

Report to the Minister of Labour

**RECOMMENDATIONS ON STRATEGIES TO  
REDUCE WORK-RELATED MUSCULOSKELETAL  
DISORDERS IN ONTARIO**



September 2005

Ergonomics Sub-Committee  
of the Manufacturing Panel,  
Health and Safety Action Group



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## MESSAGE FROM THE CHAIR



**Kevin Flynn, MPP Oakville, Chair**

The Government of Ontario is acting to make Ontario workplaces among the safest in the world. As part of achieving this goal, the government plans to reduce workplace injuries by 20 per cent over four years through a comprehensive, integrated health and safety strategy using education, training, legislation, regulation and enforcement. The goal is that by 2008 there will be 60,000 fewer workplace injuries per year.

As part of developing an integrated strategy to achieve these goals, the former Minister of Labour, Christopher Bentley, created the Health and Safety Action Group, with industry panels for manufacturing, health care, and construction. Ergonomic issues were raised in the panels and the Manufacturing Panel formed a working group to study ergonomic issues and develop strategies to address them.

The Ergonomics Sub-Committee was established by Minister Bentley and given a mandate to examine strategies to reduce work-related musculoskeletal disorders (MSD) in Ontario. It continued its work under the direction of the current Minister of Labour, Steve Peters. Although the Sub-Committee focused on issues in manufacturing and more broadly, the industrial sector, the recommendations of the Sub-Committee are relevant to all sectors.

The Sub-Committee examined a variety of ergonomic approaches, such as best practices, policies and enforcement as mechanisms for addressing this serious cause of injury. The Sub-Committee also benefited from the expertise of various presenters, who shared their knowledge of research, best practices, and legislation. The following report brings forth comprehensive recommendations that focus on education and outreach, research, enforcement, and motivators.

This report contains information that I hope will continue the drive to improve workplace health and safety. The Sub-Committee took a practical approach in the development of this report. While it recognizes and supports the work that is taking shape within the occupational health and safety system, it also provides recommendations for additional actions that could be taken within the system and by stakeholders.

It was a pleasure to work with the Sub-Committee and I thank the members and their organizations for the time and effort they devoted to this initiative. Their dedication in working together to improve occupational health and safety is remarkable. It is this demonstrated and shared commitment to excellence in health and safety that will lead the way to fewer workplace injuries and illnesses in Ontario.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kevin Flynn".

Kevin Flynn, MPP Oakville  
Parliamentary Assistant to the Minister of Labour  
Chair, Ergonomics Sub-Committee



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## EXECUTIVE SUMMARY

Nearly half of all lost time claims registered with the Workplace Safety and Insurance Board are related to musculoskeletal disorders (MSD). Steps to address this serious issue were taken by the previous Minister of Labour, Christopher Bentley, on February 28, 2005, when he announced the formation of a special advisory committee to examine ergonomic issues in Ontario. The mandate of the Ergonomics Sub-Committee was to examine strategies to address MSD in Ontario and to provide the Minister with recommendations.

The Sub-Committee met seven times, from March to September 2005 and heard formal presentations from experts in ergonomic practices and regulation that assisted in formulating its recommendations.

### Overview of MSD Prevention

The Sub-Committee recognizes that MSD prevention requires a multi-faceted approach due to the complex nature of MSD. A proactive approach and early intervention strategies are integral to the reduction and elimination of the incidence of work-related MSD. Ergonomics should also be a key consideration in the return to work process. The Sub-Committee is supportive of the coordinated approach to MSD prevention being proposed by the Occupational Health and Safety Council of Ontario (OHSCO), composed of the Ministry of Labour, the Workplace Safety and Insurance Board and the Health and Safety Associations. Stakeholder input into the development and implementation of the coordinated approach is essential.

Recommendations are grouped into four main themes:

#### **I. Theme: Research and Knowledge Transfer**

The Sub-Committee recommends a common definition and classification system of MSD to assist in tracking MSD for both the health and safety system and stakeholders. Funding should continue for research undertaken by various organizations on MSD prevention, and a balanced approach should be taken between applied and pure research.

