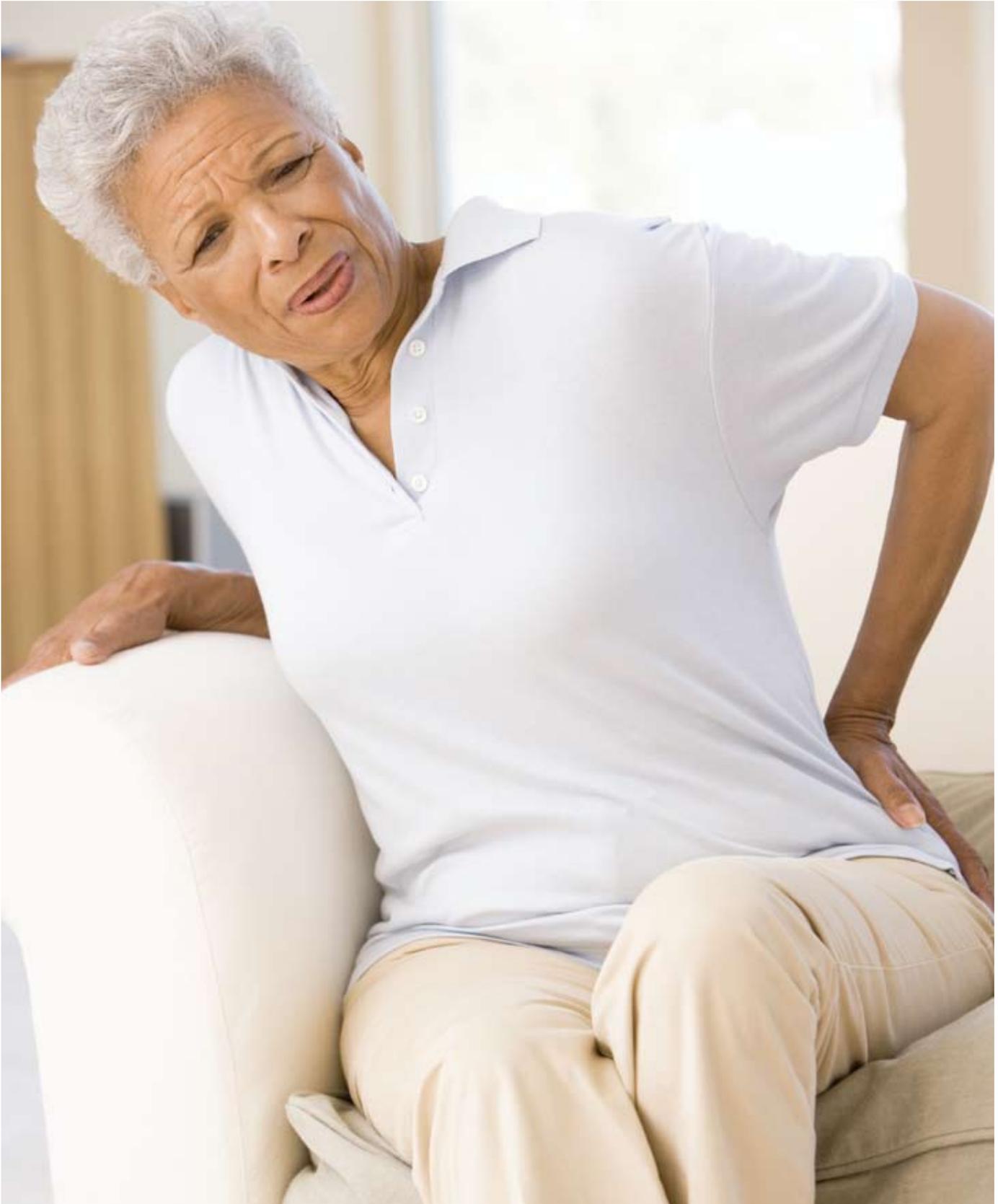


essential skills

BY BEN E. BENJAMIN



THE LIGAMENTS OF THE SACRUM

The Primary Cause of Low-Back Pain, Part 2

In the previous article, we began our discussion of the ligaments of the sacral area by examining the anatomy of these structures and the various pain patterns they cause when injured. Here, we'll move on to look at the assessment and treatment of these injuries. We'll cover testing procedures to determine which structures are injured and a range of treatment options, from exercises and manipulation to specific friction therapy techniques.

