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## Prolotherapy Information

### What is Prolotherapy?

Prolotherapy is a corrective treatment for the causes of pain due to damaged or stretched ligament or tendon\*. This treatment attempts to correct the problem, not just cover it up. Prolotherapy employs the injection of irritants into ligamentous structures of the neck, back, hip, knee, elbow, wrist, ankle or fingers. The irritation causes an inflammatory response resulting in the formation of new bone and fibrous tissue, strengthening those structures and reducing pain.

Prolotherapy as we know it today came about in the 1920's as a result of the work of Dr. George Hackett and was improved by Dr. Hackett and Dr. Gustav Hernwall in the 1930's and 1940's. Since then, work has concentrated on finding more effective irritant solutions with fewer side effects.

Solutions used widely today include dextrose (a sugar made from corn) and xylocaine (a numbing agent), sodium morrhuate (cod liver oil extract), phenol, and glycerin. This office uses the dextrose, water and xylocaine combination because it is the most gentle. Prolotherapy does not involve steroid injections. Steroids prevent or stop the inflammatory response and can weaken tissue.

Prolotherapy has been shown in animal experiments to strengthen and thicken ligaments and the surface of bone where the tissue attaches. Studies have shown this to be an effective therapy in relieving chronic pain\*.

### How it is done

Prolotherapy involves injecting small amounts of the irritant solution into ligamentous structures that are painful and/or weak. Depending on where this is done and the size of the area, this may require several injections in one office visit that are spaced one-half inch apart. The injections are uncomfortable because they are numerous and touch the bone, which is heavily invested with nerve endings. Most patients tolerate this well if they have taken several Tylenol tablets an hour ahead of time and receive numbing injections (called quaddles) of the skin overlying the bony places that will be injected.

After the procedure, most patients feel fullness and numbness in the treated areas. Some patients even report that all their pain is gone. This is due to the numbing effect of the local anesthetic xylocaine, which is part of the injected solution and serves as an indicator that the correct areas were reached. This effect wears off in 3 hours, like dental anesthesia, and the pain will return. To reduce the pain thereafter, patients take oral Tylenol or a similar medication. Aspirin or other anti-inflammatory agent must not be used, though, as they will cancel out the injections chemically. The post-injection pain increase can last for up to 2-4 days, and then gradually lessens. Some patients find that their pain never returns, whereas others must have a second or several sets of injections to obtain relief. Injections are usually done at 4-6 week intervals. If a patient experiences no relief after 3-4 sets of injections, then prolotherapy will probably not work for them\*.

After each set of injections, patients are encouraged to do regular stretching exercises, but not to do anything that they found impossible or painful to do before the treatment. The injected areas are undergoing active healing and it is unwise to overly stress them before full tissue strength is achieved, usually within 6-8 weeks. It is important to remember that it is possible for people to reinjure themselves in the future, just as a mended table leg can be rebroken along a glued joint. When having the neck treated, it is especially important to have someone accompany you to your appointment so that you will not have to drive home. Neck injections frequently result in temporary dizziness, so it is best to not drive or operate any other machinery for several hours after treatment\*.