Reviewer’s report

Title: Association between plasma phospholipid saturated fatty acids and metabolic markers of lipid, hepatic, inflammation and glycaemic pathways in eight European countries: a cross-sectional analysis in the EPIC-InterAct Study

Version: 0 Date: 25 Aug 2017

Reviewer: Rozenn Lemaitre

Reviewer’s report:

The study is a large cross-sectional study of plasma phospholipid saturated fatty acids and several metabolic markers. The associations were investigated in 8 European countries and pooled by meta-analyses. Clear differences in the associations of SFA with metabolic markers were observed; and evidence of stronger associations in alcohol drinkers and higher BMI is provided. The study with its large sample size and markers from several pathways adds significantly to the existing literature. Inclusion of all SFAs provides interesting comparisons.

The cross-sectional nature of the study findings will require validation in prospective settings. This point needs to be made more clearly.

The study population was a random cohort nested within 8 countries, without prevalent diabetes. There is no indication of other medical conditions. Prevalent conditions such as heart disease, cancer, liver and kidney diseases may influence circulating SFAs, directly or through changes in lifestyle. It would be best to exclude participants with these diseases from the study.

A descriptive table showing demographics, circulating SFAs and levels of metabolic markers in the 8 study populations would be useful; possibly instead of Table 1 which is not particularly informative.

Correlations between the SFAs would be informative too.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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I am able to assess the statistics

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