

The Rossiter System[®] Approach to Back Pain

by **Bethany Ward, Certified Rolfer**

Richard Rossiter has developed a system to give persons exposed to repetitive stress environments, such as factory workers, fast and effective tools for getting - and staying - out of pain. He likes things short and to the point; and has developed clear, specific techniques that get results. Part One - presented in the June 2002 issue of Structural Integration - introduced the basics of Richard Rossiter's work and shared insights from corporate Rossiter System trainers and users. With that background information in place, this article presents specific Rossiter techniques for the back and explores theories to explain their effectiveness.

BACK PAIN IN THE CONTEXT OF REPETITIVE STRESS

Rossiter has observed that with repeated unbalanced activity, one thigh often becomes slightly stronger than the other. The stronger thigh then becomes tense, tight, and knotted. This strength imbalance produces unequal forces on the pelvis, which, in turn, cause imbalances in the back that can manifest as chronic lower back and/or sciatic pain on the side of the slightly weaker, less active leg.

Rossiter tackles back pain by searching for knots on the client's thigh with his foot, while the client actively performs specific stretches with the same leg. To counteract the imbalance, he works the quad on the opposite side of the back pain. This approach targets chronic back pain from overuse, rather than from direct injury. It's simple:

If the back pain is on the right side, work the left thigh; if the back pain is on the left, work the right thigh.

If the stretches cause the back pain to worsen, switch to the other thigh.

TECHNIQUES: "BACKWERX" BASICS

Gas Pedal, Windshield Wiper, Knee Up & Down, and Knee Circles. If you find yourself reflexively moving as you read the names of the techniques, good. That's the

point. Most Rossiter Techniques have three things in common: they change connective tissue, incorporate "locking", and require constant client movement. The client lies supine on a mat on the floor, legs outstretched, with palms resting on the belly. The therapist uses a foot to find the most tender, knotty place on the client's thigh (Figure 1). When this spot is found, the therapist adds as much body weight as the client can tolerate.

Then, the client performs a "lock". For back work, the client pushes both heels away from the body and pulls the toes headward (extreme dorsiflexion). This should produce substantial stretch behind the knees.



Figure 1: In this Back techniques demo, Richard Rossiter searches for the most tender spot on Karen Suta's thigh.

The client starts with the simplest move - Gas Pedal. While maintaining the lock in the other leg, the client fully plantarflexes and dorsiflexes the foot of the leg the therapist is working on. The client performs the movement slowly and deliberately for approximately ten seconds, while taking care to keep the back relaxed and the breathing smooth.

Keep in mind:

Locking is performed with nearly all Rossiter techniques. Locking for back work involves feet only and is the simplest of the locking procedures. Most techniques use a more advanced lock, incorporating isometric head and arm activity (Figure 2).

The therapist holds on to the back of a chair for balance.

Feel for knots or tight spots. Place the arch of your foot on the outer part of the client's upper thigh, with your toes pointed upward, and begin slowly testing areas with weight.

Once therapist/client communication is imperative for finding the most productive location. Look for the knot laterally, usually about two-thirds of the way up the thigh.

When you've found the most sensitive spot, add weight steadily inward toward the femur. Trap the area with your arch and don't allow the knot to roll out from under your foot as weight is added. Continue holding it until the client completes the stretch.

Encourage clients to continue the "Gas Pedal" movement for ten seconds. Make sure they keep breathing smoothly and don't tighten their backs.

After ten seconds remove your foot.

Perform "Gas Pedal" three times. For each repetition, locate the most tender spot on the thigh. It may be the same spot, or it may be a different one nearby.

What might seem like a lot to remember quickly becomes second nature for both the therapist and the client. After performing three ten-second repetitions of "Gas Pedal", continue to more advanced movements. The technique stays the same: the client is supine; the therapist finds the most painful area of the quad, adds weight to client's "edge" and maintains it; the client locks and performs each stretch for approximately ten seconds, after which the therapist releases the weight and the client releases the lock.

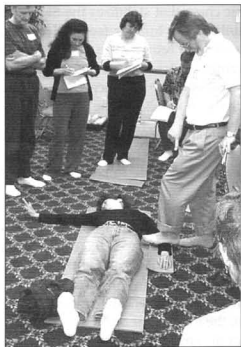


Figure 2: As Rosemary Shooing discovered, Upper Body techniques require locking the feet, arm, and head (simultaneously!)

After "Gas Pedal", perform three ten-second reps of each of the following:

Windshield Wiper - After weight is added, client locks both feet and begins rotating both legs from right to left. Toes of both feet point to the left, then to the right, back to the left, and so on.

