

New health economics study highlights societal benefits of knee replacement surgery

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The full impact of knee replacement surgery on both patients' lives and on society includes significant overall cost savings, according to a new study published in the *Journal of Bone and Joint Surgery (JBJS)*. Researchers found that for the average patient undergoing knee replacement surgery, the expense of surgery is offset by indirect savings of nearly \$40,000. This translates to an average lifetime societal benefit of \$10,000-\$30,000. Most of the societal savings come from the patient's ability to maintain employment and increase earnings over a longer time in the workforce. The study also found benefits from fewer missed worked days and lower disability payments.

As an [aging population](#) stays in the workforce longer and [obesity rates](#) continue to climb, demand for total knee replacement surgery is expected to exceed 3 million by the year 2030 – up from 600,000 in 2009. Now with a new way of comparing direct and indirect costs between surgical and non-surgical treatments, patients suffering from end-stage [osteoarthritis of the knee](#) are able to get a quantitative look at the overall cost benefits of knee replacement surgery relative to the societal and [economic savings](#).

"We know that when a knee replacement is done on patients at the appropriate time, it adds tremendous value to their lives. It gets them back to work and back to their families. It improves their quality of life and allows them to be productive and active again," said John R. Tongue, MD, American Academy of Orthopaedic Surgeons (AAOS) past-president. "But until now, that value has been hard to quantify. This

study allows patients to see the big picture of the effect on their daily lives and in the long term."

Dr. Tongue adds, "Demographics of knee replacement patients have dramatically changed as baby boomers age. They want and need to stay active but their joints can't always keep up. In this [economic environment](#), this study provides a new way of looking at cost that offers perspective to this growing population."

The study, "The Direct and Indirect Costs to Society of Treatment for End-Stage Knee Osteoarthritis," confirmed total knee replacement surgery to be a cost-effective treatment for patients with end-stage osteoarthritis and estimates lifetime societal savings of about \$12 billion from the more than 600,000 total knee replacement surgeries performed in the U.S. in 2009. These societal savings primarily accrue to working patients and employers.

Total knee replacement (or total knee arthroplasty (TKA)) is one of the most successful and life-enhancing surgical procedures. It significantly relieves pain for 90 percent of the patients who have the procedure, allowing them to return to work and tremendously improving their quality of life.

"With the new model we created for this study, we have opened the door to evaluate [societal benefit](#) for other types of health care services as well, which is truly exciting," said study author and health care economist Lane Koenig, Ph.D. "The benefit of successful treatment of bone and joint conditions in the long term is known by the patients who've been through it, but these data offer evidence on the societal effects that will add to the conversation people are having about improved, cost-conscious health care."

To conduct the study, researchers reviewed literature and Medicare

claims data and collected patient reported outcomes data. The collected data were applied to a Markov Decision Model where they estimated the total societal savings associated with [knee replacement surgery](#) by comparing costs for direct medical care and indirect costs, including lost wages from work and [disability payments](#) for both surgical and non-surgical treatments.

More information: The full study is available at www.ANationInMotion.org/value/knee

Provided by American Academy of Orthopaedic Surgeons

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