International Lipid-Based Nutrient Supplements (iLiNS) DYAD-Ghana Follow-Up Study: Effects on Social-Emotional Problems at Age 9–10 Years

Elizabeth Prado,[1] Seth Adu-Afarwuah,[2] Charles Arnold,[1] Ebenezer Adjetey,[2] Benjamin Amponsah,[2] Helena Bentil,[3] Kathryn Dewey,[1] Amanda Guyer,[1] Adom Manu,[2] Mavis Mensah,[2] Brietta Oaks,[3] Maku Ocansey,[4] Xiuping Tan,[1] and Paul Hastings[1]

[1]University of California, Davis; [2]University of Ghana, Legon; [3]University of Rhode Island; and [4]CDC Foundation

Objectives: We aimed to investigate the effect of pre- and post-natal small-quantity lipid-based nutrient supplements (SQ-LNS) on child social-emotional problems at age 9–10 years in the context of children's home environments. As previously found in the 5-year follow-up study of the same trial, we expected that SQ-LNS would reduce social-emotional problems and that greater effects of SQ-LNS would be found among children from more disadvantaged home environments.

Methods: The International Lipid-Based Nutrient Supplements (iLiNS) DYAD-Ghana trial was a randomized controlled trial conducted in 2009–2014. 1320 pregnant women ≤ 20 weeks gestation were randomly assigned to receive daily (1) iron and folic acid (IFA) during pregnancy and placebo during 6 mo postpartum, (2) multiple (18) micronutrients (MMN) during pregnancy and 6 mo postpartum, or (3) SQ-LNS (20 g/d) for pregnant women during pregnancy and 6 mo postpartum and SQ-LNS for children from 6 to 18 mo of age. In 2021, we assessed child social-emotional problems at age 9–10 years by caregiver, child, and/or teacher report using the Strengths and Difficulties Questionnaire (SDQ), Brief Problem Monitor, Early Adolescent Temperament Questionnaire, Mood and Feelings Questionnaire, Screen for Child Anxiety Related Emotional Disorders, and Children's Emotion Management Scales.

Results: We re-enrolled and assessed outcomes in 966 children, 79.4% of the 1217 children eligible for re-enrollment (excluding those known not survived). At age 9–10 years, a very small percentage (<2%) of children had social-emotional difficulties scores in the abnormal range on the caregiver-reported SDQ, in contrast to the high prevalence previously found at age 5 years in the same cohort (25%). No significant differences were found between SQ-LNS and control groups. Early childhood home environment score did not modify the effect of SQ-LNS on any score.

Conclusions: Effects of pre- and post-natal SQ-LNS on social-emotional development previously found at age 5 y were not sustained to age 9–10 y in this cohort. This may have been due to the low prevalence of social-emotional problems at 10 y of age, such that there was little potential to benefit from early nutritional intervention at this age in this outcome domain.

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