

# **Applying Ergonomics to Reduce Repetitive Strain Injuries**

Occupational Health Clinics for  
Ontario Workers Inc.

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# Topics to be Covered During this Session

- Basics about RSIs
- Process for reducing the risk of RSIs in your workplace
- Resources that can help you and your Joint Health & Safety Committee

# Occupational Health Clinics for Ontario Workers

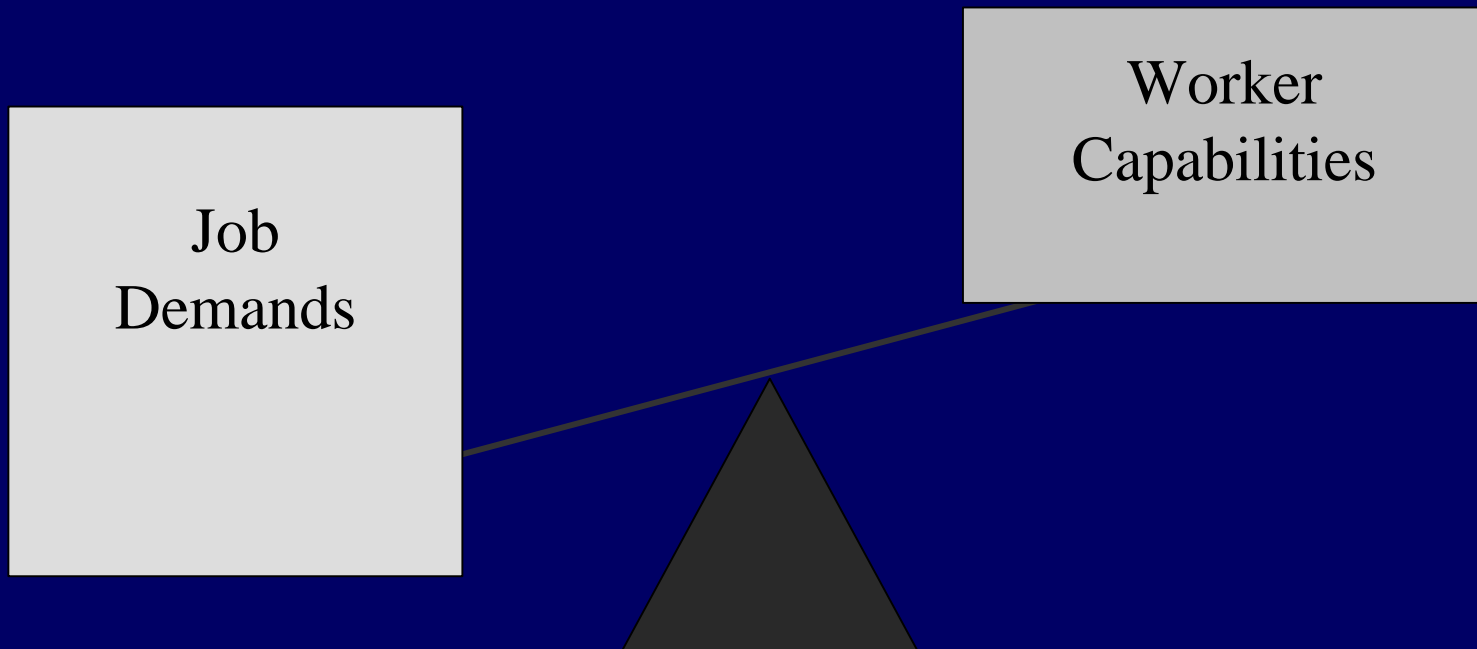
- Focus on prevention of occupational health problems in the workplace
- Provide objective, scientific information
- Staff includes ergonomists, occupational hygienists, nurses, and doctors

## Ways that OHCOW can Help

- Visit workplace, give advice to JH&SC to reduce risk factors
- Answer questions (1-888-596-3800)
- Meet with individuals to determine work-relatedness of injuries/illnesses
- Give presentations on health and safety issues

