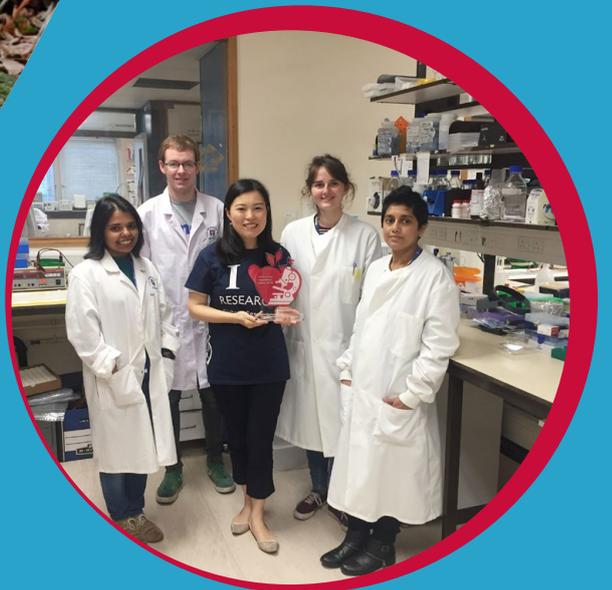




Diabetes Research & Wellness Foundation

Research Strategy 2021-23

A strategy
for growth...



Registered with
**FUNDRAISING
REGULATOR**





DRWF Staff and Volunteers at the Diabetes Wellness Day South

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Message from the DRWF Chairman and Chief Executive



Our focus for 2020 was on building resilience and sustainability for the future. We had planned to expand and develop many of our activities but those plans changed, without warning, when the Covid-19 pandemic brought the world to a standstill.

The impact of the pandemic has been significant for all, but especially challenging for those living with existing long-term chronic conditions that increased the risk of severe illness if covid-19 was contracted, like diabetes.

At a time of great concern, anxieties were heightened by isolation from family and friends; loss of support networks and disruption to routine healthcare appointments. Not to mention the confusion and fear that circulated when diabetes was reportedly linked to around 26% of covid-19 deaths.

Despite significant challenges to our fundraising activities, we maintained a level of support to our beneficiaries through offline publications and online activities. Whilst our research funding rounds were delayed, we were able to make awards at a time when research monies were being cut-back; existing research was paused or delayed, and there were concerns that some of this work may not be resumed. None of this would have been possible without the strength and resilience of our donors who stood firm in their support of our activities.

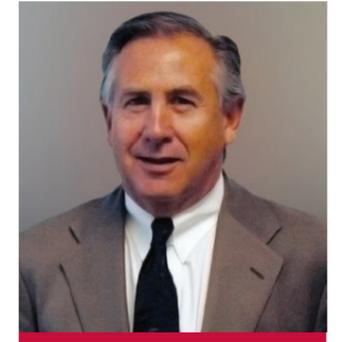
Our learnings from the pandemic have played a big part in helping us scope out our next 3-year growth strategy. We have seen the need to be agile and responsive in our approach and adaptive to ongoing changes. We are benefitting from having a stable and well-run charity with the reserves that enable us to invest in future sustainability, whilst being responsive to the needs of the people that we support and the researchers that we fund.

Most importantly, we learned that in the world's hour of need, medical research pushed all boundaries and established vaccines for Covid-19 that were rolled-out with lightening-speed to protect our communities. Diabetes is one of the world's leading health challenges – we must act with the same determination in our search for a CURE!

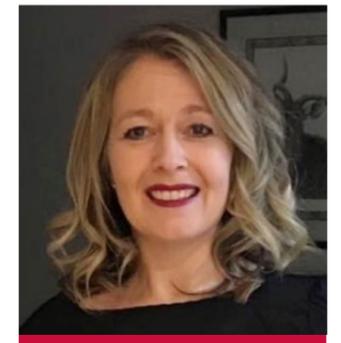
We don't want to just resume 'business as usual', going back to the way that we've always done things. We want to use the pandemic to refocus our efforts and strengthen our approach to research funding – we want diabetes research to be stronger than ever before.

Our future research strategy will focus on supporting the best and brightest early-career researchers through Clinical and Non-Clinical Fellowship funding. Pump Priming awards will support novel and proof-of-concept studies that seek to accelerate higher-value, longer-term funding proposals and we will actively pursue collaborative funding opportunities to make our funds work harder. All of this will be wrapped up in a robust peer review process implemented by a diverse Research Advisory Board that is invested in a brighter future for people with diabetes.

As we continue to navigate uncertain times, we want to thank everyone that has supported our work - the supporters, volunteers, DRWF team, trustees and advisory board members who work so tirelessly and give so generously to our cause. We could not achieve what we do without you all. **THANK YOU!**



W. Michael Gretschel



Sarah Tutton

W. Michael Gretschel
Chairman

Sarah Tutton
Chief Executive

A Strategy for Growth 2021 - 2023

OUR VISION: A world without diabetes

OUR MISSION: To fund diabetes research in the UK & around the world in order to understand the causes, prevention, treatment and management, and provide the support programmes that ensure people with diabetes are **'staying well until a cure is found...'**

WE DO THIS IN THREE WAYS:



We raise awareness of all types of diabetes so that people can take preventative actions where possible.



We provide support and tools to promote good self-management, reduce complications and improve quality of life.



We fund medical research worldwide that will help establish cause, prevention and treatment, improve management and treatment options and ultimately find a cure.

