



## Better Backbends

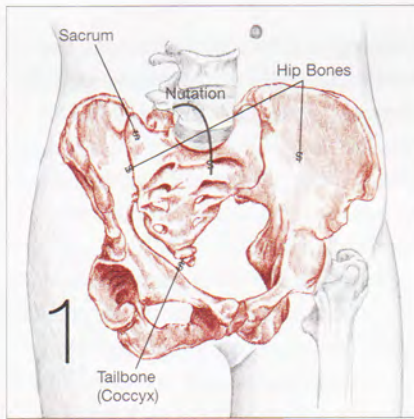
Do you tuck your tailbone in backbending poses? Discover a smarter way to keep your back safe—and get a deeper opening. **By Doug Keller**

It would be hard to imagine yoga without backbends—they're invigorating, uplifting, and heart-opening. Backbends stimulate the proper functioning of the digestive system, help preserve the health of the vertebrae and spinal disks, and open the body to deep diaphragmatic breathing. It's no wonder that backbends are an important part of any hatha yoga routine.

At the same time, these poses place strong demands upon the most vulnerable segment of the spine—the lumbar region. To protect against pinching in the low back, many teachers give cues to “scoop” or “tuck” the tailbone. But there's a better, more precise approach to safe backbending that engages certain key core muscles and the traditional hatha yoga practice of *mula bandha*, or root lock. To understand just when instructions regarding the tailbone are appropriate—and when we should engage our core instead—let's take a closer look at how the sacrum moves within the pelvis.

Stay safe in advanced backbends like wheel pose by skillfully positioning the sacrum.





**THE BASE OF THE SPINE** consists of the tailbone and the sacrum, which nutates (or rotates forward from the top) in relation to the hip bones.

### Sacral Movement

The pelvis contains three bones that are designed to move in relationship to each other. The two hip bones swing back and forth with the legs, while the sacrum is positioned between them, twisting slightly from side to side as it mediates between the movements of the hips (Fig. 1).

The sacrum also has its own distinctive action called nutation—a tipping or nodding forward of the top of the sacrum—which is crucial in supporting the spine during bending motions, including backbending.

The sacrum's neutral position—when sitting or walking, for example—is one of slight nutation. This minor forward tilt helps to support the natural inward curve of the lumbar spine; it is a stable yet unlocked position that allows free movement of the hips.

*Tadasana*, or mountain pose, on the other hand, requires that the pelvis be locked into a stable, unmoving position at the sacroiliac (SI) joints (the surfaces where the sacrum joins to each hip bone) in order to maintain the stillness and steadiness of the posture. This is accomplished by slightly scooping the tailbone down and forward (Fig. 2)—an action called counternutation, which causes the top of the sacrum to tip slightly backward. Counternutation does not generally apply if the body is

in motion; it is specific to *tadasana* and other postures (such as *parshvakonasana*, or side angle pose) in which the body is meant to be in a single straight line from the heels through the crown of the head.

When you bend backward or forward, however, the opposite action takes place in the sacrum: the top of the sacrum automatically nods forward beyond its neutral position, and the tailbone shifts slightly backward. Studies show that this sacral nutation in spine-bending poses stabilizes the sacrum within the pelvic bones in a more secure and less vulnerable position than counternutation, where, particularly with backbending, you may be more at risk of pinching the tissues within the SI joints, forcing the SI joints into misalignment, or otherwise straining or jamming your low back.

So if we're not scooping or tucking the tailbone, what should we do to protect the spine in backbends?

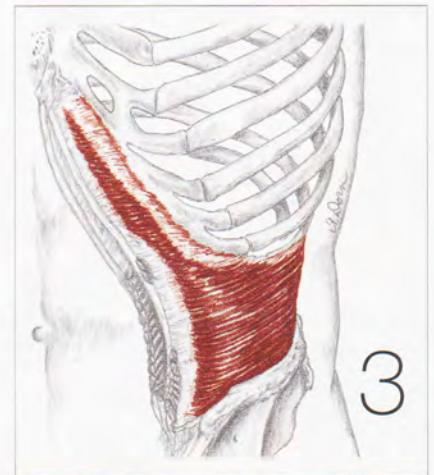


**COUNTERNUTATION** of the sacrum occurs when the tailbone scoops down and forward, promoting steadiness in poses like *tadasana*.

