Kidney, Transplant & Diabetes RESEARCH AUSTRALIA

NEWS

We are proud to support groundbreaking translational medical research that is helping to improve the lives of our family and friends suffering with these diseases.

A Life Changed Thanks to Research Advancements

At 26-years-old, Michael Burrows was at the prime of his life, climbing the corporate ladder and making partner at a leading Northern Territory criminal law firm when suddenly he was forced to quit work and fight for his life after being diagnosed with severe pancreatitis.

It was Boxing Day 2013 when Michael was rushed to the emergency room suffering from severe stomach pains. Michael did not expect what followed, ending up in the intensive care unit for 12 days and having both his lungs collapse. His parents rushed to his bedside and were told by Michael's doctors to expect the worst.

"This was the first of many attacks that followed and because of this I was forced to quit my job and move back to Tweed Heads in New South Wales to be closer to my family," Michael said.

"After working for seven years and getting to the top of my profession I had to give it all away. If it wasn't for my family and my fiancé Cara and our daughter, I don't know where I would be."

Michael's battle continued for over four years, the agonising pain was endless and the hospital trips became as frequent as every six weeks where he would stay two weeks at a time.

"Pancreatitis took everything from me and I ended up with zero quality of life."

After being told by medical professionals that he had reached the limits of medical science and would need to wait decades for advancements, Michael refused to believe it and desperately searched for answers.

"My parents were ready to sell their house to fund my procedure in America when I came across Kidney, Transplant & Diabetes Research Australia (KTDRA) and Professor Toby Coates' work," Michael said.

"Reading Chelsea Holloway and Gary Wanganeen's stories on the KTDRA website who both had pancreatitis and speaking with Prof Coates gave me the hope I needed. I didn't know how I could continue living with constant pain."

In July this year Michael underwent a pancreatic islet auto-transplant procedure at the Royal Adelaide Hospital. The two part procedure begins with the pancreas being surgically removed, before it is flown to Melbourne where the islet cells (insulin-producing cells) are extracted and injected back into the liver. This procedure truly is lifesaving!

"I feel 100 per cent better than I ever have since having the operation. I cannot thank Prof Coates, his team and KTDRA enough for giving me my life back.

"Cara and I are expecting a child next year and I'm so excited about what the future holds now I can continue with my life pain free!"

Thanks to your support, KTDRA in partnership with The Hospital Research Foundation is thrilled to be directing $330,000 in funding to ensure six more pancreatic islet auto-transplant procedures can take place at the Royal Adelaide Hospital and continue to save the lives of people like Michael living with severe and hereditary pancreatitis.

Image above: Michael with fiancé Cara and daughter Ameira.

Our aim is simple – to reduce and ultimately eliminate the high incidence of these chronic diseases in Australia and around the world.

Life-Changing Research Possible Because of You!

With your support, we've recently directed funding to four life-changing and vital research projects that will improve the lives of chronic kidney disease and diabetes sufferers.

Dr Shilpa Jesudason - Chair, CNARTS Clinical Research Group
"These funds from KTDRA will help to support a project officer to help us make our study a reality. We want to assess the burden of symptoms and the psychosocial impact of starting renal dialysis, to find out where we can intervene to help our patients the most. This project aims to make a real difference in the lives of patients with kidney failure." **Read more about Dr Jesudason's research on the next page.**

Dr Su Crail - Renal Nephrologist
"Our research project will be focused on the considerable impact of ongoing treatment, hospitalisation and outpatient appointments on patients with chronic kidney disease, those needing renal dialysis or who have had a kidney transplant. It will look at the quality of life for patients and their families particularly those living in rural or remote settings who may spend considerable time away from home. The project will help us to provide counselling for patients about what to expect and better plan service needs for the future."

Anthony Meade - Principal Renal Dietitian
"The KTDRA funding will enable us to have dedicated clinical research time, where we can focus on collecting data on dietary intakes and gastrointestinal symptoms in people with kidney disease. This type of research is difficult to do when managing a busy clinical workload, so dedicated research time is critical. Patient symptoms are very important and understanding the influence of diet on these symptoms will enable us to target dietary interventions to improve the symptom burden and the overall comfort of our patients."

Dr Rob Carroll - Transplant Physician
"The grant from KTDRA will enable our involvement in a multiple centre, multinational trial to determine whether monitoring inflammatory markers in the urine of our kidney transplant patients will lead to better health outcomes and prevent organ rejection. Ultimately it is hoped that monitoring urine will allow some people to avoid having a renal transplant biopsy."

Thank you for making this research a reality! You're helping to make advancements in the diagnosis, treatment and care of those requiring transplants or living with kidney disease and diabetes possible.

Swapping Research for Running Shoes for KTDRA

On Sunday September 17th a number of dedicated Kidney, Transplant & Diabetes Research Australia (KTDRA) researchers and wider community took on the City to Bay Fun Run in Adelaide to raise vital funds for their own research.

The team were led by Nephrologist Dr Philip Clayton who is passionate about raising awareness around the need for more funding for research into chronic kidney disease and diabetes. In an incredible effort Dr Clayton and the team raised $2,020 for their own lifesaving research!

"Much of our research relies heavily on funding from KTDRA for which we are very grateful. Rather than just being a consumer of the funds I want to actively raise funds and awareness," Dr Clayton said.

Like all community fundraisers who raise money for KTDRA, 100 per cent of the funds the running team raised will be directed to lifesaving research dedicated to improving treatment and finding a cure for kidney disease and diabetes.

