

Research Project Details	
Title	A Randomized Clinical Trial Comparing Three Methods of Anterior Cruciate Ligament (ACL) Reconstruction: Patellar Tendon, Quadruple Semitendinosus/Gracilis and Double-Bundle Semitendinosus/Gracilis Grafts - 10 Year Follow-Up
Investigator(s)	Dr. Nicholas Mohtadi and Dr. Luz Palacios-Derflinger, University of Calgary
Funding Period	August 2012 – December 2020
Budget	\$288,023.72 (total from all funding periods)
Issue/Rationale	Historically, the short-term management of ACL injuries in athletes has focused on return to sport and activity because an injured athlete has a finite career. However, the injured worker's career spans decades. An ACL-deficient worker involved in medium, heavy and very heavy job classifications should be most concerned with the management strategies that can mitigate the long-term (i.e. 10-years post-operatively) consequences – post-traumatic osteoarthritis development. Even with surgical reconstruction, an ACL injury with associated meniscal and chondral damage sets the stage for increased risk of osteoarthritis, with resulting functional limitations and pain. In Alberta, the management of ACL deficiency, and in particular osteoarthritis, is currently defined as a high priority by the Alberta Bone and Joint Strategic Clinical Network. There is a great need to reduce the impact of these knee problems on the healthcare system and in the workplace.
Objective(s)	The purpose of this study is to perform the 10-year post-operative follow-up for a prospective randomized clinical trial (RCT) that compares three reconstructive surgical graft options for anterior cruciate ligament (ACL) deficiency. This RCT compares disease- specific quality of life, clinical and functional outcomes in patients who underwent ACL reconstruction with a patellar tendon, single-bundle quadruple semitendinosus/gracilis (hamstring) or double-bundle semitendinosus/gracilis (hamstring) autograft. It also compares the radiographic changes at 10 years between graft types, to assess bone tunnel widening and osteoarthritic changes relative to baseline, two- and five-year radiographs.
Anticipated Results/ Impact	The anticipated outcomes of this study will benefit Alberta workplaces and reduce the impact of illness and injury by providing the best scientific clinical evidence to direct appropriate and optimal long-term management of ACL deficient workers, define timelines for return to work following re-injuries, improve quality of life, and delay the development of post-traumatic osteoarthritis.
Keywords	Anterior Cruciate Ligament (ACL), patellar tendon, quadruple semitendinosus/gracilis grafts, double-bundle semitendinosus/gracilis grafts, randomized clinical trial