="checkbox"/> Barrier	

Research Question:	
To apply in a practical way research on at least 10 new user-friendly non-powered hand tools, and to make these tools available to the users at the end of the project and to generate acceptance and understanding of the new qualities of the improved tools in the whole chain of actors in the Swedish hand tool industry. The aim of this article is to describe and analyze the process of a user-centred large-scale product development programme.	
Document Characteristics:	
Jurisdiction	Sweden
Industry / sector	Manufacturing
Reason for PE intervention	Risk factor
Context of Document	The Swedish Working Life Foundation was established to provide financial support for various improvements to the working environment. This indicates that the project was bigger than these companies, there was a larger initiative in place. The administrator of the SWLF was replaced. A requirement that competition between companies should not be influenced.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team	
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed <input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported
Training provider:	Not reported
Training recipient:	20 people involved in hand tool sales and hand tool choice/purchase
Nature of training	encouraged the spread of new information above all to the distributors
Length of training	2 full days
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary <input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization <input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>	
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation <input type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input checked="" type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Not reported
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Design and ergonomic support for the working out of improved tools.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Continuous information and communication is critical, particularly in times of struggle and delays in projects identifying enthusiastic persons within the participating organizations is vital; Successful elements of the process: kick off meeting, mapping	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Successful elements of the process: kick off meeting, mapping process, prototyping, piloting	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	The assignment of each group could have been more specified in the early stage of the project	

<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Financial support intended for the procurement of expert competence necessary in order to work out the new qualities of the tools.
<input checked="" type="checkbox"/> Barrier	The need of time for change is difficult to estimate and plan and varies for different professional groups Delays in decision making concerning providing financial support.
<input checked="" type="checkbox"/> Research methods	
<input checked="" type="checkbox"/> Facilitator	The case study strategy proved to be useful in describing and understanding the process of the SHTP. The qualitative methods- open observation and critical event interview provided complementary data. The open observation method facilitated an understanding of the overall process and the components in the programme. The critical event interviews provided an identification of the significant events of the programme.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Personnel turnover	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Change of administrators in SWLI caused significant delays in schedule ;
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	Difficulties can occur in keeping the interest up all through long projects Concerns about patents and secrecy delayed manufacturers and distributors coming on board (p. 379) .

Research Question:		
The intention of this paper is to discuss some of the advantages and disadvantages in the context of a new case study, the redesign of an incinerator plant's crane control room. In particular the intention is to discuss the use of participative methodology for workplace redesign with a blue collar workforce. To use a case study to look at the nature of participation - to illustrate where we got it wrong as well as where we got it right, and why in both cases.		
Document Characteristics:		
Jurisdiction	Nottingham UK	
Industry / sector	Administrative and Support, Waste Management and Remediation Services	
Reason for PE intervention	Risk factor	
Context of Document	Crane drivers work long hours and seem to be understaffed considering the importance of this role. Constraints of a limited company budget. Crane operators (5) work substantially more than 40 hr/wk, have irregular shift system and for much of the year only occasionally work less than a 12-hr shift. Morale is high due to good attitudes, site supervision and the remaining workforce.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported

<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	The paper describes 7 stages, but did not state how often the group met for each stage. They went on 3 visits to other cranes as well.	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Improved workers' knowledge and confidence with consequent greater success in achieving workforce involvement in other change at different levels. Drivers mechanical skills used in building alternative control and seat set-ups.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Research methods		
<input checked="" type="checkbox"/> Facilitator	One ergonomist trained to operate crane - helped with understanding job and building trust	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Production requirement		
<input checked="" type="checkbox"/> Facilitator	Solutions were not better than what would have resulted from ergonomics consultant - but participative process gave benefits - problems and causes were the "drivers' own" - the order of priority in attacking problems was the drivers' own, they determined where greatest effort in investigation and commitment in redesign should be put. Better chance of solution acceptance - process meant drivers were happy and no later dilution or rejection of the proposals by management. Involvement in building and design led to acceptance.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Awareness of PE program	
<input checked="" type="checkbox"/> Facilitator	Nature of change agent and ability to facilitate critical - training to perform job was critical for acceptance.
	Ergonomists left process early and 2 problems arose - room too dark and controls were found to be unavailable from supplier.
<input checked="" type="checkbox"/> Barrier	After change agent left, no one individual or group had a feeling of real ownership for the solution - caused misunderstanding of the solution. Also a barrier that process depends so much on the personnel (ergonomist) versus just the process itself. Needed to encourage an internal project champion before ergonomist/change agent left process.
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Operators were part of costing solutions in consultation with management. Participative process must be flexible and techniques adapted to situation.
<input checked="" type="checkbox"/> Barrier	Solutions were not necessarily seen as the "best" by the ergonomists, but they did not interfere because of confidence and interest gained in process - so felt it was important drivers develop their own solutions.

Research Question:	
P 86: "The ergonomic intervention had two purposes, one short-term (to assist employees in finding suitable solutions to their problems by using the results of the initial surveys and supplementary information from personnel's own work experiences to develop a hierarchical list of proposals for ergonomic intervention), the other long-term (to create an ongoing intervention programme, involving participatory problem-solving), to take care of future problems.	
Document Characteristics:	
Jurisdiction	Sweden
Industry / sector	Wholesale Trade, Public Administration
Reason for PE intervention	Injury rate
Context of Document	Downturn in economic climate had affected both organizations. P 88: In one of the organizations (Accounts Centre of Post Office), headquarters had initiated an independent demand-supply analysis, and not informed managerial staff in advance... "During the intervention programme sudden and unexpected changes to production were made that unsettled the working atmosphere at the AC." At the other organization, "The number of people... had been reduced by 40% to 12. But there were difficulties in arriving at an optimum number of employees in the exchange.... The situation was unstable, and everybody was waiting for some kind of notification from management concerning the future. Personal statistics showed virtually zero absenteeism among telephone operators. There was strong cohesiveness in the group. Nobody within it had any alternative job prospects." P 90: The subsidiary company to which the TE belonged was to be integrated into a larger company and, as a consequence, would disappear as an autonomous, self-contained organizational entity."
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group
<input checked="" type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
	<input type="checkbox"/> Not involved
	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Unclear/not reported
Training provider:	Not explicit, but apparently it was the ergonomist/researcher and possibly the psychologist.
Training recipient:	Operators, their supervisors and managers

Nature of training	As described in "The programme step by step" pg 86. "The first series of workshops was aimed at giving operators, their supervisors and managers a general knowledge of VDT work in occupational health terms: in particular, information and advice on how to utilize research results from the workplaces. The main objective was to increase consciousness of the hazards of VDT work, provide examples of existing problems, and discuss opportunities for improving the work situation. The workshops were held in the form of a number of separate small-group meetings."	
Length of training	Not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Psychologist
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear

Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Working relations <input type="checkbox"/> Facilitator	<p>"The interaction between the management level and the trade union side was intense, reflecting the conflicts that existed, and the offensive approach that was needed for the benefits of the intervention research not to be wasted away."</p> <input checked="" type="checkbox"/> Barrier <p>Other issues (discussion about working hours) "took up a considerable portion of meeting times on occasions when trade union negotiations were taking place, and there was not much time left for discussion how to handle the proposals and recommendations in the report prepared by the researchers."</p>
<input checked="" type="checkbox"/> Climate of workplace <input type="checkbox"/> Facilitator	<input checked="" type="checkbox"/> Barrier <p>"There was a shift in values among the managerial staff. The economic depression, which threatened the large organizations to which the workplaces belonged, gave rise to other problems that were more important to solve than job absenteeism and job-related ill-health. Decision-makers changed attitudes towards the report to the company delivered by the research team. The impact and cogency of its arguments were weakened."</p>
<input checked="" type="checkbox"/> Research methods <input type="checkbox"/> Facilitator	<input checked="" type="checkbox"/> Barrier <p>"A barrier of quite a different kind... concerns the researcher's relationship of ongoing dependence with the field. On what terms did he enter the field? What did he promise? What did the company promise? What restrictions are placed on a researcher compared with a practitioner?" The study goes on to discuss manager- vs researcher-initiated programmes.</p> <p>"The researcher is constrained, not least in terms of time, by the study design, and the passage of time inevitably required by an investigation... may not be in harmony with the time considerations and dependencies of the workplace."</p>
<input type="checkbox"/> Production requirement <input type="checkbox"/> Facilitator	<input type="checkbox"/> Barrier <p>Reorganization of the production schedule: "...management level closest to the VDT operators, the group supervisors, were concerned at the lack of time they had to devote to the intervention programme given the changes to production that were occurring simultaneously."</p>
<input checked="" type="checkbox"/> Personnel turnover <input type="checkbox"/> Facilitator	<input checked="" type="checkbox"/> Barrier <p>"The threat to employment that prevailed at the AC was cited as an explanation for why the immediate successful impact of the intervention programme on personnel's active propensity to improve ergonomics standards in the workplace was transformed into passivity." "The operators and their group supervisors considered it hard to envisage experimenting with a continuous participatory procedure such as that proposed in the intervention programme. In their view, the soil was not fertile enough for such an approach to enable improvements to be made to working conditions."</p>
<input checked="" type="checkbox"/> Other <input type="checkbox"/> Facilitator	<input checked="" type="checkbox"/> Barrier <p>A "goal dilemma" arises, which is concerned with obtaining a balance between what Rapoport calls research and client interests."</p>

