

Living Donor Liver Transplantation



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What is a Living-donor Liver Transplantation?

A living-donor liver transplantation, or transplant, is when a live person donates a part of his or her healthy liver. The donated part then grows to full size in the person who receives it (the recipient). After the transplant, the donor's liver also grows back to full size over a very short period of time, usually days or weeks. Sometimes, however, it can take up to several months.

The donor may be a family member, such as a parent, sister, brother, or adult child. The donor can also be a husband or wife.

What are Some Benefits of a Living-donor Liver Transplant?

In the U.S., more than 17,500 patients are waiting to receive a liver. Every day more patients are added to the waiting list. More than 6,000 patients receive transplanted livers every year, but more than 1,700 patients die each year while waiting.

Liver transplants are given to patients on the basis of how sick they are. Each patient waiting for a liver transplant is given a "score" called the "Model for End-stage Liver Disease" (MELD). Patients with a higher MELD score are very sick, so they have a better chance of getting a liver transplant sooner.

A living-donor transplant means a patient can have a transplant before their liver failure gets worse. It means a shorter wait time for a liver. Because the surgery can be planned in advance, the chance for a successful transplant is better. Also, the quality of the liver may be better, because living donors are usually young, healthy adults who have gone through a complete medical evaluation. With a living-donor transplant, the preservation time (the time when the liver is without blood) is usually minutes, instead of hours.

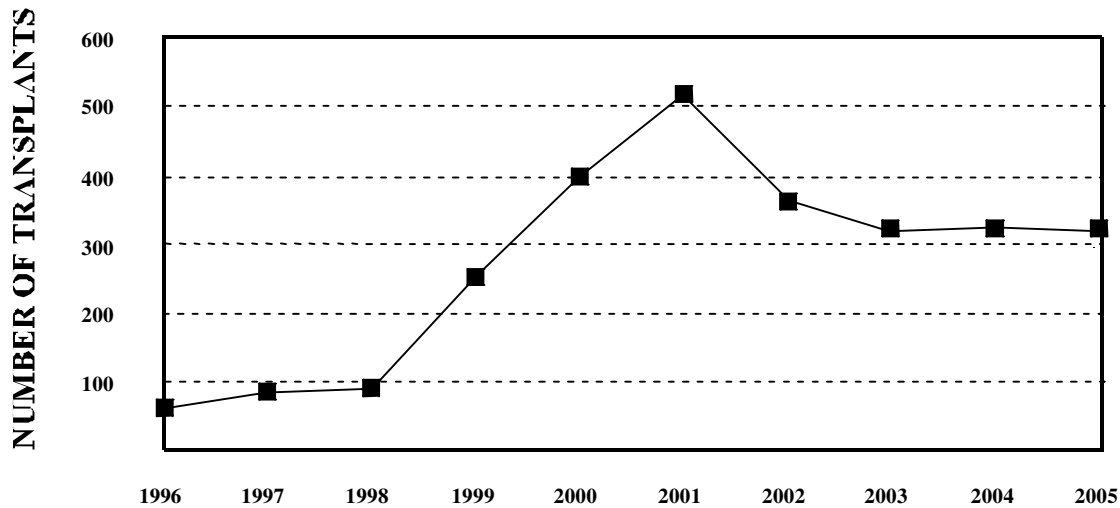
When Were the First Living-donor Liver transplants Performed?

Living-donor transplantation was first done in the 1980s in children as a way to shorten the long wait times for a liver. Today, about 10 percent of all pediatric liver transplants are from living donors. More adults are receiving living-donor transplants as well but it is currently <5% of all adult liver transplants. This is because many adult patients cannot survive the wait times for a deceased-donor liver.

How many Living-donor Liver Transplants are Performed Each Year?

In the past, less than 5% of all liver transplants in this country were living-donor transplants. Today, more than 200 patients get living-donor transplants every year, while about 6,000 have transplants from deceased donors.

LIVING-DONOR TRANSPLANTS 1996-2005



Data from SRTR/UNOS

Who Can Become a Donor?

People who want to donate their liver go through a complete medical exam to make sure their liver is healthy and that it is safe for them to donate. Safety is important for both the donor and the recipient. The risk of death is real. Talk about the risks with your doctor. In general, liver donors must:

- Be at least 18 years old. Most donors are also under 60 years old.
- Be in good health with no major medical or mental illnesses.
- Be a non-smoker for at least four to six weeks before surgery.
- Be able to understand and follow instructions before and after surgery.
- Have a compatible blood type.
- Have an emotional tie with the recipient.
- Not have a selfish motive for donating. Paid donation is illegal in the U.S.
- Have a similar body size.
- Be able to go through certain medical tests like blood work, radiology studies, and possibly a liver biopsy.

A person should feel no pressure to donate part of his or her liver; nor should any money be given or received. It is against the law for people to sell their body parts.

