



UK Children's
Neurological
Research Campaign

**Changing
futures for
families**

An introduction to the work
and plans of the UKCNRC

March 2011

Registered charity no: 1124250



About us

The United Kingdom Children's Neurological Campaign is a charity dedicated to supporting research into neurological disorders in children. It aims to raise funds to support and co-ordinate research within the UK to help a group of children whose needs are frequently overlooked.

The charity was formed in 2008 by a group of clinicians, expert in this field, to support the development and delivery of collaborative research projects focussing specifically on child neurology. They were inspired by the great advances made in childhood cancer and leukaemia survival rates as the result of an integrated approach to research over the past 25 years – and anticipate that similar benefits would be expected for children with neurological disorders if this approach was taken and the funding available.

The founding clinicians are at the centre of a UK-wide network of neurological research and aware of the priorities and difficulties in the area. The UKCNRC brings all of that knowledge together to offer advice and support to others. Prior to the formation of the UKCNRC there was no central hub of expertise to support research in this field and, as a result, important and worth-while research often failed to get off the ground. This was because of the time constraints of busy clinicians, gaps in expertise, difficulties with funding, laborious governance processes or an absence of the relevant collaborative network.

The UKCNRC has been called 'a children's brain research incubator' developing small ideas into fully fledged, nationally competitive research with valuable outcomes.

It offers help to researchers on optimising and delivering their project including advice and support on its scope and methodology, help with funding, identification of helpful research partnerships and access to a network of clinicians to help deliver the research on a national basis. It actively encourages collaboration between researchers and advises from wide experience on solutions to practical issues (see also under The Response below).

The support offered has proved helpful with 14 projects currently being supported and demand is growing. To meet this growing demand the charity aims to do the following:

1. To develop the UKCNRC infrastructure in order to support researchers effectively
2. To raise awareness of the work of the UKCNRC in order to address specific research questions
3. To secure funding for research projects
4. To develop widely applicable outcome measures, database expertise and case report proformas.

All of this support has the one aim of ensuring that all research funds are used in the most effective manner leading to the widest possible beneficial outcomes for children and their carers. **Because the UKCNRC is providing generic support applicable to a wide range of research projects very substantial results can be achieved with sums which are modest when compared to many other areas of research funding.**

To fulfil its aims the charity needs to raise funds. It is hoped that after reading more about the UKCNRC you will wish to make a donation to further the work.

The need

One in six people in the UK suffers from a neurological illness. In spite of this, research into neurological conditions lags far behind illnesses such as cancer, where funding is more readily available.

Research to improve the understanding and treatment of childhood neurological disorders is particularly difficult as there are a large number of individually rare (but additively common) childhood neurological conditions and outcome assessment is complex – there are no 'simple' measures such as life expectancy for example – changes and improvements require more sophisticated evaluation. Nevertheless, research into childhood neurological disease is essential if the outlook for these children is to improve.

Zoey, for example, was seen by one of the consultants when she was just 22 months old. She was diagnosed with 'Dancing Eye Syndrome' (also called *Opsoclonus Myoclonus Syndrome*) a very rare neurological disorder.

Dancing Eye Syndrome (DES) is so called because of the very abnormal eye movements which are almost invariably present. In the United Kingdom there are about 12 newly affected children recognised each year. Typically, a previously well child will become irritable and unsteady and develops jerky uncoordinated movements of the arms and legs. The condition worsens over days to a week or two and the child becomes more miserable and often ultimately unable to walk. Many affected children will have long-term learning, behavioural and movement problems.

The treatment for the Dancing Eye syndrome changed little between the early 1960s when the condition was first described and the 1990s when Zoey became unwell.

Recently there has been some progress and there is a current treatment trial in the United States and a European trial will be starting in 2011: Eight European countries will be involved because the rarity of the condition means that a large population is needed to obtain meaningful results. There have been and continue to be substantial hurdles in terms of European research legislation, funding issues and organisational challenges across the participating countries.

The UKCNRC is undertaking a great deal of the complex and time-consuming work involved in overcoming these hurdles for the UK arm of the project. This support is provided in large part by the Research Co-ordinator working with the volunteer Research Support Panel. Support offered includes:

- Liaising with European colleagues in France and Germany.
- Identifying potential sources of funding and working closely with researchers to complete funding applications.
- Helping with applications for the governance of the project (for example to obtain ethical committee approval).
- Developing networks of communication between participating centres in the UK.
- Helping to refine research protocols, procedures and recording mechanisms for the UK arm of the study.

The support offered continues to be, essential in taking the UK arm of this vital project forward.



