

## **The Fate of the Anterior Cruciate Ligament- and Lateral Meniscus-Injured Knee**

Fabian Jens Persson<sup>1</sup>, Janina Kaarre<sup>2</sup>, Zachary Herman, Jonas Olsson Wällgren, Eric Hamrin Senorski, Volker Musahl<sup>3</sup>, Kristian Samuelsson<sup>4</sup>

<sup>1</sup>Orthopaedics, <sup>2</sup>University of Pittsburgh, <sup>3</sup>UPMC Center for Sports Medicine, <sup>4</sup>Sahlgrenska University Hospital

### **INTRODUCTION:**

Simultaneous meniscal tears are often present in anterior cruciate ligament (ACL) injury, and in the acute setting, the lateral meniscus (LM) is more commonly injured than the medial meniscus. Therefore, the aim of this study was to investigate how concomitant LM injury, either repaired, resected, or left in situ during primary ACL reconstruction (ACLR) affects ACL revision rate and cartilaginous and meniscal status at the time of revision within 2 years after the primary ACLR.

**METHODS:** Data for 31,819 patients with primary ACLR, extracted from the Swedish National Knee Ligament Registry was used. Odds of revision ACLR, and cartilage as well as meniscal injuries at the time of revision ACLR were assessed between the unexposed comparison group (isolated ACLR) and the exposed groups of interest (ACLR + LM repair, ACLR + LM resection, ACLR + LM repair + LM resection or ACLR + LM injury left in situ).

**RESULTS:** In total, 724 (2.5%) of the included patients underwent revision ACLR within 2 years after the primary ACLR. No significant difference in revision rate was found between the groups. Patients with concomitant LM repair (OR 3.56, 1.57-8.10; p=0.0024) or LM resection (OR 1.76, 1.19-2.62; p=0.0049) had higher odds for concomitant meniscus injuries (medial or lateral) at the time of revision ACLR compared to patients undergoing isolated primary ACLR. Additionally, higher odds for concomitant cartilage injuries at the time of revision ACLR were found in patients with LM resection at index ACLR compared to patients undergoing isolated primary ACLR (OR 1.76, 1.16-2.67; p=0.0076).

**DISCUSSION AND CONCLUSION:** The results of this study demonstrated higher odds of meniscal and cartilage injuries at the time of revision ACLR within 2 years after primary ACLR + LM resection and higher odds of meniscal injury at the time of revision ACLR within 2 years after primary ACLR + LM repair compared to isolated ACLR. Surgeons should be aware of possibility of concomitant cartilaginous and meniscal injuries at the time of revision ACLR after index ACLR with concomitant LM injury, regardless of index treatment type received.