University of BRISTOL

NHS National Institute for Health Research

National Nephrotic Syndrome Patient Day 2017

29th March 2017

Dorothy Hodgkin Building, Bristol, United Kingdom

Programme and Information Booklet

BRITISH KIDNEY Patient ASSOCIATION
improving life for kidney patients

Kidney Research UK
Funding research to save lives

NeST NEPHROTIC SYNDROME TRUST

Welcome!

We are delighted to welcome you to our annual National Nephrotic Syndrome Patient day. The purpose of this event is to share information with patients and their families on current research activities. This year guests will also have the rare opportunity to tour our research laboratories at the University of Bristol. During this event you will have the chance to listen to talks on Nephrotic Syndrome, network over lunch as well as pose your questions to the experts. We hope you find the day useful and informative. This event has been kindly sponsored by Kidney Research UK and NIHR Rare Diseases Translational Research Collaboration.

The Organisation Committee:

- Prof Moin Saleem – Professor of Paediatric Renal Medicine, University of Bristol and Consultant Paediatric Nephrologist, Bristol Royal Hospital for Children.
- Dr Gavin Welsh – Senior Lecturer, University of Bristol.
- Dr Maryam Afzal – Research Associate/Project Manager of the NephroS and International NephroS study, University of Bristol.
- Dr Liz Colby – Research Associate/Project Manager of the NephroS-Nurture study, University of Bristol.
- Wendy Cook – Nephrotic Syndrome Trust (NeST) Co-ordinator.

National Nephrotic Syndrome Patient Day Programme		
Time	**Event**	**Title**
10.00 – 10.25	Registration and Refreshments	
10.25 – 10.30	Welcome	
10.30 – 10.45	Dr Wen Ding (Clinical Research Fellow, University of Bristol)	Introduction to nephrotic syndrome (medical perspective)
10.45 – 11.00	Dr Simon Satchell (University of Bristol)	Nephrotic syndrome in adults
11.00 – 11.15	Helen Sumner (Senior Clinical Trial Coordinator, Royal Manchester Children's Hospital)	Update on UK clinical trials in nephrotic syndrome
11.15 – 11.30	Dr Natalie Finch (Clinical Postdoctoral Fellow, University of Bristol)	Development of an educational virtual reality kidney game
11.30 – 11.45	Carlie Higton (Patient guest speaker)	My story: a patient's perspective
11.45 – 13.00	Lab Tours / Networking Lunch	
13.00 – 13.15	Dr Liz Colby (Research Associate/Project Manager of the NephroS-Nurture study, University of Bristol)	Overview of research into nephrotic syndrome
13.15 – 13.30	Dr Ethan Sen (Clinical Research Fellow, University of Bristol)	UK nephrotic syndrome cohort
13.30 – 13.45	Dr Agnieszka Bierzynska (Research Associate, University of Bristol)	Genetics in nephrotic syndrome
13.45 – 14.00	Sandra Currie (Chief Executive, Kidney Research UK)	Research matters
14.00 – 14.15	Kate Creswell (Regional Advocacy Officer, British Kidney Patient Association)	BKPA supporting patients now and into the future
14.15 – 14.30	Question and Answer Panel	

Information on Nephrotic Syndrome

What is Nephrotic Syndrome?

Nephrotic Syndrome is a serious and debilitating kidney condition that affects around 10,000 people in the UK each year. Nephrotic Syndrome isn't a disease in itself, it's a condition that can be caused by a range of different diseases which damage the glomeruli – the tiny filtering units of the kidney.

Healthy kidneys act like a sieve, allowing waste products and excess water to be excreted as urine. This process controls the body's water and salt balance, and regulates blood pressure. In Nephrotic Syndrome, there is a problem affecting the sieve mechanism of the kidney. The holes of the sieve enlarge, causing large amounts of protein to leak from the blood into the urine.

Nephrotic Syndrome is characterised by:

- Very high levels of protein in the urine (proteinuria)
- Low levels of protein in the blood
- Swelling (oedema) of the ankles and legs. Extra fluid may also build up in the abdomen and around the eyes.

