SMALL MULTIFIDUS MUSCLE SIZE PREDICTS FOOTBALL INJURIES

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Background In Australian Football, hip, groin and thigh (HGT) muscle injuries have had the highest incidence and prevalence. A previous study showed that football players with relatively more severe pre-season ‘HGT’ injuries had a significantly smaller size of the multifidus muscle.

Objective This study was designed to examine the robustness of multifidus muscle measurements as a predictor of lower limb injuries incurred by Australian Football League players.

Design This was a prospective quasi-experimental research design. Muscle measurements were conducted at the start of the pre-season to predict pre-season injuries, and at the start of the playing season to predict injuries in the playing season.

Setting Players from 6 clubs of the Australian National football league were eligible for inclusion (n=275). Players were assessed on club premises.

Participants Assessments were conducted on 259 elite football players for the pre-season (94.2% of eligible players), and 261 players at the start the playing season (94.9%).

Risk factor assessment Morphology of the multifidus muscle was assessed using ultrasound imaging. Injury data were obtained from records collected by the AFL club staff during the pre-season and the playing season.

Main outcome measurements The dependent variable in the binomial logistic regression was occurrence of lower limb injuries in the pre-season and the playing season.

Results A lower limb injury was incurred by 38.2% of the players in the pre-season and 69.5% of the players in the playing season. A new model using cross-sectional area of the multifidus muscle reliably and consistently predicted lower limb injury in both the pre-season and playing season. In the season, ‘kicking leg’ was related to injury.

Conclusions The results of this study have established the predictive power of multifidus muscle size to predict injury in elite football players. These results provide a strong direction for clinicians who screen and treat athletes.