

# yoga

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# beneath the surface

Yes, a toned core is great for bikini season.


But, when you learn to access the deepest muscles,  
you will get benefits that are more than skin deep.



*It's almost summer*—and chances are good that people all over America want to tone up their tummies, and they're adding crunches to their routines to do it. But sit-ups alone won't make a portbelly disappear. In fact, they just might have the reverse effect!


To achieve a toned and healthy midsection, you need to work with a number of muscles that are commonly called the "core." Your core includes more than just abdominal muscles. Most exercises that target your abdominals can actually tighten the muscles around your tummy in such a way that they prevent abdominal tone and, if done without proper awareness, can push your belly out and even hurt your back.

It's often the psoas that will cause you to lose the battle of the bulge. A key muscle at the very center of your core, the psoas is all too often overworked in ab exercises. You'll benefit most from your core work if



\*by Doug Keller

\*Photography by Katrine Naleid





you learn the actions that not only tone your tummy, but also tame a tight psoas.

### THE DEEP-DOWN MUSCLE

The psoas is the deepest and one of the largest muscles in the body. On each side of your lumbar spine, it attaches to the vertebrae and stretches over the hip joint—like the strings of a violin stretching from the neck over the bridge—to attach at your femur (inner thigh). You use the psoas when you walk: It initiates every step you take by exerting a powerful pull on your leg at your inner thigh. It also plays a critical role in forward bends, working in tandem with your abdominals to flex your spine.

Especially important, the psoas provides structural support for the curves of your spine. In fact, it runs so deep that when you're lying down, your abdominal organs literally sit on top of it, which is why the psoas can have a profound effect on the appearance of your abdomen. Thanks to the way the psoas contracts to flex your legs toward your spine, it's almost impossible to avoid tightening the psoas in any abdominal exercise. And this can

*continued on page 84*

## 1 Supta Padangusthasana (Reclining Hand-to-Big-Toe Pose)

Supta Padangusthasana will tone your abdominal muscles and lengthen your psoas.

• Lie on your back with your left leg extended. Use a strap to hold your right foot and then lift

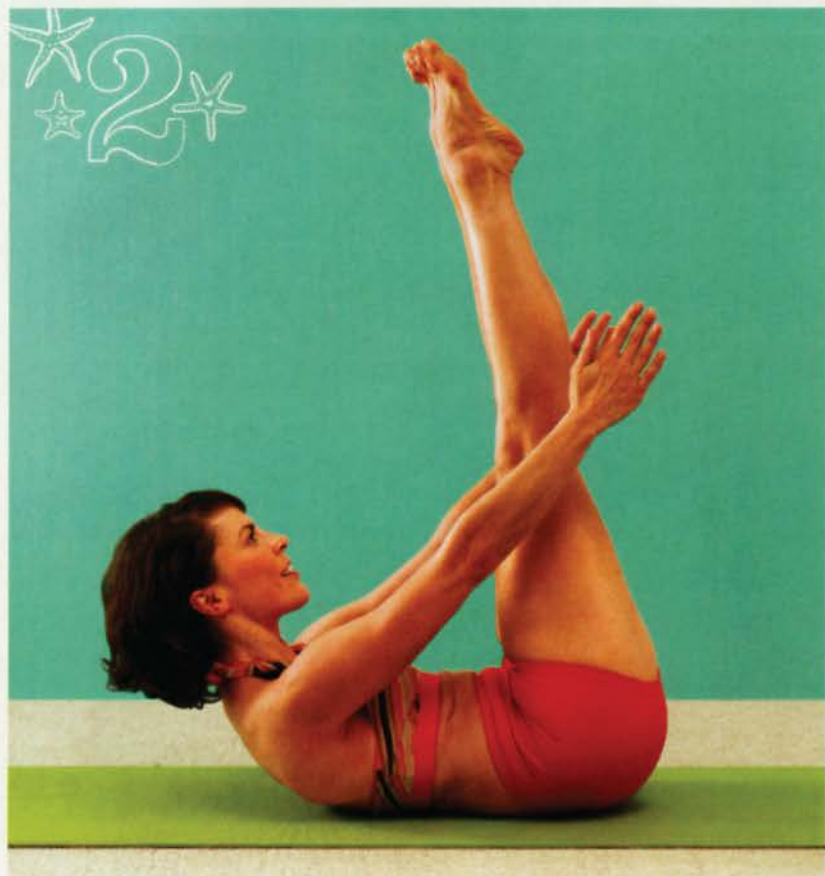
your right leg. Before moving your right leg closer to your torso, tilt your pelvis forward slightly to establish the natural inward curve to your low back, using the drawstring action to help: Work your left leg as though you were trying to lift it, firming your transverse abdominis and narrowing the space between your hip points. (See the section "The Drawstring and the Zip-Up" on page 119 for more details.) Feel your left leg spiral inward and the arch in your low back increase slightly, signaling a release in your left psoas.

