Reviewer's report

Title: The weight of nations: an estimation of adult human biomass

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Reviewer: Kevin Hall

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The manuscript by Walpole describes an interesting implication of the obesity epidemic on the food requirements of nations. The main idea is that national food energy requirements are primarily determined by the total biomass of the population rather than the population alone. The analysis is interesting, but I have serious concerns that need to be addressed prior to publication.

Major Compulsory Revisions

1. The most serious issue is that not all biomass has the same energy requirements. For example, an obese 110 kg adult woman does not require the same amount of daily energy to maintain her weight as two non-obese 55 kg women. Rather, a reasonable rule of thumb is that 100 kJ/d additional energy intake is required to maintain each additional kg of body weight for sedentary adults (Hall et al. Lancet 2011;378:826–37). I strongly suggest that the authors recalculate the implications of obesity using this rule of thumb.

2. Secondly, it should be clarified that the calculation of mean BM on page 4 requires a zero covariance between BMI and height squared. Although this may have been demonstrated in limited numbers of subjects, it is not known to be universally true across human populations. The authors should check this assumption.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests