

# Reducing MSD hazards in the workplace



**A guide to successful  
participatory ergonomics programs**



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# What is participatory ergonomics?

Participatory ergonomics (PE) is the process of involving key personnel, such as workers, in identifying and solving problems with work-related hazards. A PE intervention or program is an effective approach to reducing hazards that can lead to injuries. Studies have shown that PE programs can reduce musculoskeletal injuries, workers' compensation claims and lost days from work.

Musculoskeletal disorders (MSDs) are injuries and disorders of the musculoskeletal system and are a major cause of work-related injury in Canada, accounting for approximately 40 per cent of workers' compensation claims. Examples of MSDs include carpal tunnel syndrome, tendonitis and low-back pain.

A PE program encourages workers to help identify the hazards or risk factors in their workplace that can cause or aggravate MSDs, such as working in awkward positions, doing repetitive work and having to apply force.

Improved ergonomics can lead to increased productivity. PE programs can be implemented as a part of an organization's continual improvement process, and should be budgeted for and evaluated.



# How can you implement PE?

In the following pages are some tips to help you get started. These recommendations come from scientific evidence examining workplaces that have implemented PE interventions/programs. This evidence was summarized in a systematic review by a team of researchers and ergonomists.\* But remember that since you are involving your workplace and workers, your specific process will be – and should be – unique.

\*For the full reference, please refer to page 11.

# Address key barriers to the process.

The three issues mentioned in the systematic review most often as being either facilitators or barriers in PE interventions were:

- Having support for the PE program from the organization (management, co-workers and union). In other words, the organization believes in the program.
- Having resource commitment from the organization. Resources include time and money.
- Having open communication about the PE program.

These three concepts are related to one another. Keeping these in mind will greatly increase your chances of successfully establishing a PE intervention at your workplace. As changes occur in your organization, it's important to consider how they may affect the PE program and to find ways to avoid possible disruption.

## CASE STUDY

In a transport company, management and workers agreed to a PE approach. A key aspect of this agreement was that time would be available for ergonomics change team (ECT) members to attend meetings and carry out team activities. At the beginning of the program a change team was formed and team members received training from an ergonomics consultant. However, the one manager who was most enthusiastic about PE left the company for another job. Several months later, counter to management's earlier assurances of support, some team members were not relieved of their regular work duties to attend team meetings. Because of their absences the team was not fully able to gather information about hazards and make decisions about adopting solutions. These delays dramatically slowed the process of addressing MSDs, and weakened the effectiveness of the PE program. Therefore, team members became frustrated. Team members later recognized that documenting the initial agreement and the benefits of PE might have improved communication and formalized the support that was initially promised.

## Create PE teams with appropriate members.



A PE team should include representation from the workers and supervisors who will be directly affected by the intervention. The team would also benefit from having someone with expertise in ergonomics. Additional membership from management could help mobilize the resources necessary to implement changes. As well, it would show management support.

Participants usually include:

- workers
- supervisors
- advisors (human resources, OHS personnel)
- technical specialists (maintenance personnel, engineers, skilled tradespeople)

### CASE STUDY

In a manufacturing setting, an ergonomics change team (ECT) was formed that did not include representatives from the skilled trades. With the help of an ergonomics consultant, team members became adept at identifying hazards and devising solutions. However, the solutions were often difficult to implement because the workplace's production equipment was complex. The team's difficulties in designing solutions led to delays in making changes, and team members grew frustrated. After several months, the team enlisted the assistance of skilled tradespeople to help it design workable solutions. Over time, this approach enabled the team to design solutions to hazards that could be adapted to the workplace.

## **Involve a PE champion to guide and monitor the process.**



To keep an initiative going, someone should lead the way. This person's level of ergonomics experience is not crucial.

An ergonomist can be a great champion for a PE program, but many workplaces do not have an ergonomist on site. In those cases, a PE champion should be identified — someone who is interested in the process and enthusiastic about the intervention.

### **CASE STUDY**

A pulp and paper mill was implementing a PE program with the help of an external ergonomics consultant. After three months, the ergonomist moved to a new workplace. The mill kept momentum going in its PE program by finding a PE champion within the workplace to take over from the ergonomist. The champion provided leadership in terms of coordinating ergonomics change team meetings and raising awareness about the PE program among managers and workers. Through the efforts of the champion the PE program kept going.