Now use the zipper effect by drawing the pit of your abdomen in and up to engage your rectus abdominis, and press out through the mound of your big toe. If your left leg turns outward and your low back touches the floor here, your psoas is gripping and shortening.

Maintain these lengthening actions as you take your right leg closer to your torso. Hold for 10 breaths or longer, remaining firm but not tense in the pose. Release your right leg and repeat on the second side.







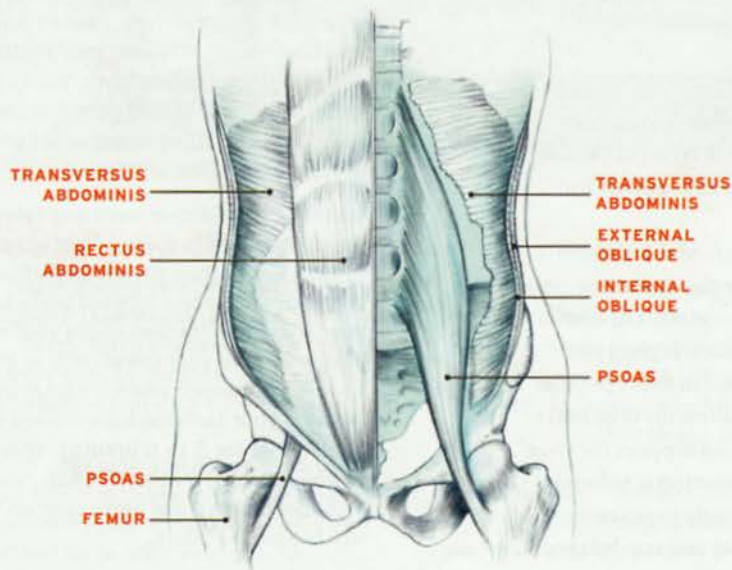
## 2 Torso Curl

Maximize the work in your abdominal muscles and minimize the pull of your psoas on your low back with this upper-body curl. You'll start in a position that keeps your psoas as neutral as possible.

From lying down, bend your knees so your thighs are closer than 90 degrees toward your chest. (If your thighs are beyond 90 degrees in relation to your torso, your psoas will tighten.) To check that you're engaging your abdominal muscles while keeping your psoas neutral, hold your knees with your arms almost straight. Press your knees into your hands, while simultaneously firming your lower abdominals and rounding your low back into the floor.

Extend your arms to the side in a T position, with your palms up and your hands in line with your shoulders. Round your low back and press it into the floor. Press your knees together to help firm the pit of your abdomen, squeezing your hip points toward each other as you curl your tailbone up toward the ceiling. On an exhalation, straighten your legs and curl your torso up, reaching your hands toward your knees or shins. On an inhalation, bend your knees and release your torso down. Repeat 5 to 6 times, moving with your breath. Eventually you may work up to 10 or more repetitions. Avoid jerking movements or straining your neck. Instead, gracefully curl your torso upward, extending your arms forward and up while keeping your throat soft.

### meet your muscles



The internal and external obliques are cut away from the front body in this illustration so you can see the psoas deep within the belly and surrounded by the corset of the transverse abdominis.

*anatomy illustrations by Stephanie McCann*





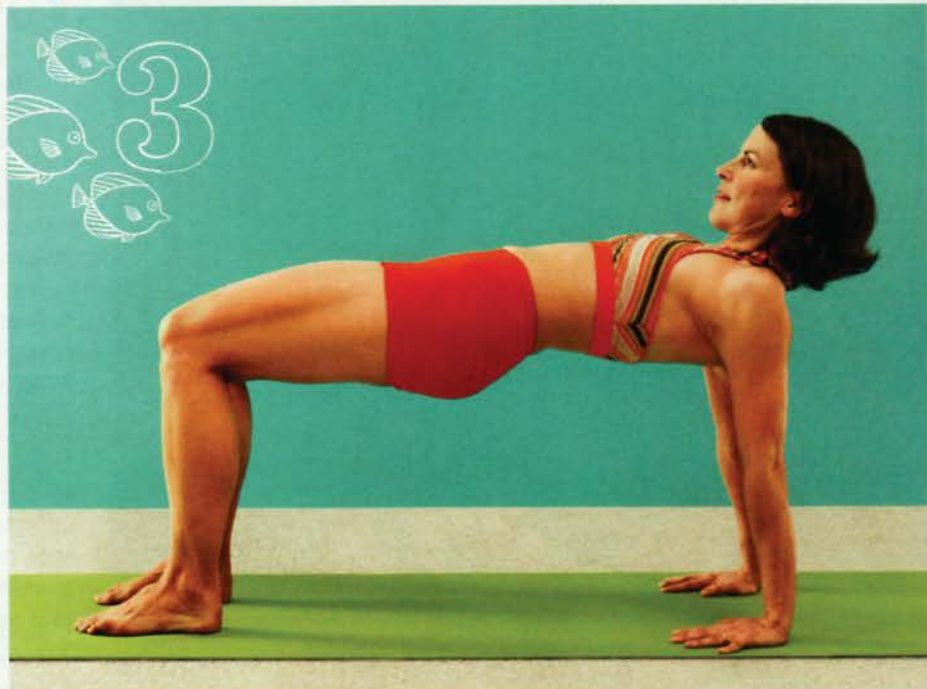
### 3 Purvottanasana (Upward Plank Pose), variation

This variation of Upward Plank works your rectus abdominis while releasing and lengthening the psoas.

Sit with your knees bent, feet hip-distance apart and flat on the floor. Place your hands behind you, a little wider apart than your feet.

Draw your shoulders back and open your chest. Keep your chin tucked slightly and, on an inhalation, lift your hips up to the height of your knees. Thanks to the tug of your psoas, your low back will likely arch and your belly will pooch out a bit.

Activate your hamstrings and gluteals, which will inhibit your psoas, by isometrically pulling your feet toward your hands on an exhalation. Squeeze your hip points inward as if you're tightening the drawstring, and zip up by drawing your low belly in and up. Now, lift your hips higher. Use your inhalations to open your chest, and your exhalations to isometrically pull your feet toward your hands, making any signs of a potbelly disappear. Hold for 5 to 8 breaths or for as long as you can with good form. Repeat 2 to 3 times.



*continued from page 82*

be a problem unless you actively incorporate poses and techniques that release and lengthen your psoas.

#### RETHINK YOUR CORE

Surrounding the psoas you'll find what is most commonly referred to as the core—three layers of muscle that provide much-needed control and support for the movements of your spine.

First, the outermost layer consists of the abdominals, which, in addition to moving the torso into forward bends, are also involved in twists. The rectus abdominis is the most visible member. It gives you that six-pack look and is emphasized in many popular abdominal routines. The rectus abdominis does make your belly look trimmer by providing support for your abdominal organs, and its active function is to bend the spine forward. It's worked strongly in poses such as Ardha Navasana (Half Boat Pose) and arm balances such as Bakasana (Crane Pose).

The other members of the outermost layer are the internal and external obliques. These start at the

*continued on page 87*

### 4 Forearm Plank Pose

Plank Pose on your forearms is a smart all-abs workout. It creates stability and strength in your core while keeping your psoas neutral.

From lying on your stomach, come on to your forearms with your fingers interlaced, elbows shoulder-width apart. Turn your toes under and lift your hips to shoulder height, stacking your shoulders directly above your elbows. You're likely to begin with an arch in your low back, thanks to the action of an eager psoas overpowering your abdominals.

To assist your abdominals and release your psoas, first squeeze your hip points toward each other, then isometrically push your forearms forward while keeping your shoulders stacked above your elbows. Firm and draw your lower belly in and up toward your heart while lengthening through your tailbone back toward your heels. Hold for 5 to 8 breaths. This pose is a healthy alternative to Chaturanga—stronger on your abs and easier on your wrists and shoulders.





## 6 High Lunge

High Lunge gives you the opportunity to fully integrate toning your transverse abdominis and rectus abdominis while lengthening your psoas and stretching your quadriceps.

From standing, step your right foot forward into a lunge. Fully straighten and firm your left leg. Start to lift your hips a little higher and squeeze your hip points toward each other, pulling the drawstring to engage your lower belly. Maintain that firmness and sink your hips down lower while keeping your left leg straight.

Place your hands on your right thigh and lift your torso upright. Keep your abs toned and take your arms out to the sides in line with your shoulders; this will help you steady your balance and center your hips beneath your chest. Then, lift your arms up. Hold steady for 10 breaths while keeping your lower belly engaged and your back leg straight and firm, balancing the actions of your abdominals and psoas. Release the pose and take the left side.

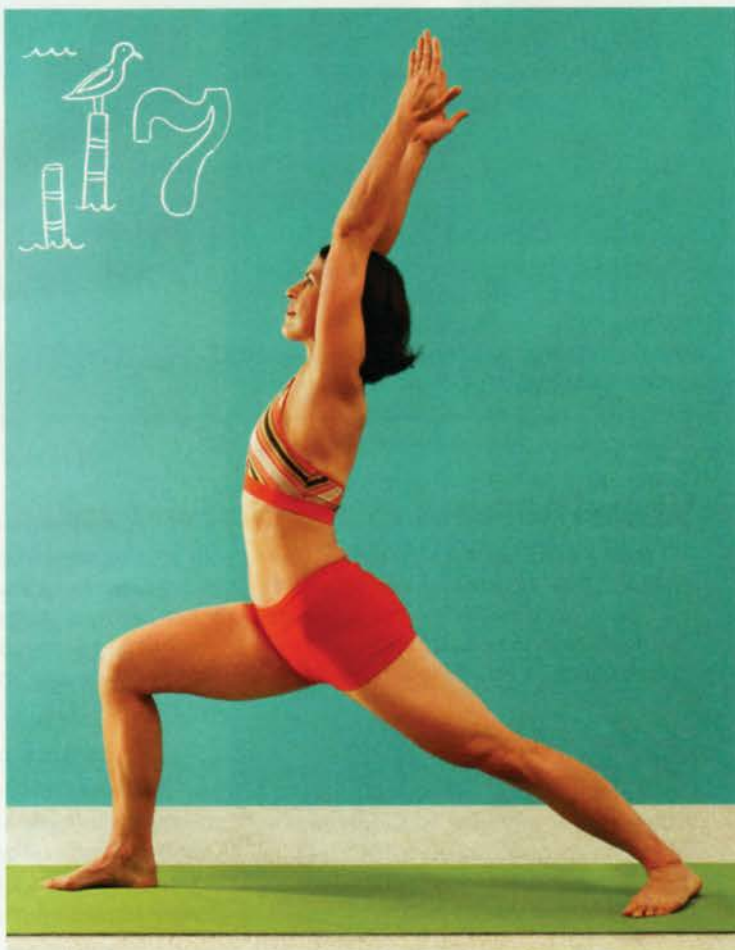
## 7 Virabhadrasana I (Warrior Pose I)

Virabhadrasana I works the two key core actions—pulling the drawstring and zipping up—and moves you even deeper into lengthening your psoas.

