

Diet inflammatory index in pregnancy is not related to offspring asthma and/or wheeze or pro-inflammatory cytokine and chemokine levels at birth.

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Abstract

Background Two studies examining the association between maternal diet inflammatory indices (DII) during pregnancy and offspring asthma and/or wheeze have shown either no effect, or increased risk. Neither study investigated a biological pathway for the association. We examined the association between maternal DII and risk of offspring asthma and/or wheeze, and sought to determine whether cord sera cytokines/chemokines might connect maternal DII with offspring risk. **Methods** Analysis included 1228 dyads in Healthy Start, a prospective prebirth cohort from Colorado. DII scores were computed for each mother based on repeated 24-hour dietary recalls during pregnancy. Child diagnosis of asthma and/or wheeze up to four years was obtained from electronic medical records. For a subset of participants, cord sera was analyzed for five cytokines and two chemokines. **Results** Unadjusted analyses showed positive association between maternal DII scores and child asthma and/or wheeze by 4 years (OR = 1.17; 95% CI: 1.07, 1.27), but the association was attenuated and no longer significant in adjusted models (OR = 1.13; 95% CI: 0.99, 1.28). There were no significant associations between cord sera cytokines/chemokines and child asthma and/or wheeze. There were no significant associations between DII scores and any cytokine or chemokine measured. **Conclusion** Our study showed that the inflammatory profile of the maternal diet was not significantly associated with offspring asthma and/or wheeze or cord sera cytokines and chemokines. Although the maternal diet in pregnancy seems an obvious biological target for asthma and/or wheeze prevention, factors other than the inflammatory profile need to be investigated.

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