



After receiving a customized partial-knee replacement at the Baptist, Derek Hayes—shown with his son, Parker—is active again.



"The care at the Baptist was absolutely the best," says Nancy Bush Ellis, who had both knees replaced and has no problem climbing Beacon Hill to her apartment.

THREE GENERATIONS OF JOINT REPLACEMENT

Across the Age Spectrum, Lives Are Transformed

When it comes to considering joint replacement surgery, a patient's age may be a factor in decision-making—

but not the way it used to be. The average age of a joint replacement patient has dropped. Five years ago, 50 percent of patients were under 65; today, it's closer to 66 percent. The fastest-growing category of joint replacements is the partial-knee replacement, which is often performed on younger individuals. As these three profiles indicate, New England Baptist Hospital has plenty to offer patients across the age spectrum. That includes older individuals, who are carefully screened and thoughtfully managed throughout their hospital stay and rehabilitation. The diverse individuals featured here have one thing in common: they found what they needed at New England Baptist Hospital and have returned to their active lifestyles.

Derek Hayes – 30s

If Derek Hayes' left knee could talk, what a story it would tell. When Hayes was just seven, a dead tree fell on it, causing a double-compound fracture that required surgery. As he grew, the knee was vulnerable, but that didn't prevent him from becoming an athlete.

Then, during a high school basketball game, Hayes went in for a lay-up, landed awkwardly and further damaged his knee. He said no to surgery, played rugby in college and, during one summer, his knee "locked up" as he climbed a ladder. "I was told I had bone chips, so absorbable screws were inserted, and for ten years I was okay," he says.

Once in his 30s, Hayes' knee became progressively worse. "Just walking caused pain," he recalls, noting that he was told his meniscus—the wedge-shaped cartilage in the knee—was torn. As manager of a lumberyard in North Berwick, Maine, Hayes is on his feet 60% of the time. The rest of his life suffered from his worsening condition.

"I used to be a real gym rat, and I also played softball," he says. "But I had to give those things up. I had a three-year-old son at the time. Nevermind playing with him, I couldn't even limp with him."

Hayes visited orthopedic surgeons who told him that, at 33, he was too young for knee replacement surgery. He tried every treatment that was available, including hyaluronic acid injections, cortisone shots and wearing a special brace. Nothing helped. "I thought I was at a dead end," he says. Then an orthopedic surgeon referred him to Brian McKeon,

MD, an orthopedic surgeon at New England Baptist Hospital. McKeon is a sports medicine specialist who serves as chief medical officer for the Boston Celtics. "Dr. McKeon is a great guy—so upbeat and positive," says Hayes. "I knew I was in good hands."

McKeon suggested that he perform a customized partial-knee replacement, which would address Hayes' problem and leave the door open for a total knee replacement in the future. The surgery only requires one or two nights in the hospital. Patients can usually put their full weight on the leg the day after surgery.

The knee implant is much smaller than is used for a total knee replacement, but the important part is the customization: its design is based on CT scans of the patient's hip, knee and ankle. "This process takes the patient's exact geometry into account," McKeon explains. "As a result, the partial-knee implants fit like a glove, and the overall leg alignment is perfect."

Hayes was a good candidate, he adds. "The right candidate is someone who needs to get back to work and accepts that they cannot participate in impact sports." McKeon encourages his patients to maintain a healthy weight and perform strength training to keep the leg in good shape.

Since his surgery three years ago, when Hayes was 34, he has returned to an active lifestyle and rarely needs pain medication. "I'm coaching my son's soccer team this year, and I renovated a two-family house," he says. "The surgery worked well."

Dennis Costin – 50s

As fire chief for District 3 in downtown Boston, Dennis Costin's days are unpredictable. He may be at a desk doing administrative work, but Costin is just as likely to serve as incident commander for a fire or other disaster. That is how he injured his left hip in 2007.

"During a fire, I was running down a stairwell that was full of smoke," says Costin, who lives in South Boston. "I couldn't see, so I fell down the last few steps." Despite physical therapy and cortisone shots, his hip remained painful.

