1-1-2006

Top 10 Positional-Release Therapy Techniques to Break the Chain of Pain, Part 1

Tim Speicher
Sacred Heart University

David O. Draper
Brigham Young University - Utah

Top 10 Positional-Release Therapy Techniques to Break the Chain of Pain, Part 1

Tim Speicher, MS, ATC, CSCS • Sacred Heart University
David O. Draper, EdD, ATC • Brigham Young University

POSITIONAL-RELEASE therapy (PRT) is a treatment technique that is gaining popularity. The purpose of this two-part column is to briefly explain the theory and application of PRT. Then, we will present our top 10 list of what we think are the most commonly treated tender points by athletic therapists, five in Part 1 and five in Part 2, along with general tips, patient self-treatments, and adjunctive techniques.

PRT, originally termed strain–counterstrain,[1] is a therapeutic technique that uses tender points (TPs) and a position of comfort (POC) to resolve the associated dysfunction. Essentially, PRT is the opposite of stretching. For example, if a patient had a tight, tender area on the calf, the clinician would dorsiflex the foot to stretch the calf in an effort to reduce the tightness and pain. Unfortunately, this might lead to muscle guarding and increased pain. Using the same example, a clinician who employs PRT would place the tender point in the position of greatest comfort (plantar flexion), shortening the muscle in an effort to relax the tissues and decrease the TP.[2-4]

Dr. Lawrence H. Jones, an osteopathic physician, was the first to publish a map of TP locations and their associated treatment positions.[1] Jones proposed that when a muscle is strained by a sudden unexpected force, its antagonist attempts to stabilize the joint, resulting in a counterstrain of the muscle in a resting or shortened position. Before the antagonist is counterstrained, gamma neural activity is heightened as a result of its shortened position, making the spindle more sensitive—propagating development of restriction, sustained contraction, and TP development.[1] The application of PRT relaxes the muscle-spindle mechanism of the counterstrained tissue, decreasing abberent gamma and alpha neuronal activity, thereby breaking the sustained contraction.[1] Jones's original work and PRT theory have been modified by several practitioners.[5-10]

The prevailing theory underlying PRT involves placing tissues in a relaxed shortened state, or POC, for a period of time (≈90 s) to decrease gamma gain in order to facilitate restoration of normal tissue length and tension.[1,8-12] Simply put, PRT works to "unkink" muscle and fascia much like one would a knotted necklace, by gently twisting and pushing the tissues together to take tension off the knot. When one link in the chain is unkinked, others nearby untangle. For example, when a dominant TP on the posterior tibialis is treated, an entire chain of TPs along the length of the muscle can release. Apparently, once the muscle spindle is unkinked, gamma activity and neurochemical equilibrium are restored.[1,5,11-14]

A gentle and passive technique, PRT has been advocated for the treatment of acute, subacute, and chronic somatic (whole-body) dysfunction for all ages.[1,7-10] Formal courses are offered in PRT, which are helpful in gaining competence more quickly, but the technique is also covered in several texts[7-10,15] that enable self-directed study.

PRT is an ideal treatment for athletic therapists to use because injuries with specific mechanisms respond well to it. There are relatively few contraindications, including open wounds, sutures, healing fractures, hematoma, hypersensitivity, systemic or local infection, malignancy, aneurysm, acute rheumatoid arthritis, and pain during treatment positioning. As a precaution, monitor the vertebral artery for occlusion during cervical positioning.

© 2006 Human Kinetics · ATT 11(5), pp. 60-62

General Treatment Rules for PRT

The following treatment rules should be followed for PRT:

- Consider the root of the body's dysfunction.
- Ensure patient and clinician comfort.
- Flex anterior structures; extend posterior structures.
- Treat dominant TPs first, then proximal, followed by medial.
- Fasciculation at the TP is the strongest when in an optimal POC.[5]
- Treatment should not cause pain.
- After 90 s, slowly release the POC to avoid reengaging the myotatic reflex.
- 70–100 % pain reduction is expected and desired with the first treatment.
- Rest tissues for 24 hr before resuming vigorous activity.
- Use established treatment positions as guides—*feel* for the POC.

Procedures for PRT

The procedure for applying PRT is as follows:

1. Palpate surrounding and opposing tissues to locate dominant and other TPs.
2. Document TPs on a standardized scale (extremely sensitive, very sensitive, moderately sensitive, no tenderness).
3. Do not try to break up the TP with hard pressure—*only* dimple the skin (≈1 kg of force).
4. Use one or two finger pads to monitor fasciculation and TP.
5. Fine-tune position with rotation.
6. Hold the POC until fasciculation decreases significantly or ceases.[5]
7. Average position hold time is 90 s to 3 min.
8. Transient periods of brief tingling, numbness, and temperature changes might occur.
9. Treat dominant TP and three to five additional TPs for one session.
10. Release tissue or joint slowly and reassess.
11. Continue with two or three treatments a week for 6 weeks (on rest days or after physical activity).

