

# Trends in Opioid Use During Hospitalization following Revision Total Hip Arthroplasty

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## INTRODUCTION:

Though opioids can be very effective for management of postoperative pain after revision total hip arthroplasty (rTHA), many physicians have made an effort to decrease usage of these medications by focusing on alternative pain management strategies in order to reduce opioid dependence and unwanted side effects. This study sought to investigate trends in opioid consumption during hospitalization following rTHA from 2016 to 2021.

## METHODS:

We retrospectively reviewed all patients who received revision total hip arthroplasty from January 2016 to April 2021. Baseline demographic variables including age, gender, race, body mass index (BMI), American Society of Anesthesiologists (ASA) classification, as well as dosage and type of opioid medications prescribed on each postoperative day during hospitalization were recorded. Opioid dosage and type were converted to milligram morphine equivalents (MMEs) per day of hospitalization and compared across the six years studied. Linear regression was utilized to determine significance of annual trends in MME consumption per day.

## RESULTS:

In total 1096 patients were identified who met inclusion and exclusion criteria. The greatest daily average opioid consumption per patient was in 2017 ( $61.6 \pm 155.4$  MME/day) and the lowest was in 2021 ( $31.8 \pm 105.8$  MME/day). Linear regression analysis detected a downward trend of 4.97 MME/day each year however this was not statistically significant ( $R^2: 0.444, p=0.089$ ).

**DISCUSSION AND CONCLUSION:** The results of this study show that opioid consumption in 2021 was lower than in 2016 and 2017, although no significant linear trend was detected. This emphasizes the effectiveness of protocols limiting opioid usage during hospitalization following rTHA.

Characteristic	Value (n, %)
Age (years, SD)	64.8 (13.8)
Gender	
Female	612 (56.0%)
Male	482 (44.0%)
Race	
White	793 (72.2%)
Black or African American	141 (12.9%)
Asian	101 (9.2%)
Other races	161 (14.7%)
Mean (range) BMI	29.2 (16-50)
ASA Classification	
1	47 (4.3%)
2	568 (51.8%)
3	444 (40.3%)
4	31 (2.8%)

Year of Surgery	Average MMEs per day (SD)
2016 (n=188)	56.3 (112.7)
2017 (n=203)	61.6 (155.4)
2018 (n=212)	34.3 (55.2)
2019 (n=225)	35.3 (75.5)
2020 (n=215)	44.1 (106.2)
2021 (n=53)	31.8 (105.8)

Procedure	Adjusted R-squared	Unstandardized $\beta$ (Change in MMEs per day per year)	P-value
rTHA	0.444	-4.97	0.089