Zoey as a baby

“The help and time invested by the UK Children’s Neurological Research Campaign, with generous financial support from the Roald Dahl Child Brain Research Development Service, has been and continues to be essential in allowing us to take forward both the ethical and R&D aspects of the project and also with research grant applications. The help with the administrative and fund-raising aspects has been absolutely vital”.

Dr Mike Pike, European Opsoclonus Myoclonus Syndrome/Dancing Eye Syndrome Trial UK Chief Investigator. November 2010

The experience and expertise which has proved so essential to Dr. Pike is also available to other researchers reducing costs and time – so important to the children, their parents and the doctors who wish to help them.

As Zoey’s parents say:

“The UK Children’s Neurological Research Campaign will be very important in helping children and their families to understand and, most importantly, treat these rare brain conditions. This can only be done with your support. Thanking you in advance,”

Lorraine and Trevor

(Parents of Zoey now aged 13 years who suffers with Dancing Eye Syndrome)

A summary of this and other research which is being supported by the UKCNRC can be found later in this report.

The Response

The UKCNRC was therefore created to help researchers work together on a national (and even multi-national) basis. The respected clinicians at the heart of the charity are at the cutting edge of their profession. Their positions within the UK's centres of neurological expertise ensure that they are fully aware of the research priorities in the field and of the particular difficulties that potential researchers face. For example:

- Securing funds for research into rare conditions
- Assessing neurological outcomes such as learning, behaviour and quality of life which are harder to measure than, for example, length of survival
- The rarity of many conditions means that it is essential for studies to include children from large (national or international) populations
- Cutting through red tape. Complex European legislation has made ethics, research and governance processes very time-consuming for busy clinicians.

The charity is governed by a Board of Trustees which includes:

Professor Galip Akay, Professor of Chemical Engineering at Newcastle University, parent and lay Trustee.

Dr Peter Baxter, President of the British Paediatric Neurology Association and Editor of Developmental Medicine and Child Neurology

Professor Helen Cross of Great Ormond Street Hospital

Dr Rob Forsyth of Newcastle University

Professor Colin Kennedy of Southampton University,

Dr Richard Newton of the Royal Manchester Children's Hospital,

Dr Michael Pike of the Oxford Children's Hospital,

The support

The UKCNRC Research Co-ordinator works closely with a Research Support Panel (RSP) which consists of 12 of the UK's top child neurologists who meet regularly and offer their wide ranging expertise on a voluntary basis to assess, advise and, where appropriate, support those wishing to take forward research projects in child neurology. If a research project is supported by the RSP, the Panel may offer, as needed, any of the following:

- Pump-priming funds to help individual projects get off the ground. Often researchers identify problems which need an answer but require work to develop to a point where they are viable research projects. Without initial research they cannot apply for full project funding. The UKCNRC offers pump priming money, as well as support, to enable researchers to take these initial ideas forward.
- Advice on study design, research methodology and statistics. The RSP collectively possesses extensive knowledge in these areas. This expertise is readily made available to researchers, not only providing economies of time and money but adding ultimately to the scientific rigour and clinical value of studies.
- Help with obtaining research funding. With an impressive background of successful applications for grant funding, the Research Coordinator and RSP can advise researchers on sources of funds for specific projects and contribute constructively to the grant writing process.
- Help to complete the Integrated Research Application System (IRAS) and associated documents. This is a complex on-line application process essential to obtaining ethical and NHS approval for clinical research. Without support, it can be a significant barrier or even a disincentive to researchers.
- Engagement of the UK national network of paediatric neurology centres to adopt, support and deliver the project.
- Linkage with other related projects in order to maximise the information obtained by joining up aims and sharing resources. For example two studies – one based in Birmingham and one in Wigan – were potentially complementary. Both were looking at different aspects of the development of Multiple Sclerosis (MS) in children. By putting these two projects in touch with each other the UKCNRC was able to facilitate a co-ordinated approach to the research.

Consequently the researchers each have access to a wider pool of information (so that more meaningful data could be collected) and the scope of the study can be widened to include a look at the protective effects of Vitamin D against MS. Also both projects can use the same infrastructure making it more efficient and cost effective.

- Help with database management, data collection and study monitoring – the UKCNRC is involved with cutting edge research and can advise on the latest and most effective ways of collecting and storing data. Methods used in one project may well be relevant for another – a cross fertilisation of knowledge and ideas can save researchers time and money and ensure the development of a standardised and accessible approach to reporting.

Ultimately, the RSP provides a hub of expertise for anyone carrying out research into child neurology. It helps them to get the best possible outcomes for their particular projects to create positive future health prospects for children affected by neurological conditions. Advice can be accessed via email, telephone or face to face. Currently the research co-coordinator is employed for 20 hours per week to do this however due to the excellent feedback and high demand this is an area we may need to expand.