Document: Bellemare, 2000 (78)

Research Question:		
To analyze the path taken from ideas retained in a brainstorming session to the implementation of change in the workplace.		
Document Characteristics:		
Jurisdiction	Quebec Canada	
Industry / sector	Manufacturing	
Reason for PE intervention	Risk factor	
Context of Document	Seven ergo groups produced 9 diagnoses leading to 40 change projects, 23 of which were carried out in 18 months	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	ergonomists	
Training recipient:	production employees, maintenance employees, first line managers, technical personnel, health and safety personnel(physicians, prevention reps, workplace health and safety advisors)	
Nature of training	"two of the eight training days were concerned with change"	
Length of training	eight days	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input checked="" type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	

<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	over the 18 months they had "regular meetings"	
Meeting length	not clear	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Ergonomists intervening in presentation of diagnosis gave weight to project. Need for technical skills in group and knowledge of organizational network both formal and informal. Ergonomist needs approaches that allow them to intervene in projects outside the engineering sector.	
<input checked="" type="checkbox"/> Barrier	Lacked tools to develop solutions in areas other than equipment/tools (e.g. organizational solutions) due to nature of training.	
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	Importance of project ownerships - first level managers involved. Project manager needed to be part of ergo groups. Needed to know decision circuits for the type of project - acquired by experience in plant. Steering committee authority to debate relevance of project and provide means to implement solutions. Program steering authority, presence of project owners on steering committee, presence of ergonomists, if the project was already planned, RELEVANT training.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Resources		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Money, involvement of project manager	

<input checked="" type="checkbox"/> Organizational training	Ergonomists intervening in presentation of diagnosis gave weight to project. Need for technical skills in group and knowledge of organizational network both formal and informal. Ergonomist needs approaches that allow them to intervene in projects outside the engineering sector.
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	

Research Question:		
This paper describes the results of an in-plant ergonomics program that demonstrates the participative approach to controlling work-related disorders. This study was undertaken to demonstrate the effectiveness of the participative ergonomics approach.		
Document Characteristics:		
Jurisdiction	Michigan USA	
Industry / sector	Manufacturing	
Reason for PE intervention	Risk factor	
Context of Document	Large auto assembly plant with strong union and management support	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Other: None reported
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	once per week
Meeting length	Not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Support of PE program	
<input checked="" type="checkbox"/> Facilitator	Full organizational support Support of union and management
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	Multi-function and multi-level team had strong role in every step of ergonomic process; Active involvement of hourly operators
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Able to get the resources needed in a very effective way.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Autonomy Dedication of committee members
<input type="checkbox"/> Barrier	

Research Question:		
This chapter will summarize how Eastman tailored its process elements into a protocol where continual ergonomic improvements are encouraged. Also highlighted will be the specific ergonomic tools used during the job analysis as well as some significant learning gleaned from the process implementation.		
Document Characteristics:		
Jurisdiction	Kingsport, Tennessee USA	
Industry / sector	Manufacturing	
Reason for PE intervention	Injury rate	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	Ergonomist	
Training recipient:	1)all employees in targeted divisions are trained. 2)all department team members	
Nature of training	1) Ergonomic awareness and instructions to promptly report any hazards they see. 2) Principles of ergonomics workshop to develop their skills at recognizing and solving ergonomic issues	
Length of training	1) one hour 2) 2 days	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	

Requirement for participation:		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
Focus:		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
Remit:		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
Role of PE facilitators:		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
Who were PE facilitators:		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
Changes implemented:		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
Effect of intervention:		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
Material resources addressed:		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Was there time to implement solutions		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Management committment is a must	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	A systematic process does not have to be complicated What gets measured gets done.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	The 'empowered team' approach gets the true experts involved and guarentees 'buy-in'	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> PE facilitator/champion		
<input checked="" type="checkbox"/> Facilitator	A strong focused catalyst is important	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Climate of workplace		
<input checked="" type="checkbox"/> Facilitator	Ergonomics is a cultural shift based on 'continual improvement'	
<input type="checkbox"/> Barrier		

Research Question:	
This paper uses a case study to discuss the development of a sustainable musculoskeletal injury prevention (MSIP) or ergonomics program within a long-term care facility in British Columbia using a collaborative consultative process.	
Document Characteristics:	
Jurisdiction	BC Canada
Industry / sector	Health Care and Social Assistance
Reason for PE intervention	Injury rate
Context of Document	Fairhaven has been involved with the provision of long-term care services since 1978 and has two sites, one with 100 beds and 100 employees (Site 1) and the other with 63 beds and 65 employees (Site 2). Both sites have a similar resident population, with low employee turnover and a well-established management team. From an environmental perspective, Site 2 is much older with greater physical challenges. Presently, site 2 is developing a new facility, which will be fully equipped with a patient ceiling lift system. Over the past years, Fairhaven has experienced rising musculoskeletal injury rates. In 1999 the site was targeted by the Workers Compensation Board as a “focus firm” due to its high injury statistics relative to other long-term facilities within the province.
Organizational structure of PE teams:	
<u>Team structure:</u> <input checked="" type="checkbox"/> Steering committee <input checked="" type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input type="checkbox"/> Change team	
<u>Worker involvement:</u> <input type="checkbox"/> Describing nature of work <input type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input type="checkbox"/> Risk analysis <input type="checkbox"/> Solution implementation <input checked="" type="checkbox"/> Unclear	
<u>Champion described:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	HBT i.e. outside consultants
Training recipient:	MSIP members (steering cmte) and employees
Nature of training	not reported
Length of training	not reported
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u> <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Temporary <input type="checkbox"/> Unclear	
<u>Involvement</u> <input type="checkbox"/> Full Direct <input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated	

<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input checked="" type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator Greater senior management involvement		
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier Skills building in ergonomic assessment and problem solving.		
<input checked="" type="checkbox"/> Communication		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier Enhanced employee communication.		
<input checked="" type="checkbox"/> Resources		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier Budgetary cuts and significant financial constraints.		

<input checked="" type="checkbox"/> Working relations	
<input checked="" type="checkbox"/> Facilitator	Teamwork within MSIP (steering committee)
<input checked="" type="checkbox"/> Barrier	Challenging labour relations.
<input checked="" type="checkbox"/> Personnel turnover	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Staff changes at all levels in the organization.

Research Question:	
P. 1913: This article describes the results of an analysis of the assimilation of ergonomic knowledge by nonergonomists during participatory ergonomics projects whose aim is the prevention of work-related musculoskeletal disorders (WMSDs). 470: The purpose of the project was to implement and validate a participatory ergonomics process in two industries in the electrical sector.	
Document Characteristics:	
Jurisdiction	Quebec Canada
Industry / sector	Manufacturing
Reason for PE intervention	Injury rate
Context of Document	1) During the last 15 years, participatory approaches have been promoted as a means of involving workers and management in a company's problem solving. 2) Objective was for industries (workplaces) to take charge of prevention, and to achieve this, a participatory process was implemented 470, p11.
Organizational structure of PE teams:	
<u>Team structure:</u> <input checked="" type="checkbox"/> Steering committee <input type="checkbox"/> Dept or work group <input type="checkbox"/> Unknown <input type="checkbox"/> Change team	
<u>Worker involvement:</u> <input checked="" type="checkbox"/> Describing nature of work <input checked="" type="checkbox"/> Solution development <input type="checkbox"/> Not involved <input checked="" type="checkbox"/> Risk analysis <input checked="" type="checkbox"/> Solution implementation <input type="checkbox"/> Unclear	
<u>Champion described:</u> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> Mixed <input checked="" type="checkbox"/> Not reported <input type="checkbox"/> No (lack of cooperation)	
<u>Issues about time to attend meetings reported:</u> <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear/not reported	
Training provider:	2 external ergonomists - though it is not entirely clear
Training recipient:	ergo committee: all 5 members of each ergo committee
Nature of training	During the analysis of the first work task, which was considered part of the basic training, the ergonomists were intimately involved in the analysis and solution finding, but their aim was to stimulate the group and help them become independent. The group members were encouraged to adopt critical questioning about the impact of the proposed solutions: impact on the work activity and work methods as well as on related work tasks, impact on safety and health, quality of production, impact on incidents, technical feasibility, and economic factors.
Length of training	9 hours
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u> <input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Temporary <input type="checkbox"/> Unclear	
<u>Involvement</u> <input type="checkbox"/> Full Direct <input checked="" type="checkbox"/> Direct Representative <input type="checkbox"/> Delegated	

