Reviewer's report

Title: Urinary concentrations of phthalate biomarkers and weight change among postmenopausal women: A prospective cohort study

Version: 1 Date: 25 Jan 2019

Reviewer: Elizabeth Hatch

Reviewer's report:

The authors have done a reasonable job with the revisions, nevertheless, I am still concerned about some issues. The statement that multiple imputation leads to greater statistical imprecision does not seem correct. Multiple imputation is the gold standard for dealing with missing values in epidemiologic research. Based on the numbers given in the paper, slightly more than 20% of the total population were excluded due to missing values (997/1257)—not a trivial amount and slightly higher than the subset that they compared models for—997 vs 1187. Given all the other potential sources of error (primarily exposure measurement error), it might be a good idea to be as careful as possible with other aspects of the analysis. This is especially true because they state that there are differences between those with missing values and those without although they don't present data to allow the reader to determine how big a problem this might be for the results.

I find the numbers of participants and who is included/excluded quite confusing. A flow chart (also showing the three time points of the study) would help with greater clarity. The response mentions that 67 controls did not participate in the year 6 follow-up. Were these excluded from the cross-sectional baseline analyses as well?

Also, I believe that phthalates are found at higher levels in certain foods such as meat and dairy, and it does seem possible that HEI would not fully control for these individual characteristics of diet. See Serrano SE et al, 2014 in your own journal: "DEHP exposure estimates based on typical diets were 5.7, 8.1, and 42.1 μg/kg-day for women of reproductive age, adolescents and infants, respectively, with dairy as the largest contributor to exposure. Diets high in meat and dairy consumption resulted in two-fold increases in exposure."

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