

# Improvement in sleep patterns after hip and knee arthroplasty: a prospective study in 780 patients

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## Background

While the relationship between OA and sleep has been examined, relatively few studies have prospectively assessed sleep before and after hip (THA) and knee arthroplasty (TKA). While improvement in sleep quality is consistently reported in these studies, subject numbers are small, ranging from 25 to 105 subjects. Further, there are conflicting reports on the relationship between sleep quality and pain scores, potentially due to inadequate sample sizes. The relationship between sleep and satisfaction with surgery has not been reported previously.

## Methods

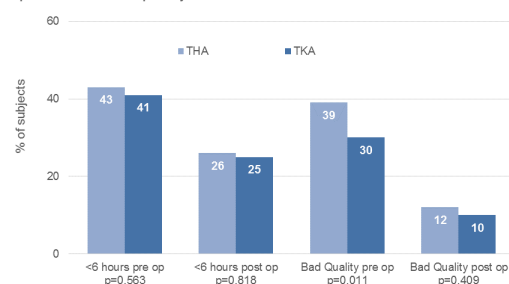
Between July 2016 and June 2018, surgical data and PROMs were collected on 780 subjects before and 12 months after THA or TKA. PROMs included Knee Injury and Osteoarthritis Outcome Score (KOOS), Hip Disability and Osteoarthritis Outcome Score (HOOS), patient satisfaction and 2 questions from the Pittsburgh Sleep Quality Index (PSQI).

## Results

Before surgery, 35% (270/780) reported poor quality sleep. Sleep quality and duration were worse in females over males, and in THA patients (39%) over TKA patients (30%,  $p=0.011$ ). Of those reporting bad sleep, 74% (201/270) were improved after arthro-

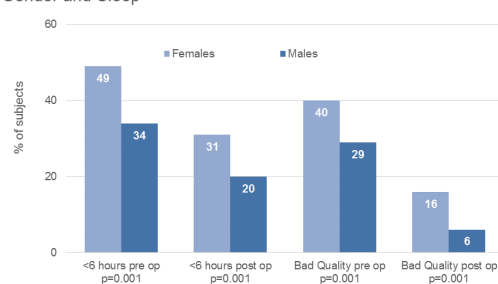
plasty. Satisfaction was higher in subjects reporting good sleep quality (626/676, 93%) compared to those reporting bad

Hip vs Knee Arthroplasty



sleep quality (67/86, 78%) ( $p=0.001$ ). Sleep was positively correlated with better HOOS/KOOS scores ( $r=0.2-0.3$ ).

Gender and Sleep



## Conclusions

This cohort study found that nearly 1 in 2 report poor sleep quality and sleep duration of less than 6 hours before hip and knee arthroplasty. Poorer measures of sleep were seen in females compared to males, and hip over knee subjects before surgery. At 1 year after arthroplasty, significant improvements in sleep quality and duration were observed. For those with poor sleep quality or duration before surgery, 7 of 10 experienced improvement after arthroplasty. Measures of sleep were positively associated with measures of pain, symptoms, general health, well-being, and satisfaction with surgery. Improvement in sleep may be considered a realistic outcome of hip and knee arthroplasty surgery, with important and meaningful positive effects on health and quality of life.

	Hip Arthroplasty		Knee Arthroplasty		p
	N	%	N	%	
<b>Sleep Quality</b>					
Improved	157	39	121	32	0.146
Unchanged	22	55	233	61	
Worse	23	6	24	6	
<b>Sleep Duration</b>					
Improved	141	35	113	30	0.298
Unchanged	225	56	230	61	
Worse	36	9	35	9	