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The Health Effects of Antenatal Multiple Micronutrient Supplementation in Nepalese Children

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Conference Abstract

ABSTRACT

Objectives: In low- and middle-income countries, prenatal multiple micronutrient supplementation has been shown in meta-analyses to increase birthweight and reduce the proportion of babies born small-for-gestational-age, but the longer term effects are unclear. We examined phenotypic and health differences between children born to mothers in a randomized controlled trial of prenatal multiple micronutrient (UNIMAPP) supplementation compared to iron and folate.

Methods: The study was conducted in Dhanusha district, Nepal. We measured anthropometry, body composition using bioelectrical impedance (with population-specific isotope calibration), blood pressure, kidney dimensions by ultrasound, and spirometry. Health outcomes were recorded in questionnaires. Personal estimates of air pollution exposure (particles of less than 4 micrometers in size) were produced by microenvironment sampling.

Results: We saw 841 children (80% of total), at a mean age of 8.5 years. The unadjusted mean (95%CI) difference (intervention minus control) in weight-for-age was 0.05 z-scores (-0.09,0.19), in height-for-age 0.02 z-scores (-0.10,0.15) and in BMI-for-age 0.04 z-scores (-0.09,0.18). Similar results were obtained from multi-variable regression analysis. No difference was found in body

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composition, kidney size, blood pressure or lung function. In addition there were no differences in health outcomes between allocation groups.

Conclusions: Differences that were previously seen in phenotype and blood pressure at birth and at two years in children born to mothers who received antenatal UNIMMAP supplements were not apparent at 8.5 years of age. While not ruling out physiological differences and health benefits in adulthood, our findings do not suggest sustained effects of antenatal micronutrient supplementation.

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