

A Seated Exercise for Daily Decompression

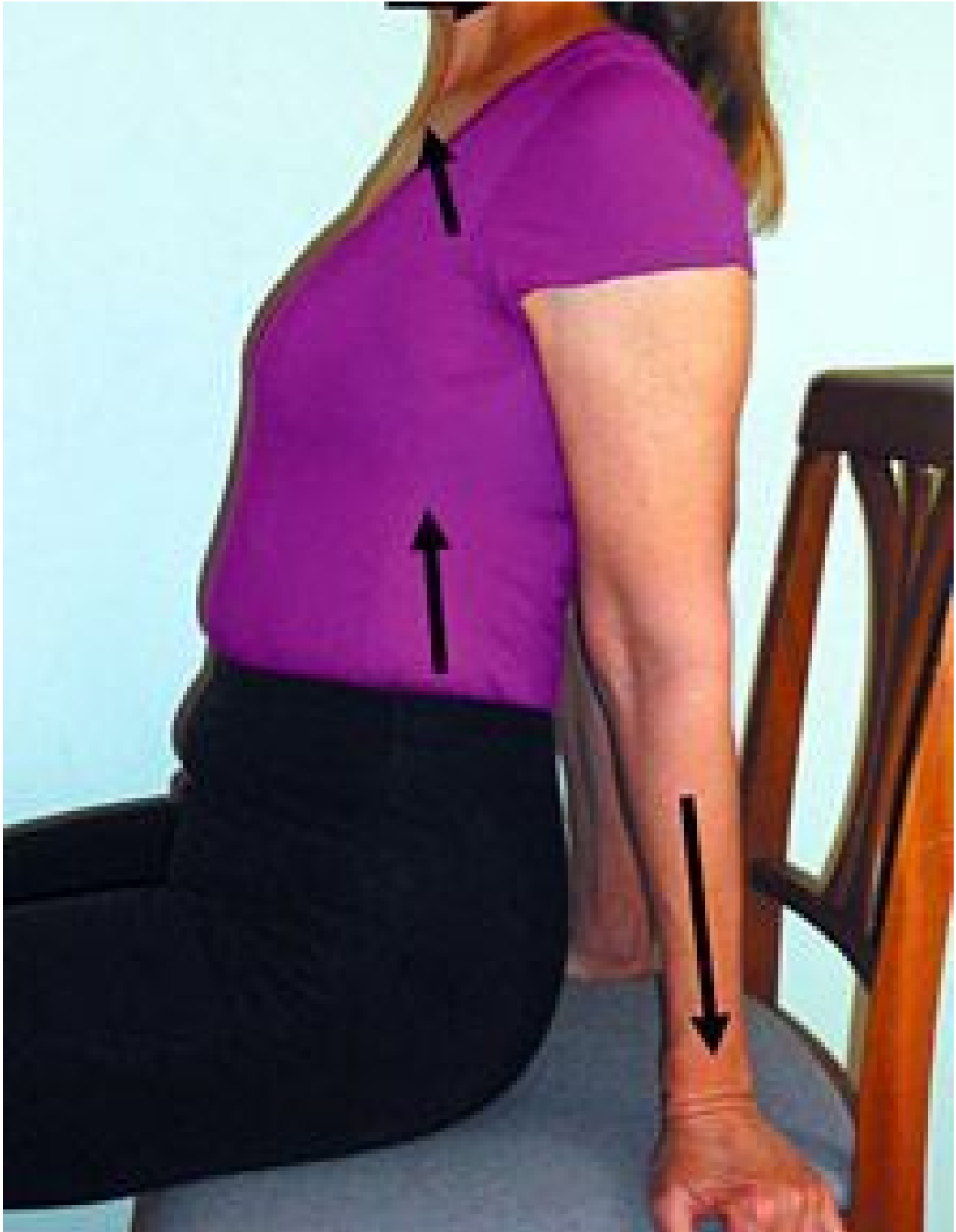
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Editor's note: This is part of an ongoing article series by Dr. Heller on patient self-care exercises for lower back pain. Previous articles include "[Lower Back Rehab Overview](#)" (May 20 issue) and "[Low-Back Self-Care: Finding the Reset Button](#)" (April 22 issue).

Many of us have wonderful clinical ideas that we implement in our offices; however, few of us subject these clinical ideas to scientific testing and then publish the findings as lead author in peer-reviewed journals. Jerome Fryer, DC, is one of the few. He started using a form of seated decompression using the arms and then measured spinal height before and after sitting and tested whether this simple chair exercise would change the pattern. Having seen good preliminary data, he then arranged to use a sitting MRI to further assess the changes that occur with sitting and to see if the exercise would help reverse these changes.

What is the significance of these studies? We can tell our patients that research shows sitting for just 15 minutes produces significant compression of the spine and loads the discs in an unhealthy way. We can also tell and show our patients that these unhealthy changes can be decompressed rapidly using a seated unloading exercise.

Let's review the articles on the seated unloading strategies. The [first](#) was published in April 2010 in *JBMT*.¹ This study compared whole body standing height, the height of the body after 15 minutes of sitting, and height after doing five unloading repetitions using the arms. Without the exercise, height was basically unchanged between the standing measurement and the post-sitting measurement. The height, however, was increased after the seated decompression exercise. The measurement was done using stadiometry within 0.1 mm, a sophisticated and more accurate version of a doctor's height scale. The study describes and shows the exercise in more detail.