#### **II. Theme: Education, Outreach and Best Practices**

The level of awareness and knowledge of ergonomics needs to be substantially expanded. In addition to increasing the number of trained ergonomists in Ontario, it is necessary to integrate ergonomics into the training of professionals such as engineers and health care practitioners as



well as into skilled trades training. Increasing the knowledge of ergonomics within the workplace for employers, supervisors, workers and health and safety committees and representatives would improve the internal resolution of issues. There should be an expansion of guidance information and other materials to assist in the purchase, design and selection of equipment, tools and work processes. This information should be readily available in a variety of formats for easy access.

### **III. Theme: Enforcement and Motivators**

Ontario should implement an approach that motivates good performance as well as an ability to detect when insufficient efforts to prevent MSD are being taken. This includes a balance of WSIB premium-based penalties and incentives as well as increasing the level of ergonomics knowledge of MOL inspectors and incorporating MSD hazards into enforcement targeting strategies. In addition, a process should be developed to ensure orders related to MSD prevention issued by MOL inspectors and ergonomists are clearly identified in the Ministry's database for tracking purposes.

### **IV. Theme: Standards (including regulation)**

The Sub-Committee supports the integration of ergonomic principles into national and international standards. An inventory and an evaluation of existing standards would assist workplace parties in their efforts to reduce MSD. The Sub-Committee continues to discuss the merits, possible principles and scope of a regulation. This will be the subject of a supplementary report to be provided to the Minister by mid-January 2006.

## INTRODUCTION

On February 28, 2005, the previous Minister of Labour, Christopher Bentley, announced the formation of a special ergonomics advisory panel to recommend ways to reduce musculoskeletal disorders in the manufacturing sector. The Sub-Committee continued its work under the direction of the current Minister of Labour, Steve Peters, subsequent to his appointment on June 29, 2005.

The panel was a Sub-Committee of the Manufacturing Panel of the Health and Safety Action Group. The Sub-Committee was chaired by the Minister's Parliamentary Assistant, MPP Kevin Flynn, and consisted of three labour and three employer members:

- John Macnamara  
President  
Business Council on Occupational Health and Safety
- Mark Nantais  
President  
Canadian Vehicle Manufacturers' Association
- Maureen Shaw  
President and CEO  
Industrial Accident Prevention Association

(Alternate: Ian Howcroft, Canadian Manufacturers and Exporters)

- Nancy Hutchison  
District Six Safety, Health and Environment Co-ordinator  
United Steelworkers of America, Canadian National Office
- Wayne Samuelson  
President  
The Ontario Federation of Labour
- Cathy Walker  
National Health and Safety Director  
Canadian Auto Workers

(Alternate: Cam Sherk, United Food and Commercial Workers)

The Sub-Committee met seven times, from March to September 2005. It examined a variety of means for reducing musculoskeletal disorders (MSD) in Ontario, including best practices, educational resources, policies and enforcement. Researchers and other experts in the field of ergonomics made presentations to the Sub-Committee (for more information, please refer to the presentations included in the report).

The following report to Minister Peters contains recommendations on strategies to reduce work-related MSD in Ontario. Although the Sub-Committee focused on the manufacturing sector, many of the recommendations will have relevance for other sectors.

## BACKGROUND

### Approach to Ergonomics in the Ontario Occupational Health and Safety System

Although there is no specific requirement under the *Occupational Health and Safety Act (OHSA)* or regulations to address ergonomic issues, employers have a general duty under Section 25(2)(h) of the *OHSA* to take reasonable precautions to protect workers from hazards that can lead to MSD.

Ministry inspectors and ergonomists issue orders under the general duty clause of the *OHSA* for ergonomic assessments and related preventive measures, such as orders for adapting workstations to meet the ergonomic needs of a worker, and training workers on proper body mechanics and lifting techniques, and also issue orders under regulation requirements, including manual materials handling and lighting.

