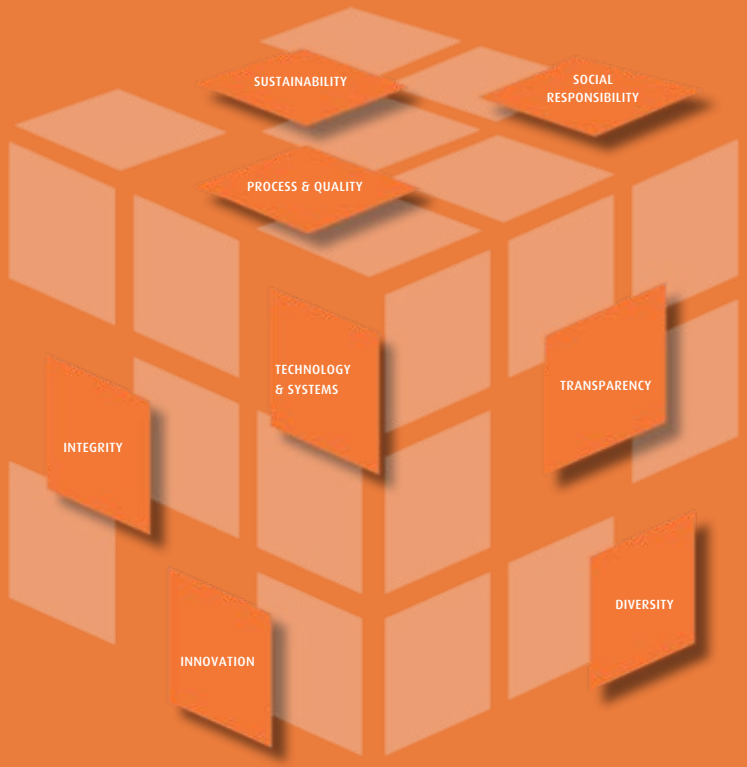
Ergonomics and Preventing Musculoskeletal Injury



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Welcome to Ergonomics and Preventing Musculoskeletal Injury

This module covers the topic of Ergonomics and Preventing Musculoskeletal Injury.

There is also a short Final Quiz, in addition to this module, which will be scored. It is necessary to pass with a score of 80% or better to receive credit for this module.

This module takes 20 minutes to complete.

Work-related musculoskeletal disorders (WMSDs) now account for 34 percent of all lost workday injuries and illnesses, costing tens of billions of dollars each year

What is it?

Ergonomics is the application of engineering and scientific principles to design a work environment that accommodates the employee in relationship to the workplace, product, equipment, tools, workspace and organization of the work.

In other words…

…fit the task to the worker rather than force the worker to adapt to the work environment

What is it?

Musculoskeletal disorders (MSDs) are injuries that build up in the body over a period of time due to repeated stress to muscle and tendons.

In other words…

…if a job is not designed to fit the worker properly, painful injuries can result.

What to Avoid

Working without the MSD distractions of aches, pains and premature fatigue can reduce or eliminate:

- Complaints, absenteeism, tardiness and high turnover rates;
- Injuries, work restrictions, disabilities, error/scrap rates and quality problems;
- Economic loss;
- Loss in expertise.

Risk Factors

Job stresses become harmful and may result in Cumulative Trauma Disorders (CTD) when workers exceed their capabilities and limitations.

Cumulative trauma: is wear and tear on the musculoskeletal system and refers to a physical ailment or abnormal condition occurring gradually over a period of time.

Risk factors, which increase the risk of developing CTDs include:

- Repetitive motions;
- Awkward postures;
- Forceful movements;
- Vibrations;
- Inadequate rest.

EXAMPLES OF CUMULATIVE TRAUMA DISORDER		
Carpal tunnel syndrome	Rotator cuff tendinitis	Muscle strains
Sciatica	Trigger finger	Lower back pain
Carpet layer’s knee	Raynaud’s phenomenon	Synovitis

Be aware: evaluate the early physical musculoskeletal symptoms of employees

- Localized fatigue is usually the first sign our bodies communicate
- Discomfort, loss of strength and possibly trembling in affected body parts

Perform a task analysis

- Break a task into its various elements or actions,
- Describe them,
- Measure and quantify risk factors inherent in the elements,
- Identify conditions contributing to the risk factors.

