Neural Prolotherapy (NPT):

A new approach to injury treatment

(Adapted with permission from John Lyftogt, MD—Founder of technique)

Prolotherapy is a very effective treatment for most injuries and ongoing joint, tendon, ligament and muscle pain. The treatment involves a series of injections with a glucose solution, immediately under the skin with a very fine needle, targeting the source of the pain. It can offer a success rate of greater than 75% for most conditions.

Neural Prolotherapy was developed by Dr. John Lyfgodt MRNZCGP in New Zealand. He has been in practice since 1978 and has extensive postgraduate training and experience in sports medicine and musculoskeletal medicine. Dr. Lyftogt began practicing Prolotherapy after training with Dr. Margaret Taylor in Adelaide, Australia in 2003. He has been a full time prolotherapist at the world-famous sports center built for the Commonwealth Games.

Dr Lyftogt's early research focused on the treatment of Achilles tendon problems and he has now treated more than 300 Achilles tendons with a success rate of more than 90%. He has published two level 4 articles on Achilles tendons.

The technique developed for the treatment of Achilles tendons differs from Classical Prolotherapy in that the injections are given immediately under the skin while taking great care avoiding contact with the exquisitely sensitive tendon.

This 'neural Prolotherapy' protocol was successfully extended to the treatment of tennis elbow, painful knees, shoulders, neck, hips, ankles, muscle injuries and low back. Results are consistent and two year follow up studies have shown success rates between 80-100%. The treatment is also less invasive than Classical Prolotherapy.

How Does It Work?

Because neural Prolotherapy does not target tendons, ligaments or joints the question had to be asked what causes the sometimes dramatic decline in pain levels after even a few treatments. A working hypothesis was developed that glucose assists in the repair of connective tissue in the nerve trunks under the skin in a similar way as repairing connective tissue in ligaments and tendons with Classical Prolotherapy. These skin nerves are now known to be responsible for

painful conditions generally identified as ‘neuralgias’ or ‘peripheral neuropathic pain’. They consist for up to 80% of connective tissue and are structurally quite similar to tendons and ligaments.

There is now also compelling scientific evidence that the very small nerves innervating the nerve trunk, known as ‘nervi nervorum’ are responsible for inflammation of the connective tissue of the nerve trunk and surrounding tissues. Interestingly and surprisingly this fact has been known for over 125 years.

It is also known that this ‘neurogenic inflammation’ differs from conventional inflammation in that it does not respond to anti-inflammatories or cortisone injections. This is one of the reasons why these commonly used drugs are proving to be ineffective in many painful conditions in addition to a growing awareness that their use is not without serious side effects.It is clear from clinical observations on more than three thousand patients and large case series that neural Prolotherapy effectively reverses ‘neurogenic inflammation’ and resolves neuralgia pain.

Treatment Protocol

Treatment typically involves a 6-8 sessions of micro-injections just under the skin with a very small needle. Additional treatment sessions are sometimes needed if a patient has prior surgeries, moderate to severe whiplash injuries with widespread pain, and/or significant underlying medical illnesses (diabetes, autoimmune disorder or history of cancer.) Treatments are completed within 10 minutes. At most the patient may have some brief tenderness at the injection site or a small bruise. Physical activity is not restricted post-injection, with most patients returning to their usual workouts the same day or next day. More than 98% of patients tolerate the minimal discomfort associated with the injections without a problem. The occasional patient however who is needle phobic or quite pain sensitive may not be a good candidate.

Prolotherapy History

Classical Prolotherapy was developed in the 1940s by an American trauma surgeon Dr George Hackett, using injections of Sylnasol, a sclerosing agent commonly used at the time for shrinking varicose veins. He targeted ‘lax’ or ‘weak’ ligaments with these injections to make them stronger.Hackett reasoned that if ‘weak’ ligaments were the cause of most joint and ligament pain, strengthening them would resolve the pain. He was certainly successful, publishing 16 articles and a textbook on this procedure, and claiming an 80% success rate for the treatment of low back pain as

well as many other painful conditions.A growing number of Prolotherapy studies over the last 40 years have indicated good to excellent results from this type of treatment, with doctors in the USA, Australia and elsewhere continuing to use glucose injections (now using more advanced glucose solutions) with no side effects for painful conditions affecting joints, ligaments and tendons.

With the advent of evidence-based medicine in the last 20 years, scientific research have become intensely demanding and financially well out of reach of most researchers, unless supported by large grants or the Pharmaceutical industry. As a result, it has been almost impossible to fund good high-level evidence research on Prolotherapy. But three researchers, Professor Michael Yelland from Australia and Professors David Rabago and K. Dean Reeves from the USA have bucked the trend with some excellent studies published recently, including a randomized control trial for treatment of Achilles tendinosis (British Journal of Sports Medicine, 2009). Dr John Lyftogt has also published six level 4 studies in the Australasian Journal of Musculoskeletal Medicine since 2005.