Maintaining an Ergonomics Program

Objective
An ergonomics program that is consistent with OSHA requirements

OSHA is concerned with:
manufacturing jobs
or
manual handling jobs
or
jobs reporting musculoskeletal disorders

Purpose of a Program
(from OSHA's perspective)
Prevent occurrence of work-related musculoskeletal disorders.

Purpose:
Inform employees about musculoskeletal disorders and the risk factors that can cause or aggravate them.

Purpose:
Promote continuous improvement in workplace ergonomic protection.
Purpose:
Encourage new technology and innovation in ergonomic protection.

Purpose:
Identify design principles that prevent exposure to risk factors

To Objectives:
Prevent disorders from occurring through the design of workplace, work methods, tools and equipment.
Prevent the progression of the disorders, if they do occur, through medical management.

Ergonomics Program Elements
Management Leadership
Employee Participation
Hazard Identification
Job-site Analysis
Hazard Control
Training
Medical Management
Program Evaluation

Management Leadership
Multidisciplinary Effort
Human Resources
Product and Process Engineers
Maintenance
Production Supervision
Health Care Providers
Management Leadership
Assign and communicate the responsibilities for setting up and managing the ergonomics program so managers, supervisors and employees know what is expected.

Management Leadership
Provide those persons with the authority, “resources,” information and training necessary to meet their responsibilities.

Management Leadership
Communicate periodically with employees about the program.

Employee Participation
Employees should have ways to
• report MSD signs and symptoms
• get responses to reports, and
• be involved in developing, implementing, and evaluating the program.

Employee Participation
Ergonomics Committee
Conduct of the Ergonomics Committee
Communicate with the workers and mgmt.
Conduct and analyze ergonomic surveys
Assist in prioritizing modifications
Maintain program documentation
**Employee Participation**
Ergonomics Committee
- Prod. Supervision
- Line Workers
- Engineering
- Maintenance
- Safety
- Medical
- Human Resources

**Hazard Identification**
Often referred to as “surveillance”
- Passive Surveillance
- Active Surveillance

**Passive Surveillance**
- OSHA logs
- Workers Compensation Records

**Active Surveillance**
- Symptom Survey
  - Predisposition to having symptoms
- Job Improvement Form
  - Imparts responsibility for improvement

**Job Improvement Form**
- Primary Job
- Shift
- Time in current job
- Rotation?
- How can your job be improved?

- Transfer requests
- Absenteeism
- Turn-over rates
Have you had any soreness within the last month? If yes, put a check for each part of your body that has felt sore.

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Rarely Noticeable</th>
<th>Noticeable</th>
<th>Very Noticeable</th>
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</thead>
<tbody>
<tr>
<td>Neck</td>
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<tr>
<td>Shoulders</td>
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<td>Elbows</td>
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<td>Upper Back</td>
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<td></td>
</tr>
<tr>
<td>Lower Back</td>
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</tr>
</tbody>
</table>

Last occurrence?
- today
- yesterday
- last week
- more than a week ago
- more than a month

When does it occur?
- during the shift
- after work
- during the night
- all the time
- it varies

How often?
- every day
- once a week
- once a month
- less than once a month
- it varies

How long does it last?
- 1 hour
- all day
- 1 - 7 days
- 8 - 30 days
- more than 30 days

Job Improvement From
Have you reported this soreness to your?
- Supervisor
- Plant Nurse
- Not reported

Job-site Analysis
Two Basic Methods
- Checklist
- Narrative
- Mathematical Models

Advantages of a Checklists
- Less time to conduct and document
- Requires less training

Disadvantages of Checklists
- Less complete
- Descriptive rather than prescriptive
Ergonomic Checklists

Two types

Qualitative Checklists

Quantitative Checklists

Qualitative Checklists

(Risk / No Risk)

Does the task require more than 10 pounds of force? (Y N)

Is the tool handle hard or slippery?

Qualitative Checklists

(Scaled)

Light: Arm away from body, no load.

Moderate: Rotating arms while exerting moderate force

Heavy: Lifting with arms extended

Quantitative Checklist

Job Strain Index

Scaled estimates of risk based on:

Intensity

Duration

Efforts per minute

Posture

Speed

Duration

Quantitative Checklists

Categorizes conditions

Risk / No risk

Scaled (1,2,3)
Mathematical Models

Biomechanical Models
(University of Michigan)

NIOSH Lifting Equations

Tilt fixture toward the operator
The angle of the tool would be
improved, as well as visual access
to the cavity

Narrative Job-site Analysis
The recommendation address
Workplace Design
Work Methods
Tools
Equipment

Hazard Control
Engineering Controls
Administrative Controls
Work-practice Controls
Categories of Modifications

1) Quick, low-cost changes
2) Prioritized modifications
3) Items that are not presently technically or ergonomically feasible

Administrative Controls

- Job Rotation
- Conditioning
- Ramp-in Programs
- Alternative Assignments

Ergonomics Training

General Training [all affected employees]
Production Management
Engineers and Maintenance
Health Care Providers
Ergonomics Committee

Training

General Training of all affected employees
- Recognize biomechanical hazards
- Benefits of correct postures and motions
- Consequences of poor biomechanics
- Signs and symptoms of disorders
- Differentiate: soreness / disorders
- Task specific training

Training

Production Supervision
- Learn to use a “different set of eyes”
- Use examples from ergonomic job analysis
- Help in early detection of signs and symptoms
- Their part in the medical management system

Training

Engineers and Maintenance
- Understand biomechanical hazards
- Relationship to product and process design
- Incorporate BEFORE installation
- Incorporate into specifications
- Continuous improvement rather than problem solving
- Use examples from ergonomic job analysis
Training

Health Care Providers
[Both internal and external]

- Protocols for detecting and treating MSD’s
- Signs and symptoms
- Restricted work, job reassignment, etc.
- Understanding of biomechanical hazards

Training

Ergonomics Committee

- Workplace Layout
- Work Methods
- Conduct of Surveys
- Conduct of Job-site Analysis
- Communication Skills

Results of an Ergonomic Program

- Regulatory compliance
- Reduced workers’ comp costs
- Increased productivity
- Improved product quality
- Reduced absenteeism
- Reduced turn-over

Simply part of good business practice

Program Evaluation

Determine if the program is achieving positive results

Measures of program effectiveness

Program Documentation

Contents of the Ergonomics Manual

Management of the Program

- Company policies relative to ergonomics
- Assignment of responsibilities and authorities
- Resources for training, analysis and modifications

Content of the Ergonomics Manual

Administrative Procedures

- Written program
- Training content and schedules
- Participants in and activities of the ergonomics committee
An Effective Ergonomics Program

- Reduces occupational injuries and illnesses
- Increases productive efficiency
- Increases product quality
- Increases worker job satisfaction
- Ensures regulatory compliance

Content of the Ergonomics Manual

Administrative Procedures
- Job rotation, ramp-in, alternative assignment policies, etc.
- Methods of encouraging reporting ergonomics risks
- Active surveillance methods and schedule

Analysis Methods
- Job-site analysis tools (checklists, etc.)
- Trigger values to initiate detailed analysis
- Procedures for addressing results of the analyses

Activity
- Ergonomics committee meeting minutes
- Schedule for modifications
- Before and after photos of modifications

Medical Management Program
- Treatment of various disorders resulting from risk factors
- Maintenance of health and safety records related to ergonomics