<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: One other member of ergonomic committee
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Weekly	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Positive attitude of participants/support of co-workers: The support of coworkers was important for the operators in the working group. The operators said in the interviews (which was confirmed by the observations) that the coworkers' attitudes had developed positively during the project but that it was necessary to actively involve the coworker.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Use of concrete risk assessment & solution tools	
<input checked="" type="checkbox"/> Barrier	Difficulty that ergonomic team had in using checklist tool developed for this project eg: a) id of risk factors b) id of causal factors c) taking variations into account identifying risk factors	

<input checked="" type="checkbox"/> Climate of workplace	Company culture: In both participating companies, the participatory approach fit well into the company culture and was well received by both management and labour. In one of the companies, the supervisors and workers had been trained in teamwork during a period preceding the project. Thus, the proposed approach fit well into the company's philosophy.
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	

Research Question:	
This paper reports a multiple-case study of the implementation of a Participatory Ergonomics for Manual tasks program (PERforM) at four Australian underground coal mines during 2003-2005 funded by the NSW Coal Services Health and Safety Trust. The primary aim of the program was to reduce injury risks associated with manual tasks performed by miners. Examples of the risk assessments undertaken and resulting control suggestions are provided and lessons learned during the project are discussed.	
Document Characteristics:	
Jurisdiction	Queensland and New South Wales Australia
Industry / sector	Mining and Oil and Gas Extraction
Reason for PE intervention	Risk factor
Context of Document	Not applicable
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group
<input checked="" type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
<input type="checkbox"/> Not involved	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input checked="" type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
Training provider:	Not reported
Training recipient:	Teams of miners ("intact work teams") (p 6)
Nature of training	The topics covered included: mechanisms of injury associated with manual tasks; direct risk factors (exertion, awkward posture, vibration, repetition and duration); hazard identification and the use of a manual task risk assessment tool (using industry specific and workplace specific video footage) to assess the severity of the hazards; the importance of the hierarchy of controls; and the general strategies for eliminating and controlling manual tasks injury risks.
Length of training	Training sessions were 2 hours; workshops were 3 hours.
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary
<input type="checkbox"/> Unclear	
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
<input type="checkbox"/> Delegated	
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization
<input type="checkbox"/> Group of Organizations	

<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input checked="" type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Other: Unclear
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	A high level of 'buy in' from the supervisor was a factor that contributed to the successful and timely implementation of control measures. Required genuine commitment of managers. Equally important was that this commitment was perceived to exist by the workers.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	The use of industry and workplace specific video footage during the training session has again appeared to be an effective way of both conveying the skills and knowledge required, and also in maintaining motivation and attention of the trainees. Highly developed safety management systems in mines involved lead to opp for skills in manual task risk assessment and control to be utilised and for design changes to be implemented.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Communication	It appeared to be important, particularly given the delays that typically occur, that communication with the teams involved in a project was maintained. Even if there was no progress to report it was critical that workers understood that the process was still underway.
<input checked="" type="checkbox"/> Facilitator	Documentation of both successes and failures (p10) - this should be part of PE process; having engineers seek feedback from end users throughout process; having a number of experienced operators involved in the process (important at the "refinement" stage, where process had greatest potential to break down (p 11).
<input checked="" type="checkbox"/> Barrier	There were greater obstacles to communicate directly with employees on shiftwork. Engineers' lack of communication with end users throughout the cycle leading to failure to produce a product which satisfies the real needs.
<input checked="" type="checkbox"/> Create appropriate team	
<input type="checkbox"/> Facilitator	Failure to ensure sufficient participation in the implementation stages.
<input checked="" type="checkbox"/> Barrier	Lack of participation may be tied to experience with traditional top-down change implementation strategies (p 9)
<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	A person onsite who drives the process appeared to be essential - this person needed to have easy access to, and support from, management to proceed with projects. Sites where such a person did not emerge, or did not stay at the site, struggled to realise implementation of the suggested controls.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	The use of industry and workplace specific video footage during the training session has again appeared to be an effective way of both conveying the skills and knowledge required, and also in maintaining motivation and attention of the trainees.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	The initial implementation of quick controls, even if they are not the highest risk tasks, may be beneficial to maintain motivation.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Climate of workplace	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	The size of the organizations and the complexity of the workplaces created challenges for ensuring that the control suggestions resulting from the participative ergonomics process were evaluated, trialled and implemented.
<input checked="" type="checkbox"/> Personnel turnover	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Site staff turnover was a factor that effected the progression of control ideas at some sites.
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Sense of ownership over a control idea that was implemented (p 9)
<input checked="" type="checkbox"/> Barrier	Certifying new designs takes time. This can be frustrating for the workers concerned, and lead to a feeling of dissatisfaction with the process.

Research Question:	
This paper describes one participative multidisciplinary ergonomics program that focused on developing organization member expertise as a basis for ongoing ergonomic improvement. Little systematic research has addressed the effects of such ergonomic intervention (PE). This research attempts to fill this void.	
Document Characteristics:	
Jurisdiction	USA
Industry / sector	Manufacturing
Reason for PE intervention	Injury rate
Context of Document	The research site was a large meat-packing plant in the Midwest. The plant employs over 800 production employees and runs two shifts. The primary tools used are knives.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group
<input type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Yes	<input type="checkbox"/> Unclear/not reported
Training provider:	Ergonomist
Training recipient:	The five ergonomic task forces. Similar ergonomics training was later offered to all plant employees
Nature of training	a review of the causes of CTDs; a review of methods to identify and prioritize jobs for ergonomic solutions; team-work (enhancing their abilities to work together). Ergonomics Knowledge and skill
Length of training	Not reported
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary
<input type="checkbox"/> Ongoing	<input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
<input type="checkbox"/> Full Direct	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>	
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation
<input type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	met formally at least twice a month	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Top management should support the team.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	Ergonomics training - additional training in team task processes and more detailed ergonomics training should be available to teams after they have had some experience as a team; Sustained ergonomic improvement or improvement in less extreme conditions may require greater expertise and result in more subtle changes in employee physical discomforts and CTDs.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Communication <input checked="" type="checkbox"/> Facilitator <input type="checkbox"/> Barrier	<p>Team process issues include employee participation and team accountability - broad-based participation and communication with all employees is necessary to identify problem areas and increase the acceptance of solutions. Mechanisms allowing review of the teams' projects and their current status and priority are needed to enhance team accountability to the plant employees.</p> <p>Efforts should also be made to ensure that ergonomics teams continually document their activities through written records, videotapes (before and after), slides, and employee evaluations. This documentation process should be systematic and uniform in format so that projects and their outcomes can be objectively evaluated and compared.</p> <p>An ergonomics information system - any effective employee involvement ergonomics effort should provide ongoing feedback and information to the teams responsible for the ergonomics changes and to the top plant management. Members generally felt free to communicate with one another. Diversity of member backgrounds (in terms of departmental area an experience in multiple jobs)- the ability to listen to ane another -talk openly -talking with other non-team member employees doing the jobs in their department.</p>
<input checked="" type="checkbox"/> Create appropriate team <input checked="" type="checkbox"/> Facilitator <input checked="" type="checkbox"/> Barrier	<p>Team-related recommendations include composition - teams should be composed of production employees, medical staff and maintenance personnel. While top management should support the team, they should not be team members because they can inhibit member interaction. Members should also represent diverse jobs and experience levels. Team size should be small, approximately five, so that members can interact easily and develop significant ergonomic expertise. Members should choose team leaders to enhance the team's self-management. Teams should be given the authority to make ergonomic changes within specific budgetary constraints and access to the necessary resources and information. Team members must be formally released at times from other duties or compensated on an overtime basis to focus on ergonomic issues.</p> <p><input checked="" type="checkbox"/> Barrier They were less certain that their groups had good internal work process.</p>
<input checked="" type="checkbox"/> Resources <input checked="" type="checkbox"/> Facilitator <input checked="" type="checkbox"/> Barrier	<p>Team members must be formally released at times from other duties or compensated on an overtime basis to focus on ergonomic issues.</p> <p>Team resources - access to ergonomic expertise and information needed for problem-solving is important for team effectiveness.</p> <p><input checked="" type="checkbox"/> Barrier Less certain that they had the necessary information and resources to do their job. They did not receive adequate assistance and timely reponse from maintenance personnel in implementing solutions.</p>
<input checked="" type="checkbox"/> Organizational training <input checked="" type="checkbox"/> Facilitator <input type="checkbox"/> Barrier	<p>The success of the project was enhanced by drawing on an understanding of group dynamics and other employee involvement literature as well as ergonomics expertise and employee commitment</p> <p>Team-building training - additional training in team task processes</p>
<input checked="" type="checkbox"/> Easy changes first <input checked="" type="checkbox"/> Facilitator <input type="checkbox"/> Barrier	<p>Initial efforts by teams should focus on the identification and implementation of relatively easy ergonomic changes to build team efficacy. However, systematic analysis of jobs and work conditions must be emphasized later in the team's existence</p>

