

SCHEDULES

11 November 2020 - 09:00

Medtronic Hosted Symposium

Session - [Industry Hosted Symposium](#) - 45.0 mins - Darwin Room

09:00

[Bluetooth Technology and Connectivity – How to maximise patient expectations and clinic benefits](#)

Novo Nordisk Hosted Symposium

Session - [Industry Hosted Symposium](#) - 45.0 mins - Brisbane Room

09:00

[Updated clinical guidance on the use of co-formulated insulin Ryzodeg® 70/30: global and local perspectives](#)
[Roger Chen, Sarah Glastras](#)

Co-formulated insulin is providing an alternative approach for the management of type 2 diabetes in individuals requiring insulin therapy. Is co-formulated insulin challenging the dogma of basal-bolus regimens?

Global¹ and national² consensus recommendations on the use of co-formulated insulin have been recently published and provide practical guidance for real world use across many clinical scenarios.

Please join the authors from the global and local publications, A/Prof Roger Chen and Dr Sarah Glastras, as they apply the consensus recommendations to their own case studies, and present insights into the use of co-formulated insulin for individuals with type 2 diabetes.

References:

1. Mehta R, et al. Diabetes Obes Metab. 2020;10.1111/dom.14128.,
2. Glastras SJ, et al. J Clin Med. 2020;9:1091
3. Novo Nordisk. Ryzodeg® 70/30 (insulin degludec/insulin aspart) prescribing information, 2020. Available: <https://www.novonordisk.com.au>

11 November 2020 - 10:00

Welcome to the Australasian Diabetes Congress 2020

Session - [Plenary](#) - 120.0 mins - Brisbane Room

10:00

[Welcome to Country](#)

Traditional Performance by Tribal Experiences

10:10

[Welcome from ADEA & ADS Presidents](#)

[Steve Stranks, Brett Fenton](#)

10:20

[The biological basis of socially determined health inequalities.](#)

[Harry Burns](#)

The relationship between low socioeconomic status, increased ill health and poor life expectancy is well documented. Efforts to narrow the gap between rich and poor have usually focussed on ways of making the poor richer. Such solutions often cause political controversy with those on the left of the political spectrum arguing for social justice while those on the right arguing that people at the lower end of the spectrum freely choose habits that damage their health. Political disagreement as to the solution leads to inaction and political paralysis.

The result is that individuals and families continue to suffer.

A close examination of the science underpinning health inequalities shows that people who are born into and grow up in adverse circumstances are likely to experience a number of biological adaptations which reduce their chances of successful lives. Epigenetic influences are associated with abnormal stress metabolism. Neurobiological studies show that young people living with adversity are less likely to make effective decisions about behaviour. As a result school failures, unemployment and offending behaviour is commoner as those children grow up.

Health inequality is a direct consequence of difficult and chaotic early lives. Over the life time of these children, social and economic costs to society are considerable. Effective interventions are essential if we are to mitigate these costs and allow these young people to live fulfilling lives. Politicians are unlikely to come up with those effective interventions. Science should determine the necessary action.

11:10

[I'll take my healthcare team with a side of peers](#)
[Michelle Litchman](#)

11 November 2020 - 12:00

Lilly Hosted Discussion Session

Session - [Industry Hosted Symposium](#) - 15.0 mins - Darwin Room

12:00

[Q&A with Professor Jonathan Shaw from the Baker Heart and Diabetes Institute, Melbourne](#)
[Jonathan Shaw](#)

11 November 2020 - 12:00

Lunch / Visit the Exhibitors / Watch a wellness session

Session - - 30.0 mins -

11 November 2020 - 12:30

ADS Basic Oral Presentations

Session - [ADS Basic](#) - 120.0 mins - Melbourne Room

12:30

[Introduction](#)
[Belinda Yau, Aowen Zhuang](#)

12:32

[Exogenous glucose sensing is the predominant signal for the suppression of endogenous glucose production in humans](#)

[Teddy Ang](#)

Abstract #110

12:44

[Harnessing ultraviolet light to reduce metabolic dysfunction](#)

[Shelley Gorman](#)

Abstract #101

12:56

[Obesity-related chronic kidney disease is ameliorated by low-dose hydralazine independent of a blood pressure-lowering effect](#)

[Ben Larkin](#)

Abstract #128

13:08

[IDOL modulates glucose metabolism in skeletal muscle via a phospholipid FGF-21 axis](#)

[Yi Wang](#)

Abstract #182

13:20

[Transcriptional landscape of atherosclerotic aorta in diabetes; Insights from single cell sequencing](#)

[Waheed Khan](#)

Abstract #36

13:32

[Inhibition of microRNA-181c rescues diabetes-impaired angiogenesis and wound healing](#)

