

Anesthesia type affects outcomes of bilateral knee replacement surgery

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Using regional anesthesia rather than general anesthesia reduces the need for blood transfusions in patients undergoing bilateral total knee replacement, according to a new study by researchers at Hospital for Special Surgery, in New York City.

Currently, the majority of bilateral knee replacements in the United States (as well as single knee replacements) are performed under general anesthesia, and researchers say that a [regional anesthesia](#) known as neuraxial anesthesia should be promoted for these procedures.

"The use of neuraxial anesthesia may not always be feasible in every patient, but it should be considered more frequently," said Stavros Memtsoudis, M.D., Ph.D., director of Critical Care Services at Hospital for [Special Surgery](#) (HSS) in New York City, who led the study. "You shouldn't be asking doctors who don't use neuraxial anesthesia in their daily practice to suddenly switch over and start doing it, but there is a lot of education that needs to be done in terms of training residents and [orthopedic surgeons](#) to point out the impact of the choice of anesthetic technique on outcomes beyond the operating room." The study appears online ahead of print in the journal *Regional Anesthesia and [Pain Medicine](#)*.

Despite its advantages, bilateral [knee replacement](#) is associated with an increased risk of complications, compared with the alternative of operating on one knee at a time. Neuraxial anesthesia involves injecting medication into the [fatty tissue](#) that surrounds the [nerve roots](#) in the

spine (known as an epidural) or into the [cerebrospinal fluid](#) that surrounds the spinal cord.

For the last two decades, HSS has increasingly used regional anesthesia for [orthopedic procedures](#), because of a growing body of evidence showing favorable results compared with general anesthesia.

Because the influence of anesthesia on perioperative outcomes after bilateral total knee replacement is unknown, researchers at Hospital for Special Surgery conducted a retrospective review of all bilateral knee replacements performed between 2006 and 2010 using Premier Perspective. This administrative database contains discharge information from approximately 400 acute care hospitals located throughout the United States. The study population included 22,253 patients, but the type of anesthesia used was unclear in 6,566 of the patients. Of the 15,687 patients where anesthesia type could be identified, 6.8% received neuraxial anesthesia, 80.1% received general anesthesia, and 13.1% received a combination of both. The three groups had similar comorbidity burdens.

The investigators discovered that patients receiving neuraxial anesthesia were less likely to receive blood transfusions (28.5%) than patients receiving general anesthesia (44.7%) or the combination (38.0%) (P

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