"I couldn't walk without limping, and I thrashed around in bed at night trying to get comfortable," he says. During the following two years, his physically demanding job took its toll. "I reinjured the hip during fires and subway incidents."

Costin soon gave up playing handball, skiing and walking the golf course in favor of using a cart. Two different Boston-area orthopedic surgeons evaluated him for hip replacement surgery. "Both said I should wait because I was only 54," he says. But waiting produced a bigger problem: his limp caused leg and back pain.

"One day, I was watching a friend play basketball," Costin recalls. "I got up to walk, and he said 'I see you're still limping. How's your waiting working out for you?' My friend had both his hips done. I knew I had to do something."

He made an appointment with Daniel Ward, MD, a Baptist orthopedic surgeon. "I liked Dr. Ward's demeanor," he says. "He tells you the way it is. He looked at my x-ray and said 'your hip is bad.' But I was definitely a candidate for hip

replacement surgery."

Ward reassured Costin that he would soon be pain-free and back to work. "Expect to do well—that's what I tell my patients," says Ward. "I cannot stress enough the role that attitude plays in a patient's recovery. I want my patients to be confident going into the operation."

Costin did his part prior to his surgery by exercising to strengthen the muscles in his hip and legs. After his surgery, which Ward performed in April 2010, he recovered at a fast clip. "It went great at the Baptist," says Costin. "Less than 24 hours after surgery, I progressed from a walker to crutches in the same PT session. I turned down pain medication; I had been in more pain prior to the surgery."

His motivation to return to work fueled his ongoing recovery. "At the end of May, I was able to walk two to three miles each day," he says. "By June, I was walking as much as eight miles a day."

As the summer ended, Costin was back at District 3, pain-free, on full duty with no limitation. "I love the way I feel now," says Costin. "When I saw Dr. Ward the last time, he said, 'Dennis, anything you could do before, you can do now.'"

"We know how to perform successful surgery," Ward explains, "and at the Baptist, patients receive great pre- and post-operative care. But if the patient is not motivated, their recovery will be delayed. Dennis has an outstanding attitude. He had all the right ingredients for a great result."

SETTING EXPECTATIONS AND LOWERING ANXIETY

Joint Replacement Surgery Class Prepares Patients and Family Members

The joint replacement surgery program at New England Baptist Hospital is distinctive for a number of reasons, including the volume of knee and hip replacement surgeries performed, the outstanding surgical expertise and the post-surgical infection rate, which is close to zero.

But there is something else that sets the Baptist apart: the outstanding preparation given to patients. The comprehensive pre-admission screening accomplishes some of it, but ask a patient who has attended the Baptist's unique joint replacement surgery class—a two-hour forum that covers the gamut—and you'll hear about increased confidence and decreased anxiety prior to their surgery.

"The class was so worthwhile, because they explained everything—the procedure, subsequent care and the rehabilitation," says Jean Devereaux, who had hip replacement surgery performed by Donald Reilly, MD, an orthopedic surgeon at the Baptist, in February. "It absolutely relieved my anxiety. I left the class knowing what to expect."

So did her husband, Lyle, who was worried about his wife's upcoming hip replacement surgery. "I knew I was going to be her nurse once she got home, so I attended the class, too," he says. "They showed us the various joint implants, and they even had a hospital bed in the room in order to demonstrate exercises and the apparatus that would be used."

Once she was back in their Arlington home, Devereaux could tell her husband had paid attention during class. "He regularly reminded me to lower my leg—and not use the hassock—in order to take the strain off my hip," she says. "That's a habit of mine."

Their team approach to her rehab, combined with the surgery that Reilly performed, resulted in a speedy recovery and outstanding outcome. "Jean was on her feet in no time," says her husband. "The results have been fabulous."

For Devereaux, who is 73, the proof is in the walking. "I enjoy walking again," she says. "I feel great."

Although Reilly doesn't insist that his patients attend the class, he makes it clear that it will be well worth their time. "He left it up to Jean and me, but Dr. Reilly definitely encouraged us to attend the class," says Devereaux. "He's one of the best, so we listened to him."

