TITLE: Physical Activity Patterns in Men and Women Within the First Six Months Following Anterior Cruciate Ligament Reconstruction

AUTHORS: Lena Einaudi[1], Caroline Lisee[1], Christin Büttner[1,2], Elizabeth Bjornsen[1], Ashley Buck[1], Brian Pietrosimone[1]

AFFILIATIONS: [1]Department of Exercise and Sport Science, University of North Carolina at Chapel Hill, [2]Institute of Human Movement Science and Health, Chemnitz University of Technology

CONTEXT: Physical activity (PA) is integral to knee joint recovery post-anterior cruciate ligament reconstruction (ACLR). Females post-ACLR are less likely to meet national PA guidelines after unrestricted clearance to return to activity. It is unclear if sex difference in PA manifest in the first 6 months post-ACLR. PURPOSE: To determine PA patterns developed during the first 6-months post-ACLR for both males and females. METHODS: Twenty-one participants (67% Female, age: 20.4±4.1 years old, BMI: 24.6 ± 4.5 kg/m^2) who underwent primary ACLR were included. Subjects wore an ActiGraph GT9X Link accelerometer to track time spent in moderate-to-vigorous PA (MVPA) per day at 2-, 4-, and 6-months post-ACLR. The accelerometer was worn for a minimum of 10 hours per day for at least a 4-day period, including at least 1 weekend day. A mixed-methods, repeated measures analysis of variance (ANOVA) and Bonferroni post hoc tests were used to determine differences in MVPA both between sexes and over time. RESULTS: There were no statistically significant main effects for differences in time spent in MVPA ($p=0.35$) between the sexes over the 6-months post-ACLR. There were also no statistically significant interactions in daily MVPA between time post-ACLR and sex ($p=0.89$). However, there were statistically significant main effects for differences in daily MVPA over time ($p=0.02$). Participants engaged in greater daily MVPA at 6-months compared to 2-months ($p=0.01$) and 4-months ($p=0.002$) post-ACLR, indicating that differences in MVPA between sex may develop following clearance to return to activity.