

Results: Face validity was acceptable and pilot testing identified minor accuracy issues that were corrected. Literacy level was rated as 'difficult to read' which reflects the medical terminology within the questionnaire. Internal consistency was very good and 81% of questions demonstrated acceptable predictive validity. Health literacy was heterogeneous depending on the question with less than 40% of respondents answering correctly for questions related to the indications, process, and the known benefits of RCRSP surgery.

Discussion: The PKQ-RCRSP demonstrated acceptable face validity, predictive validity and reliability (internal consistency) in assessing RCRSP health literacy. Health literacy among our small sample was poor for questions related to surgery for RCRSP. Our findings suggest that these aspects of RCRSP knowledge are not intuitive and may require specific education so that people avoid potentially unnecessary surgery.

Conflict of interest statement: My co-authors and I acknowledge that we have no conflict of interest of relevance to the submission of this abstract.

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S138

Are physical activity or body mass index associated with subsequent knee injuries in young female athletes?

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Introduction: Anterior cruciate ligament (ACL) injuries are devastating for young, active individuals, with up to 50% developing osteoarthritis (OA) before aged 40 years. Subsequent knee injury rates are high and lead to even poorer long-term joint health. At 2-3 years after ACL reconstruction (ACLR), the relationships between known modifiable OA risk factors [e.g. moderate and vigorous physical activity (MVPA), body mass index (BMI)] and subsequent knee injury is unknown. The objective of this study was to determine the odds of subsequent (new or recurrent) traumatic knee injury in a cohort of young females with ACLR 2-3 years post-surgery compared with healthy matched-controls. Secondary objectives were to (i) explore the relationships of MVPA and BMI with traumatic knee injury; (ii) document self-reported MVPA satisfaction and beliefs about future OA.

Methods: Fifty-one females (aged 14-22 years) with prior (1-2 years) sport-related unilateral ACLR and 51 age-and-sport-matched controls underwent assessment of MVPA (GT3X accelerometers) and BMI. One year later, participants self-reported subsequent (new or recurrent knee injuries), return to sport, MVPA satisfaction, and beliefs about OA risk. Bivariable conditional logistic regression explored the association of knee injury with (i) group (injury/control), (ii) MVPA and

(iii) BMI. Beliefs about MVPA satisfaction and OA risk was reported descriptively.

Results: At 1 year follow-up (n=101), 19.6% of injured cohort and 6.0% of control participants sustained subsequent knee injuries. The odds of traumatic knee injury for the injury group increased 7-fold over controls [OR=7.00 (95% CI=0.86,56.90)]. Odds ratios (OR) for MVPA and BMI were 0.98 (95%CI= 0.93,1.03) and 1.24 (95%CI=0.85,1.82) respectively. Just over half (55%) of injury participants and 66% of controls were satisfied with their MVPA, while 82% of injury participants believed they had increased knee OA risk compared to someone who had never had a knee injury.

Discussion: In the 2-3 years following ACLR, one in five young females had a subsequent traumatic knee injury. Based on the point estimate, injured participants were more likely to suffer a traumatic knee injury than matched controls. BMI was not associated with increased odds of a subsequent traumatic knee injury. Given participation in MVPA did not increase odds of knee injury and the high level of dissatisfaction with MVPA reported in this cohort, in-depth conversations between clinicians and patients who have had ACLR regarding enjoyable and sustainable MVPA participation are encouraged to promote long term joint health.

Conflict of interest statement: We acknowledge no conflict of interest of relevance to the submission of this abstract.

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S139

Characterising Anterior Cruciate Ligament (ACL) Injury Situations in the Women's Australian Football League (AFLW)

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Background: An early trend from the Women's Australian Football League (AFLW) is the high rate of anterior cruciate ligament (ACL) injuries. AFLW players are up to nine times more likely to suffer an ACL injury compared to male Australian Football League players. Considering the significant short- and long- term consequences following ACL injuries the alarming rate of these injuries must be addressed in the AFLW. Understanding injuries within their sporting context is important to develop effective injury prevention strategies, yet there is currently little knowledge of how ACL injuries occur to AFLW players. This study determined the common scenarios and characteristics of ACL injuries in the AFLW.

Methods: A video analysis of 21 ACL injuries from the 2017 to 2020 AFLW seasons was performed. The analysis examined the match situation, and the player's movements and body postures surrounding the injury. The frequency (i.e.n) and relative proportions (i.e.%) were determined for each characteristic. Relative odds (RO) were calculated to determine the relative probabilities of ACL injuries occurring with specific characteristics.

Results: Non-contact ACL injuries were frequently observed (n=13, 61.9%). The most common match situation was direct defence (i.e. defending an opponent in possession) (n=14, 66.7%). Sidestep cutting was the most common manoeuvre (n=11, 52.4%), with this commonly paired with applying defensive pressure (n=6 of 11, 54.6%). An extended knee (n=18, 85.7%) and valgus collapse (n=17, 81.0%) were present in nearly all injuries. ACL injuries were more likely to occur with a unilateral compared to bilateral asymmetric landing (RO=5.3 [1.7, 12.9 95% CI's] and a rear- compared to a mid- or fore-foot footfall (RO=4.5 [1.4, 10.9 95% CI's]; RO=8.52 [1.80, 23.60 95% CI's]).