It's a rare patient or family member who doesn't benefit from the class, says Nancy Sevier, RN, ONC, orthopedic clinician, who presents many of the classes along with a physical therapy colleague. "About 95 percent of patients bring a family member to the class," she says. "Afterwards, they thank me because their fears about the surgery have been allayed. That's the goal." ●



The Baptist's unique joint replacement surgery class paved the way to a speedy recovery for Jean Devereaux, shown with her husband, Lyle.

E-Education on Joint Replacement Surgery Keeps the Support Coming

The Baptist's commitment to educating patients and keeping them informed went on-line earlier this year. In March, individuals who were scheduled for knee replacement surgery began receiving weekly emails that included customized information, news and details about available resources.

The free service, which expanded this fall to include hip replacement patients, has proved to be a huge success, says Nancy Sevier, RN, ONC, orthopedic clinician. "We've expanded on our popular joint replacement surgery classes by delivering useful information to our patients' in-boxes," says

Sevier. "It's the logical next step in our commitment to provide outstanding patient education. Our e-education initiative doesn't replace the classes; rather, it enhances them."

Recent emails have addressed infection prevention, blood transfusions and the importance of maintaining a healthy weight. Patients and family members appreciate receiving the information. "About 25 percent of our patients also have family members receiving our emails," Sevier notes. "Since the Baptist performed close to 5,000 joint replacements this year, and most patients eagerly sign up for the emails, we're reaching a lot of people."

Nancy Bush Ellis – 80s

When Nancy Bush Ellis is out and about in Boston, often on foot, she doesn't think about her knees. The same is true when she is at her home in Maine, where she spends much time gardening. Ellis is pain-free since having bilateral knee replacement surgery at the Baptist—the first knee in 2003 and the other in 2007, both performed by Richard Scott, MD, a Baptist orthopedic surgeon who specializes in joint replacement surgery.

"Everyone said you have to go to Dr. Scott at the Baptist," she recalls. "They were right. You felt you were in the best hands you could be in. Dr. Scott is such a terribly nice person. You don't worry with him."

Ellis, who is the sister of former President George H.W. Bush, says her joints paid the price for many active years of playing sports. "I know I damaged my knees from skiing, golfing and playing tennis," she notes. "I played paddle tennis on a hard court, and I loved every minute of it. But I finally had to stop."

Once knee pain affected her sleep, she knew it was time to consider surgery. "I was waking up at night and heading into the bathroom for Tylenol," Ellis says.

Both surgical experiences at the Baptist were positive. "The care at the Baptist was absolutely the best," she says. "I'm pretty healthy—no cholesterol or blood pressure problems yet. I'm trying to slip through life without taking any pills."

In that regard, Ellis is fortunate, Scott notes. "Not all octogenarians are spry like Mrs. Ellis," he says. "Many fall into

the other category, where they have health conditions that we must carefully manage, such as diabetes, coronary artery disease and hypertension. We take each patient as an individual and weigh the risks of having surgery."

The Baptist's pre-surgical screening process includes a full assessment aimed at identifying surgical risks, including the potential for delirium—a state of mental confusion, anxiety and disorientation. It often occurs in older individuals after surgery, possibly due to the combination of anesthesia and the narcotic medications used to control post-surgical pain.

"Delirium is usually transient, but it can be frightening," says Scott. "We sometimes consider using spinal, instead of general, anesthesia, if we think an older patient may be vulnerable." The Baptist has conducted important research aimed at preventing post-surgical delirium before it occurs.

Ellis came through her surgery and rehabilitation beautifully. At age 84, she has no complaints about her activity level, which includes volunteer work. "Once you're old, you can't skip or run anymore," Ellis says. "But I'm totally content with what I can do. I walk all over the city, including up Beacon Hill to my apartment. I thoroughly enjoy myself."

When she's at her home in Maine, which overlooks Cape Porpoise Harbor, she is active and busy. "I swim regularly, and I'm obsessed with gardening. Needless to say, I squat and lean over a lot."

"My knees are holding up perfectly fine. It's amazing what they can do."