# Ergonomics – Fitting the job the worker

## THE BALANCING ACT



# Sometimes Job Demands are Too Much



# People are different

- Physical Condition
- Body Size and Shape
- Gender
- Age
- Physical Disabilities



## **Goal of ergonomics:**

To reduce the risk of developing a “work related”  
– Repetitive Strain Injury (RSI)

## **SYNONYMS for RSI:**

Cumulative Trauma Disorder (CTD)

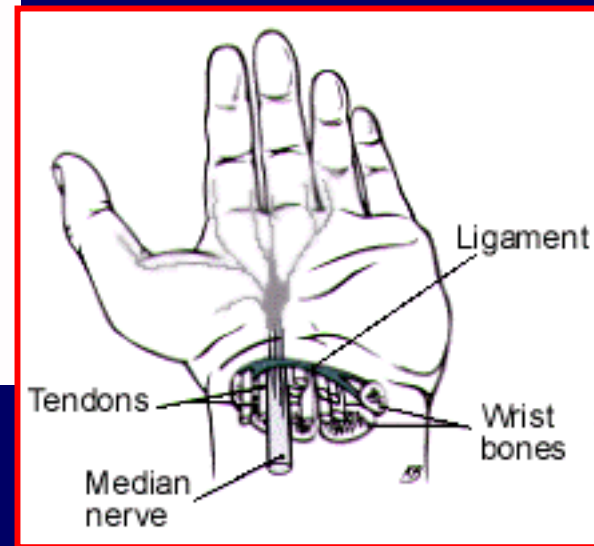
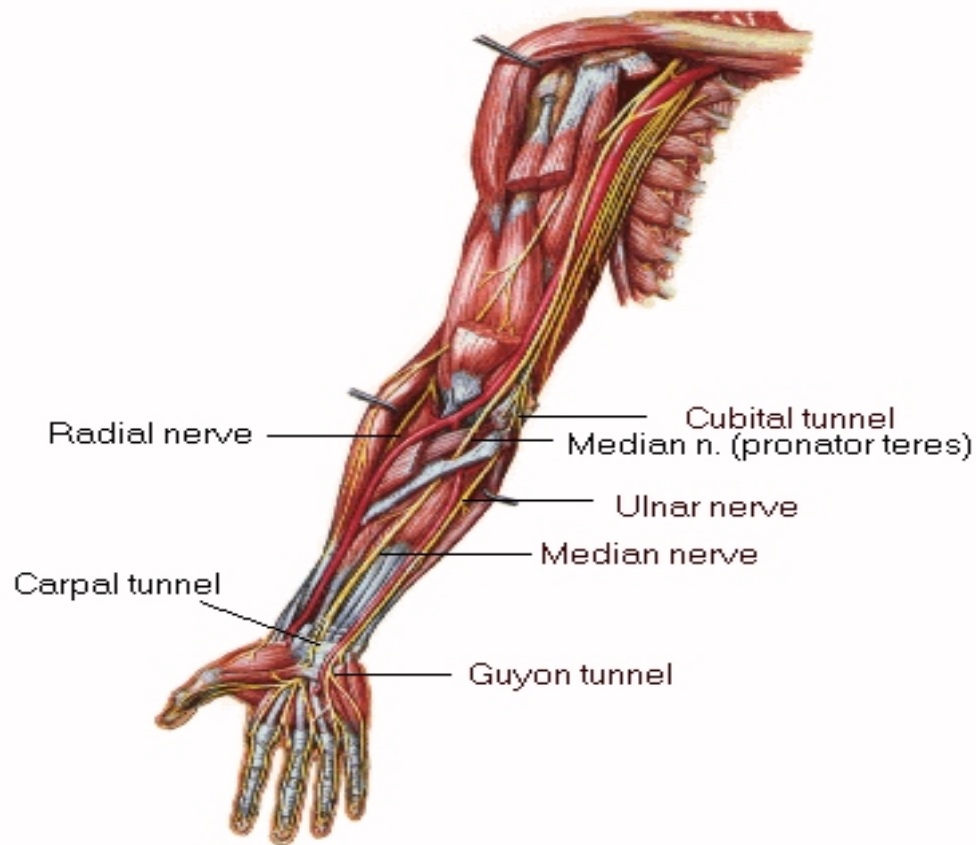
Overuse Syndrome

