

Ergonomic Safety Strategies for Material Handling

Back Ergonomics

Next to the common cold, a back disorder is the reason most often cited for job absenteeism and accounts for a significant loss of productivity and large compensation costs. Pulled or strained muscles, ligaments, tendons and discs are perhaps the most common types of back problems occurring to half of the work force at least once during their working lifetime.

The majority of workplace back disorders are the result of chronic, or long term, injury to the back rather than from one specific incident. More than likely the injury is the result of the cumulative effect of faulty body mechanics such as excessive twisting, bending, reaching, carrying, pushing, pulling or lifting loads that are too heavy or too big; staying in one position for too long; poor posture or poor physical condition. A single incident may have triggered the current injury but it may be just “the straw that broke the camel’s back.”

The amount of weight being lifted isn’t the main problem, rather it’s the manner in which the lift is performed that causes most back trauma disorders. If the material handling task can not be eliminated then the following factors should be considered.

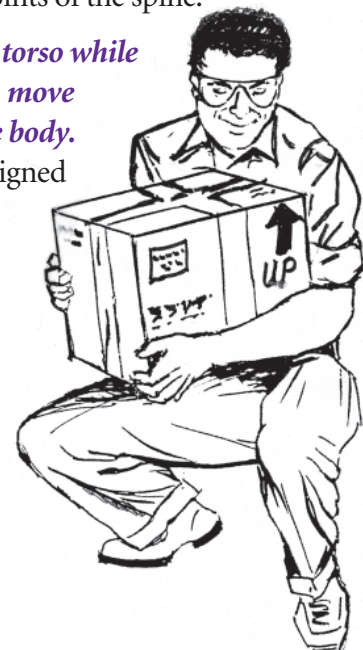
- **Employees should be in good physical shape.** If they are not accustomed to lifting and vigorous exercise, they should not attempt to do difficult lifting tasks.
- **Plan the lift.** Determine where to grip the object/load, the path that will be followed and how to put the object down. There should be sufficient clear space for the lift, the distance the object must be moved should be kept short and clear any objects from your path before lifting.
- **Never attempt to lift beyond your capacity.** If it is too heavy get a mechanical lifting aid, or get help, or both.
- **Pushing rather than pulling materials on hand trucks or carts will create less stress to the lower back area.**

- **The higher the frequency of lifts performed, the lower the weight should be that is lifted.** Always allow for recovery because fatigue can place extra stress on the back.
- **Get a firm footing for stability.** Stand close to the object with one foot alongside of the object and the other behind.
- **Squat down, bending the knees.** Do not bend at the waist.
- **Grasp the load firmly and pull the object close to the body.** When lifting unbalanced loads keep the heavy end closest to the body. Keeping the object close is one of the most important rules of lifting.
- **Keep stomach muscles tight and lift by straightening the legs and slightly unbending the back.** Your legs, buttocks, thighs and abdomen muscles are the most important muscle groups for lifting and more powerful than your back muscles. The hip, knee, and ankle joints are more flexible and have a wider range of motion than the joints of the spine.

- **Do NOT twist the torso while lifting or carrying, move the feet to turn the body.**

Jobs should be designed so that lifts are not performed with one hand, or to the side of the body.

- **Set the load down slowly, bending the knees and keeping the back straight.**



Utica National Insurance Group
Insurance that starts with you.®

Utica Mutual Insurance Company and its affiliated companies, New Hartford, NY 13413
www.uticanational.com

Materials Handling Checklist

Company: _____

Date: _____

Department: _____

Supervisor: _____

Job/Machine: _____

Job #: _____ Shift: _____

Evaluate and implement controls for all that apply in questions 1-5.

Answer the question in items 6-21 with a "Yes" or "No" and implement necessary controls or procedures.

1. Walking surfaces are:

- Level?
- Clean?
- Wide enough?
- Dry?
- Visible?

2. Objects:

- Objects are difficult to grasp?
- Objects are awkward in shape?
- Objects are unstable?
- Objects have slippery surfaces?

3. Material handling involves:

- Movements below knuckle height?
- Movements above shoulder height?
- Static muscle loading?
- Sudden movements during handling?
- Twisting at the waist?
- Excessive reaching?

4. Repetitive material handling tasks are:

- Paced by machine or conveyors?
- Motivated by piece rates or incentive programs?

5. Repetition rates are controlled by:

- Job rotation?
- Job enlargement?
- Self-pacing?
- Sufficient rest pauses?

Yes No

- 6. The weight(s) to be handled is not excessive?
- 7. If so, can the weight it be reduced?
- 8. Distances that materials are moved have been minimized?

Yes No

- 9. The distance between the object and the body is minimized?
- 10. Handholds are provided on these objects?
- 11. If gloves are required, proper sizes are provided?
- 12. Proper footwear is being utilized?
- 13. There is enough room to maneuver?
- 14. Objects are not required to be placed accurately or precisely?
- 15. Can mechanical devices be employed?
- 16. Working surfaces are adjustable to optimal handling heights?
- 17. Help is available for heavy or awkward lifts?
- 18. High pushing or pulling forces are not involved?
- 19. The employee's vision is not obscured during the handling task?
- 20. There is a preventive maintenance program for mechanical aids and associated equipment?
- 21. Are workers trained in correct handling and lifting procedures for their specific jobs?

Comments: _____