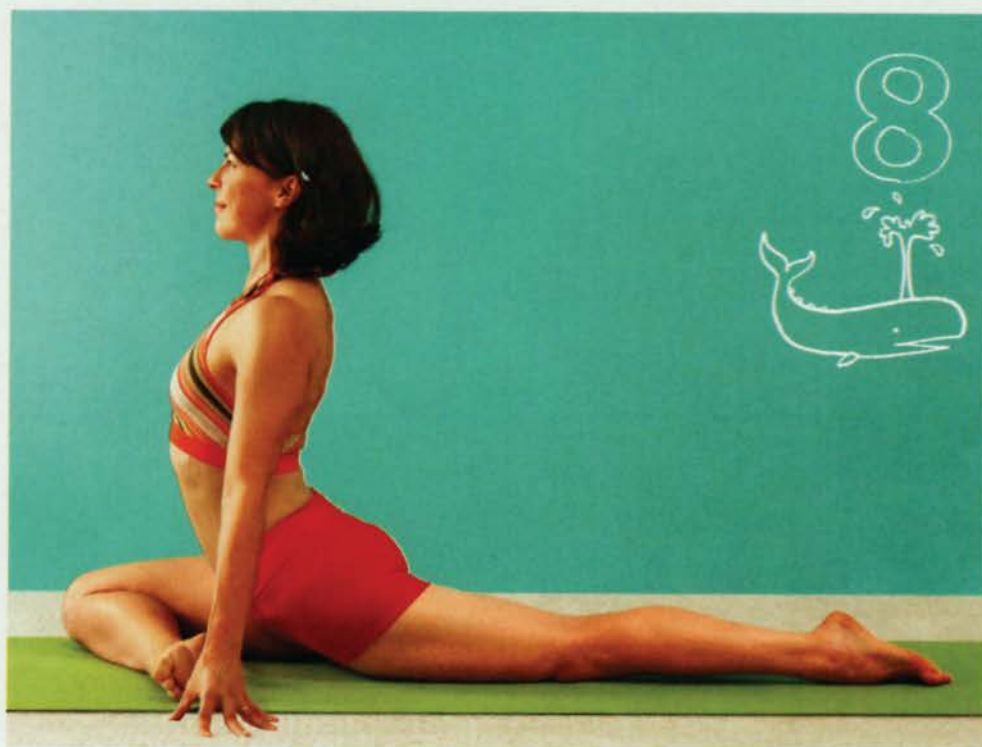
Step your right foot forward, release your left heel down, and place your hands on your hip points. Lean forward and pull the drawstring by squeezing your hip points toward each other. Firm your lower belly and feel the muscles of your inner thigh move toward your sitting bones.

Lift your torso up, and zip up by drawing your lower belly in and up. Your abdominals need to release slightly to allow the backbend here, but don't let go of your abdominals entirely!

The two actions keep the top of your pelvis from tilting forward (anterior tilt), which would allow your psoas to pull on the lumbar spine and pinch your low back. By stabilizing the pelvis, this pose becomes a deep psoas stretch, while the abdominals pressurize the abdomen to both support your low back and control the tilt of your pelvis. Activate the gluteals in your back leg to help release your psoas by pulling your left foot back isometrically and extending into the earth through your heel. Hold for 10 breaths or for as long as you can comfortably maintain alignment. Release and repeat on the second side.







*continued from page 84*

side and front body at the ribs and sternum and wrap around the front torso to your pelvis. Their primary function is to twist your torso as well as to bend it sideways. They join with the rectus abdominis to add power to your forward bending. The obliques have a protective function in twisting: They ensure that the spine twists evenly, so that the vertebrae do not turn too strongly in any one place and injure an intervertebral disk. You will find them at work in poses such as Marichyasana III and Ardha Matsyendrasana (Half Lord of the Fishes Pose). The obliques also get a workout and a stretch in lateral sidebending poses such as Utthita Trikonasana (Extended Triangle Pose).

The second, or middle, layer plays quite a different role. It supports your spine by bracing it, especially when you're picking up something heavy. This layer is really a system of muscles whose prime member is the transverse abdominis. These muscles wrap around your torso—from back near your lumbar spine around to the front—covering your entire abdomen from sternum to pubic bone. They're often described as a muscular corset.

