ABSTRACT

**Background:** With the increasing number of individuals participating in sports every year, injury - specifically anterior cruciate ligament (ACL) injury - remains an inherent risk factor for participants. The majority of ACL injuries occur from a non-contact mechanism, and there is a high physical and financial burden associated with injury. Understanding the risk factors for ACL injury may aid in the development of prevention efforts.

**Purpose:** The purpose of this review was to synthesize and appraise existing literature for risk factors associated with non-contact anterior cruciate ligament (ACL) injury in both sexes.

**Study Design:** Systematic review.

**Methods:** An electronic literature search was conducted utilizing the MEDLINE database and The Cochrane library for articles available through February 2016. All titles and abstracts were reviewed and full text articles meeting eligibility criteria were assessed in detail to determine inclusion or exclusion. Articles reviewed in full text were reviewed for scientific evidence of risk factors for ACL injury. Results from studies were extracted and initially classified as either intrinsic or extrinsic risk factors, and then further categorized based upon the evidence presented in the studies meeting inclusion criteria. Data extracted from eligible studies included general study characteristics (study design, sample characteristics), methodology, and results for risk factors included.

**Results:** Principal findings of this systematic review identified the following risk factors for ACL injury in both sexes: degrading weather conditions, decreased intercondylar notch index or width, increased lateral or posterior tibial plateau slope, decreased core and hip strength, and potential genetic influence.

**Conclusions:** Neuromuscular and biomechanical risk factors may be addressed through neuromuscular preventative training programs. Though some extrinsic and other inherent physiological factors tend to be non-modifiable, attempts to improve upon those modifiable factors may lead to a decreased incidence of ACL injury.

**Level of Evidence:** 2a.

**Key Words:** anterior cruciate ligament, ACL, risk factor, injury, rupture.

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