

ADRF Research

HELPING PEOPLE TO BETTER SELF-MANAGE THEIR DIABETES



Vision, mission & values

The vision, mission and values of the Foundation reflect and support those of the Australian Diabetes Educators Association (ADEA).



VISION

Research enables people with diabetes to live well every day.



MISSION

Rigorous collaborative research enables best diabetes education and care.



VALUES

Ethical practice, co-research, innovation and excellence in research.

Introduction

Diabetes is relentless – it is a complex 24 hour a day, 7 days a week chronic health condition.

1.2 million Australians experience the significant daily burden of living with diabetes. A survey conducted by Diabetes Australia in 2020 estimates that people with diabetes make up to 180 diabetes-related decisions every day. These may include decisions about blood glucose monitoring, when and

what to eat, how much physical activity is required and when. **That's more than 65,000 extra decisions a year.**

Structured diabetes self-management education empowers people with diabetes to make these decisions. Credentialed Diabetes Educators (CDEs) are the health professionals who provide specialised structured diabetes self-management education, supporting people with diabetes to live their healthiest lives.

The ADRF funds the research behind CDEs and propels diabetes education into the future.

What is ADEA Diabetes Research Foundation?

The Australian Diabetes Educators Association (ADEA) established the ADEA Diabetes Research Foundation (ADRF) in 2016 to support and promote quality research into the key factors that assist people to self-manage their diabetes, optimising their health outcomes. ADRF research increases diabetes education and lessens the burden on people living with diabetes.

Since 2016, ADRF has awarded over \$650,000 for research projects to ensure optimal health outcomes for people with diabetes. These grants have been awarded for 12-month projects, in two funding streams:

- **Research grants:** This program provides grants to researchers, academics and student researchers from Australian universities and research institutes working with CDEs and people with diabetes on research projects that aim to improve diabetes care, management and education.
- **Research fellowships:** This program is designed with the aim to develop capacity in research and evidence-based practice for ADEA members who want to work within universities and research institutes on a research project that aligns with ADRF research priorities.

The ADRF research funding program provides seed funding to undertake cutting edge research and then translates their research findings into practice. ADRF research grant recipients present their research at the annual Australasian Diabetes Congress.

ADRF improves the lives of people living with diabetes by funding the research that results in real-world impact.

ADRF has funded eleven research projects to date, and additional research is critically needed.

RESEARCH PROJECTS

Equipping Grey Nomads for travel through diabetes self-management education

Dr Anita De Bellis (2019)



Grey Nomads, those over 55 years who travel for extended periods of time, have limited access to regular health practitioners. For those among them with diabetes, self-management of their condition can be incredibly difficult while on the road.

Diabetes educators in rural areas were consulted as part of this project. They advised that pharmacies were usually the first point of call when Grey Nomads were struggling to manage their diabetes and

needed help. Consequently, pharmacists and the Grey Nomads themselves were also consulted throughout the study to gain a deeper understanding of what was required from the self-management checklist.

As the Australian population ages and more retirees elect to travel, this research will become increasingly important in supporting Grey Nomads

to self-manage their diabetes effectively while ensuring that pharmacists and diabetes educators are well equipped to support them at every step of their journey.

Diabetes care capability framework for health professionals with different levels of skills and knowledge

Giuliana Murfet (2019)

In recent years, the complexities of diabetes medications and technologies have rapidly evolved. It has been very difficult to keep up with these rapid changes and a large portion of the healthcare workforce has not been able to keep abreast of the ever-changing technical knowledge they require.

Giuliana Murfet, a Nurse Practitioner and CDE, saw the opportunity to develop the workforce through a diabetes care capability framework.

The framework was developed in conjunction with Deakin University who, through multiple studies, outlined nine key capability areas that needed to be addressed to ensure all healthcare workers, regardless of their prior expertise in diabetes care and management, could provide patients with the best and most up to date knowledge.

This framework for diabetes care will ensure that all healthcare professionals possess a thorough foundational knowledge of the complexities of diabetes management to better treat those living with diabetes.

Development of an Australian first support programme for young adults with diabetes transitioning into University

Dr Virginia Hagger (2019)

Dr Virginia Hagger, Senior Lecturer at the University of Deakin, noticed a gap in the support systems provided to young adults with diabetes who were transitioning into university. University based students did not have the same support provided to them as when they were at school. This poses many risks for young adults as it is known that many facets of university life can compromise diabetes management.