<input checked="" type="checkbox"/> Working relations	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Team observations revealed that conflicts existed between labour and management representatives on the Cut department team regarding what ergonomic issues to address.
<input checked="" type="checkbox"/> Production requirement	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Production pressure created problems in getting everyone to attend meetings. Lack of adequate time to work on ergonomics projects was seen as the primary factor inhibiting the teams' productivity.

Research Question:		
Abstract: "We describe the processes involved in an ergonomic program to reduce neck and upper limb WMSDs at a large Canadian newspaper." Using a qualitative approach, we address the following questions: (1) What were the expectations and intentions of the designers and implementers of the ergonomic policy? (2) How did other workers and managers perceive, understand, and account for implementation of the ergonomics policy? (3) How did ergonomics policy implementation interface with broader organizational processes, norms and structures?		
Document Characteristics:		
Jurisdiction	Toronto, Ontario Canada	
Industry / sector	Information and Cultural Industries	
Reason for PE intervention	Injury rate	
Context of Document	The paper focus on the impact of key contextual factors. Characteristics of the context will be noted as facilitators or barrier factors	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input checked="" type="checkbox"/> Unclear
<u>Champion described:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	p 234 (1): Train-the-trainers. p 103 (3): Researchers: Train-the-trainers program developed based on research findings and best practices.	
Training recipient:	Table 2 (1): Train-the-trainer, employees. HR staff	
Nature of training	How to do workstation assessments; awareness of RSI (p 234-1)	
Length of training	Not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input checked="" type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Other: Unclear
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input checked="" type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Management commitment is key, as in other workplace health and safety programs (Shannon et al., 1997). Implementation of the ergonomic policy benefited from the active support of several upper- and middle-level managers.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	"Supervisors' participation in the RSI training likely improved their understanding of MSD and provided them with problem-solving strategies, as exemplified by attitudinal and cultural changes around RSI documented in our qualitative research."	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Establishing understanding and building trust between workplace parties and outside researchers and consultants - requires open communication of assumptions, goals and interests; Efforts are required to establish understanding and build trust between workplace parties and outside researchers	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Nevertheless, involvement of outside researchers provided an important source of independent evidence upon which workplace parties could base their actions. It also provided additional accountability to the workplace parties' commitments.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Adequate resources and staff time are required, especially for time-consuming collaborative approaches to workplace change (Haims and Carayon, 1998).
<input checked="" type="checkbox"/> Barrier	Sometimes, in particular due to the expense of on-site physiotherapy, the RSI Program was seen as a drain on resources: "Financially it's a huge commitment for the company. Further, the lack of specific budget lines for certain items (e.g. furniture, ergonomic upgrades) was a constraint on preventive spending.
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Union involvement, experience and skill of program leaders, researcher involvement, organizational culture (latter mentioned as positive (generally) and negative (drive for success)? The experience and expertise of the health, safety and environment manager was central, as was the long experience with addressing RSI that other union and management members of the RSI Committee brought to the table.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Working relations	
<input checked="" type="checkbox"/> Facilitator	The union played a key role in putting broader organizational factors on the agenda and, through action on clauses in the collective agreement, invoking industrial relations strategies e.g. negotiation of more staff to reduce workload.
<input checked="" type="checkbox"/> Barrier	Finding a balance between union demands and employer action was a challenge. There were "debates" and even "battles."
<input checked="" type="checkbox"/> Climate of workplace	
<input checked="" type="checkbox"/> Facilitator	Practitioners "need to more explicitly grapple with the economic, institutional and social contexts of workplace interventions that hinder more upstream work." In the newspaper world, the company portrays itself as a liberal voice of compassion and conscience, with a commitment to progressive industrial relations. Such an organizational image provided a backdrop for the cooperative action required to develop and implement the ergonomic policy/RSI Program.
<input checked="" type="checkbox"/> Barrier	The company, like many, lacks a culture of employee participation in decision-making, with some departments deemed downright "authoritarian, top-down." Risk factors, such as job control, which relate to the distribution of power between workers and management, did not become a focus of RSI Committee activities, largely because the committee did not have a mandate to deal with them.
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	With multicausal conditions such as WMSD, proximate risk factors related to individual practices are generally more apparent to workplace parties than upstream organizational factors. The impact of organizational factors is more difficult to assess. Opportunities for employee involvement in decisions related to RSI (e.g. in re-design of our plans) were not fully exploited.

Research Question:		
The purpose of this study was to evaluate the effectiveness of a workplace PE intervention, with emphasis on assessing linked process implementation indicators, changes in exposures to WMSD risk factors, and potential improvements in musculoskeletal health outcomes.		
Document Characteristics:		
Jurisdiction	Ontario Canada	
Industry / sector	Other Services (except Public Administration)	
Reason for PE intervention	Risk factor	
Context of Document	amount of turnover and transfer between jobs that took place p.14?	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	not reported	
Training recipient:	The ECT - dock workers, couriers, a line haul driver, a mechanic, unit manager, admin assistant, HR manager, corporate health and safety regional manager and an ergonomic facilitator	
Nature of training	To provide the ECT with sufficient knowledge and skills to enable the assessment and control of WMSD risk factors, the team underwent a series of four training sessions, each lasting six hours, which covered basic ergonomic principles, identification and management of workplace risk factors, and tools to perform ergonomic assessments and 8 measurements.	
Length of training	4 sessions each lasting 6 hours	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	weekly for 7 months, then bi-weekly for 7 months (14 months total)	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Working relations		
<input checked="" type="checkbox"/> Facilitator	The PE project provided a good forum for workers to be heard and to voice concerns regarding ergonomic issues. Several representatives commented on the openness of the ECT meetings and the fact that everyone's opinion mattered, regardless of the position the person held in the organization.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Climate of workplace		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	During the course of the intervention, management repeatedly assured their commitment to the process, including resources for change projects. In practice however, while the ECT was very active in identifying problems and proposing solutions, procedures governing expenditures and existing operating structures were often a source of tension, which hindered the effectiveness of the team in implementing proposed changes. Hence intensity may not have reached effective levels.	