The patient sits in an upright chair with their arms behind them, slightly bent. They push downward, straightening the arms and leaving the buttocks in the chair, unloading the trunk and spine.

The finding of no change in standing height after sitting was counterintuitive. Dr. Fryer describes his suspicions: "It is likely that the spine lost height during sitting but the lower extremity joints, while unloaded, gained height. Thus, the absence of standing height changes was likely due to the offset of gains in lower extremity joints."

Therefore, it was important to look more carefully at the lumbar spine using a [gold-standard](#)

technology.² This study was done using a sitting MRI unit, thus allowing more direct measurement of the actual lumbar discs. Dr. Fryer found that after 15 minutes of sitting, the lumbar spine's intervertebral disc area and lumbar vertical height were significantly diminished, as was the lordotic angle. After the chair exercise, however, these measurements were significantly increased.

In this study, whole spine height as measured with the stadiometer was done sitting rather than standing (eliminating the lower extremity from the measurement), to help further explore findings from the first study. As suspected, the spinal height was diminished after sitting, and then increased after the chair exercise.

Chair decompression exercise uses the arms to lift the body weight temporarily off the lumbar discs while remaining seated. Its beauty is its simplicity. It can be taught and done quite easily. You don't have to have good balance, core awareness or exceptional strength to get good benefit from this exercise. Ideally, it should be done every 15 minutes or so by all of us who are stuck in chairs for any significant length of time.

The patient sits in an ordinary upright chair. They place their arms behind them, slightly bent, at the back of the chair, and push downward, straightening their arms, leaving the buttocks on the chair, unloading the trunk and spine. The wrists can be extended with the fingers wrapped around the seat of the chair. Another option is to push down with the hands in a fist. They should keep the arms externally rotated; this moves the upper body into something similar to Brugger's relief position. The patient should hold this for five seconds, release for a couple of seconds, and then repeat four more times. The lumbar spine should gently extend as they lift the trunk.

I have written about decompression a few times. I have always believed that frequent decompression, done by patients themselves, is the ideal form. This belief is informed by my experience, by my own reading of the limited literature on the use of expensive decompression machines, and my own dislike of our profession's tendency to fall in love with get-rich-quick schemes. Dr. Fryer's studies have reinforced these beliefs, adding further understanding of the problem of prolonged sitting that is so endemic in our culture. In addition, Fryer points us toward a simple exercise, based on clinical experience and tested through sophisticated measurement.

I have always felt that teaching the patient to fish is better than just giving them a fish, meaning an active therapy is better than a passive therapy. If the goal is to change the patient's chronic pattern, we need to get them to participate daily in their own healing. Innate is great, but self-healing works better when the patient's own activities are changing. If you want the patient to attribute their improvement to you, the great doctor, then just work on them and then show them how much better they can move and how much less pain they are in. On the other hand, if you want the patient to attribute the improvement to their own activity, and you want to motivate the patient to participate and exercise, first find the problem. Next, demonstrate and have them do a necessary exercise, and then retest. If the issue is now better, they now know, both intellectually and experientially, what to do.

I use this concept daily with my lumbar pain patients who have midline tenderness in the lower lumbar spine. I have always found midline tenderness to be a valuable indicator. To me, it indicates some degree of compression of the lumbar spine. I could use my distraction table or my vertebral distraction pump to decompress this area. These are effective tools; but I know that these patients need to decompress these areas frequently, so I use a different strategy. I find these tender spots in the midline by applying pressure both posterior to anterior, and simultaneously inferior to superior, either directly on the spinous, or more often in the interspinous spaces of the lower lumbar spine. Functional tests that correlate would include pain on flexion, an inability to bend

forward while maintaining neutral spine, and/or poor lumbar control while doing a squat.

Next, I'll get the patient off the table and show them one of a couple of decompression strategies.

My [mainstay](#) is a modified standing version of the yoga downward dog.³ Another useful decompression is the chair exercise. Another great strategy is Judith Aston's use of [ground reaction force](#) using the surface you are sitting on and "reversing" gravity, using the contact with the ground or chair to lift yourself.

Almost without fail, the midline tenderness dramatically decreases after the patient does a simple exercise for it. In most cases, once I have shown this to the patient, they follow through and do it whenever they get achy, because they have directly experienced it helping them. Ideally, they will also start using "chair care," as Dr. Fryer has coined it, every 15 minutes while sitting. Using this form of exercise coaching, whereby the patient directly experiences an immediate benefit, serves as a powerful motivational tool.

This chair exercise is a great strategy for those stuck in a chair for any length of time. Getting up and moving are still important, but it is nice to have an effective way to unload while sitting. I suspect that the act of lifting also resets the position of the spine, and that the patient will sit more upright after doing the chair exercise, especially if the doctor reinforces this awareness. I suspect that different therapeutic benefits are gained from this exercise compared to just getting up for a couple of minutes and moving around. I am routinely teaching this to my patients; they like it and do it.

References

1. Fryer J. [Preliminary investigation into a seated unloading movement strategy for the lumbar spine: a pilot study.](#) *JBMT*, 2010;14(2):119-26.
2. Fryer J, Quon J, Smith FW. [Magnetic resonance imaging and stadiometric assessment of the lumbar discs after sitting and chair-care decompression exercise: a pilot study.](#) *Spine J*, 2010 April;10:4.
3. Heller M. ["Decompression: Myths and Models."](#) *Dynamic Chiropractic*, Jan. 1, 2007;25(1).

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