

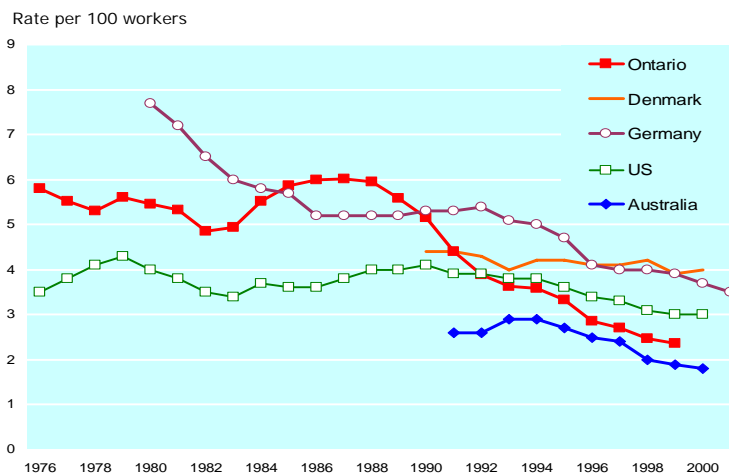
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## Incidence, Prevalence and Consequences of work-related musculoskeletal disorders: Current Canadian Evidence

Cam Mustard, ScD  
 President, Institute for Work & Health

JASP Conference  
 Montreal, October 2006

**Trends in Occupational Injuries, 1980-2000**  
 Germany, USA, Canada, Denmark, Australia



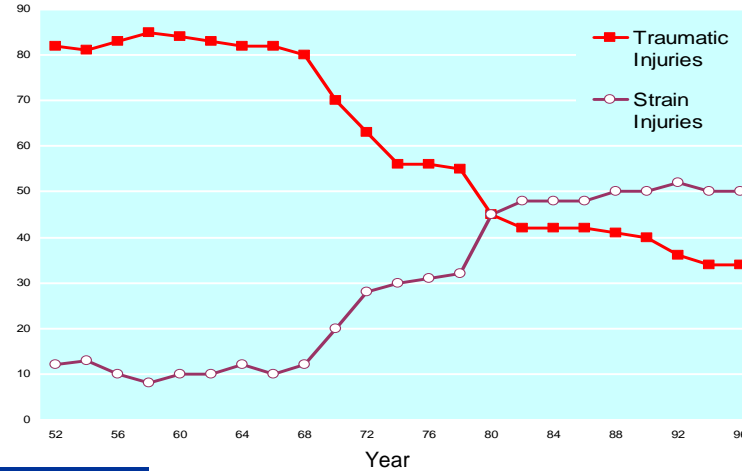
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Cette présentation a été effectuée le 23 octobre 2006, au cours du symposium "Prévenir l'incapacité au travail : un symposium pour favoriser l'action concertée" dans le cadre des Journées annuelles de santé publique (JASP) 2006. L'ensemble des présentations est disponible sur le site Web des JASP, à l'adresse <http://www.inspq.qc.ca/jasp>.

### Proportion of workers' compensation claim attributed to traumatic injuries and to strain injuries British Columbia, 1952-1996

Ostry A. From Chainsaws to Keyboards: Injury and Industrial Disease in British Columbia  
In Sullivan T, Injury and the New World of Work, UBC Press, 2000

Proportion of compensation claims



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### Presentation Overview

- Definition of Work-Related Musculoskeletal Disorders (WMSD)
- Prevalence and incidence of WMSDs, trends over time and current surveillance
- Emerging evidence for understanding WMSDs as recurrent conditions with chronic disease characteristics
- Consequences of WMSDs

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**Definition:**

**Work-Related Musculoskeletal Disorders (WMSD)**

- Work-related: caused, aggravated, exacerbated by workplace exposures (WHO, 1985)
- WMSD: A descriptor for disorders and diseases of the musculoskeletal system... tendon, muscle, nerve, joint, vascular structures and bursa (Hagberg, 1995)
- Definitions exclude conditions arising from traumatic causes
- From an ergonomic perspective, concern with biomechanical exposures related to the durations of force, posture and repetition

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**WMSD classification**

Evaluation of consistency of clinical diagnostic classification of WMSD (Van Eerd et al., 2003)

- 88 different labels were used to name disorders from 27 classification systems

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- Radiating neck complaints
- Cervical degenerative disease
- Cervico-brachial fibromyalgia
- Tension neck syndrome
- Trapezius myalgia
- Levator scapulae myalgia
- Status post-whiplash
- Non-specific musculoskeletal pain (neck)
- Thoracic outlet syndrome
- Frozen shoulder syndrome
- Rotator cuff syndrome
- Acromioclavicular syndrome
- Gleno-humeral degenerative joint disease
- Bicipital tendinitis
- Shoulder pain
- Scapulothoracic pain syndrome
- Thoracalgia
- Arm myalgia
- Triceps tendinitis
- Olecranon bursitis
- Lateral epicondylitis
- Medial epicondylitis
- Pronator syndrome
- Radial nerve entrapment
- Ulnar nerve entrapment (elbow)
- Posterior interosseus nerve entrapment
- Lateral antebrachial neuritis
- Forearm myalgia
- Non-specific diffuse forearm pain
- Tendon disorders
- Wartenberg's syndrome
- Ganglion cyst
- Ulnar nerve entrapment (wrist)
- Carpal tunnel syndrome
- deQuervain's
- Trigger finger
- Painful 1<sup>st</sup> carpometacarpal joint
- Osteoarthritis
- Arthralgia
- Digital neuritis
- Non-specific discomfort
- Intrinsic hand myalgia
- Myalgia
- Hand arm vibration syndrome

