Workplace Health and Safety
Bulletin
WORK SAFE ALBERTA

Lifting and Your Back — Some Fresh Ideas

Are you still being told that the only way to lift an object is to place it between your legs and then lift with your legs, not your back? The person who gave that advice never had to lift a bundle of three-metre-long pipes. Or a washer and dryer. This advice doesn't reflect the real world of over-sized pipes, appliances and boxes. And it assumes that many people have sufficient leg strength to perform the lift — many simply do not. With up to 80 percent of all adults expected to experience back pain during their lifetime, learning to lift, lower and move objects safely is very important.

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Revisiting the causes of back injury

Overexertion injuries result from overloading or over-stretching muscles, tendons and ligaments. Overloading exceeds their strength and overstretching exceeds their range of motion. Overuse injuries result from using muscles, tendons or ligaments so much that they become damaged.

In moderation, for example, the task of manually loading pallets may not be particularly hazardous. But if you repeat the task endlessly for eight hours each day, in an awkward body position and without allowing the body enough time to recover, you may end up with a back injury.

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Activity is your best friend

Some people still believe that to reduce the risk of low-back injury, all activities involving lifting, lowering and moving objects should be eliminated. This isn't quite correct. To remain healthy, muscles and other tissues must be challenged. The key is making sure that the challenge is sufficient — not too little, not too much. The worker slinging 40-kilogram bags of cement may need to reduce how much she works with her back. The process-control operator who sits at a console all day without moving much might be better off with a mix of work activities that includes using his back.

Work up your strength

To avoid injuring the muscles, tendons and ligaments in your back, you must give them a chance to adapt to loads of increasing weight. You want to expose them to loads that challenge but don't damage them. Equally important, you want to allow them time to recover between periods of activity. Gradually increasing the weight they must carry and the length of time they are used improves these body tissues' tolerance to injury.

The sedentary worker may actually be at greater risk of injury than the labourer.

Work up your endurance

Muscle endurance, which helps tissues work longer without tiring and losing their ability to work effectively, has more protective value than muscular strength. Research shows that exercise programs combining cardiovascular exercise with low-back exercise are more effective than programs emphasizing low-back exercise alone. Cardiovascular exercise such as walking briskly, skating or cross-country skiing helps build muscle endurance.

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Lifting principles

While employers should eliminate as much manual lifting and lowering as practical, there will still be times when objects must be handled manually.

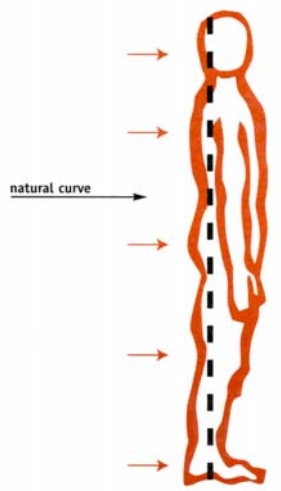
Is there one perfect technique for lifting? Unfortunately not. But do follow the four principles below as much as possible when lifting. Make sure your co-workers' or employees' methods follow these principles.

(1) *Keep the natural curve in your lower back*

When standing straight, the lower back naturally curves to create a slight hollow. Always try to maintain this curve when lifting, lowering or moving objects. The spine and back are their most stable in this position.

(2) *Contract your abdominal muscles*

Contract the abdominal muscles during lifting, lowering and moving activities. This improves spine stability. Sometimes describes as "bracing", contracting the abdominal muscles even slightly (as little as four to five percent) improves spine stability and reduces the likelihood of injury.



(3) *Avoid twisting*

Twisting the back can make it less stable, increasing the likelihood of injury. Bracing helps reduce any tendency to twist.

(4) *Hold it close*

Keep the load as close to the belly button and body as possible. Doing so reduces the strain on muscles of the back and trunk. If necessary, use protective clothing such as leather aprons so that sharp, dirty, hot or cold objects can be held as close to the body as possible.

Seven myths about back pain

And speaking of fresh ideas, here are seven myths about back pain and some of today's thinking about them:

(1) *If you've a slipped disk (also known as a herniated or ruptured disk), you must have surgery. Surgeons agree about exactly who should have surgery.*

Causes of back pain can be complex and difficult to diagnose. Opinions and treatment approaches vary among surgeons and health professionals. Only about two percent of all persons with back pain actually need surgery. Who you see is what you get.

Who you see is what you get.

(2) *X-ray images, CT and MRI scans can always identify the cause of pain.*

In research studies, abnormalities of the spine were as common in people without back pain as those suffering with back pain. Seeing abnormalities with these imaging methods is no guarantee that the cause of pain has been found.

(3) *If your back hurts, you should take it easy until the pain goes away.*

Persons with back pain who continue routine activities as normally as possible do better than those who try either bed rest or immediate exercise. It is often helpful to have persons with back pain return to some form of light work until they have recovered more fully.

(4) *Most back pain is caused by injuries or heavy lifting.*

Some back pain is related to serious disease or physical problems of the spine. Up to 85 per cent of persons with back pain, however, can't recall a specific incident that brought on their pain. Heavy lifting or injuries, though risk factors, do not account for most episodes.

Up to 85% can't recall a specific event that brought on pain.

(5) *Back pain is usually disabling.*

Most people with back pain simply get better, regardless of whether they receive treatment or the treatment methods used. Only a small percentage of workers with back pain miss work because of it. Most people who leave work return within six weeks, and only a small percentage never return to their jobs.

Most people with back pain simply get better

(6) *Everyone with back pain should have a spine x-ray*.

X-rays often provide little more useful information than the physical assessment performed by a health professional. Low-back x-rays may also involve unnecessary exposure of the reproductive organs to radiation.

(7) *Bed rest is the mainstay of therapy*.

This is old thinking. Studies have shown that four days of bed rest turns out to be no more effective than two days, or even no bed rest at all. These same studies have shown that people who remain active despite pain, experience less ongoing pain in the future. And they make less use of health care services.

(Source: Deyo, RA. Low-Back Pain. Scientific American, August 1998.)

For a more thorough discussion of these myths, readers are referred to Safety Bulletin BCL005 referenced below.

Information Sources

📖 "*Biomechanics of the Thoracolumbar Spine*" by S.M. McGill, in *Clinical Biomechanics*, edited by Zeevi Dvir. Churchill Livingstone, 2000.

📖 "*Low Back Injury: Improving Prevention Strategies and Rehabilitation Approaches*," a lecture delivered by S.M. McGill, December 2001, Edmonton, Alberta.

Resource Information

http://employment.alberta.ca/documents/WHS/WHS-PUB_ph003.pdf
Let's Back Up a Bit – Some Truths About Back Belts

http://employment.alberta.ca/documents/WHS/WHS-PUB_bcl001.pdf
Lifting and Handling Loads – Part 1 – Reviewing Issues – BCL001

http://employment.alberta.ca/documents/WHS/WHS-PUB_bcl002.pdf
Part 2 – Assessing Ergonomic Hazards – BCL002

http://employment.alberta.ca/documents/WHS/WHS-PUB_bcl003.pdf
Part 3 – Reducing Ergonomic Hazards - BCL003

This article appeared in the May 2002
Edition of the Occupational Health and Safety Magazine

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