If desired pain relief is not attained, reposition and try again. It is normal to experience muscle soreness up to 48 hr after treatment as a result of fascial unwinding of the tissue and release of inflammatory chemical mediators.[8]

Top 10

The sidebar lists the top 10 TPs most commonly treated by athletic therapists. Figures 1–5 correspond to numbers six through ten in the top 10 list.

Clinical Implications

PRT is a valuable clinical tool for the treatment of somatic dysfunction, but it is not a panacea. It is most effective when integrated into an overall treatment plan. Once tissue tension and length are restored and pain is decreased, the muscle fibers can again function normally to aid healing. If a muscle is kinked

Top 10 Tender Points Treated by Athletic Therapists

10. Biceps (Figure 1)
9. Intercostals (Figure 2)
8. Hip flexor (Figure 3)
7. Plantar fascia (Figure 4)
6. Trapezius (Figure 5)
5. Lumbar
4. Posterior tibialis
3. Cervical/Scapular
2. Iliotibial band[5]
1. Patellar tendon

Figure 1 **Biceps. The patient is supine, shoulder abducted with elbow flexed, dorsum of the hand rests on forehead. Fine-tune with shoulder abduction or rotation.**

Figure 2 Intercostals. The patient is seated in side position and rests the arm on the uninvolved side on the athletic therapist's knee. Trunk is flexed toward tender-point side, rotation and flexion toward tender-point side, head is toward tender-point side or resting on athletic therapist's leg, arm on the uninvolved side hangs at side.

Figure 3 Hip flexor. Patient is supine, hips and knees flexed, ankles crossed or uncrossed, therapist supported or with physioball. Vary amounts of hip flexion, lateral flexion, and trunk flexion; move toward or away from tender point.

for a period of time, weakness is likely to occur, so strengthening is integral to rehabilitation. ▮

References

1. Jones LH. Spontaneous release by positioning. *DO*. 1964;Jan:109-116.
2. Wang CK, Schauer C. Effect of strain counterstrain on pain and strength in hip musculature. *J Man Manipulative Ther*. 2004;12(4):215-223.
3. Alexander KM. Use of strain–counterstrain as an adjunct for treatment of chronic lower abdominal pain. *Phys Ther Case Rep*. 1999;2(5):205-208.
4. Flynn TW, Lewis C. The use of strain–counterstrain in the treatment of patients with low back pain. *J Man Manipulative Ther*. 2001;9(2):92-98.
5. Speicher TE. Positional release therapy techniques. Paper presented at: Rocky Mountain Athletic Trainers' Association Clinical Symposium; April 22, 2006; Salt Lake City, Utah.
6. Speicher, TE. Positional release therapy techniques. Paper presented at: National Athletic Trainers' Association Annual Clinical Symposium; June 15, 2005; Indianapolis, Ind.

Figure 4 Plantar fascia. Patient is prone with knee flexed to ~60°, dorsum of foot on athletic therapist's shoulder or knee, marked metatarsal and ankle plantar flexion, calcaneus compressed toward toes. Move calcaneus into varus and valgus for fine-tuning.

Figure 5 Trapezius. Patient is supine with head laterally flexed toward tender point, shoulder abducted to 90°. Shoulder flexion or extension and rotation are used to fine-tune.

7. Chaitow L. *Positional Release Techniques*. 2nd ed. London, UK: Churchill Livingstone; 2002.
8. D'Ambrogio K, Roth G. *Positional Release Therapy: Assessment and Treatment of Musculoskeletal Dysfunction*. St Louis, Mo: Mosby; 1997.
9. Deig D. *Positional Release Technique: From a Dynamic Perspective*. Boston, Mass: Butterworth & Heinemann; 2001.
10. Giammatteo T, Weiselfish-Giammatteo S. *Integrative Manual Therapy: for the Autonomic Nervous System and Related Disorders*. Berkeley, Calif: North Atlantic Books; 1998.
11. Korr IM. Proprioceptor and somatic dysfunction. *J Am Osteopath Assoc*. 1975;74:638-650.
12. Korr IM. The neural basis of the osteopathic lesion. *J Am Osteopath Assoc*. 1947;48:191-198.
13. Bailey M, Dick L. Nociceptive considerations in treating with counterstrain. *J Am Osteopath Assoc*. 1992;92(3):334, 337-341.
14. McPartland JM. Travell trigger points—molecular and osteopathic perspectives. *J Am Osteopath Assoc*. 2004;104(6):244-249.
15. Jones L, Kusunose R, Goering E. *Jones Strain Counterstrain*. Boise, Idaho: Jones Strain Counterstrain, Inc; 1995.

Tim Speicher is a clinical assistant professor at Sacred Heart University in Fairfield, CT.

David Draper is a professor of athletic training and sports medicine in the Department of Exercise Sciences at Brigham Young University.