

IT'S POSSIBLE.

#### **Mount Elizabeth Hospital**

3 Mount Elizabeth Singapore 228510



3 Mount Elizabeth #10-02
 Mount Elizabeth Medical Centre
 Singapore 228510

#### **Central Patient Assistance Centre**

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- cpac@parkwaypantai.com

### Liver Transplant Programme





Mount Elizabeth Hospital is a tertiary hospital with 345 beds operated by Parkway Pantai. Opened since 8 December 1979, the hospital has consistently delivered clinical and service excellence to our patients.

Today, Mount Elizabeth Hospital offers a full range of medical services helmed by more than 1,500 leading specialists who are supported by highly-trained healthcare professionals. The hospital is equipped with 13 operating theatres, 2 intensive care units with 24 beds and a range of room types to cater to different needs.

Together with a team of trailblazers in Southeast Asia for living donor transplant, we have helped many patients in need of liver and kidney transplants over the past 20 years. Reflecting our commitment to clinical and service quality, the hospital is accredited by Joint Commission International since 2006 and awarded "Hospital of the Year in Asia Pacific" by Global Health and Travel for four consecutive years since 2016.

#### **Awards**



Hospital of the Year in Asia Pacific (2016 to 2019)

Hospital of the Year in Singapore (2017 to 2019)

Cardiology Service Provider of the Year in Asia Pacific (2016 to 2019)

Neurology Service Provider of the Year in Asia Pacific (2018 to 2019)

Orthopaedic Service Provider of the Year in Asia Pacific (2019) Bariatric Service Provider of the Year in Asia Pacific (2019)

Health Screening Provider of the Year in Asia Pacific (2018 to 2019)

ENT Service Provider of the Year in Asia Pacific (2018)

Gastroenterology Service Provider of the Year in Asia Pacific (2018)

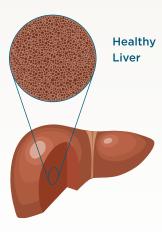
# Causes of Liver Failure

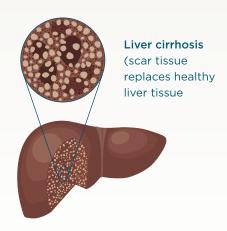
Liver failure may happen quickly or over a longer period of time.

Acute Liver Failure

Occurs quickly, in a matter of weeks and is usually the result of medication-induced liver injury.

Chronic Liver Failure Mainly caused by scarring of the liver (cirrhosis). Liver cirrhosis may be due to viruses (Hepatitis B & C), alcoholic liver diseases, non-alcoholic liver disease, genetic disorders, and conditions involving the bile ducts.





## Liver Transplantation

Liver transplantation is now the accepted standard of care for patients with end-stage liver diseases, acute liver failure and selected cases of hepatocellular carcinoma (primary liver cancer). It is a surgical procedure that replaces a patient's diseased liver with a new healthy liver either partially (live donor) or whole (cadaveric donor).

Following a liver transplant, patients will require long-term medication (immunosuppression) to prevent the body from rejecting the new organ. Advancements in immunosuppression, medical management, and surgical techniques, have led to remarkable improvements in the long term success of liver transplant.



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### Types of Liver Transplant

#### **Cadaveric Liver Transplantation**

This is also known as deceased donor liver transplantation. The majority of livers that are transplanted come from brain-dead organ donors where consent is given. The donor's whole liver will be transplanted to the patient. In Asia, many people do not come forward to be an organ donor (possibly due to personal or religious reasons, or lack of awareness) which has led to a shortage of cadaver livers.

#### **Living Donor Liver Transplant**

Part of the donor's healthy liver will be removed and transplanted to the patient. This can be done because the liver has a remarkable ability to regenerate itself. Both the donor and recipient's liver will grow back to its normal size in a few months. Due to the shortage of deceased donors in Asia, LDLT has become a feasible option for patients who require liver transplantation.

# Why Living Donor Liver Transplant?



Long waiting period for a cadaveric donor liver where patients may progress to develop fatal complications.



It allows scheduling of the procedure. As such, the patient with decompensated liver function can be optimised prior to the operation.



Living donor liver transplant is an important life-saving procedure for patients suffering from acute liver failure and hepatocellular carcinoma (liver cancer). It can be performed on any patient with end-stage liver disease regardless of the original cause of the disease.

# The Living Donor Liver Transplant Journey





Liver patient and his/her family finds a compatible healthy living donor



Pre-transplant
Assessment:
Living donor
and recipient



Family
Conference:
Meeting with
the patient
and his/her
family



Optimising medical condition for transplant surgery



Seek approval from the Transplant Ethics
Committee (required by the Ministry of Health's Human Organ Transplant Act, HOTA, in Singapore)



Transplant surgery



Posttransplant evaluation and care including medications, vaccinations, diet, follow-up consultations with specialists

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# Who can be a Living Donor?

There are some medical conditions that may make a donor ineligible, such as diabetes, certain cancers, kidney or heart disease, hepatitis, and elevated body mass index (BMI).

