

Rate of hip replacement revision surgery declines in all age groups—except middle age

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As more patients undergo total hip arthroplasty (THA) before age 65, the rate of repeat hip surgery due to complications has risen sharply in this younger age group, reports a study in the March 21, 2018, issue of *The Journal of Bone & Joint Surgery*.

Between 2007 and 2013, the rate of THA revision [surgery](#) has increased in adults aged 45 to 64 while decreasing in all other age groups, according to the research by Sean Rajaei, MD, and colleagues from Cedars-Sinai Medical Center, Los Angeles. Other findings, based on analysis of nationwide data, suggest "a trend in the right direction" toward better outcomes over time for [patients](#) undergoing THA revision surgery.

"Hip arthroplasty revision is a lot safer and more successful than 20 years ago, but still occurs too frequently," comments senior author Guy Paiement, MD. "We need to continue improving techniques and implants."

Increasing Burden of THA Revisions in Middle-Aged Patients

The researchers analyzed nearly 320,500 THA revision procedures performed between 2007 and 2013, identified from the Agency for Healthcare Research & Quality's Nationwide Inpatient Sample. While THA is a highly successful procedure, failure can occur for various

reasons. In these cases, revision surgery may be needed to remove or replace the hip prosthesis or parts of it.

The data showed a 12 percent increase in the overall estimated THA revision rate over six years, after adjustment for population growth. However, that increase was driven exclusively by patients aged 45 to 64: in this group, the THA revision rate increased by more than 30 percent. In all other age groups, the revision rate decreased during the six-year study period.

The reasons for revision surgery also changed between 2007 and 2013, with about a 14 percent decrease in revisions due to THA dislocations. This gain was offset by an increase in revision surgery due to "other mechanical complications." That trend likely reflects complications related to the increased use of "metal-on-metal" hip implants during that period, Dr. Rajaei and colleagues believe.

The data also showed improved outcomes for patients undergoing THA revision surgery. Rates of several serious inpatient complications decreased significantly, including blood clot-related problems, myocardial infarction (heart attack), pneumonia, and urinary tract infections.

The mortality rate also decreased significantly, as did the percentage of patients discharged from the hospital to a skilled nursing facility. There was also a 19 percent decrease in inflation-adjusted cost per THA revision—perhaps reflecting a reduction in length of hospital stays resulting from lower inpatient complication rates.

"Over the last several decades, there have been substantial advancements in both surgical technique and implant design that have improved patient outcomes" after THA, Dr. Rajaei and coauthors write. While THA provides excellent long-term outcomes, high rates and costs of revision

surgery continue to be a problem.

Even if they don't experience a revision surgery, most hip arthroplasty patients aged 45 to 64 have a life expectancy of 20 years or longer after their THA. "A large proportion of these patients will outlive their implants" the authors observe. "This presents a challenge to the orthopaedic and scientific communities as the need for longer-lasting implants in these relatively young patients is critical." The researchers note that in the 1990s and 2000s, metal-on-metal hip implants were more widely used in younger patients. More recently, use of these types of implants has decreased due to concern about adverse outcomes.

Meanwhile, for patients who do require THA revision, the procedure is safer today and associated with less complications, even after adjusting for all health problems. Dr. Rajaei and colleagues conclude, "This improving patient safety profile is encouraging and validates the efforts made to improve patient outcomes after THA revision."

More information: Sean S. Rajaei et al. Increasing Burden of Total Hip Arthroplasty Revisions in Patients Between 45 and 64 Years of Age, *The Journal of Bone and Joint Surgery* (2018). [DOI: 10.2106/JBJS.17.00470](https://doi.org/10.2106/JBJS.17.00470)

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