Letter to the Editor

Evaluation of fatty acids in pregnancy: plasma or erythrocyte membrane?

To the Editor,

We are interested to read the article by Nisha S. Wadhwani and colleagues (Wadhwani *et al.* 2013) published in *Maternal & Child Nutrition*. In their prospective analysis, the authors examined maternal fatty acids, micronutrients and homocysteine and their association with birth outcomes, which was a valuable addition to the current literature.

We have special interest on the maternal fatty acids and would like to comment on the methods used to measure fatty acids in this study. In their study, Wadhwani *et al.* (2013) measured plasma fatty acid concentration at three time points during pregnancy (T1 = 16th–20th week, T2 = 26th–30th week and T3 = at delivery) with gas chromatography.

Fatty acids can be measured in various blood fractions and tissues, e.g. plasma or serum, erythrocytes and adipose tissue. We argue that measurement in erythrocytes better reflects long-term dietary fatty acid intakes than plasma or serum. The half-life of erythrocytes is 120 days, which is much longer than that of plasma lipoproteins (Sun *et al.* 2007). Whilst fatty acids in serum or plasma may reflect intake over the past weeks, erythrocytes reflect intake over the past months (Katan *et al.* 1997). Therefore, it has been suggested that fatty acids in erythrocyte membrane may offer a better objective measure than fatty acid measured in plasma, which reflects a shorter term intake (Fuhrman *et al.* 2006). We believe our brief comment, comparing the measurement of fatty acids in plasma to erythrocyte membranes, contributes to

the quality of this valuable article and serves as a future reference for similar studies.

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