

Understanding the Wait List for Liver Transplantation



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What is Liver Transplantation?

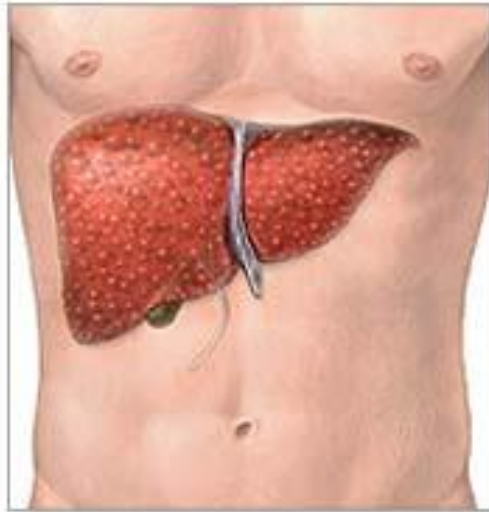


- Liver transplantation involves taking a liver (part or the whole liver) from a donor (deceased or living) and implanting it into a patient with liver disease.
- Liver transplantation is a treatment, not a cure. The important functions of the diseased liver are restored by replacing it with a healthy liver from a donor.

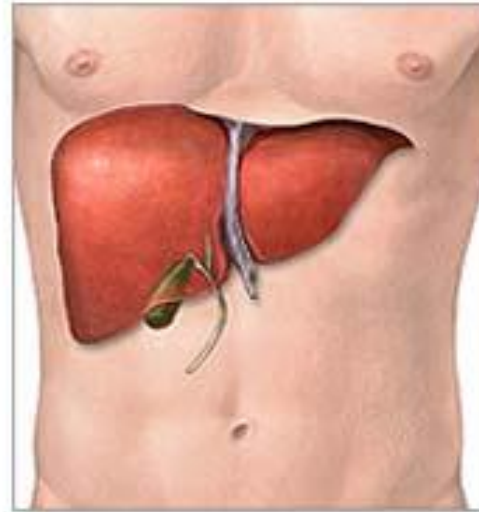
Liver Transplantation



Before



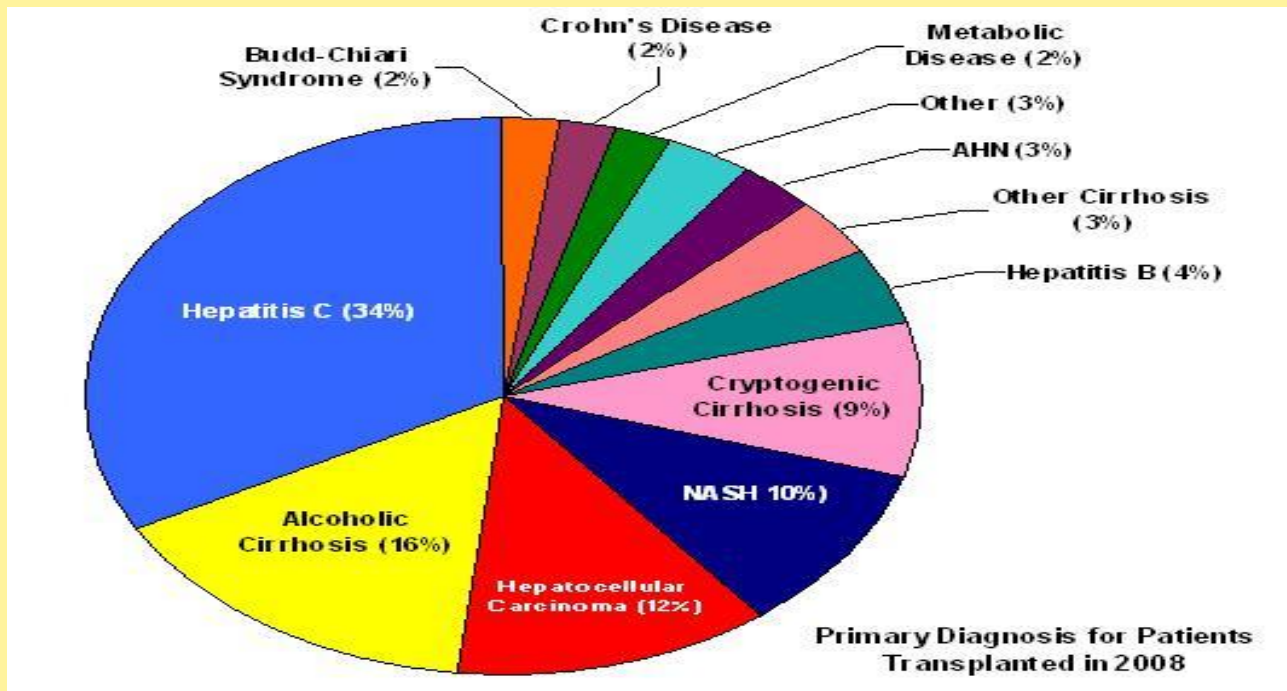
After



What diseases are treated by liver transplantation?



Liver transplantation is needed for patients who are likely to die because of liver failure. Many diseases can cause liver failure. The most common is **cirrhosis**, which is the scarring and death of liver cells.



Where do donated livers come from?