The funding provided to Dr Hagger enabled her to undertake an on-campus study to explore options for support for young adults with diabetes entering university.

Through this research, young adults with diabetes are now able to transition to university with the confidence to become more independent in managing their diabetes without compromising their on-campus experiences and academic success.



RESEARCH PROJECTS

Reducing the fear of physical activity in those living with type 1 diabetes Marian Brennan (2018)

Accredited Exercise Physiologist and CDE, Marian Brennan, identified that many of her patients with type 1 diabetes found it difficult to manage their diabetes and physical activity. They said their greatest barrier to participating in physical activity was their fear of a hypoglycaemic episode. Marian was concerned for her patients as physical activity is essential for maintaining health and wellbeing.

Marian's research fellowship enabled her to study how to best support those living with type 1 diabetes to stay active. Through her research, Marian was able to develop an intervention plan to **aid those living with diabetes to maintain a healthy lifestyle** and participate in physical activity, without the fear of an hypoglycaemic episode.



Counting the carbohydrate, fat and protein: An insulin dosing app to improve blood glucose levels in type 1 diabetes in children and adolescents using insulin pump therapy Dr Carmel Smart (2018)

With over 15 years of working on clinical trials with Children children with type 1 diabetes, Dr Carmel Smart, Clinical Research Fellow at the John Hunter Children's Hospital, is very well renowned in her field. Through her research, she noticed that it was not only carbohydrates that affected blood glucose levels but that the fat and protein in food also influenced blood glucose levels.

In partnership with the Department of Engineering at the University of Newcastle, Dr Smart undertook a study to develop a **smartphone insulin dosing app, OptimAAPP.**

The app accounts for the glucose content of all foods that type 1 diabetes patients consume, allowing them to adapt their insulin intake to accurately maintain their blood glucose levels. This prevents people with diabetes from experiencing either hypoglycaemia or hyperglycaemia.

This app enhances the lives of those living with type 1 diabetes as it reduces one of their daily burdens, balancing their blood glucose levels.

Development of online learning and support for new, breastfeeding mothers with type 1 and type 2 diabetes Professor Bodil Rasmussen (2018)

During a pilot study on pregnant women with diabetes, Professor Bodil Rasmussen, lecturer and researcher at Deakin University, discovered a pattern emerging. She found that women with diabetes were less likely to breastfeed, and those who did breastfeed were less likely to continue with it long-term. Professor Rasmussen found this alarming as long-term breastfeeding

is beneficial to both the mother and child, and particularly for the development of the child's immune system.

As a result, Professor Rasmussen developed an **online platform for pregnant women and new mothers with diabetes**, to educate them on the importance of breastfeeding and created a space for them to share their experiences.

The platform was also able to reach those in isolated geographic areas that would not otherwise have access to the information.



RESEARCH PROJECTS

The implications of terminology used in diabetes care and management

Dr Linda Beeney (2017)

After years of studying in the field of diabetes psychology, Dr Linda Beeney, director of ReMinD and researcher at Sydney Medical School of the University of Sydney, wanted to evaluate the psychological impact of commonly used diabetes-related words and phrases on people living with diabetes.

At the time, no other studies had investigated the effect of negative language on diabetes health professionals' attitudes and behaviours. Similarly, there was no published experimental research on the effects of negative diabetes language on people

with diabetes. Dr Beeney's research outlined the need for diabetes language guidelines to accommodate nuances of context, delivery and individual interpretation of communication.

People with diabetes feel stigmatised and judged by the use of terms such as diabetic, non-compliant and failed, and this negatively impacts their self-management of their diabetes. Through her research, Dr Beeney has helped health professionals, the community and the media choose words wisely to support people living with diabetes, based on solid research evidence.

Dr Beeney's research has enabled CDEs, endocrinologists and other health professionals to become more mindful of the language used when conversing with people living with diabetes (and/or their carers), while in practice.

This will minimise distress and negative feelings enabling people with diabetes and their carers to feel more supported and motivated to confidently tackle their self-management journey.