[Emma Solly](#)

Abstract #189

13:44

[A Novel Form of Polarity in Beta Cells is Disrupted in Type 2 Diabetes](#)

[Dillon Jevon](#)

Abstract #56

13:56

[Pancreatic islet slices preserve beta-cell polarity and indicate discrete mechanisms that control functional responses to glucose compared to isolated islets](#)

[Nicole Hallahan](#)

Abstract #193

14:08

[Panel Q&A](#)

ADS Clinical Oral Presentations - Type 1 Diabetes

Session - [ADS Clinical](#) - 120.0 mins - Adelaide Room

12:30

[Introduction](#)

[John Wentworth](#)

12:32

[Preservation of B cell functions and beneficial metabolic effects of golimumab in children and young adults with recently diagnosed type 1 diabetes: The phase 2 T1GER study](#)

[Mark Rigby](#)

12:44

[Omega-3 fatty acid supplementation promotes corneal nerve regeneration in type-1 diabetes: a randomised, placebo-controlled trial](#)

[Alexis Ceecee Zhang](#)

Abstract #108

12:56

[30 year Review: Assessing Retinopathy Progression in Adolescents with Type 1 Diabetes using Markov Model Analysis](#)

[Andrzej Januszewski](#)

Abstract #96

13:08

[In children and young people with type 1 diabetes using pump therapy an additional 40% of the insulin dose for a high fat, high protein meal improves postprandial glycaemia](#)

[Tenele Smith](#)

Abstract #4

13:20

[Intravenous or Oral glucose challenges to predict insulin independence duration following islet transplantation in human type 1 diabetes](#)

[Glenn M Ward](#)

Abstract #235

13:32

[Glucose Control During Exercise Using the Medtronic Advanced Hybrid Closed Loop \(AHCL\) System: Insulin Aspart Vs Faster Acting Insulin Aspart](#)

[Dale Morrison](#)

Abstract #85

13:44

[Use of a type 1 genetic risk score for diabetes diagnosis in young adults: A retrospective analysis from the Fremantle Diabetes Study Phase II](#)

[Tim Davis](#)

Abstract #146

13:56

[Q&A](#)

ADS Plenary Lectures - Katalin Susztak, Helen Colhoun

Session - [Plenary](#) - 120.0 mins - Darwin Room

12:30

[Katalin Susztak Introduction](#)

[Josephine Forbes](#)

12:35

[Big Data - Integrating multiomics and single cell technology: Cells standing out from the "crowd" in diabetes and kidney disease](#)

[Katalin Susztak](#)

13:30

[Helen Colhoun Introduction](#)

[Richard Maclsaac](#)

13:35

[Using e-health records and 'omics to inform diabetes health care – perspective from Scotland.](#)

[Helen Colhoun](#)

The improved sophistication of electronic health records should improve our understanding of the causes, course and management of chronic diseases. In this presentation I will describe how a national research platform for diabetes in Scotland has been developed that harnesses such improvements in electronic health care records. I will consider some of the key challenges from governance and privacy protection, semantic interoperability through to establishing verifiable research pipelines. I will describe how we have used the platform to inform policy and clinical management in a number of aspects of care including retinopathy screening, provision of real world effectiveness data on continuous glucose monitoring and more recently, on prediction of risk of severe COVID-19.

Biobanks linked to such diabetes e-health records research platforms affords the opportunity to apply high dimensional omics panels at scale so as to further understanding of pathogenesis and prediction of disease. I will describe some such linked biobanks in Scotland and consider their contribution to understanding the genetics of diabetes and prediction of complications, especially diabetic kidney disease progression.

Australian Diabetes Research Foundation Research Showcase

Session - [ADEA](#) - 120.0 mins - Canberra Room

12:30

[Introduction](#)

[Kirstine Bell](#)

12:32

[Connecting a community of breastfeeding women with type 1 and type 2 diabetes](#)

[Bodil Rasmussen](#)

13:02

[A pilot, randomised control trial examining the efficacy and acceptability of OptimAAPP, a novel smartphone insulin dose calculator for carbohydrate, fat and protein.](#)

[Tenele Smith](#)

AIMS

To 1) assess the efficacy of OptimAAPP in managing glycaemia under free-living conditions compared to usual care, carbohydrate counting and 2) determine the acceptability of OptimAAPP to children and adults with Type 1 Diabetes using flexible multiple daily injection therapy (≥ 4 injections/day).

METHODS

This was a cross-over trial conducted at 2 Australian sites. Participants were randomised in a 1:1 ratio to use carbohydrate counting or OptimAAPP for 12-weeks and then cross-over to the alternate arm for a further 12-weeks. Each arm was preceded by a 2-week insulin optimisation period. The primary outcome, time in glucose range; 3.9-10.0 mmol/L was assessed using sensor glucose data collected over 2-consecutive weeks in both arms. The acceptability of OptimAAPP was assessed using a questionnaire.

