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Practical Management Of A 'Stiff Spinal Segment' Of The Lumbar Spine

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Abstract

Sarah Key proposes that a 'stiff spinal segment' is caused by ligamentous contracture of the outer annulus in response to disc dehydration and load transfer from the nucleus to annulus fibrosis. She hypothesises that this is the likely neo-pathology behind the ubiquitous back pain of unknown aetiology, otherwise known as non-specific back pain. The loss of compliance of the outer annulus - the only innervated part of the intervertebral disc – makes the spinal segment stiff to palpating hands and painful, as in local back pain.

Manually mobilising the segment restores stretch to the outer annulus and renders the lower back painless (like treating any other ligamentous injury) while spinal decompression, performed by the patient on a daily basis at home, creates pressure changes that restore optimal fluid flow through the intervertebral disc. The up-regulated discal fluid exchange gives the outer annulus first use of nutrients coming through and a chance to repair, while also stimulating various biosynthetic processes within the disc, including the synthesis of proteoglycans and hence the ability for the disc to retain water.

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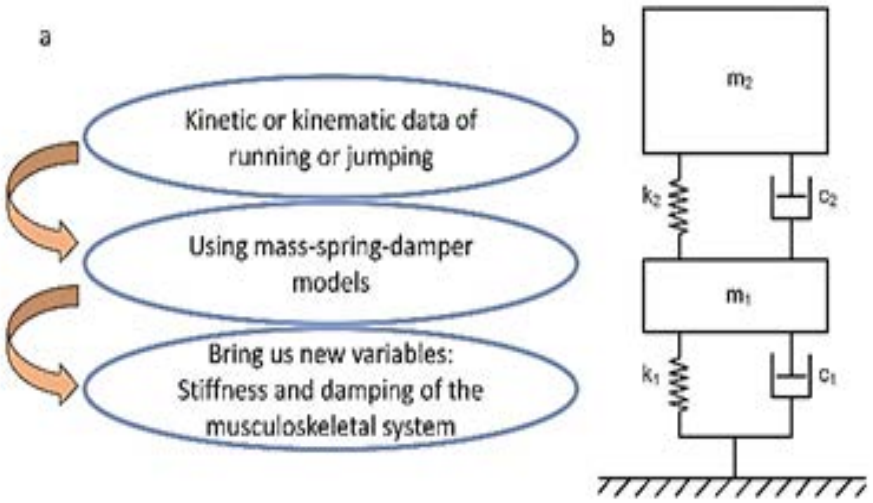

Figure 1: (a) The process of obtaining the viscoelastic variables (stiffness and damping) of the musculoskeletal system. (b) A two degree-of-freedom mass-spring-damper model.

Recent Publications

1. Boozari, S., Sanjari, M. A., Amiri, A., & Takamjani, I. E. (2018). Effect of gastrocnemius kinesio taping on countermovement jump performance and vertical stiffness following muscle fatigue. *Journal of sport rehabilitation, 27*(4), 306-311.
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