

MIDWESTERN INSURANCE ALLIANCE

Loss Control Newsletter

October 2000



Midwestern Insurance Alliance maintains the goal of providing our insureds with a wide range of loss control services. Only one of which is this monthly *Loss Control Newsletter*. To become aware of the many other services offered, contact Loss Control Manager, Keith Wertz at (502) 429-9990 or send e-mail to krwertz@midwesterninsurance.com

BACK BELTS

The Challenge

Back injuries account for nearly 20% of all injuries and illnesses in the workplace and cost the nation an estimated 20 to 50 billion dollars per year. On a more personal and relevant level, however, what have they cost you?



In response to the increasing human and economic costs of these injuries, several companies have implemented

numerous measures, often in lieu of a sound ergonomics program, to offset these losses. Specifically, there has been a dramatic increase in the use of industrial back belts, and much too often with no regard to the verifiable benefits of such personal protective equipment.

In fact, the effectiveness of these belts is debatable. The National Institute for Occupational Safety and Health (NIOSH), the federal Institute responsible for conducting research and making recommendations for the prevention of work-related injuries and illnesses, has been increasingly asked for advice on back belt selection. In response to these inquiries, the Institute

decided to address a more fundamental question. Rather than ask "Which belt will best protect workers?" NIOSH researchers began with a more applicable question - "Do back belts protect workers?"

The Evidence

After a review of the scientific literature, NIOSH has concluded that, because of limitations of the studies that have analyzed workplace use of back belts, the results cannot be used to either support or refute the effectiveness of back belts in injury reduction. Although back belts are being bought and sold under the premise that they reduce the risk of back injury, there is insufficient evidence that they actually deliver what is promised.

The Institute, therefore, does not recommend the use of back belts to prevent injuries among workers who have never been injured. Because the Institute's primary focus is on the prevention of injury, NIOSH did not address the use of back belts as medical treatment during rehabilitation from injury. If you or your workers are wearing back belts as protective equipment against back injury, you

should be aware of the lack of scientific evidence supporting their use.

At this point, there are no definitive studies on either the beneficial or harmful effects of wearing back belts. Just as there is speculation that back belts may help, there is also concern that they may harm workers. As a result of the NIOSH review, the Institute is concerned with the potentially harmful effects associated with a false sense of security that may accompany back belt use.

There is some research showing that workers believe they can lift more when wearing a back belt. If workers falsely believe they are protected, they may subject themselves to even greater risk by lifting more weight than they would have without a belt.

NIOSH searched the peer-reviewed literature for studies investigating the common claims that back belts are beneficial, and then evaluated the scientific evidence they produced. Those findings are listed below.

➤ **Reduce Forces on the Spine.** Lifting may produce a variety of forces within the body which contribute to the pressure on the spine, termed "loading." Many of the studies NIOSH reviewed sought to examine the impact of back

belt use on loading. None of the studies provide sufficient data to indicate that industrial back belts significantly reduce loading during lifting. In fact, there is little evidence to suggest that these forces could be reduced with a back belt.

which have instituted back belt programs have also implemented training and ergonomic awareness programs. The reported injury reduction may be related to these or other factors. On the basis of available evidence, the potential effectiveness of back belts in reducing the occurrence of low back injuries remains unproven.

select desired back belts, and then for the employer to purchase those belts and to make them available for the employees' optional use. To do otherwise might place the employer in a legally indefensible position.



But the bottom line remains - use of back belts as an effective method of preventing back injuries has yet to be conclusively confirmed. Education, awareness and job redesign continue to be a more successful deterrent.

The Recommendation

Rather than relying solely on back belts, companies should begin to implement a comprehensive ergonomics program that strives to protect all workers. The most effective way to prevent back injury is to redesign the work environment and work tasks to reduce the hazards of lifting. Training in identifying lifting hazards and using safe lifting techniques and methods should improve program effectiveness. If you are putting all your prevention resources into back belts, you are not adequately protecting your workers.

The decision to use back belts should be a voluntary decision by both employers and employees. Back belt use should not be a mandatory job requirement. If your workforce continues to wear back belts, you should remember the following points:

- There is a lack of scientific evidence that back belts work.
- Workers wearing back belts may attempt to lift more weight than they would have without a belt. A false sense of security may subject workers to greater risk of injury.
- Workers and employers should redesign the work environment and work tasks to reduce lifting hazards, rather than rely solely on back belts to prevent injury.
- The research needed to adequately assess back belts effectiveness will take several years to complete. In the interim, workers should not assume that back belts are protective.

The Reality

More often than not, employers are cautioned to allow their employees to

↪ **Increase Intra-Abdominal Pressure (IAP).**

While this theory remains controversial, some believe that if the pressure is increased within the abdomen, it will counterbalance the compressive force being exerted downward on the spine. The studies NIOSH reviewed were inconclusive, and the relationship between IAP and spinal compression is not well understood. Therefore, even if a back belt increased IAP, there is, as yet, no evidence that it would reduce forces on the spine or decrease back injury.

↪ **Remind Workers to Lift Properly.** At this point, there is little scientific evidence that back belts remind workers to avoid awkward postures and heavy loads.

↪ **Stiffen the Spine.** Numerous ligaments, tendons, and other soft tissues surround the spine and help hold it in place. The theory is that if back belts increase this support, they would decrease the motion allowed between segments of the spine, and therefore decrease damage to the discs in the lower back. There is no conclusive evidence that back belts increase the stiffness of the spine, and no proven relationship between this stiffness and the reduction of injury.

↪ **Reduce Bending Motions.** Loading on the spine increases when a person has to bend as far forward as possible. If the ability to bend this far forward could be restricted by a back belt, the risk of injury would possibly be decreased. It would appear that abdominal belts help restrict the range of motion during side to side bending and twisting. However, they do not have the same effect when the worker bends forward, as in many industrial situations.

↪ **Reduce Injuries in Certain Workplaces.**

There have been anecdotal case reports of injury reduction in workplaces using back belts. However, many companies

Service, innovation
and
experience is the
Midwestern advantage
Let it work for you



For more information about
Workers' Compensation
Insurance through
Midwestern Insurance
Alliance, call
(502) 429-9990