Repetitive Motion Disorder (RMD)

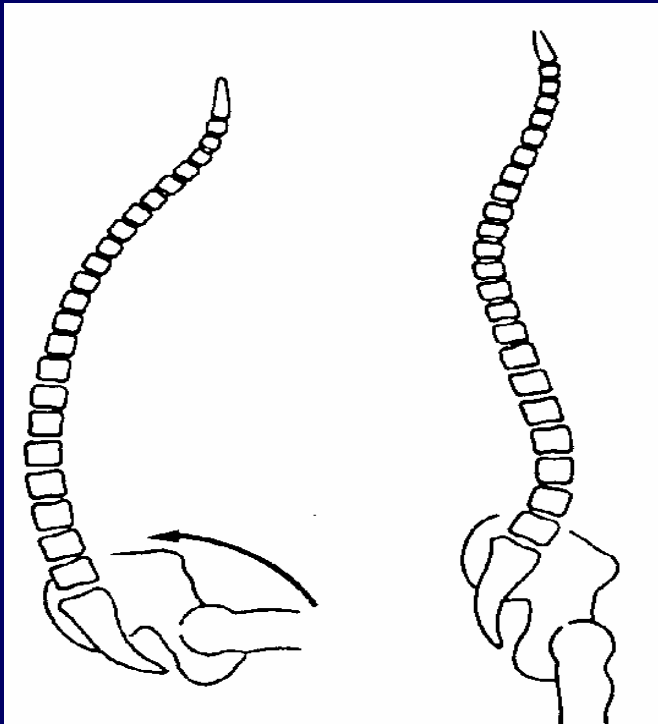
Chronic Musculoskeletal Injuries

**Musculoskeletal Disorders (MSD)**

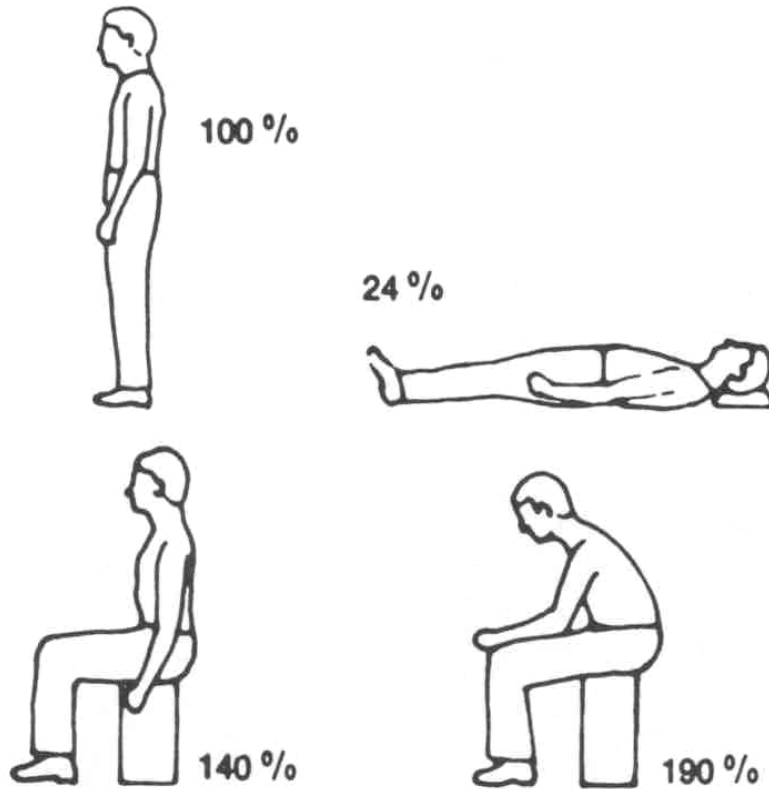
# Upper limb disorders



# Neutral Spine

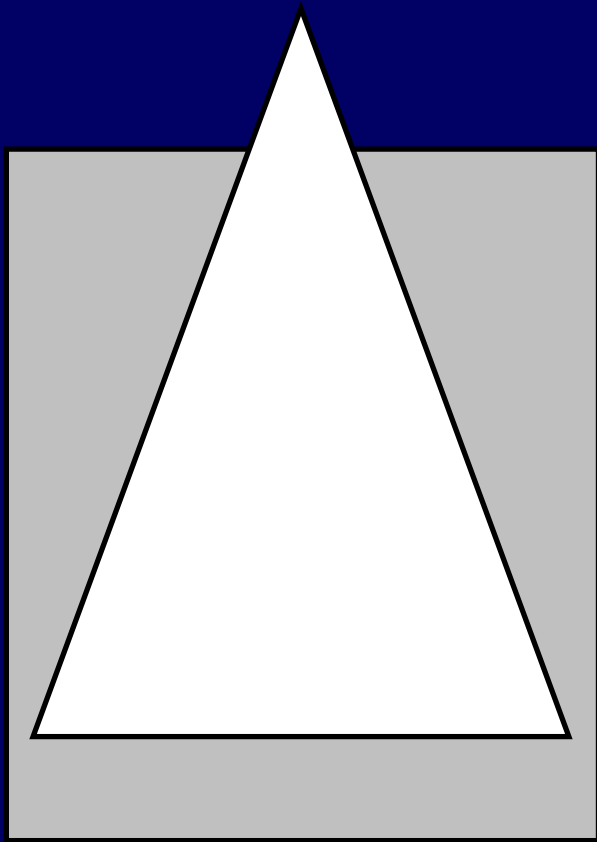