THE BAPTIST'S POST-SURGICAL INFECTION RATE IS NEAR ZERO

There are several things to consider when selecting a hospital for joint replacement surgery. A hospital's post-surgical infection rate should be at the top of the list. No hospital in the region comes close to New England Baptist's near-zero post-surgical infection rate.

During the period from October 2009 to October 2010, Baptist surgeons performed close to 5,000 hip and knee replacements; the post-surgical infection rate was 0.4%. This near-zero infection rate is truly impressive when compared with the national average for joint replacement surgery: 1.25%.

"We began working toward a zero infection rate about seven years ago," explains Maureen Spencer, MED, RN, NEBH infection control manager. In 2006, the Baptist launched a unique and highly effective program that identifies and eliminates methicillin-resistant staph aureus (MRSA)—a potentially serious organism—before a patient's

surgery. Those found to be positive are given five days of treatment. "We give our patients the opportunity to kill bacteria beforehand, which gives them a better chance for a successful surgical outcome." That first year, MRSA infections dropped 61%. They have continued to plummet ever since. The results were published in *The Journal of Bone and Joint Surgery* in August 2010.

Baptist staff also emphasize patient education and encourage patients to shower using chlorhexidine, a skin antiseptic, prior to their scheduled surgery. "In the operating room, our surgeons use antimicrobial sutures and either incisional adhesives or antimicrobial gauze dressings," Spencer notes.

It is hard to overstate the importance of avoiding an infection. "Infections can be devastating to patients who have had joint replacements," says Spencer. "That is why we are doing everything possible to prevent them." ●

the big muscles that are needed for normal strength.”

“Basically, we’re trying to minimize the adverse impact on the hip joint when it is replaced,” Murphy explains. “You can accomplish that with a well-designed implant—one that is stable—by making sure the soft tissues that support the hip joint are preserved, and by minimizing any adverse impact on the hip joint.”

“We had a great operation and navigation techniques. We were still keeping the patient in bed until the day after surgery, but we hadn’t taken full advantage of those advances.”

“After I examined her, and we discussed the approach to observe ‘fast-track’ care that includes medication and getting the patient out of bed not long after surgery. When Smith posed her question, Murphy knew he had the right patient.”

“From the start, her goal was to return to running. She did so, climbing to 15 miles per week by September, six months after her hip replacement.” Dr. Murphy gave me my life back—just the ability to move, but to run.”

“I think he’s a genius. He exudes confidence, but he has a kind and caring heart.”



Stephen Murphy, MD, invented a mechanical navigation device that he adjusts to each patient's anatomy.

“The navigation step is critical,” he explains, “because the two most common reasons why a patient would require repeat hip replacement surgery are wear and dislocation. Both are directly affected by the positioning of the implant during surgery.” His mechanical instrument is tuned to each patient's anatomy, based on either 3D models from CT imaging or regular x-rays.

Smith knew Murphy didn't perform traditional hip replacement surgery. “I didn't want an impact on her super-active life.” “I had been running 50 miles a week,” says the Allieboro resident. “I didn't want in 2009, severe osteoarthritis in her left hip was having an impact on her super-active life.”

Cindy Smith, 53, heard about Murphy when she was researching minimally invasive hip replacement surgery. “I wouldn't be able to run again.”

“The Baptist performs far more than 1,000 hip replacements using the superior capsulotomy, and the outcomes are impressive.” “People often think of less-invasive techniques as having a higher frequency of problems,” he says. “But right from the start, this operation had a lower complication rate compared with the way we used to perform hip replacement surgery. The recovery is much faster, and the length of hospital stay is significantly lower.”

He uses special instruments, most of which he designed himself, that allow him to operate effectively through a small incision. Murphy also invented a mechanical navigation instrument that assists in placing artificial components with maximum accuracy.

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INTO THE HIP MORE EASILY-AND HOME MORE QUICKLY

Baptist Surgeon Casts Hip Replacements in a New Light



Innovations

At New England Baptist Hospital

JOINT REPLACEMENT SURGERY IS A MEDICAL SUCCESS STORY

The Baptist Continues to Perfect the Surgery and the Care

Joint replacement surgery has been steadily refined since it was first shown, 40 years ago, to be an effective treatment for chronic joint pain. Artificial hip and knee implants, surgical technique and the care that follows, including rehabilitation, have all been redesigned and perfected. In the U.S., approximately 775,000 people have joint replacement surgery each year. By saying good-bye to pain and disability, their lives are transformed.

