Theirworld

Edinburgh Birth Cohort

Winter 2023

NEWSLETTER

Welcome,

to the latest edition of our newsletter. In this edition we mark the end of the 2-year study follow-up visits and an update on the 5-year visits.

We congratulate Lorena Jiménez Sánchez who has completed her PhD. Who's Who, meets Ray Amir, our Research Assistant. Ray will have contacted many of you to arrange a visit to see us but his real passion is all things music.

Research reported this time includes an investigation into the links between preterm birth and socioeconomic status (social standing) with brain development. We also share findings about advanced brain scan methods and early brain development. You can find summaries of all the findings from TEBC cohort data on our website: https://www.ed.ac.uk/centre-reproductive-health/tebc/publications

We have some fun ideas to fill the chilly, dark days of winter!

As always, huge thanks to everyone who helps us with our research, without your time and commitment none of it would be possible.

Warm wishes, The TEBC Team.

STOP PRESS! The TEBC party is back and we have just booked a date for **Saturday 11th May 2024**. This is our opportunity to say 'thank you' to families, for all that you do to help us. There will be lots of things for the children to do and plenty tea and cake for everyone! More details and invites to follow closer to the time.

Winter Fun

A few ideas on page 6 to help keep little people busy through the chilly, winter days.

STAFF NEWS

Many congratulations to Lorena Jiménez Sánchez who completed her PhD! Read more about Lorena's research and future plans.

Kadi Vaher (previously PhD student with TEBC) has joined us as a post-doc researcher and will be running the 7-year visits when then get under way early in 2024.

News

2 Year Visits

It's a wrap on the 2-year visits! We saw the first 2 year olds back in January 2019. Wind forward 5 years and the last visits for the youngest children in the study have just taken place. That's an awful lot of weighing, measuring, sampling, eye-tracking, games and questionnaires! Thank you to all the children and their families, who shared their time and contributed data. Thanks also to the fantastic nurses who did the weighing, measuring and collection of samples for us.

We couldn't see some of you in person for your 2-year visit because of COVID – we are really looking forward to catching up when you come back for a visit at 5 years! We will now get to work analysing the 2-year data, and look forward to sharing with you what we learn.

Photos: TEBC mini scientist in residence! One of the last 2-year visits to take place. Shared with consent.

5 Year Visits

We are currently inviting families back for a visit when their child is 5 years old. The 5-year visit will feel really similar to the visit at 2 years old, but with some new things. Your child will also get to try out our 'mock scanner' and if that goes well, visit for an MRI brain scan.

If your child is due to come back for their 5-year visit, we have a new child friendly animation for them to watch beforehand that explains what will happen. We'll share this with you once it has been approved by the regulatory authorities that oversee the research.

What a difference 5 years makes!

From this…..

Photos shared with consent.

to this…..

Who's Who

Congratulations to Lorena!

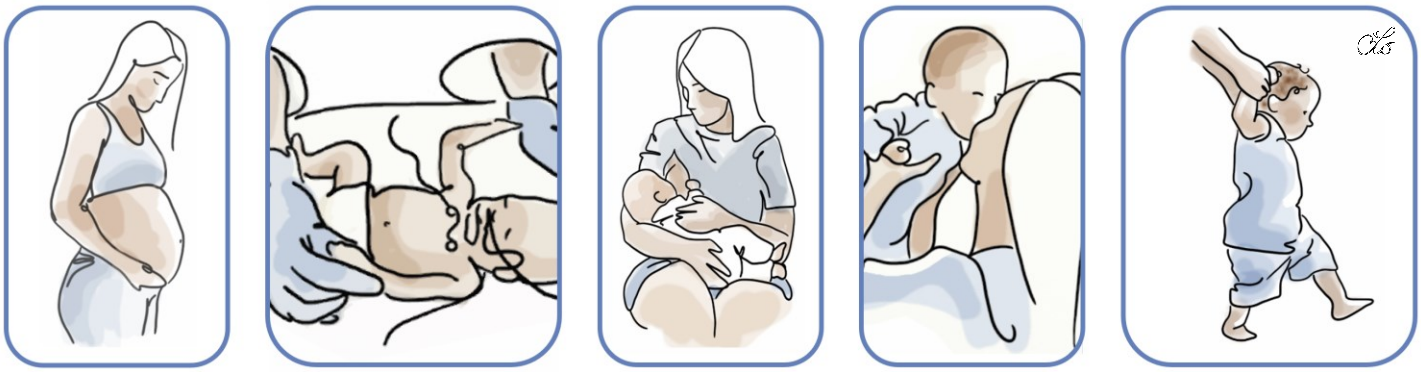
Many congratulations to Lorena Jiménez Sánchez who completed her PhD! Lots of you will have met Lorena at the 9 month or 2-year visits.

