

yoga
JOURNAL

Pain-Free Practice



Protect your knees,
back and hamstrings
with these 6 essential poses

Avoid injuries on the mat with this
practical guide to caring for your

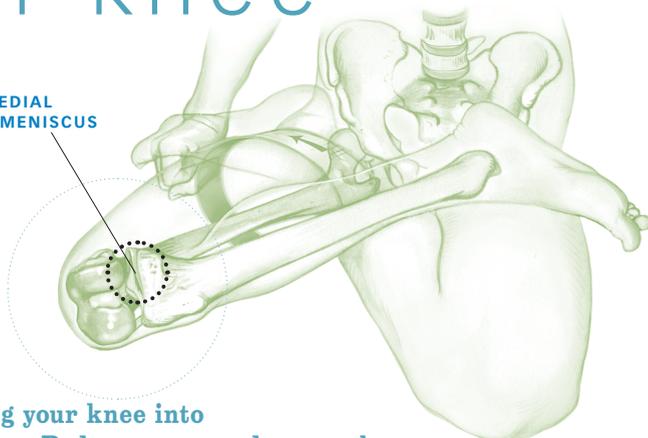
KNEES, HAMSTRINGS, and SACRUM.

BY ROGER COLE

If you practice yoga, no doubt you're aware of its health benefits. But like any physical activity, it's not completely risk free. If you've been practicing for long, you or someone you know has probably pulled a hamstring, tweaked a sacrum, or experienced some injury while on the mat. Close to 9,000 Americans received medical treatment for yoga-related injuries in 2004 and 2005, according to the U.S. Consumer Product Safety Commission. Still, there are only two yoga injuries reported for every 10,000 times it is practiced, according to American Sports Data.

Injuries can be great teachers. They invite you to uncover your yoga demons — misalignments or overzealous attempts to force your way into poses — and make corrections. But it's smart to learn proper technique, especially when it comes to your inner knees, hamstring tendons, and sacroiliac joints. These parts are vulnerable to damage and take time to mend. But if you understand what causes trauma to these areas, it's easy to adjust your practice to avoid or help heal injuries. Here's a primer on each.

inner knee

MEDIAL
MENISCUS

Forcing your knee into Padmasana can damage the medial meniscus. Instead, use a strap to rotate your thigh and always honor your limits.

the road to injury

Have you always found it difficult to get into Padmasana (Lotus Pose) and felt tempted to force your legs into the position to join your serene-looking classmates for meditation? If you are thinking of traveling down this road, please reconsider. You may have discovered that rather than leading you to the blissful land of the Lotus, pushing yourself in this way dead-ends with a sickening “pop” in the knee, followed by years of pain and limited mobility.

When you hurt your inner knee doing yoga, it's usually because you've tried to force a leg into Padmasana or one of its variations. Sometimes the injury occurs after one or both legs are already in Lotus position and you attempt a pose that adds a backbending movement, such as Matsyasana (Fish Pose), or a forward-bending movement, such as Ardha Baddha Padma Paschimottanasana (Half-Bound Lotus Seated Forward Bend).

To understand how Lotus can hurt your knee, visualize lifting your right foot up and placing it atop your left thigh. To get into this pose safely, your thigh will have to rotate outward about 115 degrees. For many of us, though, the thigh cannot turn out that much, either because of its bone structure or because tight muscles and ligaments inhibit its movement. If your thigh stops rotating but you keep lifting the shin and foot, you'll bend the knee joint sideways, which will pinch the inner-knee bones together—the upper inner end of the shinbone pressing against the lower inner end of the thighbone. Between these bones lies the medial meniscus, which is a protective rim of cartilage

that pads the knee joint and guides its movement. When you lift your foot, you are using your same-side shinbone as a long lever. If the thighbone doesn't rotate enough, you'll apply tremendous pinching pressure to the meniscus—as if your shinbone and thighbone were a giant pair of pliers. Forcing this lift even moderately can do serious damage. Similarly, if you are in Lotus and your top knee is not on the floor, pushing that knee downward can apply enormous damaging force to the meniscus.

prevent and prepare

To prevent this injury, the first rule is to never force your legs into any Lotus variations—either by pulling the foot strongly upward, pushing the knee downward, or thrusting your body forward or backward. Don't let your yoga teacher push or pull you into any of these poses either. Janu Sirsasana (Head-of-the-Knee Pose) and Baddha Konasana (Bound Angle Pose) can cause similar (though usually less severe) pinching of the inner knee, so practice them cautiously, too. Stop going deeper and back off if you feel pressure or pain in the knee. The structures that need to loosen up in these poses are all located around the hip area, so that's where you should feel stretching or releasing sensations as you go deeper.