Supporting emotional health issues in adults living with diabetes

Dr Christel Hendrieckx (2017)



Diabetes distress is an emotional condition affecting people living with diabetes. This condition – affecting three in ten Australians living with diabetes – results in feelings of frustration, defeat and being overwhelmed.

Due to the commonality of diabetes distress which can be a precursor of depression, it was necessary to develop a program for health professionals to better support their patients.

Dr Christel Hendrieckx, from Deakin University, was a recipient of the 2017 research grant for her work in developing a training program for health professionals to better support adults with diabetes distress.

The research project was led by the Australian Centre for Behavioural Research in Diabetes in partnership with Diabetes Victoria and Deakin University. The content of the program was developed based on the Diabetes and Emotional Health handbook, which was published by the Australian National Diabetes Services Scheme in 2016.

The online program provides health professionals with an evidence-based psychological training program that enables high-quality care and better health outcomes for all Australian adults living with diabetes.

Optimisation of mealtime insulin bolusing algorithm

Dr Kirstine Bell (2016)



Most people living with diabetes would estimate the dose of insulin required after a meal, based on the total carbohydrates consumed. However, studies have indicated that dietary fat influences the amount of insulin required to maintain safe blood glucose levels.

Dr Kirstine Bell, a researcher at The University of Sydney's Charles Perkins Centre, received the 2016 research grant to work alongside the Harvard Medical School on a novel project which sought to understand the impact of fat content in meals, on blood glucose levels.

The goal of the project was to model the extent to which dietary fat influences blood glucose levels of people with type 1 diabetes and thus develop an algorithm that correctly calculates the dose of insulin required after considering the fat and carbohydrate content of the meal.

A Food Insulin Index algorithm was developed as a result of the study. A trial was undertaken in which the algorithm was tested against the standard carbohydrate counting algorithm in patients who use insulin pump therapy.

Results from the trial showed a reduction in hyperglycaemia post meal consumption in the group following the use of the Food Insulin Index algorithm.

This project assists people living with diabetes to better manage their blood glucose levels, as well as enabling healthcare professionals to provide clearer guidance to their patients.

RESEARCH PROJECTS

Not Scared of Sugar

Dr Tammie Choi (2016)

Dr Tammie Choi, from Monash University, identified that some of her Chinese patients with diabetes felt overwhelmed by the medical information that was presented to them. Her research project, in collaboration with Monash University and Carrington Health, set out to tailor a diabetes education program specifically for Chinese Australians.

The medical information was previously made available to Chinese Australians via

translated diabetes care models or via one-on-one consultations with health professionals. However, as medical information tends to be communicated via seminars in China, many Chinese Australians were not comfortable with the one-on-one approach and therefore missed out on key information to manage their diabetes.

The success of this project has enabled more Chinese Australians with diabetes to live well

every day by providing them with culturally tailored diabetes education programs in a format that matched their expectations.

The study's results showed an increase in diabetes self-management and a decrease in diabetes distress during the study and six months post-study.

DiabetesDriving-Australia

Dr Steven Trawley (2016)



Hypoglycaemia, low blood glucose levels, involves symptoms such as blurred vision, altered decision making, fatigue and even fainting. In severe cases, emergency medical help is required. Medical advice specifies that after a hypoglycaemic episode, those living with diabetes are not permitted to drive for six weeks as they could pose a risk to themselves or others if any further symptoms were to be experienced while driving. As a result, many people with diabetes felt anxious when they were able to drive again.

To help alleviate this anxiety, Dr Steven Trawley from the CairnMiller Institute,

explored the development of an Australian version of DiabetesDriving.com (a previously established educational program from the USA), to improve the anticipation, prevention, detection and treatment of hypoglycaemia while driving, for at-risk drivers with type 1 diabetes.

DiabetesDriving-Australia consists of an online education program and a toolkit to be kept in a car. This toolkit contains a pre-drive checklist, rapid-acting and long-acting glucose sources, a blood glucose monitor, blood glucose driving benchmark keychain and stickers.

Driving is important for people to maintain their independence and self-esteem. This cutting edge research is vital in helping adults with type 1 diabetes to drive confidently and safely – empowering them to live full and independent lives.

Research such as this is vital in helping adults with type 1 diabetes to drive confidently and safely – empowering them to live well with diabetes.

Visit us on YouTube @ADEA TV to learn more about our research projects



ADEA Diabetes Research Foundation

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