



## Health & Safety

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### Back Injury Prevention

Last month's article discussed the pros and cons of back belts and concluded that there is not clear evidence that back belts effectively prevent back injury. Both managers and employees are faced with the challenge of reducing the pain, disability and cost of back injuries, but often struggle to devise effective and lasting prevention strategies.

No single method will magically reduce back injuries, and each workplace will need to develop its own strategies. A complete back injury prevention program is beyond the scope of this article; the following suggestions and recommendations, however, may be helpful.

#### Eliminate the Problem

This advice may seem obvious, but it is often overlooked. If possible, use automation or mechanical lifting devices. This may require the purchase of new equipment but, surprisingly, this equipment is often available in the workplace—it is just inadequately used.

I even know of one plant where workers repeatedly struggle to push, pull or force large, heavy printing cylinders into position—*directly beneath* a manual hoist designed for that purpose. The hoist cannot be used because the loading area for it is needed for material storage. If lifting equipment is available in the plant, then the process flow, materials and storage need to be designed to take full advantage of these mechanical lifting devices.

Some workplace modifications can be made that are far less expensive than hoists and automation. Take time to observe employees as they work and look for movements that could

tend to cause back injuries. The following are examples of some “red flag” situations:

- Do workers have to bend at the waist to reach into bins or barrels for parts? A lift/tip table will eliminate this movement.
- A work counter that is comfortable for one worker may force a taller co-worker to stoop. An adjustable workstation or chair should be considered to avoid this problem.
- Do workers remove finished parts from a machine or conveyor and twist with their backs in order to place the parts into shipping containers? Move the receiving container about two steps back or to the side so that workers are forced to turn with their feet, rather than twist their backs. (A little salesmanship may be necessary to convince workers that these extra steps are for their own good!)

Also, remember that remaining in one position for prolonged periods of time predisposes one to back pain. Workers should be encouraged to move about and change position.

#### Worker Education

Employee education is often conducted in a “Back School” approach. This can have several shortcomings. Workers usually have seen and heard these lectures, films and demonstrations many times, and often can recite the principles of safe lifting. Observing these same individuals at work will likely reveal that they continue to practice poor lifting techniques. Why? Lifting involves habits and patterns of

behavior that are hard to change.

Knowing how to do something does not necessarily translate into doing it correctly!

In addition, back education sessions usually describe lifting activities under ideal situations, rather than actual work-related conditions. The alternative approach is to move these sessions from the classroom into the workplace and emphasize practice and lifting performance through one-on-one coaching. Consider the following suggestions:

1. Identify coaches to perform the back awareness activities. A health care professional may be selected to train supervisors to become back care advocates. Obviously, this person must possess a thorough understanding of body mechanics and safe lifting techniques. A variety of health care professionals can provide this service including: Ergonomists, kinesiologists, occupational or physical therapists, occupational health nurses and industrial hygienists.
2. Provide sufficient opportunities for the coaches to become familiar with the workplace tasks and lifting activities, with special attention to those tasks that tend to cause back injuries.
3. Coaches then observe individual workers performing lifting activities and take the time to explain and demonstrate principles of body mechanics and good lifting techniques, answer the employee's questions and discuss special conditions and situations that may alter the task, such as time pressures, restricted work space or

changes in equipment or materials. Coaches should identify poor lifting movements and demonstrate alternative behaviors, such as “I noticed you were standing like this—try to put your feet this way so you won’t be twisting your back as you lift.” Then observe the employee as he/she performs this lift. Encouragement, praise and a pat on the back work wonders.

4. Coaches later re-visit workers on a regular basis to observe lifting activities, reinforce good lifting techniques and, if needed, repeat explanations or demonstrations.

Personal Back Care Education  
Safe Lifting Techniques  
Following are some suggestions for safe lifting:

- Be in good physical shape—don’t attempt heavy lifting if you are unaccustomed to lifting or vigorous exercise.
- Use a mechanical lifting device, if available.
- Get help if the load is too heavy to lift safely by yourself.
- Plan your move:
  - Size up the load—is it heavy, awkward, or will it shift?
  - Make sure the path is clear.
  - Place material within easy reach.
- Try to lift within the optimal lifting range: No lower than your knuckles when your arms are at your side, and no higher than your shoulder.
- Get a good grip, and test the weight before trying to lift it.
- Stand close to the object and use a balanced stance: Feet shoulder-width apart with one foot slightly ahead of the other.
- Tighten your stomach muscles as you lift.
- Don’t hold your breath—breathe out during the lift.
- Lift mostly by straightening the legs. Keep your lower back in a normal, arched position.
- **Do not** twist the back or bend sideways; turn with your feet, not your back.
- Carry the object close to the body, never with arms extended.
- Lower the load slowly, maintaining the curve of your lower back.
- Exercise regularly and stay in good physical condition.

This personalized, one-on-one method of back care education encourages workers to make safe lifting an ongoing habit, and may help to reduce the pain, disability and cost associated with workplace back injuries. **P&SF**

About the Columnist  
Jane Lemke is a registered nurse who has worked as an occupational health

nurse and safety coordinator in various industrial settings. She currently is a health and safety consultant, and also teaches health and safety at a local community college.

She is a member of AESF’s OSHA Committee, and is a frequent contributor to the “Health and Safety” column.

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