

# Return to Activity after Arthroscopic Partial Meniscectomy

David Eric Kantrowitz<sup>1</sup>, Dennis Bienstock, Thomas Morgan Li<sup>2</sup>, Robert L. Parisien<sup>3</sup>, Shawn G Anthony, Aruna Seneviratne<sup>4</sup>, Alexis Chiang Colvin<sup>5</sup>, James N Gladstone<sup>3</sup>

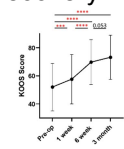
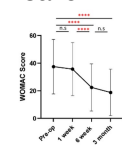
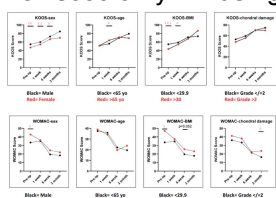
<sup>1</sup>Orthopedic Surgery, Mount Sinai Health System, <sup>2</sup>University of California San Francisco, <sup>3</sup>Mount Sinai Health System, <sup>4</sup>Mount Sinai West Orthopedic Faculty Practice, <sup>5</sup>Mount Sinai

**INTRODUCTION:** Previous studies have reported on the recovery, and return to sport, after arthroscopic partial meniscectomy (APM) with good results. However, the literature on when non-athletic patients return to activities of daily living is limited. Preoperatively, patients frequently ask their surgeon when they can expect to return to work, climb stairs, and drive a car. The primary aim of this study is to report the average time it takes patients to return to activities of daily living following APM. The secondary outcomes include the Knee Injury and Osteoarthritis Outcome Score (KOOS) and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). The final objective is to determine if any demographic variables influence return to activity times or outcomes scores.

**METHODS:** Patients who were indicated for APM were prospectively enrolled after obtaining informed consent. Exclusion criteria were age under 18, meniscal repair or other concomitant procedure (ligament reconstruction, etc.), and significant degenerative osteoarthritis (Kellgren and Lawrence > 2). Modified KOOS and WOMAC outcome surveys as well as a return-to-activity questionnaire were administered at 1-week, 6-weeks, and 3-months postoperatively. The KOOS and WOMAC were also administered once preoperatively at the time of enrollment. Demographic data were collected from the electronic medical records. Preoperative and postoperative KOOS and WOMAC scores were compared using paired student's t-tests. KOOS, WOMAC, and return-to-activity data were stratified by preoperative age, sex, BMI and intraoperatively noted Outerbridge score. All statistics were performed in GraphPad-Prism.

**RESULTS:** 265 patients were enrolled. The sample was 55% male, with a mean age of 51 and BMI of 27.7. By 7 days postoperatively, 52.6% of patients had returned to work, 70% of patients were ambulating without an assistive device, 60% were able to get in and out of a car comfortably, and 61.9% were able to sit on the toilet comfortably. 54.6% of patients had discontinued narcotic medications by 3 days postoperatively. Return to activity data is summarized in Table 1. Stratified by demographic data, age did not affect time to return to any activities. Women used over the counter pain medication for an extra day longer than men (p = 0.001), and took an additional day to return to driving (p = 0.009). A BMI > 30 resulted in a delay in returning to several of the activities, most notably 2 additional days off work (p < 0.001) and one extra day on narcotic medications (p < 0.001) on average compared to individuals with a BMI < 30. Worse chondral damage (Outerbridge score of > 2) was also associated with a delay in return to work by nearly one day (p = 0.006). Return to activity data stratified by demographics is displayed in Table 2. The average preoperative WOMAC and KOOS scores were 37.4 ± 19.7 and 52.0 ± 17.0, respectively. WOMAC scores after surgery were significantly lower at 6 weeks compared to at 1 week (22.4 ± 17.1, p<0.0001) but did not change significantly between 6 weeks and 3 months (18.7 ± 16.9, p= 0.079). KOOS scores similarly significantly increased between 1 and 6 weeks after surgery (69.8 ± 16.1, p<0.0001) but reached a plateau at 3 months (73.2 ± 15.8, p=0.053). KOOS and WOMAC trends are diagrammatically depicted in Figure 1. A BMI > 30 resulted in worse KOOS (p = 0.047) and WOMAC (p = 0.05) scores at 1 week and 6 weeks, respectively, but neither were significantly different by 3 months postoperatively. KOOS and WOMAC scores stratified by demographics are displayed in Figure 2.

**DISCUSSION AND CONCLUSION:** The majority of APM patients return to their more basic activities of daily living, such as work, getting into a car, and sitting on the toilet comfortably, within 1 week of surgery. Obese BMI and worse chondral damage is associated with a slower return to work. Return to running and recreational sports occurs on the order of one to two months. Patients make their most significant functional gains, as quantified by the KOOS and WOMAC scores, in the first 6 weeks after surgery and make smaller gains as they approach the 3 month postoperative time point. Obese patients improved at a slower rate than their non-obese counterparts, but ultimately reached similar functional levels by 3 months. Taken together, these data provide surgeons the ability to better counsel their patients considering arthroscopic partial meniscectomy using salient recovery time points applicable to the general population.



Percentage of patients that returned to activity by:	1 Week	2 Weeks	3 Months	6 Months	9 Months	1 Year	2 Years	Physical Therapy
Return to work	52.6%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	4 to 20 weeks
Return to driving	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to sitting on toilet	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to walking without assistive device	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	4 to 20 weeks
Return to climbing stairs	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to getting in and out of car	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to running	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to recreational sports	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to sitting on floor	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to walking with or without cane	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to driving	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to sitting on toilet	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to walking without assistive device	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	4 to 20 weeks
Return to climbing stairs	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to getting in and out of car	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
Return to running	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	61.9%	4 to 20 weeks
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