Symptoms can include:

- Frothy urine
- General feeling of tiredness
- Raised blood cholesterol
- Increased risk of blood clots (thrombosis) as proteins which help prevent the blood from clotting can be passed out in the urine.
- Infections as antibodies (good proteins in the blood that help fight off infections) can be lost in the urine.
- Low levels of vitamin D.

Nephrotic Syndrome Diagnosis

Nephrotic Syndrome is usually diagnosed by a simple dipstick urine test that confirms protein in the urine, followed by a blood test to determine blood protein levels. A kidney biopsy may also be taken, where a tiny piece of kidney is removed for examination under the microscope.

What causes Nephrotic Syndrome?

Nephrotic Syndrome can be caused by any disease that causes inflammation of the glomeruli. Glomeruli can be damage in different ways, resulting in Nephrotic Syndrome.

- Minimal change disease (MCD) is the most common cause of Nephrotic Syndrome in children (80%), however MCD also affects adults too.

- Focal Segmental Glomerulosclerosis (FSGS) – is the most common cause of Nephrotic Syndrome in adults. It causes collapse and scarring of only some of the glomeruli.

- In other cases, Nephrotic Syndrome can occur as a result of a malfunction in the immune system, which could be the result of a virus, or autoimmune disorder, such as Systemic Lupus Erythematosus. Other secondary causes of Nephrotic Syndrome include diabetes and infections, including hepatitis B. Approximately 30% of adults with Nephrotic Syndrome will have an underlying medical problem.

Nephrotic Syndrome may also have a genetic cause. Our bodies are made from around 21,000 genes, which each have a function. You can think of each gene as an instructional code and

sometimes there are errors in the code, which scientists call ‘mutations’. In approximately 20% of childhood Nephrotic Syndrome cases there is a genetic fault identified. Genetics is likely to play less of a contribution in cases of Nephrotic Syndrome that develop over the age of 2, however research into genetic errors across patients of all ages will help identify how common these errors are.

How is Nephrotic Syndrome treated?

Treatment for Nephrotic Syndrome depends upon the underlying cause.

When Nephrotic Syndrome is caused by a disease, treating that disease usually relieves the kidney symptoms.

Autoimmune disorders are treated with drugs that suppress the immune system’s production of antibodies. Drugs called steroids, which reduce inflammation, may also be used to treat the damaged glomeruli. These steroids, often prescribed for several months, can prevent proteins from moving from the bloodstream into the urine. In some cases, this will be a one-off treatment and Nephrotic Syndrome may not develop again. In other more complex cases, the condition may return so you may need another course.

If the disease can’t be controlled by steroids alone, other medications may be used alongside or instead, to help control symptoms. These include levamisole, cyclophosphamide, ciclosporin, tacrolimus, mycophenolate mofetil (MMF) and rituximab. The kidneys may gradually lose their ability to filter waste and excess water from the body. Kidney failure may occur that progresses to end-stage renal disease needing dialysis, or a kidney transplant. Transplants are normally successful but there is a small chance the condition could return.

Drugs may also be used to treat other side effects. Including:

- Reducing high cholesterol
- Reducing high blood pressure
- Reducing swelling - diuretics or ‘water tablets’ may be given to help reduce fluid-build up. They work by acting on the cells in your kidneys to make them pass out more water rather than reabsorbing water back into the bloodstream.

Most of the protein that is lost in Nephrotic Syndrome is albumin. If symptoms are severe, you may be admitted to hospital to receive albumin infusions. Albumin is slowly added to the blood over a few hours through a tube into a vein in the arm.

Immunosuppressive drugs will also be given after a transplant. These medicines lower the body’s ability to reject a transplanted organ by reducing the strength of the body’s immune system.

Diet

To help prevent further water retention during a relapse, a no-added-salt diet is recommended and there may be fluid restrictions each day. This means avoiding processed foods and not adding salt in cooking or at the table. The emphasis is on a healthy, balanced diet.