Document: Faville, 1995 (68)

Research Question:	
This paper describes the approach the Boeing Company's Everett Division chose to take during the development of their ergonomics program. The program also aimed to distribute ergonomic intervention costs over a number of years.	
Document Characteristics:	
Jurisdiction	Everett, Washington USA
Industry / sector	Manufacturing
Reason for PE intervention	Production
Context of Document	Factory program and office program described. The office program is based on responding to specific requests.
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group
<input checked="" type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
<input type="checkbox"/> Not involved	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input checked="" type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Unclear/not reported	
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Unclear/not reported	
Training provider:	ergonomists
Training recipient:	The cross-functional team members (shop supervisor and at least one employee, representatives from Industrial Engineering, Facilities, Tooling, Safety and Industrial Hygiene, and R&D) In office - safety focals received training
Nature of training	The class covers basic ergonomic principles and instruction in conducting ergonomic job evaluations. In office - office ergo training
Length of training	8 hours
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary
<input type="checkbox"/> Unclear	
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
<input type="checkbox"/> Delegated	
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization
<input type="checkbox"/> Group of Organizations	
<u>Decision Making:</u>	
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation
<input type="checkbox"/> Group Delegation	

<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Once a week	
Meeting length	unclear	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	For the team to continue, the shop needs very strong management commitment to the ergonomics effort or a pre-existing infrastructure or safety team to handle the program.	
<input checked="" type="checkbox"/> Barrier	Shop needs very strong management commitment to program or a pre-existing infrastructure or safety team in place to handle the program.	
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Follow-up by shop team or core member important to verify the effectiveness and appropriateness of solutions, but the step is often missed - need stronger follow-up and follow through on part of core team.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	The efforts of the program are more likely to succeed if coordinated by a safety team.	
<input checked="" type="checkbox"/> Barrier	Tendency for shop team to break up once core team moves on to next shop - therefore no follow-up on solution implementation and handling subsequent ergonomic issues. Efforts of program more likely to succeed if coordinated by safety team	

<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Dedicating one person from the core group to continue with the shop team may provide some continuity to the team to ensure actions and issues are being tracked and addressed as required.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Another reason for team loss is the time required for the solution to be implemented.
<input checked="" type="checkbox"/> Production requirement	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Extended time frame (5-10 months per ergonomics survey) due to number of jobs, production cycles and multiple shifts

Research Question:		
Presents solutions and means of getting to them- path from solution identification to implementation comparative analysis of these interventions with reference models (the initial design of the intervention, and action theories)		
Document Characteristics:		
Jurisdiction	Quebec Canada	
Industry / sector	Manufacturing	
Reason for PE intervention	Injury rate	
Context of Document	unionized, two plants, ongoing ergo groups	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	ergonomist	
Training recipient:	Ergo group members n+27, 7 groups	
Nature of training	4 modules (all including practical work): 1) a portrait of MSD 2) analysis of the risk factors of the task under study 3) analysis of the determinants of MSD risk factors 4) work situation transformation following diagnosis	
Length of training	8 days over 6 months, 2 days class and practical training module over 6 months	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	

<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Ergo groups: 1-2x per month	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program	Management in Plant A set precise limits on possible changes to work situations, including financial possibilities, made it easier to mobilize and obtain cooperation for projects.	
<input checked="" type="checkbox"/> Facilitator	To be more effective, a new principle of involvement would need to ensure the establishment of a steering committee with access to accurate information on the financial resources available for change, and access to the person with spending authority.	
<input checked="" type="checkbox"/> Barrier	Management not convinced regarding larger projects at their level would resolve problems.	

<input checked="" type="checkbox"/> Ergonomics training <input checked="" type="checkbox"/> Facilitator	<p>The need to define a principle that provides the outline of learning to be achieved from the beginning of the participatory ergonomic process. One of the success factors for continuity is the presence of formal and effective structures to recognize skills.</p>
<input checked="" type="checkbox"/> Barrier	<p>Insufficient knowledge of ergonomics to act alone without consultation of an expert. Training too short, limited in scope. Experience of ergonomic group members limited. Although in many cases participants wanted to develop projects in other sectors (process, work organization, working methods), they were unable to do so because they lacked tools derived from training or experience in the plant. Some of the limitations on work analysis potential due to the short duration of the training may also have been a contributing factor for the withdrawal of certain projects. All of the projects related to working methods required a lack of familiarity with a variety of operating methods that the group members simply did not have, causing them to abandon this type of project.</p>
<input checked="" type="checkbox"/> Detailed plan <input checked="" type="checkbox"/> Facilitator	<p>The transition should be planned at the beginning of the process, and the shorter the project, the more important the planning work. One of the crucial steps to ensuring that a change is implemented is the path leading from the idea to the project. This step requires not only the technical skills of the participants, but also a certain knowledge of the organization's networks, both formal and less formal.</p>
<input type="checkbox"/> Barrier	<p><input checked="" type="checkbox"/> Create appropriate team Coordination committee in plant A 'determining factor in bringing certain changes to a successful conclusion'. Complementary nature of ergo group members experience and skills. Maintenance technicians involved. <input checked="" type="checkbox"/> Facilitator Having the project manager as a member of the ergonomic group. To maximize the possibility that a project will be implemented, we emphasize the importance of the program steering authority, whose role is to debate the relevance of the projects and to provide the means of implementing them where necessary. The presence of the project owners, i.e. senior managers, on the steering committee is vital, especially for major or medium projects.</p>
<input checked="" type="checkbox"/> Barrier	<p>With regard to the projects for which a response was not received, in all cases the project owner was not a member of the program steering committee.</p>
<input checked="" type="checkbox"/> Organizational training <input checked="" type="checkbox"/> Facilitator	<p>The need to define a principle that provides the outline of learning to be achieved from the beginning of the participatory ergonomic process. One of the success factors for continuity is the presence of formal and effective structures to recognize skills</p>
<input type="checkbox"/> Barrier	<p><input checked="" type="checkbox"/> Easy changes first <input checked="" type="checkbox"/> Facilitator Large projects with new equipment or small projects with old equipment. Dividing up a large project into smaller projects.</p>
<input type="checkbox"/> Barrier	

<input checked="" type="checkbox"/> Awareness of PE program	
<input checked="" type="checkbox"/> Facilitator	Management had to regard the problem as important and had to be convinced that the proposed project would solve the problem.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	<p>Formal and effective structures to recognize skills.</p> <p>The tendency of the division between the designers and the producers to become re-established is encouraged by three factors: the scope of the design products, the increase in the workload of design product leaders and managers associated with a participatory approach, and the broadening of the projects to include other actors from outside the Ergo group.</p> <p>The greater the investment, the greater the need for convergence with other issues such as safety, environment and quality.</p> <p>The fact that the ergonomist intervened during the presentation of the diagnoses by the Ergo groups gave more weight to their work.</p> <p>The fact that a project was already planned was a major factor in favour of its implementation.</p> <p>Ergonomists need to develop approaches that will enable them to intervene in projects outside the engineering sector. A better knowledge of training management and work organization methods used by companies could be useful in developing intervention tools for ergonomists.</p>
<input checked="" type="checkbox"/> Barrier	<p>Mix of departments vs. one department.</p> <p>Situations less favourable to Ergo group effectiveness are those involving small projects and new equipment, or large projects and old equipment.</p>

Document: Hasle, 1997 (71)

Research Question:		
1) reduction of repetitive work in a Marzipan factory 2) Intervention in monotonous work in 5 companies		
Document Characteristics:		
Jurisdiction	Denmark	
Industry / sector	Manufacturing, Finance and Insurance, Accommodation and food Services	
Reason for PE intervention	Injury rate	
Context of Document	interventions carried out in 6 different companies - mergers, conflicts within the organization	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	once
Meeting length	2 days
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Support of PE program	
<input checked="" type="checkbox"/> Facilitator	Management must be willing to develop employee participation in overall strategy of company.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Ergonomics training	
<input checked="" type="checkbox"/> Facilitator	Upgrading of employee qualifications
<input checked="" type="checkbox"/> Barrier	Difficult for employees (especially in low qualified work with low level of control) to participate in decisions about change of their work, if decisions reach much further than the daily operation. Front-line workers inability to express their opinions about the future technology and organization with the result that they did not have as much influence as they might have if the interventions are not part of an overall corporate strategy.
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Platforms for dialogue and reflection must be created, including physical possibility to meet and assistance to develop dialogue and reflection.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Detailed plan	
<input checked="" type="checkbox"/> Facilitator	Necessary to plan in a long-term perspective over several years and include series of events which give employees the possibility to exercise their influence and develop confidence and skills in participation.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Upgrading of employee qualifications
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Working relations	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	In plastic co: serious conflict between prod manager and economic manager nearly closed the project.

