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## A sporting chance for active total knee replacement patients

*Study finds implant durability not affected by high-impact sports participation*

Total knee arthroplasty (TKA) patients may be able to participate in high-impact sports without increasing risk of early implant failure, according to a new study presented today at the 2010 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS). In addition, the authors observed better clinical scores in the group of patients who participated in activities discouraged by the Knee Society (KS) than those of the control group.

The Knee Society recommends TKA patients avoid activities that cause high stress loads on the implant and may increase the risk of early failure. Such activities include high-impact aerobics, football, soccer, baseball, basketball, jogging and power lifting, among others.

"Recent studies have shown that as many as one in six total knee replacement patients participate in non-recommended activities," said Sebastian Parratte, M.D., PhD, an orthopaedic surgeon from the Mayo Clinic in Rochester, MN and the Aix-Marseille University, Center for Arthritis Surgery, Hospital Sainte-Marguerite in Marseille, France. "This study offers some reassurance to those patients who choose to return to an active lifestyle after surgery."

Researchers evaluated outcomes of 218 patients between the ages of 18 and 90 who underwent primary knee arthroplasty at the Mayo Clinic and reported performing heavy manual labor or practicing a non-recommended sport following surgery. The "sport group" was matched by age, gender and BMI to a control group of 317 patients who underwent the same procedure using an identical implant and followed recommended activity guidelines.

Clinical and radiologic results were measured using Knee Society (KS) scores and implant survivorship was evaluated using multivariate analysis according to the Cox model.

At an average follow-up of seven-and-a-half years after surgery, the study found:

- No significant radiological differences and no significant differences in implant durability could be demonstrated between the sport group and the control group;
- The sport group showed slightly higher KS Knee and function scores compared to the control group;
- The control group experienced a 20 percent higher revision rate for mechanical failure (loosening, wear or fracture) compared to the sport group;
- After accounting for all variables, including co-morbidities, the sport group had a 10 percent higher risk of mechanical failure compared to the control group.

These results were quite surprising to Dr. Parratte and his team.

"We hypothesized that high-impact activities would not increase the risk of implant failure, but we did not foresee that such activities might actually improve clinical results," he said. "It is clear that more research is necessary to evaluate the short and long-term effect of high-impact activities on the durability and function of modern TKA implants."

He added that, although the industry is not ready or able at this point to revise its recommendations, that possibility may exist in the not-too-distant future. In the meantime, he noted that surgeons and patients should continue to follow all industry recommendations relating to recovery following joint replacement surgery.

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Learn more.

## About Joint Replacement

Joint replacement, also known as arthroplasty, is considered by many to be one of the most successful medical innovations of the 20th century. Total joint replacement is a surgical procedure in which the patient's natural joint is replaced with an artificial one, made of a combination of plastic, metal, and/or ceramic.

The most common reasons for this surgery are pain and stiffness that limits normal activities such as walking and bending and that cannot be satisfactorily treated with medications or other therapies. Therefore, joint replacement surgery often provides a significantly improved quality of life to patients who would otherwise have to live with severe pain.

In 2007, there were 550,161 total knee replacements performed in the United States, and that number is on the rise—particularly as the Baby Boomer population continues to age. Because of this trend, it is important to optimize patient outcomes.

Disclosure: Dr. Parratte and his co-authors received no compensation for this study.

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