INJURY VERIFICATION

A pain in the low back can mean many things, varying from simple to serious, and figuring it out can be a complicated process. In addition to a ligament or muscle injury, low-back pain may be caused by cancer, a nerve root compression, spinal stenosis, or another serious condition. Whenever a client has apparent muscle atrophy, bladder or bowel incontinence, extreme limitation of movement, severe pain, or symptoms of numbness, advise that person to consult a physician right away. The evaluative tests and treatments described below should be used only after a physician or other fully trained healthcare practitioner has ruled out the more serious causes of back pain.

LOW-BACK ASSESSMENT TESTS

A full assessment of the low back—which distinguishes between injuries to discs, ligaments, muscles, and other structures—includes 27 assessment tests and is beyond the scope of this article. Here, we'll focus on ligament injuries, which are among the most common and least known causes of chronic low-back pain. Damage to ligaments in the sacral area is indicated by the results of three tests: flexion, extension, and side-flexion. For each of these tests, have the client begin in a standing position with the knees straight and the feet a few inches apart. Ask whether the person feels any pain in this basic standing position. If the answer is no, you'll be testing whether each assessment test brings on pain. If the answer is yes, you'll be testing whether each test increases the pain.

Test 1. Flexion

Ask the client to bend forward slowly, stopping if and when pain is felt and immediately returning to the upright starting position. If there is pain, ask the client to point to the area or areas that hurt. With a normal range of motion, the person can touch the floor (image 1, page 101).

Test 2. Extension

Ask the client to bend backward from the waist. Again, if there is any pain, have the client stop, return to the starting position, and point to the place or places that hurt. With a normal range of motion, the person can bend at least 30 degrees (image 2, page 101).

Tests 3–4. Side-Flexion

Ask the client to bend to one side as far as possible, stopping if and when there is pain. Be sure the knees remain straight. Take note of where any pain is felt, and then have the client bend toward the opposite side. With a normal range of motion, the person's hand can touch the side of the knee (image 3, page 101).

UNDERSTANDING TEST RESULTS

When the ligaments of the sacrum are injured, there is usually pain with one or more of these movements, with the worst pain felt in either flexion or extension. The individual generally feels pain right at the sacrum and may also feel some discomfort across the lowest part of the back and/or in the buttock, thigh, and lower leg. In cases where pain is felt only in the posterior thigh and lower leg, it is usually caused by strains of the sacrotuberous and/or sacrospinous ligaments. (See images 4–8, pages 102–105, for referred pain patterns from each of these ligaments.)

The most telling sign is the absence of certain symptoms that would indicate a disc injury. Sprained ligaments cause no weakness or pins and needles, just pain and sometimes a numblike sensation (not numbness). With a disc injury, pain is almost never referred down both legs at once and does not alternate between right and left legs. With a sacroiliac ligament injury, pain is frequently referred down both legs and may alternate legs as well.

TREATMENT CHOICES

Ancient stone carvings of traction devices suggest that human beings have received treatment for back pain for thousands of years. The sections below give just a partial introduction to the range of available treatments, covering only those with which I have had personal experience. As with all treatments, they work some of the time, but certainly are not effective in every case. Often a combination of modalities is required—especially if the client's body is tense, nutritionally deficient, or out of alignment.

