



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Saumya Nimmagadda	Project Number S0419
Project Title The Effect of Support and Knowledge from Coaches and Family on an Athlete's Return to Sport from an ACL Injury	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The first goal is to identify the more influential party in an athlete's return to sport from an ACL injury. The second is to classify the specific knowledge a coach and family should have about the ACL injury. The third goal is to display the methods of support a family and coach should use.</p> <p>Methods/Materials Create a survey and address demographics, support and knowledge of the family and the coach. All of the questions and Likert statements were designed to find the most influential party in a recovery and areas of knowledge and support that will reduce the chance of re-injury. The respondents of this survey were athletes that suffered from an ACL injury and subsequently returned to their sport after an ACL reconstruction surgery and were reached through several ACL support groups on Facebook or through personal contacts.</p> <p>Results When comparing the coach's importance for athletes who re-injured themselves and who had a safe recovery, the average difference of the weighted average of all the Likert statements was 0.48 points. This is a significant amount in relation to the weighted average of the family which was 0.016 points. In terms of the coach's knowledge, athletes who didn't re-injure themselves reported a weighted average difference of 1.013 points higher than those of re-injured athletes. The familial knowledge only had a 0.137 point higher average when comparing athletes who didn't re-injure themselves to re-injured athletes. For the coach's support, the average difference was 0.56 points. The familial support had an average difference of 0.25 points.</p> <p>Conclusions/Discussion The most influential party in the recovery process of a torn ACL and ACL reconstruction surgery was the coach. The areas of knowledge a coach should have include knowledge about the injury, the function of the ACL, the motions and activities that could cause an ACL tear, and which graft would be best for the athlete. The family should know which motions and activities cause an ACL tear, what happens in physical therapy, and about the recovery exercises. In terms of support, the coach should communicate with the athlete's surgeon and physical therapist more often. The family should communicate with the surgeon more often and empathize about the injury.</p>	
Summary Statement This project aimed at identifying factors expressed by coaches and families that contribute to a re-injury of the anterior cruciate ligament.	
Help Received I designed the experiment myself, but did receive feedback from a physical therapist, Valerie Jackson.	