Engineering Controls

- Control CTD hazards through a proper engineering design of the job, workstation and equipment.
- May reduce CTD risk factors, including extreme postures, excessive forces and repetitive motions.
- These controls are preferred.

Administrative Controls

- Work practices and policies established to reduce or prevent exposure to ergonomic risk factors.
- Can serve as a temporary or supplemental measure until you implement engineering controls.
- When engineering controls are not technically feasible.

Reducing worker exposure to risk factors is the key to controlling some upper extremity CTDs.

Techniques for controlling CTDs include:

- Bend the tool, not the wrist. Ensure dustpans and mop handles are the proper length for the user
- Replace mop bucket wringers if they are not working as designed
- When working heights and reaches, keep the elbows close to the side of the body
- Reduce excessive or unnecessary gripping and grasping forces
- Select the proper size, material and style of glove when comfort, protection or cleanliness are necessary

Administrative control strategies for reducing the risk of MSDs are:

- Determine employees who are required to perform repetitive motions and rotate your workers every 30 minutes so they are not exhausting the same muscles
- Reducing shift length or curtailing the amount of overtime;
- Rotating workers with different physical demands on limbs and body;
- Scheduling more breaks to allow for rest and recovery;
- Broadening or varying the job content to offset repetitive motions, static and awkward postures;
- Adjusting the work pace to relieve repetitive motion risks;
- Training in the recognition of risk factors for MSDs and instruction in work practices that can ease the task demands or burden.

Engineering control strategies to reduce ergonomic risk factors may include:

- Changing processes to reduce worker exposures to risk factors;
- Storing heavy items on the bottom of shelving, easy access to equipment and materials, use a step stool when necessary
- Modifying containers such as height-adjustable material bins;
- Changing workstation layout such as using height-adjustable workbenches or locating tools and materials within short reaching distances;
- Changing tool designs;
- Automation or mechanization. Whenever practical, employees should use mechanical lifting aids to avoid lifting-related injuries.

Conduct a follow-up evaluation to ensure the implemented controls have reduced or eliminated the risk factors, and that no new risk factors were introduced.

Use the same method of analysis that first documented risk factors. If the hazards are not significantly reduced or eliminated, you have not finished the process.

CONSIDER SOLICITING PROSPECTIVE TEAM MEMBERS FROM:	
Management	to support with communication, finances and facility goals
Supervisors	to play a key role in the recognition of risk factors and the development of practical solutions
Associates/affected employees	to perform the job and promote ergonomics
Human resources	to provide information about injury type, frequency, severity and cost
Engineers, facilities, and maintenance	to get machine and process design
Plant safety representative	to get guidance on safety management and state and federal guidelines
Purchasing/accounting/finance	to ensure tools and equipment purchased have desirable ergonomic characteristics

Training is an essential element for any ergonomic safety and health program.

The goal is to enable managers, supervisors and employees to:

- Identify job tasks that may increase a worker's risk of developing MSDs,
- Recognize the signs and symptoms of the disorders
- Participate in the development of strategies to control or prevent them
- Show continuous improvement
- Document and follow up to achieve reduction in:
  - the incidence rate of musculoskeletal disorders;
  - job turnover and absenteeism;
  - increase in productivity or the quality of products and services.

Review of Employee's Daily Routine

- ✓ Is their workday filled with repetitive motions?
- ✓ Do they try to vary their routines or take minibreaks?
- ✓ Do their jobs require forceful movements and awkward postures?
- ✓ Can these risks be reduced by better positioning of work materials to reduce lifting, stretching, bending, and twisting?
- ✓ Is their workstation adjustable for their size and individual needs?
- ✓ Can simple changes make the workstation more comfortable?
- ✓ Do workers avoid extensive use of equipment that exposes them to vibration?
- ✓ Do workers know they should report any symptoms like pain, tingling, or numbness to their supervisor immediately so they can receive treatment?

Congratulations, you have completed the Ergonomics and Musculoskeletal Safety module.

Click here to take the final quiz.

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For more information, please contact:

Safety.US@atalianworld.com

ATALIAN Global Services
417 Fifth Avenue, New York, NY 10016
www.atalian.us

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