# Highlighting the importance of neonatal nutrition

## Third N3 national study day, London, 16 June 2016

Managing nutritional problems in newborn infants is a challenging task and there is growing demand for training for multidisciplinary team members. The third Neonatal Nutrition Network (N3) national study day explored a range of topics related to the nutritional needs of premature and sick infants, including recent research and current viewpoints on enteral and parenteral nutrition and the management of common conditions such as gastro-oesophageal reflux (GOR) and necrotising enterocolitis (NEC).

The event was jointly organised by University College London Hospital (UCLH) and the N3 group, and supported by Fresenius, Baxter and Vigela. Consultant Neonatologist Angela Huertas from UCLH directed the course and the Royal College of Paediatrics and Child Health awarded up to six CPD points for the day.

The study day aimed to:

- introduce N3 to multidisciplinary healthcare professionals with an interest in neonatal nutrition
- highlight the importance of nutrition for the preterm infant
- discuss the latest evidence for immediate parenteral nutrition in preterm infants, and for starting and increasing enteral feeds in preterm infants
- consider current viewpoints on GOR and NEC and the introduction of complementary food in infancy
- focus on 'hot topics' via workshop sessions.

The event commenced with an introduction to N3 by Pam Cairns, Consultant Neonatologist at St Michael's Hospital, Bristol. Dr Cairns gave a brief overview of the history and achievements that this research group has had over more than 10 years.

Nick Embleton, Consultant Neonatologist at Royal Victoria Infirmary, Newcastle upon Tyne, and current chair of N3, went on to outline the critical importance of adequate early nutrition and highlighted the potential effects on long-term outcomes. He discussed brain development and the consequences of malnutrition on cognition, emphasising the effects of nutritional deficits and providing the audience with a comprehensive but simple assessment of nutritional status on a daily chart. Dr Embleton ended his presentation with an invitation for others to engage in research through the Neonatal Research Network website.[1]

Dr Nick Embleton outlined the importance of early nutrition.

The barriers to early nutrition and the basis for current recommendations were neatly summarised by Sabita Uthaya, Consultant Neonatologist at Chelsea and Westminster Hospital, London. Dr Uthaya went on to discuss the recent nutritional evaluation and optimisation in neonates (NEON) trial of amino acid regimen and intravenous lipid composition in preterm parenteral nutrition.[2] This randomised, double-blind controlled trial compared different rates of incrementing amino acids, and compared two lipid preparations. Infants showed no difference in adiposity at term but a smaller head circumference was measured in the group receiving a higher amino acid intake; however, this is at odds with the SCAMP (standardised, concentrated, additional macronutrients, parenteral nutrition in very preterm infants) study.[3]

Consultant Neonatologist Jonathan Dorling, Queen's Medical Centre, Nottingham, explored the large number of 'unknowns' in preterm feeding by

An opportunity to chat with colleagues.

examining the Cochrane systematic reviews into neonatal enteral nutrition before discussing his current work on SIFT (speed of increasing milk feeds trial).[4] SIFT compares two different rates of advancing enteral feeds in very preterm or very low birthweight infants. The results so far hint at a reduction in mortality, NEC and infection with progressive feeding.

GOR is certainly common in preterm infants but is it harmful? Consultant Neonatologist at Hull York Medical School William McGuire gave an entertaining lecture on the controversies surrounding GOR. He re-examined the physiology and development of the gastrointestinal system in premature infants, reassuring the audience that GOR is physiological and will pass as the baby matures. Professor McGuire considered whether or not GOR should be treated, concluding that there is no convincing evidence for any of the current interventions.

In the final lecture of the morning, Paul Fleming, Consultant Neonatologist at Homerton University Hospital, London, reviewed the epidemiology and pathophysiology of NEC, and the evidence for preventative interventions such as exclusive breast milk. Dr Fleming subsequently discussed the results of the PiPS (probiotics in preterms) trial,[5] which concluded that there is currently no evidence for the use of probiotics.

In the afternoon, delegates could attend two of four workshops led by Anne Hickey, Consultant Neonatologist at King's College Hospital, London, and Nick Embleton:

1. Management of infants following intestinal surgery: practical problems and potential strategies to optimise nutrition
2. Parenteral nutrition and the recent British Association of Perinatal Medicine (BAPM) framework for practice[6]
3. The use of expressed breast milk fortification
4. The use of probiotics: what, why and when.

To finish off the day guest speaker Mary Fewtrell, Professor of Paediatric Nutrition at the Institute of Child Health, London, gave an overview of the evidence for when and how to introduce complementary food in infancy. She discussed the range of views on 'developmental readiness' at four months of age and the latest research into the links between allergy and complementary food, such as the learning early about peanut allergy (LEAP) study.[7]

Professor William McGuire focussed on GOR while Dr Paul Fleming reviewed NEC.

Drs Gemma Holder and Helen Mactier at the afternoon parenteral nutrition workshop.

A provisional date of 15 June, 2017, has been set for next year's meeting. Those keen to become members of N3 should email Honorary Secretary Deb Wilson (debwilson65@yahoo.co.uk).

## References


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7. **Du Toit G., Roberts G., Sayre P.H. et al.** Randomized trial of peanut consumption in infants at risk for peanut allergy. *N Eng J Med* 2015;372:803-13.



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