Aging Workers & Ergonomic Challenges

Presented By:
Kavita Chauhan, R.Kin, B.Sc. Kin & Hlth., Ergonomic Specialist

About ERGO Inc.
- International Ergonomics Consulting & Training organization providing Professional Ergonomic & Injury Management Services
- Since 1994

Why ERGO Inc.
- Certified, experienced professional Specialists

© ERGO Inc. 2013
www.ergoconsulting.ca
info@ergoconsulting.ca
Aging Workers & Ergonomic Challenges

Objectives
1. Ergonomic Hazard Review
2. Musculoskeletal Disorders
3. Effects of Aging in the Workforce
4. Workplace Ergonomic Hazards
5. Ergonomic Injury Prevention
6. “Finding Solutions” – Group exercise

What is Ergonomics?

Definition of ergonomics...

What does ergonomics mean to you...

"No wonder your arm aches. Shackles should be placed at eye level. Man, it's an ergonomic nightmare down here.”
Why Ergonomics?

If only we could remain this young...

Prevent Injuries

Ergonomic Standards

CSA Z1004 - Workplace Ergonomics
Ergonomic Guidelines

Musculoskeletal Disorder Prevention Guidelines

Evaluating Risks in Growing Occupations Inc.

Workplace Trends

- Aging Workforce
- Increased Technology
- Increasing Female and Temporary Workers
- Social Responsibility
- Legislation

© ERGO Inc. 2013
www.ergoconsulting.ca
info@ergoconsulting.ca
WORKPLACE TRENDS

“Workers over 60 are seen as more experienced, knowledgeable, reliable, and loyal than younger employees.”

Delaying retirement may also promote physical and emotional health by keeping older adults active and engaged and imbuing their lives with meaning

(Calvo, 2006)

Source: Managerial Attitudes towards Older Workers: a Review of the Evidence, The Urban Institute
Richard Johnson, September 2007

AGING WORKERS

“Older workers have lower non-fatal injury rates. However, when they get hurt, they need more time off. Job characteristics such as high stress, repetitiveness and high physical demands are statistically related to early retirement.”

Source: Kowalski-Trakoff et al, 2005

Musculoskeletal Disorders (MSDs)
MUSCULOSKELETAL DISORDERS

MSDs are injuries and disorders of the musculoskeletal system. They may be caused or aggravated by various hazards in the workplace. Include injuries mainly to:

- Muscles, tendons and tendon sheaths
- Nerves
- Bursa
- Joints/spinal discs

MSDs are not the direct result of a fall, struck by or against, caught in or on, vehicle collision, violence, etc.

HYPOTHESIZED TISSUE RESPONSE TO CUMULATIVE STRESS

<table>
<thead>
<tr>
<th>Time (Years)</th>
<th>Activity Demand</th>
<th>Tissue Tolerance</th>
<th>Activity demand exceeds Tissue Tolerance and MSD Occurs</th>
</tr>
</thead>
</table>
| ***Aging workers have decreased tissue tolerance***

COMMON TYPES OF MSDs

Cumulative stresses on the body over time lead to wear and tear of musculoskeletal system –

***Aging workers are more prone to MSDs***
MSD STATISTICS

- In Ontario MSDs account for 42% of all lost time claims and 50% of lost time days (averages for 1996-2004).
- These claims represent almost 27 million lost days.
- Direct costs of more than 3 billion.
- Ontario employers are estimated to have paid more than 12 billion in direct and indirect costs related to MSD related lost time claims.
- Workers over 50 years of age contribute significantly to increased costs.

PHYSIOLOGY OF AGING

- Hearing issues (1/3 by age 65)
- Issues with vision
- Issues with extreme temperatures
- Fatigue
  - more rapid onset
  - 40% less oxygen exchange at 65
  - 25% less function of respiratory system at age 65

- Strength – 25-30% decrease at 65 yrs
- Flexibility - 18-20% decrease at 65 yrs
- Balance – One-third of 65 yrs or older fall each year
- Reaction time
- Motor skills

© ERGO Inc. 2013
www.ergoconsulting.ca
info@ergoconsulting.ca
PHYSIOLOGY OF AGING

An aging workforce INCREASES the need for ergonomic interventions

Ergonomics interventions designed to assist the aging workforce should improve safety for ALL employees.

Can you think of examples?

DO YOU HAVE MSD WORKPLACE HAZARDS?

PHYSICAL MSD HAZARDS

- Force
- Awkward posture
- Repetition
- Static Work
- Vibration
- Cold
- Impact Loading

**Aging workers feel the effects of these hazards more than younger workers**
Aging Workers & Ergonomic Challenges

**FORCE**

- Material Handling
  - Lifting & Lowering
  - Pushing & Pulling
  - Carrying

- Gripping forces
  - Pinch gripping
  - Power gripping

**Aging workers have less strength**

**AWKWARD POSTURES**

- What are Awkward Postures?
  - Bending, twisting (e.g. neck, back, wrist)
  - Reaching (overhead, to floor, behind body)

**Aging workers have limited range of motion and therefore awkward postures can be more harmful**

**REPETITION**

- What is Repetition?
  - Number of times a task is performed in a given period of time (cycle time)

  *Tissue strain is experienced as a result of cumulative exposure*

- What is Repetitive?
  - No universal definition

**Aging workers fatigue quicker**
STATIC WORK & VIBRATION

What is vibration?
What is static work?

**Aging workers are at more risk to these hazards.

OTHER FACTORS

BIOLICAL • Age • Gender • Size • Previous Injuries • Pregnancy

SOCIOLOGICAL • Perception of workload • Relationships • Work ethic • Culture

INJURY PREVENTION STRATEGIES
INJURY PREVENTION

Controls to assist an aging worker

- Improve the task, workstation and/or environment
  - Engineering Controls
- Maximize the employees ability to perform the physical demands of the job
  - Administrative Controls

DESIGN CONSIDERATIONS

- Boredom vs. complex jobs
- Rate, duration, and recovery time of task
- Static vs. dynamic muscle activity requirements
- Weights of objects
- Grips
- Lighting
- Keyboard and mouse design
- Lettering, character size and colour

ENGINEERING CONTROLS - Office Examples
ENGINEERING CONTROLS

Everyday use
Aging Workers & Ergonomic Challenges

ADMINISTRATIVE CONTROLS

PRODUCT STATIONS

Thank you for attending this workshop!

Questions?

© ERGO Inc. 2013
www.ergoconsulting.ca
info@ergoconsulting.ca
About ERGO Inc.

www.ergoconsulting.ca

Join Our BLOG @ ERGO

www.ergoconsulting.ca

‘Healthy Workers add up to Healthy Profits’

ERGO Worksheet

Product or Thing ________________

Check all applicable boxes:

- Improve hearing
- Improve issues with sight
- Improve balance
- Improve issues with temperature
- Reduce/ minimize fatigue
- Reduce force – material handling
- Reduce static postures
- Reduce effects of cold
- Address strength issues
- Address flexibility issues
- Address reaction time issues
- Address motor skills issues
- Improve postures
- Reduce force – gripping
- Address repetition
- Reduce vibration

How could this product be used improperly and what hazard could result?

© ERGO Inc. 2013
www.ergoconsulting.ca
info@ergoconsulting.ca