The UKCNRC is currently offering support to a number of projects. Further details on these projects, with comments from some of the researchers who are using our support, can be found toward the back of this report. More information can also be found on the website www.ukcnrc.co.uk. If you have detailed questions, or are a researcher seeking support please contact Dr John Coleman, the research co-ordinator who can give further information.

Email: john.coleman@ukcnrc.co.uk

Tel: **020 7599 4113**

Monitoring and evaluation

Studies supported by the UKCNRC are monitored by the Research Support Panel. The Panel will ensure that the projects move forward within an agreed time-frame and work closely with the researcher to accomplish this. Measures are put in place to review progress and adjust if necessary. Members of the RSP offer expert advice and guidance through the life-time of each research project.

Dissemination

The UKCNRC has strong and established links with all 23 of the neurological paediatric neurology centres in the UK, is able to engage them in delivering collaborative projects and can disseminate research findings quickly and effectively. This ensures that positive results can be translated from academia to service delivery more rapidly.

Completed studies will be published in the relevant medical journals so information is available to the international professional community, and researchers are encouraged to present their work at national and international paediatric neurology research meetings – such as the annual British Paediatric Neurology Association Annual Meeting and the biennial European Paediatric Neurology Society meetings.

Annual budget for 2011:

Direct Research Support costs	
Part time Research Coordinator (salary and on costs)	£20,250
Travel	£3,500 per annum
Office costs	£2,500 per annum
Research support panel meeting costs	£3,000 per annum
Overheads – admin, IT support, website upkeep and updating, Management costs	£5,000 per annum
Project support	£10,000 (telephone helpline for researchers, funding signposting, research support panel feedback)
Total research support costs	£41,750
Capacity building costs	
Part time Development Officer (salary and on costs)	£21,600
Office costs	£2,500
Total capacity building costs	£24,100
Total annual budget	£65,850

Funding situation

The UK Children's Neurological Research Campaign was initially funded by a 2 year donation of £55,000 from the British Paediatric Neurology Association. The donation enabled the organisation to develop its infrastructure, recruit the small team and launch the charity; a further grant of £15,000 has helped to launch a fund-raising initiative. The charity has also been awarded a grant of £25,000 per year for a three year period from The Roald Dahl Foundation to support research project development. Two of the founding Trustees each made donations of £5,000 and a number of other donations have been received from trusts and individuals.

In order to move the charity forward and to further support the on-going research applications and developments, the UKCNRC is looking to secure an income of £85,000 per year by 2013 in order to achieve its strategic goals.

Strategic goals:

1. To develop the infrastructure needed to enable the work of the UKCNRC to support researchers effectively
2. To raise awareness of the work of the UKCNRC in order to address specific research questions
3. To increase the funds available to pump-prime and ultimately fully fund worth-while research projects

The help we need

The UKCNRC is a cost effective organisation which offers a wide range of services to researchers and through their work to a group of children and parents whose needs have for too long been ignored.

In order to develop these services further and to offer researchers into neurological disorders time, expertise and support, the UKCNRC needs your help.

We believe that by offering this focused, skilled and integrated approach to research we can ensure that the outlook for children with neurological disease will be greatly improved.

A donation will make a huge difference to the lives of children who face an uncertain future due to their rare neurological conditions.

With your help the UKCNRC can give ongoing support to children, their parents and to the researchers who offer the hope of improvement in their conditions

To make a donation or to learn more about the work of the UKCNRC contact our Fundraising and Development Officer:

Donna Treanor
42 Bonner Drive
Walmley
Sutton Coldfield
B76 1DZ

Tel: **0121 351 1975**

Mobile: **07713 637865**

Email: **donna.treanor@ukcnrc.co.uk**

www.ukcnrc.co.uk

The UK Children's Neurological Research Campaign is currently providing support to a number of different research projects at different stages of development and delivery. Here are some examples with comments from some of the researchers:-

1. The European Opsoclonus Myoclonus Syndrome/Dancing Eye Syndrome (OMS/DES) Trial (UK arm).

Researchers: Dr Gudrun Schleiermacher, Institut Curie Paris, Dr Barbara Hero, University of Cologne, Dr Michael Pike, Oxford Children's Hospital, Dr Ming Lim, Evelina Children's Hospital, Dr Martin Elliot, Leeds General Infirmary, and many European neurologists, oncologists and scientists.

Purpose: To establish a systematic approach to investigation, treatment and outcome evaluation in this very rare condition.

Background: Child neurologists and cancer specialists across 8 European countries have combined to form an international study of this rare condition which, for the first time, looks systematically at the frequency of the accompanying tumour (neuroblastoma), uses a uniform approach to treatment with a regimen of escalating intensity, measures symptom severity on a standard scale and evaluates outcome at 5 years of age with standardised measures of learning, behaviour and quality of life. The study has brought together a European network of clinicians and scientists which will deliver the trial and will then, with colleagues from the United States with whom close links have been developed, set up the next randomised controlled trial of therapy for this rare and devastating disorder.

