



Low Back Pain

– True or False?

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Do any of your clients complain about low back pain? The anatomy of the spine is both fascinating and miraculous – and highly abused in our sedentary culture. In the case of the back, particularly the low back, it is usually what we do not do that causes problems. It is well-established that the biggest independent risk factor for low back pain is low cardiovascular fitness level. Walking and other forms of aerobic exercise do not just protect the heart - they protect the low back as well. Specific exercises that target the low back are important, but in the absence of cardiovascular exercise, are often limited in their usefulness.

There are many misconceptions about low back and its causes. Often, people attribute their sore back to a specific “event”. This is especially true for disc herniation, an exceptionally painful injury that can make it difficult to function until healing has occurred. However, evidence from large epidemiological studies has taught us that the role of “cumulative trauma” has been largely ignored. While a particular movement might be “the straw that breaks the camel’s back” (no pun intended!), the stage for the injury has in most cases,

been set long before the occurrence of the actual triggering event.

What sets the stage for low back disorders? The movement that causes the most repetitive, cumulative damage to the low back is repeated forward flexion. In other words, repeatedly leaning forward creates vulnerability for a major injury. How does this play out in our daily lives? Some examples are:

- Slouching in a desk chair
- Leaning over to pick something up from the floor (even something light such as a pen or piece of food)
- Leaning over to tie shoelaces or pull on boots
- Leaning over to zip up a child’s jacket
- Leaning over to assist clients with an exercise
- Full sit ups, or even crunches

The forward flexion does not need to be “loaded” (i.e., lifting something heavy) – damage occurs from the movement itself. Over time, a process called delamination takes place – which is the progressive degeneration of the collagen rings around the discs of the lower spine. The eventual outcome is a herniated or bulging disc. While many people believe that degenerative disc disease is an inevitable side effect of the aging process, it can, in fact, be prevented by avoiding this highly irritating movement.

Another problem people with low back pain often experience is gluteal amnesia – a humorous name for, essentially, not using the

muscles in the buttocks. The glutes should assist in bending down and standing back up, as well as keeping the pelvis in alignment while at rest. Individuals with troubled backs use their backs more – to lift, to bend, and to maintain proper posture. Moreover, the erector spinae musculature of the low back is designed to keep the spine straight, not execute dynamic movement with the exception of spinal rotation. People with low back pain use their erector spinae to carry out what the gluteus maximus is meant to do. Sitting at a computer for hours on end places the glutes in a constantly stretched position, leading to their eventual weakening. Gluteal amnesia can be both the cause and result of low back pain, and in any case needs to be addressed by an exercise program.

An exercise program also must address spinal stability. Let me dispel one of the most prevalent myths of this era of fitness – balancing on an unstable ball or board does not lead to greater spinal stability! Being able to balance well is simply a reflection of a person's ability to, well, balance well. True spinal stability comes from a balanced stiffening of the spine – contrary to popular belief, in fact, those with more mobility in their spines are more prone to injury. More mobility in the spine equals more unwanted motion that lead to pain and/or tissue damage. We need to teach all the muscles of the lower back area to work together to achieve this balanced stiffening, with just enough mobility for the spine to move comfortably.

Programming Considerations

- Avoid repeated forward flexion. Teach your clients to squat or, even better, to lunge down to get things off the floor. Even a small degree of sustained forward flexion, such as standing at a table that is too low to write something down, can result in damage over time.

- Do not have clients bring the low back into extreme forward flexion, including full sit ups. According to Dr. Stuart McGill, a professor at McMaster University and a world expert on low back pain, even basic crunches are to be avoided. Eliminate toe touches or certain stretches that involve leaning forward. Find safe positions for exercises such as reverse flies or bent-over dumbbell rows that do not involve forward flexion.

- Advise clients not to sit for longer than 20 minutes without taking a standing break.

- Do not have clients who have LBP sit on an exercise ball to do exercises – this applies even more compression to the lower spine than sitting on a regular chair.

- Strengthen the gluteals. The best beginner exercise for this purpose is a simple supine bridge – have your client focus on squeezing their bum on the way up, and holding for a few seconds at the top.

- Encourage clients to sleep with a firm, thick pillow between their knees to facilitate circulation to low back area.

- Strongly encourage clients who smoke to stop – smokers have a much higher incidence of low back pain, most likely due to smoking's detrimental effect on circulation.

Always have clients who experience low back pain consult with their physicians before embarking on an exercise program. As a trainer, keeping current with the evidence-based body of literature on exercise programming for low back disorders will enable you to design appropriate programs that will help, not exacerbate, your clients' pain.

Jennifer Salter is a Gold Certified Advanced Health and Fitness Professional, certified personal trainer, and certified Post Rehabilitation Conditioning Specialist.

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