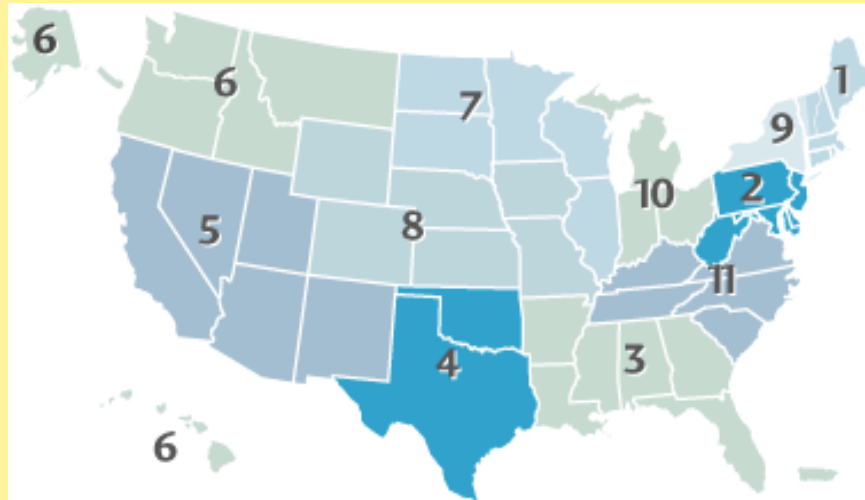
- Livers for transplantation can come from deceased donors or living donors. In both cases, blood type and body size are the most important factors in determining whether a donated liver may be a match for the patient.
- Deceased donors typically die of accidents or head injuries. Either they have arranged in advance to be an organ donor or their family grants permission for organ donation when the victim is declared brain dead.
- In a living donor transplant, a segment of a healthy person's liver is transplanted into the sick patient. This can be done because the liver is the only organ that can regenerate itself. Both the donated segment and the remaining section of the donor liver will grow to normal size within weeks. Living donors are generally family members or close relatives of the patient.

United Network of Organ Sharing (UNOS)



The national UNOS membership is divided into 11 geographic regions. This regional structure was developed to:

- facilitate organ allocation
- provide individuals with the opportunity to identify concerns regarding organ procurement, allocation and transplantation that are unique to their particular geographic area



What are the requirements for liver transplantation?



- For transplantation to occur, the donor's and recipient's blood types must be compatible and their size, in terms of height must be close. The sickest person on the waiting list, with the highest MELD score, is the one to receive the liver.
- During the transplant evaluation, candidates meet with a team of experts who will be with them throughout the transplant process. A battery of tests may require two to three visits to The Johns Hopkins Hospital.
- The tests may include: routine blood work, an X-ray of heart and lungs, an abdominal ultrasound, a CT scan, pulmonary function tests, an electrocardiogram and an echocardiogram.
- Specialists from the transplant team—surgeons, hepatologists, pulmonologists, anesthesiologists, cardiologists, psychologists, nurses and social workers—are consulted as well.

The Wait List



- Status 1 (acute severe disease)
- MELD scoring
- Status 7 (inactive)



How does the liver transplant waiting list work?



- Local versus distant (donor organs are first offered locally)
- ABO type
- Body size (the acceptable body range is determined by the transplant surgeon)
- Degree of medical urgency as determined by the MELD score (highest priority given to Status 1 patients)

What is MELD?



The MELD system involves a numerical scale, ranging from 6 (less ill) to 40 (gravely ill), used for liver transplant candidates age 12 and older. It gives each person a 'score' (number) based on how urgently he or she needs a liver transplant within the next three months. The number is calculated by a formula using three routine lab test results:

- Bilirubin, which measures how effectively the liver excretes bile
- INR (formally known as the prothrombin time), measures the liver's ability to make blood clotting factors
- Creatinine, which measures kidney function. Impaired kidney function is often associated with severe liver disease.

When should laboratory tests be done?



Lab Test Frequency

- MELD score greater than or equal to 25; Labs needed every 7 days
- MELD score 24-19; Labs needed every 30 days
- MELD score 18-11; Labs needed every 90 days
- MELD score less than or equal to 10; Labs needed every year

Special case exceptions



- **Hepatocellular Carcinoma** (Liver Cancer)
- **Hepatopulmonary Syndrome** (Abnormal changes within the lung which results from the high pressure within the liver. Results in severe shortness of breath because of the extremely low level of oxygen. Patient usually needs oxygen therapy)
- **Familial Amyloidosis** (Rare, chronic disease resulting in accumulation of an abnormal fibrillar scleroprotein (amyloid), which infiltrates body organs and can cause life threatening organ damage.)
- In addition to the previously mentioned special case exceptions, a transplant center can apply for a MELD exception for a patient whose medical urgency is not reflected by the MELD score.

What is the average MELD score which patients are being transplanted?



- Currently, the average MELD score for a patient undergoing a liver transplant is 20 nationally. The average MELD score for liver transplant patients in our region varies from 22-25, depending on blood type.
- This waiting time may be very short for a patient with very high MELD scores and especially those with acute liver failure.
- As a patient's MELD score increases, the priority to receive a liver transplant increases. If a patient's condition improves, and the MELD score decreases, the priority to receive a liver transplant decreases.

Further Questions?



- www.unos.org
- Liver Transplant Office
(410) 614-2989