Maternal Diet Quality during Pregnancy and Infant Growth in Early Postnatal Life

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**Objective:** There is a limited understanding of maternal nutritional exposures during pregnancy that influence optimal infant growth and reduce lifelong obesity. The purpose of this study is to examine associations between maternal diet quality in pregnancy and offspring length-for-age (LAZ) and weight-for-length (WFL-Z) Z-scores from birth to 6-months.

**Methods:** Participants included 277 mother-infant dyads from the Mothers and Infants LinKed for Health (MILK) study. Mothers completed the Diet History Questionnaire II in their 3rd trimester of pregnancy, from which Healthy Eating Index-2015 (HEI-2015) total diet quality scores were calculated. Infant LAZ and WFL-Z were assessed at birth, and 1, 3 and 6 months. Mixed effects models were used to examine associations between HEI-2015 total scores and infant LAZ/WAZ from birth to 6-months with adjustment for covariates including maternal pre-pregnancy body mass index, energy intake, age, race, education, and infant gestational age and sex.

**Results:** Higher HEI-2015 total scores during pregnancy were associated with higher infant LAZ from birth to 6-months ($\beta=0.02$, $p=0.02$). Higher HEI-2015 total scores during pregnancy were associated with lower infant WFL-Z from birth to 6-months ($\beta=-0.01$, $p=0.04$).

**Conclusions:** Diet quality during pregnancy may play a pivotal role in fetal programming and early postnatal growth and body composition. Additional research is needed to investigate the interplay between maternal pregnancy diet, infant growth and later disease susceptibility.