

Project focus

The role of the Endoplasmic Reticulum Stress Response in the development of diabetes in Wolfram syndrome

PROFESSOR TIMOTHY BARRETT,
DIABETES UNIT, BIRMINGHAM CHILDREN'S HOSPITAL

GRANT AWARD **£164,236**

Synopsis: Both type 1 and type 2 diabetes lead to loss of the insulin producing pancreatic beta cells by cell death. One cell death mechanism is called 'ER stress', and is thought to cause two forms of childhood diabetes. In one of these, Wolfram syndrome, pancreatic beta cells die, but we don't know how the Wolfram protein (Wolfram) works to maintain these cells. So far the research has identified potential proteins that interact with Wolfram and that give us a clue to its function. The aim is to find out how ER stress works to cause diabetes. If the mechanism can be identified, the research team may find new drug targets that may also be useful in more common types of diabetes.

ER stress is a mechanism of disease that underlies both type 1 and type 2 diabetes; in theory understanding ER stress may benefit all the people with diabetes, not just those children with Wolfram syndrome.

Applying for WellChild funding...

WellChild's annual call for research applications encourages high quality and innovative research projects which clearly demonstrate the benefit to children and young people's health and well-being. All applications are critically assessed by our Grant Review Panel. As members of the Association of Medical Research Charities (AMRC), WellChild adheres to guidelines of good practice at all levels of the research processes. WellChild also funds a joint clinical research training fellowship with the Medical Research Council (MRC).

For further information on this fellowship and on how to apply for funding for a WellChild Research post please visit www.wellchild.org.uk, email research@wellchild.org.uk or telephone 0845 458 8171.

About WellChild

WellChild is the national charity for sick children. We help children and young people who are seriously ill or have complex conditions and their families throughout the UK. We are not limited to a single illness but try to offer help to all young people who need us.

We focus on three key areas:

Care – through our WellChild Nurses who support sick children at home.

Support – through our Helping Hands projects which give practical help such as garden and bedroom makeovers.

Research – we have invested more than £20 million in children's health projects.

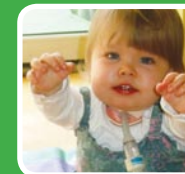


WellChild,
16 Royal Crescent, Cheltenham,
Gloucestershire GL50 3DA.
Phone: 0845 458 8171
Registered Charity No: 289600

WellChild 
the national charity for sick children

WellChild Research

Helping sick children and their families throughout the UK



WellChild 
the national charity for sick children



WellChild's vision is to invest in innovative, high impact, high quality and effective research that influences and ensures the best quality of life and clinical care for children and young people with long term and serious illness.

WellChild's established profile as a funder of children's health research within the research and scientific community has seen over £20,000,000 invested since 1977. In addition to supporting the early careers of researchers who have gone on to make significant contributions in the field of children's health, WellChild has also provided funding for infrastructure and capital projects at units across the UK, including the development of the Neonatal Unit at King's College Hospital, the WellChild Research Laboratory at Evelina Children's Hospital, the WellChild Pain Research Centre at Great Ormond Street Hospital, and the Children's Research Centre at Birmingham Children's Hospital.

In this rapidly evolving research climate WellChild is ideally placed to build on its reputation and previous achievements for funding innovative and high quality research projects.

WellChild Research in action



The WellChild Laboratory in the Evelina Children's Hospital was established 25 years ago and is led by Professor Neil Dalton, who has recently been made the new Professor of Paediatric Biochemistry at King's College.

The charitable provision of sophisticated laboratory infrastructure and an endowed academic post has established a focus for paediatric clinical research and diagnostic development. Professor Dalton has focused his research on screening children and babies for a range of diseases including kidney disease, diabetes, developmental delay, epilepsy, autism, liver disease, brain injury, sickle cell disease, and a comprehensive range of inherited metabolic diseases. This has meant that thousands of children have had the benefit of an early warning system – allowing them to be successfully treated rather than developing potentially debilitating or life threatening illnesses.

“If we had not had this endowment from WellChild we would have found it very difficult to do the work we do because it is not easily fundable. Thanks to WellChild we had a laboratory facility and a guaranteed salary that meant we had something to hang everything on.”

Professor Neil Dalton, Evelina Children's Hospital

Looking to the future

In the current health environment the care and management of children with long term and serious illness has become a priority. Earlier diagnosis, more accurate surveillance, the recognition of new health conditions and needs (e.g. rare conditions), improved life span, new technologies, the development of new therapies and the current focus on children's medicines and clinical trials – these are just some of the issues that have impacted on the need for further scientific, clinical and psychosocial research. However this can only be achieved with greater investment and support. Therefore in looking to the future WellChild is committed to the following:

- building on past successes in making a unique contribution to children's health research which will improve the health and wellbeing of children through the development of new treatment and therapies
- continuing to promote the importance of children's health research
- 'kick starting' research that will result in clear and positive improvements in the quality of life for children with a range of long-term and serious illness.



Testing Dr Gabor Barton's virtual reality game, which helps children with cerebral palsy, at the Research Institute for Sport and Exercise Sciences, Liverpool

WellChild is a member of

