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### Risk Factors Associated With Osteoarthritis Post-ACL Injury: A Literature Review

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RISK FACTORS ASSOCIATED WITH OSTEOARTHRITIS POST-ACL INJURY:  
A LITERATURE REVIEW

by

ALLISON S. BARNES

Submitted in partial fulfillment of the requirements  
for the Honors in Major Program in Athletic Training  
in the College of Health and Human Services  
at the University of New Hampshire  
Durham, New Hampshire

Fall 2016

Thesis Advisor: Daniel Sedory

## **Risk Factors Associated with Osteoarthritis Post-ACL Injury: A Literature Review**

**Background:** Anterior cruciate ligament ruptures are a relatively common injury in both contact and non-contact sports and are known to have a long rehabilitation process. In addition to a long recovery to get back to competitive sport levels, ACL tears are also associated with a high risk of early onset osteoarthritis, resulting in pain, functional limitations, and a diminished quality of life. There are many variables that have been studied that have a correlation to the occurrence of this condition.

**Objectives:** To examine peer reviewed literature to determine evidence based risk factors for developing osteoarthritis post-ACL injury.

**Data sources:** Resources were pulled from PubMed, SPORTDiscus, and MEDLINE, between the years of 1999 and 2016 using the key words *anterior cruciate ligament*, *ACL*, *osteoarthritis*, and *risk factors*. Inclusion criteria consisted of the following: peer reviewed studies that were published after 1999, studies that were done on human subjects, ACL ruptures that were treated by either conservative management, patella graft, or hamstring graft, and radiographic follow-up five years or more post-surgery. Abstracts and unpublished data were excluded.

**Conclusion:** There are seven important factors associated with the incidence of post-traumatic osteoarthritis following ACL injury. Treatment decisions, graft choice, meniscal status, age at the time of reconstruction, time between injury and reconstruction, sport activity post-injury, and body mass index all play a role in the development of OA. Some variables can be controlled, while others cannot, which makes it difficult to entirely diminish the occurrence of OA.