

# Total Hip Arthroplasty: COPD and its Effect on Postoperative Complications

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## Introduction

- This study aims to determine differences in short-term postoperative complications after undergoing Total Hip Arthroplasty, comparing patients with COPD to those without.
- The demand for Total Hip Arthroplasty has increased rapidly and continues to due to high success rates of this procedure and the growing aging population.
- Although COPD has been linked to negative postoperative outcomes across several surgeries, little has been investigated regarding postoperative complications in patients with COPD following a Total Hip Arthroplasty.



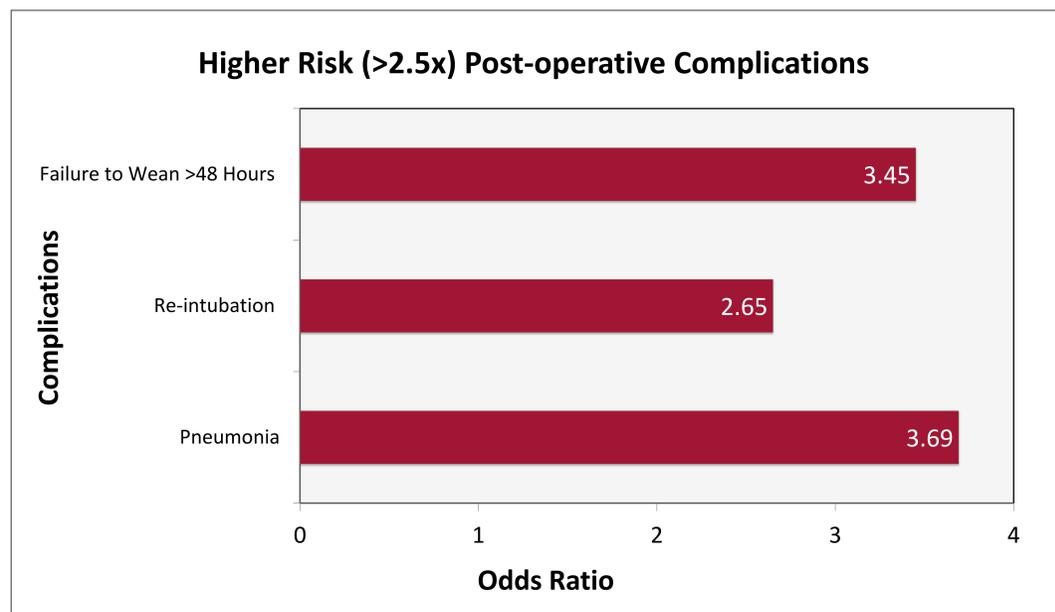
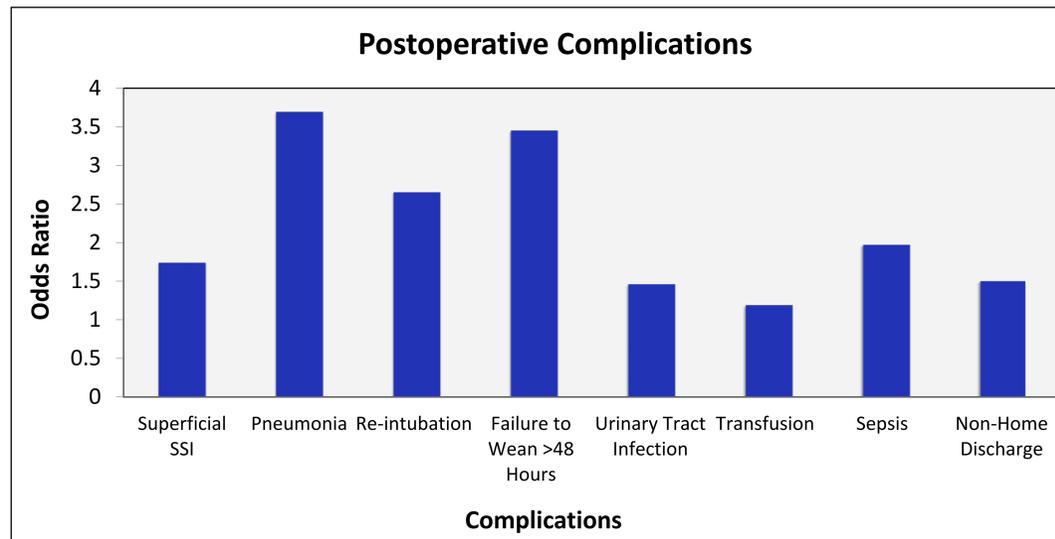
Figure 1- Patil, Sanjeev. Total Hip Replacement. glasgow-hip-clinic.co.uk/hip-surgery/total-hip-arthroplasty/. Accessed 1 Apr. 2018.

## Methods

- In total, 74,814 patients were included to analyze how COPD contributes to rates of postoperative complications in primary Total Hip Arthroplasty.
- Data was obtained from the National Surgical Quality Improvement Project Database (NSQIP) years 2005-2014, with readmission/reoperation data beginning in 2011. Total Hip Arthroplasty cases were selected out of the database using current procedural terminology (CPT) code 27130.
- Complications were stratified by operative complications, which are directly related to the surgical procedure, and non-operative complications, which are not directly connected to the surgery.

## Results

- The amount of overall complications in primary Total Hip Arthroplasty was 14,082. Out of the total 74,814, the complication rate from primary THA was found to be 18.82%.
- On multivariate analysis and after controlling for contributing comorbidities, COPD was found to be an independent predictor of: superficial surgical site infection (SSI), pneumonia, reintubation, failure to wean, urinary tract infection, needing a postoperative transfusion, and sepsis. COPD also independently predicted whether a patient would be discharged home or not.



Complications	Odds Ratio (95% CI)	P-Value
Superficial SSI	1.74 (1.24, 2.43)	0.001
Pneumonia	3.69 (2.67, 5.10)	<0.001
Re-intubation	2.65 (1.69, 4.16)	<0.001
Failure to Wean >48 Hours	3.45 (1.89, 6.29)	<0.001
Urinary Tract Infection	1.46 (1.13, 1.90)	0.004
Transfusion	1.19 (1.07, 1.31)	0.001
Sepsis	1.97 (1.29, 3.01)	0.002
Non-Home Discharge	1.50 (1.37, 1.64)	<0.001

## Discussion

- Over 15 million people are diagnosed with COPD in the United States, and it is currently the third leading cause of death.
- The purpose of the current study is to bring to a discussion the most common postoperative complications those with COPD face after a Total Hip Arthroplasty. This will help recognize surgery and patient specific risk factors that account for complications, and subsequently help target high-risk patients in efforts to reduce cost and improve patient care.
- COPD is linked to poorer postoperative outcomes in our study, and as a result, higher health service costs.
- Identifying complications that can arise following a Total Hip Arthroplasty COPD patient is a critical first step in targeting precise perioperative modifications to improve surgical outcomes.
- Additional research is needed to determine optimal practices for stratifying and mitigating these risks for patients.