OUR ACHIEVEMENTS OVER THE LAST 22 YEARS



We reach over half a million people every year helping them to manage their diabetes and improve their quality of life.



We have raised more than £70 million over 22 years, of which an average 82% has been spent on funding research, awareness and educational support programmes.



We support healthcare professionals and clinics stay up to date with the latest advice.



Introduction to DRWF Research Strategy

Our vision is for a world free of diabetes and it is our goal to fund the very best research possible to ensure that we work towards a cure for the disease, investigating better treatments and management strategies, to ensure that people with diabetes are 'staying well until a cure is found...'

The aim of DRWF's Research Strategy is to set out clearly the charity's objectives and priorities for funding research and to outline the organisation's plan for achieving them.

DRWF FUNDS RESEARCH PROJECTS FOCUSED ON:



Through our research funding, we are investing in a brighter future for people with diabetes.

Each year our goal becomes more important as the number of people diagnosed continues to rise. Figures from the International Diabetes Federation indicate that more than 463 million people are living with diabetes worldwide. By 2030 this number will rise to almost 578 million. Diabetes is one of the fastest growing health challenges of the 21st century with the number of adults living with the condition having more than tripled in the last 20 years.

Put simply, it is our ultimate goal to discover a cure for diabetes. We know that this is a long road but we are intent on maximising the potential by funding the highest quality clinical and scientific research at the very best research institutions in the UK and around the world. We are committed to investing in research projects with tangibly beneficial and practical outcomes for people living with diabetes. Our research funding programme and successes are proof of this.

DRWF is a member of the Association of Medical Research Charities (AMRC), a membership body representing the leading UK medical and health research organisations. As a member, we fulfil AMRC's criteria for the use of peer review for allocating funding and support AMRC position statements on the payment of indirect costs in universities and the use of animals in medical research.

Our Research Advisory Board, a multi-disciplinary panel of clinicians and scientists, assess applications for funding. Board members serve on a rotational basis with an initial 3 year term which can be extended for a further 2 years.

Our annual funding round is offered through open competition, and as such, enables funded researchers to access support for both indirect and direct costs of research via the Charity Research Support Fund (CRSF) and NIHR Clinical Research Networks AcoRD agreement.

OUR RESEARCH ADVISORY BOARD IMPLEMENTS FIVE PRINCIPLES OF PEER REVIEW:

**ACCOUNTABILITY | BALANCE | INDEPENDENT DECISION MAKING
ROTATION OF SCIENTIFIC ADVISERS | IMPARTIALITY**

to ensure that only the highest quality and most effective research receives DRWF funding.

AMRC members are also required to ensure that the researchers they fund adopt good practice in their working methods. Additionally, we are committed to the 3Rs of reduction, replacement and refinement in the use of animals in research.



Research Advisory Board



Professor Angela Shore
CHAIRMAN
University of Exeter Medical School



Professor Peter Jones
King's College London



Dr Mark Evans
University of Cambridge



Dr Angus Jones
University of Exeter



Professor Robert Semple
University of Edinburgh



Professor Mirela Delibegovic
University of Aberdeen



Professor Susan Ozanne
University of Cambridge



Dr Victoria Salem
Imperial College London



Professor Ketan Dhatariya
University of East Anglia

DRWF Research Grants

ANNUAL FUNDING ROUND

FELLOWSHIPS

DRWF Research Fellowships are awarded for research related to causes, cures or complications of diabetes. Clinical/Non-Clinical Fellowships are awarded on alternate years.

Sutherland-Earl Clinical Fellowship

Applications are invited from:

- Medically qualified doctors
- (MBChB or equivalent) working towards a higher degree, ie MD or PhD

DRWF Sutherland-Earl Clinical Research Fellowships cover a period of up to 3 years, in a recognised institution or department within the United Kingdom. Support for the Fellowship is a maximum of £80,000 per year, to include a salary, consumables and some support costs

The Professor David Matthews Non-Clinical Fellowship

Applications are invited from:

- Post-doctoral researchers working or intending to work in the field of diabetes

DRWF Non-Clinical Research Fellowships cover a period of up to 3 years, in a recognised institution or department within the United Kingdom. Support for the 2020 Fellowship is a maximum of £65,000 per year, to include a salary, consumables and some support costs.

PUMP PRIMING GRANTS

Pump Priming grants are small project grants aimed as a stepping stone for young researchers.

Research Projects – Clinical or Non-Clinical, of one year's duration of up to £20,000 (no-cost extensions may be considered);

INSTITUTIONAL FUNDING

Our research portfolio demonstrates a commitment to support institutions whose aim is to relieve the symptoms of diabetes whilst aiming for a cure. To this end, we have a long-standing commitment to the DRWF Human Islet Isolation Facility at the Churchill Hospital, Oxford. Ongoing contract funding supports 3 key personnel within the facility, which plays a central role in the delivery of a national islet transplant programme.

PARTNERSHIP FUNDING

By combining expertise and resources, we can answer bigger and more complex scientific questions, expanding the breadth of our research portfolio. Working collaboratively with organisations that share our vision, mission and values enables us to maximise opportunity and increase impact. We are open to proposals to work in partnership and we often collaborate with international DRWF groups to support higher-value, longer-term grant funding awards.

DISCRETIONARY FUNDING

The DRWF Board of Trustees is open to proposals that do not fall within the eligibility parameters of our annual funding round awards, however these are our priority. On receipt of such a proposal, the Board will consider whether it fits with our over-arching strategy and seek peer-review from relevant experts, provided the charity is satisfied that it is financially viable.

