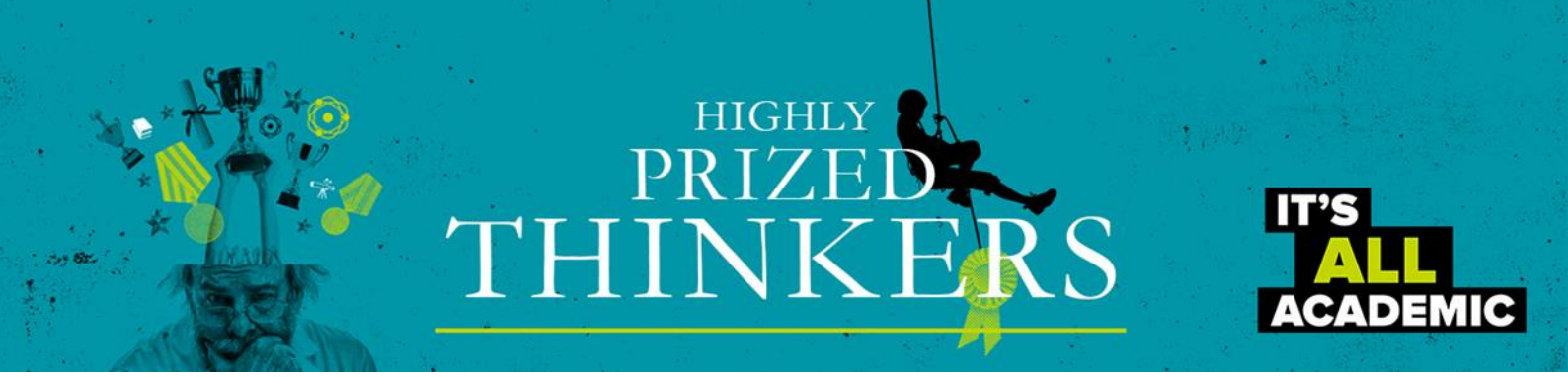

Examining the link between Oxytocin and Postnatal Depression

An update prepared for the Trustees of the Lord Leonard and Lady Estelle Wolfson Foundation
June 2018

We are deeply grateful for the support of the Lord Leonard and Lady Estelle Wolfson Foundation to conduct this research into Postnatal Depression (PND). Supporting a scholarship such as this at UCL has a profoundly positive impact not just on the student, but also on the research community and all those who benefit from the outcomes of the project. We are delighted to share an update on the project below.

Project Overview

Postnatal Depression affects 10-20% of women and is clinically very important for three reasons. First, because the mother's mental health includes not only depression, but in extreme cases suicidal feelings or attempts. Second, because this has a negative impact on her baby's psychological development and emotional security, both in the short and long-term. Finally, because PND disturbs the mother-child relationship.

Our project is novel in conducting two linked studies, examining the role of oxytocin in PND. Oxytocin is a naturally occurring neuropeptide hormone that plays a role in forming trusting relationships, social and emotional functioning, and in maternal behaviours including bonding and breastfeeding. Each of these areas has been identified as disrupted in women with PND.

Oxytocin is reduced in women with PND when analysed in blood samples, but no study has ever measured oxytocin in the breast milk of women with PND. Therefore, Study 1 looks at 28 women with PND and 28 'controls' who have no PND, to examine the relationship between oxytocin in breast milk, and mother-child interaction during breastfeeding and play (when oxytocin is released). The aim of this study is to advance basic science by testing if there is a group difference in oxytocin in breast milk between these patients with PND and typical women, and how any group difference correlates with maternal behaviour. Finding a hormonal difference in the breast milk has implications for how much of this hormone is also reaching the infant during feeding. It may also affect the woman's mood during breastfeeding.

Study 2 is a double-blind randomised control trial of the same 28 mothers with PND and 28 'control' mothers without PND. Each mother comes in to our lab at the Anna Freud National Centre for Children and Families in London. They are offered two visits in which they either receive an oxytocin nasal spray or a placebo nasal spray, in a random order.

UCL School of Psychology and Language Sciences

- The UCL Division of Psychology and Language Sciences (PALS) is the largest such department in the country with over 120 academic staff and 1500 students studying at undergraduate and postgraduate level.
- The Faculty ranks 2nd globally for research in neuroscience/behaviour and psychiatry/psychology.
- Of the 20 most highly cited scientists globally in neuroscience and behaviour, three are from PALS.
- Research income of over £50 million annually.
- Offers 20 Masters degrees in topics as diverse as decision sciences, business psychology, neuroscience, psychopathology, human-computer interaction, and linguistics, plus professional training courses in clinical psychology, educational psychology, psychotherapy, and speech and language therapy.

The aim of Study 2 is clinical. We will test if under the influence of elevated oxytocin levels mothers with PND recover to typical levels in their mood, as well as their maternal behaviours and ability to interpret their infant's emotional cues.

Study 2 is important because if confirmed, oxytocin administration could become part of the treatment for PND, likely in combination with existing psychological therapies.

Next Steps for Study 2:

Our research team have designed this as a proof of concept study, both because the scale of it is modest (to fit in with a PhD timeframe) and the goal is to collect preliminary feasibility and efficacy data. Nevertheless, this is essential before embarking on a larger clinical trial. If the results of this trial are positive, showing patient benefit, this would form the basis of a larger grant application to funders who support clinical research, for a multi-centre, large scale treatment trial of several hundred women. The funding from The Lord Leonard and Lady Estelle Wolfon Foundation is therefore pivotal in leveraging the more substantial funding needed for a big treatment trial. This is beyond the scope of a 3 year PhD, however the PhD data that will have been collected, with your support, is a vital and exciting step towards establishing a much needed treatment for PND.

Progress (October 2016 – May 2018)

In this period, we have achieved all of our target deliverables in setting up the project. First, the study received full NHS ethical approval. Second, the research team now includes three collaborators: Professor Pasco Fearon at the Anna Freud Centre at UCL who is co-supervising the PhD; Dr Paul Hardiman at the Institute of Women's Health at UCL, who is supervising the oxytocin breast milk analysis; and Professor Ruth Feldman at Bar-Ilan University in Israel, who has joined the team as an expert advisor on oxytocin and mother-infant bonding. Third, we have established a recruitment pathway for the oxytocin studies within the postnatal wards of the Royal Free London Hospitals. Fourth, we have piloted all the planned measures with 25 participants, including live interaction gaze tracking for measuring mother's gaze towards her infant's eyes during a naturalistic interaction; and analysis of oxytocin levels in breast milk. Fifth, we have involved participants in the design of the research and how the testing sessions will be run, and have redesigned the study in the light of their feedback. This is important to ensure the research design is relevant and the testing sessions will be enjoyable for the participants.

Above: A mother plays with her child

Plans for 2018/19

Between June 2018 and October 2018, we will collect all of the data for Studies 1 and 2. From October 2018 to September 2019, we will analyse all of the psychological, behavioural and physiological data, write up the research findings as scientific papers, present these findings at national and international conferences, and submit the PhD thesis. We look forwards to updating you again at this stage.

We are grateful to The Lord Leonard and Lady Estelle Wolfson Foundation and are pleased to report that the study is on track for completion. Thank you.

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