Reviewer's report

Title: The Impact of Waist Circumference on Function and Physical Activity in Older Adults: Longitudinal Observational Data from the Osteoarthritis Initiative

Version: 3
Date: 19 June 2014

Reviewer: Manfred Stommel

Reviewer's report:

I am not sure what to make of the authors’ response. The authors keep stating that central adiposity is an important (unique) predictor of the quality of life outcomes, but they DON'T SHOW IT with their data. They simply substitute WC for the BMI and find that WC is as good a predictor of quality of life outcomes as the BMI. To say that “not considering WC may ignore a considerable sample of subjects at otherwise risk of adverse outcomes” is a CONJECTURE, but not a conclusion based on the EVIDENCE PRESENTED HERE. In the manuscript (p. 14), the authors claim: “It is likely that abdominal adiposity places a disproportionate burden on the musculoskeletal system that limits overall mobility, and have independently confirmed its association with physical limitations in subjects with normal BMI [Batsis submitted].” If you have confirmed this in another (not yet accepted/published) paper that you claim overlaps with this one, what is the contribution of THIS paper? Again, just substituting the WC measure for the BMI and not finding it to be a better predictor does not warrant your conclusion that targeting patients with high WC, instead of high BMI, yields an extra pay-off.

As to the point about the non-linear relationship between physical activity and the continuous WC, I don’t agree with the statement that the “clinical interpretation of polynomial regression analysis is a rather difficult process and would be markedly compromised (?).” However, I am willing to give the authors the benefit of the doubt here.

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'