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## The WMSD Iceberg

Typical 12 month disorder reports

**Lost days at work**

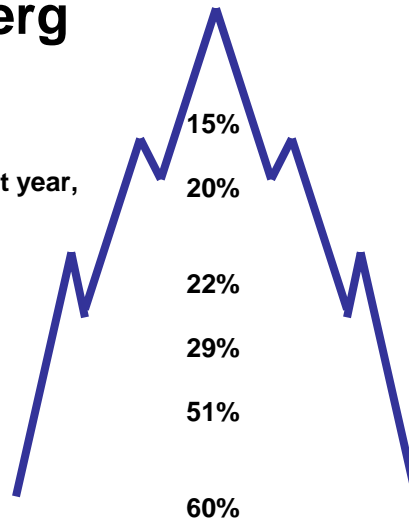
**Pain > 12 times or > 7 days in last year, moderate intensity**

**Reported to workplace**

**Saw health practitioner**

**Work aggravates pain to some extent**

**Any neck or upper limb pain**



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**Prevalence of WMSD conditions**  
**Example of the Institutional Health Care Sector**

Ontario Patient Lift Evaluation Study, 2006  
 Representative sample of 870 caregivers in workforce of 75,000  
 12 month prevalence

	Sample N=870	Rate per 100 worker years	Population N=75,000
WMSD resulting in a work absence	177	<b>20</b>	15,000
Total disability days due to WMSD	2,300	<b>270</b>	200,000
Total disability days due to non-work illness	6,234	<b>725</b>	540,000

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**Prevalence of WMSD conditions**  
**Example of the Institutional Health Care Sector**

Ontario Patient Lift Evaluation Study, 2006  
 Representative sample of 870 caregivers in workforce of 75,000  
 12 month prevalence

	Sample N=870	Rate per 100 worker years
Pain in the past 12 months	538	<b>61</b>
Visited a health care provider for pain	384	<b>44</b>
Work absence due to WMSD	177	<b>20</b>
Reported injury to WSIB	147	<b>17</b>

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**Attributed cause of WMSD pain**  
**Example of the Institutional Health Care Sector**

Ontario Patient Lift Evaluation Study, 2006  
Representative sample of 870 caregivers in workforce of 75,000  
538 caregivers reporting pain

	Sample N=538	Percent
Resident lifting and transfer	390	<b>72%</b>
Repetitive movement	321	<b>51%</b>
Moving equipment	221	<b>41%</b>
Awkward posture	135	<b>25%</b>
Traumatic injury	51	<b>10%</b>

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**Emerging evidence for understanding WMSDs as recurrent conditions with chronic disease characteristics**

12 month incidence of **24.4%** of recurrence of work-related low back disorder in longitudinal observational study of 350 workers

- biomechanical exposures were not related to risk of recurrence
- risk factors were low physical health, back pain disability at baseline and frequency of job change

Oleske et al. Risk factors for recurrent episodes of work-related low back disorders in an industrial population. Spine 2006; 31: 789-798.

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### Consequences of WMSDs

Incidence, Disability Duration and Compensation Costs,  
WMSD, Ontario 2000

	Number of Lost-time Claims	Total Disability Days (000)	Compensation costs (\$ 000)
WMSD Claims	44,767	3,023	337,200
WMSD as % of total	<b>43%</b>	<b>49%</b>	<b>44%</b>
Non-WMSD Claims	59,033	3,082	432,000
Total	103,800	6,105	769,200

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### Workplace Return-to-Work Practices Ontario

In a sample of 1,500 workers disabled by a musculoskeletal injury in 1994, **25%** of workers reported receiving an offer of work accommodation from their employer in the first 30 days following injury

In a sample of 600 workers disabled by a musculoskeletal injury in 2005, **60%** of workers reported receiving an offer of work accommodation from their employer in the first 30 days following injury

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## Workplace Return-to-Work Practices Ontario, 2005

Unpublished data. Franche RL, Hogg-Johnson S, Breslin C, Mustard CA, Coté P. Determinants of Return-to-Work: Applying the readiness for change model. Project 341. Institute for Work & Health 2006.

	Sample	One Month Follow-up		Seven Month Follow-up
		WA not offered	WA offered and accepted	WA offered and accepted
Firm Size	N=479	N=206 (43.0%)	N=211 (44.1%)	N=231 (59.1%)
1 to 20 FTE	40 (8%)	25 (62.5%)	11 (27.5%)	17 (42.5%)
21 to 100 FTE	74 (15.4%)	40 (54.0%)	29 (39.2%)	25 (44.7%)
101 to 1000 FTE	146 (30.5%)	60 (41.1%)	70 (47.9%)	69 (56.1%)
> 1000 FTE	110 (23.0%)	38 (34.5%)	54 (49.1%)	56 (65.9%)
Schedule 2	109 (22.8%)	43 (39.5%)	47 (43.1%)	64 (67.1%)

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## Summary

- WMSDs are the leading cause of disability among working age adults
- The incidence of time-loss workers' compensation claims are important but represent the 'tip of the iceberg' of morbidity
- Limited agreement on the clinical classification of specific disorders within WMSD
- Important to recognize the risk of recurrent disability in this class of disorder: Many cases of WMSD may represent chronic conditions
- Good evidence of improving workplace practices concerning disability management and return-to-work
- Important gaps in our knowledge of effective prevention of WMSDs

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