### The Right Support

The right support for backbending recruits several muscles in the pelvis, but starts at the deepest layer of the abdominal muscles—the transverse abdominals.

The transverse abdominals play a significant active role in stabilizing the trunk of the body for movement. They wrap around the torso—from the fascia of the lumbar spine and the upper edges of the hip bones at the back body to the front edges of the ribs and the rim of the pelvic bowl (Fig. 3). Essentially, the transverse abdominals produce just enough pressure in the abdomen and pelvic cavity to distribute the stress of movement, so that no single part of the low back bears the entire burden.



**THE TRANSVERSE ABDOMINALS** are the deepest layer of abdominal muscles. They protect the lower back by stabilizing the pelvis and spine.

In order to consciously engage these muscles, you can focus on their action in the lower abdomen, about three inches below the navel. When you contract here, you can feel the muscles firm inward toward the sacrum and draw up toward the navel; at the same time, the two hip points at the front of the pelvis squeeze toward each other, as if there is a string between them that is tightening. >>



## A Simple Experiment

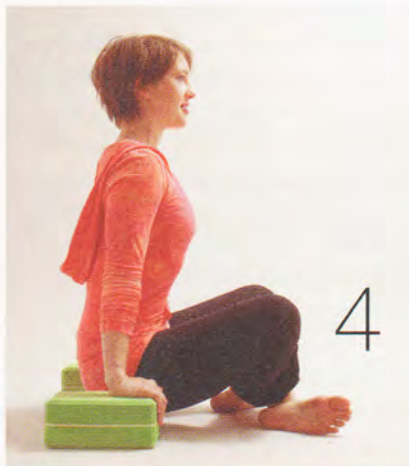
### Engaging the Transverse Abdominals

Sit cross-legged in *sukhasana* (easy pose) and place your hands to either side of your hips; bend your elbows so you can place yoga blocks or books under your hands. (This same experiment can be done while sitting on a chair with armrests; place your feet on the floor and your hands on the arms of the chair.)

Bring a natural inward curve to your low back, tipping your pelvis slightly forward. Tuck your chin toward your chest to help you draw your shoulders back and open your chest. Then press with your hands to lift your weight out of your sit bones (you don't have to lift your hips entirely off the floor) (Fig. 4). Feel how the pit of your abdomen naturally tones and lifts, your hip points draw toward each other in the front, and your sacrum lengthens downward from your waistline toward your tailbone, as if your tailbone were heavy or rooted in the earth.

### Finding Mula Bandha

Now look deeper inside, beyond these actions. If you pay attention to the muscles of the pelvic floor at the perineum



**ELEVATED SUKHASANA** Allow the pelvis to tip forward as you press into the blocks and lift your weight out of the sit bones. Notice how the sacrum and tailbone lengthen downward.

(the region between the anus and the urethra), you'll find that you can gently draw the perineum upward as you lift. This is the subtle action of mula bandha, a toning and inner lift of the muscles of the pelvic floor. Then lower the hips back down.

Next see if you can create the same actions at the pelvic floor before you lift your hips, and then lift up. In this exercise, mula bandha is most accessible when you start from the abdominal action we just described: the pit of your abdomen tones and lifts, and your hip points squeeze toward each other. This action helps you to initiate the lift of the perineum. When you engage mula bandha, your pelvis, abdomen, and low back will feel steady, stable, and light, regardless of whether you're lifting your hips up or setting them down.

Notice what happens in the area of the sacrum as you practice the actions in the abdominals and pelvic floor. The

deep muscles that you feel drawing downward from your waistline toward your tailbone are the multifidus muscles, which lie close to the sacrum on the inside of the two hip points at the back of your pelvis. When the transverse abdominals engage at the pit of the abdomen and the sacrum is stabilized, the multifidi co-contract and inflate. In this way, the multifidus muscles act like protective air bags that cushion the sacroiliac joints, preventing any pinching of the joint tissue.