# Low Back Pain



Spinal Cord

# Tip of the Iceberg



## Compensated Injuries

**Stage 3:** Persistent pain or discomfort

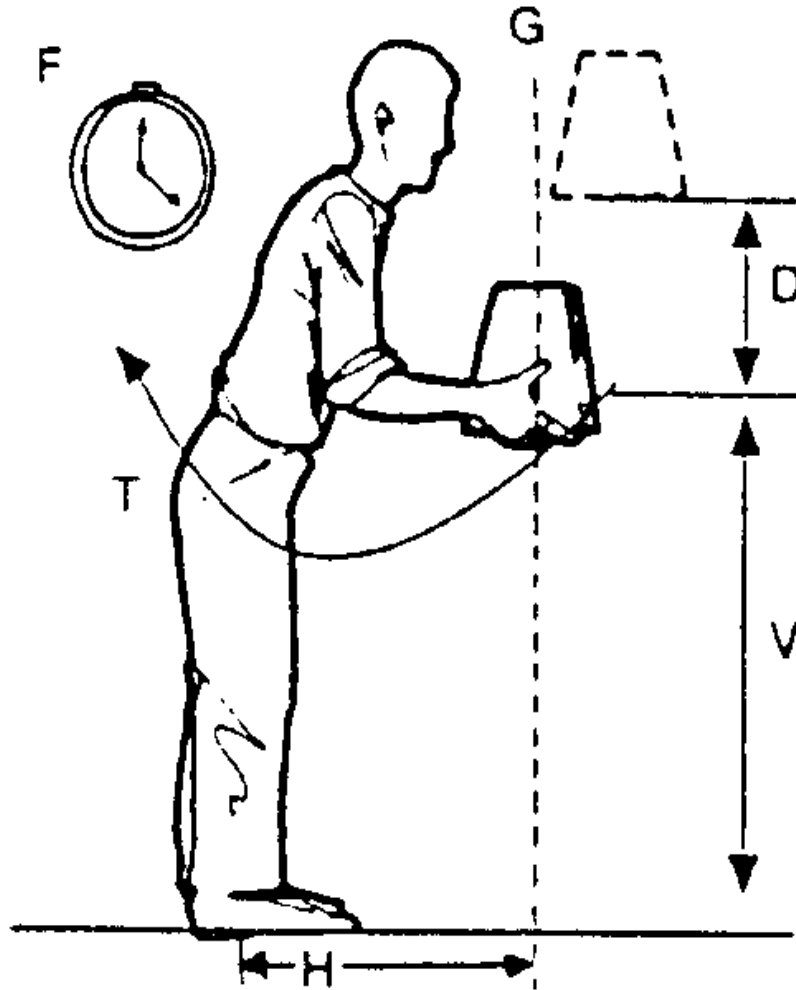
**Stage 2:** Pain or discomfort that disappears with rest

