

Infections following hip replacement associated with an increased risk of death, study finds

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Infections following **total hip replacement** associated with an increased risk of death



Key Findings



868 patients (0.5%) required further surgery for a **prosthetic joint infection (PJI)** within **one year** of hip replacement.



Patients who developed a **PJI** had more than a **five-fold increased risk of death** within **10 years**.



These findings underscore the need for **effective strategies** to **prevent** and **treat infections**.



Study Description:

This population-based study included adult patients in Ontario, Canada, who received their first total hip replacement for arthritis between 2002 and 2021. For those who developed PJI within one year of the procedure, the primary outcome was death within 10 years following hip replacement surgery.

Citation: Mundi et al. J Bone Joint Surg Am. 2024.

Infographic for "Association Between Periprosthetic Joint Infection and Mortality Following Primary Total Hip Arthroplasty" Credit: ICES

Patients who develop a periprosthetic joint infection (PJI) after a total hip replacement have more than a five-fold increased risk of mortality within 10 years, according to new research published in the [Journal of Bone and Joint Surgery](#).

In one of the largest studies to date of patients with PJI after [total hip arthroplasty](#) (THA), researchers from ICES, Sunnybrook Research Institute and the Department of Surgery at the University of Toronto's Temerty Faculty of Medicine looked at the long-term (10 year) mortality risk of PJI for 175,432 adults receiving their first hip replacement in Ontario, Canada.

About 1 in 7 Canadian adults live with osteoarthritis, a number that is [expected to grow](#) as [baby boomers](#) age and life expectancies increase. Joint replacement procedures can lessen pain and improve quality of life for people who are dealing with this progressive disease.

"Most hip replacement surgeries are very successful, but unfortunately, about one to two percent of patients develop infections of the prosthetic joint. It is well established that such infections impact patient health over the long-term, but this research provides compelling evidence that it can even lead to death," says lead author Dr. Raman Mundi, an assistant professor in Temerty Medicine's Department of Surgery and a surgeon-scientist in the Division of Orthopaedic Surgery at Sunnybrook Health Sciences Centre.

The researchers found that among adults receiving their first hip replacement from 2002 to 2021, 868 patients (0.5%) required further [surgery](#) for a PJI within one year of hip replacement.

Patients with a PJI within the first year had a significantly higher 10-year mortality rate than those who didn't develop an [infection](#) (11.4% versus 2.2%)

"Our findings underscore the need for arthroplasty surgeons and infectious disease experts to work together on prevention efforts and follow best practice guidelines for patient care," says senior author Dr. Bheeshma Ravi, an adjunct scientist with ICES, surgeon-scientist with the Division of Orthopaedic Surgery at Sunnybrook Health Sciences Centre and assistant professor of surgery at Temerty Medicine.

The authors provide several reasons for why they believe the association between PJI and mortality is likely causal and not correlational.

First is that the association was quite strong, with the authors controlling for variables such as age, sex, income and health status. Second is that there is precedent that major orthopedic events (for example, hip fractures) can directly increase risk of mortality. And finally, this study builds on existing evidence that used smaller cohorts of patients and shorter follow-up times.

"Ultimately, we need to develop effective strategies to prevent and cure these infections to reduce the long-term risk to patients," adds Ravi.

More information: Raman Mundi et al, Association Between Periprosthetic Joint Infection and Mortality Following Primary Total Hip Arthroplasty, *Journal of Bone and Joint Surgery* (2024). [DOI: 10.2106/JBJS.23.01160](https://doi.org/10.2106/JBJS.23.01160)

Provided by ICES

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