Vaccines

When taking immunosuppressive drugs the immune system is weakened. Live vaccines (including MMR, chickenpox and BCG) are therefore unsuitable for anyone taking or likely to start taking immunosuppressive medication (including steroids (prednisolone), tacrolimus, mycophenolate mofetil, cyclophosphamide or regular rituximab infusions) in the near future. This also includes those who have received high dose steroids within the last 3 months.

Chicken Pox

Chicken pox contact whilst immunosuppressed can be very serious. It is therefore important that the varicella zoster (chicken pox) immunity is known for each patient with Nephrotic Syndrome. If a patient is non-immune then a post-exposure prophylaxis may be required. Please contact your local team for advice on local policies. A chicken pox vaccination should be given at the first opportunity of the patient being non-immunosuppressed. Thought should also be given to immunising non-immune siblings.

Patient View

https://www.patientview.org/

PatientView is a website that allows you to see your latest test results, letters and medicines, plus has information about diagnosis and treatment. It is available to patients if their hospital or 'unit' has signed up to it – this is most renal units in the UK. To check whether your unit has signed up and to assist you in getting an account on the system, please talk to your specialist at your next appointment.

Useful Links

- Kidney Research UK is the largest charity dedicated to funding research into kidney disease: www.kidneyresearchuk.org/research/patient-and-carer-involvement
- The British Kidney Patient Association (BKPA) is the main charitable body supporting kidney services in the UK: www.britishkidney-pa.co.uk
- The National Kidney Federation (NKF) is the largest kidney patient support group in the UK: http://www.kidney.org.uk
- There is information about rare renal diseases available on the Renal Association Rare Renal website: http://rarerenal.org/
- NHS Information: http://www.nhs.uk/livewell/kidneyhealth/Pages/Kidneyhealthhome.aspx

Additional Information for Paediatric Patients:

- infoKID is a UK-based website for children's kidney information which has information on various conditions, tests and procedures: http://www.infokid.org.uk/
- Great Ormond Street Hospital also have a large range of patient information on their website: http://www.gosh.nhs.uk/medical-information/clinical-specialties/nephrology-information-for-parents-and-visitors/conditions-we-treat/
- East Midlands, East of England and South Yorkshire (EMEESY children's kidney network). They have a number of patient information booklets for parents in various conditions and procedures as well as a number of story booklets to help prepare children for commonly performed procedures: http://www.emeesykidney.nhs.uk/

Research into Nephrotic Syndrome

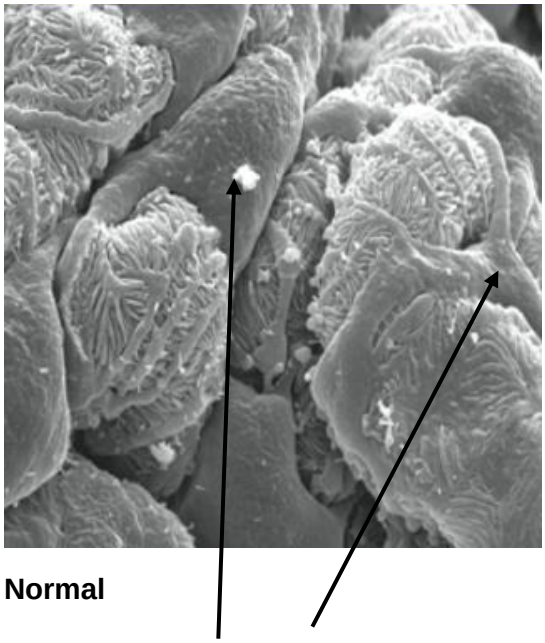
During the afternoon you will hear about research that is being carried out into Nephrotic Syndrome. If you are interested in participating in any of this research – please talk to your specialist at the hospital who can provide you with further information.

Bristol and Manchester Universities both have a strong team of researchers who are carrying out research to improve the management, treatment and prevention of renal disease. They are doing this by integrating laboratory research with clinical research.