RESULTS

Presented are the results of an initial 18 participants; mean age 32 ± 13 years, diabetes duration 14 ± 11 years and HbA1c $7.0\% \pm 1.0$ (57 ± 11 mmol/mol). Compared to carbohydrate counting, OptimAAPP achieved similar glycaemic outcomes without severe hypoglycaemia. The mean proportion of time in range was 66% (carbohydrate counting) vs 67% (OptimAAPP), above range; 30% vs 2% and below range; 4% vs 5%. The mean coefficient of variation of sensor glucose was 34.8% vs 36.1% and change in HbA1c from baseline; $+0.2\%$ vs $+0.1\%$. The majority of participants were confident giving the doses that OptimAAPP recommended (85%) and felt it was easy to use (77%) however, less than half (46%) preferred OptimAAPP with the limited number of foods in the database a key barrier to use.

CONCLUSIONS

Preliminary data indicates that OptimAAPP is a safe, effective tool for managing glycaemia similar to carbohydrate counting. The OptimAAPP food database may require further attention.

13:32

[Reducing Fear of Hypoglycaemia towards Active Living](#)

[Marian Brennan](#)

14:02

[Panel Q&A](#)

[Tenele Smith](#), [Marian Brennan](#), [Bodil Rasmussen](#)

Best of the Best ADEA Orals: Best Oral & Best Novice Oral Prize Session

Session - [ADEA](#) - 120.0 mins - Hobart Room

12:30

[Introduction](#)

[Trisha Dunning](#)

12:32

[Diabetes distress e-Learning for credentialled diabetes educators: A pilot randomised controlled trial](#)

[Jennifer Halliday](#)

Abstract #11

12:44

[Type 1 TACTICS for Exercise: Reducing fear of hypoglycaemia as a barrier to physical activity.](#)

[Marian Brennan](#)

Abstract #18

12:56

[Inpatient Diabetes Prevalence, length of stay and sub-specialty prevalence at a metropolitan teaching hospital](#)

[Liam Collins](#)

Abstract #48

13:08

[Development of a COVID-19 Diabetes Liaison Service- A focus on individuals with disadvantage](#)

[Elizabeth Mulrooney](#)

Abstract #32

13:20

[Acceptable diabetic retinopathy DR screening coverage: Is it achievable in non-ophthalmic settings, such as indigenous primary care clinics?-A CRE in Diabetic Retinopathy sub-study](#)

[Sharon Atkinson-Briggs](#)

13:32

[The Patients Readiness to Learn about Diabetes Diet in General Practice: a Transtheoretical Model of Change](#)

[Fatemeh Adili](#)

Abstract #7

13:44

[An Evaluation of the Perceptions and Impact of a Health Professional Mentoring Program for Multidisciplinary Diabetes Educators in Australia](#)

[Amy Cowan](#)

Abstract #10

13:56

[Panel Q&A](#)

NADC Symposium - Diabetes Centres and Primary Care Services responses to Covid 19 + ANDA Update

Session - [ADS Clinical](#) - 120.0 mins - Brisbane Room

12:30

[Introduction](#)

[Anthony Russell](#)

12:35

[How we are supporting the changes in diabetes care delivery in 2020 and beyond](#)

[Natalie Wischer](#)

13:00

[High Risk Foot Service accreditation - The ongoing benefits of accredited organisations](#)

[Michaela Watts](#)

13:15

[Models of Diabetes Care - what are the big shifts and what do we expect will stick?](#)

[Anthony Russell](#)

13:30

[The Diabetes Epidemic meets the COVID-19 Pandemic in Western Sydney: accelerating Integrated Virtual Care of type 2 diabetes with community providers](#)

[Glen Maberly](#)

Diabetes is Australia's leading burden of disease and western Sydney is a particular hotspot. WSD estimates that type 2 diabetes costs \$16,000 per patient per year (in direct and indirect health costs). We estimate that 12% of adults in the District have diabetes, i.e. 72,000 people, and this adds to \$1.16B a year.

In 2020 the focus has been on the COVID-19 pandemic and diabetes is part of the vulnerable group with a doubling mortality. Yet people with diabetes stayed away from our Emergency Departments.

WSD stopped face-to-face care and implemented a WSD Virtual Care (VC) service. New patients started with both the GP and the patient participating in a multi-disciplinary case conference. Digital cloud solution, including home Blood Sugar Levels (BSL), Flash Glucose Monitoring and lifestyle options, were added to WSD VC to help stabilise patients while at home and enhance their self-management.

