Reviewer's report

Title: Increased waist circumference is independently associated with hypothyroidism in Mexican Americans: Replicative evidence from two large, population-based studies

Version: 1 Date: 29 May 2014

Reviewer: Adrian Cameron

Reviewer's report:

I have reviewed the authors' response to the reviewer comments and in general, they have done a very good job with their resubmission. I do, however, have one additional comment that I think the authors could consider before this is suitable for publication:

- in response to the author arguments regarding which waist circumference cut-points should be used, although I am comfortable with them using the cut-points as presented in the paper, I think the rationale for this should be included in the methods. On this topic, I do not agree with some of the points made in their response on this topic:

  Re point #1 - in relation to the paper by Alberti et al, the table of cut-points presented in that paper is a summary of those used in different countries AND for different ethnic groups. The text of the paper states "One key question is whether the same criteria should be applied to someone of a particular ethnic group regardless of their country of residence. This would be logical." Therefore, even though the US cut-points are often used for the whole of the US population, this is not the recommendation of the Alberti paper.

  Re point #2 - there is no doubt that Mexican Americans are a part of the population of north America. Ethnicity does not confer risk based on geography, however, but based on genetics and culture. This is the reason that the Alberti paper makes it clear that it is preferable where possible to consider ethnicity rather than country of residence as the criteria for choosing cut-points.

  Re point #3 - decisions on the use of cut-points should not be based on current prevalence. Just because a large percentage are classified as at-risk does not make a cut-point wrong. If 100% of a population was at risk, the cut-point is not wrong, but the whole population is at risk.

  Re point #4 - Knowing that a very large proportion of the population is at risk, I would have said is particularly epidemiologically informative. While this may introduce statistical issues, I don't consider it a rationale for the choice of which cut-points to use (this should be based on risk).

  Re point #5 - Just because there is a precedent doesn't make it right.

As I said earlier, if the authors want to use the higher cut-points, that is their call. I think, however, that this should be listed as a potential limitation and discussed
in the methods since the difference between the cut-points is non-trivial.