

Connective tissue

Extracellular Matrix and Soft Tissue Injury

Connective tissues such as tendons, joints, ligaments, cartilage and fascia are composed of the extracellular matrix (ECM) - a complex network of glycosaminoglycans and fibrous proteins – giving strength, support, and protection to other parts of the body, as well as binding body parts together.

The health of the ECM is governed by a family of enzymes called matrix metalloproteinases (MMPs).

In healthy tissue MMPs are beneficial to normal growth, tissue repair, and reproduction, but in higher levels of expression, MMPs have been implicated in numerous inflammatory and degenerative processes. Elevated MMP expression has been associated with tendon pathologies (acute tendon injuries, tendonitis (Riley et al, 2002)), torn rotator cuffs (Lo et al, 2004)), degenerative discs (Le Maitre et al, 2004), and sites of repeated injury or mechanical strain (Arnoczky et al, 2007).

MMP enzymes can degrade several different types of collagen, and they have the ability to produce or modulate precursors to proinflammatory cytokines and transcription factors, thereby contributing to inflammation and further MMP expression. Inhibition of signaling pathways, transcription factors, and associated cytokines has therefore been suggested in a growing amount of scientific evidence as a therapeutic approach to conditions associated with MMP overexpression (Functional Medicine Research Centre, 2009).

Conventional treatment

Whilst there are many different types of connective tissue injury (including sprains, strains, tendonitis and many more), many are treated with NSAIDs (non-steroidal anti-inflammatories), which associated with significant side effects.

Clinical Kinesiology diagnosis

A skilled CK practitioner can easily reveal to you the toxicity present in your system, and offer a specific detoxification regime for your needs. This will enable your body to regain it's ability to function, and the automatic healing process will be unimpeded.

Physiotherapy carried out by a Chartered Physiotherapist can greatly benefit pain and inflammation symptoms, and skilled guidance and advice can help prevent further damage.

Acupuncture carried out by a TCM acupuncturist can greatly elevate pain, speed up healing, and enhance swift relief.

Nutritional Factors

Certain dietary nutrients including vitamins, minerals and phytochemicals may specifically target the MMPs that regulate ECM health. A combination of targeted nutrients including phytonutrients from hops, berberine, selenium, zinc, biotin, niacin, folic acid and vitamins B6 and B12 was recently tested in a small open-label clinical trial and observed to improve treatment response to bodywork (Lamb JJ et al, unpublished results).