<input checked="" type="checkbox"/> Personnel turnover	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	A merger of two factories within the bread company, and having the original manager released from duties at the bank required the project to be reformulated
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Government orders; union pressure
<input type="checkbox"/> Barrier	

Research Question:		
The aim of the study was to find suitable measures to improve the stress factors for employees.		
Document Characteristics:		
Jurisdiction	Tore, Sweden	
Industry / sector	Manufacturing	
Reason for PE intervention	Risk factor	
Context of Document	Re-arranged assembly work into flow groups to vary the physical stresses	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	not reported	
Training recipient:	the 'personnel' not indicated, but assumed individuals on assembly line (35 employees)	
Nature of training	training in questions concerning ergonomics and group work	
Length of training	not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported

<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Other: Not reported
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	not reported	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	The local manager and the supervisor gave very clear and active support to the work involved.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	It is also very important to have frequent informal discussions with personnel at all levels in the company, during the whole process of change.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> PE facilitator/champion		
<input checked="" type="checkbox"/> Facilitator	An applied ergonomist should also quickly learn how production is carried out, otherwise it is very difficult to gain the confidence of the management and employees.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Resources		
<input checked="" type="checkbox"/> Facilitator	The changes were at a reasonable level regarding cost and difficulty.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Organizational training		
<input checked="" type="checkbox"/> Facilitator	It is important to adjust to a company and its problems. Solutions should not only deal with the ergonomic aspects.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Research methods		
<input checked="" type="checkbox"/> Facilitator	Cooperation between the researchers and the employees.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Awareness of PE program	
<input checked="" type="checkbox"/> Facilitator	The problems and their causes were well-known and accepted by management. Management and employees could picture a credible alternative to the existing system.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Parallel activities ensured that the project did not lose tempo if one activity had to be slowed down.
<input type="checkbox"/> Barrier	

Research Question:		
The aim of these projects was to make the plants aware of the cost and other problems of work-related MSDs, and to help them start a prevention process.		
Document Characteristics:		
Jurisdiction	Quebec Canada	
Industry / sector	Manufacturing	
Reason for PE intervention	Risk factor	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	not reported	
Training recipient:	the working groups (operators, supervisors and in most cases, management and labour representatives)	
Nature of training	The basics of WMSD risk factors were taught and the methods of analysis were explained.	
Length of training	training continued throughout the project	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input checked="" type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input checked="" type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported

<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	7-10 meetings per group over a 6-10 month project	
Meeting length	not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	General management support and understanding of the seriousness of the WMSD situation	
<input checked="" type="checkbox"/> Barrier	Management interest vague or lacking and consequently, there was non-committment of middle management.	
<input checked="" type="checkbox"/> PE facilitator/champion		
<input checked="" type="checkbox"/> Facilitator	Enthusiasm of strategically placed key individuals The role of the ergonomist was important, as was the occasional presence of consultants.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Resources		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Lack of time and resources.	
<input checked="" type="checkbox"/> Easy changes first		
<input checked="" type="checkbox"/> Facilitator	Concrete results obtained early in the project.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Awareness of PE program		
<input checked="" type="checkbox"/> Facilitator	General management support and understanding of the seriousness of the WMSD situation.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Other		
<input checked="" type="checkbox"/> Facilitator	Economic incentives and perspective of law enforcement.	
<input checked="" type="checkbox"/> Barrier	Rapid changes in the business environment.	

Research Question:		
There were three main objectives: - to analyze the main organizational issues caused by the outsourcing and their effects on people and organizations - to identify some feasible solutions - to put into practice some of the identified solutions		
Document Characteristics:		
Jurisdiction	Rome, Italy	
Industry / sector	Public Administration	
Reason for PE intervention	Risk factor	
Context of Document	outsourcing issues	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input checked="" type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	10 workshops to share both the results of the organizational analysis and the objectives of the program.
Meeting length	not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input checked="" type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative <input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Support of PE program	
<input checked="" type="checkbox"/> Facilitator	Top and middle management have to be bold enough to empower and apply a policy of decentralization.
<input checked="" type="checkbox"/> Barrier	The most resistance came from the managers of administrations whose managerial style is focused on control.
<input checked="" type="checkbox"/> Ergonomics training	
<input checked="" type="checkbox"/> Facilitator	Training on-the-job is key.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Communication during change process is important.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Training on-the-job is key.
<input type="checkbox"/> Barrier	

Research Question:		
This paper describ(es) one practical application of the EDR process within the company. To embed ergonomic thinking within the company so that systems are designed well from the start.		
Document Characteristics:		
Jurisdiction	Sydney, Australia	
Industry / sector	Mining and Oil and Gas Extraction	
Reason for PE intervention	Production	
Context of Document	Worldwide company with 80 outlets in Australia.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input checked="" type="checkbox"/> Other: two core members plus others as required
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input checked="" type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	7 meetings over a 12 month period
Meeting length	4-6 hours long
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Support of PE program	
<input checked="" type="checkbox"/> Facilitator	Having ongoing senior management support and drive.
<input type="checkbox"/> Barrier	
<input type="checkbox"/> Ergonomics training	
<input type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Communication	
<input checked="" type="checkbox"/> Facilitator	Early utilization of company-wide communications system to enhance awareness of process and outcomes.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Detailed plan	
<input checked="" type="checkbox"/> Facilitator	Formal and objective nature of process led to easier selling of outcomes.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	Having well-balanced team with open and trusting relationship.
<input type="checkbox"/> Barrier	
<input type="checkbox"/> PE facilitator/champion	
<input type="checkbox"/> Facilitator	Having a credible facilitator.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input checked="" type="checkbox"/> Facilitator	Early identification of cost constraints.
<input type="checkbox"/> Barrier	

Research Question:		
The objective of this study is to determine if a participatory ergonomics program leads to reduced physical loading on the body, improved psychosocial environment, reduced pain or fatigue, and improved productivity and/or quality. This project is also intended to examine the process of change used in the plant.		
Document Characteristics:		
Jurisdiction	Ontario Canada	
Industry / sector	Manufacturing	
Reason for PE intervention	Injury rate	
Context of Document	Senior Canadian Autoworker's Union members had endorsed the project and were represented on the steering committee.	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input checked="" type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	not reported (research team?)	
Training recipient:	ECT	
Nature of training	"introductory ergonomics" - basic ergonomic principles and an opportunity to review the data that was collected during the "pre" measurement period	
Length of training	one day	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input checked="" type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	

<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Researchers
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	Not reported	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
<input checked="" type="checkbox"/> Facilitator	Strong support of executive management helped gain active support by plant personnel.	
<input checked="" type="checkbox"/> Barrier	Low participation rates of workers.	
<input checked="" type="checkbox"/> Communication		
<input checked="" type="checkbox"/> Facilitator	Communications and support.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Detailed plan		
<input checked="" type="checkbox"/> Facilitator	Step-wise improvement plan by ECT.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Create appropriate team		
<input checked="" type="checkbox"/> Facilitator	Direct involvement of senior management (Division VP). Having good team members. Direct involvement of key staff decision-makers.	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Easy changes first		
<input checked="" type="checkbox"/> Facilitator	Early improvements have resulted in more suggestions from workers.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Working relations	<input type="checkbox"/> Facilitator	Ongoing relationship between researchers and company (Corporate).
	<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Research methods	<input checked="" type="checkbox"/> Facilitator	Previous relationship between researchers and workplace (their track record).
	<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	<input checked="" type="checkbox"/> Facilitator	Building credibility
	<input checked="" type="checkbox"/> Barrier	Information overload.

Document: Smith, 1994 (45)

Research Question:		
This study examines the effectiveness of an ergonomics program which used worker participation to define ergonomic problems and implement improved work methods in a meat plant of approximately 200 employees.		
Document Characteristics:		
Jurisdiction	USA	
Industry / sector	Manufacturing	
Reason for PE intervention	Research	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Training provider:	Not reported	
Training recipient:	All plant supervisors and employees	
Nature of training	A baseline knowledge of ergonomics and why improvements were needed	
Length of training	Not reported	
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	

<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Employee assigned to be ergonomic coordinator
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	regularly (no other info provided)	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Support of PE program		
	Strong management support and involvement in ergonomics program.	
<input checked="" type="checkbox"/> Facilitator	Employees' willingness to participate.	
	Input and involvement from employees and supervisors through safety meetings and employee focus groups was critical	
<input type="checkbox"/> Barrier		
<input checked="" type="checkbox"/> Other		
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Not all focus group input or activities were worthwhile.	