The identification of MODY and characterisation of diabetes subtype in a young South Asian population to inform appropriate treatment.

This research project aims to describe the types of diabetes in people diagnosed before the age of 30 years, from different ethnic backgrounds in the UK. It can be challenging to correctly differentiate subtype of diabetes across ethnic groups and in people diagnosed at young age, but this is really important as the subtype determines what treatment a person with diabetes receives, and misclassification may result in incorrect treatment.

The research team hopes to identify cases of MODY (Maturity Onset Diabetes of the Young), a genetic form of diabetes, in the South Asian group. MODY is relatively uncommon in contrast to type 1 and type 2 diabetes, with 1-3% of people with diabetes in the UK estimated to have the disease, however the potential to change treatment means it is worth identifying these cases. As the features of MODY overlap with more common types of diabetes it often remains unrecognized and may be incorrectly managed. It is estimated that about 90% of people with MODY are incorrectly diagnosed with type-1 or type-2 diabetes initially. However the frequency of MODY in the south Asian ethnic group is unknown.

In the first part of the study, an analysis of the national MODY database in Exeter was undertaken. The ethnic origin of people in Britain who were tested for MODY mutations was investigated and the probability of finding a MODY mutation after testing was also assessed.

Dr Shivani Misra, DRWF Trustee

Imperial College, London Consultant in Metabolic Medicine, DRWF Sutherland-Earl Clinical Fellow 2012

In 2018, Dr Misra was featured in the Evening Standards Progress 1000 list as one of London's leading health influencers for her work in diabetes and misdiagnosis in ethnic communities.



Dr. Shivani Misra's analysis revealed that white British people referred for MODY testing were more likely to test positive for MODY mutations than UK South Asian people who had a significantly lower pick-up rate. Further work is needed to determine why, but this may be due to higher rates of young-onset type 2 diabetes, which is particularly difficult to distinguish from MODY, in the South Asian group. The team is now working to find ways to improve the detection rate of MODY in this group.

In the second part of the study, the team recruited people with young-onset diabetes from three ethnic groups, to determine if they could have undiagnosed MODY. Over 500 participants were recruited. Preliminary results have already found some cases of MODY that were misdiagnosed and for some of the participants this has led to a change in medical treatment. The complete analysis addressed an important knowledge gap as to the proportion of people of South Asian origin with early onset who have a genetic cause for their diabetes. This also resulted in data on the characteristics of the types of diabetes in the white British and South Asian groups.

"The Sutherland-Earl Clinical Research Fellowship made to myself by DRWF back in 2012 enabled the My Diabetes study to get underway. This was a national clinical study, in partnership with the National Institute for Health Research, the results of which have been crucial in helping to address misclassification of diabetes types in people from different ethnic groups. Without that initial funding, I would never have got started and I hope with the support of my fantastic clinical and research diabetes colleagues, we can continue to do more important work in this area, which goes a long way to ensuring that people receive the right diagnosis and the right treatment for best quality of life."

Improving islet transplantation outcomes by harnessing the mesenchymal stromal cell secretome to target the donor islet graft and host environment.

This research aims to define the mechanisms through which Mesenchymal Stromal Cells (MSCs) or the biologically active substances that they produce should be used to improve the efficiency of clinical islet transplantation. Our experiments have shown that MSCs produce Annexin A1 (ANXA1) and that ANXA1 partially mimics the beneficial effects of using MSCs. We aim to define a 'cocktail' of therapeutic factors produced by MSCs, that can be used instead of the MSCs, to fully reproduce the beneficial effects of MSCs in transplantation protocols. Defining MSC-

derived biotherapeutics will allow simple modifications to clinical transplantation, that will help to overcome some of the safety concerns of using MSCs directly and allow safe and reproducible modifications to be carried out. The proposed work will help design and start a clinical trial within the next five years. Through improving the efficiency of the transplant procedure, clinical islet transplantation can be offered as a therapeutic option to the greatest possible number of patients with Type 1 Diabetes and improve outcomes for individual transplant recipients.



"DRWF supports myself and many of my colleagues in the Diabetes Research community to advance our knowledge of the causes of diabetes, and crucially to work towards better treatment and prevention options. The support of DRWF has been crucial in allowing me to investigate Mesenchymal Stem Cell based strategies to improve the efficiency of clinical islet transplantation as a therapy for those living with diabetes. This research has potential to improve quality of life for many people living with diabetes, through stabilizing blood glucose levels and reducing or eliminating potentially life threatening severe low blood glucose (hypoglycaemia). Additionally, research funded by DRWF will help to reduce the likelihood of secondary vascular complications of diabetes (including retinopathy, cardiovascular disease, kidney disease), which as well as dramatically improving quality of life, will undoubtedly reduce avoidable pressures on the NHS as we move forward with this research. As an individual both living with diabetes and a passionate DRWF-funded researcher, I cannot stress enough the need to support DRWF in helping us to continue with our vital research, and to provide much needed advice and support to those living with diabetes."

Dr Chloe Rackham

King's College, London DRWF Professor David Matthews Non-Clinical Research Fellow 2018

DRWF has made a considerable contribution to the funding of islet cell research and transplant in the UK and around the world.

Celebrating 20 Years 1998-2018

1998

- DRWF is incorporated as a registered charity and company limited by guarantee - our objective... 'to raise awareness and assist people living with diabetes and similar or related conditions, their incidence, cause, treatment, avoidance and relief.'
- Dr Roslyn Elson (above), then Managing Editor of Practical Diabetes International, was recruited as Executive Director of DRWF.



