Reviewer's report

**Title:** Body composition and cardiovascular risk factors in a cohort of young Australian men: a cross sectional study

**Version:** 1 **Date:** 17 April 2013

**Reviewer:** Dan S Sharp

**Reviewer's report:**

1. Is the question posed by the authors new and well defined?

The question is not new, although the authors adequately define the conceptual question in the very last sentence of the Introduction.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work?

Most methods are well described and sufficient to replicate the work. However, this is not the case for DEXA measurements. In addition, there is evidence that indexes which take into account stature do a better job of controlling for misclassification of obesity than BMI or percent fat-mass (Kelly TL, Wilson KE, Heymsfield SB. 2009. Dual energy X-ray absorptiometry body composition reference values from NHANES. PLoS One 4:e7038.) This concern casts concern on how the two groups—lean and overweight—are formed.

The BP measurement seems to be a single assessment without standardization common to laboratory and epidemiological studies; e.g., three measurements preceded by a resting period and at least five minutes between measurements.

The use of two difference technologies for the RMR measurements is potentially a major problem. There is no description of what was done, or could be done, to compensate for the stated and known difference between methods. For example, were more subjects in the “lean” group measured with one technology than the other, thus creating a bias caused solely by the measurement system? With a difference in means in RMR between the two groups of ~140 kCal, how much of this is due to measurement bias? Were a subset of subjects measured on both devices; and if so, how do measurements compare?

The use of the word “cohort” and “cross-sectional” in the title of this paper is misleading. These are terms commonly used to identify large groupings from a defined population—usually geographical—with a defined strategy to recruit from this population into a sampling frame. There is no description of how these 35 young men came to be part of the study, and the concern is whether some type of selection bias could be driving the recruitment with the a priori hypothesis influencing selection. Were athletes recruited to identify the lean group, while the overweight group is selected from known “couch potatoes”? In addition, a common problem in modern day observational studies is advertising the
hypothesis, a reliance on volunteerism, and resultant statistical associations being driven by selection biases. To what extent could some of the statistical associations being reported result from such a selection process, and to what extent could such associations be consistent with biology or with bias?

The aforementioned comments should be construed as "Major Compulsory Revisions"

3. Are the data sound and well controlled?
   See preceding concerns detailed about methods.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
   How results are reported appear to be straightforward and without dissimulation.

5. Are the discussion and conclusions well balanced and adequately supported by the data?
   There is no discussion of the potential limitations of this study, which are potentially noteworthy as detailed in preceding sections. Too much of a stretch is being made in trying to cover almost every aspect of CV risk. If the aforementioned methodological concerns can be adequately addressed, this paper would be much better as a focused effort on the MUFA results. This concern falls under "Major Compulsory Revision."

6. Do the title and abstract accurately convey what has been found?
   No. See preceding concerns.

7. Is the writing acceptable?
   The writing is excellent, with no suggestion of English as a second language or major difficulties in communication of either overarching concepts or specific detail.

   **Quality of written English:** Acceptable

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

   **Declaration of competing interests:**

   No competing interests.