BY GARY GOLDENBERG | PHOTOGRAPHY BY JULIANA THOMAS

A New Lease on Life

IN NYU'S LIVING-DONOR LIVER TRANSPLANT PROGRAM, PATIENTS TRULY GIVE OF THEMSELVES TO OTHERS.

For some men, a 50th birthday brings a present like a sports car or a trip around the world. But on reaching his half-century milestone, Paul Fox, a marketing executive from Brooklyn, got the best gift he could ever have imagined.

On April 3, 2003, just a few weeks after his big celebration, Paul was wheeled into an operating room at Tisch Hospital for a liver transplant.

As part of a growing national trend, Fox received an organ not from a cadaver, but from a living, breathing human being: his wife, Linda. Without her remarkable gift—the right lobe of her liver—Paul would have been placed on the national organ transplant registry, along with 17,000 other Americans. (Fifty thousand additional patients with liver failure don't even make the list because their chances of getting an organ are so slim.) At the time, the average wait for a man his age was more than two years. He probably didn't have that long to live. But today Paul is thriving. And so is Linda. Her liver has almost completely regenerated, and the only sign of her surgery is a large wishbone-shaped scar across her abdomen.

The Foxes' heartwarming story is just one of dozens at NYU's Mary Lea Johnson Richards Organ Transplantation Center, one of the nation's busiest and best programs for living-donor transplants. "If the population as a whole would agree to donate their organs when they die, we would not be doing live-donor transplant operations," says Lewis W. Teperman, M.D., Associate Professor of Surgery and Director of Transplantation at NYU Medical Center. "But due to the critical donor shortage, there's no alternative."

Paul Fox and his wife, Linda

RIGOROUS SCREENING

Dr. Teperman and his colleagues started NYU's living-donor liver transplant program in the late 1990s. "We've always known how to do this," he says. "It's very similar to a right hepatic resection, an operation we do all the time for cancer."

The surgeons also learned from years of experience with living-donor surgery in Asia, where the operation was necessitated because of cultural taboos against the use of cadaver organs. "We took existing techniques, modified them, tested them in animals, and went to the Ethics Committee," recalls Dr. Teperman. The Ethics Committee and the transplant team agreed that stringent screening procedures were needed to ensure that donors understand the risks involved and are not being coerced by family pressures or financial incentives.

NYU's donor-screening process has become a model for transplant programs around the country. First, prospective donors are tested to see if they have the same blood type as the recipient. If so, they are interviewed and re-interviewed (without other family members present) and given thorough psycho-social evaluations to ensure that they have proper motivation and strong resolve.

"They even try to talk you out of it," says Amy Gaeta, 23, of Hoboken, N.J., who donated part of her liver to her older sister in 2003 *(See sidebar on page 37)*. "It

got to the point where I was almost arguing with the psychologist," says Amy. "I had to tell her, 'I *want* to do it.' I didn't understand her reasoning at the time, but it's great that she did that."

B). He recovered quickly and thought nothing of it until he turned 35, when a routine exam revealed that all along he actually had hepatitis C, a much more serious form of the disease. He

first, beginning a day-long marathon for the two surgical teams, each consisting of about a dozen nurses, residents, surgery fellows, and anesthesiologists. One team, led by Dr. Teperman, began

"My faith in the human spirit is continually renewed by having conversations with the donors and their families," says Dr. Lewis Teperman, who performs about 25 of these operations a year.

Next, would-be donors are subjected to a series of medical tests to determine if they are in robust health. Those who pass this step are assigned a donor advocate team, consisting of a medical social worker, a nurse clinician, and two attending physicians. "They are dedicated entirely to the donor," says Dr. Teperman, who also serves as Chairman of the New York Organ Donor Network, the nonprofit, federally designated organ-procurement organization that serves the Greater New York metropolitan area. "Another team is dedicated entirely to the recipient. There's essentially a 'Chinese wall' between the two teams."

The presurgical phase culminates with a series of radiological tests. "With our colleagues, we have come up with ways to scan the liver so that we know what to expect before we go into the OR," explains Dr. Teperman. "This significantly decreases the risk and the complication rate. We might find, for example, that there would be too little tissue left for the donor. If that's that case, we won't do the surgery. We have rules, and the number one rule is, 'Do not hurt the donor.' "

RUNNING OUT OF TIME

Paul Fox knew for years that he might eventually need a liver transplant. As a young adult, he had a bout with hepatitis (mistakenly identified as hepatitis

remained relatively well for more than a decade, but his liver steadily deteriorated. By early 2003, it was time for the transplant.

THE LIVING-DONOR OPTION

At Dr. Teperman's suggestion, the Foxes began to investigate the living-donor alternative. There were no guarantees, however; only one in four patients finds a suitable living donor. The couple ruled out Paul's sister, who lives in California and has two young children. "Of course, our children wanted to donate," says Linda. "Our son was 17, so he wasn't old enough [the age range for donors is 18 to 55]. Our daughter is 21, but . . . ."

"It's against the parental code," Paul interjects, completing his wife's thought. "You just don't put your children in danger."

