Introduction: Total joint arthroplasty (TJA) requires intensive post-operative communication and adherence to rehabilitation protocols. Patients with hearing loss (HL) face unique communication barriers that may impact recovery. This study aimed to evaluate post-operative outcomes for HL patients compared to a matched non-HL cohort following elective TJA.

Methods: We conducted a retrospective cohort study using a national claims-based database. Patients with osteoarthritis undergoing elective TJA were divided into HL and non-HL cohorts. Groups were 1:1 propensity score matched for age, sex, comorbidities (CCI), obesity, diabetes, and substance use history. Primary outcomes included all-cause revision, readmission, emergency department (ED) visits, periprosthetic joint infection (PJI), manipulation under anesthesia (MUA), and mortality, each at 30 and 90 days. Outcomes were compared between matched HL and non-HL cohorts using odds ratios (OR) with 95% confidence intervals (CI).

Results: After matching, 285,354 patients were analyzed (142,677 per group). At 30 days, HL patients had significantly lower odds of all-cause revision (OR: 0.90; 95% CI: 0.81–1.00; $p=0.04$) but higher odds of ED visits (OR: 1.16; 95% CI: 1.13–1.20; $p<0.0001$). By 90 days, the increased risk for ED visits persisted (OR: 1.17; 95% CI: 1.15–1.20; $p<0.0001$). HL patients also demonstrated higher odds of MUA (OR: 1.12; 95% CI: 1.04–1.19; $p<0.001$). No significant differences were found for readmission, PJI, or mortality at either time point ($p>0.05$).

Conclusion: Patients with hearing loss experience comparable rates of major complications (readmission, PJI, mortality) but utilize the emergency department more frequently and have higher rates of post-operative stiffness requiring MUA. The lower 30-day revision rate alongside higher ED utilization may suggest that HL patients seek acute care for minor concerns, potentially preventing early surgical failures. Targeted communication strategies are needed to optimize outpatient recovery and reduce ED reliance in this population.