



The Numbers



35yrs
first Australian
lung transplant



7 average
lung transplants
per month



5th largest
lung transplant
program in
the world



1700
lung transplants
at The Alfred



73yrs
oldest lung
recipient

IMPACT REPORT

Our vision of Transplant for Life takes a giant step forward in delivering real outcomes

First of all, 'Thank you!' to all the health workers who have been so supportive during difficult times. Frontline workers are constantly challenged, and we are forever grateful for your continued care and duty.

Over the past 12 months the Lungitude Foundation has continued to press forward in supporting global best practice research. I'm pleased to report that through best practice governance we have been able to commit funding for 3 years to key research projects.

This decision, unanimously supported by the Lungitude Board and 3rd party peer review, provides the baseline funding for a number of critical research projects. However, in order to expediate the outcomes further, funding from corporate, philanthropic, State and Federal Governments and other support channels is imperative.

We are now seeing more questions

raised about the impact of COVID-19 on the lungs, the impact on transplants and the long-term health of any transplant recipient who may have been exposed to the virus. Lungitude Foundation will continue to monitor the impact of COVID-19, and where we may be able to add value in alignment with what we do.

We have for a long time recognised that there is a need for further support for patients beyond just the physical, and that every lung transplant patient has a designated caregiver and key supporters who also may need support. We have established a Lungitude Online Peer Support Network, in collaboration with Lung Foundation Australia, to enable the sharing of ideas and tips for managing the practical and emotional challenges of the lung transplant journey.

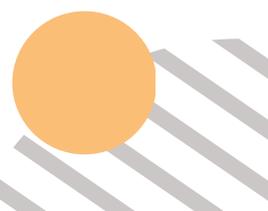
In addition, with the advancement of technology our national reach is starting to increase, and we are

able to bring initiatives such as the Lung Transplantation Research Presentation updates to a wider audience than was previously possible, which has been welcomed.

COVID-19 continues to put pressure on our major fundraising events. Our much anticipated Lungitude Long Lunch is pencilled in for early May 2022. In the meantime, we are embracing events like the Lungitude Virtual Challenge which has garnered great support to date. Thank you to everyone who donated to Lungitude this year, your generosity during challenging times is very much appreciated.

We encourage everyone to continue safe distancing and infection control practices. Please check out our website for helpful information specific to lung transplantation. We thank you for your ongoing support.

Gordon Jenkins
Board Chair



The Alfred's Lung Transplantation Service

Key research projects that require funding

The Lungitude Foundation is a major benefactor of The Alfred's Lung Transplantation program which remains the premier lung transplant service in Australia, and 5th largest program internationally. The team are at the forefront of new and innovative research as well as continuing productive collaborations with local and international research institutes.

Over the next three years, The Alfred's clinical research will focus on investing in three key research projects. All are centred on preventing, treating or recognising the early development of CLAD (Chronic Lung Allograft Dysfunction).



PROJECT 1

HARNESSING NON-CONVENTIONAL T CELLS FOR ANTIVIRAL CELLULAR THERAPIES

To help reduce the incidence of rejection for lung transplant recipients, the use of immunosuppressive medications are required; however, these same medications make it difficult for the recipient's body to control infections.

One infection that is particularly problematic is a common and often harmless virus, called cytomegalovirus or CMV. About half of all Australians are infected with CMV, but it doesn't cause major symptoms in healthy people.

However for lung transplant recipients, CMV infection can lead to very harmful complications, including inflammation, pneumonia, rejection (acute and chronic-CLAD) and in severe cases it can result in death. Recipients who experience CMV infection have a higher rate of rejection, and a death rate 6 times higher than those without CMV.

It is critical we discover how to control CMV infection to improve outcomes for lung transplant patients.

The Alfred's research team have identified a group of immune cells called CMV gamma delta ($\gamma\delta$) T cells that can recognise and control CMV infection. The ultimate goal of this research project is to harness this specific cell subset to develop cellular therapies and hopefully decrease the impact of CMV infection.

AIM

1

To determine relevant subsets to be targeted for future cellular therapy.

AIM

2

To provide further verification that CMV $\gamma\delta$ T cells can control CMV infection and will allow us to determine how effective they are compared to conventional cellular therapies.

AIM

3

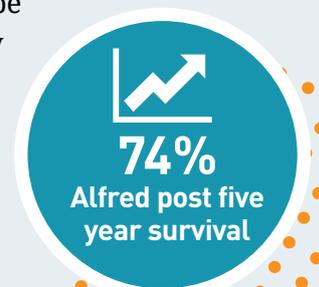
To harness these mechanisms for the design of future cellular therapies, and decrease the impact of CMV infection.



"We wish to express our gratitude to the Lungitude Foundation for its ongoing support of our research endeavours. The funding provided from Lungitude enables The Alfred's Lung Transplant Service to continue to be a world leader in Lung Transplant research, and additionally improve our patient's quality of life and survival rates even further."

Professor Glen Westall
MBBS PhD FRACP

Consultant Respiratory Physician Lung Transplant Service



HARNESSING DONOR IMMUNE CELLS TO PREVENT LUNG TRANSPLANTATION REJECTION

Up to 50% of lung transplants develop chronic rejection (CLAD) within the first five years.