Discussion: Sidestep cutting manoeuvres when applying defensive pressure was the most common ACL injury scenario observed. Consistent with existing research, an extended knee and valgus collapse were

prominent knee postures during ACL injuries. AFLW players may benefit from injury prevention programs incorporating agility-based training. Specifically, drills undertaken in defensive scenarios requiring a player to execute a sidestep cutting manoeuvre in response to an opposition player's movement. This may result in safer and more desirable lower limb postures being implemented during the most common AFLW ACL injury scenario.

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S140

Despite a high daily training availability, a quarter of Academy athletes start the season with an injury and three quarters finish with one

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Introduction: The development (or academy) phase of an athlete forms the foundation for a successful athletic career. Injuries affect an athlete's availability to train, compete, and perform. Context-specific understanding of the injury burden and risk factors can enable prevention strategies to be prioritised, developed, and implemented to positively impact academy athlete longevity and trajectory towards elite levels. Medical servicing is a key component of the health system around an athletic population. Currently there are no data pertaining to the delivery of medical services in Australian academy athletes. We aim to investigate the incidence, prevalence, burden and characteristics of injuries; and to describe the frequency and type of medical servicing for elite sports academy athletes over a 12-month season.

Methods: Medical attention and time-loss injuries were prospectively recorded for 94 athletes (72.3% females) during the 2019-2020 scholarship season. The number and type of linked medical treatments was also recorded. Injury incidence rates (IIR), point and period prevalence, and injury burden were calculated and compared by athlete sex, sport, and categorisation using incidence rate ratios (IRR).

Results: 193 injuries were reported in 71 (75.5%) athletes. The IIR was 2.08 (95%CI=1.80-2.40) injuries per 365 days, with no sex difference observed (IRR=1.05, 95%CI=0.77-1.43, $p=0.761$). The injury burden was 43.52 (95%CI=37.79-50.11) days absence per 365 days. More than one-quarter (point prevalence, 26.6%) of athletes commenced the season with an injury. In-season injury risk was 2.5 times higher in athletes commencing the season with an injury (IRR=2.49, 95%CI=1.85-3.35, $p<0.0001$). 75.5% of athletes sustained a medical-attention injury within the 12 month period, medical servicing was not uniform across sports, and despite this, a mean daily athlete availability rate of 87% was observed which fluctuated significantly across the period between 79% and 92%. 81.2% of the 1164 treatments recorded were physiotherapy, with an overall 4.3:1.0 physiotherapy to medicine treatment ratio.

Discussion: This is the first study to report the incidence, prevalence, burden, and characteristics of injuries, and the frequency and type of medical servicing delivered to athletes across multiple sports at a State Academy of Sport in Australia. One in four athletes began the elite pathway season with a pre-existing injury, while also demonstrating a 2.5 increased risk of subsequent injury in the scholarship period. Injury profiles and medical servicing varied across sports highlighting the need for service delivery models, prevention programs, and scholarship selection processes to be flexible and supportive of athlete health requirements.

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S141

Consensus statement for preventing and managing low back pain in elite and sub-elite adult rowers

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Background: Low back pain (LBP) is the most frequently reported musculoskeletal disorder, and can result in long term pain and disability. Rowing is a sport associated with large volumes of training and high cumulative loading of the lumbar spine. The most frequently reported site of pain for rowers is the low back. Recent research has focused on epidemiology and biomechanical analyses to understand mechanisms that contribute to LBP onset. There has been a limited focus on management or prevention strategies. There are currently no guidelines for managing LBP in rowers or in athletes who participate in other sports. There are guidelines for managing LBP in the general population. While many principles of management are transferable, there is a need to consider issues that are particular to rowers. We aimed to synthesise evidence on low back pain (LBP) in adult rowers and to create a consensus statement to inform clinical practice.

Methods: There were five key steps to develop the management guideline. In step one, seven expert clinicians and researchers examined current evidence, and identified five sections that comprised the scope of the consensus statement: epidemiology; biomechanics; management; the athlete's voice and clinical expertise. In step two, working groups were established for each section of the consensus statement to discuss and summarise key issues relevant to their section. In step three, the evidence from each group was synthesised to create the overall consensus statement. In step four, modified Delphi processes were used to create summaries and recommendations. In step five, information from the consensus statement and that from a survey of clinical experts were combined to produce the management guideline.

Results: The scope of the consensus statement included epidemiology, biomechanics, management, the athlete's voice and clinical expertise. Prevention and management of LBP in rowers include education on risk factors, rowing biomechanics and training load. If treatment is needed, non-invasive management, including early unloading from aggravating activities, effective pain control and exercise therapy. Fitness should be maintained with load management and progression to full training and competition. The role of surgery is unclear. Management should be athlete focused and a culture of openness within the team encouraged.

Discussion: Recommendations are based on current evidence and consensus and aligned with international LBP guidelines in non-athletic populations, but with advice aimed specifically at rowers. We recommend that research in relation to aspects of prevention and management of LBP in rowers be intensified.