## **Provide training.**

Training in ergonomics is crucial in identifying hazards and designing solutions. General ergonomics training typically covers mechanisms of injury, risk factors, hazard identification (including training on any tools used to identify hazards), strategies for reducing hazards and basic ergonomics principles. Training in organizational processes assists PE teams to navigate the decision-making procedure at their workplace. Such training could cover the steps required for purchasing equipment or securing time from maintenance or facilities staff.

Training topics include:

- general ergonomics concepts
- organizational processes

### **CASE STUDY**

The same PE program was implemented in two sister plants. At one plant training was provided, and at the other it was not. There were drastic differences in the teams' abilities to investigate hazards and develop solutions, and in the overall effectiveness of the PE programs. For instance, team members with ergonomics training were able to find the source of workers' injuries quickly and correctly. Because they also received training in organizational processes, team members knew that they had to involve the purchasing department and a senior manager if they wanted to make equipment purchases of \$500 or more. As a result, the plant that provided training to the PE team reported more success in implementing changes, and experienced decreases in worker reports of MSDs.

## Involve the right people from the workplace in the overall PE process.



A successful PE program involves more than just the PE team. You need support throughout the workplace to implement solutions and maintain the program. Workers from various departments may be asked to share information about their work. The more staff who are aware of the PE program and “buy in” to its purpose, the more smoothly the program can be integrated into the workplace.

Participants often include:

- management
- purchasing
- maintenance
- other workers

### CASE STUDY

At a medium-sized manufacturing plant, managers decided to address a rising number of MSD claims by implementing a PE program. Their PE teams included line workers and line managers. The remaining workers were not involved with the PE team, but the entire process was successfully communicated to them with an explanation of how important it was to have worker input. As a result, other staff willingly filled in for co-workers who attended PE team meetings. The co-workers also established a system that ensured non-team workers were able to meet production goals without being overburdened.



## **Define team members' responsibilities.**

Great communication can improve any team initiative in an organization, and a PE program is no exception. Communicating everyone's role can help your team function well. By clearly explaining everyone's responsibilities, it keeps everybody in the loop and can help keep the program on track.

Responsibilities include:

- identifying problems
- developing solutions
- implementing changes

### **CASE STUDY**

A PE program was adopted in a large food service company. At the program's outset the ergonomics change team elected a chair and a person to take minutes. The chair helped keep the meeting focused and ensured that each item on the team's agenda was addressed. The minute-taker recorded team decisions, action items and the person responsible, and then prepared and distributed the minutes shortly after a meeting. The minutes were a good record of what the team was working on and ensured that members remembered their responsibilities for the next meeting. Both the chair and minute-taker enabled the team to have well-organized and efficient meetings. Team members were enthusiastic about the program because their own responsibilities were clear and they did not want to be seen as letting the team down.

## **Make decisions using group consultation.**

Allow your ergonomics team to make decisions as a group and then present the team's suggestions to management for approval. Including the entire team in the decision-making process allows different points of view to be represented.

A team is empowered when it is involved in decision-making around the PE program. Teams should be encouraged to make decisions about which problems to focus on and which solutions to implement. Management may then become involved when financial resources are required.

### **CASE STUDY**

At a long-term care centre, managers initially made all decisions about health and safety. Team members only provided management with general suggestions to consider about interventions and implementation. The centre's management soon noticed that the team was becoming less engaged in the process. It began letting the team members work together to decide which interventions to address and which solutions were most appropriate. Team members only needed to gain management approval for interventions that cost more than \$100. As a result, the team members became much more involved with the PE program.

## Resources:

Participative Ergonomic Blueprint:

<http://www.iwh.on.ca/pe-blueprint>

<http://www.ergonomics.uwaterloo.ca/bprint.html>

Occupational Health and Safety Council of Ontario (OHSCO)

MSD Prevention Guideline:

<http://www.iwh.on.ca/msd-tool-kit>

Occupational Health Clinics for Ontario Workers (OHCOW) PE manual:

[http://www.ohcow.on.ca/resources/handbooks/TI\\_automotive/ergonomichandbook2.pdf](http://www.ohcow.on.ca/resources/handbooks/TI_automotive/ergonomichandbook2.pdf)

Ergonomic Handbook for the Clothing Industry:

[http://www.iwh.on.ca/system/files/documents/ergo\\_handbook\\_clothing\\_2001.pdf](http://www.iwh.on.ca/system/files/documents/ergo_handbook_clothing_2001.pdf)

## References:

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The Institute for Work & Health conducts and shares research that protects and improves the health of working people and is valued by policy-makers, workers and workplaces, clinicians, and health & safety professionals.

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