**Stage 1:** Pain or discomfort when performing repetitive activity

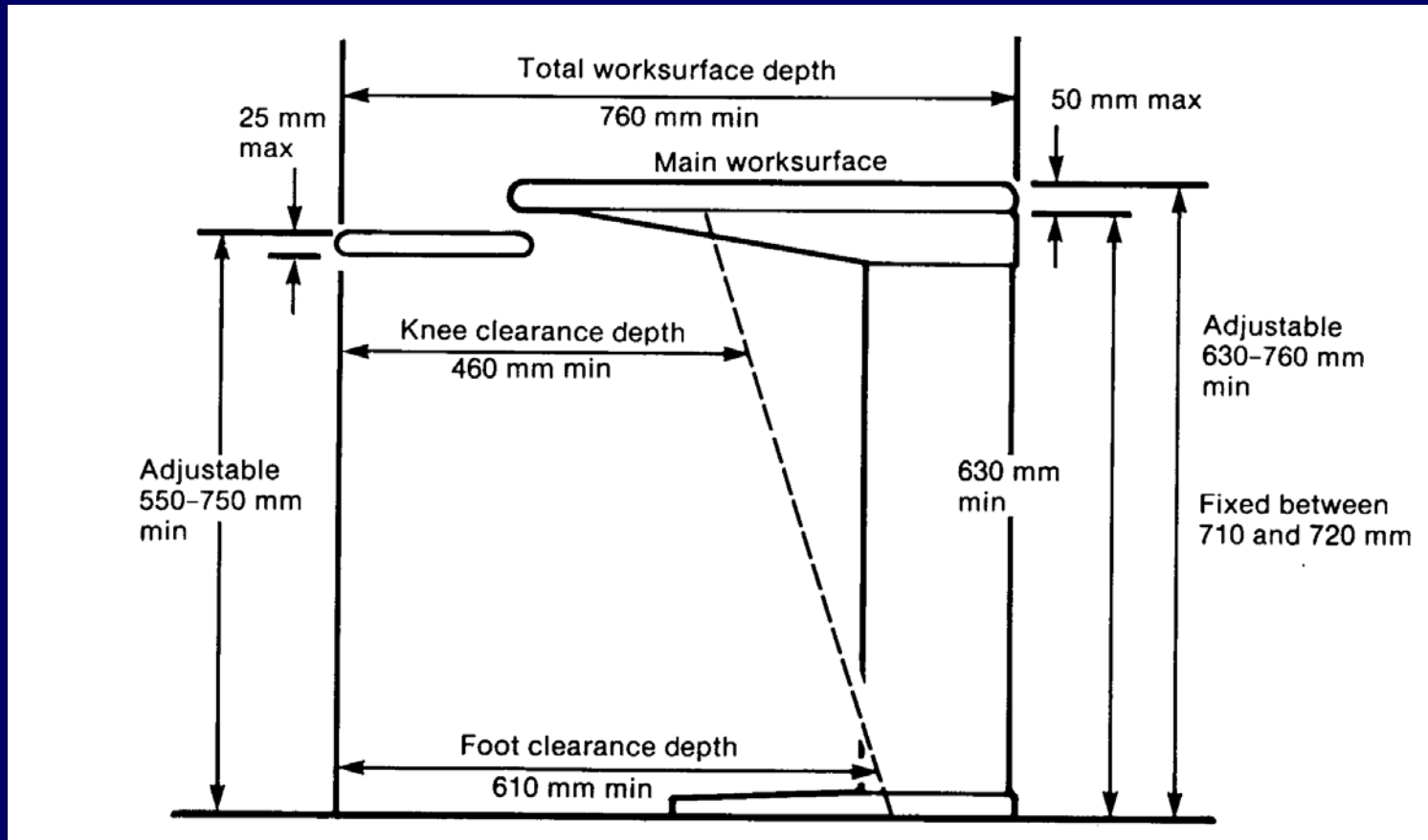
# Ergonomic Risk Factors

- Repetition
- Force – Static & dynamic
- Awkward Postures
- Insufficient rest
- Contact Stresses
- Extreme temperatures
- Vibration