The safest way to practice Padmasana and related poses is to strongly rotate your thigh outward at the hip and not go deeper into the pose when you reach the limit of your outward rotation. This means that you'll have to stop lifting your foot when your thigh stops rotating, so you may not get your foot on the opposite thigh. (Remember the upside: happy, functional, pain-free knees.) You can use your hands or a strap to help rotate your thighbone outward. Whether using your hands, a strap, or a cloth, if your knee ends up dangling in midair, support it with a folded blanket so you do not inadvertently force it downward as you turn the thigh outward.

the path to healing

If you have the misfortune of hurting your inner knee in Padmasana or a related pose, the first thing to do is leave it alone. You need to rest, ice, elevate, and compress it for a few days to reduce swelling and inflammation. If the injury seems serious, seek medical attention. It's a good idea to reintroduce knee range of motion as early as you can by gently flexing and extending the knee to the extent possible. A yoga program for recovery needs to be individualized to your needs and supervised by a qualified instructor. But the general pattern is to promote alignment and strength with basic standing poses, such as Trikonasana (Triangle Pose) and Virabhadrasana II (Warrior Pose II). If necessary, support your body with a chair to take weight off the knee. In addition, increase range of motion by doing Virasana (Hero Pose) with the pelvis supported on a prop, and *eventually* reintroduce outward rotating movements like Baddha Konasana (and perhaps Padmasana) using a rolled cloth behind the inner knee.

padmasana (lotus pose), preparation

Avoid pain in your knees by elevating your pelvis as high as is necessary with folded blankets. Align your heels directly under your outer hips (this is less stressful for the knees than the standard alignment of having your heels outside of your hips). Keep your knees slightly apart, with your thighbones parallel. Place your feet in line with your shins. Sit for several minutes daily. Gradually lower the props over a period of weeks or months.

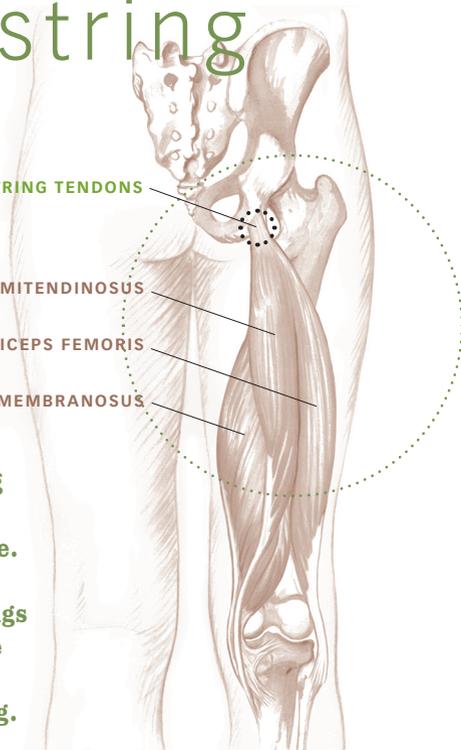


(hero pose), modification

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upper-hamstring tendons



HAMSTRING TENDONS

SEMITENDINOSUS

BICEPS FEMORIS

SEMIMEMBRANOSUS

Your hamstring muscles attach to your sitting bone. The tendons that attach the hamstrings to the sitting bone can be torn by overstretching.

the road to injury

Say that you're a flexible yoga teacher. Each day you wake up and practice hamstring stretches, then demonstrate deep forward bends in your classes. When you notice a pain just below one of your sitting bones, you stretch it more, thinking that will promote healing. But when the pain increases, you decide to rest it. After the pain diminishes, you stretch again and reinjure the area. The pain comes back, and the cycle repeats. This process can go on for years.

The hamstrings are three long muscles that cover the back of the thighs. At the top of them, tendons attach all three to the sitting bones. A nagging sensation just below the sitting bone is caused by a tear in the upper-hamstring tendon, near where it connects to the bone (called the *attachment*). To stretch hamstrings in forward-bending poses like Uttanasana (Standing Forward Bend), you straighten your knees while lifting your sitting bones. Any time you stretch a muscle, it pulls on its tendons, creating microscopic tears in them. If you wait 24 to 48 hours between practice ses-

sions, these tiny tears heal. But the upper-hamstring tendons can take longer to heal because they are poorly supplied with blood. When you don't give your hamstrings time to rest, you set up a scenario for injury. Alignment can also be an issue. Teachers often tell beginners to lift their sitting bones in forward bends because beginners tend to round their backs in such poses, which can lead to disk compression and lower-back injuries. But people with loose hamstrings can lift their sitting bones so high that the tendon starts to wrap around the bone. This can weaken the tendon.

