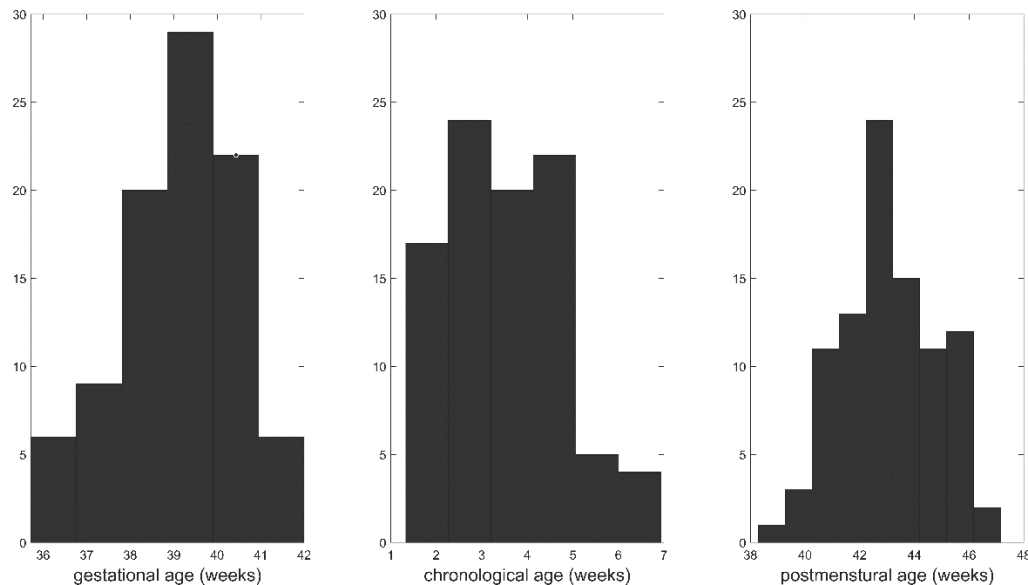


Supplementary Materials

I. Detailed Distribution of Age at MRI

Supplement Figure 1. Distribution of subjects based on gestational age at birth (left), chronological age at MRI (center) or postmenstrual age at scan (left).

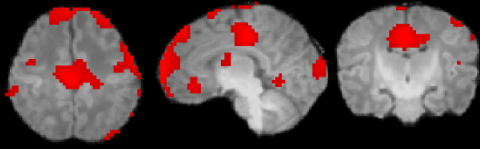


II. Sensitivity Analysis

As stated in the Discussion, our cohort contains 92 mother-infant dyads but only 54 of the infants were purely breast-fed and another 12 infants were breast-fed more than 75% (less than 100%) of the time they were fed. Therefore, to show that the findings in Figure 4 are valid, we conducted a sensitivity analysis, focusing on 54 purely breastfed mother-infant dyads. The results are shown in Supplement Figure II.

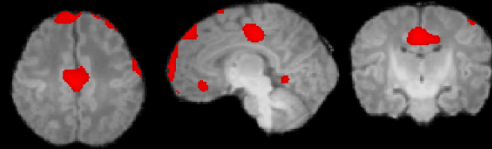
Supplement Figure 2. Infant brain voxel-wise relative volumes (RAVENS values normalized by the intracranial volume) positively correlated with maternal nutrient intake, after the FDR correction and after controlling for postmenstrual age and sex. For each nutrient there are representative axial, sagittal, and coronal views at the same level are presented. Four omega-3 fatty acids – SDA (FA184), EPA (FA205), DPA (FA225) and DHA (FA226) – were positively correlated with absolute brain volume in the regions highlighted in red. Total volume increase is listed below each series of images; there were no significantly negatively-correlated volumes.

DT_FA184 (Dietary PUFA (~N-3) 18:4, gms) ∈ **Fats**



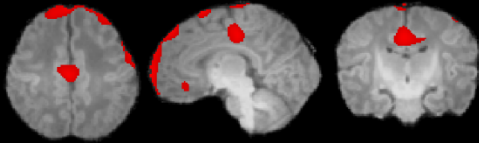
volume= 33072 mm3

DT_FA205 (Dietary N-3 PUFA 20:5 (DPA), gms) ∈ **Fats**



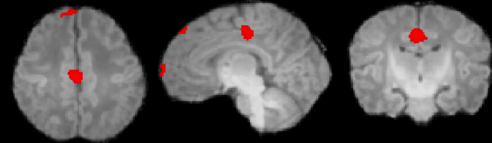
volulme= 12598 mm3

DT_FA225 (Dietary PUFA N-3 22:5, gms) ∈ **Fats**



volume= 11791 mm3

DT_FA226 (Dietary PUFA N-3 22:6, gms) ∈ **Fats**



volulme= 8264 mm3

■ significant positive correlation