The Workplace Safety and Insurance Board (WSIB) and the Health and Safety Associations (including twelve industry-based safe workplace associations, the Workers Health and Safety Centre, and the Occupational Health Clinics for Ontario Workers) also have staff ergonomists, and provide various tools, information, and ergonomic evaluations to assist workplaces in reducing the risks of MSD. The Occupational Health and Safety Council of Ontario (OHSCO) MSD sub-committee, with assistance from the Institute for Work and Health (IWH) and the Centre of Research Expertise in the Prevention of Musculoskeletal Disorders (CRE-MSD) developed a system-wide coordinated strategy to address the MSD issue in Ontario. Part of the strategy includes a coordinated approach to services and information available to workplaces (refer to Appendix).

Many workplaces, unions and other organizations in Ontario have also worked to reduce MSD by developing and implementing ergonomics programs, publishing ergonomics information, and sharing best practices. For example, Ford Motor Company and the Canadian Auto Workers Union jointly developed and implemented an ergonomics program.

### MSD Defined

The OHSCO strategy includes a working definition of MSD and methodology for data extraction to ensure consistency in understanding and messaging. The working definition is:

Musculoskeletal disorders (MSD) are injuries and disorders of the musculoskeletal system where exposure to various risk factors present in the workplace may have either contributed

to the disorder's development, or aggravated a pre-existing condition. MSD have been related to various workplace risk factors, including, but not limited to:

- repetitive, forceful or prolonged exertions
- frequent or heavy lifting, pushing or pulling, or carrying of objects
- fixed or awkward work postures
- contact stress
- local or whole-body vibration
- cold temperatures
- work organization (e.g. work-recovery cycles, task variability, and work rate)

MSD are injuries and disorders of the musculoskeletal system, which includes the muscles, tendons, tendon sheaths, nerves, bursa, blood vessels, joints and ligaments. For purposes of the OHSCO strategy, injuries/disorders of the musculoskeletal system that are the direct result of a sudden, single event involving an external source (e.g. a fall, vehicle accident, violence, etc.) are not considered to be MSD.<sup>1</sup>

### **OHSCO Problem Scope<sup>2</sup>**

(i) Nearly half of all lost time claims registered with the WSIB are related to MSD.

(ii) Although there has been a general decline of WSIB accepted lost-time injuries, according to information obtained using the WSIB's Information Warehouse for the period 1996 to 2003, MSD accounted for:

- (a) approximately 41 per cent of all lost-time claims;
- (b) approximately 49 per cent of all lost-time-claim-related lost-time days; and,
- (c) approximately 41 per cent of all lost-time benefit claim costs (averaged over the period).<sup>3</sup>

(iii) The percentage of lost-time MSD, compared to all other lost-time claims, has remained relatively stable in each of the past eight years.

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<sup>1</sup> Claims related to repetitive exertions, manual material handling (e.g. back strain from a single push/pull incident) and awkward postures are included. See the OHSCO strategy document for a full list and description of codes included.

<sup>2</sup> Section is adapted from the Occupational Health and Safety Council of Ontario (OHSCO), "Prevention Strategy for Musculoskeletal Disorders (MSD) in Ontario". March 2005. pp. 2-3.

<sup>3</sup> This is updated data made available since original OHSCO MSD Prevention Strategy was approved.

(iv) Direct costs due to lost-time MSD for the period 1996 to 2003 totalled more than an estimated \$3 billion. Conservatively, the sum of the direct and indirect costs due to lost-time MSD is estimated to be approximately \$12 billion.<sup>4</sup>

(v) The costs of non-lost-time MSD claims have not been included in the above statistics. However, the strategy will help reduce the number of lost-time and non-lost-time MSD in Ontario by eliminating where feasible, or minimizing MSD risk factors in Ontario workplaces.

(vi) Consequently, the magnitude of this problem continues to pose a threat, not only to the health and safety of Ontario workers, but also to the province's economic performance.

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<sup>4</sup> Business Results Through Health & Safety, Canadian Manufacturers & Exporters and Workplace Safety And Insurance Board, 2002 p.18

## COMMITTEE FINDINGS

### Overview of MSD Prevention

#### *An Ergonomics Approach*

MSD prevention requires a multi-faceted approach. The Sub-Committee believes that the application of ergonomics in the workplace is key to reducing the incidence of work-related MSD and is needed in all sectors, including industrial establishments, construction, mining, and health care.

