

Background: The anterior cruciate ligament (ACL) is an important stabilizer for the knee joint. It plays a substantial role in maintaining normal knee joint function. The ACL's primary purpose is to resist excessive forward movement of the tibia relative to the femur. Injury to this ligament can often occur during athletic participation, with high-risk populations including those athletes participating in pivoting and cutting sports, adolescent athletes, and female athletes. While the ACL can rupture as a result of direct contact from an outside force, such as another player or object on the field of play, most often, the injury occurs indirectly without contact. Non-contact injuries typically occur during a deceleration maneuver, combined with a change of direction while the foot is planted. Rupture of this ligament can be a devastating injury for athletes and can result in an end to one's competitive career. Over 200,000 ACL injuries are estimated to occur annually in the United States of America. Surgical repair, anterior cruciate ligament reconstruction (ACLR), is typical management of ACL injury, and is often required to restore stability to the knee and for the athlete to return to an active life. This rehabilitation process typically spans 6-9 months, with 80% of athletes returning to some sport activity. However, despite the high percentage of ACLR after ACL injury, outcomes may be less than optimal, including an increased risk of subsequent injuries and future knee osteoarthritis. It is reported that only 65% of athletes return to their preinjury level and 55% to competitive level sports.

Purpose: ACL ruptures are among the most commonly studied injuries in orthopedic research. Therefore this proposal attempts to add to the growing body of literature in this area. Also, the intended purpose is to provide insight into ACL injury and ACLR occurring in Canada.

Methods: A systematic review of rehabilitation after ACLR will initially be completed. There appears to be consensus in the literature for the effectiveness of a postoperative reconstruction rehabilitation program, however, there is little consensus regarding the optimal parameters that influence rehabilitation and return to play. Much of the literature in North America refers to incidence rates occurring in the United States of American, therefore the following project will investigate the epidemiology of ACL injury within Canada. Utilizing Ontario administrative health care data, this project will identify the current incidence rate of ACL reconstruction, as well as ACL revision, among the population in Ontario, Canada. Once established, this information can be utilized in comparison to incidence rates among different countries.. The final project will attempt to establish a professional consensus when defining success as it relates to ACLR rehabilitation in Canada. The information gathered through this project will attempt to fill a gap between evidence and clinical practice.