The causes for the poor survival rate experienced by lung transplant recipients are not yet well understood. The lung is different to other transplanted organs because a large number of immune cells, that belong to the donor, are transplanted with the lung.

Immune cells that live in the lung (“resident immune cells”) regulate lung health and control infections but upon transplant we do not know what happens to the resident immune cells. The Alfred’s research team’s data shows that the presence of donor-derived resident immune cells, long-term, in the recipient’s lungs correlates with less CLAD development within first 3 years.

This indicates that the resident immune cells may offer protection to the transplanted lung. In this project, we will aim to harness any potential of the resident immune cells to prevent the development of CLAD post-transplant.

AIM

1

To determine the characteristics and function of donor-derived immune cells and how they are associated with lung transplant survival.

AIM

2

To determine if acute rejection or infection can change lung “resident” immune cells.

AIM

3

To evaluate whether lung “resident” immune cells differ between healthy, non-transplanted lung and the failed transplanted lung.

Spotlight on... DR SANDA STANKOVIC

Serbian born Dr Sanda Stankovic relocated as a teenager to New Zealand where she completed her schooling and attended The University of Auckland, before moving to Australia where she graduated from Melbourne University’s Walter and Eliza Hall Institute, Australia’s oldest medical research institute.

Sanda spent a further ten years at Melbourne University, initially focusing her research on the link between gut health and diabetes, which then expanded to numerous research projects in the field of immunology, cellular biology and techniques that cover both mouse models of infection and disease as well as human NK cell biology and cancer immunity.

More recently, Sanda was based at The Peter Doherty Institute for Infection and Immunity, which

is a joint venture between the University of Melbourne and the Royal Melbourne Hospital. Further collaborations with The Alfred’s Lung Transplant Research Team drew Sanda’s interest, in particular around the presence of donor derived immune cells and how they can impact lung transplantation rejection.

The Alfred team has since invited Sanda to join them, a decision she was happy to make citing how inspirational and passionate the other team members are. The Lungitude Foundation is proud to be funding a key project that Sanda will be working on alongside her fellow researchers - Project 2: Harnessing Donor Immune Cells to Prevent Lung Transplantation Rejection.

Sanda is mainly lab-based spending her time between The Alfred and The Doherty Institute, where

the majority of the key research equipment is located. That is when she is not spending time with her husband, three children, pet dog and lizard!



DID YOU KNOW?

Mucosal immunology is the study of immune and inflammatory responses that occur at mucosal membranes such as within the gut and lungs.

These surfaces are in contact with the external environment, so the role of lymphocytes and their ability to help the body fight off infection, and contribute to general lung health, is of particular interest to Sanda with this area currently under-researched.

REASSESSING DONOR-RECIPIENT MATCHING TO IMPROVE LUNG TRANSPLANTATION OUTCOMES

We must aim to improve the life expectancy and outcomes of lung transplant recipients.

There are many factors that we now know lead to the development of CLAD, however we still are lacking obvious biomarkers and investigations that make early diagnosis of CLAD possible.

This research project focuses on improving donor-recipient matching to minimise the impact of CLAD. A major barrier to improving life expectancy rates is the difficulty in matching human leukocyte antigens (HLA), which are proteins, between donors and recipients in the early stages of matching.

Currently two proteins HLA-A and HLA-B are matched as closely as possible between donors and recipients while a third protein HLA-C has been largely ignored in the matching process.

The Alfred research team have been exploring some exciting, but as yet unpublished, preliminary data which shows that when the mismatching of donor and recipient HLA-C occurs the development of CLAD is highly likely.

Why this is occurring is unclear. This research will look specifically at HLA-C matching in the hope of reducing the incidence of CLAD, thereby improving the survival rates and outcomes for Australian lung transplant recipients.

AIM

1

To improve donor-recipient matching by understanding the impact a donor's HLA-C has on a recipient's immune cells, and to determine the likelihood of the recipient developing CLAD after lung transplantation.

AIM

2

To understand the extent to which donor HLA-C impacts on the function of recipient immune cells.

AIM

3

To determine whether mismatched HLA-C can lead to the formation of antibodies and contribute to the development of CLAD.

TAKING RESEARCH FROM 'bench to bedside'

The Lungitude Foundation partners with leading medical and health organisations in the field of lung transplantation. The research we fund is translational 'bench to bedside' health and medical research – which means research undertaken in the lab ('the bench') or in the clinics by the research teams, is translated into treatments or therapies that benefit people at the 'bedside' as soon as possible.

A living example of this is transplant patient Margaret who received her lungs in 2020, and who benefited directly from the research we have been funding into improved donor-recipient matching.

Professor Greg Snell shared that, at the time of assessment, there

was debate about whether to use a specific lung for Margaret. If older methods of assessment had been used, then the match may well have been overlooked as it was too difficult to predict success.

However, as a direct result of the funded research that is being conducted in collaboration with fellow researchers, such as Steven Hiho at the Victorian Transplantation and Immunogenetics Service (VTIS), the team were able to use new programs that determine a 'score' of compatibility between any pair. This gave the team the confidence to proceed. Read more about matching organs in the project titled Reassessing Donor-Recipient Matching To Improve Lung Transplantation Outcomes.

