

# Minimally invasive adult liver donation for pediatric transplantation available exclusively

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NewYork-Presbyterian Morgan Stanley Children's Hospital is the only medical center in the United States to offer minimally invasive liver donation for pediatric transplantation. Surgeons use a laparoscopic technique to remove a section of liver from a living donor for implantation in a pediatric patient -- typically a parent donating to their child. The innovative approach promises dramatically improved recovery for the donor.

The laparoscopic [liver](#) retrieval is offered by Dr. Benjamin Samstein, a [transplant](#) surgeon at NewYork-Presbyterian Morgan Stanley Children's Hospital and NewYork-Presbyterian Hospital/Columbia University Medical Center, and assistant professor of surgery at Columbia University College of Physicians and Surgeons. Standard pediatric liver implantation is led by Dr. Tomoaki Kato, surgical director of liver and intestinal transplantation at NewYork-Presbyterian Hospital/Columbia University Medical Center and professor of surgery at Columbia University College of Physicians and Surgeons.

"Despite its many advantages and superb track record, living donor transplantation involving a child and their parent can have a debilitating effect on the family. Since the standard adult organ donor surgery involves a long recovery, it can impede a parent's ability to care for their recently transplanted child," says Dr. Kato. "Laparoscopy promises to significantly shorten recovery. If the approach catches on, it could

potentially revolutionize living donor transplantation for children by encouraging more donors, increasing the availability of organs and improving outcomes."

"Standard open organ retrieval requires a foot-long incision from the breast bone to the belly button. Recovery is two to three months. By contrast, in laparoscopy, we make five small incisions, the largest of which is three inches. The donor is typically completely back to normal only a month after surgery," says Dr. Samstein.

The minimally invasive liver retrieval technique was first introduced to Dr. Samstein by Dr. Daniel Cherqui of Hôpital Henri Mondor, Paris. "I am grateful to Dr. Cherqui for generously assisting us with these procedures," Dr. Samstein says.

## Leaders in Living Organ Transplantation

The new surgical advance represents the latest chapter in a history of innovations in living organ donation by New York-Presbyterian/Columbia surgeons. Dr. Jean Emond, chief of transplantation, was a key member of the team that performed the first pediatric living donor [liver transplantation](#) in North America in 1989 while at the University of Chicago Medical Center. Dr. Lloyd Ratner, director of renal and pancreatic transplantation, performed the nation's first adult-to-adult laparoscopic living donor kidney transplant in 1995 while at Johns Hopkins Medical Center. Today more than half of kidney transplants are done with a living donor, and 80 percent of these are retrieved laparoscopically.

Living organ donation is currently done in 3 percent of all liver transplant cases, and laparoscopic liver retrieval is only now becoming possible for pediatric cases.

"Laparoscopy for kidney retrieval is fairly straight-forward. The surgeon only needs to cut around the organ to remove it. For the liver, we must cut through the organ, while preserving its blood supply," explains Dr. Samstein. "This new surgery keeps the piece of extracted liver connected to the donor's blood vessels until the moment when it's removed, helping ensure its fitness for transplant."

Laparoscopic living donor liver retrieval for pediatric transplant was developed by Dr. Daniel Cherqui, who reported the first case in 2002; since then he has performed the procedure approximately 20 times. Dr. Cherqui trained under NewYork-Presbyterian/Columbia's Dr. Jean Emond in the late 1980s. Today, Dr. Cherqui has a reputation as one of the most experienced laparoscopic liver surgeons in the world.

## **Organ Transplantation at NewYork-Presbyterian Hospital**

The Center for Liver Disease and Transplantation (CLDT) at NewYork-Presbyterian Hospital/Columbia University Medical Center and NewYork-Presbyterian Morgan Stanley Children's Hospital is among the top 10 centers in the country for number of transplants performed annually, and has completed more than 1,000 successful transplants since its inception in 1998.

The larger organ transplantation program at NewYork-Presbyterian Hospital -- which includes NewYork-Presbyterian Hospital/Weill Cornell Medical Center, NewYork-Presbyterian Hospital/Columbia University Medical Center and The Rogosin Institute -- is the most active program of its kind in the nation, and offers comprehensive and personalized care for the heart, liver, pancreas, kidney and lung. With outcomes ranked among the nation's best, the Hospital is dedicated to improving quality of life for its patients. NewYork-Presbyterian's

dedicated teams of surgeons and physicians are responsible for many significant advances made over the past several decades in transplant surgery and the maintenance of healthy organs. The Hospital has been on the forefront of developing and improving anti-rejection medications (immunosuppressants), minimally invasive surgery for living donors, genetic methods to detect transplant rejection, strategies to increase opportunities for donor matching, islet cell transplantation, and the FDA-approved Left Ventricle Assist Device (LVAD) that functions as a bridge to transplantation for those waiting for a new heart.

Provided by New York- Presbyterian Hospital

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