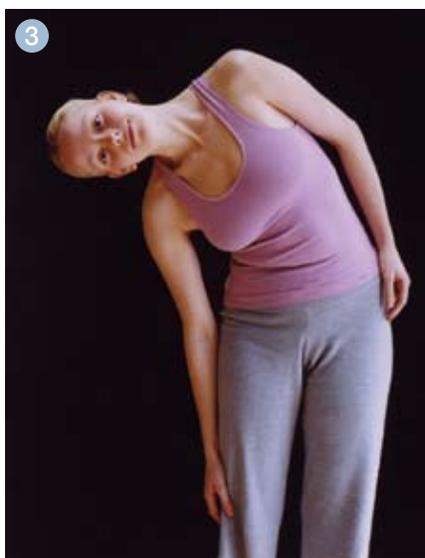
REST

Often a period of bed rest—for anywhere from a few days to a week—will permit inflamed ligaments to heal, at least temporarily. If the person's back hurts only when doing athletic activities or lifting things, the rest period may consist of just avoiding those activities.

EXERCISE

A daily exercise regimen for the low back and abdominal muscles can reduce pain or keep it at bay. I have found exercises alone to be only temporarily effective, but I often use the ones described here with my clients as an adjunct to massage and friction therapy.

Have the client move slowly when doing these or any other exercises. He or she should stay within a pain-free range of motion. In the first week, assign exercises 1 through 3, plus the pelvic tilt. The remaining



exercises can be added as the person's condition begins to improve.

All of these exercises are done on hands and knees. The client will begin with a straight back, with shoulders relaxed and hands on the floor, shoulder-width apart. Have the client do 8–10 repetitions of each exercise, unless otherwise stated below.

1. **The Cat.** Arch the back up toward the ceiling and then return to the neutral position, with the spine parallel to the floor. Then reverse the curve of the spine into hyperextension, moving the belly toward the floor. Return to the neutral position and repeat.

2. **Side-Flexion.** Starting in the same neutral position, move the hips side to side like a dog wagging its tail. Think of moving the right greater trochanter toward the right ear, and then the left greater trochanter toward the left ear.

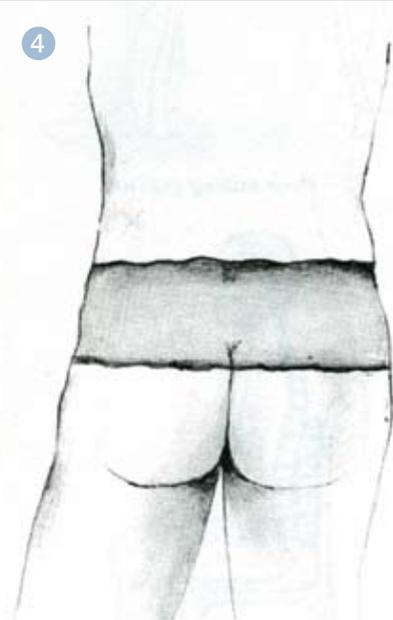
3. **Weight Shift.** Slowly shift so that most of the body's weight is on the right hand and right knee, still keeping good contact with the floor with the left hand and left knee. Alternate shifting weight from left to right.

4. **Leg Extension.** Slowly extend the right leg backward, extending the knee and foot so they are parallel to the floor and in line with the hip. Return to the neutral position and repeat on the other side.

5. **Arm Extension.** Extend the right arm slowly forward until it comes up to shoulder height, then return to the neutral position. Repeat with the left arm.

6. **Arm/Leg Extension.** Combine the actions described in exercises 4 and 5, simultaneously extending the right leg backward and the left arm forward. Hold for a moment and then return to the neutral position. Repeat on the other diagonal.

4



REFERRED PAIN PATTERNS:
SACROILIAC LIGAMENTS

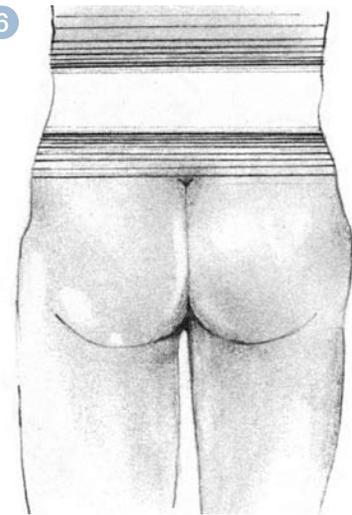
7. Pelvic Tilt. Still on all fours, tilt the lower back and pelvis so that the sacrum moves up to the ceiling and then down toward the floor. Keep alternating this motion rhythmically 10–15 times.

DEEP MASSAGE

Deep massage of the entire low-back and sacral region helps to reduce the tension in this area and speed the healing process. If the client experienced any difficulty or pain on extension (bending backward), be sure to place a pillow under the abdomen when working on the low back. Also avoid bearing down on the low back with your massage techniques; this increases the extension and can cause pain.

Work on the erectors, quadratus lumborum, all the gluteus muscles, the piriformis, the hamstrings, and the tensor fascia latae muscles. The gluteus medius muscle needs particular attention; it tends to get very tight, sometimes develops adhesive scar tissue, and may even refer pain to the lateral lower leg.

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REFERRED PAIN PATTERNS:
SUPRASPINOUS LIGAMENTS L4-L5-S1

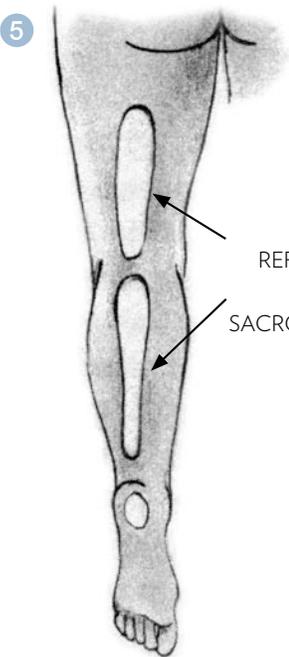
along the edge of the bony attachment, starting at the posterior superior iliac spine (PSIS). This technique can be tricky to learn without seeing it in person or on video. (To view the instructions on video, visit *Massage & Bodywork's* digital edition link available on Massageandbodywork.com for a clip from my low-back DVD series.)

To treat the sacrotuberous ligament, have the client lie on one side with the knees curled up as far as possible in a fetal position. Apply friction along the edge of the sacrum between the PSIS and the coccyx. Work at the site of tenderness for 5–10 minutes, taking breaks as you need them.

BALANCING THE PSOAS

In many cases when the ligaments in the sacral area are sprained, the iliopsoas muscle is shortened on one side; this makes the leg on that side functionally shorter than the other one. If you are skilled at working on the psoas muscles to balance their length, this can be an effective treatment. After several treatments, the sacrum often drops back into line, alleviating the tension on the ligaments. This treatment must be done carefully as it is often difficult to work through the abdominal region to access the psoas muscles.

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REFERRED PAIN PATTERNS:
SACROTUBEROUS LIGAMENTS

FRICTION THERAPY

Deep massage will be most helpful if the scar tissue in the ligaments is reduced simultaneously through friction therapy. Friction therapy is an effective treatment for the superficial sacroiliac ligaments and for the sacrotuberous ligaments. However, the sacrospinous ligaments and the deeper sacroiliac ligaments are too deep to be accessed by your hands; manual therapy will be of limited benefit in treating these structures.

The most frequently injured portion of the posterior sacroiliac ligaments is accessible to the fingers at the back of the pelvis. You can perform friction therapy here with the tip of your thumb, index, or middle finger, or with your middle three fingers together—whichever is easiest for you. Have the client lying prone on the table and apply friction right where the fibers attach to the back of the ilia. Apply friction

That area is often very tense, holding many locked emotions. It is sometimes better to leave it alone, especially if you have not had supervised training working in that part of the body.

CRANIOSACRAL THERAPY

This treatment does not specifically treat a back problem, but it is useful in restoring a healthy balance in the body to allow the ligaments to heal and stay well. It is a very gentle treatment that requires time and patience to be effective, and it is only effective when performed by a skilled practitioner.

