

PP 04 - The effects of soccer match like exercise on ankle position senseL. R. Jayalath^{1,3*}, M. de Noronha¹, N. Weerakkody², D. Wundersitz¹¹Department of Community and Allied Health, La Trobe University²Department of Pharmacy and Applied Sciences, La Trobe University³Department of Allied Health Science, Faculty of Medicine, University of Colombo

Introduction: Proprioception is the ability to sense our body's own actions and involves a range of sensations including our sense of joint position, movement and tension. Ankle position is particularly important because the ankle dominates actions as a primary contact point during different tasks and is the most commonly injured joint in the body during sports. Muscle fatigue is known to negatively affect joint position sense. However, many studies have used laboratory-induced local muscular fatigue protocols which do not mimic the physical demands of most team sports where exercise is prolonged and intermittent. Furthermore, most ankle injuries in soccer occur at later stages in each half of a match suggesting that the prolonged nature of most team sports may be a contributing factor to increased injury risk. Thus, authors investigate the effects of soccer match like exercise on ankle position sense.

Methods: This experimental study design was conducted laboratory based with eighteen healthy males performed 90-minutes soccer like exercise that replicated the physiological demands of a soccer match. Main outcome measure was position matching (unilateral replication) was assessed using wireless motion tracking sensors (Xsens). Angle matching was assessed actively at 10°dorsiflexion and 20°plantarflexion during control, pre exercise and post exercise sessions. Maximum voluntary contraction (MVC) of dorsiflexor and plantar flexor muscles were assessed using handheld dynamometer.

Results: No significant change in matching tasks was seen between the control and pre-exercise sessions. Immediately after exercise for the 20°plantarflexion, an increase in absolute error (-1.3°,95% CI, -2.03to-0.57) and variable error (-1.1°,95%CI, -1.79to-0.41) was observed. Dorsiflexion Maximum voluntary contraction decreased after the exercise protocol (p=0.003) while no difference was observed for plantarflexion Maximum voluntary contraction (p=0.32).

Conclusion: Ankle plantarflexion position sense was impaired by soccer match like exercise and is likely to have implications for the risk of ankle injuries.

Keywords: proprioception, exercise, ankle, limb awareness

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