

COGNITIVE FUNCTIONAL APPROACH TO MANAGE LOW BACK PAIN IN ROWERS

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There is a high prevalence of low back pain in rowers at all training levels. However, very few studies have reported an effective management strategy to reduce low back pain in these athletes. This may be due to the multidimensional nature of low back pain that ranges from physical, psychological, social and lifestyle factors. Recently, a Cognitive Functional approach to manage low back pain has been shown to reduce low back pain and disability in adolescent male rowers. This management strategy has been adapted and implemented to prevent LBP in elite international level rowers.

Keywords: low back pain, intervention, prevention, rowing

INTRODUCTION: The lifetime prevalence of LBP has been reported to be as high as 94% in the adolescent amateur male population (Ng et al., 2014) and an incidence of 82% in the elite female population (Howell, 1984). The high rate of LBP has led many rowers to quit the sport at a young age (Teitz et al., 2002) and this is a concern to the international rowing federation (Lacoste et al., 2014). Risk factors for LBP include physical, social, psychological and lifestyle factors (Waddell and Burton, 2005). However, previous research has suggested that the repeated cyclic compressive flexion loading of the lumbar spine during rowing, and end of range lumbar spinal flexion may be a dominant factor contributing to LBP in rowers (Caldwell et al., 2003; Wilson et al., 2013). Furthermore, individual factors such as poor lower limb and back muscle endurance and slump sitting during usual sitting may predispose an individual to LBP during rowing (Perich et al., 2011).

METHOD: In a recent randomized controlled trial, 36 male adolescent rowers aged between 14 to 19 years old who were participating in high school rowing competitions participated in the study. The rowers in the treatment group (n=19) underwent a comprehensive interview and physical examination to determine the primary contributing factors to their LBP. Following this, an 8-week individually tailored cognitive functional approach to manage LBP targeting the primary contributing factors to their LBP was prescribed. The intervention included patient centred education regarding the underlying mechanism of the LBP; educating lumbar kinematics during sitting and rowing to minimize end range flexion; conditioning muscles in functional postures related to rowing and addressing lifestyle factors that may be contributing to their LBP.

RESULTS: The treatment group reported reduced severity of LBP during rowing ($p=0.035$) and disability associated with their LBP ($p=0.01$) compared to an active control group. Further, rowers in the treatment group significantly improved their lower limb muscle endurance ($p=0.03$) and improved the sitting postures of the rowers ($p=0.01$) (Ng et al., In press). The results of the study did not support a change of lumbar kinematics during ergometer rowing in the intervention group.

DISCUSSION AND CONCLUSION: This cognitive functional approach to the management of LBP has been adapted to prevent LBP in the elite international rowing population in Australia. However, further research is required to determine the effectiveness of such program to prevent LBP.

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