The transverse abdominis works in combination with the diaphragm and pelvic-floor muscles to pressurize your torso, protecting your spine from stressful loads. To feel this system at work, take a small breath in and then hold it; tense the

*continued on page 118*

## 8 Eka Pada Rajakapotasana (One-Legged King Pigeon Pose)

Eka Pada Rajakapotasana stretches and releases your psoas. This makes it a great pose to practice after abdominal work.

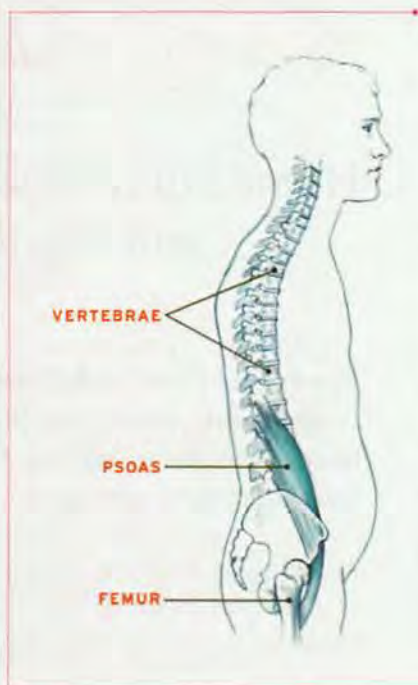
Come onto all fours and bring your right knee forward to the outside of your right hand; your right heel should be in line with your left hip

point. If your right sitting bone does not release down to the floor, keep your pelvis level by placing a blanket or block underneath your right hip. Lean your upper body forward and extend back through your left leg and big toe while you squeeze your hip points toward each other. To release more deeply into the stretch, pull your thighs apart laterally and engage your outer hips to make space for your hips to descend and your psoas to lengthen.

Move your lower belly in and up, and start to lift your torso. Continue reaching back through your left leg and big toe to keep your leg active and aligned. Keep lifting your lower belly in and up to encourage the stretch through your front body, lengthening your psoas. Again, you'll have to release your abdominals slightly to allow the back-bend, but avoid simply letting your lower belly go slack. Hold for 10 to 15 breaths or longer, breathing smoothly. Then release, come back to all fours, and take the pose on your left side.







## ban the bulge

Your ab routine could be doing more harm than good.

If your abdominal routine tightens your psoas muscles more than it

strengthens your abdominals, your chronically tight psoas will tend to tip your pelvis forward and your lower belly will be pushed out, resulting in the "beach belly" phenomenon.

Working on ab strength is not enough. The sequence starting on page 82 combines lengthening your psoas with a focus on abdominal toning. See "The Drawstring and the Zip-Up" on the next page for techniques to help you create an ideal balance of core strength and psoas length.

*continued from page 87*

abdominals as though you were going to lift something heavy, and firm your pelvic floor (as though you were trying to "hold it" on the way to the bathroom).

These actions firm the entire torso, supporting your lumbar spine in particular. They're at work whether you're a weightlifter who grunts during a heavy lift, or a yogi who uses the Ujjayi Breath and the *bandhas* to steady your core for a challenging pose. Your transverse abdominis works strongly in poses such as Plank Pose and Chaturanga Dandasana (Four-Limbed Staff Pose).

Finally, though you might not think of them as core muscles, the tiny muscles that fine-tune the movements of your vertebrae make up the deepest layer. The powerful river of the psoas flows right alongside these muscles.

### THE POWER OF THE PSOAS

If the psoas is like a river flowing through the core, the transverse abdominis forms the sturdy riverbanks. The support of the transverse abdominis strengthens the action of your psoas. When the torso is held steady by this corset of muscle, the pull of the psoas acts powerfully on the leg and hip. But if the transverse abdominis is weak (if the torso is not pressurized and

held steady by the transverse abdominis), the psoas will pull your lumbar spine out of alignment and into an exaggerated concave curve—when you're walking, doing your abdominal exercises, or even just standing or sitting—as it drags the front of your vertebrae toward your hip.

