

Alternate type of surgery may prevent total knee replacement

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An underused type of knee surgery in younger patients, called high tibial osteotomy, shows considerable success in reducing the need for total knee replacement, according to new research in *CMAJ* (*Canadian Medical Association Journal*).

"High tibial osteotomy is a [knee surgery](#) aimed at [younger patients](#) in the earlier stages of knee osteoarthritis. One of its goals is to prevent or delay the need for [knee replacement](#)," says coauthor Dr. Trevor Birmingham, Canada Research Chair in the Faculty of Health Sciences and the Bone and Joint Institute at Western University, London, Ontario. "In some ways, it's like performing a front-end alignment on your car to stop asymmetric wear on your tires and increase their longevity."

Knee osteoarthritis is a common cause of pain and disability and puts tremendous burden on health care systems. Total knee [replacement](#) is frequently performed on [older patients](#) with end-stage disease and limited mobility.

In Canada, rates of total knee replacement are high and increasing, while rates of high tibial osteotomy are low and decreasing. One reason for this is the perception that high tibial osteotomy is not warranted if the joint is going to be replaced soon afterwards. The findings of this new study contradict this perception.

Of the patients in this study getting high tibial osteotomy in London, Ontario (643 knees in 556 patients), 95% did not need a total knee replacement within 5 years, and 79% did not get a total knee replacement within 10 years. Even in patients traditionally not considered ideal candidates for high tibial osteotomy (e.g., women and patients with later-stage disease), about 70% did not get a knee replacement within 10 years.

The procedure is particularly suitable for people who are younger, have less severe joint damage and who may be more physically active. "Those patients especially contribute to the burden of knee osteoarthritis," says Mr. Codie Primeau, lead author. "There is a treatment gap between exhausting nonoperative treatments and appropriateness for joint replacement, resulting in many years of pain, lost productivity and

associated costs."

"Given these findings, high tibial osteotomy may be underused in Canada and could be performed more often to delay or prevent the need for [total knee replacement](#)," says coauthor Dr. Robert Giffin, professor of surgery at Western University's Schulich School of Medicine & Dentistry and the Bone and Joint Institute.

"Total [knee](#) replacement after high tibial osteotomy: time-to-event analysis and predictors" is published February 1, 2021.

More information: Codie A. Primeau et al. Total knee replacement after high tibial osteotomy: time-to-event analysis and predictors, *Canadian Medical Association Journal* (2021). [DOI: 10.1503/cmaj.200934](#)

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