

# yoga

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## The Max Factor

There's a great divide among yoga teachers about the correct way to use the gluteus maximus—the main muscle of each buttock—in backbends.

By Roger Cole



Some teachers are "Grippers," who urge their students to contract the gluteals as hard as they can; others are "Soft Pedalers," who try to sell their students the idea that they must always keep the muscles completely relaxed; and still others are "Peacemakers," who try to find some compromise between the two.

Common sense favors the Grippers. Just about any yoga student can tell you that bending backward can cause a painful pinching sensation at the base of the spine, and that tightening the buttocks often takes that pain away very quickly. Usually, the more you tighten, the less your back hurts and the deeper you can move into the pose. This works in almost any backbend.

Case closed, it would seem: You should obviously contract your gluteal muscles in backbends, right? Not according to hard-core Soft Pedalers, who insist that you must never engage your buttocks while bending backward. But how could anyone even think such a thing when your direct experience so clearly tells you otherwise? What sort of incense have they been burning? It would be easy to dismiss those teachers out of hand—except that many of them are crazy-good backbenders, and their gluteus maximus muscles are perfectly soft and relaxed even when they are deep in the throes of a crazy-good backbend. So who's right?

The answer is: It depends. People who have tight hip flexors (the muscles that pull the thighs toward the chest) can benefit from contracting their gluteals in a backbend, if they do it the right way. Those with loose hip flexors are usually better off keeping their glutes relaxed.

## Tight Logic

Backbends require maximal extension of the hip joints. Extension is the action of opening the hip joint in front. To understand this action, move into a lunging pose like Virabhadrasana I (Warrior Pose I). The hip joint of your back leg is in extension. In order to achieve extension, the hip flexors have to stretch. The primary hip flexor is the iliopsoas muscle. The top end of the iliopsoas attaches to the lower spine and upper front pelvis, while the bottom end attaches to a bony projection on the upper inner thighbone (the lesser trochanter). When you extend your hip, you lengthen the iliopsoas. If the muscle is tight, it prevents your hip from extending as far as it should

and instead pulls your lower spine and upper pelvis forward. This exaggerates the arch of your lower back and creates the painful and all-too-familiar lumbar pinch.

Some people have long, loose hip flexor muscles. When they do backbends, their hips move virtually unopposed into deep extension, so they can easily get far into the pose without overusing the lower back. Other people have short, tight hip flexors. They cannot advance safely into backbends unless they find a way to make their hip flexors longer. One way to do this is to actively stretch them by contracting the hip extensor muscles.

## Glute Tolerance

The strongest hip extensor is the gluteus maximus. Its upper end attaches to the back of the pelvis and the sacrum. Its fibers run diagonally downward and to the side, and its lower end attaches to the back of the upper thighbone and to the fascia lata, a strong band of connective tissue on the outside of the thigh. When the gluteus maximus contracts, it does three things: It extends the hip joint, it rotates the thighbone outward, and it pulls the thighbone out to the side (abduction). Of these three actions, only one—extension—moves you deeper into a backbend; the other two create mis-alignments. This mixed effect is the main source of the confusion about whether and how to use the gluteal muscles when bending backward.

Teachers in the Gripper camp seem to see only the positive effects of contracting the glutes in backbends. They argue that it decompresses the lower back by tilting the top of the pelvis and sacrum backward, stretches the hip flexors by extending the hip joint, and strengthens the buttocks. Therefore, the Grippers conclude, everyone should squeeze the gluteals when they bend backward.

## The Soft Approach

But Soft Pedalers are quick to point out that contracting the glutes can make it impossible for highly flexible yogis to move completely into the deepest backbends. For a maximal backbend, the pelvis has to tilt backward. When you tighten your gluteus maximus, it tilts your pelvis back at first, but when it reaches full contraction, it forms a hard lump of muscle that sits between the back of the pelvis and the back of the thigh. In extreme backbends, this lump physically blocks the pelvis from tilting back any farther, so a flexible practitioner can't extend to his or her full capacity.

To make matters worse, if a flexible yogi allows the gluteal muscles to pull the thighs apart and turn them out, as the muscles naturally tend to do, this jams the greater trochanters (the knobby part of the upper outer thighbones) against the back of the pelvis, further impeding backward pelvic tilt. It's no wonder, then, that many extraloose backbenders choose to be Soft Pedalers: Hard glutes prevent them from moving 100 percent of the way into their favorite poses.