WSD now has 100 short patient education videos provided over WSD VC and also made available through the National Association of Diabetes Centres (NADC) Patient Education Resource Library (PERL).

Building capacity of General Practice team and community providers remains a key part of WSD's mission.

We enrolled 400 practice and community nurses in the on-line NADC National Diabetes Care Course.

Diabetes Webinar Forums were run engaging more than 1000 partners, providers and people. They included diabetes and COVID-19 management, increasing physical activity, healthy urban design, healthy food supply and consumption, Healthy Living Toongabbie community engagement, Indian and Filipino populations responding to diabetes, and mental illness and diabetes distress.

A 2020 Diabetes Masterclass to build the capacity of hospital, General Practice and community providers attracted more than 700 participants over 10 weekly 1.5 hour sessions. This was provided by 5 partners and 10 industry sponsors and delivered by 40 faculty.

13:45

[Australian National Diabetes Audit -Lessons from 2019 ANDA audit](#)

[Naomi Szwarcbard](#)

14:05

[COVID-19 Center Survey - and the results are... and ANDA 2021 - a big year long in the planning](#)

[Sophia Zoungas](#)

14:20

[Panel Q&A](#)

[Sophia Zoungas](#), [Natalie Wischer](#), [Naomi Szwarcbard](#), [Michaela Watts](#), [Glen Maberly](#), [Anthony Russell](#)

Peer Support in Diabetes Care - What, How, Why and Keeping Safe

Session - [ADEA](#) - 120.0 mins - Sydney Room

12:30

[Introduction](#)

[Ashley Ng](#)

12:32

[Who are you, how do you use peer support, why is peer support important for people with diabetes, one misconception or myth you want to bust about peer support](#)

[Giovanna Taverna](#), [Debra Thorpe](#), [Ashley Ng](#)

13:32

[Peer Support](#)

[Michelle Litchman](#), [Giovanna Taverna](#), [Debra Thorpe](#), [David Burren](#), [Ashley Ng](#)

11 November 2020 - 14:30

Afternoon Tea

Session - - 30.0 mins -

11 November 2020 - 15:00

ADEA Orals: Hot Topics in Diabetes Community Health Programs & Pregnancy Care

Session - - 120.0 mins - Hobart Room

15:00

[Introduction](#)

[Melinda Morrison](#)

15:02

[Improving behavioural health indicators in people with type 2 diabetes: outcomes from MyDESMOND Australia](#)

[Natasha Watson](#)

Abstract #16

15:14

[12-month follow up of the Beat It program, an 8-week community-based group exercise and lifestyle program for people with diabetes](#)

[Thomas Laing](#)

Abstract #27

15:26

[Enhancing self-efficacy to improve physical activity behaviours in adults with diabetes: evaluation of the Ready Set Go, Let's Move! Program](#)

[Joannah Braham](#)

Abstract #26

15:38

[A two-stage screening protocol for identifying persons at risk for type 2 diabetes in different community settings within South Australia](#)

[Foorough Kavian](#)

Abstract #8

15:50

[Adapting peer support training to online delivery in a COVID-19 world](#)

[Giovanna Taverna](#)

Abstract #53

16:02

[Baby Steps towards reducing risk of type 2 diabetes among women with a history of Gestational Diabetes Mellitus: outcomes of a national pilot](#)

[Deborah Schofield](#)

Abstract #15

16:14

[Understanding gestational diabetes: incorporating the lived experience of women in the update of videos for gestational diabetes management](#)

[Natalie Arambasic](#)

Abstract #42

16:26

[Evaluation of a Telehealth Clinic for Antenatal Endocrine Care during COVID-19](#)

[Alison Gebuehr](#)

Abstract #9

16:38

[Q&A](#)

ADS clinical Oral Presentations - President's Young Investigator Award

Session - [ADS Clinical](#) - 120.0 mins - Brisbane Room

15:00

[Introduction](#)

[Steve Stranks](#)

15:02

[Diabetes IN-hospital, Glucose & Outcomes - The DINGO Study](#)

[Rahul Barmanray](#)

Abstract #81

15:14

[A Randomised Trial of Closed Loop versus Standard Therapy in Glycaemia Management During Exercise](#)

[Barbora Paldus](#)

Abstract #136

15:26

[Coverage and Gaps in Referral to the Far North Queensland Diabetes in Pregnancy Clinical Register](#)

[Mimi Wong](#)

Abstract #60

15:38

[Efficacy of islet cell transplantation in Australia in improving counter-regulatory hormone release during hypoglycaemia in adults with T1D & Impaired Awareness of Hypoglycaemia](#)

[Melissa Lee](#)

Abstract #210

15:50

[Australian Guidelines for Gestational Diabetes Testing during the COVID-19 Pandemic: Potential Effect on Pregnancy Outcomes](#)