Knee Up & Down - After locking, client raises and lowers the knee three inches off the floor, dragging the heel. Therapist maintains consistent weight straight down on the top of the leg being stretched. After bending the knee once with the leg perpendicular to the floor, the client rotates the leg internally or externally and repeats the movement at the new angle: Float knee up three inches, straighten leg, rotate leg to new angle with respect to the floor, and repeat movement. It's as if the client is using the knee to trace four or five spokes of an Asian fan, or the spokes of half a bicycle wheel. As the client slowly returns the knee to the floor, client actively reaches through the heel, extending the posterior compartments of the leg.

Knee Circles - This is similar to "Knee Up & Down". Instead of spokes, the client traces a circle with the knee. After locking, client raises the stretched knee about three inches off the floor. Continuing to drag the heel, the client slowly makes a small circle in the air with the knee (knee moves right, down, left, and upwards - returning to the top of the circle). At the bottom of the circle,

the back of the knee is on the floor and fully extended.

The therapist provides consistent weight to the quad, while the client circles knee twice in one direction and twice in the opposite direction.

When you're done, you'll have completed a total of twelve ten-second stretches.

Note: This article and accompanying graphics are not a substitute for hands-on training. Among the important factors beyond the scope of this article is proper body mechanics. The therapist must stand upright and refrain from twisting. Many Rossiter System users employ multilevel stands to maintain proper alignment and balanced body use. Chair backs or quad canes are essential to avoid body strain and deliver smooth, consistent, controlled pressure. Ongoing communication is also key; and the client must be able to provide sound data. The client must walk vigorously and report observations. What has changed? Is the area tighter or looser? Have new sensations become apparent? What are they? It is important to know about medications, particularly analgesics. If client cannot provide meaningful feedback and active participation, another therapeutic approach is indicated.

WHY DOES IT WORK?

When asked why the techniques are so effective, Richard Rossiter responds, "Because they affect volumes of connective tissue." Asked specifically about why his approach to back pain works, he adds: "One side gets used more. It's big muscle vs. little muscle, and big muscle always wins. The back is unbalanced because one side is stronger, and the stronger side is making the hurting side work harder. By stretching out and loosening the stronger side, you release its grip on the hurting side, and eventually the pain goes away."

IS THERE MORE TO IT? A PHYSIOLOGICAL EXPLANATION

I asked Rolf Institute® Instructor Jon Martine to explain the anatomical and physiological processes involved in Rossiter techniques. He introduced me to the recent discoveries about the reflexogenic relationship between muscles and joints, muscle imbalance patterns, and how aberrant neuromotor firing patterns can develop, and in turn, destabilize the back.

Joints. Joint receptors are constantly providing feedback to the nervous system that the joint is stable. Steady, even pressure on the joint is required to send this "thumbs up" message. Maintaining this balanced pressure on the joint during movement requires coordinated neuromuscular firing of agonist and antagonist muscles.

"When Ida said, 'When flexors flex, extensors lengthen,' this is what she was talking about - keeping consistent pressure through the joint, through range of motion so there's coordination between the antagonist and agonist of that action," Martine says. "But the antagonist needs to be able to let out eccentrically in a consistent way." For a joint to be stable, eccentric (lengthening) contraction must occur in balance with concentric (shortening) contraction.

Muscles. (1) Tonic v. phasic. Czech neurologist Vladimir Janda distinguishes between tonic muscles, which maintain position, and phasic muscles, which produce movement. Janda's research shows that under stress, tonic muscles tend toward hyperactivity and are apt to become spastic, tight, and short. Conversely, phasic muscles tend toward inhibition and are inclined to become flaccid and long. These motor pattern imbalances are enhanced by pain and fatigue.¹

(2) Aberrant firing order. Researchers believe these muscle imbalance patterns "develop from a bombardment of abnormal neurologic information to the spinal cord and brain due to tension, trauma, poor posture, joint blockage, genetic influences, excessive physical demands or habitual movement patterns."²

(3) Muscle imbalance causes uneven pull on spinal joints. "When tight muscles pull unevenly on spinal joints, the joint's axis of rotation is disrupted and the center of gravity changes. Sensory nerve receptors located in spinal joint capsules, ligaments, discs and deep transversospinalis muscles become aggravated from prolonged joint misalignment."³ Over time, adhesions build up in the joint capsule, reducing joint play. Joint receptors communicate afferent messages warning of spinal instability or tissue damage; which, in turn, produce spasms and chronic pain. To protect the area from further damage, surrounding tissue spasms. The longer "asymmetric myofascial forces are allowed to twist and compress the body's bony framework, the more noxious stimuli are generated."⁴ Thus develops the self-perpetuating myofascial pain cycle.

HOW DOES THIS APPLY IN ROSSITER BACK TECHNIQUES?