Joint replacement surgery is recognized as a major medical success story, and New England Baptist Hospital has contributed to that success. “Over the years, Baptist surgeons have helped address the major obstacles, such as loosening of the implant and post-surgical infection,” notes James Bono, MD, vice chair of orthopedics and a highly regarded joint replacement surgeon. “At the Baptist, we’re often on the edge of the wave. By the time a new trend is recognized nationally, we’ve already changed how we practice.”

Pain management is a recent example. “At the Baptist, we’re now using multi-modal, preemptive analgesia—a fancy way of saying that we treat the patient’s pain before surgery,” Bono adds. “Historically, patients undergoing joint replacement surgery received medication following surgery to treat post-operative pain.

“But we have learned that it is far more effective to give pain medicine before surgery, in anticipation of post-operative pain. This avoids ‘getting behind’ in the management of the patient’s pain. By addressing pain at these different points in time, we’re able to make the experience more comfortable for our patients.”

The Baptist performs far more joint replacement surgery than any other Boston hospital.

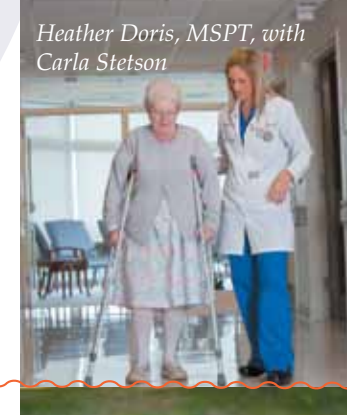
Because the Baptist performs far more joint replacement surgery than any other Boston hospital, its orthopedic surgeons see a wide range of cases, from straightforward to the most complex. Complementing their expertise is a care team, including nursing and rehabilitation staff, who provide patients with the outstanding care and legendary service for which the Baptist is known.

Thanks to ongoing clinical advances, today joint replacement surgery is an easier journey than it was just a decade ago. As this issue of *Innovations* shows, the Baptist is perfecting it even further.

continued inside



Stephen Murphy, MD



Heather Doris, MSPT, with Carla Stetson



Cindy Smith

To make an appointment with Dr. Murphy, please call 617-232-3040

Simplified surgery isn't magic, Murphy says. “The day after surgery, we want people to feel—aside from the hip itself—as close as possible to how they did the day before surgery. Obviously, they had an operation, but we're trying to get out of the patient's way as much as possible so that they can move, eat, feel well and have a clear head. That way, they can return to normal as rapidly as their bodies will allow.”

“The Baptist has been spectacular in supporting what we're doing,” Murphy notes. “However, patients are discharged only when they're ready to leave. People just happen to want to get home a lot sooner than they used to.” Several other Baptist joint replacement surgeons now offer their patients the “fast-track” option.

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“None of us advocates that patients run after surgery, since we don't yet know if they will pay a high price for it,” Murphy explains. “In 1985, more than half of hip replacements in patients younger than 50 failed at five years. Today, with low-wear bearings, fewer than 3% of hips in these younger patients have failed at 10 years. The progress is gratifying, but time will tell.”



Cindy Smith searched for a non-traditional approach to hip replacement surgery and found it at the Baptist. She quickly returned to her active lifestyle.

“Everyone on the floor was excited for me, because I was the first Baptist patient to go home the day after joint replacement surgery.” —Cindy Smith

GUIDANCE, ENCOURAGEMENT AND SAFE MOVEMENT

Baptist Physical Therapists Are Critical to a Patient's Progress

After joint replacement surgery, a patient's thoughts turn to heading home with decreased pain, increased function and an ultimate return to favorite activities. But before that can happen, there are specific milestones to be reached, including walking with crutches, going up and down stairs and regaining the ability to safely function at home. The key to reaching those milestones is the physical therapist (PT), a highly trained rehabilitation expert who understands healing, safe movement and the psychological aspect of encouraging patients after their surgery, even when just getting out of bed seems overwhelming.

