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Maternal LCPUFA status, infant first meconium and newborn MRI brain volumetrics

Introduction: Links between gut microbiota, nutrition and brain health is rapidly translating from bench to human clinical practice. Many reports have challenged the notion that newborn meconium is sterile. Brain health at birth is dependent on maternal nutrition and health. Emerging evidence suggests gut health can affect the brain.

Objective: To determine if first meconium biodiversity is related to their maternal Long Chain Polyunsaturated Fatty Acids (LCPUFA) status and brain MRI volumes.

Material & Methods: Infants born to women enrolled in a LCPUFA supplementation randomized controlled trial in pregnancy had their first meconium microbiota correlated to maternal lipid status and their brain MRI volumetrics. Stool analyses used culture and semi quantitative genus-specific real time polymerase chain reaction.

Results: The infants' first stool samples analyzed correlated statistically significant to maternal and cord blood LCPUFA status. The infants' stool microbiota was also found to correlate to their brain MRI volumetrics

Conclusions: This is the first study describing associations between maternal LCPUFA status, meconium microbiota and newborn MRI-measured brain volumes which may be important for neurocognition and cortical synapsing.

Biography

Enitan Ogundipe is a Consultant in Neonatal Pediatrics at Chelsea & Westminster Hospital, London, UK (Dec 2000 – date); Honorary Senior Lecturer in Child Health, Division of Medicine, Imperial College London, UK and also Lead of Specialist Training and the Current Neonatal College Tutor. Their unit is a specialist perinatal tertiary center and designated unit in the sector for neonatal surgery. Her area of interest lies in research and clinical care aimed at enhancing the brain development of high risk babies and is focused on factors such as nutrition especially essential lipids of the mother and newborn infants in relation to their developmental and health outcomes-nutritional intervention in the pre-conception period, pregnancy, newborn period in baby and assess the effect on brain development and disorders in infants.

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