Those in the Gripper camp might retort, with good reason, that these are problems of an elite minority of freakishly flexible people. For the average Joe Yogi, tight hip flexors stop the pelvis from tilting back long before it runs up against the gluteal lump or the

greater trochanters. Shouldn't Joe have the right to tighten his buttocks if it gives him a fighting chance of extending his hips and saving his back?

Undaunted, the Soft Pedaler would counter that contracting the glutes is bad in backbends for all people. Even though the gluteus maximus does give some stretch to the iliopsoas by extending the hip, it then takes part of that stretch away by pulling the thighs apart and rotating them outward (this combination of movements shortens the iliopsoas by moving the lesser trochanter closer to the pelvis). The same abducting, externally rotating action also wastes much of the glutes' energy by directing their muscular force out to the sides, rather than using it to pull the thighs straight backward in the direction of the backbend.

### Reconcilable Differences

Before the Grippers and the Soft Pedalers come to blows, the Peacemakers step in, citing pros and cons on both sides. They agree with the Soft Pedalers that hardening the glutes can prevent superflexible yogis from reaching their full potential in backbends, but they also note a weakness in their other arguments: Every one of them is based on the assumption that tightening the buttocks will pull the thighs apart and turn them out. Like the Grippers, the Peacemakers believe that engaging the glutes has the potential to help the average yogi, so they ask, "Isn't there a way to contract the gluteal muscles in backbends without allowing the thighs to fly outward? Wouldn't this give Joe Yogi the benefits of these powerful muscles without the downside?"

The answer is yes, and the method has three parts: Selectively contract those parts of the gluteus maximus that produce the most hip extension with the least abduction and external rotation, contract helper muscles that add to the hip extension, and contract guiding muscles that can help hold the thighbones in.

### Operating Instructions

The upper fibers of the gluteus maximus produce the most abduction and external rotation, and the lower fibers produce the most extension; so if you contract your gluteal region in backbends, you should focus on tightening the lower half and keeping the upper half soft. The hamstrings and, to some extent, the adductor magnus (a large muscle of the inner thigh) are hip extensors that can help the gluteus maximus. You target these muscles by tightening the area just beneath your sitting bones. The adductor magnus also helps you keep your thigh rolled in, with the help of other inner thigh muscles and one outer hip muscle (the gluteus medius). In reclining backbends with bent knees like Setu Bandha Sarvangasana (Bridge Pose), your front thigh muscles (quadriceps) can help deepen the pose in its later stages because the more you straighten the knees, the higher your pelvis will lift.

To learn how to isolate and target the lower glutes, hamstrings, and adductor magnus, stand near a wall for balance, rotate one leg far inward, and then, keeping the knee straight, lift the foot off the floor and move it back a little so its toes point toward the opposite heel. Touch the muscles below the sitting bone. They are now hard, but the buttocks are still soft. You are contracting your hamstrings and adductor magnus but

not your gluteus maximus. Keep the leg straight and rotated as far inward as you can and lift it backward a few inches more, just until you feel the lowest fibers of the gluteus maximus contract while all the fibers above remain soft. Now, without leaning your trunk forward or arching your back, slowly lift the leg straight back to contract the muscle fibers higher and higher up the buttock, but don't contract more than halfway up, and don't allow your foot to turn out at all. Remember this sequence of muscle recruitment; the next step is to re-create it in Bridge Pose.

### Build a Balanced Bridge

To do this, lie on your back with your knees bent. Place your feet hip-width apart and turn them in slightly. Keeping the buttocks soft, contract the muscles just below the sitting bones and use them to tilt the sitting bones up off the floor while the sacrum remains on the floor. Now, just as you did while standing, contract the lowest gluteal fibers. Use all these muscles to lift the pelvis off the floor, leading with the sitting bones. Keep your upper buttocks soft, but contract more and more lower gluteal fibers the higher you lift. Although your thighs will roll out slightly, tighten your inner thigh and outer front hip muscles to limit this.

Maintaining all these muscle contractions, imagine a line that connects your knees to your shoulders. When your hips reach that line, begin to contract your quadriceps as if to straighten your knees, to lift your pelvis still higher. When your hips are as high as they can go, try this: Contract your quads as hard as you can to maintain as much lift as possible, then completely soften the glutes, hamstrings, and adductor magnus. Your pelvis will probably drop a little. Now, keeping the quads just as active, contract the hamstrings, adductors, and lower buttocks from bottom to middle. Notice how this tilts your sitting bones up and lifts your pelvis higher. Any extra lift, tilt, and stretch you got from this contraction demonstrates the power of using the gluteus maximus and nearby extensor muscles to enhance your backbends. But that's the easy part. Now, can you find peace in this position?

