

## THE CONTRIBUTION FROM OSTEOPATH AND CHIROPRACTIC SPECIALISTS



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Would a multi-modal management approach for muscle injury prevention reduce local and non-local muscle injury and prevent the occurrence of muscle disorders and other non-contact lower limb injuries in footballers? This would include, osteopathic/chiropractic High-Velocity Low-Amplitude (HVLA) manipulation, mobilization and/or supporting soft tissue therapies to the spine, pelvis and extremities.

It has been established that, functional muscle disorders are multifactorial and can be grouped into subgroups reflecting their clinical origin.

The lumbar and pelvic functional relationships are important not only because of the different pathogenesis behind muscle disorders but also because of different therapeutic implications and treatment pathways. This may also be a factor in injury prevention.

An experimental body of evidence exists, indicating spinal manipulation impacts primary afferent neurons from para-spinal tissues, the motor control system and pain processing system.

Biomechanical changes caused by spinal manipulation are thought to have physiological consequences by means of their effects on the inflow of sensory information to the central nervous system. System reflex pathways are evoked systematically during spinal manipulative treatment, possibly causing some of the clinically observed beneficial effects, such as a decrease in pain and muscle hypertonicity.

Taking into account hamstrings, injuries have been associated with poor motor control and strength deficit, soft tissue length and postural alignment. A Cochrane systematic review of the literature has stated that consideration should be given to the lumbar spine, Sacro-Iliac Joint (SIJ) and pelvic alignment and postural control mechanisms when managing hamstring injuries (1).

Functional lumbar and pelvic disturbances, for example SIJ dysfunction or lumbar restrictions that may include nerve root irritation are examples of spine-related muscle disorders that are usually Magnetic Resonance Imaging (MRI)-negative but can be observed on clinical-functional examination.

Although, it has not been proven prospectively many clinicians believe that athletes with lumbar spine pathology have a greater predisposition to hamstring injury as supported by a study where footballers with a history of lumbar spine injury had a higher rate of MRI-negative posterior thigh injury, but not of actual structural hamstring injury.

Experimental work in this area is warranted and should be encouraged to help better understand mechanisms underlying the therapeutic effect of spinal manipulation of the lumbar spine and pelvis, in relation to muscle function.

Until further evidence is available, current practice and widely published rehabilitation protocols cannot either be supported or refuted.