the removal of their baby from their care. We describe specific cognitive techniques using an imagery focus which were found to be acceptable, and generally led to the thoughts diminishing considerably.
Conclusions Parents with postnatal depression or anxiety should routinely be asked about intrusive thoughts of harm to their baby. Future work should systematically explore the potential benefits of imagery based interventions for the effects on parents and on the mother infant relationship.

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BEHAVIOR AND RESTING-STATE ACTIVITY IN NEWBORNS (BRAIN) STUDY

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Introduction Lifelong neurodisability remains a significant problem in infants with brain-injury. Neonates with normal brain scans still occasionally develop learning difficulties or behavioral problems. This study aims to investigate the relationship between brain structure, function, and behavior by developing indicators of early abnormal function in babies with brain injury.
Method The Neonatal Behavioral Assessment Scale (NBAS) evaluates infant behavior at term. A novel optically-based functional brain-imaging system will measure spontaneous brain activity, known as resting-state functional connectivity (RSFC). Three studies are in progress to address the following objectives: (1) To establish normal RSFC in healthy term and near-term infants; (2) To investigate the impact of extreme prematurity on behavior and RSFC in infants <32 weeks gestation; (3) To investigate the impact of brain-injury on behavior and RSFC in infants with hypoxic-ischaemic brain-injury. Participating infants will be enrolled into a follow-up program to compare early biomakers with longer-term neurodevelopment.
Results Eleven infants were recruited in a preliminary study in the development of the functional brain-imaging system and RSFC brain mapping techniques. Five healthy term infants, two healthy near-term and four diagnosed with hypoxic-ischaemic encephalopathy (HIE) were scanned at median corrected gestational ages of 38+4, 36+4 and 40+5 weeks respectively. The overall results demonstrate functional connectivity brain maps of intra- and inter-hemispheric connections between disparate cortical regions, and bilateral homologous temporal regions in individual term infants. Our results also verify the feasibility of scanning a vulnerable population of infants in the challenging NICU environment.
Conclusions This study will represent the first comprehensive investigation of newborn brain function and behavior by combining the NBAS with functional brain-imaging. Ultimately we anticipate helping elucidate the effects of prematurity and hypoxic ischaemic brain-injury on brain function, behavior, and long-term neurodevelopmental outcome in the infant.

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THE ASSOCIATION BETWEEN ANTENATAL DOPPLER FINDINGS AND COGNITIVE DEVELOPMENTAL PROBLEMS IN CHILDHOOD - A SYSTEMATIC REVIEW

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Introduction Infants born small-for-gestational-age (SGA) with intrauterine growth retardation is a leading cause of premature mortality and morbidity. Studies on the association between high-risk fetuses detected by Doppler ultrasonography and cognitive developmental outcomes had inconclusive results. This systematic review aims to assess such association between Antenatal findings and postnatal cognitive development.
Method A systematic review of published articles was carried out with a goal of having a better understanding of Doppler findings and long term prediction on cognitive developmental outcomes among infants and toddlers. The search strategy, the selection process for identifying relevant studies, the method of extracting data from eligible studies, assessing the methodological quality of individual studies, and methods of data synthesis were all carried out according to the framework of Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA).
Results 14 studies with a cohort of 2101 infants from 5 different continents were found to be eligible for this systematic review in accordance to predefined inclusion and exclusion criteria. Following quality assessments and qualitative summaries of each study, 7 studies showed a positive association between SGA babies having abnormal antenatal findings and poorer cognitive development outcomes in learning abilities, intellectual development, development of language capabilities, and personal-social skills among children from 2 to 18 years old. However, the remaining studies showed a weak association between normal-size babies having intrauterine growth retardation and severe intellectual development delay after birth.
Conclusions This review demonstrated that SGA infants have poorer cognitive developmental outcomes than normal babies . However, no link was found between pre-natally detected SGA babies and postnatal cognitive delay. Further research is needed with more evidence. Results of this review could be used to recommend long-term public health policies.

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ASSESSMENT OF YOUNG CHILDREN'S PLAY USING THE DEVELOPMENTAL PLAY ASSESSMENT (DPA)

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