Safety Talk

Preventing Overexertion
In the Workplace

Before you begin:

Review your loss reports and business operations to identify recent overexertion injuries and tasks that expose workers to risk factors. Encouraging early reporting of musculoskeletal pain and discomfort helps you intervene to prevent more severe injuries

Introduction

Overexertion injuries occur when a worker performs a task that exceeds his or her physical capability or when the worker becomes fatigued. According to a 2018 U.S. Bureau of Labor Statistics report, overexertion injuries are the leading cause of nonfatal workplace injuries, with an incident rate of 30.3 cases per 10,000 full-time workers. The 2019 Liberty Mutual Workplace Safety Index reported that direct costs of overexertion injuries exceeded $13 billion in the United States

Definitions

Overexertion injury: an injury to the musculoskeletal system from doing a task that is beyond the person's physical capability.

Musculoskeletal system: the system of bones, muscles, cartilage, tendons, ligaments, and other connective tissue that support and move the body.

Discussion

Overexertion injuries can occur during manual handling tasks such as lifting, pushing, pulling, or carrying heavy objects. These actions can cause cumulative damage to the musculoskeletal system. Workers also risk overexertion injuries when they do jobs for which they are not properly trained.

Preventing overexertion injuries first requires an understanding of their risk factors, then finding ways to eliminate or reduce those factors.

Forceful Exertions

Manual material handling tasks often requires forceful exertions which may injure the back or shoulder if they require more strength than the worker has. Other tasks involving hand tools or the use of equipment can also require high force exertions.

Ways to reduce forceful exertions:

- Use mechanical assistance or get a buddy to help move heavy loads.
- Use power tools instead of manual tools.
- Reduce the weight of loads that need to be handled manually.

Awkward Postures

Awkward postures are any non-neutral body postures such as bending or twisting part of the body. These unnatural postures can strain muscles and joints and increase the risk of overexertion injuries, especially when combined with forceful exertions.

Ways to reduce awkward postures:

- Design jobs to reduce twisting, bending deeply, or extended reaching.
- Provide enough space in the workplace so workers aren't forced to work in awkward postures.
- When lifting, keep loads as close to the body as possible.
- Push instead of pull, when possible.
- Avoid asymmetric postures, such as working to one side of the body.

Fast Movements and Unexpected Muscle Loading

Many overexertion injuries happen when a worker is rushing to finish a job. They can also occur when a worker must react suddenly to an unexpected shift of a load as it is being moved. Fast, jerky movements can create much higher musculoskeletal stresses than moving more slowly, and these kinds of movements can lead to overexertion injuries.

Ways to reduce fast movements and sudden muscle loading:

- Avoid rushing – provide enough time and space to do the job properly.
- Minimize the potential for loads to shift during handling.
- Avoid the need for "catching" loads or using the body to stop the movement of loads.
- Minimize tripping and slipping hazards.
- Provide well-designed handles on loads and carts.
- Avoid having to open doors or climb steps when pushing/pulling or carrying loads.

Local Muscle Fatigue

Activities that involve high-force exertions, static postures for a long time, or highly repetitive motions can lead to local muscle fatigue. Muscles generate less force as they become more fatigued, so additional muscles must be activated to compensate for the reduced strength of the fatigued muscles. Muscle soreness is a common side-effect as lactic acid begins to accumulate in the tiring muscles. Fatigued muscles must be given adequate recovery time before they can work efficiently once again. Asking fatigued muscles to continue working before they have fully recovered can greatly increase the chance for an overexertion injury.

Ways to reduce local muscular fatigue:

- Avoid prolonged static postures – especially if the posture feels awkward.
- For repetitive lifting, consider changes such as reducing lift frequency, correcting poor postures, decreasing the weights lifted, etc.
- Provide breaks between exertions so muscles have enough time to recover before the next effort.

Conclusion

Overexertion injuries are costly – both in terms of worker health and safety, and for a company's overall profitability. Make sure workers and supervisors understand the risk factors that can cause overexertion injuries. Find risky jobs, then brainstorm solutions with supervisors and workers themselves to reduce the risks and make the jobs safer for everyone

Group Activity

Brainstorm and discuss possible improvements with employees:

- What tasks require the greatest amount of forceful exertion?
- What types of awkward postures are required in which tasks?
- What tasks must be done quickly due to time pressures?

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Resources

NIOSH Ergonomics and Musculoskeletal Disorders Page

OSHA Ergonomics Topic Page

BWC Ergonomic Tools and Resource