**Prolotherapy**

**Q: What is Prolotherapy?**

**A:** Prolotherapy (proliferative therapy) is now recognized as a Regenerative Injection Treatment (RIT). RITs are safe, effective and elegant orthopedic procedures that stimulate the body's natural healing processes to strengthen ligaments, tendons and other soft tissues that are weakened by traumatic or over-use injury.

**Q: How does Prolotherapy work?**

**A:** With a precise injection of a mild irritant solution directly on the site of the injured ligament or tendon, Prolotherapy creates a mild, controlled inflammatory reaction that stimulates the body's natural healing mechanisms to lay down new tissue on the weakened area. Additional treatments repeat this process, allowing a gradual buildup of tissue to restore the strength to the affected area and often relieves soft tissue and joint pain.

**Q: What is in the solution that is injected?**

**A:** The Prolotherapy injections contain natural substances and anesthetic agents which stimulate the healing response. The substance that is most commonly used is a concentrated Dextrose solution (ranging from 5-25% concentration with sterile water or saline), often combined with a local anesthetic such as Lidocaine. Many find the effectiveness of sterile Dextrose solution surprising, since it is nothing more than sterile sugar water! But studies have shown that it works and, furthermore, without the toxicity of other solutions, which makes it even better. Other injectable solutions include Serapin, a derivative of the pitcher plant that can be used in the place of sterile water. P2G, a mixture of phenol, dextrose and glycerin, is another solution that may be used.

**Q: Is the Prolotherapy treatment painful?**

**A:** Any pain involving an injection will vary according to the structure to be treated, the choice of solution, and the skill of the physician administering the injection. The treatment may result in mild swelling and stiffness. The mild discomfort passes fairly rapidly and can be reduced with pain relievers such as Tylenol. Anti-inflammatory drugs, such as aspirin and ibuprofen, should not be used for pain relief because their action suppresses the desired inflammatory process produced by the injection.

**Q: What do I need to do to prepare for the Prolotherapy treatments?**

**A:** The region to be treated should be washed the evening or morning before the injection. Systemic oral steroid or steroid/cortisone injections should be stopped two weeks before the injection. Aspirin and other nonsteroidal anti-inflammatory medications such as Motrin, Advil, Aleve and Naproxen should be stopped 48 hours before the Prolotherapy treatment. If you are not able to stop oral steroids or nonsteroidal medications, your response may not be as robust.

**Q: What should I expect after the injections?**

**A:** There may be stiffness and soreness in the region of the injection that may last from one day to a week. Patients should not use anti-inflammatory medications such as Advil, Ibuprofen, Aleve, Motrin, etc. after the procedure. If patients are taking aspirin for cardiac or stroke issues, then these medications should not be stopped. It is often recommended that a patient see a physical therapist or chiropractor in the weeks following injections to check biomechanical problems.
Q: What are the risks?
A: Prolotherapy has been used for more than 50 years and reports of serious complications are very rare. As with any injection, there are risks of bleeding, infection and, even more rarely, nerve injury. It is possible with injections in the neck, back or sacroiliac region that the solution may enter the spinal canal. This may result in a temporary nerve block or spinal headache. The other risk of injections in the upper part of the back or the chest wall and ribs is the possibility of puncturing a lung creating what is called a pneumothorax that may require further treatment. There is of course the risk that is in play with all treatments, namely that Prolotherapy may not be effective for your problem.

Q: Can Prolotherapy help everyone?
A: Each patient must be evaluated thoroughly with patient history, physical exam, imaging, and possibly a full laboratory work up before treatment will be administered. With this information, your physician can evaluate your potential success with this therapy. Success depends on many factors, which include the patient’s overall health and ability to heal, the level of the patient’s fitness and any underlying nutritional deficiencies that would impede the healing process.

Q: What areas of the body can be treated?
A: This form of therapy can be used to treat instability (i.e. too much motion) in joints, pain from degenerative joints (e.g. knee osteoarthritis, wrist and ankle pain), chronic tendon pain (e.g. tennis elbow, golfers elbow), plantar fasciitis, Temporal Mandibular Joint (TMJ) dysfunction, neck and back pain, trochanteric bursitis, rotator cuff impingement, carpal tunnel syndrome, and other nerve entrapment syndromes. The therapy affects only the area treated and does not cause any problem in any other area.

Q: How often do I need these treatments?
A: Several injections are usually done at the site of complaint. Injection sessions are usually done 2-4 weeks apart. Prolotherapy injections are often done in a series of 3 and the response is then assessed. The average number of treatments is between 3 and 6. An alternative solution may be tried or Prolotherapy may be abandoned if there is no improvement.

Q: What’s the rate of success in treatment?
A: The anticipated rate of success depends on a number of variables, including the patient’s history and ability to heal, and the type of solution used. In patients with low back pain with hypermobility, 85% to 95% of patients treated experience remission of pain with this form of therapy. In comparison, the Journal of Bone and Joint Therapy reports on a 52% improvement in patients treated surgically for disc involvement.

Q: Is this form of therapy really new?
A: Prolotherapy has been used successfully as early as 500 B.C. when Roman soldiers with shoulder joint dislocations were treated with hot branding irons to help fuse the torn ligaments in the shoulder joint. Advances in medicines greatly improved on this process, and led to the modern techniques of strengthening the fibrous tissue rather than producing scarring to fuse tissues. In 1926, a group of physicians met with great success using injection therapy to treat hernias and hemorrhoids. Earl Gedney, D.O., a well-known Orthopedist, decreased his surgical practice and began to inject joints with these newer injectable medicines in the 1940s and 1950s. Also, in 1950, George Stuart Hackett, M.D., wrote a book on injection therapy. His work is still used today in training physicians. In the years since this early work, techniques and medications have advanced to move from a scarring or fusing effect to a strengthening effect, which restores the weakened joint to its original level of stability, without loss of flexibility and function.