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PROLOTHERAPY

Definition: Prolotherapy is injection whose primary intent is to repair connective tissue (that is, ligament, tendon or cartilage). The term proli is Latin for "to grow."

How Does Prolotherapy Work? Dextrose injection (12.5% to 25% concentration) stimulates a brief AA (arachidonic acid) pathway inflammation. AA inflammation is the type of inflammation to which most doctors are referring when they use that word. After an injury, the body uses primarily AA inflammation to try to repair the damage. Prolotherapy causes no significant damage, because there is no stretching or tearing of fibers, but the body still begins a repair process, which allows the structure to become stronger and tighter rather than first becoming weaker and looser. Why do some people get better quickly with prolotherapy? Healing takes months, but some patients get better quickly. This is likely because dextrose and other solutions have effects on nerves as well. However, this is by a different mechanism and is not the primary goal of prolotherapy (see below).

What about injecting solutions other than dextrose? There are other solutions that stimulate the AA type of inflammation, such as phenol, and they are also called prolotherapy. However, when cells are removed from the human body and then reinjected, that is termed "Bioregenerative Injection"(BRI). The primary goal is still repair but it is by use of tissue from living sources. This includes injection of whole blood, stem cell injection and platelet rich plasma injection.

WHAT TO EXPECT AFTER PROLOTHERAPY

Stiffness and Soreness: You can expect to be stiff and sore post-treatment. This could last from 3 to 10 days.

If you feel the need for some pain relief post-treatment, please try Tylenol (acetaminophen) or the pain medication that you will be given at the time you are seen. Make sure to limit Tylenol to 3 grams per day and don't forget that the pain medication received from our office may have Tylenol as well.

AVOID TAKING anti-inflammatory medications for pain such as aspirin, ibuprofen (Motrin/Advil), naproxen (Aleve/Naprosyn) because they can reduce the positive effect of the body's natural response to prolotherapy. If you are on an aspirin regimen (for your heart, stroke prevention, etc), do not discontinue your aspirin treatment. We will discuss whether it's advisable to discontinue the medication on a case by case basis.

Numbness: You may notice some numbness post-treatment. This is not uncommon as a sensation after the injection of ligaments and tendons. If there is *weakness* that does not resolve in several days, or if *burning pain* is noted that does not resolve in several days, please contact our office.

Bruising: Bruising is quite common; do not be alarmed by it. Bruising is good for us, as it contains growth factors.

Itching: If you notice itching, over-the-counter Benadryl or Diphenhydramine is helpful. These medications can make you drowsier so driving may be affected. Calamine lotion may also be helpful.

General Precautions:

Exercising is encouraged, but please do not over-do it. Pay attention to what your body tells you. If it hurts, take a break! Do not push yourself just because you feel better (you may pay for it later). Use either ice or heat to help calm pain or spasms.

Additional injuries will make healing more difficult. For any of our patients with significant pain we recommend the following: when going up or down stairs, do not alternate feet. Take one step at a time. Always hold on to at least one handrail when using stairs, watch for obstructions on steps, and do not carry things in both hands.

Feeling better or worse: Sometimes breaking a pain cycle can help quickly, especially if you feel supported by the fluid of injection. Therefore you may feel better after the post-injection soreness wears off. However, many nerves are not going to quit firing until the ligaments and tendons become strong enough that the nerves are taken off "stretch" -- and that takes time. In this office we attempt to avoid missing anything during a treatment session so that 6 weeks after the 2nd treatment is usually enough time to determine benefit.

HOW MANY TREATMENTS WILL I NEED?

Two trial treatments are usually enough to determine if the treatment will be beneficial. Exceptions include athletes that are actively engaging in contact sports or high force activity during treatment periods. Typically those areas which have hurt less over

months or years resolve first, and we then taper out treatment as the more stubborn areas start responding. There are those conditions in which all cartilage has been lost already in a joint (such as the knee) and in which wear and tear of everyday living may require a treatment every 3-4 months, but our goal is always to restore tissue enough towards "normal" that repeat visits are only recommended following trauma or some unusual event.

It is very important to realize that prolotherapy is a *diagnostic* as well as a *therapeutic* treatment. This means that if prolotherapy does not help it may very well be that there is an undiagnosed problem that needs to be identified. Surgery is not needed often in patients receiving prolotherapy, but occasionally it is and referrals from your prolotherapy physician can often save a lot of time in obtaining surgery when it is truly necessary. For those few patients who need surgery, prolotherapy prepares them by addressing other pain problems unrelated to the need for surgery, simplifying decision making by the surgeon, and typically allowing a smoother recovery from surgery.

WHAT ABOUT NARCOTICS?

Typically patients do not need narcotic pain medication after treatment except, perhaps, that evening of the treatment, or the next day. Patients typically receive a prescription for a limited amount of post-injection pain medication.

EXTRA READING AND INFORMATION:

The above information is from the website drreeves.com which is an excellent source of information. Also, visit aaomed.org (specifically <http://aaomed.org/Injection-Therapy-FAQ>).

WHAT TO EXPECT FROM YOUR PROLOTHERAPY TREATMENTS

- Prolotherapy is a highly effective method of treating chronic ligament and tendon weakness. It is a very effective treatment to strengthen those specific areas and reduce or eliminate pain. **However, prolotherapy takes time to grow new healthy, strong tissue and thus relieve pain. This relief develops over time.**
- **Many patients are looking for a "quick fix", but prolotherapy results do not occur overnight and it is a process that requires time.**
- **The prolotherapy patient must be committed to the treatments because multiple sessions can be required before healing occurs and pain relief is obtained. Do not judge your results based on only one treatment.**
- Be advised that the number of prolotherapy treatment sessions varies with each patient.
- While many of our patients have reported partial or complete relief of pain after only one session, **the average person usually requires 2-6 or more treatments given at 1-3 week intervals before this occurs.**
- Patients that require only 1-2 treatments to reach complete healing are usually those who are typically younger patients or those who have sought prolotherapy right away after an injury.
- *****Do not judge your benefit after just one treatment.*****
- **Multiple treatments are the norm and provide longer and more pain relief until the sustained pain improvements are realized (as the ligaments and tendons heal).**
- **If you have suffered from pain for over 3 months or longer, then it may take at least that long to gain healing and pain relief.**
- Prolotherapy relies on the patient's own body "healing" itself and this can be a slow process. Patients with a healthy immune system generally require fewer treatments.
- The connective tissue strengthening occurs for 4-6 weeks after each treatment session and each subsequent session builds on the previous sessions. It is normal to experience waxing and waning of functionality and pain relief during the course of these treatments.
- Patients will often experience an increased ability to function in activities of daily living and may be able to perform previously painful activities without pain, once the healing from prolotherapy has occurred over time.
- Patients will often experience an improvement in muscle strength and will notice that any stiffness will begin to subside with prolotherapy treatments. Once prolotherapy help stabilize the area injured, the muscles no longer have to provide this stability, so they relax. Once they relax, the stiffness subsides.
- Pain from auto accidents, athletic injuries and overuse injuries often arise from injury to the soft tissues in the body. The soft tissues, which include ligaments, tendons, muscles and joint capsules are called connective tissues because they connect structures to bone thereby supporting the skeleton. Prolotherapy causes these connections to be rebuilt and strength intact.
- **The prolotherapy patient must be committed to the treatments because multiple sessions may be required before healing occurs and pain relief is obtained.**
- For healing and pain relief to occur in your painful areas, more than one session of prolotherapy is usually required, and most patients will begin to see benefits after anywhere from 3-6 treatment sessions in the area involved.