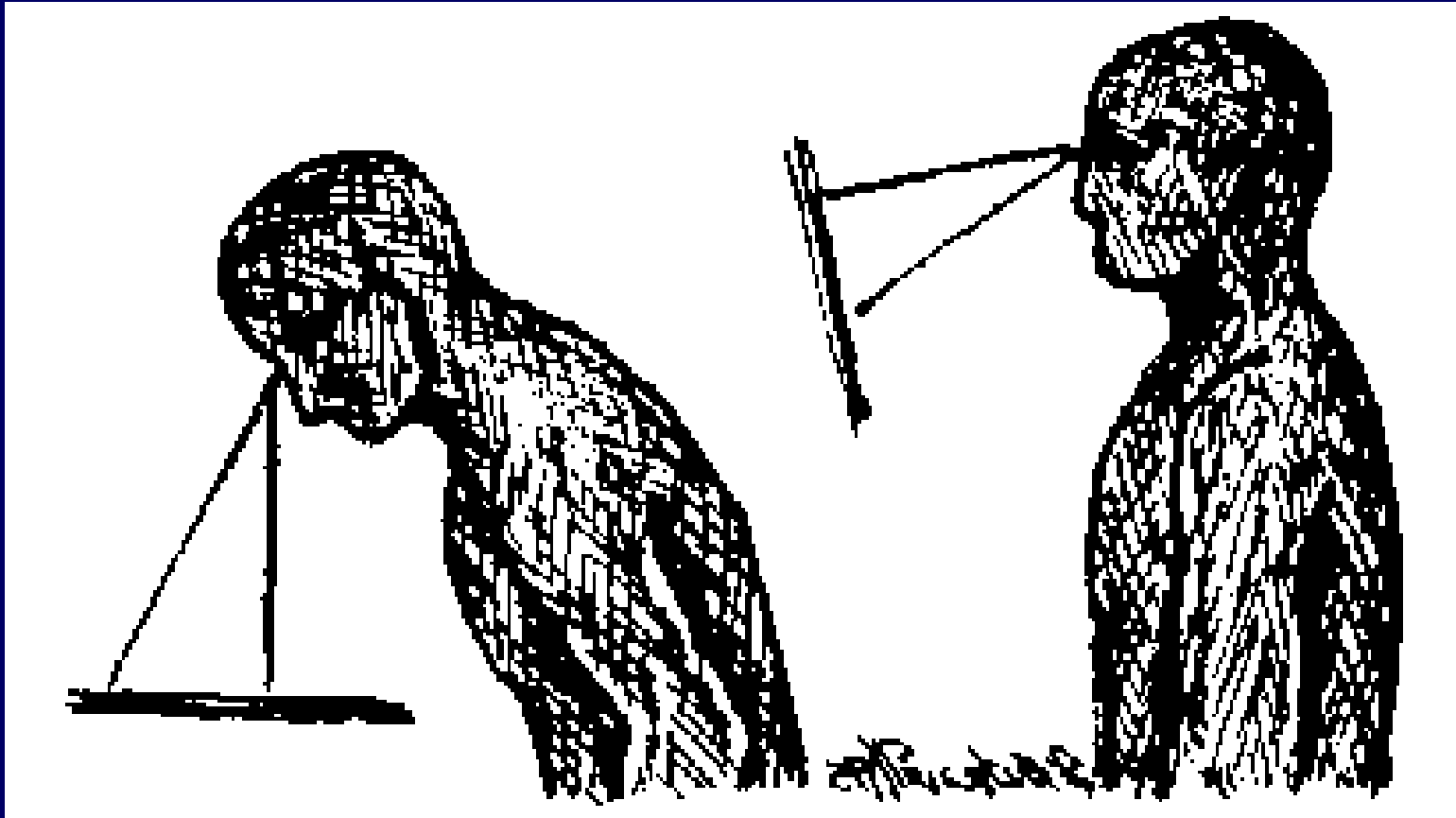
# NIOSH Lifting Equation



# Avoiding Awkward Postures Through Design



# Static Postures



# Process for Reducing the Risk of RSIs in Your Workplace



# 1. Identify jobs or tasks to evaluate

- Compensation claims
- Complaints from workers
- Absenteeism due to musculoskeletal discomfort
- High turnover on some jobs
- People wearing wrist or elbow splints
- Some jobs that are repetitive or require awkward postures and/or high force

## 2. Identify Risk Factors

- Talk to workers
- Ask workers about exposures in a survey
- Body mapping / hazard mapping
- Observe work, apply guidelines
  - NIOSH lifting equation, Snook's tables
  - Work heights - Anthropometric tables
  - Office Ergonomics - CSA Standard
  - Vibration - ISO and ACGIH
  - Repetition - ACGIH hand activity level

### 3. Identify Recommendations / Interventions

#### Brainstorming Session

Risk Factors	Possible Short-term Solutions	Possible Long-term Solutions

# Making Recommendations

<b>Risk Factor</b>	<b>Possible Recommendation</b>	<b>Feasible (Y/N)</b>	<b>Priority Level</b>	<b>Target Date</b>	<b>Person Responsible</b>
Work height is not adjustable.	Purchase height adjustable equipment for shared workstations.				

# 4. Implement Changes

## Legislation in Ontario

- OH&S Act, Section 25(2)(h)

*An employer shall take every precaution reasonable in the circumstances for the protection of a worker.*

- OH&S Act, Section 9(20)

- *A constructor or employer who receives written recommendations from a committee shall respond in writing within twenty-one days.*

