

Prolotherapy

Prolotherapy involves injection of any substance that promotes or stimulates the growth of normal cells and tissue, especially ligaments, tendons and cartilage, thereby regenerating and strengthening the lax or weakened tissue and alleviating musculoskeletal pain. "Prolo" is short for proliferation (propagation, generation). Prolotherapy is now commonly referred to a Regenerative Injection Therapy (RIT).

Prolotherapy focuses on repairing and optimizing the structure and function of tendons and ligaments. A tendon attaches a muscle to the bone and is involved in movement of the joint. A ligament connects two bones and is involved in the stability of the joint. A strain is defined as a stretched or injured tendon and a sprain is a stretched or injured ligament. When ligaments or tendons are injured, the immune system is stimulated to repair the injured area. Ligaments and tendons generally have a poor blood supply and so incomplete healing is common after an injury. When the ligaments and tendons become lax and weak, the joint becomes unstable and chronic pain results.

With regard to trauma and injury, the greatest stress to the ligaments and tendons is where they attach to the bone, the fibro-osseous junction. With regard to pain, the periosteum (covering of the bone) and the ligaments are the most sensitive structures. With regard to the scale of pain sensitivity (which part of the body hurts more when injured), the periosteum ranks first, followed by the ligaments, tendons, fascia (tissue that surrounds muscle) and finally muscle. Cartilage contains no sensory nerve endings and therefore the cartilage cannot hurt because it contains no pain sensing nerves. If there is cartilage damage, the ligaments are typically the structures that hurt.

Conventional Prolotherapy involves injecting a mild irritant solution referred to as a proliferant. The most common proliferant is a solution of dextrose (sugar water) combined with procaine, a commonly used local anesthetic. Sometimes lidocaine is used instead of procaine. Most commonly, the injections are given into a joint capsule (elbow, shoulder, knee, ankle, spine, etc.) or where a lax, weakened or damaged ligament or tendon attaches to bone. Prolotherapy works by exactly the same process that the human body naturally uses to stimulate the body's healing response. The first stage of this process is called inflammation. The Prolotherapy injection causes a local inflammation. The local inflammation triggers a healing cascade which stimulates fibroblasts, the cells from which connective tissue is developed. Activation of the fibroblasts results in the deposition of new collagen, the strong, fibrous, insoluble protein from which ligaments, tendons and cartilage are made. The new collagen regenerates cartilage in the joint and strengthens the ligaments and tendons and their attachments to the bone. New collagen shrinks as it matures. The shrinking collagen tightens the ligament or tendon that was injected. The result is improved stability and function, and resolution of pain.

The response to treatment varies from individual to individual, and depends upon one's healing ability. Some people experience localized swelling, inflammation and pain around the injection site that resolves over the following few days. Others experience no discomfort. Some people may only need a few treatments while others may need 10 or more. A typical course of therapy is six to ten treatments, sometimes with multiple injections during each treatment. Treatment is usually repeated every four to six weeks.

Injections of irritant solutions were performed in the late 1800's to repair hernias and in the early 1900's for jaw pain due to TMJ (jaw) joint laxity. George Hackett, MD developed the technique of prolotherapy in the 1940's. Dr. Gustav Hemwall was a pioneer in prolotherapy, beginning his studies and treatments in the 1950's and continuing until the mid 1990s. In his study of almost 10,000 prolotherapy cases, Dr. Hackett found that over 99 percent of the patients found relief from their chronic pain.

Recent advancements in prolotherapy by doctors of oriental medicine, certified for expanded practice in New Mexico, have improved outcomes. The addition of pharmaceutical grade vitamins, minerals, homeopathic medicines, and natural medicines to the Prolotherapy injection solution improves the regeneration of the ligaments, tendons and cartilage. Sometimes ozone is used for prolotherapy which helps eliminate chronic localized pathogens that can contribute to joint instability, dysfunction and pain. Often the dextrose is unnecessary. This is a real advantage for sensitive people who are more prone to inflammation and pain. It also makes Prolotherapy possible for those with hardware (screws, rods, joint replacements, etc.) near the injection site since the presence of such hardware is a contraindication for conventional Prolotherapy using an irritant like dextrose.

Prolotherapy can be helpful for:

Musculoskeletal pain

Arthritis

Back pain

Sacroiliac sprain

Sciatica

Neck pain

Fibromyalgia

Sports injuries

Knee injuries and pain

Shoulder injuries and pain

Rotator cuff tears or syndrome

Elbow injuries and pain

Tennis or golfers elbow

Tendonitis

Ankle injuries and pain

Whiplash

Carpal tunnel syndrome

Chronic tendonitis

Partially torn tendons

Ligaments and cartilage

Degenerative disk disease

Herniated discs

TMJ

Sciatica

Cartilage injury

Cluster headache

Migraine headache

Headache

Heel spurs

Hip Degeneration

Polio