

## WHAT IS PROLOTHERAPY



Prolotherapy is a simple, natural technique that stimulates the body to repair the painful area when the body's own healing process needs a little assistance. Notice that I said "a little assistance", because often that is all that is needed to stimulate the body to be able to take care of itself the way that it always has. When more heroic measures such as surgery, replacement of joints, and powerful pain medications and anti-inflammatories are used, this bypasses the body's own healing mechanism, and because it never addresses the underlying reason that surgery or medications were used, the condition only worsens, and in fact interferes with the innate healing mechanisms of the body.

In a nutshell, Prolotherapy uses a proliferative/building solution of dextrose (active ingredient), saline solution, nutritional and homeopathic substances which are injected into the "ah-shi" acupuncture points at the junction of the bones and ligaments and the bones and tendons. The purpose of this solution is to PURPOSELY create a very mild inflammatory response at these crucial

areas of pain. Purposely, because this controlled inflammatory response is an indication that your body is bringing chondroblasts, fibroblasts, collagen, and elastin, i.e., substances that make connective tissue, to the affected area in order to manufacture new tissue at the injected site. This is the reason that we call this process "Prolotherapy" because there is a proliferation, a building and strengthening of new connective tissue at the injected site.

Let's give a "word picture" of this process. Remembering the last time you had a turkey dinner, you realize that when you get to the tendons and ligaments on the drumstick, that those tissues are white, or clear. This is an indication that there is very little blood supply that gets to these tissues, and that nutrition does not easily get into the tissues, and waste products don't easily get out. In a word, the circulation is very poor in these tissues. Therefore, when these tissues – tendons and ligaments – get injured, they don't heal very well, if at all.

Another property of connective tissue that exacerbates the injury process is that the tendons and ligaments are not nearly as flexible as muscles. The function of the ligaments is to hold bones in place so that we have some stability in our structure. When the ligaments get stretched out, they stay stretched out. They are not like muscles or rubber bands that just go back to their original location. This produces a condition we call ligamentous laxity, i. e., loose ligaments. Now we have loose ligaments holding the bones together. This will produce a very unstable joint, and many times feels like the joint is sloshing around with many "clicking sounds". We get diagnosed with Degenerative Disc Disease, or spinal stenosis, or plantar fasciitis, or rotator cuff injury, fibromyalgia, chondromalacia, or osteoarthritis, on and on. Many times these conditions are caused by ligaments that are not holding bones firmly in place and those bones grind around on each other wearing down the cartilage between the bones causing pain. By extension, if the ligaments are not holding the bones in place as they were meant, then the muscles many times will try to take up the slack and help out by going into spasm, in an effort to stabilize the bones. Muscles were not meant to take on this task, and they will get tired, give out and cause pain additionally.

In 1983, Y. King Liu performed a study using the knee ligament in rabbits. This study was done in order to quantify the strength of the tissue formed by Prolotherapy. In this study a proliferant was injected into the femoral and tibial attachments of the medial collateral ligament, the inside knee ligament. The ligaments were given five Prolotherapy treatments and then compared to non-injected ligaments. The results showed that in every case, Prolotherapy significantly increased ligamentous mass, thickness, and cross sectional area as well as the ligament strength. In a six-week period, ligament mass increased by 44 percent, ligament thickness increased by 27 percent, and the ligament/bone junction strength increased by 28 percent. This research was yet another attestation to the effectiveness of Prolotherapy, showing that Prolotherapy actually causes new tissue to grow. Imagine what it would mean to an athlete to run 40 percent faster, jump 40 percent higher, or be 40

percent stronger. This new growth of stronger, healthier tissue is the normal and desired outcome with Prolotherapy.

As we can see, Prolotherapy can sometimes be described as musculoskeletal “spot-welding”. In fact, in 1956, George S. Hackett, MD the originator of Prolotherapy described Prolotherapy, in his seminal work “Ligament and Tendon Relaxation Treated by Prolotherapy”, as a ‘weld’ between the connective tissue and the bone.

### **WHO WILL BENEFIT FROM PROLOTHERAPY**

1. Pain caused by a tendon or ligament injury is where Prolotherapy is unsurpassed. One of the symptoms that will give you a clue as to whether your injury is from a damaged ligament/tendon or a muscle is that muscles will usually heal very nicely without any intervention within about two months. This is because muscles have a very rich blood supply and the blood brings nutrients and gets rid of waste products in the muscles very efficiently. As we have learned, ligaments/tendons do not have a rich blood supply and for this reason they do not heal very well if at all unless some intervention such as Prolotherapy is utilized. If you have had an injury for longer than two months, then an evaluation for Prolotherapy would be appropriate.
2. Healing requires the mobilization of the immune system. Inflammation induced in a controlled manner at a specific site with Prolotherapy initiates your immune system to begin the healing cascade that will allow your body to create and stabilize tissue in the damaged area.
3. Whenever a patient requires another Prolotherapy session for the same problem, this is not an indication that the treatment did not work, or that a ‘pain killer’ wore off. It is an indication that you had more damage that we were able to fix in one treatment. Follow up treatments when necessary are done at one month intervals, because we need to give the healing system of the body time to build new tissue. An even disbursement of people need 1 – 3 treatments; others need 3 – 6 treatments. One patient since incorporating Prolotherapy into our practice in 2005 required 12 treatments, but for a severe disorder.
4. Of course we use the nutrients in our diet to manufacture the materials to feed our healing system. Dietary intake is important. For example, if you are eating a pop-tart for breakfast, and a candy bar for lunch, and a piece of pizza for dinner, we need to talk about that before we do anything.

### **WHO WILL NOT BENEFIT FROM PROLOTHERAPY**

1. Since Prolotherapy is a system that takes maximum advantage of the immune system, people whose immune system is severely compromised may not be able to mount a sufficient response to allow for the growth of new tissue as is usually expected with Prolotherapy. Additionally patients with autoimmune conditions such as Lupus, MS, Rheumatoid Arthritis, Myasthenia Gravis, etc may have an immune system that is so overactive that it interferes with the Prolotherapy process.
2. There is an intimate interplay between the Immune System, the Endocrine (Hormonal) System and the Nervous system. Since Prolotherapy directly utilizes the properties of the Immune System to create controlled inflammation to build new tissue, the immune system that is unduly affected by the hormonal system and/or the nervous system can compromise the results obtained with Prolotherapy. In those cases, we address those hormonal and nervous system problems that are adversely affecting the immune system.
3. Many times there are emotional issues that prevent ANY type of treatment from resolving a particular pain. Although these emotional issues may not be the sole cause of the pain, many times those issues need to be peeled away like the outer layer of the onion to allow Prolotherapy to do its magic.

4. Remember: the need for a subsequent visit does not mean that the treatment did not work. It is only a reflection that you had more damage than we were able to fix in one treatment. Subsequent treatments pick up where the last treatment left off.
5. Not to underestimate the obvious, but the skill of the practitioner is paramount in injecting the correct site. Sometimes a pain in one area has its origins in another place. For instance a pain in the Adductor Longus, inside the groin, may have its cause in a ligamentous laxity in the lumbar area.

As you can see in reviewing who will benefit from Prolotherapy and who will not benefit from Prolotherapy, it is not a simple case of putting a patient on the table and mechanically injecting the Prolotherapy solution into the correct area. A patient first has to be evaluated to determine into which category does he or she fit.