Workplace parties need to identify MSD issues early to allow for effective implementation of prevention strategies. Senior management that embraces a culture of healthy and safe workplaces is essential in leading others and instilling a positive approach. Good health and safety performance is good business. Another integral part of prevention involves designers and manufacturers of tools, equipment and work processes that will be used in the workplace.

The Sub-Committee encourages and supports the integration of effective disability management within health and safety systems. Ergonomics should be a key consideration in the return to work process.

#### *The Health and Safety System*

The Sub-Committee is generally supportive of the initiatives in the document from OHSCO titled "Prevention Strategy for Musculoskeletal Disorders in Ontario". Obtaining stakeholder input is critical.

The role of the Ministry of Labour in setting, communicating, and enforcing workplace standards, the role of the Workplace Safety and Insurance Board in educating, promoting and fostering healthy and safe workplaces and a prevention culture, and the role of the Health and Safety Associations in the development and provision of training programs, products and services to Ontario's employers and workers are all important in the prevention of MSD.

## **I. Research and Knowledge Transfer**

The application and dissemination of research information within industry is a key component in increasing knowledge of ergonomic issues and reducing MSD. Research organizations such as IWH and CRE-MSD can provide research knowledge that can be used towards reducing work-related MSD in Ontario. Research funding related to MSD prevention is provided by the WSIB's Research Advisory Council and other organizations.

The Sub-Committee supports:

- The OHSCO MSD definition and use of common claim codes to analyze and track MSD; stakeholder consultation is required to refine the process.
- Continued dialogue across Canada and internationally among ergonomists, health and safety experts, and stakeholders on the development and coordination of research related to MSD and sharing best practices.
- A balanced approach between applied and pure research.

The Sub-Committee recommends:

- Standardized use of injury and illness classification systems to analyze and track MSD in Ontario for both the system partners and for stakeholders (including employers, workers and the research community).
- Funding continue for research undertaken by organizations including IWH and CRE-MSD, on MSD prevention and supports.



## II. Education, Outreach and Best Practices

Education involves increasing the level of knowledge and awareness through training for workplace parties, including employers, supervisors, workers, students and apprentices, health and safety representatives, and Joint Health and Safety Committee members. Outreach is the mechanism for disseminating knowledge through workplace contacts, printed material, and information campaigns. Best practices include specific examples of successful implementation of processes and practices, tools and methods to reduce MSD risk factors.

The Sub-Committee supports:

- The OHSCO MSD prevention strategy to raise general awareness and motivate prevention activity in Ontario workplaces. This should include a knowledge transfer component making information on ergonomics easily accessible to all workplaces (e.g. web access). It should also include coordination of awareness efforts such as posters and advertisements, to reinforce responsibilities to report work-related injuries to the appropriate agencies.
- Development of healthy workplaces and the dissemination of information on healthy workplaces primarily focusing on preventing injury and illness, as well as how healthy workplaces create business value. Examples of such programs include those developed by Health Canada, Public Health Agency of Canada and the Canadian Health Network.

The Sub-Committee recommends:

- Integration of ergonomics into education programs for business, engineering, health care, and skilled trades including integrating ergonomic principles into apprenticeship programs for skilled trades.
- Increasing education and training programs to expand the number of qualified ergonomists in Ontario, in order to increase the knowledge and skill base accessible to Ontario workplaces.
- Inclusion of sound ergonomic principles into guides for safe purchasing, design and selection of equipment, tools and work processes that are made available to engineers, designers, employers and others who are involved with design and setup of work and workplaces.
- MSD information, outreach activities, and education be made available to health care practitioners, including the Ontario Medical Association.
- Enhanced involvement of WSIB ergonomists in supporting MSD prevention in the workplace, in addition to current return to work activities.

- Compiling and encouraging refinement of information on the internet to include MSD best practices, case studies, etc. for public access, such as the Ministry of Labour portal, WSIB Prevention Practices database and the Canadian Centre for Occupational Health and Safety (CCOHS) website.
- Development of an online inventory of qualified consultation services and training to assist workplaces.

### III. Enforcement and Motivators

Enforcement refers to actions by the Ministry of Labour to ensure compliance with the Ministry's MSD prevention requirements. Motivators will encourage employers and workers to take ergonomic issues seriously.