What are the Major Risks of Donating?

Most donors recover fully after the operation and can do normal activities within a few months after the surgery. However, as with any major surgery, there are risks.

A donor may develop some problems during or right after the operation. They might also experience problems months or years later. Removing more than half of the liver is a major operation that has some risks. Some of the risk involves specific problems that can occur in and around the liver after surgery. These problems include bleeding, infection, bile leaks, or damage to the bile tree (the ducts that run through the liver). Bile is a digestive juice made by the liver.

Other risks can come from anesthesia and general surgery. You could have a reaction to the anesthetic, or you could get pneumonia. You could have problems because of the tubes that will be inserted in your mouth, arteries, and veins. Your blood pressure could change during the operation. There is also a risk of blood clots in your legs.

Although there is a 38% chance a donor could have complications from the surgery, the most common problem is a bile leak. In rare cases, a donor may die as a result of the operation. Or, if the remaining piece of the liver is damaged, the donor may also need a liver transplant. The estimated risk of dying from the transplant operation is about 1 in 500.

Sometimes donors do not have problems until months or years after the surgery. One of the most common problems is stomach pain and bulges or hernias around the scar. The bulges can usually be fixed with surgery.

During your medical exam, ask the transplant team about these risks. You may also want to talk to a donor who has already gone through the surgery and can talk about his or her experiences.

What Happens During the Donor Medical Evaluation?

A person who wants to donate part of his or her liver must go through a complete medical evaluation for two basic reasons:

- 1) To make sure the donor does not have any health problems, like diabetes or heart conditions, that could increase the risks of problems during and after the surgery.
- 2) To make sure the donor has a healthy piece of liver that is the right size and shape for the recipient.

The testing process for donors is somewhat different between transplant centers. However, most centers do the following tests as part of the medical evaluation:

Blood tests. The first test is to find out if the donor's blood type matches the recipient's blood type. Next, the transplant team will measure liver and kidney function as well as red cell, white cell, and platelet counts. The donor is also tested for viruses such as hepatitis B, hepatitis C, and HIV (the virus that causes AIDS). Doctors also look for signs of common liver diseases.

Physical exam. If the donor's and recipient's blood types are compatible, the donor will get a physical examination.

Ultrasound/MRI/CT scan. These tests are done to get "pictures" of the liver to make sure the donor's bile ducts, arteries, and veins are the right fit for the intended recipient. These pictures will also look for benign and malignant tumors, which are rare, but are sometimes found.

Chest X-ray and EKG. These are standard tests done before any major operation to check for lung or heart problems.

Consults. Every donor will meet with a social worker or psychiatrist to talk about their reasons for donating a liver and to make sure they are in a stable mental condition for the surgery.

Liver biopsy. Some transplant centers require that a liver biopsy be done on every donor; other transplant centers do biopsies only in certain patients. A biopsy is when a small sample of liver tissue is removed and examined.

Other tests. Other tests may be needed to decide if the donor is a good match for the recipient.

It usually takes two to four weeks for a donor to go through these tests. In an emergency, however, the tests can be done in as little as 48 hours. If the donor lives far from the transplant center, then some of these tests can often be done where the donor lives.

It is important for people to know that once they start this evaluation process, they can change their mind at any time for any reason. As a donor, you do not need to have a medical reason to change your mind about going through with the operation.

What Happens During Transplant Surgery?

The donor's liver is split into two parts. One part is removed for the transplant. The surgeon then closes the wound with sutures or staples. These are later removed at a follow-up visit to the surgeon's office. The remaining liver begins to heal and grow new tissue. It takes about six to eight weeks for the liver to grow back to normal size.

How Long Does a Donor Usually Stay in the Hospital?

Donors stay in the hospital from four to seven days after surgery, longer if problems occur. You will usually spend the first night after surgery in the intensive care unit (ICU). The next day, you may be moved to a surgical floor where nurses have experience

caring for liver donors. The nurses will encourage you to get out of bed and sit in a chair the day after surgery and to walk as soon as you are able.

How Long Will a Full Recovery Take?

For the most part, it takes about four weeks to recover from surgery. For a month after leaving the hospital, you will go to the clinic for frequent check-ups. Most people get back to work within eight to 10 weeks, but this differs from person to person. The medical staff will say when it is safe to return to normal life. Federal employees can get a special leave for being organ donors. Other employers have similar programs, so check with your boss to see if your company offers special leave.

What Will it Cost for me to Donate my Liver?

The recipient's health insurance pays for the donor's health care costs. This includes the costs of the check-up, doctors' fees, hospital costs, and follow-up visits after surgery. However, certain costs are usually not covered by insurance or the hospital. These include travel, lodging, loss of income (from time off work), and other related expenses. In some cases, these costs may be several thousand dollars, depending on your distance from the transplant center and your loss of income. You should think about these important financial issues when you consider being a donor.