



The CORK
BASELINE
Birth Cohort



Babies After SCOPE: Evaluating the Longitudinal Impact using Neurological and Nutritional Endpoints

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Research team



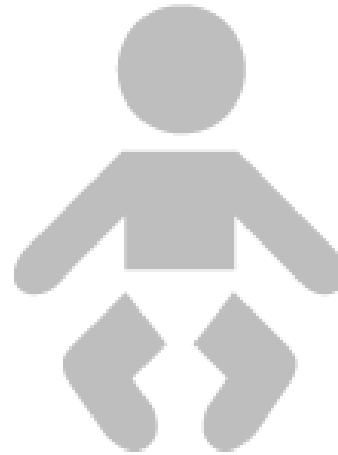
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Neonatal Brain Research Group
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The BASELINE study



Immediate Aims 0-2 years

- *Prevalence of food allergy and eczema*
- *Maternal and neonatal vitamin D status*
- *Metabolic and developmental effects of IUGR*
- *Build foundation for study of the cohort through childhood into adulthood*



2137



Birth

2m

6m

12m

24m

5Y



Biobanking
TEWL
Body fat %
Anthropometry
Neonatal course

Feeding
Growth
Body fat %
Eczema TEWL
Food allergy
General health
Childhood illness
Developmental screening

Bone density,
body fat

Detailed neurodevelopment assessment
Allergy, BP, Anthropometrics, 25-OH-D3,
biobanking, DNA, skin prick testing

Early origins of childhood obesity and metabolic dysfunction



Assessment outline

- Growth
- Development
- Allergy
- Activity
- Dietary habits
- Metabolic/inflammatory risk





Biobanking

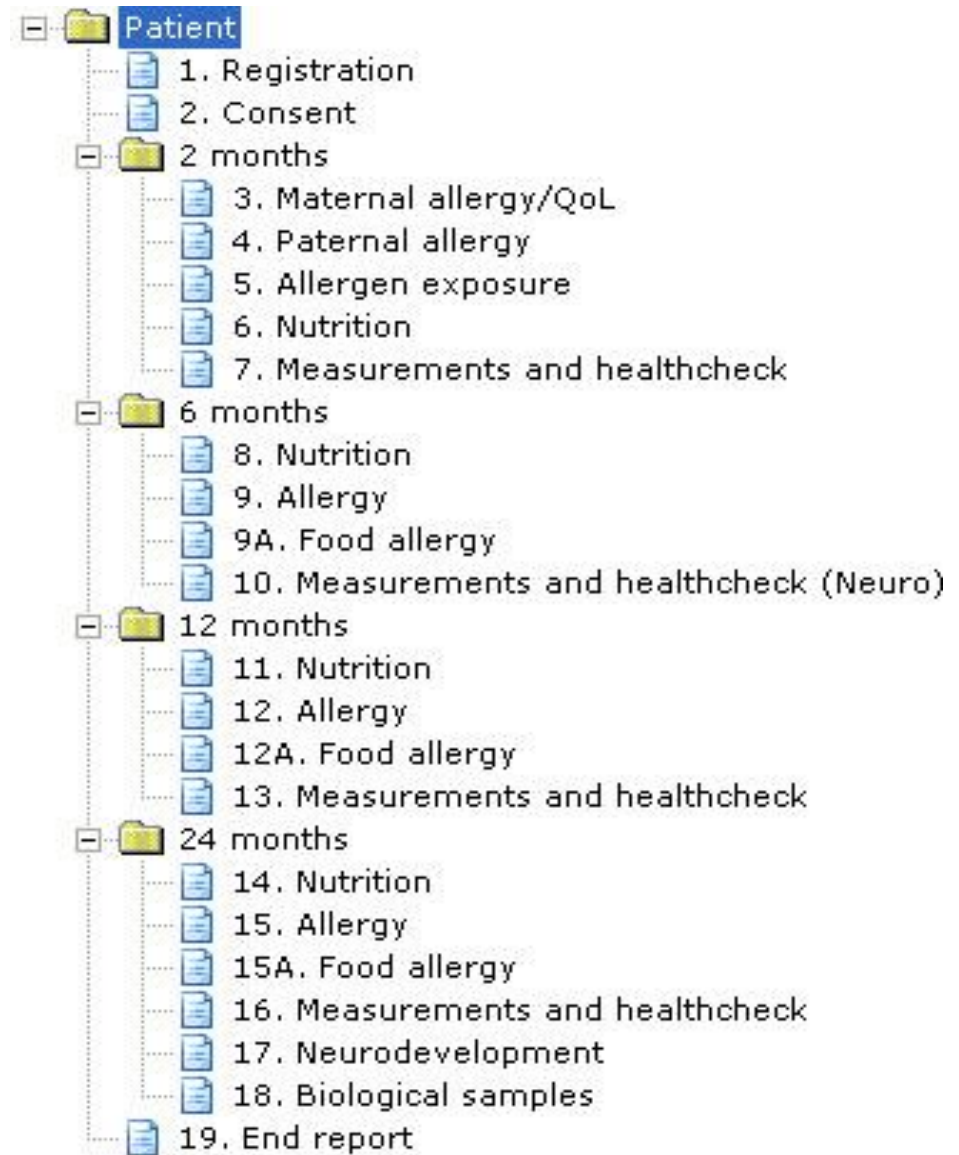
- Birth: umbilical cord blood: serum, plasma, DNA, RNA
- 2 years: whole blood DNA, FBC and serum:
- 5 years: fasting serum and DNA