1999

- Debra Peett and Sarah Tutton are recruited to get various activities underway for the charity.
- The charity commences its initial fundraising programme raising its first £1million by November 1999.
- The first small research awards are made, 8 in total, to various institutions in the UK totalling £84,610.
- DRWF launches the Diabetes Wellness News, a subscriber-based monthly newsletter containing specially commissioned self-management articles, news and research updates.



2000

- The charity awards its first 3-year Non-Clinical Research Fellowship to Dr Luke Chamberlain (Glasgow) for £106,456.

2003

- DRWF becomes a member of the Association of Medical Research Charities (AMRC) establishing robust peer review processes for applications for its annual research funding awards.
- The first Active with Diabetes Walking Holiday is held at Hassness in the Lake District. A support team of diabetes specialist nurses and a podiatrist advise on how to make walking part of a daily exercise programme whilst managing diabetes medications and blood glucose levels accordingly.
- A new range of diabetes information leaflets are introduced to the charity's repertoire of support literature.



2002

- The charity sets up a multi-disciplinary Research Advisory Board (RAB) and launches an annual research funding programme of 3-year Fellowships and 1-year Research Grant awards. The RAB is chaired by Professor David Matthews, Oxford, whose research focuses on type 2 diabetes. Professor Matthews was also deputy coordinator of the Executive and Policy Advisory Committee for the UK Prospective Study of Diabetes (UKPDS) and founder member of the Oxford Health Alliance.



2001

- The charity awards its first 3-year Clinical Research Fellowship to Dr Karen Anthony (Kings College London) for £120,000.
- As part of a new outreach programme, DRWF holds a Diabetes Wellness Retreat providing expert diabetes healthcare workshops, as well as a social programme, for people with all types of diabetes, in Chichester, West Sussex.



2004

- DRWF make an unprecedented award of £1.4 million to the Nuffield Department of Surgery to establish a Human Islet Isolation Facility at the Churchill Hospital, Oxford.



2005

- DRWF makes a grant for the set-up of a sister group in France, the Association pour le recherché sur la diabète (A-rd) in order to grow the International Diabetes Wellness Network.
- With a commitment to islet cell research and transplant, the charity makes a multi-year grant in collaboration with groups in the US and France in support of the Spring Point Project (Wisconsin) which seeks to find an alternative, sustainable supply of islets suitable for human transplant.

2006

- The DRWF Human Islet Isolation Facility is launched in Oxford (above) which marks a long-standing commitment to islet cell research and transplant for the charity.

2007

- DRWF supports the International Pancreas and Islet Transplant Association (IPITA) meeting in Minneapolis demonstrating its desire to support international knowledge sharing in this emerging field of diabetes research.

2008

- The NHS make clinical funding available for Islet Cell Transplants for a selection of people with type 1 diabetes, meaning that the DRWF Islet Isolation Facility in Oxford becomes the key provider of islets for this national treatment programme.
- The first Diabetes Wellness Day South is held – a change to the ad-hoc Diabetes Wellness Workshops that the charity had previously held, with an established home in Southampton, serving the south coast.
- DRWF provides an institutional grant of £81,000 for the completion of the Stephanie Marks Diabetes Resource Centre at St. Peter's Hospital, Chertsey (pictured right).
- The charity makes a grant for the set-up of a sister group in Sweden, the Diabetes Wellness Network Sverige (DWNS) in order to grow the International Diabetes Wellness Network.

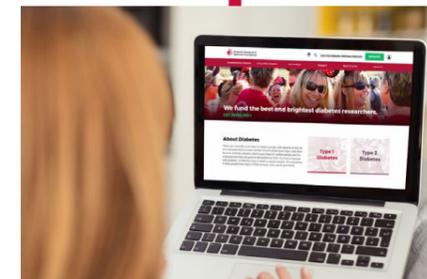


2010

- DRWF gains the Department of Health Information Standard accreditation for its adult health and social care information. This is a kite mark which demonstrates that patient information goes through a peer review process, is appropriately written for its intended audience, clinically evidenced/referenced and up-to-date.
- As part of the Diabetes Wellness Event programme, the first Wellness Day North is held in Hartlepool, serving the diabetes community in the north-east.

2014

- DRWF is shortlisted in the **Best Use of Web** category at the Charity Times Awards.



2013

- The charity launches a new website focused on providing access to information resources, news and research updates with a 'community' feel.
- DRWF plays an integral part in the set-up of a Research Advisory Board for its sister group in Sweden. This is to ensure a consistency of research funding and to enable robust peer review processes to be adopted across Sweden and a newly established group in Finland.



2011

- DRWF is a finalist in the Medical Journalists Association, Health Charity of the Year, awards.

2015

- DRWF attends the European Association for the Study of Diabetes annual conference in Stockholm with colleagues from Diabetes Wellness Network Sverige, to meet with DRWF-funded researchers from around the world.

2016

- The charity is invited to become a key sponsor of the newly established Diabetes Professional Care (DPC) conference at Olympia, London. This event supports the upskilling of diabetes and related healthcare professionals, for whom the event is free to attend.

2017

- DRWF is shortlisted in the **Empowering people with diabetes in self-management** category of the Quality in Care Diabetes (QiC) awards going on to gain a highly commended award. The charity also goes on to win the Judges' Special Award, from all entries received across all categories, for providing an outstanding educational event programme for people with diabetes.
- At the end of the financial year for 2017, the charity has committed more than £11.5 million to diabetes research alone in 19 years; 93p in every £1 spent on charitable activities. The charity now has 12 staff and around 24 volunteers.



