RISK FACTORS FOR CONTACT INJURY IN ELITE COLLISION SPORT ATHLETES

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Introduction
Well developed physical qualities have been suggested to offer a protective effect against contact injuries in collision sport athletes[1]. However, the potential contribution of physical qualities as risk or protective factors to contact injury risk is yet to be determined. The purpose of this study was to identify risk factors for contact injury in elite collision sport athletes.

Methods
Sixty-six professional rugby league players participated in this three-year prospective study. All players underwent measurements of standard anthropometry (height, body mass, and sum of seven skinfolds), speed (10m and 40m sprint), muscular strength (1 repetition maximum [RM] bench press, 1RM squat, 1RM weighted chin-ups), power (vertical jump, bench throw, 1RM power clean, jump squat), and endurance (maximum repetition bench press with 60kg resistance), repeated-sprint ability (12 x 20m sprints performed on a 20 second cycle), prolonged high-intensity intermittent running ability (8 x 12 second maximal effort shuttles performed on a 48 second cycle), and maximal aerobic power (multi-stage fitness test). Injuries were defined in three ways: (1) any injury that resulted in treatment by the club physiotherapist; (2) any injury that resulted in time loss from training and/or competition; and (3) any injury that occurred as a result of training or competition that caused the player to miss a subsequent match. Cox proportional regression analysis was applied to identify factors associated with a high relative risk of injury.

Results & Discussion
Players with poor prolonged high-intensity intermittent running ability and chin up strength, and well developed lower body muscular power had a higher incidence of contact injury. Players with poor chin up strength, repeated-sprint ability, and prolonged high-intensity intermittent running ability, and well developed lower body muscular power, were at greater risk of sustaining a contact injury.

Conclusion
These findings suggest that well developed physical qualities offer a protective effect against contact injuries in professional rugby league players. The development of prolonged high-intensity intermittent running ability, repeated-sprint ability, and upper-body strength may assist to reduce the risk of contact injury in professional rugby league players.

References
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