The lessons learnt from the organisation of this multi-national study can be applied to other pan-European studies of rare childhood neurological diseases – such as a study currently being considered by the UKCNRC comparing two therapies in the treatment of acute inflammation of the spinal cord.

2. The Paediatric UK Demyelinating Disease Longitudinal Study (PUDDLs)

Researchers: Drs Evangeline Wassmer and Michael Absoud, Birmingham Children's Hospital.

Purpose: To understand the spectrum and outcome of demyelinating disease in children.

Background: Although there is wide awareness of Multiple Sclerosis (MS) in adults, there is much less known about the outcome of similar disorders in children – how many children are affected, in what ways and at what ages – and which of these children will go on to develop MS. The study will address these questions and the answers will allow us to give parents and young people better information about their future, and will help guide us as to which children to target in treatment trials in the future.

“The UK Children's Neurological Research Campaign has been of huge assistance to the PUDDLs study; from the design and writing of the protocol to help with progressing R&D in individual centres and recruiting further centres to participate. The UKCNRC has also proved a massive difference with providing an avenue to providing other potential study extensions to the PUDDLs study. The UKCNRC is a great resource to help support studies in childhood rare and common neurological diseases which can be translated into clinical practice to make a difference to children and their families.”

Michael Absoud, Clinical Research Fellow, Institute of Child Health, Birmingham Children's Hospital

3. The association between Acute Disseminating Encephalomyelitis and Vitamin D

Researchers: Drs Richard Newton, Manchester Children's Hospital, and Christos Zipitis, Wrightlington, Wigan and Leigh NHS Foundation Trust.

Purpose: To evaluate the role of Vitamin D status as a risk factor for childhood demyelinating disease.

Background: There is growing evidence that Vitamin D is an important protective factor for MS. This study will establish the relative importance of diet, sunlight exposure and other life-style factors on MS susceptibility. The UKCNRC has been able to link this study with the PUDDLs study (see above) and to harness the infra-structure under-pinning the PUDDLs study to help deliver the Vitamin D study, to the benefit of both.

4. Response to treatment in the early onset epilepsies of childhood.

Researchers: Professor Helen Cross, Great Ormond Street Hospital and the Institute of Child Health, London and the British Paediatric Epilepsy Group.

Purpose: To define the incidence, prevalence, treatment response and outcome of the early onset infantile epilepsies.

Background: There are a number of epilepsies which start in infancy and are often difficult to treat and associated with a poor outcome in terms of seizure control, the child's development and life expectancy. These, like many disorders in paediatric neurology, are individually rare but additively a significant component of the child neurologist's clinical work-load. The study will, for the first time, systematically gather information for each of these conditions including clinical data, brain scans, biochemistry, EEGs, response to treatments tried, outcome. The information obtained will mean that prognosis and treatment decisions will be better informed and an evidence base will become available from which to identify and design specific treatment trials. The UKCNRC has worked to help clarify the case definitions and to expand the original study to include imaging and biochemical information.

“The role of the UK Children's Neurological Support Campaign has been invaluable in taking forward further the study of Early Onset Epilepsies, not only in defining the range of the project but also linking in the appropriate expertise including molecular genetics”

Professor Helen Cross, UCL-Institute of Child Health & Great Ormond Street Hospital for Children

5. Can we use exome sequencing to find high penetrance pathogenic mutations in children and adults with severe epilepsy that has begun in the first few months of life?

Researcher: Dr Andrew Fry, Academic Clinical Fellow, Institute of Medical Genetics, University Hospital of Wales.

Purpose: To identify the genetic basis for otherwise unexplained infantile onset epilepsies.

Background: For those infantile onset epilepsies which are currently unexplained there is increasing evidence that genetic mutations may be the underlying cause. The study will use next-generation DNA sequencing technologies to search the genome of 50 individuals with unexplained infantile onset epilepsies and compare these to control patients. Mutations identified will then be examined for pathogenicity and expression. This will allow families to receive more accurate genetic counselling as to the risk for future pregnancies, ante-natal diagnosis where needed and raises the possibility, by evaluating the gene product, of understanding the disease process better and designing more effective treatments. The UKCNRC has been able to bring together this study with the complementary Early Onset Epilepsies study (see above) and to make sure that the studies are compatible to the benefit of both.



Funded by:



UKCNR

Registered Office: Bridge House, Harrow Road, Bolton, BL1 4NH
A company limited by guarantee registered in England (number 6474740)
Registered as a charity in England and Wales (number 1124250)

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