2018

- DRWF is shortlisted in the Charity of the Year category at the Asian Voice Charity Clarity awards.

We are investing in a brighter future for people with diabetes and we are only able to do that with the amazing support of our donors, fundraisers, volunteers, staff and trustees.

Sarah Tutton, Chief Executive Officer

and the journey continues...

A James Lind Alliance Partnership to define the research priorities in diabetes and pregnancy

DR GOHER AYMAN
UNIVERSITY OF OXFORD
£19,567



Diabetes affects over 5% of all women giving birth in the UK. It increases the risk of complications during pregnancy and birth for the mother and her baby, and can also affect them in the long-term. More research is needed to help provide the best health care for women with or at risk of diabetes, who are planning or are pregnant. This project aims to help direct the research which is done in diabetes and pregnancy towards addressing the areas which are considered most important by the people impacted by it.

Over approximately 12-18 months we will work with women and their families affected by diabetes in pregnancy, and health care professionals, to identify where little is known, or there are uncertainties about, the effects of treatments and health care in diabetes and pregnancy. A top ten list of priority research questions will be jointly agreed and shared with the public and research funders. Where possible, research projects will be developed and submitted for funding.

DRWF-FUNDED STUDY AIMS TO HELP PRIORITISE AND IMPROVE DIABETES AND PREGNANCY RESEARCH.

- Researchers at the University of Oxford are calling for women, their families and healthcare professionals to help prioritise research that will benefit women and families affected by diabetes and pregnancy.
- Around 38,000 (5%) of women giving birth in the UK each year are affected by diabetes and rates are increasing.
- Although most women have healthy babies, diabetes can increase the risk of complications, including premature birth and long-term risks such as cardiovascular disease in mothers and babies.
- For mothers with diabetes there are many questions that remain unanswered by research and many women have reported a lack of information relating to diabetes and pregnancy.
- The new study, led by the University of Oxford, will look to identify the areas of research that are most important to the people concerned by diabetes before, during and after pregnancy.

Dr Goher Ayman

Co-Lead of the study, of the National Perinatal Epidemiology Unit, Nuffield Department of Population Health, University of Oxford

“More research is needed to help provide the best healthcare for women with or at risk of diabetes, who are planning pregnancy or are pregnant.”

We want to work with women, their support networks, and healthcare professionals to identify uncertainties about the prevention, diagnosis, treatment, and health impacts of pregnancy with diabetes of any type. We are currently inviting people to suggest their questions about diabetes and pregnancy by completing our survey. Their questions will be used to produce a shortlist of priority research topics.”



Sonya Carnell

Diagnosed with type 2 diabetes after the birth of her first child and had diabetes during her second pregnancy

“Despite having a family history of diabetes, I was not aware of the risks relating to diabetes and pregnancy.”

Once I had been diagnosed, I read a lot about it and asked lots of questions, but I still found that there was a lack of information.

I hope that by involving those with direct experience of the issue, this project will help to direct funding to the unanswered questions that affect me and many other women.”



“Diabetes and pregnancy is an important issue to many women, whether it is pregestational diabetes or pre-existing diabetes in pregnancy or so-called gestational diabetes, such as diabetes that you are diagnosed with during pregnancy. The risks to the mother and baby during pregnancy are significant and it is vital that women with diabetes who are pregnant or who are planning a family can input to and be helped through research like this to understand as much as possible about their own health and wellbeing and that of their baby too.”

Dr Eleanor Kennedy

DRWF Research Manager



The project is funded by the Diabetes Research & Wellness Foundation, the University of Oxford John Fell Fund and the Nuffield Department of Population Health. Project partners are: the Diabetes Research & Wellness Foundation, Diabetes UK, the James Lind Alliance, JDRF the type 1 diabetes charity, the Oxford Biomedical Research Centre, and the Oxford Centre for Diabetes, Endocrinology and Metabolism.

Dr Matthew Simmonds research into pancreas transplant rejection and pancreas development/function

In type 1 diabetes the cells within the pancreas, which produce the hormone insulin, are destroyed by the immune system. As insulin is essential for many functions within the body, including controlling glucose levels, injecting insulin is the main form of treatment for people with type 1 diabetes.

In some patients giving insulin does not control their diabetes, they have troublesome low blood sugars and can go on to develop severe problems of the eyes, kidneys, nerves, brain and heart. In these patients, a transplant of the pancreas or the cells from a pancreas is currently the only treatment that can restore the patient's own ability to produce insulin, as well as improving diabetes related complications.

At present 85% of pancreas transplant patients regain normal pancreas function one year after transplantation, enabling them to discontinue insulin use. Transplanted pancreas function can, however decrease over time and in some patients stops completely, with only 68% of transplant patients having a functional pancreas after five years.

Decreased or lack of transplanted pancreas function means a return to insulin and potentially further worsening of other diabetic complications. Currently we cannot predict when the transplanted pancreas will start to fail. We want to test the genetic material (DNA) obtained from both pancreas transplant donors and recipients, from all pancreas transplant centres across Europe, to investigate naturally occurring variations within genes influencing transplant rejection and pancreas development/function to help us try to predict when the transplanted pancreas is likely to fail so that we can administer medicines that might extend the pancreas' lifespan.

This unique work has the potential to generate findings in a relatively short time span that could then be tested in further clinical trials to determine, in a real-world setting, if we can truly predict pancreas transplant survival and in the future inform hospital practice across the whole of Europe and beyond.



