



# Theirworld

## Edinburgh Birth Cohort

Winter 2019

## Welcome,

to the latest edition of the TEBC newsletter. It's been a busy time for the research team and our study families. We welcome parent representative Bavanthi Navarathne to the Scientific Advisory Board and Victoria Ledsham, Research Psychologist to the team. If you've ever wondered what we do with some of the saliva collected from the babies, you can find out more from David Stoye in 'Who's who'. TEBC research in this edition focuses on our recent findings that babies born before their due date show better brain development when fed breast milk rather than formula. Look out for the date for our annual party to say 'thank you' to all the families who generously help us with our research! We hope you enjoy catching up on all our news and we look forward to being in touch again in the summer.

## News

- It is with great pleasure that we welcome parent representative, Bavanthi Navarathne to the Scientific Advisory Board. The Board meets once a year to provide guidance and scientific steer to the project. Making sure that parents' views are heard is very important to us, so we are particularly delighted that Bavanthi has agreed to be involved. We are looking forward to working with Bavanthi and thank her for helping us in this way.
- We wish a warm welcome to Research Psychologist, Victoria Ledsham. Victoria will be working with our team at Kennedy Tower and will be contacting families when they are due a follow up appointment. Victoria has replaced Lorna Ginnell who is now studying for her PhD (still with TEBC). Lorna was awarded funding from the University's prestigious 'Principal's Career Development Scholarship' scheme and started her training in October 2018. Lorna's research will focus on understanding whether babies born too early use their attention skills differently, and if so, whether these differences might be related to some biological factors like hormone levels or brain structure. Lorna will continue to see families when they come for their follow up visits along with Victoria, Sinead and Bethan.



Lorna (left) and Victoria

- **A party date for your diary!** Our annual party to say 'thank you' to all our families will take place on the afternoon of Saturday 11th May in Edinburgh. We'll send the invites out a bit nearer the time and look forward to seeing how your babies have grown!



- We also welcome Kate Orme (academic clinical fellow in training) who is with us for a short placement. Kate will be working with Manuel Blesa Cabez, investigating the effect of early nutrition on brain development in babies who are born early.
- Congratulations to Vix Monnelly who was recently awarded her MD for research investigating methadone taken during pregnancy and its effect on brain development of babies. You can read more about Vix's research on our [website here](#).
- In September, we published research findings that babies born before their due date show better brain development when fed breast milk rather than formula. You may have seen it on the news or online because it received a lot of coverage in the media, both in the UK and internationally. You can read a summary of the findings here in this newsletter as well as on our [website](#).



**News (continued)**

- In September, Manuel Blesa Cabez and Paola Galdi went to the International Conference on Medical Image Computing & Computer Assisted Intervention and presented their research on imaging and brain development in babies who are born early. Paola was awarded a travel grant from Guarantors of the Brain to attend the conference.



- Congratulations to Paola who has also been awarded a travel grant to visit potential collaborators at the Emotion and Cognition Lab at Caltech (Pasadena, California). Paola is hoping to learn new methods to link together the brain scan images and the information collected from the assessments at the follow up appointments.
- Over 250 families have signed up to take part in TEBC and means that so far we are on target with our plans (our target is 400). Gillian (TEBC research midwife), Gemma and David (TEBC clinical research fellows) work closely with NHS staff to make sure families have all the information they need to decide whether the study is for them or not. They are in the hospital most days and are happy to answer any questions that parents or staff may have.

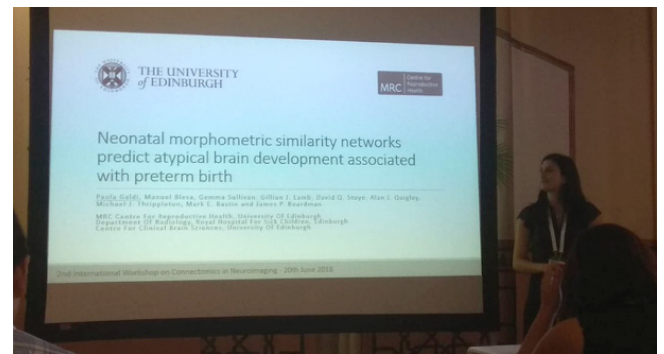
**Research**

**Breast milk may help brain development of babies who are born early**

Being born too soon (preterm) increases the possibility of problems with learning and thinking skills in later life, which are thought to be linked to alterations in brain development. Breast milk is thought to have benefits for brain development in babies born around their due date (term), but we don't yet fully understand how breast milk affects brain development in preterm babies.

We wanted to see whether giving breast milk to preterm babies improved brain connectivity. This is important because it helps us to make sure we are giving babies the right type of nutrition while they are in hospital.

