



RESPONSE TO COMMENT ON KULKARNI ET AL.

Maternal Lipids Are as Important as Glucose for Fetal Growth: Findings From the Pune Maternal Nutrition Study. *Diabetes Care* 2013;36:2706–2713

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We thank Sahoo et al. (1) for their interest in our article (2) and for their comments. Our study did not show an association between HDL cholesterol levels and birth size (2). Sahoo et al. allude to three articles (3–5) that suggest that our findings are unusual. However, we believe our results are compatible with these studies. In the study by Misra et al. (3), there was an inverse relationship between HDL cholesterol and birth weight only in overweight/obese women (i.e., BMI >25 kg/m²). In our study, the average BMI was ~18 kg/m², and this may explain the lack of an association. In the study by Clausen et al. (4), an inverse association was reported between HDL cholesterol and macrosomia (defined as birth weight >4,500 g or >95th centile), where birth weight was considered as a dichotomous variable. The average birth weight in our study was ~2,700 g, and there was no baby who weighed over 4,500 g. In the study from India by Mitra et al. (5), mothers of large-for-gestational-age babies had lower HDL cholesterol compared with appropriate-for-gestational-age babies. Again, this relationship was observed with birth weight as a dichotomous variable. Moreover, this relationship disappeared when adjusting for other potential confounders in a multivariate analysis where maternal BMI remained the only predictor of newborn size. The small

sample size ($n = 50$) is one of the limitations of this study, and the timing of the lipid measurements is not clear (5). Our measurements were made at both 18 and 28 weeks; the study by Misra et al. (3) measured lipid levels serially through pregnancy, while Clausen et al. (4) measured lipids at 17–19 weeks.

Our study was performed between 1993–1996, similar to the time frame of Clausen et al. We have continued to follow up the birth cohort, which has allowed us a unique opportunity to undertake a lifecourse analysis of the effect of maternal lipids during pregnancy on offspring outcomes at 18 years. We have already started examining the effect of maternal metabolism during pregnancy on offspring outcome characteristics during childhood, adolescence, and young adulthood. We hope to submit a manuscript in due course. We believe ours is the first study to prospectively collect data on the influence of maternal nutrition and metabolism during pregnancy on offspring outcomes adopting a lifecourse approach. Our findings will have significant implications for the understanding and management of lipid levels during pregnancy.

Finally, we fully agree with Sahoo et al. (1) in supporting large-scale studies investigating the influence of maternal lipids on newborn size and future

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outcomes in different populations/ethnicities across the range of BMI.

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