The outcome of Dr Simmonds work within this grant enabled a successful application to the charity's Non-Clinical Fellowship round in 2012.

"I would like to thank the DRWF for awarding this Fellowship to me and taking a chance on establishing a brand-new area of research. Without your support it would have been impossible to have set up this novel area of research."

"My DRWF fellowship provided me with an amazing research base on which to build and enhance into the future, with the longer-term goal of translating my research into real world improvements in pancreas donor selection and long-term pancreas transplant function. My fellowship also enabled me to establish myself fully within the transplant research community and during this time I have transitioned from senior postdoctoral fellow to University Research Lecturer. In my new position as a Senior Lecturer, I am now in the perfect position to go on to achieve a Reader and ultimately a Professorial position in the future."

"Without this funding from DRWF, it would have been impossible to start establishing this new area of research looking at the role of genetic predictors of long-term pancreas transplant function. The consumable funding and part time technician made it possible to establish a working relationship within the pancreas transplant field and produce preliminary genotyping of pancreas transplant donors and recipients. This funding also offered the research technician employed on this grant, Mr Hamilton, his first research job in science and has provided him with the real-world research experience he requires to enable him to start applying for PhD/DPhil positions to progress his career further. The preliminary data obtained from this grant also supported my successful application for a DRWF non-clinical research fellowship which is now enabling me to enhance and further expand this new area of research."

Dr Matthew Simmonds

Oxford Centre for Diabetes of, Endocrinology and Metabolism, (OCDEM)

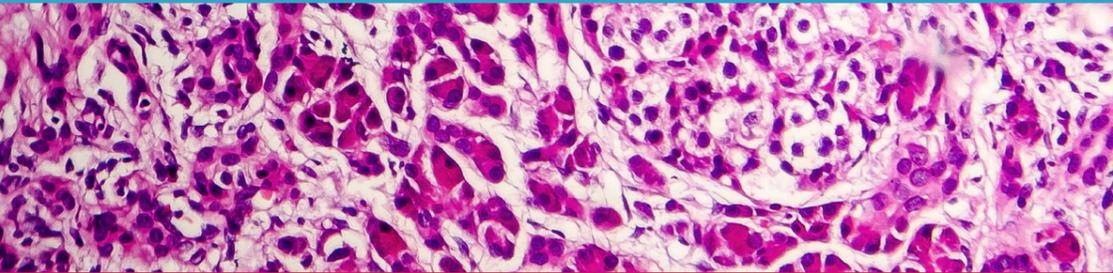
a DRWF-funded researcher who received a Pump Priming award in 2011

"Building relationships with our funded researchers is so important as we endeavour to support them throughout their research journey. It's incredibly rewarding when they offer to give back by way of fundraising for us, or offering to give a talk to our supporters at one of our Diabetes Wellness events, as we work together to ensure that people are staying well until a cure is found..."

Sarah Brown

Grants Administrator





Islet Cell Research & Transplant

In 2004, DRWF made a significant commitment to islet cell research & transplant with an unprecedented award of £1.4 million to the Nuffield Department of Surgery Oxford, for the provision of a human islet isolation facility.

The University of Oxford continues to be a leader in human pancreatic islet isolation, a field in which it has been involved for more than 30 years. Indeed, many of the techniques now used routinely worldwide were developed in Oxford.

The DRWF Human Islet Isolation Facility, housed within the Oxford Centre for Diabetes, Endocrinology and Metabolism (OCDEM) at Churchill Hospital was launched in 2006 and plays a pivotal role in providing islets for research and transplant to 7 centres across the UK as part of a national treatment programme, the clinical element of which has been funded by the NHS since 2008.

DRWF FUNDS 3 KEY PERSONNEL WITHIN THE FACILITY (APPROXIMATELY 50% OF THE TEAM)

- Lab Manager
- Deputy Lab Manager
- Transplant Administrator

'Improving human islet provision for clinical and research use within the UK by optimisation of human islet yield, islet function and islet survival'

The facility harvests islet cells for clinical transplantation as well as a broad range of research projects. Additionally, the isolation team and the associated research group continues to investigate ways in which to improve the efficiency of islet isolation in order to increase the number of insulin producing cells isolated from donor organs to improve function and survival of cells post-transplant.

Their work continues to deliver world-leading outcomes in terms of post-transplant resolution of life-threatening hypoglycaemia, and in terms of research productivity and translational impact. The provision of high-quality human islets for clinical and research uses is a unique and invaluable resource and has resulted in numerous high impact publications and novel discoveries.

The provision of high-quality human clinical islets has impacted directly on patients with type 1 diabetes throughout the UK, with lives transformed by diabetes stabilisation and reversal. The distribution of research islets has enabled a wide-range of different diabetes research projects to be undertaken resulting in many high-impact publications.

The team continues to undertake novel research into the development of physiological islet scaffolds and islet macro-capsules, design of a novel islet culture, and optimisation of islet oxygenation including proteomic characterisation during islet isolation. They were a key partner in a Horizon 20/20 European Grant and continue to be central to two themes (Surgical & Diabetes) of the Oxford Biomedical Research Centre.

The Isolation team have continued to be highly recognised in the islet transplant and islet research fields giving invited lectures to learned societies, presenting at international scientific meetings and regularly publishing work in peer-reviewed journals.