The Sub-Committee supports:

- The continuation of dialogue among stakeholders and the system partners (HSAs, MOL, WSIB). For example, WSIB and stakeholders are currently discussing workplace health and safety incentives.

The Sub-Committee recommends:

- The Ministry of Labour ensure it has sufficient ergonomic expertise to support the Ministry's role in MSD prevention.
- Enhancement of ergonomics training for Ministry inspectors to increase their knowledge and skills. The Ministry should standardize the level of ergonomics training, as well as the guidance, that inspectors receive.
- Development of Ministry of Labour operational policy/guidance on MSD prevention, including identification of risk factors that may contribute to the development of MSD. A risk-based approach must be taken when evaluating workplaces. Stakeholder input must be considered during each stage of the development of materials.
- The Ministry develop a process to ensure orders related to MSD prevention issued by inspectors and ergonomists be clearly identified in the Ministry's database, for tracking purposes.
- The Ministry include a focus on MSD reduction among poor performers within the 'High-Risk' initiative and within the 'Last-Chance' initiative.
- A balanced approach of WSIB premium-based penalties and incentives.
- Development of financial assistance for qualifying firms, in order to encourage businesses to invest in efforts to reduce MSD.

#### **IV. Standards (including regulation)**

While consensus was not reached on a recommendation related to the development of a regulation, the Sub-Committee entered into extensive discussions on the merits and possible principles and scope of a regulation. For this reason, labour and employer representatives will be participating in further meetings to attempt to reach agreement on some or all of these issues related to a regulation. A supplement to the report on this issue will be delivered to the Minister by mid-January 2006.

Regardless of the outcome of these additional meetings, the Sub-Committee feels very strongly that the other recommendations remain a priority for action and should not be delayed in the absence of agreement on the issue of regulation. The implementation of these recommendations is essential to reducing the occurrence of MSD, regardless of whether a regulation is to be developed.

The Sub-Committee supports:

- Integration of ergonomic principles into national and international standards and management systems.
- MSD prevention taking a 'risk-based approach' that allows flexibility for a wide variety of workplaces and tasks.

The Sub-Committee recommends:

- Development of an inventory of existing ergonomic standards and tools (e.g., Canadian Standards Association Guideline on Office Ergonomics, NIOSH Lifting Guideline, Snook and Ciriello Tables), including advantages and disadvantages of each to help provide workplaces with practical and effective information. The OHSCO sub-committee should consider including this in its strategy.

## ACKNOWLEDGEMENTS

The Ergonomics Sub-Committee of the Manufacturing Panel, Health and Safety Action Group would like to thank Ford of Canada for its generous hospitality in providing the Sub-Committee with a meeting room and amenities for its June 3rd meeting, and for providing an informative tour of its Oakville Assembly Plant.

The Sub-Committee would like to thank the following presenters who provided the Sub-Committee with formal presentations:

- John Vander Doelen, Director, Workplace Insurance, Health and Safety Policy Branch, Ontario Ministry of Labour.
- Roy Mould, Chief Prevention & Corporate Strategy Officer, Workplace Safety and Insurance Board, and Marianne Levitsky, Director, Best Practices Branch, Prevention Division, Workplace Safety and Insurance Board.
- Jonathon Tyson, Ergonomist, Pulp and Paper Health and Safety Association (PPHSA).
- Syed Naqvi, Ergonomist, Occupational Health and Safety Clinics for Ontario Workers (OHCOW).
- Richard Wells, Director, Centre of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD); Professor, Department of Kinesiology, Faculty of Applied Health Sciences, University of Waterloo.
- Bradley S. Joseph, Ergonomics and Safety Process Manager, Ford Motor Company and Tashlyn Chase, Canadian Auto Workers (CAW).
- Roberta Ellis, Vice President, Prevention, Workers' Compensation Board of British Columbia.
- Bawan Saravanabawan, Manager, Technical Services Unit, Occupational Health and Safety and Injury Compensation, Labour Operations, Human Resources and Skills Development Canada.

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- Retail Council of Canada
- Dr. Heather Tick, Integrated Pain Treatment Centre





