

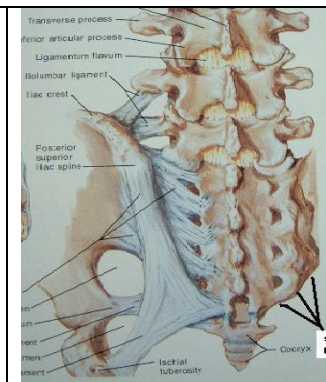
PROLOTHERAPY (Sclerosing injections)

Various types of injections have been used by doctors over the years as a means of alleviating different musculo-skeletal disorders. The most popular is the "cortisone shot". At times the public has maligned these injections as dangerous, but there is good evidence that they dramatically reduce inflammation in the short term. However, they do not promote healing or regeneration of damaged tissues and repeating the injections frequently may lead to side effects.

Sclerosing or prolotherapy injections were first proposed by Hackett, an orthopaedic surgeon, in the 1950s. Early injections included various solutions of vegetable oils, local anaesthetic, dextrose (sugar), phenol and glycerol. The solution was designed to **create** an inflammatory reaction initiating the proliferation of scar tissue (sclerosis) in the tissues injected. The idea was to cause thickening, tightening and strengthening of the tissues through scarring. Studies confirm that indeed the results lead to about a 40% increase in collagen fibre strength and cross sectional area of tendons and ligaments.

Thus sclerosing injections are useful in the treatment of the following conditions:

- Loose or stretched ligaments (such as lateral ligament ankle sprains)
- Strained tendon attachments to bone (tennis elbow, achilles tendonitis jumper's knee,)
- Musculo-ligamentous low back strain and sacro-iliac joint pain
- Tendonitis and para-tendonitis (achilles tendonitis)
- Chronic non-specific low back pain
- Osteo-arthritis of the knees and thumbs



More recent trends have led to the use of less irritant solutions of 20% - 35% dextrose and 0.5% Xylocaine – a very tolerable and safe injection, although the effect on the tendon strength is not known.

Other theories on how the injections work include:

- dextrose may also act as an oxygen radical scavenger - soaking up molecules that are thought to cause tissue damage, possibly having some anti-inflammatory value as well.
- repeated injections into tender points may help to de-sensitize these tissues or block pain from other joints

Research

A randomised controlled trial on low back pain has been conducted at Queensland University showing some benefit of injections over exercise being sustained at 2 years post treatment. A current trial on achilles tendonitis is in progress with good results shown in case series of achilles and patellar tendon injuries. Two other smaller trials have shown some benefit in osteoarthritis of the knees and base of the thumbs. Australia's leading researcher, Prof Nik Bogduk, has this to say in his review of management of chronic low back pain.

"Injections into tender attachment sites for ligaments can achieve complete relief of pain in 20% of back pain patients and significantly reduce pain in 40%. These figures are no worse than those for the best alternatives, and better than most." (Medical Journal Australia 2004; 180: 79-83)

Protocol:

Up to 15 points can be injected each visit using a small volume at each site. The injections are repeated at fortnightly intervals for a total of 6 to 8 visits. At the same time it is recommended to take oral supplements of **zinc, manganese and vitamin C** which help promote healing of connective tissue. Some improvement should be felt by about the 4th visit. After the initial course, review is suggested at 3 months and again at 6 months, when further "top up" injections may be given.

Side Effects:

Initially after the injection, there can be a flare up of pain for 2-3 days and this can be treated by local applications of ice to reduce bruising from the needle. Other adverse effects are rare. In particular, there is no thinning of the skin that is sometimes associated with cortisone injection. Usual activities should be maintained between injections.

Comprehensive spinal and joint care