

Ease on Back

Make sure your yoga practice is helping, not hurting, your back.

By Julie Gudmestad

A young woman sat uncomfortably in my physical therapy office, her face drawn with pain. "I had heard stretching would help my lower back pain," she said. "But after a few weeks of daily stretching, my pain only got worse. What did I do wrong?"

With further questioning, her whole story came out. She had experienced intermittent lower back pain for two years before starting the stretching program she remembered from a P.E. class—a sequence consisting primarily of various leg stretches performed sitting on the floor, bending over her legs, and reaching for her toes. When the back pain became worse and was further complicated by severe hip and leg pain, she consulted her physician, who diagnosed her problem as a bulging disc in her lumbar spine.

As a physical therapist, I have heard this unfortunate story many times. Sitting forward bends are probably the best-known leg stretches, and are therefore likely to be included in a beginning stretch routine, whether in a public yoga or aerobics class, or in a book or video. Surprisingly, there seems to be widespread misunderstanding about the role of stretching in the care of back problems. And the irony is that certain types of stretching can actually worsen some back problems.

A yoga practice with too much emphasis on aggressive forward bending can be risky, particularly if the student has tight hamstrings and a flattened curve in the lower back. A well-constructed yoga routine, however, can be an ideal way to learn to stretch without creating or exacerbating back pain, and a chance to practice good alignment and movement patterns which help protect the back from injury.

Under Pressure

To understand how stretching can improve or aggravate disc problems, let's look at how a disc works and how it gets damaged. Intervertebral discs function as shock absorbers, cushioning the brain from jarring as we walk, run, and jump. Each disc consists of two parts: the inner disc, the nucleus pulposus, made of a shock-absorbing gel-like substance, and the annulus fibrosis, the rings of ligament that surround and support the center.

A normal lumbar spine has a mild curve forward, and in this position, weight is evenly distributed throughout each disc. During toe-touching, the lower back flexes, losing its normal curve, and more weight is put on the front of the discs. The gel-like centers get pushed backward, into the now stretching support ligaments. While this can happen during forward bending even if a person tends to have excessive lumbar curve ("swayback"), it is especially problematic if the spine has lost the normal curve and become flattened.

With repetition, or if great force is applied as in heavy lifting, the ligaments weaken and may "bulge" like a bubble in the wall of a tire. Or the ligaments may tear, allowing the gel-like inner disc to leak out,

resulting in a herniated disc. The bulging or herniated disc may cause lower back pain or, if it is pressing on an adjacent nerve, pain can be referred into the hip and leg. Bulging and herniated discs may be treated conservatively, with physical therapy, exercise, and other noninvasive treatments, but a badly herniated disc is a serious medical problem which may require surgery and a lengthy recovery period.

While heavy lifting is a well-known cause of back injuries, disc damage is just as frequently caused by the smaller but repetitious forward-bending movements we make during daily activities at work and at home. For most of us, half of our body weight is above the waist. Just as a child "weighs more" as he or she slides away from the center to sit at the end of a teeter-totter, our own upper body weight exerts greater force at the disc as we bend farther forward. This tremendous force on the disc, added to the strain on the supporting ligaments, sets the stage for damage.

In our society, opportunities abound for repetitive forward bending: child care, yardwork, housework, shopping. Even sedentary work may exert strain on the lower back; for example, someone bending and twisting from a sitting position to lift a heavy object out of a bottom desk drawer. The greater the weight being lifted (and the weight of one's own body), the greater the pressure on the disc.

Forward bending activities, especially combined with lifting, are also the most common cause of back "strain." While much less serious than disc injuries, back strain is responsible for most of our lower back pain, including the Monday morning ache after weekend gardening.

How Are Your Hamstrings?

Repetitive forward bending may also occur in exercise routines, including yoga. These routines can be particularly risky for people with tight hamstrings, the muscles extending from hip to knee on the back of the thigh that receive much of the stretch in forward bends. The hamstrings attach to the sitting bones—the two large bones at the base of the buttocks (called the ischial tuberosities). In a sitting forward bend, the pull of tight hamstrings keeps the pelvis from rotating forward over the legs. In fact, tight hamstrings encourage the pelvis to rotate backward, in a position called "posterior tilt." If your pelvis is held in a posterior tilt and you reach toward your toes, all the forward movement occurs by hinging through the lower back.

Doing a series of sitting forward bends, then, can put prolonged or repetitive strain on the disc, causing or contributing to disc bulging or herniation. Ironically, the people who most need to stretch their hamstrings, to help improve posture and movement patterns, are most at risk for injuring their backs practicing forward bends.

