

W O N D E R   W H Y ?

# Why Prolotherapy is the Strongest Weapon I have found against Chronic Pain and Sports Injuries

*Donna Alderman, DO*

**W**hen a person becomes a physician, he or she learns the Hippocratic Oath which sets down the rules for practicing medicine. The first and foremost rule of this doctrine is “to help, or at least, do no harm.” Musculoskeletal pain issues, such as low back pain, neck pain, knee pain, shoulder pain, elbow or wrist pain, ankle pain, arthritis pain, and the pain and disability of sports injuries, are common complaints heard by many physicians. As a young doctor practicing family medicine, I had patient after patient come to me with these ailments. Being an osteopathic physician, with extra training in the musculoskeletal system and treatment, I knew more than the average medical doctor regarding these complaints, and had extra tools I could use. I was able to help some of my patients get rid of their pain, but for others, the pain would only go away temporarily and would continue to return.



**Dr. Donna Alderman injecting a patient's knee.**

Because of my belief that a doctor should “do no harm,” I was reluctant to prescribe long-term painkillers, which have potential side effects and can be addictive, or to send someone for an invasive procedure such as surgery, unless the need was clear-cut, which is rare. I was getting discouraged. Yet, I did not give up. With all that medical science had to offer, I thought there must be *something* I could do to help these patients. Then I heard about Prolotherapy.

Prolotherapy is a minimally invasive, safe therapy that stimulates the body to heal painful areas. It has a high success rate and strengthens tissue rather than weakening it, as can happen with other treatments such as cortisone, which reduces healing. Cortisone is often injected into painful joints and in the short term can help with pain. However, cortisone can destroy a joint if used too frequently and therefore doctors are instructed not to give more than a few shots a year to a particular joint. Prolotherapy, on the other hand, stimulates the repair of joints.

Prolotherapy is a logical and simple treatment based on very basic principles. One of these principles is that the body has the ability to heal itself. Another principle is that the body is “programmed” to heal based on “stimulus-response.” After an injury, the body will try to heal according to its programming. For soft tissue injuries (ligaments and tendons), the program allows for several weeks of healing, but after that time interval has passed, the healing stops. Think of a sprained ankle. A sprain is an overstretching, twisting and/or tearing of a ligament, the tissue that holds bones together. When a sprain occurs, the body’s “program” kicks in and the stimulus to heal begins. At first, this stimulus to heal is strong but over the ensuing weeks diminishes and then eventually stops. Unfortunately soft tissue, specifically joint ligaments and tendons, often do not heal completely after an injury because of limited blood flow to these areas. Therefore if healing is not 100% (and often isn’t), the person is left with a remnant of that injury. This remnant makes the joint a little weaker and more prone to another injury. Over time, and repeated injury which is more likely to occur



**Dr. Alderman injecting a patient's neck, while teaching doctors from Denmark.**

now that joint area weakens more and more. Eventually, an individual may find himself or herself with pain in that area which does not ever seem to go away (chronic pain).

Doctors faced with this type of pain sometimes suggest that surgery is the only option, especially if an MRI shows damage. MRI's, however, can be misleading with this type of pain. As evidenced by multiple studies<sup>1-20</sup> MRI's may show abnormalities unrelated to the patient's current pain complaints. Study after study shows that abnormal findings exist in patients who have no pain at all, and therefore surgery directed strictly towards an abnormality on an MRI without being correctly correlated to that patient's history and physical exam may not resolve that person's pain. It is therefore prudent for patients to be as conservative as possible when seeking pain remedies and not go directly for surgery unless there is a very clear need, such as a completely ruptured tendon or ligament (off the bone) or neurological deficits requiring immediate action. Many patients, treated with Prolotherapy, have been able to avoid surgery and have experienced resolution of their pain. This includes patients who have been told they needed back surgery for a disc problem, knee surgery or replacement, ankle surgery, neck surgery, elbow or shoulder surgery and wrist, toe, or other joint surgery.

What about exercise and physical therapy? These are often prescribed for musculoskeletal injuries. It is important to understand that exercise and physical therapy, while helpful to strengthen muscle around a joint, does not have much impact on the tendon part of the muscle which attaches it to the bone, or the ligaments which hold the joint together. Because of the reduced blood flow to

ligament and tendon tissue, these areas do not respond to exercise or physical therapy in the same way that muscle tissue does. Weight training can be employed to build muscles, but again, has very little impact on ligament and tendon growth and repair. Consider bodybuilding and how it works: Body builders use heavier and heavier weights in an effort to create micro-trauma to the muscle. This micro-trauma stimulates the body to go to the injured muscle and make it stronger and bigger (muscle hypertrophy). Again, the stimulus-response of the body at work! However, weight training does not stimulate ligaments and tendons in the same way as it does muscle tissue. Prolotherapy is the only treatment I know of that stimulates the repair and strengthening of ligaments and tendons. You could say, then, that Prolotherapy is "body-building" for the ligaments and tendons.

Prolotherapy works by tricking the body into healing; it provides a "stimulus" which causes the body to "respond" by reactivating and completing the healing process in these previously unhealed areas, reducing or eliminating pain. The stimulus is at the level of the injured ligaments and tendons, and activates growth factors to come to the sites where healing needs to occur. Prolotherapy is an option when physical therapy has failed, but it can also be used in conjunction with physical therapy and exercise. Depending on the injury, Prolotherapy and exercise may be started at the same time, or after a few Prolotherapy treatments have strengthened the joint.

Osteopathic manipulation is also a very effective treatment which can be used in conjunction with Prolotherapy. Sometimes osteopathic treatment can be tried first, if there is no obvious soft tissue injury. Osteopathic physicians are trained in all aspects of body mobilization, not only the spine but also the soft tissues, muscles, nerve flow, blood flow, lymph flow, myofascial release (the release of muscle structures which have a negative impact on body mechanics) as well as specialized techniques such as cranial-sacral (the correct movement and alignment of the cranial bones and sacrum). Osteopathic techniques can be very, very powerful in and of themselves. However, when they do not work to solve a pain issue, they can be combined with Prolotherapy. For instance, I have had patients come in for knee pain, which was treated with Prolotherapy. An analysis of that patient's body mechanics showed a twisting of their back and pelvis was putting undue pressure on his knee and that needed to be addressed. Osteopathic manipulation was then used to



**Dr. Alderman treating a knee patient in her California office.**

release the twisting and take the strain off the knee, which then was able to return to full function.

Conditions or diagnoses that can be treated with Prolotherapy include degenerative disc disease including herniated discs, low back pain, sciatica, medial and lateral epicondylitis (golfers and tennis elbows), tendonitis or tendonosis, rotator cuff tendon problems, plantar fasciitis or foot pain, knee joint pain, osteoarthritis, hypermobility pain or instability, ankle pain, toe pain or problems including bunion pain or “turf toe”, athletic injuries including sprains and strains that do not resolve, sacroiliac issues, neck pain, musculoskeletal headaches and others.

Thanks to the Internet, where a vast amount of information is now available at ones fingertips, our society is shifting from one where patients know little about their health care options, to one where individuals do their own research and take a more active role in making decisions about their medical treatments. The more someone knows about his or her options, the better equipped that person will be to make informed choices that are right for them. While Prolotherapy is not for everyone or for every condition, it has helped thousands of people who might otherwise still be in pain. ■

#### BIBLIOGRAPHY

1. MacRae DL. Asymptomatic intervertebral disc protrusion. *Acta Radiologica*. 1956;46-49.
2. Hitselberger WE, et al. Abnormal myelograms in asymptomatic patients. *Journal of Neurosurgery*. 1968;28:204.
3. Wiesel SW, et al. A study of computer-assisted tomography: 1. The incidence of positive CAT scans in an asymptomatic group of patients. *Spine*. 1984;9:549-551.
4. Powell MC, et al. Prevalence of lumbar disc degeneration observed by magnetic resonance in symptomless woman. *Lancet*. 1986;13:1366-1367.
5. Boden SD, et al. Abnormal magnetic resonance scans of the lumbar spine in asymptomatic subjects. *Journal of Bone and Joint Surgery*. 1990;72A:503-408.
6. Kaplan PA. MR imaging of the normal shoulder: variants and pitfalls. *Radiology*. 1992;184:519-524.
7. Deyo R. Magnetic resonance imaging of the lumbar spine—terrific test or tar baby? *New England Journal of Medicine*. 1994;331:115-116.
8. Matsumoto M, et al. MRI of the cervical intervertebral discs in asymptomatic subjects. *Journal of Bone and Joint Surgery (Br)*. 1998;80(1):19-24.
9. Humphreys SC, et al. Reliability of magnetic resonance imaging in predicting disc material posterior to the posterior longitudinal ligament in the cervical spine, A prospective study. *Spine*. 1998;23(22):2468-2471.
10. Kaiser JA, et al. Imaging of the cervical spine. *Spine*. 1998;23(24):2701-2712.
11. Englund M, et al. Incidental Meniscal Findings on Knee MRI in Middle-Aged and Elderly Persons. *The New England Journal of Medicine*. 2008;359(11):1108-1115. September 11, 2008.
12. Jerosch J, et al. Age related magnetic resonance imaging morphology of the menisci in asymptomatic individuals. *Archives of Orthopedic Trauma Surgery*. 1996;115(3-4):199-202.
13. LaPrade RF, et al. The prevalence of abnormal magnetic resonance imaging findings in asymptomatic knees. With correlation of magnetic resonance imaging to arthroscopic findings in symptomatic knees. *American Journal of Sports Medicine*. 1994;22(6):739-745.
14. Stanitski CL. Correlation of arthroscopic and clinical examinations with magnetic resonance imaging findings of injured knees in children and adolescents. *American Journal of Sports Medicine*. 1998;26:2-6.
15. Chandnani V, et al. MR findings in asymptomatic shoulders: A blind analysis using symptomatic shoulders as controls. *Clinical Imaging* 1992;16:25-30.
16. Sher JS, et al. Abnormal findings on magnetic resonance images of asymptomatic shoulders. *Journal of Bone and Joint Surgery*. 1995;75A:10-15.
17. Miniaci A, et al. Magnetic resonance imaging evaluation of the rotator cuff tendons in the asymptomatic shoulder. *American Journal of Sports Medicine*. 1995;23:142-145.
18. Thompson WO, et al. A biomechanical analysis of rotator cuff deficiency in a cadaveric model. *American Journal of Sports Medicine*. 1996;24(3):286-292.
19. Miniaci A, et al. Magnetic Imaging of the Shoulder in Asymptomatic Professional Baseball Pitchers. *American Journal of Sports Medicine*. 2002;20:66-73.
20. Connor PM, et al. Magnetic Resonance Imaging of the Asymptomatic Shoulder of Overhead Athletes: A 5 Year Follow-up Study. *American Journal of Sports Medicine*. 2003;31:724-727.