# Setting Priorities

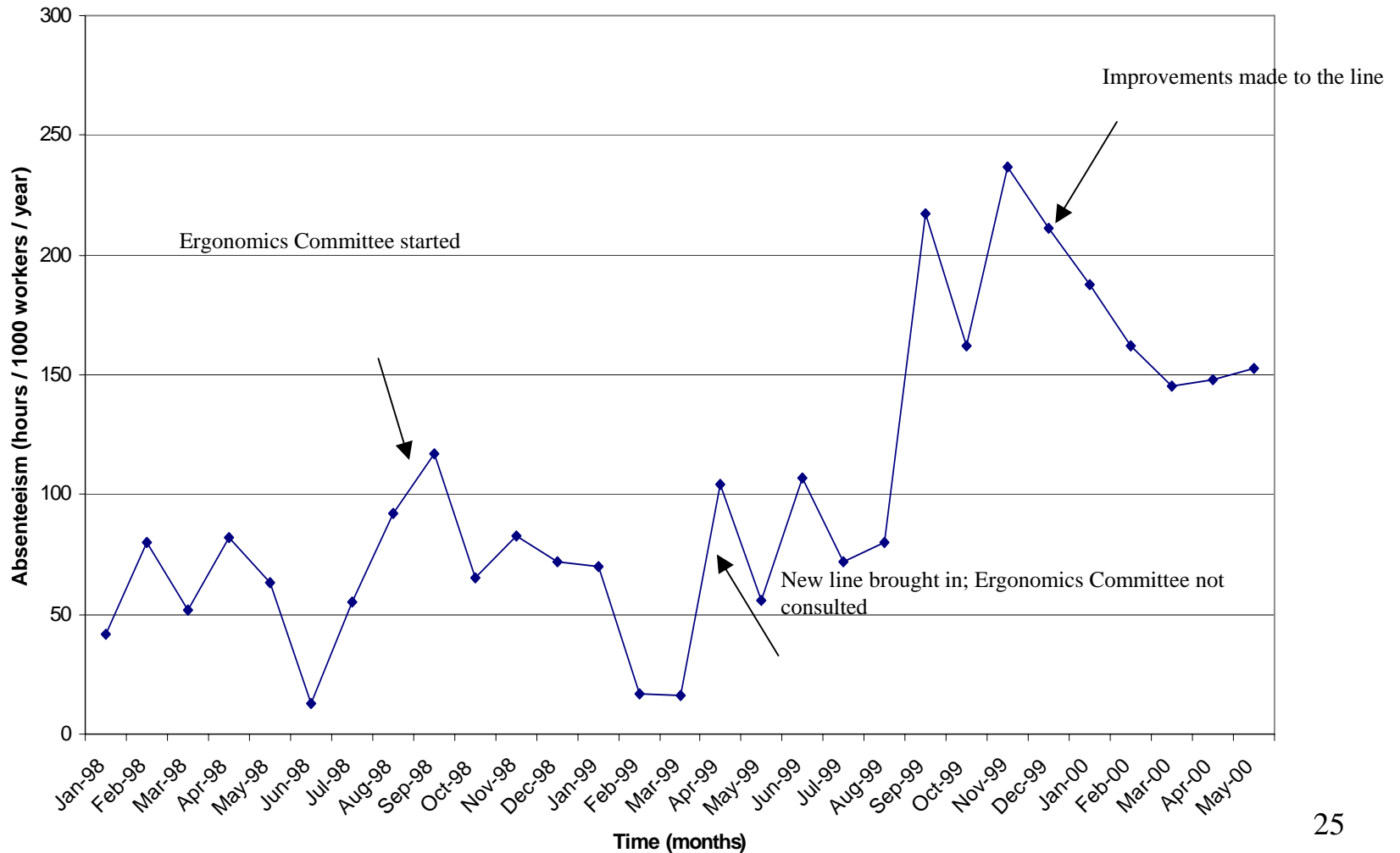
- Injuries or health complaints
- Job demands exceed guidelines
- Degree that proposed change will reduce risk factors
- Potential benefit to health
- Number affected by the change

## 5. Follow-up to determine effectiveness of change - Examples of indicators to measure

- absenteeism
- symptom survey results
- worker feedback/complaints
- productivity levels / product quality
- product waste
- work stoppages

# Graphing Indicators Over Time

Figure 5: Absenteeism calculated based on the number of hours worked



# Additional Outside Resources

- Workers Health and Safety Centre
- Safe Workplace Associations
- Your union or corporate office
- Workplace Safety and Insurance Board
- Ontario Ministry of Labour
- Ergonomics consultants (Association of Canadian Ergonomists)

# **OHCOW nearest you**

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