Tight hamstrings affect posture and the health of the lower back by exerting a constant pull on the sitting bones, tipping the pelvis posteriorly and flattening the normal curve of the lumbar spine. Overly strong or tight abdominal muscles may also contribute to a habitually flattened lower back. Tight abdominal muscles pull up on the pubic bones, again contributing to posterior tilt, especially if combined with tight hamstrings. They also pull down on the front rib cage, contributing to forward-slumped posture. This posture, with posterior-tipped pelvis and forward-slumped trunk, puts chronic strain not only on the discs, but also on the lower back muscles.

Many who suffer from lower back pain have heard or read that strong abdominals are the key to pain relief. It is true that the abdominals are important support muscles for the lower back, especially for problems like arthritis and swayback.

Problems arise, however, when the abdominals are strengthened with regular exercises like sit-ups or crunches, but the back extensors—the long muscles running parallel to the spine that support it and maintain and increase the normal lower back curve—are ignored.

Over time, a muscle imbalance develops: The abdominals become stronger and tighter, while the back becomes relatively weaker and overstretched. Unfortunately, many current exercise routines emphasize several types of abdominal strengthening, and a series of sitting forward bends to stretch the legs. The end result of years of this type of exercise will be a rounded, slumped posture with a weak and vulnerable lower back.

When faced with challenging poses, students are likely to fall back on familiar positions and muscle patterns. If your usual posture is rounded forward, with a flattened lower back, posterior-tilted pelvis, and tight hamstrings, you are at risk for back injury in forward bends and need to take special care as you prepare to practice them. Your goal is to be able to stretch the hamstrings without a posterior tilt of the pelvis.

To check your readiness, lie on your back with one leg stretched out flat on the floor. Stretch the other leg up to the ceiling with a straight knee. Look in a mirror or have someone else check to see if you can bring the leg to vertical, perpendicular to the floor.

If you can't get to vertical, your pelvis will be posteriorly tilted in a sitting forward bend, and it's possible that you would strain your back muscles or injure a disc if you reached for your toes. You should avoid sitting forward bends, especially if you have a history of lower back pain or injury, until you can stretch your leg straight up to 90 degrees or more. If you are in a class where forward bends are being taught, you can always substitute some simple leg and hip stretches like Supta Padangusthasana and Supta Baddha Konasana.

Pass the Test

My plan for building towards safe forward bends involves six basic poses:

Modified Supta Padangusthasana (Supine Hand-to-Foot Pose, Variation I) practiced with the raised leg up the wall and the straight leg through a doorway

Utthita Hasta Padangusthasana (Extended Hand-to-Foot Pose) practiced with the raised leg on a chair back.

Prasarita Padottanasana (Widespread Forward Bend)

Supta Baddha Konasana (Supine Bound Angle Pose) practiced with the pelvis against a wall and the feet up on the wall, pressing gently on the thighs.

Modified Supta Padangusthasana (Supine Hand-to-Foot Pose, Variation II) practiced with the raised leg extended to the side and the foot on a wall

Savasana (Corpse Pose) practiced with blanket support for the spine.

Taking only 10 to 15 minutes daily, these poses will begin to reshape your body by lengthening your hamstrings without compromising a normal lumbar curve. Included in the sequence are two poses that stretch the inner thigh muscles, the adductors, which can also factor into forward bends.

These gentle poses will help you progress toward forward bends. If, however, you have a history of lower back pain, known disc damage, or a recent lower back injury, it may not be safe to begin forward bends even after working with these preparations for some time. Check with your physician or other health care provider before starting. Remember, sitting forward bends put the spine into flexion, reversing the normal curve, and some lower backs will not tolerate that position without pain or strain.

Additionally, you may want to take instruction in forward bends from a teacher experienced in working with back problems who can give you expert guidance and feedback.

When you are ready to start, I suggest you begin with standing forward bends. The transition from neutral-spine Prasarita Padottanasana (Widespread Forward Bend) to the version with the head hanging down towards the floor (or on the floor) is a good trial. Next try Uttanasana (Standing Forward Bend). In both of these poses, gravity helps to take the weight of the upper body off the lower back, decompressing the discs.

If you have passed the 90-degree test and can practice these hanging forward bends without back pain, you may be ready to begin practicing sitting forward bends safely and reap their restorative benefits of introspection, relaxation, and flexibility.

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