Therein lies the danger of many core workouts: If your transverse abdominis is weak, your psoas will pull too strongly on your spine. A prime example of the danger comes from doing exercises such as leg lifts. The transverse abdominis should do the job of holding your spine steady while your psoas and thigh muscles lift and lower your legs. Your effort to maintain a neutral curve in your spine throughout the exercise is what gives your abdominals a workout. Your transverse abdominis tightens to prevent your psoas from pulling your back into an exaggerated arch as you lift and lower your legs.

But the exercise essentially pits your core muscles and psoas against each other. The problem is that your core is most often no match for the combined power of your psoas and gravity. The end result is that tremendous pressure is placed on your lumbar spine, which causes your low back to overarch and can lead to low-back pain or even to injury.



The physiotherapist Leon Chaitow, an osteopath and senior lecturer at the University of Westminster in London, points out that when you practice a sit-up (lifting your entire torso all the way up and off the floor), the pull of the psoas compresses the disk between the vertebrae known as L5 and S1 (the place where your lumbar spine meets your sacrum) with the force of about 100 kilograms—or 220 pounds! That's quite a squeeze to put on your low back for the sake of a flat belly. The pressure can wreak havoc on the health of your low back, bringing stiffness, muscle spasms, and even the risk of damage to the lumbar disks.

The effect of overworking your psoas is also postural. A tight psoas will tilt the bowl of your pelvis forward, spilling the contents of your belly over your waistline. The result? A potbelly!

The good news is that it is possible to work your core without stressing your psoas. And it doesn't necessarily take more abdominal work, but rather smarter work. You can learn to tame a tight psoas and support a posture that is supple and tension free while developing core strength. It starts with learning two key techniques that you can use in your daily yoga practice or in any abdominal routine.

## THE DRAWSTRING AND THE ZIP-UP

By locating the action of the transverse abdominis in the following exercise, you can experience the support it gives to your spine and the release it provides your psoas, and apply that understanding to any core work you do.

Lie on your back with your legs straight, about hip-width apart, your knees and toes pointing toward the ceiling. Place your fingertips on your hip points, the bony protrusions at the front of your hipbones closest to the surface.

With your legs straight and firm, activate both legs at once as though you're trying to lift them off the floor. But don't actually lift your feet off the floor, since that risks hurting your back.

The first thing you're likely to feel, apart from the effort in your thighs, is a firming of your abdomen in the space between



## beneath the surface

your hip points. That firming is the result of your transverse abdominis engaging to provide support as your psoas works to lift your legs. Engaging the transverse abdominis in this way is like tightening the drawstring on a pair of sweatpants: It narrows your waist, pulling your hip points slightly toward each other. You'll also notice that your sitting bones move back and apart, the arch in your lower back increases slightly, and your thighs effortlessly spiral inward.

To give your transverse abdominis the support it needs, you'll now learn to engage the rectus abdominis and control the tilt of your pelvis. The rectus abdominis regulates the tilt of the pelvis through its attachment at the pubic bone. To engage it, simply draw your belly below your navel slightly back toward your spine and up toward your heart, as though you were zipping up a tight pair of pants. You'll feel your tailbone lengthen away from your waistline at the back.

## CONSCIOUS CORE

These two basic actions—the drawstring and the zip-up—allow you to work crosswise (via the transverse abdominis) and lengthwise (via the rectus abdominis). Their combined power brings full integration to the layers of the abdominals while allowing the power of the psoas to be focused on moving your legs instead of pulling on your lumbar spine.

True core strength is developed through a conscious awareness of these two actions during your exercise or yoga routine. Ultimately, core strengthening results from getting the abdominals and the psoas to work together well. The sequence that starts on page 82 provides work for the abdominals while paying close attention to lengthening the psoas, taming its tendency to pull too hard on the lumbar vertebrae. Once you find this balance in your yoga practice, you won't even think about adding sit-ups to your practice to get your belly ready for the beach! ❖

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*Doug Keller, who studied at the Siddha Yoga ashram in Ganeshpuri, India, for nearly a decade, teaches workshops and trainings worldwide. For more info, visit [doyoga.com](http://doyoga.com).*