Supplementary Table 1: Satisfaction at 2 years

	OA (n = 4320)	RA (n = 136)	P value
Satisfaction at 2 years, Relieving Pain, n (%)			0.8861
Very Satisfied	2247 (77%)	59 (81%)	
Somewhat Satisfied	388 (13%)	7 (10%)	
Neither Satisfied nor Dissatisfied	59 (2%)	1 (1%)	
Somewhat Dissatisfied	111 (4%)	3 (4%)	
Very Dissatisfied	100 (3%)	3 (4%)	
Satisfaction at 2 years, Improving ability to do recreational activities, n (%)			0.4399
Very Satisfied	1668 (58%)	38 (54%)	
Somewhat Satisfied	691 (24%)	14 (20%)	
Neither Satisfied nor Dissatisfied	203 (7%)	7 (10%)	
Somewhat Dissatisfied	171 (6%)	6 (8%)	
Very Dissatisfied	147 (5%)	6 (8%)	
Satisfaction at 2 years, Overall, n (%)			0.7833
Very Satisfied	2158 (74%)	53 (72%)	
Somewhat Satisfied	425 (15%)	10 (14%)	
Neither Satisfied nor Dissatisfied	62 (2%)	2 (3%)	

Dissatisfied	139 (5%)	5 (7%)	
Very Dissatisfied	130 (4%)	4 (5%)	
Satisfaction at 2 years, Improving Quality of Life, n (%)			0.2444
More improvement than I ever dreamed possible	532 (18%)	20 (28%)	
Great improvement	1679 (57%)	33 (46%)	
Moderate improvement	432 (15%)	12 (17%)	
A little improvement	143 (5%)	4 (6%)	
No improvement	69 (2%)	1 (1%)	
The quality of my life is worse	67 (2%)	2 (3%)	

Supplemental table 2: Univariate Analysis for Poor Pain or Function (WOMAC>40) Two Years After Surgery*

	WOMAC Pain at 2 years Estimated Coefficient (Standard Error)	WOMAC Function at 2 years Estimated Coefficient (Standard Error)
Age	0.98 (0.97, 1.01)***	1.00 (0.99, 1.02)***
Female vs. Male	**1.78 (1.22, 2.60)****	**1.90 (1.36, 2.67)****
RA vs. OA	1.61 (0.63, 4.14)***	1.73 (0.77, 3.91)***
ASA Class 2 vs. ASA Class 1	0.88 (0.37, 2.07)	1.37 (0.54, 3.44)
ASA Class 3+ vs. ASA Class 1	1.09 (0.44, 2.68)	2.05 (0.79, 5.30)
≥1 Deyo Comorbidities vs. 0 Deyo Comorbidities	1.08 (0.74, 1.58)	1.33 (0.96, 1.84)
BMI	1.00 (0.97, 1.03)	1.01 (0.99, 1.04)
≥College education vs. <College	**0.53 (0.38, 0.75)****	**0.45 (0.33, 0.62)****
Caucasian vs. Non-Caucasian	**0.48 (0.30, 0.77)****	**0.46 (0.31, 0.70)****
Pre-Op WOMAC Pain	**1.04 (1.03, 1.05)****	**1.04 (1.03, 1.05)****
Pre-Op WOMAC Function	**1.04 (1.02, 1.05)****	**1.04 (1.03, 1.06)****
Pre-Op PCS	**0.94 (0.92, 0.96)****	**0.94 (0.92, 0.96)****
Pre-Op MCS	**0.96 (0.95, 0.97)****	**0.95 (0.94, 0.96)****

Previous Replacement vs. No Prev Replacement	1.18 (0.79, 1.77)	1.19 (0.83, 1.71)
Back Pain vs. No Back Pain	**1.49 (1.05, 2.11)****	**1.87 (1.37, 2.55)****
Expectation Score	1.00 (0.99, 1.01)	0.99 (0.98, 1.01)

* Univariate logistic regression controlling for each individual predictor as listed in the table

** Variables with p-value<0.05 in the univariate analysis and included in the multivariate regression

***Variables with p-value>0.05 in the univariate analysis; included in the multivariate regression based on the

research of interest

Supplemental Table 3: Predictors of Having Poor Pain or Function (WOMAC ≤60) Two Years After Surgery*

	Poor WOMAC Pain at 2 years (WOMAC ≤60) Odds Ratio (95% CI)	Poor WOMAC Function at 2 years (WOMAC ≤60) Odds Ratio (95% CI)
Age	**	**
Female vs. Male	**1.59 (1.02, 2.46)**	**2.01 (1.19, 3.41)**
RA vs. OA	0.66 (0.22, 2.05)***	0.67 (0.18, 2.50)***
ASA Class 2 vs. ASA Class 1	**	**
ASA Class 3+ vs. ASA Class 1	**	**
≥1 Deyo Comorbidities vs. 0 Deyo Comorbidities	**	1.05 (0.65, 1.69)
BMI	**	**
≥College education vs. <College	0.85 (0.58, 1.25)	0.66 (0.42, 1.03)
Caucasian vs. Non-Caucasian	**0.51 (0.31, 0.84)**	0.59 (0.33, 1.05)

Pre-Op WOMAC Pain	**0.97 (0.96, 0.99)**	1.00 (0.98, 1.02)
Pre-Op WOMAC Function	1.01 (0.99, 1.03)	0.98 (0.96, 1.01)
Pre-Op PCS	**0.96 (0.93, 0.99)**	0.98 (0.94, 1.02)
Pre-Op MCS	**0.98 (0.96, 0.99)**	**0.98 (0.96, 0.99)**
Previous Replacement vs. No Prev Replacement	**	**
Back Pain vs. No Back Pain	1.27 (0.86, 1.88)	1.34 (0.86, 2.11)
Expectation Score	**	0.99 (0.98, 1.01)

*Multivariate logistic regression controlling for age, gender, diagnosis, ASA class, deyo comorbidities, BMI, education, race, pre-operative WOMAC pain score, pre-operative WOMAC function score, pre-operative PCS, pre-operative MCS, previous replacement, back pain, and expectation score.

** Variable excluded If they had a p- value greater than 0.1 in the univariate analysis.

***RA was included in the analysis based on the research interest. It was not significant in the univariate analysis.