Database

Medical Science Online
MedSciNet™
Internet Database Solutions



Internet based
Secure access
FDA approved



The BASELINE study

Progress to date

Born into the study 2137 at completion of recruitment

- 2 months - 1954 complete
- 6 months - 1817 complete
- 12 months - 1706 complete
- 24 months - 1604 complete

Biobanking at 24 months– 60%

Weaning diaries 823/1436 completed

Last 24 month follow up completed Oct 2013

Five year assessments: over 460 children

Publications

Adherence with early infant feeding and complementary feeding guidelines in the Cork BASELINE Birth Cohort Study. *Public Health Nutrition*, 2015 Feb 18:1-10.

Cohort profile: The Cork BASELINE birth cohort study: Babies after SCOPE: Evaluating the Longitudinal Impact on Neurological and Nutritional Endpoints. *International Journal of Epidemiology*, 2014 Aug 7.

The C3-epimer of 25-hydroxyvitamin D₃ [3-*epi*-25OHD₃] is quantifiable in almost all neonates and mirrors variation in serum 25OHD₃. *Nutrients*, 6: 2759-2919.

Skin barrier dysfunction measured by transepidermal water loss at 2 days and 2 months predates and predicts atopic dermatitis at 1 year. *J Allergy Clin Immunol* 2015

Child eating behaviours are associated with weight status at two years of age. Proceedings of the Nutrition Society 2014, 73 (OCE2), E52.

Iron intakes and dietary sources in two year olds from the Cork BASELINE Birth Cohort Study. Proceedings of the Nutrition Society 2014, 73 (OCE2), E61.

Concentrations of 25-hydroxyvitamin D in umbilical cord blood and achievement of gross motor outcomes in infants. *Nutrients* 2014, 6, 2759-2919 (abstract number 2.44).

Rapid growth and body size in infancy predict overweight/obesity at 2 years. *Proceedings of the Nutrition Society* 73 (OCE2) E106

Iron intakes and dietary sources in two year olds from the Cork BASELINE Birth Cohort Study 73 (OCE2) E61

Maternal 25-hydroxyvitamin D concentrations in early pregnancy are associated with body composition at birth. *Nutrients* 2014 ,6, 2759-2919 (abstract 2.28) Kelleher MM, O'Carroll M, Gallagher A, Murray DM, Dunn Galvin A, Irvine AD, Hourihane JO. Newborn Transepidermal Water Loss Values: A Reference Dataset. *Pediatr Dermatol*. 2013 Mar 5

The metabolomic profile of umbilical cord blood in neonatal hypoxic ischaemic encephalopathy. *PLoS One*. 2012;7(12):e50520.

Diversity of bifidobacteria within the infant gut microbiota. *PLoS One*. 2012;7(5):e36957. Epub 2012 May 11.

Gender- and gestational age-specific body fat percentage at birth. *Pediatrics*. 2011 Sep;128(3):e645-51.

An International Opportunity: Birth cohort resources in Europe and the opportunities for etiologic child health research. *Pediatric and Perinatal Epidemiology* 2012

Smith HA, O'B Hourihane J, Kenny LC, Kiely M, Murray DM, Leahy-Warren P. Early life factors associated with the exclusivity and duration of breast feeding in an Irish birth cohort study. *Midwifery*. 2015 May 5.

O'Donovan SM, Murray DM, Hourihane JO, Kenny LC, Irvine AD, Kiely M. Adherence with early infant feeding and complementary feeding guidelines in the Cork BASELINE Birth Cohort Study. *Public Health Nutr*. 2015 Feb 18:1-10

Plans for the future

- We have learnt important information about children's health, nutrition, growth and allergy risk
- At 5 years, we will look at risks of obesity, persisting food allergy and cognitive outcome
- At 10 years and beyond: focus on asthma, rhinitis, growth and academic achievement
- Adolescent health

From the BASELINE team

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Thank you!