

Tartan Analogy

Sprain and strain injuries are tears within ligaments and muscle/tendons respectively.

They are graded: a complete tear that requires a surgeon to stitch together; a macroscopic tear which is characterized by bruising (bleeding in the tissue); and microscopic where there is no bleeding and is characterized by just swelling.

These injuries heal in three phases. The first phase is the inflammatory phase lasting a few days where swelling and pain might increase in the days following the injury. It is not unexpected for people to feel progressively worse in the days following an accident.

The second phase is the scar formation phase where the body sets about knitting together and replacing injured tissue. Here the body lays down a lattice work of collagen fibres to bridge the wounds. This phase will typically last a month or so.

The final phase of healing is the remodeling phase where the scar shrinks. At about six to eight weeks the scar tissue starts to contract on itself by forming cross bridges between its fibres. Once the scar tissue starts to contract on itself, the stresses and strains of everyday life will cause the scar to remodel, to break some cross bridges and form new ones. When this happens the improvement people have seen starts to falter as they become stiff, sore and tight. This would be the signal that it is safe to add strength training to the rehabilitation program. This remodeling can continue for up to two years at which time the structure of the scar is now permanent.

It is during the first month following an accident, in the scar formation phase, that you have the best chance to effect outcomes. If you don't necessarily do anything over this first month, collagen fibres will be laid down in any old haphazard fashion. This makes for a larger unorganized scar that is not functional. If however a systematic stress is applied to the forming scar tissue as it is laid down, then the fibres organize along the lines of stress and you get a small functional scar (tissue that is strong in the direction of expected loads). This is achieved by having your chiropractor address any functional faults in the weeks following an accident and you intermittently stretching. A physiotherapist could be helpful with the application of modalities for pain management and later with strength training supervision.

A key point to remember is: that when you stretch normal tissue the stress is over the entirety of the tissue; where in injured tissues, the forming scar is the weakest link and will experience load first. Therefore, in the initial weeks, stretches should only be intermittent, held for a few seconds in a wax-on, wax-off fashion.