Research Question:		
The objectives of this article are to report several of the results on the feasibility of integrating ergonomics in a continuous improvement process, such as PVA-Kaizen. 2746, and to describe the principal prerequisites for success and the difficulties involved with such integration.		
Document Characteristics:		
Jurisdiction	Quebec Canada	
Industry / sector	Manufacturing, Accommodation and Food Services	
Reason for PE intervention	Injury rate	
Context of Document	Not applicable	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group	<input checked="" type="checkbox"/> Other: Kaizen team
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input checked="" type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Others: Consultant (not defined)
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	not reported
Meeting length	not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative <input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Ergonomics training	
<input checked="" type="checkbox"/> Facilitator	Providing adequate training in ergonomics/OHS to members of the Kaizen teams and even to the workers called upon to support the change should contribute to an understanding, throughout the intervention, of the issues and consequences of changes, not only for productivity but also for OHS.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Coaching the ergonomics intervention by an expert and having his collaboration in carrying out the intervention and solutions' implementation would help to better address the OHS/ergonomics problems, while preventing negative effects on OHS/ergonomics being caused by changes proposed by participants.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	The principal limitation mentioned, as often by managers as by consultants, was financial, ergonomics being perceived as an extra expense.
<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Another option for integrating ergonomic expertise to increase productivity would be to train consultants to be able to treat productivity/quality problems jointly with the main ergonomics problems. This approach would reduce costs, a concern expressed by managers, but it has yet to be developed and formalized.
<input type="checkbox"/> Barrier	

<input checked="" type="checkbox"/> Awareness of PE program	<p>Making managers and consultants aware of the advantages of addressing OHS/ergonomic problems in parallel with productivity and quality should convince them, when the intervention is being prepared, of the importance of establishing specific intervention objectives and organizing data collection so as to be able to analyze problems from both angles.</p>
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	<p>According to several consultants and managers interviewed, integrating the ergonomic component would add value to the PVA-Kaizen approach.</p>
<input checked="" type="checkbox"/> Facilitator	<p>Integrating ergonomics and continuous improvement does not always appear to be easily applicable considering the means and resources put forward by the companies, together with the consultants.</p>
<input checked="" type="checkbox"/> Barrier	<p>The selective and partial implementation of some solutions was accompanied by the appearance of other problems with their own associated risks.</p>

Research Question:		
Broad - How far the work of quality circles includes ergonomic subjects? Case study 4 - description of integration of ergonomic aspects in the problem-solving capability of a quality circle (p177-180). Within the framework of a broad study of the current situation of small-group activities in West Germany, we have researched into how far the work of quality circles includes ergonomic subjects.		
Document Characteristics:		
Jurisdiction	West Germany	
Industry / sector	Manufacturing	
Reason for PE intervention	Research	
Context of Document	two workplaces	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input checked="" type="checkbox"/> Not Involved
<input type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input checked="" type="checkbox"/> Other: Unknown
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	Generically up front, 1-2 times/month. Four teams: crane drivers, shop-floor workers, maintenance and forge machine operators. Each team met for 12 one hour periods.
Meeting length	One hour meetings.
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> PE facilitator/champion	
<input checked="" type="checkbox"/> Facilitator	Specialist department (construction) giving technical support. An effective participative leadership concept is necessary.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	Two solutions in case study - Limited space for optimal solution.
<input checked="" type="checkbox"/> Production requirement	
<input checked="" type="checkbox"/> Facilitator	Integration of economic and ergonomic constraints.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	The participative approach requires a suitable environment.
<input checked="" type="checkbox"/> Barrier	To widespread worker participation in Germany - managerial perception that increases costs.

Research Question:		
The study described in this article is a comparative analysis of two ergonomic interventions, each involving the provision of ergonomic support to architectural projects in public libraries.		
Document Characteristics:		
Jurisdiction	Quebec Canada	
Industry / sector	Information and Cultural Industries	
Reason for PE intervention	Production	
Context of Document	Project A was large-scale new design with ergonomics being a small part of it	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input checked="" type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input checked="" type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input type="checkbox"/> Direct Representative	<input checked="" type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input checked="" type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input type="checkbox"/> Implementation of change
<input type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	

<u>Role of PE facilitators:</u>	
<input type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members <input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input checked="" type="checkbox"/> Available for Consultation
<u>Who were PE facilitators:</u>	
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT <input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:	
Meeting schedule	Project A - ergonomists in 2 of 9 steering group meetings and 8 working group meetings; Project B - ergonomist in all 4 steering committee meetings
Meeting length	not reported
Ergonomic changes implemented and intervention effect:	
<u>Changes implemented:</u>	
<input checked="" type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization <input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input type="checkbox"/> Unclear
<u>Effect of intervention:</u>	
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative <input type="checkbox"/> No effect
<u>Material resources addressed:</u>	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document	
<input checked="" type="checkbox"/> Detailed plan	
<input checked="" type="checkbox"/> Facilitator	Objective in project B that focused on desired work conditions essential (decrease MSDs).
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	In Project A, the technical discussions with respect to architectural aspects monopolized meetings leaving little time for ergonomics.
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Group B also had steering committee and working group B did simulations and mock-ups.
<input type="checkbox"/> Barrier	

Research Question:	
In this case study, we were interested in how these macro-level variables affect the sustainability of PE programs and how organizational members respond. We focused on the time period after the ergonomist's departure to seek insights into how organizational members might maintain the long-term viability of PE programs. Using ethnographic data, we examined how an ergonomic change team (ECT), consisting of managers and workers, was able, in a context of scarce resources, to integrate a PE program into an organization's existing structures and regular operating practices. In doing so, they ensured an uninterrupted flow of resources to make ergonomic changes and maintain the ECT's viability.	
Document Characteristics:	
Jurisdiction	Ontario Canada
Industry / sector	Manufacturing
Reason for PE intervention	Risk factor
Context of Document	Not applicable
Organizational structure of PE teams:	
<u>Team structure:</u>	
<input type="checkbox"/> Steering committee	<input type="checkbox"/> Dept or work group
<input checked="" type="checkbox"/> Change team	<input type="checkbox"/> Unknown
<u>Worker involvement:</u>	
<input type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation
	<input type="checkbox"/> Not involved
	<input type="checkbox"/> Unclear
<u>Champion described:</u>	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> Mixed
<input type="checkbox"/> No (lack of cooperation)	<input checked="" type="checkbox"/> Not reported
<u>Issues about time to attend meetings reported:</u>	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training	
Was ergonomic training provided?	
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
	<input type="checkbox"/> Unclear/not reported
Training provider:	ergonomist facilitator and research team
Training recipient:	ECT members
Nature of training	The ECT was taught such job analysis techniques as Snook and NIOSH. They followed a 'blueprint' provided by the university research team, with specified stages in which opportunities for improvement were identified, solutions formulated and then preferred options implemented.
Length of training	Instruction lasted for 4 days, 6 hours a day.
Dimensions of PE Framework (from Haines et al., 2002):	
<u>Permanence:</u>	
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary
	<input type="checkbox"/> Unclear
<u>Involvement</u>	
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative
	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>	
<input type="checkbox"/> Department/Work Group	<input checked="" type="checkbox"/> Entire Organization
	<input type="checkbox"/> Group of Organizations

<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input checked="" type="checkbox"/> Group Consultation	<input type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input checked="" type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input checked="" type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input type="checkbox"/> Voluntary	<input checked="" type="checkbox"/> Not reported
<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization
<u>Remit:</u>		
<input type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input checked="" type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input type="checkbox"/> Others
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	weekly for the first 27 months, bi-weekly for 9 months.	
Meeting length	Not reported	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input type="checkbox"/> Tools and equipment	<input type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input type="checkbox"/> Work processes	<input checked="" type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input type="checkbox"/> Positive	<input type="checkbox"/> Negative	<input checked="" type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training		
<input checked="" type="checkbox"/> Facilitator	The ECTs level of training and ability to work independently of the ergonomist-facilitator.	
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Communication	<p>Present the ECT's activities during the company's annual "safety week." Speak about the ECT in the Safety Committee and RTW Committee meetings</p> <p>Present the ECT as a viable effective group to manage risk and injuries that affected production.</p> <p>The health and safety manager also reported the ECT's work in an issue of the plant health and safety bulletin which all employees received. S/he organized a presentation of the ECTs activities during the company's annual "safety week," which is devoted to educating the workforce about health and safety issues. As a way to "prove that the ECT did something" s/he developed a detailed list of the work that ECT had done and what it planned to do for the next several months, which was referred to as the "Evaluation and Audit Sheet." Copies of these documents were circulated to managers as a way to regularly update them. In addition s/he regularly spoke about the ECT in the Safety Committee and Return to Work Committee meetings.</p>
<input checked="" type="checkbox"/> Facilitator	
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Create appropriate team	
<input checked="" type="checkbox"/> Facilitator	Recruit powerful workplace members for funding and authority issues.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Resources	
<input type="checkbox"/> Facilitator	
<input checked="" type="checkbox"/> Barrier	<p>Lack of resources:</p> <p>An important obstacle was that the ECT lacked sufficient resources to implement its changes. There was no budget designated for the ECT's activities; in fact, the only money designated specifically for health and safety was for worker safety training (e.g. WHMIS training, fork lift operation). At the same time, many of the ECT's activities, especially those that involved purchasing or fabricating costly material handling equipment, prompted the ECT to request funds from senior managers.</p>
<input checked="" type="checkbox"/> Easy changes first	
<input checked="" type="checkbox"/> Facilitator	Demonstrating to management that the ECT was making a difference in the plant.
<input type="checkbox"/> Barrier	
<input checked="" type="checkbox"/> Awareness of PE program	
<input checked="" type="checkbox"/> Facilitator	To make senior managers and others aware of the ECT's work, the health and safety manager, as ECT chair, used several strategies. To raise awareness about the ECT among engineers and supervisors s/he organized ergonomic training for them, which drew from the earlier training s/he had received from the university researchers.
<input checked="" type="checkbox"/> Barrier	Lack of awareness of some managers was a factor that challenged the sustainability of the ECT. Several influential managers who were responsible for the plant's production processes were not aware of what the ECT was trying to accomplish or what changes it had made in the plant. This led to several instances where production engineers eliminated or significantly altered changes.

