

Living Donation Facts

History

The first successful living donor transplant was performed between 23-year-old identical twins in 1954. Doctor Joseph E. Murray at Peter Bent Brigham Hospital in Boston, MA, transplanted a healthy kidney from Ronald Herrick into his twin brother, Richard, who had chronic kidney failure. Richard Herrick went on to live an active, normal life, dying eight years later from causes unrelated to the transplant. Since that time, thousands of patients have received successful transplants from living donors. And today, almost all transplant centers in the United States perform living kidney transplants.

Organs

Living donor transplants are a viable alternative for patients in need of new organs. Many different types of organs can be delivered by living donors, including:

- **Single Kidney.** This is the most frequent type of living organ donation. For the donor, there is little risk in living with one kidney because the remaining kidney compensates to do the work of both kidneys.
- **Liver.** Individuals can donate segments of the liver, which has the ability to regenerate the segment that was donated and regain full function.
- **Lung.** Although lung lobes do not regenerate, individuals can donate lobes of the lung.
- **Intestine.** Although very rare, it is possible to donate a portion of your intestine.
- **Pancreas.** Individuals can also donate a portion of the pancreas. Like the lung, the pancreas does not regenerate, but donors usually have no problems with reduced function.
- **Heart.** A domino transplant makes some heart-lung recipients living heart donors. When a patient receives a heart-lung "bloc" from a deceased donor, his or her healthy heart may be given to an individual waiting for a heart transplant. This procedure is used when physicians determine that the deceased donor lungs will function best if they are used in conjunction with the deceased donor heart.

Qualifications for Living Donors

In order to qualify as a living donor, an individual must be physically fit, in good general health, and free from high blood pressure, diabetes, cancer, kidney disease and heart disease. Individuals considered for living donation are usually between 18-60 years of age. Gender and race are not factors in determining a successful match.

The living donor must first undergo a blood test to determine blood type compatibility with the recipient.

The decision to become a living donor is a voluntary one, and the donor may change his or her mind at any time during the process. The donor's decision and reasons are kept confidential.

Blood Type Compatibility Chart

Recipient's Blood Type	Donor's Blood Type
O	O
A	A or O
B	B or O
AB	A,B, AB or O

If the donor and recipient have compatible blood types, the donor undergoes a medical history review and a complete physical examination. The following tests may be performed:

- **Tissue Typing:** the donor's blood is drawn for tissue typing of the white blood cells.

- **Crossmatching:** a blood test is done before the transplant to see if the potential recipient will react to the donor organ. If the crossmatch is "positive," then the donor and patient are incompatible. If the crossmatch is "negative," then the transplant may proceed. Crossmatching is routinely performed for kidney and pancreas transplants.
- **Antibody Screen:** an antibody is a protein substance made by the body's immune system in response to an antigen (a foreign substance; for example, a transplanted organ, blood transfusion, virus, or pregnancy). Because the antibodies attack the transplanted organ, the antibody screen tests for panel reactive antibody (PRA). The white blood cells of the donor and the serum of the recipient are mixed to see if there are antibodies in the recipient that react with the antigens of the donor.
- **Urine Tests:** In the case of a kidney donation, urine samples are collected for 24 hours to assess the donor's kidney function.
- **X-Rays:** A chest X-Ray and an electrocardiogram (EKG) are performed to screen the donor for heart and lung disease.
- **Arteriogram:** This final set of tests involves injecting a liquid that is visible under X-Ray into the blood vessels to view the organ to be donated. This procedure is usually done on an outpatient basis, but in some cases it may require an overnight hospital stay.
- **Psychiatric and/or psychological evaluation:** The donor and the recipient may undergo a psychiatric and/or psychological evaluation.

Risks Involved in Living Donation

All patients experience some pain and discomfort after an operation. And as with any major operation, there are risks involved. It is possible for kidney donors to develop infections or bleeding and when a portion of the liver or pancreas is donated, the liver or spleen may be injured.

Living donation may also have long-term risks that may not be apparent in the short term. It is therefore important that the benefits to both donor and recipient outweigh the risks associated with the donation and transplantation of the living donor organ. In addition to potential individual health concerns, it is possible for negative psychological consequences to result from living donation. Living donors may feel pressured by their families into donating an organ and guilty if they are reluctant to go through with the procedure. Feelings of resentment may also occur if the recipient rejects the donated organ. Living donors must be made aware of the physical and psychological risks involved before they consent to donate an organ. They should discuss their feelings, questions and concerns with a transplant professional and/or social worker.

Positive Aspects of Living Donation

Living donation eliminates the transplant candidate's need for placement on the national waiting list. Transplant surgery can be scheduled at a mutually-agreed upon time rather than performed as an emergency operation. Because the operation can be scheduled in advance, the recipient may begin taking immunosuppressant drugs two days before the operation. This decreases the risk of organ rejection.

In addition, a positive aspect of living donation can be the psychological benefit because the donor experiences the satisfaction of knowing that he or she has contributed to the improved health of the recipient.

Costs Related to Living Donation

Because health insurance coverage varies for living donation, it is important to check with your insurance company for verification of benefits. If the recipient is covered by a private insurance plan, some insurance companies pay 100 percent of the donor's expenses. If the recipient is covered by Medicare's end-stage renal disease program, Medicare Part A pays all of the donor's medical expenses, including preliminary testing, the transplant operation, and post-operative recovery costs. Medicare Part B pays for physician services during the hospital stay. Medicare also covers follow-up care if complications arise following the donation.