[Yoon Ji Jina Rhou](#)

Abstract #151

16:02

[Progression to type 2 diabetes in women with and without gestational diabetes: the PANDORA Wave 1 study](#)

[Anna Wood](#)

Abstract #45

16:14

[COVID-19 severity characterised by hyperglycaemia at presentation and high insulin requirements with dexamethasone treatment](#)

[Rebecca Foskey](#)

Abstract #232

16:26

[Effect of 12 weeks of High-Intensity Interval Training on Liver Fat in Adults with Type 1 Diabetes and Overweight or Obesity](#)

[Angela Lee](#)

Abstract #75

16:38

[Panel Q&A](#)

ADS/ADIPS Symposium: Pregnancy and Diabetes

Session - [ADS Clinical](#) - 120.0 mins - Melbourne Room

15:00

[Introduction](#)

[Arianne Sweeting, Glynis Ross](#)

15:02

[Update of the ADIPS guideline on pre-existing diabetes](#)

[Victoria Rudland](#)

15:27

[The OGTT in the diagnosis of GDM](#)

[Christopher Nolan](#)

15:52

[Human gut microbiota and diabetes in pregnancy](#)

[Helen Barrett](#)

There appears to be a bidirectional relationship between the host and the gut microbiota, with the metabolic, and immune health of the host related to the composition of the gut microbiota. This presentation will examine the data on diabetes in pregnancy and the gut microbiota, with a focus on Gestational Diabetes and whether the gut microbiota can influence pregnancy outcomes and the role of probiotics in GDM.

16:17

[Extracellular vesicles : New players in regulating glucose homeostasis in gestational diabetes mellitus pregnancies](#)

[Carlos Salomon](#)

16:42

[Panel Q&A](#)

[Leonie Callaway, Helen Barrett, Christopher Nolan, Carlos Salomon](#)

Decoding Diets for Diabetes

Session - [ADEA](#) - 120.0 mins - Sydney Room

15:00

[Introduction](#)

[Kirstine Bell](#)

15:05

[Making sense of nutrition information and communicating evidence-based nutrition messages to patients](#)

[Tim Crowe](#)

It seems expertise in nutrition today is measured by a person's loud voice in the media and their social media following rather than qualifications. There is no need to despair though as fads and their champions come and go but credible voices of reason remain long after. In this presentation, Tim will outline how health professionals can equip themselves to make sense of sometimes conflicting nutrition research and information and how best to communicate this clearly to patients and the public alike.

15:30

[Plant-based diets](#)

[Kate Marsh](#)

There is a lot of confusion around the dietary management of diabetes, with many people currently advocating lower carbohydrate, higher fat diets for managing both type 1 and type 2 diabetes. However, this ignores the significant body of evidence around the role of plant-based diets (particularly low-fat vegan diets) in the prevention, management and reversal of type 2 diabetes.

In this presentation, Kate will:

- provide an overview of the current evidence for the role of a plant-based diet in both the prevention and management of type 2 diabetes
- briefly discuss some of the mechanisms which might explain the benefits of a plant-based diet for people with and at risk of type 2 diabetes
- address some of the commonly cited concerns about recommending plant-based diets, including

- acceptability and nutritional adequacy
- provide practical tips and resources for helping people with diabetes to adopt a plant-based diet

15:55

[Diabetes and the Gut Connection](#)

[Nicole Dynan](#)

Evidence has been building over the last decade, uncovering the influence of the 'gut microbiota' (GM) on glycaemic control, and the development of metabolic diseases, including Type 2 Diabetes (T2D). It has found that GM diversity appears to be reduced in people with T2D. This promotes chronic-low grade inflammation which destroys insulin-producing beta cells in the pancreas and is implicated in the pathogenesis of T2D. It can be a result of inadequate fibre intake or due to an unhealthy level of highly processed food in the diet. In this webinar, Nicole will discuss:

- The link between gut health, diet, and diabetes
- The role the GM plays in the digestion and absorption of fibre
- The impact of dysbiosis and inflammation on disease formation and progression
- The role of dietary patterns, prebiotics, probiotics and specific nutrients
- The importance of short chain fatty acids

You will learn how a high fibre diet such as a Mediterranean Diet, plant-based diet or DASH diet provide the perfect dietary building blocks for gut health, leading to increased colonisation and diversity of health-promoting bacteria and increased production of short chain fatty acids. These factors ultimately help to reduce inflammation, improve blood glucose and HbA1c levels, increase insulin secretion and reduce the risk of T2D.

