

Autumn 2022

## NEWSLETTER

*Welcome,*

In this edition we report on the 20<sup>th</sup> anniversary of Theirworld and the important work they hope to continue through the Jennifer Brown Research Laboratory and TEBC. There is also exciting news on the award of a prestigious research grant that helps to secure a key aspect of the TEBC follow-up plans.

The team have been busy sharing their work with fellow researchers and clinicians across the world and we report on a visit earlier this year where several members of the team presented findings from the baby brain scans. The team write lay summaries of the study results and these can be read on our study [website](#). In 'Who's Who' this time we introduce Pip, one of the youngest members of the TEBC team.

The TEBC study recently hit two important milestones when the 4.5 month and 9 month visits were completed! This is a big achievement on everyone's part. There is more information about this and the 5 year MRI scans in the study update section of the newsletter.

Research this time includes findings about brain connectivity, emotion regulation and 'stress' hormones. We have a roundup of staff news as well as some autumn fun to try at home!

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.

### Autumn Fun

Make your own handprint tree and get ready for Halloween with paper plate pumpkins and ghost marshmallows!



## RESEARCH FINDINGS

Summaries of all our published research findings are available on our study [website](#). Here are a selection of recent papers:

Kadi Vaher (PhD student) has used data from the MRI scans to study brain connections (the 'wiring' that connects one region with another) and how that is affected by being born early. [Click here to read more.](#)



Many of you will have met Lorna Ginnell at the 9 month follow-up visit. Lorna used data from the 'still face' task (where you were asked to ignore your baby for a short time) to investigate 'stress' response and emotion regulation. [Click here to read more.](#)



David Stoye published two papers about 'stress' hormones and early infant life. [Click here](#) and [here](#) to read more.



## News

### 20<sup>th</sup> Anniversary

In June, Theirworld marked their 20th anniversary with an appeal to continue the work of the Jennifer Brown Research Laboratory. They released a powerful short film about how the laboratory began and how, through TEBC, it continues to research ways to save and improve children's lives. [Watch it here](#). There was wide media coverage across radio and TV including BBC Radio 4, Good Morning Britain and a special STV programme with Sarah Brown and the cohort chief investigator, Professor James Boardman. Press articles: [STV News](#) [Daily Record](#)

### Funding Award

Congratulations to James Boardman and colleagues who have been awarded a prestigious Medical Research Council programme grant. The funding grant helps ensure we can offer a 5 year MRI scan to all the children taking part in the TEBC study. The grant also means we can undertake new research which builds on some of the early findings from TEBC around the roles of stress, inflammation, and medical problems linked to prematurity in shaping the lives of children. This is with a view to identifying protective strategies to achieve the best outcomes in life.

### Meetings and Conferences

James Boardman is giving an invited talk at the European Academy of Pediatric Societies in Barcelona in October. James will be talking about findings from the TEBC study.

Several team members presented research findings from the TEBC baby brain scans at the Paediatric Academic Societies meeting held in Denver, USA in April



(Left to right: Kadi, Paola, James, Gemma and Manuel)

Kadi presented a poster on the preliminary work where we applied new brain imaging methods to study myelin development in the preterm babies. Myelin is the insulating sheath around nerve cells that makes communication between two different brain regions faster. Different early life exposures in babies born too early can have an impact on myelin development, but so far, methods to specifically measure myelin have been less used to study baby brains. This method can help to understand more specific processes that could be at risk after preterm birth. Manuel's poster reported work where we explored a new image biomarker, only applied until now in adults, to explore prematurity in the neonatal brain, and see if we can extract more meaningful biological information compared to the most common image biomarkers. Gemma had two posters entitled 'Incidental findings on 3T brain MRI at term-equivalent age in a research cohort of very preterm infants and term-born controls' and 'Breast milk exposure is associated with cortical development in preterm infants'.

## Who's Who

Pip the puppy joined the TEBC team about 18 months ago. Her main role is making sure the birthday cards are posted to the children on time. Despite a few early setbacks while training, she's now doing a great job and posts around 25 to 30 cards every month! When she's not at work, Pip enjoys running, eating and sleeping.



Above: Training issues



Right: Pip at work

## Study Update

The study met a couple of important milestones recently when the **4.5 month and 9 month visits were completed**. The last 4.5 month visit took place in March. Thank you to parents who spent time completing the questionnaires and to children who also provided a nasal sample. Lynda Melvin (community nurse, pictured right), collected 133 nasal samples from the children during her home visits, criss-crossing the country over the last four years. We thought some tea and cake was much needed. Thank you Lynda!



Hundreds of 9 month visits have taken place at the child lab and online during the pandemic. With the help of all the families taking part, research nurses and the TEBC team we have collected a wealth of information including eye-tracking, biological samples and all those (many!) questionnaires. The TEBC team are beginning to analyse the data and as findings are published we will keep sharing those insights with you. Watch this space!

The **5 year MRI scans** are in full swing! The scan will provide really useful information about how the brain is supporting children's development around a time when they are rapidly gaining new skills. Most importantly, we make sure it's a fun and enjoyable experience for everyone!



Left and above: Mini scientists at work!

## Staff News

Congratulations to study investigator, Hilary Richardson, who gave birth to a baby girl in the spring! We wish Hilary and her family all the best. Hilary will return following maternity leave and resume her role leading on the analysis of brain responses to watching movies at the 5 year MRI scan appointment, and in helping design the collection of cognitive and neurodevelopmental outcome assessments



We bid a fond farewell, and thank you, to Paola Galdi who has worked with TEBC for the past four years. Paola is a computer scientist and has made significant contributions to the analysis of TEBC data, particularly to

the analysis of brain scans. For her projects, she designed models to integrate multiple metrics derived from different types of brain images and gain a better understanding of how the preterm brain develops in the first weeks of life. Paola has started a new job in Edinburgh where she will apply artificial intelligence to health data, but she is still collaborating with us on a project investigating the impact of prematurity on the neonatal cortex, stay tuned for future updates! We wish Paola all the best for the future.

A warm welcome to Jean Skelton who is assisting with the 5 year MRI scan appointments. Jean is a research assistant at the University of Edinburgh. She completed her undergraduate degree in Psychology before undertaking an MSc in Human Cognitive Neuropsychology at the University of Edinburgh. Jean's research interests include developmental psychology, social cognitive neuroscience, and using multidisciplinary approaches to improve health outcomes for children.



## Autumn Fun!



### Handprint Tree

Learn how to make your very own [here!](#)

### Paper Plate Pumpkin

You will need large paper plates, black card, orange paint, green pipe cleaner and glue. If you don't have paint, you can use marker pens or crayons to make the paper plates orange. And if you don't have black card, you can paint or draw the faces on.



### Marshmallow Ghost Hot Chocolate

You will need large marshmallows, edible food marker and straws. Draw on your ghost faces with the edible food marker, push in the straw and then dunk it in your hot chocolate!

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