☒ Other	Important to ensure that ergonomics was integrated into organizational structures and ongoing practices of the workplace.
☒ Facilitator	Align with H&S practices, demonstrate utility for reducing workplace risk and promoting accommodation and recruit middle management. Another way the ECT countered threats to sustainability was to establish itself as complementary to health and safety practices already in place at the worksite. Part of this involved presenting the ECT to the organization
☒ Barrier	Insufficient authority to make the changes. Authority (support): The second obstacle the ECT faced was that it had little authority to make changes on the plant floor. As a result, it risked having supervisors discount its recommendations, which meant ergonomic changes were often underused or used incorrectly. In part, supervisors were concerned that moving and/or modifying equipment and instructing workers in new work practices would disrupt production. As well, ECT members did not have the authority to coordinate the fabrication and installation of changes on the shop floor. Though required to implement solutions, such requests for changes received low priority.

Research Question:		
To describe a case study where problems with production design and manufacturing process are redesigned in parallel with implementation of self-directed work teams - to provide lessons in implementation of self-directed work teams.		
Document Characteristics:		
Jurisdiction	UK	
Industry / sector	Manufacturing	
Reason for PE intervention	Not reported	
Context of Document	large electronics company, hisotry of team work,at the time of the study there was concern about potential job losses and changes to the shift pattern which was proving unpopular due to disruption to people's established social lives	
Organizational structure of PE teams:		
<u>Team structure:</u>		
<input checked="" type="checkbox"/> Steering committee	<input checked="" type="checkbox"/> Dept or work group	<input type="checkbox"/> Unknown
<input checked="" type="checkbox"/> Change team		
<u>Worker involvement:</u>		
<input checked="" type="checkbox"/> Describing nature of work	<input checked="" type="checkbox"/> Solution development	<input type="checkbox"/> Not involved
<input checked="" type="checkbox"/> Risk analysis	<input checked="" type="checkbox"/> Solution implementation	<input type="checkbox"/> Unclear
<u>Champion described:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
<u>Cooperation reported:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> Mixed	<input type="checkbox"/> Not reported
<input type="checkbox"/> No (lack of cooperation)		
<u>Issues about time to attend meetings reported:</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Unclear/not reported
Ergonomics Training		
Was ergonomic training provided?		
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Unclear/not reported
Dimensions of PE Framework (from Haines et al., 2002):		
<u>Permanence:</u>		
<input checked="" type="checkbox"/> Ongoing	<input type="checkbox"/> Temporary	<input type="checkbox"/> Unclear
<u>Involvement</u>		
<input type="checkbox"/> Full Direct	<input checked="" type="checkbox"/> Direct Representative	<input type="checkbox"/> Delegated
<u>Level of Influence:</u>		
<input checked="" type="checkbox"/> Department/Work Group	<input type="checkbox"/> Entire Organization	<input type="checkbox"/> Group of Organizations
<u>Decision Making:</u>		
<input type="checkbox"/> Individual Consultation	<input type="checkbox"/> Group Consultation	<input checked="" type="checkbox"/> Group Delegation
<u>Mix of Participants:</u>		
<input checked="" type="checkbox"/> Workers/Operators	<input checked="" type="checkbox"/> Internal/technical specialist	<input type="checkbox"/> Supplier
<input type="checkbox"/> Supervisors/ Line Mgmt	<input type="checkbox"/> Union	<input type="checkbox"/> Cross-industry rep
<input type="checkbox"/> Senior Management	<input checked="" type="checkbox"/> External Advisor	
<u>Requirement for participation:</u>		
<input type="checkbox"/> Compulsory	<input checked="" type="checkbox"/> Voluntary	<input type="checkbox"/> Not reported
<u>Focus:</u>		
<input type="checkbox"/> Tools/equipment	<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Workplace organization

<u>Remit:</u>		
<input checked="" type="checkbox"/> Set-up/ Structure Process	<input checked="" type="checkbox"/> Problems Identification	<input checked="" type="checkbox"/> Implementation of change
<input checked="" type="checkbox"/> Monitor/ Oversee Process	<input checked="" type="checkbox"/> Solution Development	
<u>Role of PE facilitators:</u>		
<input checked="" type="checkbox"/> Initiate and Guide Process	<input type="checkbox"/> Trains Members	<input type="checkbox"/> Not Involved
<input checked="" type="checkbox"/> Acts as Expert	<input type="checkbox"/> Available for Consultation	
<u>Who were PE facilitators:</u>		
<input checked="" type="checkbox"/> Ergonomists	<input type="checkbox"/> PT/OT	<input checked="" type="checkbox"/> Others: Manufacturing engineer
Ergonomic Change Team (ECT) Meetings:		
Meeting schedule	every 2 weeks	
Meeting length	one full day of team building and training	
Ergonomic changes implemented and intervention effect:		
<u>Changes implemented:</u>		
<input checked="" type="checkbox"/> Tools and equipment	<input checked="" type="checkbox"/> Workplace organization	<input type="checkbox"/> No changes implemented
<input checked="" type="checkbox"/> Work processes	<input type="checkbox"/> Unclear	
<u>Effect of intervention:</u>		
<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	<input type="checkbox"/> No effect
<u>Material resources addressed:</u>		
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Not reported/unclear
<u>Was there time to implement solutions</u>		
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> Not reported/unclear
Facilitators and Barriers to the PE process identified in this Document		
<input checked="" type="checkbox"/> Ergonomics training	Degree of success of new teams, especially as regards to their group cohesiveness and their taking of responsibility has been a function of extent of split training with original team - the longer they worked alongside original members, the better performance and attitude.	
<input checked="" type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Need considerable training in social skills, frustrating process, confusion over management roles, cohesiveness and responsibility of team.	
<input checked="" type="checkbox"/> Communication	A more formal 2-way feedback system between team and design engineers beneficial in technical, organizational and team morale terms.	
<input type="checkbox"/> Facilitator		
<input checked="" type="checkbox"/> Barrier	Growing expertise of team should be brought into decisions on process technology and line set-up and a 2-way feedback with process	
<input checked="" type="checkbox"/> Create appropriate team	Providing knowledgeable workers who do not need as much supervision, and who liked being involved from the start.	
<input checked="" type="checkbox"/> Facilitator	Group size preference was between 5 and absolute max of 10.	
<input checked="" type="checkbox"/> Barrier	Less effort in preparing ground and less time given to setting up and developing SDWTs.	
<input checked="" type="checkbox"/> Resources	Flexibility for workers and managers.	
<input type="checkbox"/> Facilitator		
<input type="checkbox"/> Barrier		

<input checked="" type="checkbox"/> Organizational training	
<input checked="" type="checkbox"/> Facilitator	Degree of success of new teams, especially as regards to their group cohesiveness and their taking of responsibility has been a function of extent of split training with original team - the longer they worked alongside original members, the better performance and attitude.
<input checked="" type="checkbox"/> Barrier	Need considerable training in social skills, frustrating process, confusion over management roles, cohesiveness and responsibility of team a factor. Less effort in training for team facilitation.
<input checked="" type="checkbox"/> Production requirement	
<input type="checkbox"/> Facilitator	Team should be involved in setting of production and quality targets.
<input checked="" type="checkbox"/> Barrier	When pressure to ramp up production led to more hasty group implementation, internal audit revealed much team spirit was lost leading to perceived decline in SDWT credibility.
<input checked="" type="checkbox"/> Other	
<input checked="" type="checkbox"/> Facilitator	Increased work responsibility giving increased quality and greater control over decision-making,
<input type="checkbox"/> Barrier	