

How to lift properly

Statistics tell us that 80% of the population will suffer acute back pain at least once in their lives. From this group, another 80% will suffer a second acute episode sometime after. I personally fit this statistic.

I have suffered two bouts of acute back pain that were disc in nature. Both were about 3 years apart, but in exactly the same circumstances. It was a Sunday morning. I had just got out of bed and went to pick up a light box from the floor in readiness for the removalist who was about to turn up to move our furniture.

This scenario fits perfectly with what we know scientifically about low back injuries.

Scientific fact 1

The lumbar spine discs have an unusual nerve supply. Only the outer 1/3 of the circumference of the disc has nerves that can generate pain. If you damage the inner 2/3, you don't feel back pain. It takes repetitive trauma to the disc to break through to the outer 1/3 where you can start feeling pain. In my case, it was the repeat bending in the days before my episode that had done the damage. (Bending over to pack boxes, picking up boxes, furniture etc.) The episode on the Sunday tipped me over the edge and into the outer 1/3. Maybe I should have gone to church instead!

Scientific fact 2

When you sleep at night and the body is horizontal, the discs will suck up water and swell. So when you first wake up in the morning, not only are your discs slightly taller (and thus, you are taller) but the pressure in the discs are at maximum. If you already have damage to the discs and you then perform an action that further increases the pressure (such as bending over to pick up a box) you then have a greater chance of injury. Moral of the story: don't bend over and pick heavy things up first thing in the morning. I really should have gone to church.

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Scientific fact 3

When you stand up straight, in comparison to sitting straight, the pressure in the disc in sitting is 50% higher. When you sit slumped, the pressure doubles compared with standing. When you bend forward to pick up a box (and the spine flexes), the pressure can jump 10x what it is in standing, depending on the weight of the object you are picking up. **Stuart McGill, the Canadian back specialist, states in his books that it is almost impossible to damage a lumbar spine disc if the spine is kept in its neutral curve when bending forward.** What does the damage is bending and allowing the spine to flex during the movement. To bend forward using neutral spine, you need to bend from the hips and keep the spine in neutral. We call this a 'Waiters Bow'.

Scientific fact 4

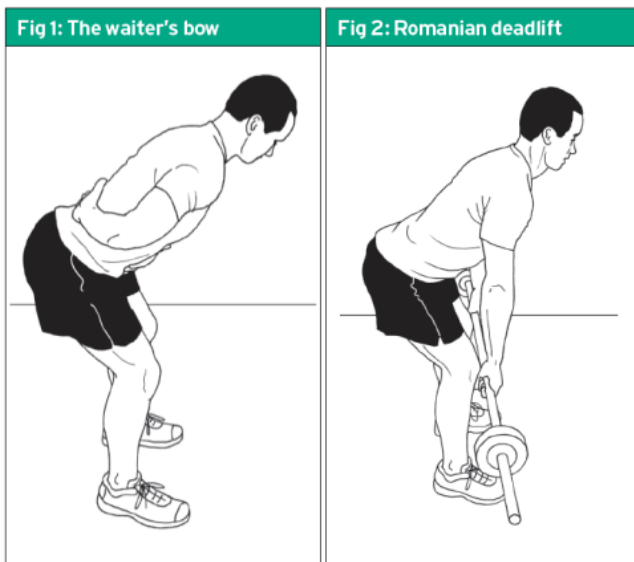
The back extensor muscles and the small segmental stabilising multifidus muscles can only function properly if the spine is kept in neutral. If the spine flexes during movement, the muscles change their orientation and can no longer help in supporting the lumbar spine. So the spine effectively will hang off ligaments and damaging forces, such as shear forces, will act on the vertebrae and discs.

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The correct and safest way to lift, therefore, is to keep the spine in neutral and bend from the hips. This resembles a 'Waiters Bow', or in weightlifting terminology, the exercise that most resembles this is a Romanian Deadlift. To do this movement well, the pelvis needs to be locked into slight anterior pelvic tilt that then forces the lower lumbar spine to slightly extend. The movement is then performed at the hips. What is required by the lifter therefore is good hamstring flexibility.

Rx:

1. Reeducate proper lifting mechanics
2. Stretch tight hip flexors and hamstrings from sitting postures



The other option if the weight is only light is to perform what is called a 'Golfer's Lift'. See the diagram below:



The 'Waiters Bow', 'Romanian Deadlift' and 'Golfers Lift' all have common features that are important in preventing low back injury: all three require that the spine maintains its neutral curve and the movement comes from the hips.