A patient's nurse and case manager play critical roles in a patient's successful stay at New England Baptist Hospital, but physical therapy sessions—more than anything else—provide concrete evidence of a patient's progress after joint replacement surgery. This was apparent on a recent morning when Heather Doris, MSPT, clinical supervisor of inpatient physical therapy, visited three different patients who were recovering from joint replacement surgery.

8:00 am, Wednesday: Doris's day began on Jenks 5 East. The first patient on her list was Carla Stetson, 66, a Sharon, Massachusetts, resident who had hip replacement surgery on Monday. She had gotten out of bed and onto a walker the following day. Before greeting her patient, Doris reviewed her medical chart and checked in with her nurse for up-to-the-minute information. She entered room 507, where Stetson was eyeing her new crutches with suspicion. Still in their plastic wrapping, they had been placed beside her bed early that morning.

to do several exercises, with Stetson using the wall for support. “You're doing fantastic,” Doris said, “and it's going to become easier each and every day.”

Once she was in bed again, Stetson had a look of triumph on her face. She was tired, but she had taken the next step in her journey. Prior to her surgery, her hip pain was so intense that she couldn't drive—and could hardly get in or out of a car. She would be going home soon, with no need to stay at a rehab facility.

9:00 am: Doris headed to Jenks 4 West and reviewed Joy McIntosh's medical chart. McIntosh, 52, had a second hip replacement performed by Stephen Murphy, MD, the day before and was considered to be a “fast-track” patient (see article on page 2). She received lighter anesthesia during surgery, her urinary catheter was removed soon afterward, and she had gotten out of the bed and onto a walker the evening of her surgery.

Now, 24 hours after leaving the Baptist recovery room, McIntosh was ready for crutches and stairs. In a few hours, she would be going home.

“I'm backing off my pain medication,” she told Doris. “I don't feel pain as much as stiffness.” Familiar with the process of moving safely after hip replacement surgery, she



Two days after hip replacement surgery, Carla Stetson went from walker to crutches with help from Heather Doris, MSPT.

got onto her crutches and, with Doris's instructions and cues, headed down the hall with confidence. There were stairs to navigate.

“Remember, going up the stairs, your good leg goes first,” Doris said. “Going down, it's the other way; you put your crutch down first.” McIntosh mastered the stairs in no time. She had met all her rehabilitation milestones, and a home care physical therapist was scheduled to come to her Winchester home the next day.

“I feel like I'm ready to go home,” McIntosh said with a smile. “I'd rather sleep in my own bed.”

“Our job is to assess when patients have met all their PT goals and are safe to go home,” noted Doris, “but a big part of our job is getting patients to where they feel they are ready. Joy is definitely ready.”

10:00 am: Back upstairs, Doris greeted Celina Leonczuk, 72, and looked to see if Monica Phuah, a Polish interpreter, had arrived. Leonczuk does not speak English, and there would be much to communicate during this important PT session. Her knee replacement surgery was performed two days earlier by Tucker Aufranc, MD.

got out of bed and reported that her pain was a “four.” With the walker planted squarely in front of her and Doris's two hands providing safety and guidance, she began to walk gingerly. “It's not easy,” Leonczuk said, “but it's for my own good. I know that.”

She was soon back sitting on the side of her bed with a smile on her face. Her daughter looked on as Leonczuk worked with Doris to perform a group of exercises aimed at increasing the strength of her affected leg. She would need to be able to climb stairs since their home in South Boston has 23. Doris would be back again that afternoon to keep the progress going.

As she left to check in with her next patient, Doris reflected on the role she and her colleagues play in those important early days after joint replacement surgery. “As physical therapists, we have many rewarding moments—mostly when we see people go from fearful to confident because of our help,” said Doris. “I like being that person who instills confidence. In a way, we serve as the patient's coach. We back up the care we provide with knowledge.”

With Phuah capturing every word, Leonczuk moved slowly