16:20

[Mediterranean diets & diabetes](#)

[Evangeline Mantzioris](#)

16:45

[Panel Q&A](#)

[Tim Crowe](#), [Nicole Dynan](#), [Kate Marsh](#), [Evangeline Mantzioris](#)

Social Media & TweetChat Masterclass

Session - [ADEA](#) - 120.0 mins - Canberra Room

15:00

[Introduction](#)

[Ashley Ng](#)

15:05

[Building your digital profile](#)

[Ashley Ng](#)

16:05

[Introduction to who you are and your role](#)

[Jessica Beange](#)

16:20

[How you use social media to engage with the diabetes community and/or healthcare professionals](#)

[Belinda Moore](#)

16:35

[One tip for engaging or how to be more engaging on social media](#)

[Asha Brown](#)

16:50

[Panel Q&A](#)

[Jessica Beange](#), [Belinda Moore](#), [Ashley Ng](#), [Asha Brown](#)

Symposium: Bench to Bedside - Stem Cells

Session - [ADS Basic](#) - 120.0 mins - Darwin Room

15:00

[Introduction](#)

[Sonia Saad](#)

15:05

[Derivation of functional pancreatic islets from human pluripotent stem cells](#)

[Timo Otonkoski](#)

Human pluripotent stem cells (hPSC) include both embryonic stem cells (hESC) and induced pluripotent stem cells (hiPSC), which developmentally represent the pre-gastrulation stage cells from which all embryonic tissues are derived. In order to guide the differentiation of these cells into the pancreatic lineage, step-wise protocols have been developed in order to mimic the essential inductive events occurring during

development in vivo. For several years, it has been possible to use these protocols to generate stem-cell derived pancreatic islet-like cells (sc-islets) which closely resemble late fetal islets, characterized by minimal glucose-induced insulin secretion. Recent developments in the methods have resulted in improved functionality of the sc-islets. In my talk I will describe unpublished results characterizing the insulin secretion, electrophysiology, single cell transcriptomics and metabolomics of sc-islets in comparison with adult human islets. The functionality of sc-islets by most parameters equals that of adult islets, even if they still show signs of metabolic immaturity.

15:30

[Immunosuppression free transplantation of stem cell derived beta cells](#)

[Bernard Tuch](#)

Introduction: Stem cell differentiated β -cells are an attractive treatment option for type-1-diabetes (T1D), but toxic immunosuppressive drugs are needed. We aimed to deliver allogeneic β -cell therapies without anti-rejection drugs using a bioengineered device that combines microencapsulation of β -cells and 3D scaffolds printed using sophisticated melt electrospin writing (MEW).

Methods: Mouse β -cell (MIN6) clusters, islets from QS mice and islet-like clusters (ILC) differentiated for 28 days from human embryonic stem cells (hESC) were encapsulated in 2.2% ultra-pure alginate. After viability and glucose stimulated insulin secretion were assessed, the clusters were seeded within MEW scaffolds. Devices were transplanted subcutaneously in immune-deficient (NOD/SCID) or immune-competent (BALB/c) mice made diabetic with streptozotocin. Blood glucose level (BGL) and glucose tolerance were tested and for ILCs, human C-Peptide was measured. Vascularity inside grafts was quantified over 4 weeks by 3D-doppler ultrasound. Once BGL normalized, grafts were removed for examination. Insulin and C-peptide in plasma, pancreases and grafts were measured by ELISA.

Results: Viability and insulin secretion were unaffected by encapsulation. Transplantation of encapsulated MIN6 within MEW scaffolds lowered BGL (from 30 to 5 mmol/L) and improved glucose tolerance in NOD/SCID and BALB/c strains within 25-41 days. Long-term BGL normalization (up to 105 days) in BALB/c mice was achieved with QS islets in a device pre-vascularised for 3 weeks. Inflammatory infiltration of neutrophils (myeloperoxidase+), macrophages (CD68+) and B-lymphocytes (CD19+) was present on MEW scaffolds but not on microcapsules, which had infrequent pro-fibrotic walling (α -SMA+). In diabetic NOD/SCID mice receiving small numbers of ILC, human C-peptide was measurable and no teratoma formation occurred for at least 82 days. BGL were lowered to almost normal in NOD/SCID mice receiving IP encapsulated ILC.

Conclusion: Allogeneic β -cell therapy for T1D without immunosuppression can be delivered using our bioengineered device. It is safe to implant β -cells differentiated from hESC.

