

Pace bowlers in cricket with history of lumbar stress fracture have increased risk of lower limb muscle strains, particularly calf strains

Authors: [John Orchard](#) --- [Patrick Farhart](#) --- [Alex Kountouris](#) --- [et al](#)

Journal: Open Access Journal of Sports Medicine ISSN: 11791543 Year: 2010 Volume: 2010 Issue: default Pages: 177-182 Provider: DOAJ Publisher: Dove Press

[Abstract ↑](#) | [Keywords](#) | [Full text](#) | [Export](#) | [+Add to Collection](#) | [Issue contents](#) | [Issues](#) | [Link to this record ↓](#)

Abstract

John Orchard¹, Patrick Farhart², Alex Kountouris³, Trefor James³, Marc Portus³¹School of Public Health, University of Sydney, Australia; ²Punjab Kings XI team, Indian Premier League, India; ³Cricket Australia, Melbourne, Australia

Objective: To assess whether a history of lumbar stress fracture in pace bowlers in cricket is a risk factor for lower limb muscle strains.

Methods: This was a prospective cohort risk factor study, conducted using injury data from contracted first class pace bowlers in Australia during seasons 1998–1999 to 2008–2009 inclusive. There were 205 pace bowlers, 33 of whom suffered a lumbar stress fracture when playing first class cricket. Risk ratios ([RR] with 95% confidence intervals[CI]) were calculated to compare the seasonal incidence of various injuries between bowlers with a prior history of lumbar stress fracture and those with no history of lumbar stress fracture.

Results: Risk of calf strain was strongly associated with prior lumbar stress fracture injury history (RR = 4.1; 95% CI: 2.4–7.1). Risks of both hamstring strain (RR = 1.5; 95% CI: 1.03–2.1) and quadriceps strain (RR = 2.0; 95% CI: 1.1–3.5) were somewhat associated with history of lumbar stress fracture. Risk of groin strain was not associated with history of lumbar stress fracture (RR = 0.7; 95% CI: 0.4–1.1). Other injuries showed little association with prior lumbar stress fracture, although knee cartilage injuries were more likely in the non-stress fracture group.

Conclusion: Bony hypertrophy associated with lumbar stress fracture healing may lead to subsequent lumbar nerve root impingement, making lower limb muscle strains more likely to occur. Confounders may be responsible for some of the findings. In particular, bowling speed is likely to be independently correlated with risk of lumbar stress fracture and risk of muscle strain. However, as the relationship between lumbar stress fracture history and calf strain was very strong, and that there is a strong theoretical basis for the connection, it is likely that this is a true association.

Keywords: cricket, fast bowling, stress fractures, hamstring strain, calf strain