Balance between the tonic and phasic muscles produces balance around the joints. When this is achieved, hyperactivity in agitated joint and muscle receptors dissipates and the joint can stabilize. The combined Rossiter techniques of locking, applied weight, and movement apparently retrain nerve firing patterns to redistribute tensions and stabilize sacroiliac joints and lumbar facets. Let's review the two most comprehensive movements:

Knee Up & Down. "I think we overuse our quadriceps. They're [predominantly] phasic, whereas the hamstrings are tonic," says



Figure 3: Judi Clinton applies significant weight to this Lower Calf Crunch so Karen can optimize her stretch.

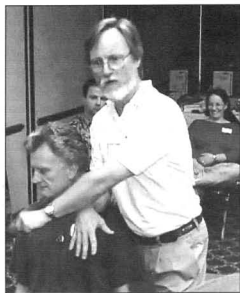


Figure 4: Richard Rossiter is careful not to torque his own body while Bruce Dow turns his head in this Traps technique.

Martine. "So when you're doing something like a knee extension, typically thought of as a quadriceps move, you actually want to engage the hamstrings to do that."

This stretch engages the hamstrings while getting quads to shut down a bit. Locking creates sustained activity in the posterior tonic muscle chain; increased activity in any one of the tonic muscles produces increased activity in all of them. Conversely, relaxation of one produces relaxation in the others. As hamstrings are engaged through both the lock and the movement, the quads will release due to reciprocal inhibition; and agonist and antagonist activity become more balanced.

The lock's resistance, combined with movement, forces the quadriceps to perform both concentric (shortening when leg is extended) and eccentric (when the knee is bending) contraction. "So you're training the muscles to be able to fire through a full range of motion to keep steady pressure across the SI joint," says Martine.

Knee Circles. The lock tightens the posterior fascial chain from the heel, through the soleus/gastrocnemius complex, and through the hamstrings (tilting the pelvis slightly posterior); which engages the transversus abdominis where it attaches along the crest of the ilium. The transversus abdominis, in turn, tugs at the thoracolumbar fascia, which engages the multifidi that overlie the sacrum and lumbar.

As the knee traces a circle, the client encounters resistance and must push into the heel to lift the knee. Pushing into the heel engages the transversus abdominis and multifidi. The transversus abdominis is a key player in trunk stability. Because it's a phasic muscle, it can become weak and unable to provide the necessary tension at the SI joint. Joint sensors send noxious afferent messages that the SI and/or lumbar are unstable, producing a cycle of lower back pain and spasm.

The "Knee Circles" interrupt this cycle by reestablishing steady pressure across the SI joints and lumbar facets:

As the client makes circles with the knee, the transversus abdominis, multifidi, and deeper fibers of the erectors contract. As they contract, muscles overlying the sacrum expand slightly, establishing balanced tension that stabilizes the SI joint.

Additionally, the multifidi and erectors must learn to release gradually. Because the

tonic chain that stabilizes the SI joint also stabilizes the lumbar facets, deep spinal muscles are retrained to provide smooth, eccentric contractions, which keeps consistent pressure on the facets and stabilizes both the lumbar and the SI joints.

Strengthening or retraining? "I think both," says Martine. "The back work requires muscles to be able to contract through a sequence. But it's also retraining the body by introducing a feeling of stability from that locked-out position. So that locked-out position might as well have you pushing up against a wall just slightly - what PTs call a closed-chain loop." Martine thinks that by bringing sensation awareness to the feet, the locked-out position may be doing a lot of what Hubert Godard describes in his tonic functioning and closed-chain loop work. "You're doing repatterning at the same time. So I think there's an integrative quality to what's going on with that sequence of movements," Martine says.

CONCLUSION

Steady pressure across spinal joints is imperative to avoid muscle spasm and pain. Muscle imbalance over time results in aberrant neuromotor firing patterns that perpetuate joint instability. Long-term correction requires retraining muscles to perform smooth, sequenced eccentric contractions in balance with concentric activity. Rossiter's range-of-motion stretches of the tonic muscle chain strengthen and retrain neuromuscular structures to provide more balanced forces on joints and stabilize the low back.

1. Tonic muscles tighten while phasic muscles weaken when exposed to the same stressors. From this observation, Janda developed his Upper- and Lower-Crossed Syndrome theory to explain common dysfunctional body patterns (e.g., forward head with or without lordosis).
2. Dalton, Erik: "Simplifying The Pain Puzzle," *Massage Magazine*, Mar/Apr, 2002.
3. Dalton, Erik: "Mobilizing Joints Through Muscle Manipulation," *Massage Magazine*, Jan/Feb, 2002.
4. Dalton, Erik: "Working Through the Dura Mater Joints," *Massage Magazine*, May/June, 2002.

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