



# Living Liver Donation: Medical Toolkit

CHAPTER • 4

## Surgery for living liver donors

### What is surgery for living liver donors?

During surgery for living liver donation, surgeons remove part of a donor’s liver to transplant it into another person whose liver is no longer working (called a partial hepatectomy). Usually, a living liver donor must be age 18 or older.

Surgeons leave the rest of the donor’s liver in their body. This part will grow to at least 80% of its original size within a few months and will return to working normally.

Type of surgery	What it does	Type of recipient
Right lobe hepatectomy	Removes 50-70% of the liver’s right lobe	Adult
Left lobe hepatectomy	Removes 20-50% of the liver’s left lobe	Adults who are small or not very sick, bigger children, and teens
Left lateral segment hepatectomy	Removes 10-25% of the liver’s left lobe	Small children

### How does the donor transplant team know which part of the liver to remove?

To decide which part of your liver to remove, the donor transplant team will do imaging tests, such as an MRI or CT scan. These tests show the liver’s size and how your arteries, veins, and bile ducts are arranged in your body.

To decide how much liver the recipient needs, the recipient’s transplant team will do similar tests and consider the recipient’s age, size, and how sick they are.

### What happens during the donor surgery?

For this major surgery, the donor transplant team will:

1. Give anesthesia to put you to sleep
2. Make a cut (incision) in your abdominal wall (belly area)
3. Remove the part of your liver that will best help the recipient – making sure you are left with enough liver (at least 30%) to support you until it grows bigger (regenerates) within a few months

### What will the recovery from donor surgery be like?

#### In the first week

Recovery from major surgery can be different for different donors, but usually:

- You will stay in the hospital for 4-7 days
- Your transplant team will check you very carefully for the first few days and do blood tests to make sure your liver returns to working normally
- In the hospital, you will take strong pain medicine and the doctors will tell you how to return to normal eating and activity over time

Living Donor Liver Transplantation

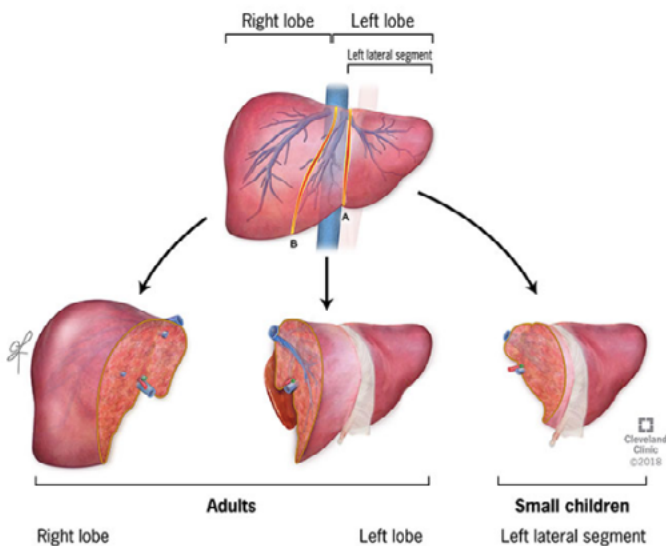


Image credit: <https://consultqd.clevelandclinic.org/living-donor-liver-transplantation-a-better-option-for-pediatric-patients/>



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- You can go home once your pain, eating, and activity are stable

Don't be alarmed if it seems that the recipient is having a faster and smoother recovery than you are as the donor. Remember that the recipient was sick before the transplant and now hopefully is doing better with a new liver, while you were healthy and then had a major surgery.

### In the first 3-4 months

In the first 3 months after donation, many donors have some physical symptoms such as belly or back pain. These go away over time in 3 months - 2 years after donation.

Your return to work after donation can depend on your symptoms, age, and how physical your job is:

- Donors with jobs that take little physical work can usually return 1-2 months after surgery
- Donors with jobs that take heavy lifting or other physical work may return 3 months or more after surgery to avoid problems
- Rarely, donors aren't able to return to their jobs because of physical symptoms

If you take care of family members such as children or your liver recipient, other people will need to take on those caregiving tasks while you recover.

## What are the possible problems from liver donor surgery?

### Chance of problems

For liver donors, the chance of health problems from surgery is highest in the first 1-2 months after surgery. Once your remaining liver has grown back, your chance of problems is lowered.

Your chance of problems usually depends on how much of your liver is removed and if you have other health conditions:

- Right lobe liver donors have health problems about 24-40% of the time (and severe problems happen more often in right lobe donors)

- Left lobe liver donors have health problems about 9% of the time

### Common problems

This table shows problems from liver donation surgery and how often they happen.

Problem from liver donation surgery in the United States	How often it happens
Infections	13%
Pleural effusion (fluid in the lungs)	11%
Bile leaking into the abdomen (belly area)	8%
Organ pushes through a surgical cut (incisional hernia)	7%
Psychological difficulties	6%
Unplanned re-operation due to problems	3%
Stomach is slow to wake up (ileus)	3%
Ascites (fluid accumulation in the belly)	3%
Neuropraxia (numbness)	3%
Intestines are blocked (bowel obstruction)	2%
Pulmonary edema (swelling of the lungs)	2%
Bleeding after surgery	1%
Intra-abdominal abscess (infection inside the belly)	1%
Pulmonary embolism (blood clot in the lungs)	1%
Surgical cut (incision) opens up	0.8%
DVT (deep vein thrombosis: blood clot in the leg)	0.8%
Air in chest outside the lungs (pneumothorax)	0.8%
Biliary stricture (narrowing of the bile duct)	0.7%
Portal vein thrombosis (blood clot in the main vein in the liver)	0.5%
IVC thrombosis (blood clot in a vein that runs behind the liver)	0.4%

Complications associated with living donor hepatectomy in the A2ALL studies (adapted from Abecassis 2012)

### Less common problems

In people who donated their right lobe, recent reports show the risk of dying is 0.2% (2 in 1,000 people) or less.



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According to OPTN/UNOS data as of September 15, 2020, out of 5,330 living liver donors in the US, 3 (0.06%) developed “liver failure/liver failure requiring a liver transplant”.

Given that the first adult-to-adult living donor liver transplant using the right lobe of the liver occurred in 1996, there are no outcome studies in right lobe donors beyond 20 years.

### How can I learn more?

To learn about the social and emotional effects of living donation, see Chapter 10 about your social and emotional health.

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*Note: This information is the opinion of the Living Donor Community of Practice (LDCOP) of the American Society of Transplantation. The LDCOP is a group of health care professionals and researchers who specialize in living donation. The LDCOP's recommendations are meant to offer you helpful information, but you may find opinions from other groups or organizations that are helpful to you, too.*