

## **Changing Demographics of Hip and Knee Arthroplasty Patients at a Midwestern U.S. Private Practice**

Adolph V Lombardi<sup>1</sup>, Thomas H Mallory, Joanne B Adams<sup>1</sup>, Patricia Regina Melvin<sup>2</sup>, David Anthony Crawford<sup>1</sup>

<sup>1</sup>JIS Orthopedics, <sup>2</sup>Orthopaedic Surgery

**INTRODUCTION:** More primary and revision hip and knee replacements are being performed in the United States than ever before. Coincidentally, rates of obesity in the Midwest are rising and may contribute to greater demand for joint replacements, especially at younger ages. The purpose of this study is to determine if demographics of patients undergoing hip and knee arthroplasty (TJA) at our center have changed over the past 35 years.

**METHODS:** A query of our private practice registry revealed 48,766 patients (73,760 joints) who underwent primary or revision total hip, total knee or unicompartmental knee arthroplasty between 1988 and 2022. Mean age was 65.2 years, mean BMI was 32.4 kg/m<sup>2</sup>, and 57.3% of patients were women. All patients are medically optimized prior to surgery and no BMI cutoff is used. Patients were divided into 7 groups based on date of surgery: 1988-1992, 1993-1997, 1998-2002, 2003-2007, 2008-2012, 2013-2017, and 2018-2022.

**RESULTS:** Mean age for primary arthroplasty increased from 63.1 years in 1988-1992 to 66.2 in 2018-2022 ( $p<0.0001$ ), and for revisions from 65.4 to 66.9 ( $p=0.0021$ ). Likewise, proportion of primary patients aged 55 or younger decreased from 22.8% in 1988-1992 to 12.2% in 2018-2022 and for revisions from 19.9% to 11.7% (both  $p<0.0001$ ). Mean BMI has increased in primary patients from 31.5 kg/m<sup>2</sup> in 1988-1992 to 32.9 in 2018-2022, and for revision from 28.6 to 33.5 (both  $p<0.0001$ ). Likewise, proportion of obese (BMI  $>30$ ) and morbidly obese patients (BMI  $>40$ ) has increased substantially for both primary and revision. Revision burden has decreased from high of 31.7% of arthroplasties in 2003-2007 to 9.6% in 2018-2022 ( $p<0.0001$ ).

**DISCUSSION AND CONCLUSION:** The trend of an increasingly heavier population coincides with a rise in demand for joint replacements. Mean patient age has become older rather than younger over time. Revision burden has decreased dramatically over the past 35 years.