Changes in knee joint biomechanics following balance and technique training and a season of Australian football

Injuries to the lower body and more specifically the anterior cruciate ligament (ACL) are common in sport. Aside from the physical burden of sustaining an ACL injury, these injuries also come with a high financial cost. Exercise training programs emphasising balance and movement technique training have been developed to prevent these injuries in community level Australian football players. The purpose of this investigation was to determine if balance and technique training alongside normal Australian football training alters knee joint biomechanics as they relate to risk factors for ACL injuries.

A group of 34 community football players were recruited to attend two biomechanical testing sessions during the season. Fourteen participants had completed the balance and technique training program, and twenty participant participated in their normal football training. The balance training program consisted of 18 weeks of single leg, wobble board, stability disk and swiss stability ball tasks. The first testing session occurred during the first seven weeks of the season and the second during the final seven weeks. During testing the participants completed series of running, pre-planned and unplanned sidestepping tasks. Knee kinematics (knee flexion and knee flexion range of motion) and kinetics (valgus and internal-rotation) were assessed during each task.

Results from this investigation indicated that the balance and technique training was not effective in a “real world” community Australian football context for improving knee joint biomechanics during pre-planned and unplanned.

How can this research be of use?

- If prescribing exercise to prevent knee injuries in community Australian football monitoring adherence to the program and exercise technique is important
- Knee biomechanics are different between pre-planned and unplanned side stepping tasks. When performing an unplanned sidestepping task later in the season players may be at an increased risk of ACL injury.

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PREVENTING AUSTRALIAN FOOTBALL INJURIES THROUGH EXERCISE