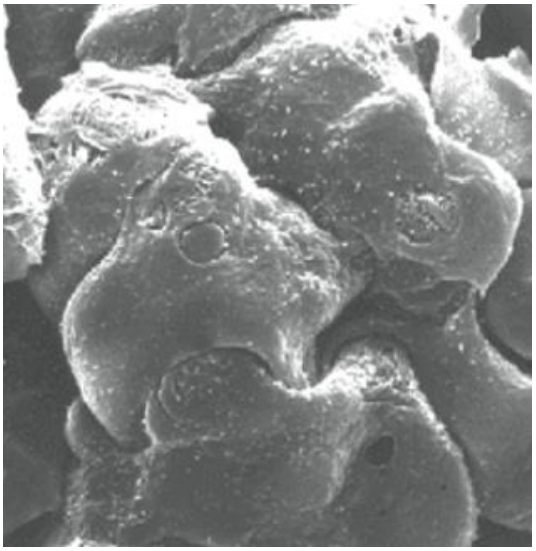
In the Lab:

In Nephrotic Syndrome there is a breakdown of the kidney 'filter', which normally functions to stop blood proteins entering the urine but allows toxins and waste products to be filtered out. The cell type at the centre of this filter mechanism is called a podocyte, a highly specialised cell which is unique to the kidney.

Podocytes can be seen using a high powered microscope. They have branch-like extensions that wrap around blood vessels in the kidney, stopping the escape of blood proteins. You can see how this filter is disrupted in Nephrotic Syndrome.



Normal



Nephrotic Syndrome

Podocyte - a highly specialised cell in the kidney. You can see the branch like structures of the cell, wrapping themselves around a blood vessel to form the filter – preventing proteins from entering the urine. This meshwork is disrupted in NS.

Scientists can look at the biology of these cells to understand the filtration barrier and the effects of disease states. Researchers at Bristol were the first in the world to grow these specialised kidney cells (podocytes) that make up the filtration barrier in a dish. Using this resource, scientists have been making ground breaking discoveries using a range of scientific techniques. The ultimate aim of their research is to design and study new therapies in patients with kidney disease.

In the Clinic:

The **National Registry of Rare Kidney Diseases (RaDaR)** is an initiative by UK kidney specialists (the Renal Association). It is designed to pull together information from patients who have certain rare kidney diseases. This will give a much better understanding of how these illnesses affect people.

This work is done in partnership with patients. Where the research leads to practical benefits, such as better diagnosis, treatments or general advice this will be publicised on the project website rarerenal.org. The National Registry for Rare Kidney Diseases (RaDaR) allows information to be collected from patients (upon their consent) on a national web based database/registry which is continually updated. Major funding has been obtained to secure the infrastructure of RADAR, and bring in new disease groups.

This information is used by expert groups appointed by the Renal Association. These groups are called Rare Disease Groups (RDGs). They consist of clinicians, scientists and patient representatives. The Renal Association govern how the information is kept safe and used appropriately for research and patient benefit.

The Nephrotic Syndrome RDG is led by Prof. Moin Saleem, who heads the research group at the University of Bristol and is the lead clinician on the **National Study of Nephrotic Syndrome (NephroS)**. This study aims to understand why some patients get Nephrotic Syndrome and how the disease causes the changes in the kidney that result in the Nephrotic Syndrome. The team will look at genes that may cause Nephrotic Syndrome and see how common they are in patients in the UK with the disease as well as study blood plasma for biomarkers of disease (a factor within the blood that differs in times of relapse and remission).

The study collection recently expanded to all patients with NS (Steroid Resistant and Steroid Sensitive including FSGS) in both children and adults. This expansion of the study on large numbers of patient in the UK, will be the most powerful way to gather new information on the disease and also permit the design of the highest quality clinical trials for new treatments in the future.

Further information can be found at **www.rarerenal.org**. If you are a patient with NS, and are not yet registered on this database by your clinician, we encourage you to ask your renal physician to get you registered, via the website (most UK kidney centres are taking part).

Benefits of research to date

Using the new tools of genetic sequencing we have developed a 'Gene Panel' test for clinical use, which is approved for NHS use. This means that any patient with steroid resistant NS (SRNS) can now be tested by their clinician in a rapid manner not previously possible, by the Bristol Genetics Laboratories. A huge advance is that this test can test all known genes in one simple blood test, something that would never have been possible using previous technology. We are also able to respond to new gene discoveries by adding those genes to the panel on a regular basis.

