

# Lifting and Your Back – Some Fresh Ideas

## OHS information for workers

### Introduction

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 per cent of all adults expected to experience back pain during their lifetime, learning to lift, lower and move objects safely is very important.

### Revisiting the cause of back pain

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.

### ACTIVITY IS YOUR 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.

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Cardiovascular exercise such as walking briskly, cycling, skating or cross-country skiing helps build muscle endurance.

Muscle endurance has more protective value than muscular strength.

## 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 most stable in this position.

### 2) Contract your abdominal muscles

Contract the abdominal muscles during lifting, lowering and moving activities. This improves spine stability.

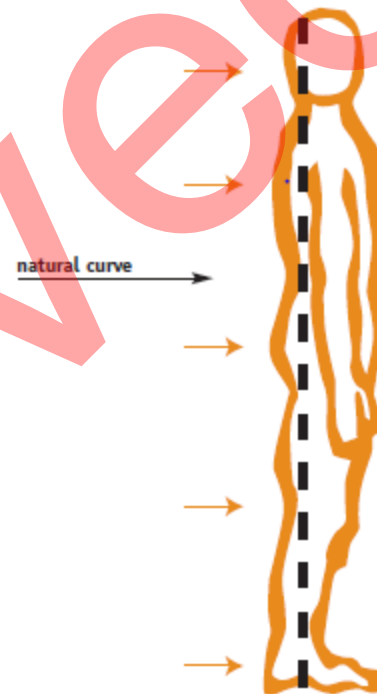
Sometimes describes as “bracing”, contracting the abdominal muscles even slightly (as little as four to five percent) improves spine stability and reduces the likelihood of injury.

### 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.



## Sources

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

*Ergonomic Guidelines for Manual Material Handling*. National Institute for Occupational Safety and Health (NIOSH), Publication No. 2007-131.

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## Contact Us

### OHS Contact Centre

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Throughout Alberta

- 1-866-415-8690

Deaf or hearing impaired:

- 780-427-9999 (Edmonton)
- 1-800-232-7215 (Alberta)

### Website

[work.alberta.ca/ohs-contact-us](http://work.alberta.ca/ohs-contact-us)

## Get Copies of OHS Act, Regulation and Code

Alberta Queen's Printer

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Occupational Health and Safety

[work.alberta.ca/ohs-legislation](http://work.alberta.ca/ohs-legislation)

## FOR MORE INFORMATION:

[Let's Back Up a Bit – Some Truths about Back Belts](#)

[Lifting and Handling Loads – Part 1 – Reviewing Issues](#)

[Assessing Ergonomic Hazards – Part 2](#)

[Reducing Ergonomic Hazards – Part 3](#)

[Seven Myths about Back Pain](#)

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