

# Adult Reconstruction Fellowship Trained Surgeons: Increased Complexity, Improved Results

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## INTRODUCTION:

It remains to be seen if adult reconstruction fellowship trained (FT) surgeons practice differently than non-fellowship trained (NFT) surgeons, and if this difference contributes to decreased complications following total hip arthroplasty (THA). The purpose of the present study was to compare indications, patient selection, and outcomes between fellowship trained and non-fellowship trained surgeons performing THA on a national level.

## METHODS:

A national insurance administrative database was utilized to compare patients who underwent THA with FT and NFT surgeons from 2010 to 2020 with 5-year surveillance period. Propensity score matching was used to match patients based on age, gender, comorbidity index, and region. Ninety-day medical complications and 5-year surgical complications were compared. Continuous and categorical variables were compared using T-test and Chi Square analysis, respectively.

## RESULTS:

In total, 118,423 THAs were identified, with 44,068 THAs in matched fellowship and non-fellowship cohorts, respectively. Patients undergoing THA with FT surgeons were older (64.2 vs. 63.6,  $p < 0.001$ ), more privately insured (68.5 vs. 61.3%,  $p < 0.001$ ), with higher average comorbidity burden (Elixhauser Comorbidity Index, 3.6 vs. 3.3,  $p < 0.001$ ), and presence of obesity (12.0 vs. 10.9%,  $p < 0.001$ ). Diagnoses of hip dysplasia (1.0 vs. 0.6%,  $p < 0.001$ ) and avascular necrosis (8.6 vs. 7.9%,  $p < 0.001$ ) were more common indications for FT surgeons, while osteoarthritis was less common (80.5 vs. 82.3%,  $p < 0.001$ ). Fewer smokers were operated on by FT surgeons (9.2 vs. 11.1%,  $p < 0.001$ ). FT surgeons prescribed fewer opioids (127.3 vs. 137.6 MMEs/patient,  $p < 0.001$ ) and direct oral anticoagulants (6.8 vs. 11.3%,  $p < 0.001$ ). In matched cohort analysis, overall complication rates were lower for FT surgeons (15.1 vs. 18.0%,  $p < 0.001$ ), including 5-year dislocation (2.2 vs. 3.8%,  $p < 0.001$ ) and revision rates (3.9 vs. 4.3%,  $p < 0.001$ ).

## DISCUSSION AND CONCLUSION:

Adult reconstruction FT surgeons perform THA on more medically complex patients and have lower complication rates than NFT surgeons. This may be a result of more aggressive preoperative optimization as seen by fewer smokers in the FT group and through prescribing fewer opioids and direct oral anticoagulants postoperatively.

Variable	FT (n=44,068)	NFT (n=44,068)	p-value
Age (mean)	64.2	63.6	<0.001
Gender (Male %)	51.2	51.5	0.85
Insurance (Private %)	68.5	61.3	<0.001
Elixhauser Index (mean)	3.6	3.3	<0.001
Obesity (Yes %)	12.0	10.9	<0.001
Smoking (Yes %)	9.2	11.1	<0.001
Opioids (MMEs)	127.3	137.6	<0.001
DOACs (%)	6.8	11.3	<0.001
90-day Complications (%)	15.1	18.0	<0.001
5-year Dislocation (%)	2.2	3.8	<0.001
5-year Revision (%)	3.9	4.3	<0.001

Diagnosis	FT (%)	NFT (%)	p-value
Osteoarthritis	80.5	82.3	<0.001
Hip Dysplasia	1.0	0.6	<0.001
Avascular Necrosis	8.6	7.9	<0.001
Osteoarthritis	80.5	82.3	<0.001

Complication	FT (%)	NFT (%)	p-value
90-day Medical	15.1	18.0	<0.001
5-year Dislocation	2.2	3.8	<0.001
5-year Revision	3.9	4.3	<0.001

Medication	FT (%)	NFT (%)	p-value
Opioids (MMEs)	127.3	137.6	<0.001
DOACs	6.8	11.3	<0.001

Outcome	FT (%)	NFT (%)	p-value
90-day Complications	15.1	18.0	<0.001
5-year Dislocation	2.2	3.8	<0.001
5-year Revision	3.9	4.3	<0.001