15:55

[Understanding genetic renal diseases by using kidney organoids](#)

[Melissa Little](#)

Inherited kidney disease collectively affects in in 15,000 children, however less than 50% of children presenting with kidney disease will get a definitive genetic diagnosis. For those with a diagnosis, in most instances this does not provide specific treatment options as we do not understand the underlying disease aetiology. Many animal models of genetic kidney disease imperfectly model the condition as it presents in man and existing primary and immortalised cell line models do not retain cellular identity in vitro and are poor models of the organ itself. We have developed a method for the directed differentiation of human pluripotent stem cells to generate kidney organoids containing nephrons, vasculature and renal stroma. Using CRISPR/Cas9 gene editing to either recreate specific gene mutations or correct those present within patient-derived stem cell lines, we have utilised kidney organoids to recapitulate genetic defects of glomerular and tubular development, facilitating the modelling of human kidney disease in vitro.

16:20

[Bromodomain Inhibition Blocks Inflammation-Induced Cardiac Dysfunction and SARS-CoV2 Infection](#)

[James Hudson](#)

Cardiac injury and dysfunction occur in COVID-19 patients and increase the risk of mortality. Causes are ill defined, but could be direct cardiac infection and/or 'cytokine-storm' induced dysfunction. To identify mechanisms and discover cardio-protective drugs, we use a state-of-the-art pipeline combining human cardiac organoids with high throughput phosphoproteomics and single nuclei RNA sequencing. We identify that 'cytokine-storm' induced diastolic dysfunction can be caused by a cocktail of interferon gamma, interleukin 1β and poly(I:C) and also human COVID-19 serum. Bromodomain protein 4 (BRD4) is activated along with pathology driving fibrotic and induced nitric oxide synthase genes. BRD inhibitors fully recover function in hCO and totally prevent death in a cytokine-storm mouse model. BRD inhibition decreases transcription of multiple genes, including fibrotic, induced nitric oxide synthase and ACE2, and prevention of cardiac infection with SARS-CoV2. Thus, BRD inhibitors are promising candidates to prevent COVID-19 mediated cardiac damage.

16:45

[Panel Q&A](#)

[Melissa Little](#), [James Hudson](#), [Bernard Tuch](#)

Symposium: The role of androgens in metabolism and diabetes

Session - [ADS Clinical](#) - 120.0 mins - Adelaide Room

15:00

[Introduction](#)

[Sof Andrikopoulos](#)

15:05

[Serum Testosterone in Older men - implications for metabolism](#)

[Mathis Grossmann](#)

Older men commonly present with lowered serum testosterone. Obesity is one of the strongest modifiable risk factors for a lowered testosterone, and coexisting diabetes leads to further hypothalamic-pituitary-testicular axis suppression. The hypothalamic-pituitary-testicular axis suppression is functional and hence potentially reversible, and occurs predominantly at the level of the hypothalamus. Weight loss and optimization of comorbidities can reverse functional hypothalamic-pituitary-testicular axis suppression. In older men, testosterone treatment leads to metabolically favourable changes in body composition, and in some studies to modest improvements in insulin resistance. However, long term risks of testosterone treatment remain unknown. In this presentation I will discuss the implications of low serum testosterone metabolism, with a focus on recent epidemiologic, experimental and interventional data.

15:30

[Androgens and the risk of cardiovascular disease](#)

[Bu Yeap](#)

15:55

[Testosterone replacement in women](#)

[Susan Davis](#)

16:20

[Testosterone and the prevention of type 2 diabetes - the T4DM Study](#)

[Gary Wittert](#)

16:45

[Panel Q&A](#)

[Susan Davis](#), [Mathis Grossmann](#), [Gary Wittert](#), [Bu Yeap](#)

11 November 2020 - 17:00

ADEA Posters Session: Working Together to Improve Diabetes Care

Session - [ADEA](#) - 30.0 mins - Sydney Room

17:00

[Introduction](#)

[Elizabeth Obersteller](#)

17:02

[Starting Insulin: co-design of a booklet to support informed decision making among Australians with type 2 diabetes](#)

[Elizabeth Holmes-Truscott](#)

Abstract #12

17:05

[I need someone to believe in me and walk the journey with me: A qualitative analysis of preferred approaches to weight management discussions in clinical care among adults with T2D](#)

[Ralph Geerling](#)

Abstract #39

17:08

[Assessing the acceptability and barriers to digital education for culturally and linguistically diverse \(CALD\) communities, when designing effective digital education.](#)

[Katie Allison](#)

Abstract #34

17:11

[Breastfeeding information and support: development of a website for women with type 1 or type 2 diabetes](#)

[Bodil Rasmussen](#)

Abstract #22

17:14

[Building the capacity of healthcare professionals in western Sydney to better manage diabetes during the COVID-19 pandemic](#)

[Sharon McClelland](#)

Abstract #24

17:17

[Continuous Improvement Project: restructuring an outpatient insulin phone titration program, following development of a bespoke Electronic Medical Record](#)

[Charlotte Hurburgh](#)

Abstract #43

17:20

[Q&A](#)

