

# Study: Women report more pain than men after knee replacement surgery

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Middle-aged women with rheumatoid arthritis or arthritis resulting from an injury are among the patients most likely to experience serious pain following a knee replacement, researchers from Hospital for Special Surgery (HSS) in New York have found.

One of the biggest concerns patients have is the amount of pain they will have after [knee replacement surgery](#). Although it is a very successful operation overall to relieve [arthritis pain](#) and restore function, persistent [postoperative pain](#) can be a problem for some patients. Researchers at HSS set out to determine which groups were at highest risk for increased postoperative pain based on demographic and surgical variables.

"There is no question that pain after [total knee replacement](#) is greater than that after total hip replacement," says senior study author Thomas P. Sculco, M.D., the hospital's surgeon-in-chief. "Many factors play a role, and our studies found that younger female patients, particularly those with post-traumatic or [rheumatoid arthritis](#), had the highest pain scores."

In two companion studies to be presented at the annual meeting of the American Academy of Orthopaedic Surgeons in New Orleans on March 11, Dr. Sculco and colleagues also found that surgical factors like having [general anesthesia](#) or a longer tourniquet time during knee replacement also can contribute to pain following surgery.

For the studies, the researchers reviewed hospital records for 273 patients who underwent total knee replacement from October 2007 to March 2010. For the first study, investigators looked at demographic data such as gender, ethnicity, age, height, weight, type of knee arthritis and co-existing medical conditions. They also looked at the knee's preoperative range of motion, how well the patients could walk and the amount of pain they had before surgery.

The strongest predictors for severe postoperative pain during rest included being female; being between the ages of 45 and 65; having post-traumatic arthritis spurred by an injury, rheumatoid arthritis, or osteoarthritis; being obese; and having a higher level of pain at the time of hospital admission. Patients with avascular necrosis, a disease that causes cell death of bone components due to a decreased blood supply, had significantly lower postoperative pain.

During periods of activity, obesity, a higher pain level during hospital admission and being between the ages of 45 and 65 were the strongest predictors of postoperative pain. Patients who were Asian or Caucasian, and those with either underlying osteoarthritis or avascular necrosis, or both, had lower postoperative pain during periods of activity.

"Before patients come in to the hospital, surgeons should have a thorough discussion with them regarding postoperative pain, particularly in the groups that we found tended to have more pain," Dr. Sculco says. "More aggressive pain management techniques may be necessary for these patients."

For the second study, the researchers used the same medical records to gather information about surgical variables including the length of the incision, type of anesthesia, tourniquet time and pressure, how long the procedure took, estimated blood loss, and radiographic assessment including the amount of knee deformity and implant positioning and alignment.

Risk factors for severe postoperative pain at rest included having general anesthesia as opposed to an epidural or spinal block, longer tourniquet time, more blood loss, and having a large kneecap. Predictors for postoperative pain during activity included having a large kneecap, and techniques such as overstuffing of the patellofemoral joint (where the kneecap meets the thigh bone).

Surgical technique can play a role in reducing pain, Dr. Sculco says. "The surgeon must be aware not to use an implant that is too large for the knee, or a kneecap component that is excessive in size. In addition, the location of the joint line must be accurately positioned after the [knee replacement](#), for if it is too high it may lead to increased pain." Patients with epidural anesthesia also tended to have less pain than those who had general anesthesia, he says.

"Technical accuracy is important, particularly the alignment, patella sizing and joint line level," Dr. Sculco says. "Patients with more complex preoperative deformities often required increased operating time and surgical dissection, which in turn led to increased [pain](#), especially in the younger female [patients](#)."

**More information:** Study Titles: Demographic Variables Associated with Increased Postoperative Pain Following Total Knee Replacement (#150) and Surgical and Radiographic Variables Related to Increased Postoperative Pain Following Total Knee Replacement (#164)

Provided by Hospital for Special Surgery

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