

## Back Injury Prevention Tips

*Musculoskeletal disorders of the low back and upper extremities are an important national health problem resulting in approximately 1 million people losing time from work each year. These disorders impose a substantial economic burden in compensation costs, lost wages and productivity. Conservative cost estimates vary, but a reasonable figure is about \$50 billion annually in work-related costs<sup>1</sup>. A survey of 1,300 National Association of EMT members found that 47 percent of respondents had sustained a back injury while performing EMS duties<sup>2</sup>.*

Lifting and moving patients, equipment and tools are part of an emergency service worker's job. Knowing how to perform these tasks safely may help reduce injuries. This communiqué looks at risk factors and steps that may help minimize injury potential.

### **Back Injury Risk Factors**

The risk factors associated with back injuries come from a combination of work-related activities, non-work activities and the physical and psychological characteristics of the individual<sup>1</sup>. To reduce the work-related risks of lifting and moving items, consider the following factors when designing, planning and organizing work tasks:

- Limit the weight of the object to a maximum of 51 pounds<sup>3</sup> (whenever possible).
- Reduce the reaching distance.
- Keep the heaviest side of the load next to the body.
- Adopt a stable position with feet apart and one leg slightly forward to maintain balance.
- Provide a handle for a secure grip or hug the load as close to the body as possible, balance the weight being lifted on both arms.
- Start the lift as close to waist height as possible.
- End the lift as close to waist height as possible.
- Maintain posture with slight bending of the back, hips and knees; lift the load as the legs begin to straighten<sup>4</sup> (lift with the legs, not with the back).
- Reduce twisting the torso - if turning is required, move the feet as the object is carried.
- Reduce the number of times a lift must be repeated.

A visual way to remember some of these tips is to think of a baseball batter and keep the lift within the "strike zone" of the employee.

### **Lifting and Back Injury Risk Reduction Tips**

Workers and their employers have an opportunity to reduce the risk of back injury before, during and at the end of a lifting task. For in-station tasks (and where possible, in the field), consider the following:

#### **• Before the lift**

- Determine if the object can be lifted with a mechanical assist.
- Evaluate the weight and determine if assistance from a co-worker is needed.
- Move other items out of the way to get as close to the item as possible.
- Organize work areas so items are not stored on the floor.
- Organize storage areas so items are not stored above shoulder level.
- Clear the pathways so adequate space is available to set the item down easily.
- Only carry one item at a time for better visibility.
- Store items in containers with good handles or find a spot to grasp the item securely.

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### • During the lift

- Secure a stance and put one foot beside the item if possible.
- Beginning the lift:
  - > Keep the item close to the body.
  - > Maintain balanced posture allowing for a slight bending of the back, hips and knees.
  - > Lift the load as the legs begin to straighten.
- Move feet in the direction the item is being carried.

### • Setting the item down

- Keep the item close to the body as it is being placed.
- If lowering the item, position the feet with one foot beside where the item will be placed.
- If lifting the object above the waist:
  - > Move body forward as the weight is lifted up and outward to reduce the reaching distance.
  - > Use a ladder with hand rails.
- Place the item on a level surface at waist level, bend down and pick up the item at chest level before hoisting it above the shoulders<sup>5</sup>. Move feet in the direction of where the object will be placed.

### • Tips for Patient Handling

Handling and moving patients is one of the more difficult tasks undertaken by emergency service personnel. Moving and handling patients without the needed resources could put the patient and those attempting to move the patient at risk for injury. Best practices to help reduce these risks include:

- Administrative controls
  - > Identify and communicate the maximum weight that both the patient lifting equipment and ambulances can accommodate.
  - > Assess the patient's size and weight including the weight of the equipment.
  - > Assess the patient's ability to assist and support their own weight.
  - > Know the limitations of the patient transport equipment.
  - > Know who (and when) to contact for assistance.
  - > Provide for patient dignity where appropriate.
  - > Develop guidelines for assessing risks not directly related to patient health.
- Onsite observations (based on established guidelines for scene assessment)
  - > Evaluate:
    - o Weight and size limitations of stairs, steps, ramps, porches and decks.
    - o Hazards that may inhibit moving the patient safely (plush carpet, soft ground, inclined surfaces, narrow hallways, etc.).
    - o Walking surface conditions (grade, grounds, driveways and walks and interior floor finishes).
    - o Adequacy of door opening(s).
    - o Location of the patient.
    - o The ability to get the patient handling/lifting equipment near the patient.
  - > Select and utilize the proper lifting device.

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- Lifting and moving the patient
  - > Know each individual's physical abilities.
  - > Attempt to coordinate physical abilities with a partner and apply it to the situation accordingly.
  - > Think through the dynamics of the lift before attempting to move the patient.
  - > Lift as a team (communicate).
  - > Avoid awkward positions as much as possible and use leverage more than muscle strength.
  - > Use proper lifting techniques and keep the weight close to the lifter's body.
  - > Use nearby individuals to help facilitate patient transport such as holding open doors and moving items out of the way.

Understanding the primary work-related risk factors that increase the chance of a back injury is the first step in evaluating work tasks. Applying lifting task risk reduction tips to the work task design may help reduce the potential for injury to the lower back. Educating employees in these back injury risk reduction principles will possibly help them to assess and alter their daily tasks to further reduce the potential for work-related back injuries.

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### References

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