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## Pushing Limits of New Knees

*Younger Patients Choose Surgery; Some Sports Are OK, But Which Are Too Much?*



By MELINDA BECK

John Jeffries, a 49-year-old money manager in Dover, Mass., had hip-resurfacing surgery in 2008 and is now coaching his son's basketball team and long-distance cycling.

Alex Douglas, a Wall Street software architect, had both knees replaced last year at 39 after years of sports injuries. He can't wait to go kite-boarding this weekend. "I've been cleared to have fun," he says.



Hard charging baby boomers and Generation X-ers are wearing out their joints at younger ages and turning to joint replacement surgery. But is it a quick fix? WSJ's health columnist Melinda Beck discusses with Kelsey Hubbard.

Joint-replacement patients these days are younger and more active than ever before. More than half of all hip-replacement surgeries performed this year are expected to be on people under 65, with the same percentage projected for knee replacements by 2016. The fastest-growing group is patients 46 to 64, according to the American Academy of Orthopaedic Surgery.

Many active middle-agers are wearing out their joints with marathons, triathlons, basketball and tennis and suffering osteoarthritis years earlier than previous generations. They're also determined to stay active for

many more years and not let pain or disability make them sedentary.

To accommodate them, implant makers are working to build joints with longer-wearing materials, and surgeons are offering more options like partial knee replacements, hip resurfacing and minimally invasive procedures.

More younger people also need joint-replacement surgery due to obesity, and some orthopedists refer them for weight-loss surgery first to reduce complications later.

Even the most fit patients face a long period of rehabilitation after surgery and may not be able to resume high-impact activities.

"There is, to be honest, some irrational exuberance out there," says Daniel Berry, chief of orthopedic surgery at the Mayo Clinic in Rochester, Minn., and president of the American Academy of Orthopedic Surgeons. "People may be overly optimistic about what joint replacement can do for them."

One big unknown: How long will the replacement joints last? In the past, many doctors assumed

implants would wear out in about 10 or 15 years, and they urged young patients to put off surgery as long as possible to minimize the risk of needing a costly and difficult revision surgery—or even two. (A total knee replacement typically costs \$15,000 to \$22,000. A revision can be \$45,000 or more, with a higher risk of complications.)



Dominick Reuter for The Wall Street Journal

John Jeffries, 49, had his hip resurfaced in 2008.

Steven Haas, chief of the knee service at the Hospital for Special Surgery in New York City, says he frequently sees young patients who are in too much pain to play with their kids, take walks, work or enjoy traveling. "To them, the idea of being miserable in their 50s so they might not need another surgery in their 70s doesn't make much sense," he says.

Several studies of hips and knees implanted in patients long ago have found that 85% to 90% are still functioning well after 20 years. Advances in wear-resistant materials may make implants being used today last even longer.

For example, many hips and knees use a combination of metal and polyethylene parts, and continuous motion can wear away small polyethylene particles. Scientists have found that irradiating the polyethylene removes free oxygen radicals that contribute to degradation, so the polyethylene components are expected to wear much longer.

"Metal-on-metal" hip parts were supposed to wear better than plastic, but their use is declining due to concerns that they can release metal ions into patients' bloodstreams and cause soft-tissue damage. Hip implants made with "ceramic-on-ceramic" components have a disconcerting tendency to squeak.

Last year, one manufacturer, [Smith & Nephew](#), won clearance from the Food and Drug Administration to market its latest technology as a "30-year knee" based on tests mimicking 30 years of wear.

Still, there are no long-term data on how any of the latest implants will fare in actual patients. "We have to install them and see," says Robert Namba, an orthopedic surgeon with Kaiser Permanente in Irvine, Calif.

The biggest variable is patients themselves. As a rule, the more active they are, the faster their joints will wear out, loosen or require revision.

Most orthopedic surgeons encourage patients with hip and knee implants to walk, swim and cycle as much as possible. Golf and doubles tennis are acceptable. But jogging, running, jumping and singles tennis are out. "If your goal is a 30-year knee, you need to avoid high-impact sports," says John Wright, an orthopedic surgeon at Brigham and Women's Hospital in Boston.

That said, some patients are determined to push the envelope, and some doctors give their blessing.

"If you have a brand new sports car and leave it in the garage, it will last forever and you won't have any fun," says Thomas Schmalzried, an orthopedic surgeon at St. Vincent Medical Center in Los Angeles. A former college basketball player, Dr. Schmalzried has patients who play competitive sports and run marathons with artificial joints. "I know that the technology is capable of this level of athletic function. What I don't know—what nobody knows—is where the lines are for the average patient."

Some doctors compromise and tell patients they can ski and surf if they were good at it before surgery,

(and as long as they avoid skiing moguls).

"There's a happy medium, and it's not necessarily the same for every patient," says Dr. Berry. "One might say, 'I'm willing to take a risk because that activity is important to me,' and another might not."

Personal quality of life issues are also important in deciding whether—and when—a patient is ready for joint-replacement surgery.

"It got to the point where I couldn't get on my motorcycle anymore," says Paul Canter, a picture framer from Los Angeles who had a double hip replacement at 63 last year.

Chris Schubert was kicked by a horse when she was 25, then suffered a near-fatal staph infection from a cortisone shot. Mounting pain and inflammation over the next 14 years forced her to quit recreational horseback riding, interrupted her sleep and interfered with her work as a building contractor. She had minimally invasive knee replacement surgery with Dr. Haas last year, at age 38, and her pain and limitations are gone. "I thought my path in life was set and I'd just be miserable," she says. "I never imagined my life could be this wonderful."

Patients say that regaining function after surgery requires enormous mental and physical effort. "Pre-hab"—building up strength before the surgery—is just as important as re-hab afterward, they say.

"I was in the best shape of my life before I went in for the surgery," says Mr. Jeffries, the money manager, who trained twice a day for six months before his hip-resurfacing surgery in 2008.

And staying as fit and strong as possible is also critical to joint preservation. "I made up my mind. If I was going to go through all this surgery and rehab, I wanted to make these hips last as long as they possibly can," says Carol Espel, 55, an executive of Equinox Fitness who damaged both hips dancing professionally and teaching fitness for years. Now she takes classes in cycling, yoga, Pilates and strength training weekly. "No impact ever," she says.

Mark Liszt, the owner of a wholesale meat company in Los Angeles who had double knee replacement surgery in 2008 at the age of 60, says the first five months of rehab were very painful and discouraging. "You're fighting to get range of motion back. You're fighting to break adhesions. You're fighting depression and you're wondering, 'Is an era of your life over?'" But he worked through the pain and was back playing basketball a few months later.

Now 63, he still plays basketball twice a week. The surgery, he says, "gave me my life back. I can pivot. I can do a hook shot. And I am completely pain free."

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