Diabetes Research Institute (DRI), Miami, Florida 2-year collaborative award 2019 – 2021



Mesenchymal stem cells, or MSCs, are a group of stem cells that have many beneficial properties. Not only can MSCs can give rise to new tissues, like bone, cartilage, muscle and fat, but researchers have also discovered that MSCs can modulate, or control, the immune system, dampen inflammation, and promote the formation of new blood vessels. For all of these reasons, MSC's are being extensively explored by several DRI scientists.

Multiple teams of researchers at the Diabetes Research Institute (DRI) continue to work to develop therapies that can change the lives of individuals living with diabetes. Much evidence has been collected confirming the important role that MSCs can play in the development of a cure for diabetes. Some of the key advances made during the funding period are described below.

The team has discovered a select population of MSCs (CD146 Positive) that are extremely potent. They can reduce inflammation and inhibit the activation of the immune system. It is believed that the addition of MSCs to islet cells prior to transplantation will make the islets invisible to the immune system. Tests are underway to measure whether they will be most effective when added singly or as 3D structures. The MSCs also enhance the growth of blood vessels, which are a lifeline for newly transplanted islet cells. Going forward, the team will be testing methods of utilizing MSCs to improve the engraftment of islet cells into the transplant site. To advance their research toward a clinical trial, the team has modified their protocol for manufacturing the CD146 MSCs to ensure compliance with FDA standards.

The team has developed highly effective technology for providing high levels of oxygen to the islet cells in culture, and have combined therapies to transplant healthier islets that do not trigger a response from the immune system and are reaping positive results to date. They are also incorporating technology for encapsulating the islet cells within a protective barrier that allows nutrients to enter and waste to exit but cloaks the cells from the immune system.

The team are comparing the effects of MSCs derived from different tissues of the body. The goal is to create a welcoming "home" that defends islets from an immune attack and that mimics the pancreas – so that the insulin-producing cells sense that they are in a familiar place to perform their function.

The team has already shown that MSCs from bone marrow result in more successful transplants and have been working with a newly developed anti-CD40L monoclonal antibody that has the potential to limit the side effects of immune suppression in islet transplants and enhance islet cell function. Equally as important, the antibody may enable us to achieve tolerance or long-term islet survival with minimal immune suppression. They are currently conducting a pre-clinical trial consisting of eight transplants using anti- CD40L. The results to date are very promising. Armed with data from this trial, they will apply to the FDA for approval to conduct a clinical trial to test anti-CD40L in people. If the first two transplants meet the team's expectations, they plan to undertake a second transplant of MSCs from the bone marrow of the recipient to optimize outcomes.

Strategic Aims & Priorities 2021 – 2023

Our funding of research for the benefit of people with diabetes is wide-ranging to enable us to be both strategic and reactive in approach. We don't want to miss an opportunity to fund the next big breakthrough!

Every research grant that we award fits into one of these key priorities which we believe maximises our resources and gives us the best chance to deliver benefits for people with diabetes as quickly as possible.



OUR VISION: A world without diabetes

OUR MISSION: To fund diabetes research in the UK & around the world in order to understand the causes, prevention, treatment and management, and provide the support programmes that ensure people with diabetes are **'staying well until a cure is found...'**

- 5 PRINCIPLES OF PEER REVIEW:**
- Accountability
 - Balance
 - Independent decision making
 - Rotation of scientific advisers
 - Impartiality



Our four key priority areas of research



SUPPORT research that is of the highest quality and that is most likely to produce results relevant to our vision of a world without diabetes.



EXPAND our cadre of DRWF-funded clinical and non-clinical fellows working closely with them to elevate the profile of their research.



MAXIMISE opportunity to leverage funds into the proof-of-concept research that our pump priming grants fund, building capacity by doubling our money and accelerating ideas and innovation.



DEVELOP collaborations with researchers and organisations where there is a synergy of mission and vision and a benefit for people with diabetes, as we work together towards our cure.

To deliver our strategy, we will:

- Grow our network of DRWF-funded researchers, identifying new funding streams and opportunities to support the very best work
- Explore opportunities to work collaboratively with like-minded funders who share our vision and values
- Increase visibility of DRWF-funded research/ers to ensure that the results of their work is published in our supporter communications and online via our website and social media campaigns
- Grow and involve our community of diabetes supporters and beneficiaries to ensure an active participation in our work, helping us to understand their research priorities and to raise the funds that will enable us together, to invest in a brighter future for people with diabetes



Research Advisory Board members took on an 'Escape from Alcatraz' fundraising swim for the charity.

John Wilding from Liverpool together with Rob Andrews from Taunton and Parth Narendran from Birmingham took on this mammoth challenge whilst attending The American Diabetes Association's Scientific Sessions in California, USA.

The swim from Alcatraz to Aquatic Park involves covering around 1.25 miles in cold water with risks of strong currents and even sharks! Around 35 swimmers took part.

Parth said: "Fortunately we all had wetsuits and there was a support boat!"

John is Head of Department of Obesity & Endocrinology at the University of Liverpool and his clinical work includes looking after people with type 1 and type 2 diabetes. John was a member of the DRWF Research Advisory Board for over 10 years. His own research focuses on the links between overweight and obesity and type 2 diabetes, including the importance of exercise and a healthy diet.

Parth Narendran works in the diabetes department at University Hospital Birmingham and at the University of Birmingham, and has seen how this disease can affect the lives of both the young and old. He has a number of family members with diabetes. In the past, DRWF has supported his research into diabetes, and he is a past member of the charity's Research Advisory Board.