For comparison, try scooping your tailbone down and forward before you lift up. You're likely to feel the triangle of muscles between the tailbone and the sit bones tense up, and there is a hardness and greater effort to the action of lifting. You may even feel a slight pull or discomfort in the SI joints. In this sitting position, scooping the tailbone works against the natural nutated positioning of the sacrum.

### Safe Backbending

This nutation (a forward tilt of the sacrum relative to the hip bones) also occurs naturally during backbending. However, it is possible for the sacrum to nutate excessively under the pressure of the backbend—especially if you're hypermobile in the SI joints. So it is essential to engage the core muscles described in the exercise above in order to stabilize and protect the low back.

By engaging the transverse abdominals, the multifidi, and also the muscles of your inner thighs (as we shall see below), you provide the support for mula bandha, drawing energy up from the center of the pelvic floor and helping the spine extend into a healthy backbend. The example of *ustrasana*, or camel pose, illustrates how these actions all come together.

### Ustrasana

A camel kneels down to release the burden of packs and passengers placed upon its back. In *ustrasana*, we mimic the camel's relief when we find a light and expansive feeling in the pose, as if we too just slid a burden off our shoulders.

Activating the core muscles and mula bandha in preparation for this kneeling backbend provides the necessary foundation for the feeling of extension, expansion, and release without any compression in the spine. (In contrast, tucking your tailbone and clenching your buttocks would immobilize your spine, pinch the sacroiliac joints, and place the burden of the backbend almost entirely upon just a couple of vertebrae—L4 and L5—in your lumbar spine.)

To begin, kneel on a blanket with your knees and feet hip distance apart and your toes turned under. Rest your hands on your hips and position your hips vertically above your thighs.

Place a light yoga block between your upper inner thighs. The width of the block should allow you to keep your thighs parallel, with your knees slightly wider than your sit bones. >>

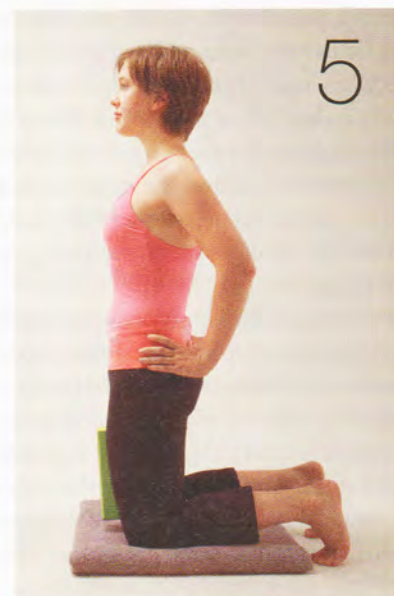


Firm the muscles of the inner thighs (the adductors), as if trying to lift the block up toward your pubic bone, and then draw the block back toward your sit bones. This will tip your pelvis forward, increasing the arch in your lower back. Finally, rather than clenching your thighs on the block, draw your inner thighs apart, as if you were trying to drop the block—but without actually dropping it (**Fig 5**). These actions in the inner thighs create space for the sacrum and allow for the proper amount of nutation. Now the stage is set for engaging your transverse abdominals and the inner lift of mula bandha.

Without changing the arch in your lower back, drop your chin toward your chest and exhale as you firm the pit of your abdomen, squeezing the hip points at the front of the pelvis toward each other. Feel the broadening at the back of your pelvis, across the whole area of the sacrum.