Forty-seven preterm babies (born before 33 weeks gestation) had an MRI scan of their brain around their due date. We also collected information about how the infants had been fed while in intensive care – either formula milk or breast milk from either the mother or a donor.



Paola presenting TEBC research at the MICCAI conference.

Babies who exclusively received breast milk for more than 75% of the days when they were in hospital showed improved brain connectivity compared with others. The effects were greatest in babies who were fed breast milk for more than 90% of their time spent in intensive care. This suggests that larger amounts of breast milk have a greater effect on brain connectivity.

This finding highlights the need for more research to understand the role of early life nutrition for improving long-term outcomes for preterm babies.

'Image of the Issue' shows the brain connections in preterm babies who received breast milk for more than 75% or 90% of their time in hospital.

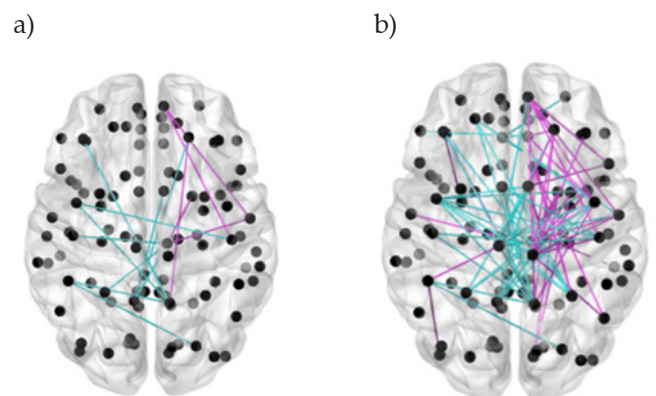
If you would like to read the full paper you can link to it from [here](#).

**Image of the Issue**

The images in this issue come from the breast milk and brain development research findings.

In these images, a) shows babies who received breast milk for more than 75% of their time and b) shows babies who received breast milk for more than 90% of their time in hospital.

The black dots represent different areas of the brain and the coloured lines represent the connections between them. Babies who received more than 90% breast milk during their time in hospital showed the greatest improvement in brain connectivity.



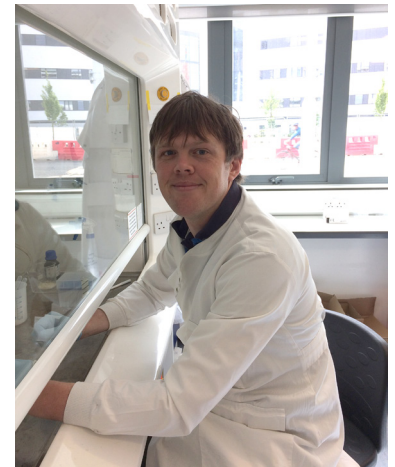
## Who's who

### David Stoye

David is a Clinical Research Fellow who moved to Edinburgh in order to join our team in September 2017. He grew up in Hertfordshire, England, and attended University College London where he completed a medical degree, and spent an additional year studying for a BSc in International Health. After this he worked as a doctor for 5 years, training in Paediatrics.

David is now in his 2nd year of a PhD under the supervision of Prof. Rebecca Reynolds and Prof James Boardman. He is studying how preterm birth influences hormonal stress response systems, and how these hormones influence a baby's development as they grow older. Through the study he is interested in whether a baby's hormone levels relate to their brain structure, measured by MRI.

Within the study he attends babies' vaccinations at 4 and 12 months of age, where he measures hormone levels in saliva. This gives him the opportunity to meet with participants multiple times over the course of a year, and he particularly enjoys seeing how babies he first met in the neonatal unit are growing and developing.



## Contact Details



**Jill Hall** (*Study Coordinator*)  
Telephone: 0131 242 6602  
Email: [jill.hall@ed.ac.uk](mailto:jill.hall@ed.ac.uk)



**Gillian Lamb** (*Research Midwife*)  
Telephone: 0758 464 2278  
Email: [gillian.lamb@ed.ac.uk](mailto:gillian.lamb@ed.ac.uk)



**Victoria Ledsham**  
(*Research Assistant*)  
Telephone: 01315316289  
Mobile: 07584 642 277  
E-mail: [Victoria.Ledsham@ed.ac.uk](mailto:Victoria.Ledsham@ed.ac.uk)



**Gemma Sullivan**  
(*Clinical Research Fellow*)  
Telephone: 0131 242 6602  
Email: [gemma.sullivan@ed.ac.uk](mailto:gemma.sullivan@ed.ac.uk)

Website: [www.tebc.ed.ac.uk](http://www.tebc.ed.ac.uk)

Twitter: [#TheirworldEBC](https://twitter.com/TheirworldEBC)

Watch this short video to meet the follow-up appointment researchers and see the kind of activities they do with the children! [Link to the video here.](#)



Babies taking part in TEBC have an MRI scan at, or around their due date.

