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## Mental Health and Athletic Performance Post-Major Surgical Operations on the Knee

CONFERENCE ABSTRACT

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### Abstract

Athletes face struggles on and off the field when faced with injuries; they lose their self-identity, struggle with mental battles, and feel like they are missing out while being unable to participate. Despite athletes struggling post-surgery and throughout the rehabilitation process, there has yet to be research combining tests that mix both physical measurements and mental questionnaire measurements. Approximately 150,000 to 400,000 ACL injuries occur in the United States per year, with 70% of those cases being athletes; there are roughly 74,000 MCL injuries, and about 1 million individuals have meniscal tears. Athletes are known to be ready to return to sports as early as possible, but typically question their athletic ability due to a mental block. My research goal was to analyze whether there is a difference in athletic performance between the athletes' non-surgical knee and surgical knee, as well as whether they are trusting and displaying confidence in their knee to make sport-specific movements. In addition, I was asked whether there was any correlation between higher athletic performance in the participant's surgical leg versus non-surgical leg due to differences in rehabilitation training. My study was composed of two parts: a physical portion where the tests provide a quantitative measure, and a questionnaire

that provides more quantitative data on how much pain, inflammation, and trust the athlete has to complete the specified movements. I gathered my participants by asking teams at lifts if anybody had knee surgery and would be willing to participate in the study, and had close to a 1:1 ratio of female to male participants. The majority of the athletes who participated in the study ended up performing better on their surgical knee in the agility testing, due to the majority of their sports requiring more quick cutting movements rather than explosive upward movements. For example, an athlete who requires more of an upwards jump within their sport performed better at the single-leg explosive jump upwards on the jump mat. Expecting athletes to come back weaker and slower post major surgical operations was proven wrong throughout the results gathered, but the significant difference was the questionnaire portion, where athletes had very little trust and experienced more pain in their surgical knee daily. As I watched the athletes complete the physical testing, it was evident that the majority of the athletes were being cautious in their movements with their surgical leg, which can be a variable that impacts the data as a whole. Conclusively, I believe that healthcare as a whole has advanced significantly and assisted these athletes in returning to sports to their previous athletic capability. However, athletes and their mental state can advance an athlete past their physical ability because their mental block is not allowing them to completely go after their goal because of the constant fear of pain, injury, or the rehabilitation process all over again.

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