ADS Basic Poster Award Session

Session - [ADS Basic](#) - 30.0 mins - Darwin Room

17:00

[Introduction](#)

[Ross Laybutt](#), [Karin Jandeleit-Dahm](#)

17:02

[Mapping the islet proteome pathway to type 2 diabetes](#)

[Belinda Yau](#)

Abstract #265

17:05

[Wound fluid micro-RNAs miRNAs are associated with features of non-healing wounds in diabetes-related foot ulcers DRFUs](#)

[Carla Cannizzo](#)

Abstract #220

17:08

[The evaluation of oral glucose tolerance testing compared to intraperitoneal glucose tolerance testing in obese mice and the effect of GLP-1 agonists](#)

[Natassia Rodrigo](#)

Abstract #188

17:11

[T cell infiltration in the kidneys of people with Type 2 Diabetes](#)

[Lingyun Kong](#)

Abstract #183

17:14

[Exploring the direct effect of metformin on beta-cells and islets: a systematic review of the literature](#)

[Bhavisha Patel](#)

Abstract #200

17:17

[Can Borate Bioactive Glass Improve Cutaneous Wound Healing in Preclinical Diabetes?](#)

[Sarah Fox](#)

Abstract #33

17:20

[Q&A](#)

ADS Clinical Poster Award Session

Session - [ADS Clinical](#) - 30.0 mins - Brisbane Room

17:00

[Introduction](#)

[Jerry Greenfield](#)

17:02

[Glucose & Counterregulatory Responses to Exercise in Adults With T1D & Impaired Awareness of Hypoglycemia Using Closed-Loop Insulin Delivery: A Randomized Crossover Study](#)

[Melissa Lee](#)

Abstract #173

17:05

[Validity of an Icelandic Retinopathy Risk Calculator in Prediction of Sight-Threatening Retinopathy in Type 2 diabetes: A FIELD Substudy.](#)

[Ben Rao](#)

Abstract #244

17:08

[DACoN - Diabetes Alliance Co-commissioned Practice Nurse led Model of Care: A pilot project](#)

[Johanna Kuehn](#)

Abstract #50

17:11

[Role of bile acids in glucose-lowering by metformin in type 2 diabetes](#)

[Daniel Sansome](#)

Abstract #78

17:14

[Role of endogenous glucagon-like peptide-1 in the serum triglyceride response to intraduodenal fat infusion in type 2 diabetic patients on vildagliptin](#)

[Cong Xie](#)

Abstract #87

17:17

[Assessment of confidence levels and practices among junior doctors in the inpatient management of diabetes](#)

[Kay Hau Choy](#)

Abstract #165

17:20

[Q&A](#)

Best of the Best ADEA Posters: Best Poster & Best Novice Poster Prize Session

Session - [ADEA](#) - 30.0 mins - Canberra Room

17:00

[Introduction](#)

[Kirstine Bell](#)

17:02

[Carbohydrate counting education in people with type 1 diabetes: different time course effects on knowledge, confidence and behaviour](#)

[Sandra Voesenek](#)

Abstract #25

17:05

[Are diabetes patient education materials easy to understand and act on? An evaluation of Australian resources in English and Chinese languages.](#)

[Shannon Lin](#)

Abstract #1

17:08

[Residential aged care \(RAC\): Addressing factors affecting implementation of diabetes evidence-based practice](#)

[Tracy Aylen](#)

Abstract #33

17:11

[The experience from preconception to postpartum of living with type 1 diabetes](#)

[Sarah West](#)

Abstract #45

17:14

[A qualitative assessment of Diabetes Distress of inpatients at Royal North Shore Hospital- Keeping the General Practitioner in the Loop.](#)

[Josfin Charles](#)

Abstract #55

17:17

[eDiab - an update for COVID 19](#)

[Lisa Iulianetti](#)

Abstract #47

17:20

[Q&A](#)

11 November 2020 - 17:30

Magical Social Hour

Session - - 60.0 mins -

JOIN HERE! - <https://us02web.zoom.us/j/87925378874?pwd=czFlaHdPZGFkT0JSUjYybmVnTWtIZz09> |

Passcode: 117224

Adam Axford is a breath of fresh air and a welcomed exception to the rules. Fusing psychological illusion with powerful language and storytelling, he confidently explores vulnerability, transforming setbacks and failures into alchemical gold. Far more than a mentalist or magician, Adam's visions of sustainability, mental health, travel and connection inspire new ways of thinking about the world and our role in it.

He uses his extraordinary skills to challenge the way we think about the world and our part in it. On a quest for purpose, he has aligned his passion with what the world needs and will be sharing this with us today.

Date: Wednesday 11 November 2020

Time: 5:30pm to 6:30pm

Host: Adam Axford

Cost: Included with Full Registration
