

Lower limb tendinopathies: is there a relationship with altered patterns of lumbo-pelvic movement control?

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BACKGROUND/HYPOTHESIS: Tendinopathies around the hip and lower limb are increasingly common. Tendinopathy research has focused a lot on the structural pathology of the tendon and local mechano-biological mechanisms – and current treatment protocols are heavily dictated by this research. Results can be frustrating. However, we can be so caught up in the science that we fail to step back and simply look and see how the patient himself can also provide valuable information that can help lead us to the answers. We know that altered patterns of skeletal loading and force transmission exact their toll on the fascial system [1]. It is clinically evident that the changes in and around the tendon [2] are usually associated with a *more global movement system dysfunction* – notably around the pelvis

APPROACH: Clinically apparent coarser patterns of postural and movement control alter postural loading, movement kinematics and disturb control of important spino-pelvic force couples. The spine is particularly vulnerable. As each spinal segment and the related connective tissues enjoy a rich innervation, they become an easy target if control of the pelvic girdle and spine changes such that the tissues are repetitively and adversely loaded in excess tension and/or compression. Spinal segmental irritation can become both a covert and overt source of pain and disturbed function throughout what we can think of as the ‘fasciatome’- the ‘postcode’ of the tissues innervated by that segment - a blend of dermatomal and myotomal referral patterns. For example, changed segmental loading at say L4/5/S1 will likely be reflected in increased resting muscle tone, hyperactivity and ‘shortness’ in the entire lower limb posterior myofascial chain. Not only does this hyperactivity adversely ‘tug’ on the myo-tendinous expansions but also pockets of reduced fascial slide, tissue sensitivity and autonomic changes are evident throughout the posterior myofascial chain in association with the local inflammation and poor tissue health of the ‘tendon’ in question – gluteal, hamstrings or tendo-achilles. Unfortunately many prescribed fitness and exercise regimes are directly contributing to the altered movement control and this fascial dysfunction

RESULTS: A treatment approach which considers the interdependent function between the neuro-myofascial and articular systems can shed light on the occurrence of more ‘local’ pain events such as tendinopathy. Addressing the more proximal dysfunction in the myofascial tissues and joints of the pelvis and lower spine through appropriate manual and movement therapy to restore the lumbo-pelvic dysfunction can significantly change the function in the more peripheral target tissues. These then become more amenable to direct myofascial release and loading. Clinical evidence has demonstrated that a more holistic ‘functional approach’ to treatment of tendinopathies yields much more effective outcomes in a shorter time frame than a treatment approach primarily based upon a local ‘pathological diagnosis’.

CONCLUSION: Understanding and managing local tendinopathies as part of a more regional and global dysfunction in the movement system is likely to yield better clinical results than treating the local problem alone

¹ **Barbe MF et al 2013** The interaction of force & repetition on musculoskeletal & neural tissue responses & sensorimotor behaviour in a rat model of work related musculoskeletal disorders BMC Musculoskeletal Disorders 14:303

² **Stecco A et al 2015** Comparative ultrasonographic evaluation of the Achilles paratenon in symptomatic and asymptomatic subjects: an imaging study Surg Radiol Anat April - Vol 37(3):281-285