Margaret is elated sharing that "The research has proven to be



extremely successful as in my case. The match is so perfect that I am back to my old self doing every and anything I want. I truly feel twenty years younger. Nothing is stopping me. I feel fantastic. This research will improve the matching of not only lung transplants but other organ transplants in time. The team working on this program is second to none and I thank each and every one of them with all my heart. I ask on behalf of the Lungitude Foundation and The Alfred Lung Transplant Research Team that you please give to continue this outstanding life-saving work." A terrific outcome for all involved.

LUNGITUDE ONLINE

Peer to Peer Support Network

We have always recognised that there is a need for further support for patients beyond just the physical, and for the key supporters of each lung transplant patient who are alongside them on the transplant journey.

We were therefore proud to be able to launch our new Lungitude Online Peer Support Network in June this year, in collaboration with Lung Foundation Australia who we want to make special mention of for all their assistance and provision of the online platform we use.

The Lungitude Online Peer Support

Network is a group for lung transplant patients and their immediate key supporters or caregivers, or those currently on their journey to undergo a transplant. The network enables sharing of ideas and tips for managing the practical and emotional challenges of the lung transplant journey. The focus is on connecting with each other, providing emotional support, shared experiences, and helpful resources.

We hold a monthly group video chat often with invited guests, more recently speaking about topics such as transplant physiotherapy or long-term patients sharing their tips and insights. Members encourage

each other along the journey to meet their goals and maintain their wellbeing, and to join in where they feel comfortable to share their own experiences.

Find out more via our website.



CENTRE FOR TRANSPLANT EXCELLENCE

Post transplant care & support

Lungitude's long-term vision includes the establishment of The Centre for Transplant Excellence. Annual growth in the number of transplants is not matched by growth in vital health support services needed to keep post-transplant patients healthy and alive to enjoy a productive life. Every additional transplant places greater demand and pressure on hospital health services.

It is as if Australia is travelling down a 6 lane superhighway in terms of donors and transplants, however the post-care system is more like a muddy footpath.

We are therefore continuing our advocacy for The Centre of Transplant Excellence (CTE) as we believe that the Centre will rapidly leverage Victoria's status as the world leader in transplant care and establish a national and globally significant centre of knowledge, education, research and innovation.

If you would like to know more about the Centre of Transplant Excellence and how you and your network can assist please contact: Gordon Jenkins, Lungitude Foundation Chair gordon@lungitude.com.au or **0414 414 481**.

Jeff Gittus

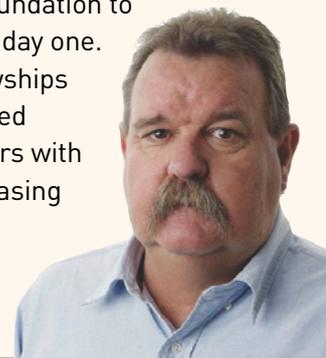
FELLOWSHIP

The inaugural Jeff Gittus Fellowship, funded by the Gittus Family in memory of Jeff, was awarded to Dr Louise Fuller (Physiotherapist) and Ms Christie Emsley (Dietician) for their project – Body Composition and Muscle Morphology after Lung Transplant.

Jeff had two lung transplants, and alongside his wife Liz were instrumental in enabling the Lungitude Foundation to flourish from day one.

Future Fellowships will be awarded every two years with funding increasing accordingly.

A wonderful tribute.



THE ALFRED'S PATIENT OUTCOMES FOLLOWING LUNG TRANSPLANTATION REMAIN THE WORLD'S BEST WITH 96% (ONE YEAR) AND 74% (FIVE YEAR) SURVIVAL RATES

THE LUNGITUDE FOUNDATION EXTENDS OUR THANKS TO OUR KEY SUPPORTERS:

GILLESPIE FAMILY FOUNDATION

THE GITTUS FAMILY

MR TONY PRATT



Save the dates

9-17 OCT 2021 Lungitude Virtual Challenge VIRTUAL EVENT

Choose your challenge and join us from where you live

7 MAY 2022 Lungitude's Long Lunch INNER CITY

Stunning location, entertainment, fabulous food & wine

OCT EACH YEAR Annual Research PRESENTATION

World-class researchers showcasing their latest projects

Our team

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Wendy Jenkins, Secretary
A/Prof Bronwyn Lewey
Craig Wood
Katharine Terkuile
Bridget Mullahy
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Elise Patterson

YOU CAN MAKE A VITAL DIFFERENCE

- Sponsor the Lungitude Foundation
- Make a Donation
- Sponsor or Attend an Event
- Run your own fundraiser supporting the Lungitude Foundation
- Encourage staff, colleagues, suppliers or clients to support the Lungitude Foundation
- Donate Goods & Services
- Subscribe to our Online Community

Find out more on how you can support us www.lungitude.com.au/get-involved/

Have you been receiving our latest emails? Please add the following email to your address book Info@lungitude.com.au or subscribe to our database www.lungitude.com.au/our-community/

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