Lorena's research investigated attachment relationships in preterm infants, which are important for babies' development later in life. She explored if these relationships differ between term and preterm babies, and focused on factors around birth that may predict the relationships infants establish with their caregivers. For example, she looked at the association between the amount of breast milk preterm babies had in the NICU and the attachment relationships infants established with their caregivers at nine months of age.

Lorena's now finalising her PhD work and has started a postdoctoral position with Dr. Hilary Richardson. Moving forward, she'll continue studying early social development, but she's also interested in the intersection between art and science! She's illustrated the first steps of the Theirworld Edinburgh Birth Cohort below.

Hi, I'm Ray! I took on the role of Research Assistant at TEBC earlier this year. You're likely to see me at the 5-year follow-up appointments. I have an academic background in Psychology, specifically cognitive neuropsychology, and I'm also a music producer. My research interests lie at the intersection of music and the brain, particularly in children. I'm particularly interested in understanding how music exposure affects the development of language, cognitive function, and social-emotional skills in children. I hope to expand on these interests by pursuing a PhD in this area of study.

I'm originally from Pakistan, and I've also lived in Turkey and the UK. I love learning about new cultures and experiences, and I'm always on the lookout for good spicy food. If you catch me eating lunch at work, be prepared to witness my daily ritual of devouring a bowl of fiery cup noodles!



The first steps of the Theirworld Edinburgh Birth Cohort: we have now completed antenatal, birth, 4.5 month, 9 month and 2 year visits.

Research Findings

We have published over 50 research papers using data from the study cohort. Summaries of all our published research findings are available on our study website.

Association of preterm birth and social standing with brain development

Research question

We wanted to know whether socioeconomic status (SES), which refers to an individual's social standing, influences the brain development of preterm babies during NICU or whether preterm birth outweighs the effects of social factors. This question is important because if low SES affects brain development during NICU, efforts to support families by reducing social inequality could promote healthier brain development in preterm babies. To answer this question, we combined SES data with brain MRI scans from babies in TEBC.

Findings

Preterm birth and low socioeconomic status were associated with differences in brain structure, but preterm birth has more widely distributed effects across the brain. Family SES has a greater impact than neighbourhood deprivation in determining brain development in very early life

Conclusion

Taking measures to reduce family-level social inequalities during NICU care could help to improve brain development after premature birth. In future work, we plan to study the biological basis by which low gestational age and social factors affect the brain because this could lead to new treatment strategies.

To read more about the background to this research and link to the full paper publication click here.

Advanced brain scan methods and early brain development

Research question

We wanted to know if an advanced brain scan method (MTsat) allows to detect the progress of myelin development around the time of birth and whether term and preterm infants have different levels of myelin in their white matter as measured using this technique. These questions are important for understanding the biological processes underpinning brain differences between term and preterm babies.

Findings

We found that MTsat was positively correlated with age at scan across the white matter: babies scanned when they were older had more myelin. This means that MTsat captures the development of myelin in early life. We also found that some, but not all, white matter regions had lower MTsat in preterm compared to term-born babies. The same regions had lower MTsat, meaning that myelin in those white matter regions that myelinate later, may be more affected by preterm birth.

Conclusion

This study demonstrated that MTsat could be used to study myelin development in early life. As the participants in the TEBC come back for behavioural assessments, in future work, we plan to study whether these differences in myelin levels between term and preterm infants underly some of the difficulties preterm children have.

To read more about the background to this research and link to the full paper publication click here.

Winter Fun!

Egg Carton Snowman

Have fun with some egg cartons before you recycle them! These little snowmen are easy to make and just the thing for these cold, dark afternoons.

https://www.thebestideasforkids.com/egg-carton-snowman/

Reindeer cupcakes

Enjoy making (and eating!) these treats decorated with chocolate buttons, sweets and pretzel antlers.

https://www.bbcgoodfood.com/recipes/rudolph-cupcakes

Pipe Cleaner Snowflakes

If you have some pipe cleaners these pretty snowflakes are a super easy decoration to make.

https://www.thebestideasforkids.com/pipe-cleaner-snowflakes/

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