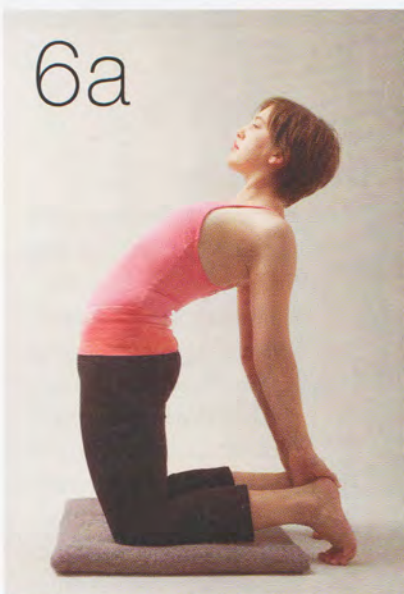
Use your next inhalation to lift through your torso and lengthen the sides of your body from your waistline to your shoulders. Now the pit of your abdomen is not only firming inward but also drawing upward. Take your attention down to your perineum, at the pelvic floor. With the lift of the lower abdominals, draw up from the perineum, initiating mula bandha without creating any clenching in your buttocks or hips. Once you've activated mula bandha, you can take the block out (though you may want to try the whole backbend with the block in place).

Before taking the spine into the backbend, look for the slight squeeze of the deep multifidus muscles in the area of the sacrum. Draw downward through these muscles from your waistline toward your tailbone (without scooping), and root through your legs as you continue to lift up from the pelvic floor and the pit of your abdomen. To protect your



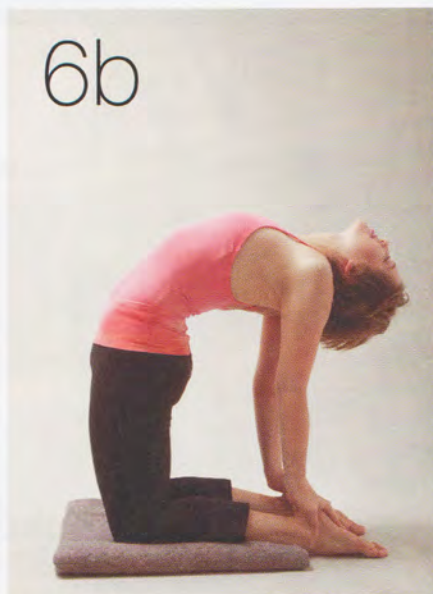
**USTRASANA PREP** To create space for proper nutation of the sacrum, squeeze a block between the inner thighs while drawing them back and apart.

6a



**USTRASANA** Ground through your legs, engage at the pit of the abdomen, and lift up from the pelvic floor as you inhale into a backbend.

6b



To deepen the pose, lift and open your chest, uncurl your toes, and allow your head to come into full extension with your spine.

neck, keep your head looking forward and your chin tucked toward your chest.

Your spine will now naturally want to extend into a backbend. With your next inhalation, press your hips forward (your sacrum will tip forward slightly, as it should) and, without allowing your chest to collapse, reach back to touch your heels, palms facing out (**Fig. 6a**).

It's natural for your whole body to shift back slightly when reaching for the heels, so press your hips forward once again to bring your thighs back toward vertical over the knees. To deepen the pose, point your toes back and place the tops of your feet flat on the floor; if this causes any strain in the knees, come back to the previous version.

Finally, lift and open your chest to allow your spine to fully extend into the backbend. It may feel natural to take your head back into the full expression of the pose (**Fig. 6b**). If this causes any pinching in your neck or low back, however, keep your chin tucked toward your chest, and continue to work on the actions in the lower body that we have been practicing. The neck extension will come in time.

Hold the pose for 3 to 5 breaths. To come out, engage your quadriceps by grounding through your feet and lower legs. You can take your hands to your hips as you press your hips forward and draw your spine up, letting the head come up last. When you come fully upright, it's appropriate to scoop your tailbone to stabilize your spine and sacrum in its *tadasana* position. You can also give your back muscles a rest by sitting back into *balasana*, or child's pose.

As we've seen, the key to safe backbending is to stabilize the sacrum in its optimal nutated position while protecting the spine from overarching. By engaging the inner thighs, the transverse abdominals, the multifidi, and *mula bandha*, we provide core support for the sacrum so that we can drop our burdens and reap all the invigorating benefits of backbends. ■

*Doug Keller's yoga journey includes 14 years of practicing in Siddha Yoga ashrams, intensive training in the Iyengar and Anusara methods, and a decade of teaching in the U.S. and abroad.*