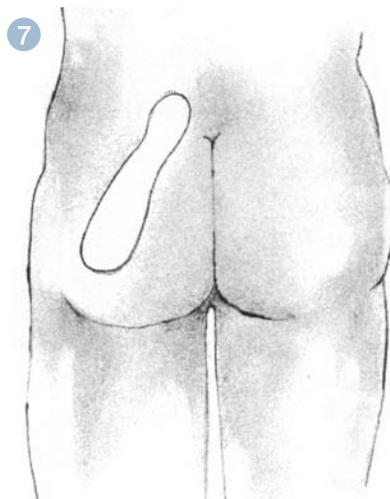
MANIPULATION

Osteopathic and chiropractic manipulation often succeed in eliminating pain from overstressed ligaments in the sacral area, at least temporarily. One to five manipulations should be all that is necessary. If a client does not see results after five sessions, that person probably needs to try a different treatment. There are various theories about why manipulation may be helpful with these conditions. It may help by allowing the sacrum to go back into place, thereby relieving the stress, or by causing the strained fibers to tear and then become stronger as they heal.

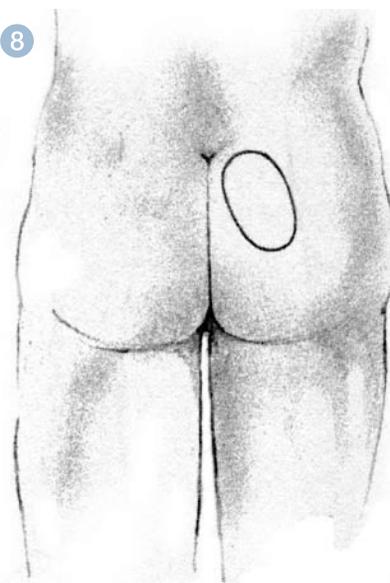
INJECTIONS

Proliferant injections into the affected ligaments (performed by a physician who is trained in orthopedic medicine) can be very effective. They often provide a good long-term solution for people who have loose ligaments in the low back and sacrum that are causing instability and repeated trauma. I know from personal experience — this treatment once played a critical role in my own healing from back pain, and I have seen it help many of my clients as well.

Proliferant injections help to break up adhesive scar tissue, to align the bones of the sacrum and low back, and to tighten, thicken, and strengthen the stretched and weakened ligament fibers. After each injection treatment, the



REFERRED PAIN PATTERNS:
SUPRASPINOUS LIGAMENT L5-S1



REFERRED PAIN PATTERNS:
SUPRASPINOUS LIGAMENT L5-S1 OR
SACROILIAC LIGAMENTS ON ONE SIDE

area of pain is somewhat diminished. The patient then guides the physician to the remaining areas of pain so that they can be injected. Typically, about eight injections are needed to fully relieve the pain. Note that this treatment requires a very high level of skill on the part of the physician.

LASTING RELIEF

Low-back pain is probably the most common musculoskeletal problem treated by massage and bodywork therapists. Depending on the severity of the pain, this condition can range from being a nuisance to being a debilitating, life-altering experience. In many cases, the underlying cause of low-back pain is injury to the ligaments of the sacrum. Often a combined treatment approach—using massage to increase circulation, friction therapy to eliminate adhesive scar tissue, and exercise to prevent future adhesions from forming—is highly effective in providing clients with lasting relief. **m&b**

6 Ben E. Benjamin, PhD, holds a doctorate in education and sports medicine. He is founder of the Muscular Therapy Institute. Benjamin has been in private practice for more than 45 years and has taught communication skills as a trainer and coach for more than 25 years. He teaches extensively across the country on topics including SAVI communications, ethics, and orthopedic massage, and is the author of *Listen to Your Pain, Are You Tense?* and *Exercise Without Injury* and coauthor of *The Ethics of Touch*. He can be contacted at bbby@mtti.com.

Editor's Note: *Massage & Bodywork* is dedicated to educating readers within the scope of practice for massage therapy. *Essential Skills* is based on author Ben Benjamin's years of experience and education. The column is meant to add to readers' knowledge, not to dictate their treatment protocols.