The Relationship between the Piriformis Muscle, Low Back Pain, Lower Limb Injuries and Motor Control Training Among Elite Football Players

Leung, F.T., Mendis, M.D., Stanton, W.R. and Hides, J.A., 2015. The relationship between the piriformis muscle, low back pain, lower limb injuries and motor control training among elite football players. *Journal of Science and Medicine in Sport*, *18*(4), pp.407-411.

Setting the Scene:

Australian Football League (AFL) players have a high incidence of back injuries. Motor control training to increase lumbopelvic neuromuscular control has been effective in reducing low back pain (LBP) and lower limb injuries in elite athletes. Control of pelvic and femoral alignment during functional activity involves the piriformis muscle. This study investigated (a) the effect of motor control training on piriformis muscle size in AFL players, with and without LBP, during the playing season, and (b) whether there is a relationship between lower limb injury and piriformis muscle size.

What did they do?

46 AFL players participated in a motor control training programme consisting of two 30 min sessions per week over 7–8 weeks, delivered across the season as a randomised 3 group single-blinded stepped-wedge design. Assessment of piriformis muscle cross-sectional area (CSA) involved magnetic resonance imaging (MRI) at 3 time points during the season. Assessment of LBP consisted of player interview and physical examination. Injury data were obtained from club records. An interaction effect for Time, Intervention Group and LBP group was found. Piriformis muscle CSA showed significant increases between Times. Players with a smaller increase in piriformis muscle CSA across the season had higher odds of sustaining an injury.

Takeaway home message:

Piriformis muscle size increases across the season in elite AFL players and is affected by the presence of LBP and lower limb injury. Motor control training positively affects piriformis muscle size in players with LBP.