#### **Donor Selection Criteria**



Be a willing adult between the ages of 21 and 50 years old



Should not have liver-related illness



Be of healthy BMI



Be a family member, friend, colleague, or close acquaintance



Be of compatible blood type with the recipient



Be in good physical and mental health



# Before the procedure



You and your donor will be assessed by our transplant team to confirm your suitability to undergo a liver transplant surgery. For foreigners, your blood and other imaging tests will be repeated in Singapore to confirm your disease condition.



Your donor will also undergo stringent medical evaluation. He/she will be asked to complete a questionnaire and have his/her blood tests done to assess suitability. This is also to rule out chronic conditions such as Hepatitis B and C. Further stringent blood, radiological and psychosocial examinations will be carried out.



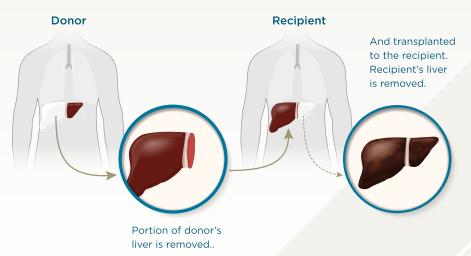
Your donor will also be assessed by independent physicians, cardiac and infectious disease physicians, psychiatrists, dentists and nephrologists for suitability. The transplant coordinator will inquire about his/her family, social and financial history to gather the necessary information for the ethics committee. At times, personal questions may be asked.

# During the procedure

On the day of the transplant, surgeons will remove a portion of the donor liver for transplant through an incision in the abdomen. The specific part of the liver donated depends on the size of the donor liver and the needs of the recipient.

Next, surgeons remove the diseased liver and place the donated liver portion in the recipient's body, connecting the blood vessels and bile ducts to the new liver.

The transplanted liver in the recipient and the portion left behind in the donor regrow rapidly, reaching normal liver volume and function within a couple of months.



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# After the procedure

After your liver transplant, you can expect to:



#### Stay in the intensive care unit for a few days

Doctors and nurses will monitor your condition to watch for signs of complications. They will also test your liver function frequently for signs that your new liver is working.



#### Spend 5 to 10 days in the hospital

Once you are stable, you will be taken to a transplant recovery area to continue recuperating.





### Have frequent checkups as you continue recovering at home

Your transplant team designs a checkup schedule for you. You may undergo blood tests a few times each week at first and then less often over time.



#### Take post-transplant medications

You will take a number of medications after your liver transplant. Drugs called immunosuppressants prevent your immune system from attacking your new liver. Other drugs help reduce the risk of other complications after your transplant, e.g. infection.



### Expect six months or more recovery time before you will feel fully healed after your liver transplant surgery

You may be able to resume normal activities or go back to work a few months after surgery. The length of recovery may depend on how ill you were before your liver transplant.

### Our Liver Transplant Team

The Mount Elizabeth Orchard Living Donor Living Transplantation Programme is led by

#### **Medical Director**



#### Dr Kieron Lim

Prior to private practice, he was the Medical Director for liver transplantation at the National University Centre for Organ Transplantation & Head of the Division of Gastroenterology & Hepatology, National University Hospital (NUH).

#### **Surgical Director**



#### Dr Wong Jen San

Prior to private practice, he was the Consultant with the Department of Hepatopancreatobiliary and Transplant Surgery, Singapore General Hospital (SGH). He also did a HMDP clinical fellowship in living donor liver transplantation in Japan under the guidance of Professor Shinji Uemoto at Kyoto University Hospital and Professor Yukihiro Inomata at Kumamoto University Hospital.



#### Gastroenterology



Dr Kieron Lim



Dr Tan Poh Seng

#### **General Surgery**



Dr Wong Jen San Dr Tan Yu Meng





Dr Victor Lee



Dr Lee Ser Yee



Respiratory



**Anaesthesiology** 



Dr Asok Kurup



Dr Tan Aik Hau



Dr Lim Tai Tian



Dr Lim Hsien Jer

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## Cost of Liver Transplant Surgery

Transplant procedure is approximately \$\$260,000 - \$\$300,000 that includes:



Hospitalisation (inpatient investigations and medications)



Recipient's and donor's surgery



#### **Recipient:**

Maximum 7 days ICU and maximum 23 days in a single room



Fees for 4 surgeons, 2 gastroenterologists, 2 anaesthetists and 1 radiologist



**Donor:** 2 days ICU and maximum 5 days in a 2 bedded room



Visitation fees of transplant team doctors: pulmonologist/intensivist, cardiologist, and infectious disease physician

#### Medical costs does not include:

- × Kidney or liver dialysis
- × Hepatitis B immunoglobulin (special medication for hepatitis B recipient)
- × Remote video ICU monitoring system (\$200 per day)
- × Any extended ICU stays and general ward stays



**Pre-transplant assessment** of donor and recipient is approximately S\$20,000 in outpatient settings.



**Post-transplant recuperation** includes clinic visits, blood tests, ultrasound of liver and medications such as immunosuppressants.

