Background
Autologous chondrocyte implantation (ACI) is a well-established treatment for articular cartilage defects of the knee however, few studies have examined return-to-work rates among ACI patients, and even fewer have investigated the effect of mental health on postoperative outcomes.

The purpose of this study was to examine the effect of preoperative mental health on return to work and patient-reported outcomes.

We hypothesized that patients with low mental component scores prior to surgery would demonstrate inferior outcomes regardless of lesion location.

Methods
Subjects: From our IRB-approved prospective outcomes registry, we identified 109 ACI patients (mean age = 34.5 years, mean follow-up = 2.8 years) with complete pre- and postoperative clinical data.

Methods: Patients were stratified into those with preoperative VR-12 Mental Component Scores in the bottom quartile (LOW MCS) and in the top 3 quartiles (HIGH MCS) based on normative values. Figure 1 LOW MCS were defined as scores < 42.9.

Patients with patellar and/or trochlear lesions were placed in the patellofemoral (PF) group, and all other patients were placed in the tibiofemoral (TF) group. Return to work, IKDC scores, and Lysholm scores were individually compared between the LOW MCS and HIGH MCS groups in TF or PF patients.

Statistical Analyses: Fisher’s exact tests were used to compare the return to work rates and frequency of IKDC and Lysholm improvements greater than the minimal clinically important difference.

One-way ANOVAs were used to examine magnitude of change of IKDC and Lysholm scores.

Results
Preoperatively, 14/55 (25.5%) TF patients and 17/54 (31.5%) PF patients were included in the LOW MCS group.

For the TF group, IKDC scores significantly improved after surgery regardless of preoperative MCS (p < 0.05).

For the PF group, both IKDC and Lysholm scores significantly improved after surgery regardless of preoperative MCS (p < 0.05).

Changes in IKDC and Lysholm scores did not differ between the LOW MCS and HIGH MCS groups in TF or PF patients.

However, for the PF group return to work rates were significantly lower for the LOW MCS group (p=0.0005) but return to work rates did not differ in the TF group (p>0.99, Figure 2).

Conclusions & Clinical Relevance
The results of the current study underscore the need to preoperatively quantify mental health status for this specific patient group in order to set realistic postoperative expectations.

Limitations & Future Work
While an adequate sample size was available for the primary analysis, the study was underpowered to assess the potential relationship between lesion size and postoperative outcomes.

We did not assess specific features related to pain processing or pain coping behaviors, which may influence both preoperative mental component scores and postoperative outcomes.

Future studies are necessary to determine if pain coping interventions may improve outcomes in the subset of patients with patellofemoral lesions and low mental component scores.

References