Linda, who has the same blood type as Paul, volunteered to donate without hesitation. "I had had a Cesarean section with my first child, so I knew what surgery was like," she says. "As I told the people at NYU, I did it because I love my husband and I didn't want my children to go through this. And I knew I had a clean liver—hardly used, not a drink."

In mid-March, Paul turned 50, looking gaunt and tired. The operation couldn't come too soon. On the big day, April 3, Linda went into the OR

by removing her liver's right lobe (the larger of the organ's two lobes), a complex and laborious procedure in which a thick network of blood vessels are exposed and tied off or cauterized, bile ducts are rerouted, and the gallbladder is removed.

"No two livers are exactly alike," notes Dr. Teperman, who is assisted by Glyn R. Morgan, M.D., Assistant Professor of Surgery. After about eight hours, the lobe was freed, then flushed with saline (to prevent clotting) and a preservative. Dr. Teperman walked the organ across the hall, where the other team, which included Thomas Diflo, M.D., Associate Professor of Surgery, and Devon John, M.D., Assistant Professor of Surgery, waited.

By that time, Paul had already been in surgery for several hours, and his diseased liver had been removed. When Dr. Teperman arrived, the new lobe was set into place and the surgeons essentially ran the entire procedure in reverse. Eight hours later, the transplant was complete.

The initial days after a transplant are typically the hardest. Fortunately, both Paul and Linda were spared any significant postoperative complications, which can include bleeding, infection, or pneumonia.

Both went home on schedule, thanks in no small part to the transplant team's expert nurse clinicians. "I would

Amy and Kim Gaeta

“What’s the BIG deal?”

THE LIVER GETS NO RESPECT—until it goes on strike. This three-pound organ quietly performs about 500 vital functions. It stores iron, vitamins, fats, amino acids, and minerals; manufactures bile to break fats into easily digested globules; neutralizes potent substances, such as nicotine and caffeine; and filters out the debris of millions of moribund red blood cells. The liver comes to the rescue when your body needs fast fuel, by storing glycogen, which can be converted quickly back into glucose and released into the blood when your blood-sugar level dips too low. It also manufactures proteins necessary for your blood to clot properly.

Kim Gaeta, 28, has a newfound appreciation for the liver’s quiet toils. She first noticed something was wrong in August 2002, when her stomach and legs began to swell. She was stunned to learn that her liver was failing because of an irreversible condition called congenital hepatic fibrosis.

When Kim was referred to NYU for advanced care, Dr. Lewis Teperman told her that she would need a transplant and informed her about the living-donor alternative. When Amy, her sister and apartment mate, heard the news, she immediately volunteered—a little surprising, considering that the two sisters didn’t get along all that well.

“I said, ‘Let’s get tested, let’s go do it. What’s the big deal?’” Amy recalls. “We had a fight about it. Kim said she would kick me out of our apartment if I went ahead with it.”

“Imagine the guilt if I was all right and something went wrong with her,” Kim responds. “Who would want it?”

But Amy prevailed, joining a special group of people willing to sacrifice a part of themselves for a loved one.

The transplant took place on January 16, 2003. After the surgery, Amy was plagued with back pain for three weeks, causing many a sleepless night. But she was able to return to work within two months. “Sometimes, I don’t even remember that we did it.” she says. “That’s how easy it was.”

Kim also recovered quickly, and her prognosis is very good. Unfortunately, an injury from a car accident has kept her out of work. “It’s been a rough year, but it puts things into perspective,” she says. “I’m not all bent out of shape. I’m just trying to enjoy life.”

“My friends and family make a huge deal over this,” says Amy, who downplays any talk of heroism. In fact, not once has she lorded her gift over her sister. “I’m sure everyone expected me to,” she says with a mischievous smile. “I’m not the nicest girl.” ■

have been more nervous going through this alone," says Linda, who went back to work, managing an orthopaedics practice at a Manhattan hospital, within two months. "But when you're together, comparing notes, there is a strength you develop."

For Lewis W. Teperman, M.D., Director of Organ Transplantation at NYU (far left), and fellow surgeons (left to right) Thomas Diflo, M.D., Devon John, M.D., and Glyn R. Morgan, M.D., performing wonders is all in a day's work.

Paul, who now looks far younger than his years, has also returned to work. He will have to take anti-rejection medications for the rest of his life and incorporate changes into his lifestyle, such as a low-salt, low-sugar diet, but he's not complaining. And he will have to endure his wife's playful reminders of the gift she gave him. As Linda jokes, "Whenever there's an argument, I say, 'Excuse me, the liver donor has spoken,' and I get my way." Turning serious, she adds, "We had a good relationship before and this made it better." Paul nods in agreement, speechless.

THE HUMAN SPIRIT

"My faith in the human spirit is continually renewed by the donors and their families," says Dr. Teperman, who performs about 25 of these operations a year, one of the largest caseloads in the nation. "We've seen husbands give to wives, daughters and sons give to parents, in-laws give to relations, friends give to friends. All of these donors, I call heroes." ■