



Lifting and your back

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? This advice doesn't reflect the real world of over-sized pipes, tools, and boxes. With up to 80% of all adults expected to experience back pain during their lifetime, learning to lift, lower, and move objects safely is very important.

Revisiting the causes of back injury

Overexertion injuries result from overloading or overstretching 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, the task of manually lifting or lowering is probably not particularly hazardous. But if you perform the task repeatedly 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

It is not necessary to eliminate all lifting and lowering to reduce the risk of low-back injury. To remain healthy, muscles and other tissues must be used. 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 work is done with the back. The crane operator who sits at a console all day without moving very much might be better off with a mix of work activities that includes using the 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 the tolerance of these body tissues to injury.

Work up your endurance

Muscle endurance has more protective value than muscular strength. Exercise programs combining cardiovascular exercise with low-back exercise are more effective than programs emphasizing low-back exercise alone. Any cardiovascular exercise such as walking briskly or cycling helps build muscle endurance.

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. Try following these four principles as much as possible when lifting.

1. Keep the natural curve in your lower back

When standing straight, the lower back naturally curves to create a slight hollow. Try to maintain this curve when lifting, lowering, or moving objects. The spine is 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 described as "bracing," contracting the abdominal muscles even slightly 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 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.

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.