Hundreds of patients have now been tested, not just from the UK but also worldwide, and the test continues to be improved in terms of speed and scope. Using the rare disease registry and the genetic analysis tools that we are developing for NS, by testing the UK cohort of patients we have discovered 3 new genes that cause steroid resistant NS, called CRB2, ARHGAP24 and MAGI2. These new genes have been added to the clinical panel of genes that are tested for whenever a patient is diagnosed with SRNS.

DO YOU SUFFER FROM NEPHROTIC SYNDROME?

If you suffer from Nephrotic Syndrome, we would like to invite you to take part in the NephroS study.

Nephrotic Syndrome is a rare disease and research is essential to improve the understanding and treatment of the disease.

HOW YOU CAN HELP:

If you want to know more regarding this research project please contact your local Renal Research Team

WHAT WE WILL NEED YOUR HELP WITH:

1. **We will ask you to donate blood and urine samples at:**
   - **Follow-up appointments**
   - **Times of relapse**
   - **Around transplantation**
2. **If you had/have a kidney biopsy as part of routine treatment, we will request a tissue sample.**
3. **We will invite you to have your DNA sequenced.**
4. **We will need to collect some clinical information from your medical records.**

PREDNOS2 is being run by Prof. Nick Webb who is a renal consultant at Manchester Children's Hospital.

An invitation to join the PREDNOS 2 study

Short course daily prednisolone therapy at the time of upper respiratory tract infection (URTI) in children with relapsing steroid sensitive nephrotic syndrome; the PREDNOS 2 study.

70-80% of children and young people with nephrotic syndrome will experience relapses (i.e. the nephrotic syndrome coming back after initial treatment). There is known to be a strong link between upper respiratory tract infection (URTI – the common cold) and relapse. The PREDNOS 2 study is going to test whether taking 6 day course of steroid treatment at the time of URTI can reduce relapses occurring in children and young people with nephrotic syndrome.

The study is currently recruiting patients and each participant will have study visits occurring once every three months; at baseline, 3, 6, 9 and 12 months. To enter the study, children and young adults must be aged over 1 year and under 19 years of age and need to have suffered two disease relapses in the preceding 12 months. Patients who have participated in the PREDNOS study will be able to enter PREDNOS 2. The study is supported by the NIHR Clinical Research Network: Children, has been funded by the NIHR Health Technology Assessment Programme and is sponsored the University of Birmingham and the Central Manchester University Hospitals NHS Foundation Trust.

We do very much hope that you/your child would be interested in participating in PREDNOS 2 if your child meets the entry criteria. We require a total of 300 patients nationally and over 100 centres across the UK are taking part. Further information and a list of participating UK centres is available on the PREDNOS 2 website (www.birmingham.ac.uk/prednos2). If you are interested in taking part in the study please speak to your doctor when you next attend a clinic appointment.

Yours faithfully

Prof Nick Webb

PREDNOS 2 Chief Investigator, Royal Manchester Children's Hospital, Oxford Rd, Manchester M13 9WL UK Email: nicholas.webb@cmft.nhs.uk, Tel: +44 161 701 2961, Fax: +44 161 701 2630

Helen Sumner

PREDNOS 2 Coordinator, Royal Manchester Children's Hospital, Oxford Rd, Manchester M13 9WL UK Email: Helen.sumner2@cmft.nhs.uk, Tel: 0161 701 6905

PREDNOS 2

Do you, or does your child have relapsing childhood nephrotic syndrome?

Children and young people aged over 1 year and less than 19 years who have relapsing nephrotic syndrome may be eligible to take part in the PREDNOS 2 study.

70-80% of children and young people with nephrotic syndrome will experience relapses. There is known to be a strong link between upper respiratory tract infection (URTI – the common cold) and relapse. The PREDNOS 2 study is going to test whether taking 6 day course of steroid treatment at the time of URTI can reduce relapses occurring.

The PREDNOS 2 study is recruiting 300 children and young people with relapsing nephrotic syndrome from over 100 hospitals across the UK.