To recap: If you produce new tears in your upper-hamstring tendons faster than your body can repair the old ones, you'll end up with an injury. If you rest and start to heal, the partially healed tissue may still be too weak to withstand the pose and you'll tear it again, ending up with more pain than before. If you repeat this cycle often enough, scar tissue will eventually develop in the torn area—and rehabilitating scar tissue is typically a slow, difficult process. Often hamstring injuries that seem to occur suddenly are set up by a gradual weakening of the tendon over time, caused by overstretching and insufficient rest. The weakening can culminate in one powerful stretch that leads to injury.

prevent and prepare

To prevent an upper-hamstring injury, you need to approach straight-leg forward bends gradually and with awareness, taking any pain near the sitting bone seriously. Never force a forward bend (or any pose), and if you feel discomfort at or near the sitting bone while bending forward, stop stretching that hamstring immediately. If the discomfort recurs in a future practice, avoid any action that causes it for at least several days. This usually means you should avoid practicing forward bends over that leg or you can bend the injured-side knee in all forward bends. Bending the knee protects the hamstring tendons by taking some of the stretch off of them and giving them time to repair themselves before a significant injury develops. Reintroduce straight-leg forward bends on the affected side only when the discomfort is completely gone for at least a few days, and then do so gradually.

Another important preventive measure is to include plenty of hamstring-strengthening poses, such as Salabhasana (Locust Pose), Purvottanasana (Upward Plank Pose), and Virabhadrasana III (Warrior Pose III), in your asana practice. Building muscle strength also strengthens the tendons of these muscles. However, if you have an existing hamstring injury, be sure to introduce these poses gradually.

uttanasana (standing forward bend), modification

If bending forward with straight legs causes pain below one sitting bone, you may have injured your hamstring tendon. To protect an injured hamstring, fold forward into Uttanasana while bending the knee on the injured side enough to eliminate any discomfort. This will give the tendon a chance to heal. Continue to stretch the hamstrings of the other leg normally.



supta padangusthasana (reclining hand-to-big-toe pose), against resistance

During the later stages of recovery from a hamstring injury, you can build strength while stretching the hamstring muscles mildly in Supta Padangusthasana. Lie back on the floor through a doorway or in the corner of a room. Lift one leg at about a 60-degree angle from the floor and firmly press the heel against the door frame, holding for 10 to 30 seconds. Repeat 3 to 5 times.

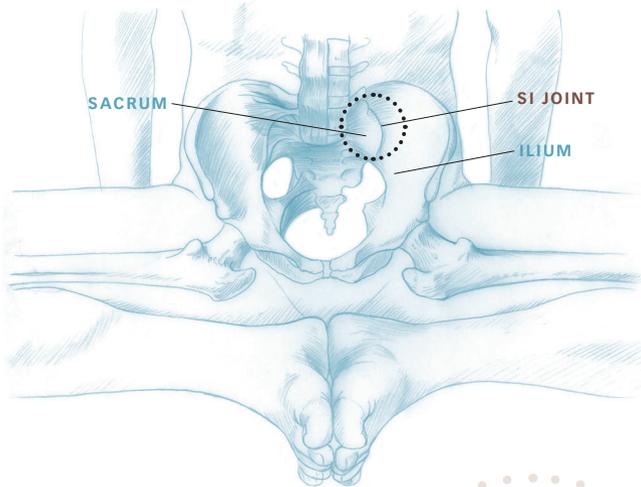


the path to healing

If your injury is new, especially if you experience a dramatic injury such as a sudden tearing sensation during a hamstring stretch, rest and ice the area immediately. Be sure to avoid stressing it in any way for several days before introducing any recovery exercises at all.

Recovering from an upper-hamstring tendon injury typically takes at least a year. There are different schools of thought on how to recuperate. Some people suggest that you avoid all stretching for about six weeks while slowly reintroducing very mild strengthening exercises such as tiny preparatory movements for Salabhasana and Dhanurasana (Bow Pose). You systematically build up strength over the next several months, eventually adding powerful strengtheners like Purvottanasana and exercises that combine strengthening and stretching, such as Supta Padangusthasana (Reclining Hand-to-Big-Toe Pose), against resistance. The key is to avoid any stretching that causes pain to the injured tendon while systematically introducing stronger hamstring-strengthening exercises, including those that strengthen the muscle in the stretched position, for several months. You shouldn't reintroduce any maximum-power hamstring stretches, such as Paschimottanasana (Seated Forward Bend), for at least a year after your injury.

sacroiliac joint



The sacroiliac joints are a common site of yoga injury.

To protect these joints, move the sacrum and ilium bones as a unit in forward bends and twists.

the road to injury

Suppose you're one of those people who finds that yoga comes easily to you. You can bend into most poses without stress or strain. One day, while coming out of Janu Sirsasana, you notice that something feels a little off down where your lower back joins your pelvis. From that day on, you frequently have a nagging ache in that area. It's usually more annoying than disabling, and periodically it goes away altogether, only to mysteriously reappear days or even weeks later. These are some of the symptoms of an unstable sacroiliac joint alternately moving out of alignment and back in again.

The sacrum is the bone that is shaped like an upside-down triangle at the base of the spine. On each side of the sacrum, a roughened surface makes contact with the corresponding surface of the left and right ilium bones, or the "wings" of the pelvis. These are the left and right sacroiliac (SI) joints. Strong ligaments hold the SI joints together to prevent the sacrum from tipping forward between the ilium bones. To get an idea of where your SI joints are, trace your thumb over the top rim of your pelvis on



salabhasana

This pose may help stabilize the sacroiliac joints. Strap your ankles 8 to 12 inches apart. Lie on your belly with your arms alongside your body, palms facing up. As you inhale, lift your arms, legs, and chest up. Pulling the legs strongly outward against the strap may relieve sacroiliac symptoms; it contracts outer hip muscles (gluteus medius and minimus) that pull the ilium bones apart, temporarily creating a gap between the sacrum and ilium to give the sacrum the freedom to move back into place. Introduce this pose gradually and back off immediately if it causes discomfort.

one side, moving backward until you find the rearmost bony prominence of the ilium (this is called the posterior superior iliac spine or PSIS). If it were possible to press your thumb forward an inch or two, deep into your body, you would be touching one of your SI joints.

Yoga students frequently develop a specific pain pattern that's characterized by a dull ache over an area about the size of a quarter and is centered on the PSIS on one side of the body only. Sitting, forward bending, and twisting movements often make it worse, and back- and sidebending can also be painful. Although not all experts agree and other injuries must be ruled out, many yoga teachers and health professionals believe that this pain pattern is caused by the misalignment of one of the sacroiliac joints.

According to one theory, yoga practice (especially if it emphasizes forward bends, twists, and poses that stretch the inner thighs) can loosen the supporting ligaments of the SI joints over time, until one side of the upper sacrum slips forward relative to the ilium on that side. Because the two irregular surfaces no longer sit properly on one another, pressing them together tightly (as occurs strongly while sitting) causes pain.

virabhadrasana I (warrior pose I), variation

This pose may relieve sacroiliac symptoms by putting asymmetrical forces on the joint. Move into it slowly to make sure it feels OK; avoid it if it hurts. Take a wide stride, bend your front knee, and place a block between your knee and the wall. Keep your front shin vertical, back knee straight, back heel lifted, and chest lifted. Shift your body weight and adjust the angle of your pelvis to find the position that feels best in your sacroiliac area.



prevent and prepare

To prevent this problem from happening, be mindful of your alignment in different types of poses. In forward bends, be careful to move your sacrum and ilium forward as a unit. For example, in Janu Sirsasana, move into the pose by tilting the iliac crest (pelvic rim) of the bent leg forward toward the foot of the straight leg. This makes the ilium push the sacrum along so that the two bones move as one. When your ilium stops moving, don't tilt your sacrum any deeper into the pose. Likewise, in twists, experiment with letting the pelvis turn along with the spine instead of keeping it fixed, so the sacrum and ilium move as a unit.

In forward bends, twists, and any pose that stretches your inner thighs, try contracting the pelvic-floor muscles. These muscles help hold the sacrum in place by pulling the sitting bones toward one another, thereby squeezing the ilium bones inward against

the sacrum. Finally, strengthening muscles of the back with poses such as Salabhasana, and strengthening the deepest abdominal muscle (transversus abdominis) with pranayama practices such as Kapalabhati (Skull Shining Breath), help stabilize the SI joints.

the path to healing

If you already have a sacroiliac misalignment, the key is to adjust the joint back into its proper position and keep it there. Some health professionals know how to manually manipulate the SI joint back into place, but it often pops back out soon afterward. Therefore, it's helpful to learn how to reset your own SI joint using asana techniques, but it's best to learn these techniques from a qualified instructor.

The golden rule for SI-adjusting postures is that a correct pose should immediately feel good on the injured area while you practice it. Enter each pose slowly, and if it causes any discomfort near the PSIS, come out of it right away. Not all poses work for all people, but you need only a single one that works for you. Two examples of poses that help some people are the Salabhasana and Virabhadrasana I (Warrior Pose I) variations shown here. Either side of the Virabhadrasana I variation may be helpful.

Once you have learned to put your SI joint back into place, make sure it is properly located before each yoga practice and follow the preventive steps above to keep it there. At the end of practice, use your technique again, if needed, to firmly reset the joint. Some teachers find that taking special care to keep the SI joint in place at all times over a period of months or even years can make it more stable. ■

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