

Single liver donor benefits two patients—one young, one old

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Surgeons Clark Bonham and Carlos Esquivel with liver-transplant recipients Noah Hernandez and James Howell, a retired physician. Credit: Katherine Emery/Stanford Children's Health

Noah Hernandez, born in 2017, and James Howell, born in 1955, each

benefited from a single liver to treat their life-threatening conditions.

The lives of two patients—one a baby, one a retired physician—crossed paths in the most unexpected way in the summer of 2017, when a single organ donor helped save both their lives at once.

Noah Hernandez, born in February 2017, and James Howell, MD, born in 1955, had never met, but both were facing life-threatening health conditions caused by liver disorders.

Noah had been born healthy, but at 4 months, he was beginning to look yellowish, a condition associated with jaundice. After being admitted to his local hospital in Sacramento, a CT scan and liver biopsy indicated a problem with his bile ducts that was preventing his liver from draining properly—a condition called biliary atresia. That's when he was transferred to Lucile Packard Children's Hospital Stanford.

"With biliary atresia, no one really knows what the cause is," said Carlos Esquivel, MD, Ph.D., professor of surgery and of pediatrics at the Stanford School of Medicine. Most patients, he said, get a pediatric surgery called a Kasai procedure that attempts to create drainage of the liver. "In some children, it works and then they get better; but in some children, this procedure fails," said Esquivel, who is also director of the Liver Transplant Program at Packard Children's. "Their only chance for survival is [liver transplant](#). And that was the case with Noah."

Noah was placed on the waiting list for a donor liver. His parents, Alyssa and Reymon, understood it could be a long wait, because pediatric livers aren't often available. "They can't tell you how long you'll wait," Alyssa said. "They preferred to have an infant-sized liver, and felt that Noah was well enough that they could be picky and wait for the perfect liver."

Fluid buildup

Noah soon began experiencing unusually high levels of ascites—an abnormal buildup of fluid in his abdomen. "Normally it's there in the stomach," Alyssa said. "But Noah had it only along his Kasai incision. It was so bad that it kept getting bigger and bigger to the point that his entire right side was bulging out. He couldn't sleep any more, wasn't comfortable. He would just cry."

Alyssa, who had stayed awake at her son's side, was sent home to get some sleep on Aug. 23. While she was gone, Noah started having trouble breathing. She rushed back to the hospital, where Noah had been transferred to the pediatric intensive care unit and placed on life support. "Those were absolutely the worst days," Alyssa said. Fearing the worst, she immediately called her husband, and also her pastor, to come right away. Noah was baptized that evening.

Because of how sick he was, Noah's position on the organ waiting list was moved up to the highest urgency, meaning he would get the first liver available. The paradox of organ transplant, however, is that even though the sickest patients are placed higher on organ waiting lists, some patients can be too sick to undergo transplant surgery, making them ineligible for a donor organ. "Dr. Esquivel said they were doing everything in their power to prep Noah to get a liver," Alyssa said. "That night, at about 9:30, we received the call." A donor match was available—only it was not a pediatric liver, but one from an older teenager.

A doctor with liver cancer

Almost 15 years earlier, in 2003, James Howell, MD, a retired physician in the South Bay, was diagnosed with cirrhosis, an irreversible liver disease. It can be the beginning of other complications and diseases of the liver, including cancer, with which Howell was later diagnosed. "I

was just extraordinarily lucky to keep my cancer with only liver involvement," he said.

"Once the tumor in the liver gets large enough, they can treat that by ablation," he said. "They put a probe into my liver and zapped it. I went through that procedure twice over two years. But the ablation was only buying time. I had two fatal illnesses going on at the same time. It was just a weight on my shoulders, just a burden that I felt every day."

When his cancer came back for the third time, Howell was put on the waiting list for a liver. "I'd been cruising along, all things considered, keeping my ascites under control, strict dieting, staying with my medicines," he said. "I was getting prepared to go in for another scan of my liver, when all of a sudden I got a call at about 10 o'clock at night." Howell explained that they described the quality and condition of the liver. "They give you a little profile of it," he said. "And it was almost too good to be true. It was like a gift from God and from that family."

Esquivel, who also holds the Arnold and Barbara Silverman Professorship in Pediatric Transplantation, was among the first surgeons to do liver transplants in children—especially tiny babies—and has been doing them for nearly three decades. When surgeons began doing split-liver transplants, it was a move that made sense, he said, because of the difficulty in finding pediatric donors.

"Because of the shape of the liver, it is common to split it between recipients of varying ages," Esquivel said. "The anatomy of the liver is such that what we call the right lobe amounts to about two-thirds of the entire liver volume. So, let's say it's a 3-pound liver: The adult will get about 2.5 pounds, and the child one-half pound." The liver is the only internal organ capable of regeneration, which can begin almost immediately after surgery.

A complex procedure

Still, transplanting an adult-sized liver into an infant is a complex procedure. "The blood vessels are more of a mismatch, because they are adult-sized," he said. "A child who is only a few months old—their blood vessels are tiny."

Noah was prepped for surgery around 8:30 a.m. the next day, Aug. 24. "They told us it would take about eight to 10 hours," Alyssa said. "When it was done in 7½, that just blew our minds." Clark Andrew Bonham, MD, associate professor of surgery, performed the removal of Noah's liver, and Esquivel did the transplant. Bonham performed the [liver](#) transplant for James Howell.

"I woke up the next day and thought they had not done the transplant," Howell recalled. "I had absolutely no pain." The surgeons soon visited Howell to tell him everything had gone well. He made a quick recovery, which he attributes to the constant support of his wife, Denise, and an around-the-clock team of nurses who were "absolutely incredible," he said. "They were the most awesome human beings I have ever met." For his surgeons, and the entire transplant team, he felt equal appreciation. "I can't say enough about the people who took care of me," he added. "They were just awesome—skilled, compassionate and caring. It made a huge difference for me, obviously."

Howell went home just five days after his surgery.

Successful transplant, rocky recovery

Recovery was rockier for Noah, who stayed in the hospital for two more months. The transplant itself was successful, but the difficulty he'd had keeping his ascites low before the transplant worsened afterward. "The

fluid started going around his lungs, and then into them," Alyssa said. Noah needed surgery to place, and later replace, a chest tube to drain the fluid, and also needed a respirator to support his breathing.

Alyssa recalled the day that Esquivel stopped by Noah's bedside and advised taking him off all fluids, because they worsened ascites. Noah was also on diuretics and other medications to balance his fluid retention. "I adjusted his medications," Esquivel said, "and it worked." Noah's ascites were gone within a week. "It was definitely a turning point," Esquivel said. "Noah began to look happy and more like a normal child."

"The man is a miracle worker," Alyssa said of Esquivel.

A few weeks later, the Hernandez family left the hospital but stayed nearby at the Ronald McDonald House at Stanford for a few weeks while Noah was still under observation. Then they all went home to Sacramento in November.

Today, Noah has passed the 70th percentile for weight. He's started swimming lessons and loves the water, Alyssa said. "He is walking around everywhere and learning to say 'cat,' among many other words," she said. "He is the happiest little boy."

Meanwhile, Howell is getting back to enjoying his retirement, eating whatever he likes and taking time to enjoy the simple things in life. "I think a lot about the bravery and the courage of the donor family for allowing their loved one to donate the organ that changed two lives immensely," he said. "I don't know why he was on the earth for such a short time, but I'm truly grateful."

Provided by Stanford University Medical Center

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