Rob Andrews is Honorary Consultant Physician at Musgrove Park Hospital Taunton and a Consultant Senior lecturer at the University of Bristol. Clinically he looks after patients with type 1 and type 2 diabetes and specialises in giving advice to patients about how to manage their diabetes when exercising. In his research role, Rob leads a group that looks at the role that diet and exercise can play in preventing and treating patients with type 1 and type 2 diabetes. DRWF has helped to support this research. Rob is also a past member of the charity's Research Advisory Board.



Together, the fundraising trio raised almost £1200 in support of our awareness, educational support and research funding activities.

British 10k London Run

The British 10k London Run is staged on the world's greatest road race route through the heart of central London, passing many of the capital's truly world class historic landmarks.

We were absolutely delighted when two funded researchers, James Bowe from King's College London and Matt Simmonds from OCDEM (Oxford Centre for Diabetes, Endocrinology and Metabolism), along with their colleagues, Jennifer Lock and Amy Barrett, decided to join the charity's London 10K team of fundraisers. Alongside supporters Diana Vassalo, Matt Batting, Emma George, Sarah Brown and Joe Murphy, the team raised a whopping £1800 towards our charitable activities.

This is the type of community fundraising activity that we rely on to generate awareness and income for the charity. It was wonderful to see some of our research funding recipients join forces with our supporters to raise money for us.



Cyclists supporting DRWF took on 100-mile cycle ride

Our DRWF-funded researcher Chloe Rackham, shares her experience.

The Prudential Ride London-Surrey 100 is a gruelling course taking in the sights of central London and the Surrey countryside along the way. It is part of the world's greatest festival of cycling, with more than 100,000 participants cycling more than 3 million miles in six different events over a weekend.

Chloe Rackham, PhD, DRWF Research Fellow at King's College London

"I chose to support DRWF and all of the incredible work that they do in helping people who live with diabetes, as well as many scientists working in the field of diabetes like myself and colleagues, to continue our research to keep making quality of life and treatment options better.

"DRWF support the research we are doing at King's College London to investigate the mechanisms through which Mesenchymal Stem Cells can be used to improve the efficiency of clinical islet transplantation. Through improving the efficiency of the transplant procedure, we would like to ensure that clinical islet transplantation can be offered as a therapeutic option to the greatest possible number of people living with type 1 diabetes, as well as improving the lifespan and function of the transplanted islets for each individual transplant recipient. Thank you to DRWF for their support.



"Preparation for RideLondon-Surrey 100 was demanding, but made easier with the support of my husband Martin who did the long training cycles with me, as well as the generous contributions of family and friends who have helped me to raise money for DRWF. Thank you all.

The cycle on the day was fantastic - great to see so many people out cheering on myself and other fundraisers. It was a tremendous pleasure to ride for team DRWF and **the team of 6 cyclists that I was part of, raised over £2900 towards the charity's activities. Amazing!**"

How to support us

YOUR GENEROSITY CAN HELP OUR DREAMS BECOME A REALITY

We don't receive any government income and rely entirely on donations and fundraised income to support our work. The researchers we fund work tirelessly to improve our knowledge of diabetes; explore new treatments and management pathways, on the long road towards our ultimate goal of a CURE. Alarming, diabetes continues to grow in pandemic proportions around the world and with almost 5 million people living with diabetes in the UK, our work is increasingly important.

Your support enables us to fund the research that we believe will make diabetes a thing of the past. We are investing in a brighter future for people with diabetes, **WILL YOU?**

If you would like to get involved in our fundraising activities, perhaps participate in a pre-planned challenge event, or hold an event in your local community with family and friends, please contact us on 023 92 637808, email fundraising@drwf.org.uk We would love you to **JOIN US!**

ALTERNATIVELY YOU CAN -



Make a one-off donation or set up a regular giving direct debit on our website www.drwf.org.uk/get-involved/donate



Play our lottery, a great way to be in with a chance to win a prize and make a donation at the same time www.drwf.org.uk/lottery



Talk to your employer about their Corporate Social Responsibility (CSR) policy, most have one. They may be encouraged to match-fund your fundraising sponsorship. This is a great way to double the money you raise!

It is sometimes hard to understand how making a donation today, or getting involved in a fundraising event can make a difference in the future, but it is this combined effort that drives change forward.

You can visit our website for more inspiration on how you can help us find a cure and create a world without diabetes.

We are investing in a brighter future for people with diabetes, and you help us to do that!

PLEASE DONATE!



£10 A MONTH funds 2 DAYS

of a yearly research grant, to find better ways to manage diabetes and ultimately a cure



Our ultimate goal is to find a cure for diabetes. In pursuit of this, we fund some of the best and brightest diabetes researchers in the UK and around the world, whose work improves our understanding of diabetes; explores new treatments; develops self-management strategies; and seeks out potential cure pathways. The dedication and commitment of our diabetes research community is second to none.

Each year, through open competition, we issue calls for applications for our Fellowships and Pump Priming Awards. Our support of Institutional and Collaborative awards enables us to commit to higher value, longer-term funding in-line with our strategic priorities.

Through our awareness raising, information resources and educational support programmes, we enable people with all types of diabetes to learn more about their condition, providing the tools to motivate, empower and engage in a pro-active approach to good self-care.

Every day, we do our utmost to ensure that people living with diabetes are 'staying well until a cure is found...'

To find out more...

Diabetes Research & Wellness Foundation,
Building 6000, Langstone Technology Park,
Havant, PO9 1SA



www.drwf.org.uk

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Diabetes Research &
Wellness Foundation