

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, or almost full, size in the person who receives it (the recipient). After the transplant, the donor's liver also grows back to full, or almost full, size over a very short period of time, usually weeks. Sometimes, 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 or a friend.

WHAT ARE SOME BENEFITS OF A LIVING-DONOR LIVER TRANSPLANT?

In the U.S., currently 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 offered to a patient depending how sick he or she is. Each patient waiting for a liver transplant is given a "score" called the "Model for End-stage Liver Disease", or MELD score. Patients with a higher MELD score are very sick. These patients have a better chance of getting a liver transplant sooner than those with a low MELD score.

A living-donor transplant means a patient can have a transplant before the liver gets worse and the MELD score rises. It means a shorter time to wait for a new liver. The surgery can also be planned in advance and 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?

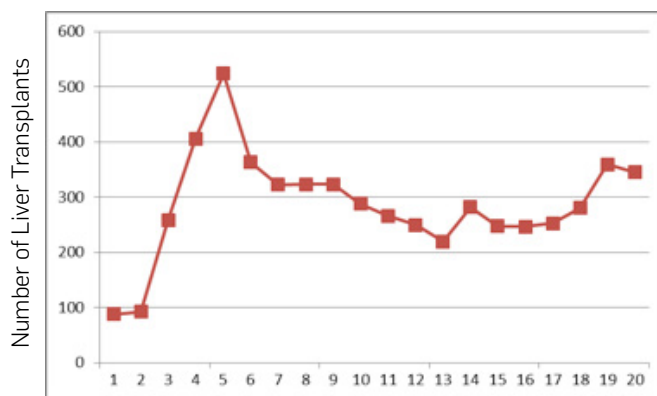
Living-donor transplantation was first done in the 1980s. They were first done in children to shorten the long wait time a child had to wait for a new liver. Today, about 10 percent of all liver transplants in children are from living donors. More adults are receiving living-donor transplants as well. But, currently less than 5 % of all adult liver transplants in the United States are living

donor transplants. However, in many countries in Asia, living donors account for more than 80% of liver transplants.

HOW MANY LIVING-DONOR LIVER TRANSPLANTS ARE PERFORMED EACH YEAR?

Today, more than 300 patients get living-donor transplants every year in the United States. About 6,000 patients have transplants from deceased donors.

Living Donor Liver Transplants 1996 - 2017



Based on data from the Organ Procurement and Transplantation Network as of June 14, 2018

WHO CAN BECOME A DONOR?

People who want to donate their liver must have a complete medical exam to make sure their liver is healthy and that it is safe for them to donate their liver. 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 under 60 years of age.
- 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.
- 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 not feel any pressure to donate part of his or her liver. No money is to be given or received. It is against the law for people to sell their body parts. However, recipients are allowed to reimburse donors for out-of-pocket expenses such as travel and lodging.

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. The donor may also have 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 ducts (the tree-like structure that drains bile from the liver to the intestine). 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.

More than a third of donors have some type of complication. Most complications are mild and can be treated successfully without serious problems. In rare cases, a donor may die as a result of the operation. 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 person dies in every 500 transplants.

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 from the surgery. The bulges can usually be fixed with an operation.

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 MEDICAL EVALUATION OF THE DONOR?

A person who wants to donate part of his or her liver must go through a complete medical evaluation for two 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 can be 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 how well the liver and kidney are working, 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 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 his or her reasons for donating a liver and to make sure he or she is 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 six weeks for a donor to go through these tests. If it is an emergency, 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 to know that once in this evaluation process, you can change your 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.

HOW LONG DOES A DONOR USUALLY STAY IN THE HOSPITAL?

Donors usually stay in the hospital from four to seven days after surgery. This can be longer if problems occur. You will typically spend the first night after surgery in the intensive care unit (ICU). The next day, you may be moved to a location in the hospital 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. In the month after leaving the hospital you will need to go frequently to the clinic for check-ups. Most people get back to work within 8 to 10 weeks, but this differs from person to person. The medical staff will tell you when it is safe to return to your normal routine. People employed by the federal government can get a special leave for being organ donors. Other employers have similar programs. Check with your boss to see if your company offers special leave for being a donor.

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. The amount depends 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.