Did you know you can host your own fundraiser for KTDRA? Your event can be whatever you want it to be, from a fun run to a barbeque! To find out how you can get started visit **contactus@kidneydiabetesresearch.com.au** or call **(08) 7002 0840.**

Impactful Research to Help Patients Today

With the support of a recent $50,000 grant from Kidney, Transplant & Diabetes Research Australia (KTDRA) Dr Shilpa Jesudason and the CNARTS Clinical Research Group are implementing a patient centred research project focused on improving outcomes for people living with chronic kidney disease.

This funding, made possible with your support, will allow Dr Jesudason to bring on board a project officer to develop and lead this translational project. It will also involve a multi-disciplinary team to assess patients at the time of starting dialysis, to understand their experience and ultimately improve their care.

"As a team we tend to do very well in basic science, but a couple of years ago I noticed we needed to develop some patient-centred research that brought together the different parts of our service (medical, nursing and allied health). What do patients need from us, and where are the gaps in current research?" Dr Jesudason said.

"With this new project we want to get a snapshot of our patients' experiences with end-stage kidney disease. We know dialysis is a difficult time and some people don't cope that well, but we've never had data to tell us exactly where they are not coping to help improve their care. Others cope very well and we want to learn more about that.

"This is why we've put together a multi-disciplinary team within our unit that includes clinicians, nursing staff, an occupational therapist, dietitian and a psychologist to assess patients who are at key transition points in their care."

The key and important transition points Dr Jesudason is referring to are when a patient starts dialysis, when they're on dialysis and have a kidney transplant, and when they have a failed transplant and return back to dialysis.

"These transition points are absolutely critical and are a time of incredible stress, dislocation, fear and uncertainty for patients. We know it's a tough time based on years of looking after patients, but we've never tried to study what happens to them during this transition. We want to find out at what points do they need help, and where we can intervene to make their experience better.

"Our psychologist will be conducting psychological assessments looking at depression, anxiety, coping skills whilst our dietitian will be concerned with the gastrointestinal symptoms patients experience from being on dialysis and how this effects their experience.

"An occupational therapist will be looking at how frail our patients are physically along with their cognition and function status. We will also be looking at people's quality of life, and asking patients how they feel about their care."

Dr Jesudason and the multi-disciplinary research team will be assessing patients as soon as they start dialysis and again three, six and 12 months down the track to gain an understanding at each crucial time point about how they are feeling and managing.

With this data, the team can pinpoint where the problems are, with the ultimate aim to develop interventions to improve the care provided to patients in those areas.

"We are trying to look at meaningful outcomes that are relevant to our patients. We want outcomes that are amenable to interventions to ultimately improve their dialysis experience.

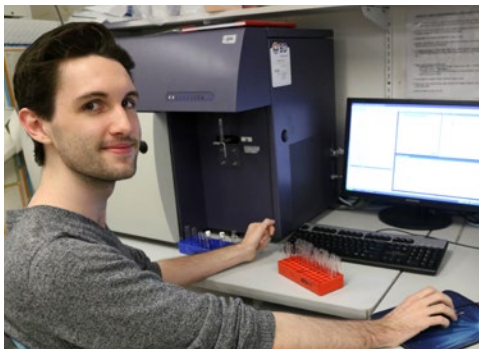
"The project officer we will employ thanks to this KTDRA funding will help us to coordinate this whole project, which involves hundreds of patients. Ideally we would like to see outcomes from this project be imbedded into the improvement of our day to day clinical practice. We want it to be translated into the clinic and for patients as quickly as possible."

Striving to Improve Islet Transplantation

Islet transplantation is revolutionising treatment for type 1 diabetes and other chronic conditions like pancreatitis, changing the lives of those living with the debilitating conditions.

Right now, the world-class research team supported by Kidney, Transplant & Diabetes Research Australia (KTDRA) are working hard to make islet transplantation more readily available for all living with these chronic conditions. Currently when patients undergo an islet transplant they have to take anti-rejection medication following the procedure, which can have severe side effects. It's for this reason, islet transplants are only offered to people living with severe type 1 diabetes who suffer from regular hypoglycaemic episodes.

Islet transplantation is an innovative treatment and potential cure for type 1 diabetes, involving the transplantation of isolated islet cells from a donor pancreas into another person.



For the last three years, PhD student Sebastian Stead has been investigating a new way to prevent the side effects of these anti-rejection medications following an islet transplant.

"My project is aiming to use nanoparticles as a new way of delivering anti-rejection medication directly to key immune cells in the patient. This would be a more localised method than what is currently used to take medications and could prevent the drugs side effects," Sebastian explained.

Having proved nanoparticles are a successful vehicle for delivering medication, Sebastian is now about to launch the next aspect of his project that will determine if there is a therapeutic benefit of using nanoparticles to deliver drugs to immune cells.

"Currently, we are optimistic. Initial experiments have shown that these nanoparticles do end up in the liver, which is the current site for islet transplantation."

If this new way of delivering medication proves successful, Sebastian says there is potential for this treatment to have a wider impact than just for type 1 diabetes sufferers.

"We've discovered the nanoparticles also like to go to the kidneys, which would be highly beneficial for kidney transplant recipients as a new way to deliver drugs to help minimise organ rejection without the horrible side effects," he said.

"In fact, this new treatment could be beneficial for anyone who has received an organ transplant such as a kidney, liver, heart, lung transplant and more.

"The main side effect of the transplant drugs are increased risk of cancer and infection. If our therapy is successful, we could minimise if not prevent these side effects to improve patient quality of life and potentially prolong the transplanted organ's lifespan in the process."

Showing very promising results for type 1 diabetes sufferers and other transplant patients, we look forward to updating you on Sebastian's groundbreaking research as he nears closer to finishing his PhD.

Image above: Sebastian Stead with Dr Shilpa Jesudason and Dr Rob Carroll (R-L). Image left: Sebastian's research has the potential to improve outcomes for all diabetes sufferers in the future.

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