Could you or your child be one of them?

If you are interested in taking part in the study please speak to your doctor when you next attend a clinic appointment

Or for more details please visit www.birmingham.ac.uk/prednos2

Or for more details email Prof Nicholas Webb at nicholas.webb@cmft.nhs.uk

PREDNOS 2 is funded by the NIHR HTA Programme

NHS National Institute for Health Research Clinical Research Network Children

Central Manchester University Hospitals NHS Foundation Trust

University of Birmingham

The Nephrotic Syndrome Trust (NeST)

http://www.nstrust.co.uk

"The Nephrotic Syndrome Trust (NeST) was set up in 2005 by trustee David Yearsley, whose son James suffers from the disease. Its main aims are to:

- Raise awareness of the disease
- Raise funds for research to find a cure – NeST supports the Bristol-based team research team. This includes work into researching the causes of Nephrotic Syndrome, and ultimately find a cure.
- Offer a website resource and forum for sufferers and their carers/families who often feel isolated. Please check out our Facebook page – which is a buzzing place full of people sharing their stories and experiences, building up a network of support that you can access any time. There are also Nephrotic Syndrome Support groups which are intended for those with NS, family and carers to support each other through their local area throughout the UK. There are now 9 of these closed Facebook groups:

- (NeST) South West Support Group
- Nephrotic Syndrome Friends - NeST UK South East
- North East (UK) NeST Nephrotic Syndrome Support Group
- NeST Support Group North Wales, Chester, Merseyside
- Greater Manchester NeST (Admin),
- NeST Thames Valley
- NeST - East Anglia
- NeST Midlands Support Group
- Bradford Nephrotic Syndrome Support Group NeST

Thank you to our Sponsors:

The British Kidney Patient Association

www.britishkidney-pa.co.uk

The British Kidney Patient Association is the leading UK charity, which for over 40 years has been providing support to kidney patients and working to improve health and social care services for patients and their families. With over 40 patients supported every week, and around £3 million invested every year in research, funding health and social care professionals and improving hospital services, we are committed to improving the quality of life for everyone affected by kidney disease.

We do this by:

- Providing grants to help patients in times of financial hardship
- Providing information, advice, counselling and support services
- Providing a national advocacy service for patients and their families
- Campaigning to inform policy and practice to improve the lives and choices of kidney patients
- Funding kidney units to improve services and patient care
- Commissioning research to improve health and care services.

National Advocacy Service contacts:

Scotland – Ewen Maclean ewen.maclean@britishkidney-pa.co.uk

North East, Yorkshire & Humberside – Linda Pickering linda.pickering@britishkidney-pa.co.uk

North West – vacant

Wales & Northern Ireland – Lynne Callow Lynne.callow@britishkidney-pa.co.uk

West Midlands – Mark Davis mark.davis@britishkidney-pa.co.uk

East Midlands & East of England – Sandy Lines sandy.lines@britishkidney-pa.co.uk

South West – Kate Cresswell kate.cresswell@britishkidney-pa.co.uk

London, South East & South Central – Nick Palmer nicholas.palmer@britishkidney-pa.co.uk

Kidney Research UK

www.kidneyresearchuk.org

Kidney Research UK has provided substantial support for the development and continuation of RaDaR, and the Rare Disease Groups and therefore is delighted to support this Patient Information Day.

Who we are:

Kidney Research UK is the leading national charity funding research to save lives from kidney disease and kidney related illnesses. This cutting-edge research has always focused on the causes, prevention and treatment of kidney disease. The charity also dedicates its work to providing health information and raising awareness of kidney disease.

Our Mission:

- To fund and deliver life-saving research into kidney diseases.
- To improve treatments for people with kidney diseases and enhance their quality of life.
- To increase awareness of kidney health.

Our three aims:

1. Funding and supporting research. Improving the understanding of kidney disease, its causes, prevention and treatment.

2. Providing kidney-related health information

3. Raising awareness of kidney disease. Informing and updating people interested in learning more about kidney disease and the needs of those affected.

Our Vision

Lives free from kidney disease.

Notes: