Reviewers report

Title: Improvements in vascular health by a low-fat diet, but not a high-fat diet, are mediated by changes in adipocyte biology

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Reviewer: Todd Rideout

Reviewers report:

Manuscript title: Improvements in vascular health by a low-fat diet, but not a high fat diet, are mediated by changes in adipocyte biology

Author: Krista A. Varady et al

Purpose of study: The authors conducted a controlled dietary intervention to examine adipokine profile in mediating weight loss associated changes in vascular function following consumption of either a low or high fat diet. The study rational is clearly defined and the research is of high priority given the link between obesity and cardiovascular outcomes.

Strengths: A major strength of the research design compared with previous studies is the use of a compliance-controlled dietary intervention. This design removes much of the uncertainty associated with free-living research studies.

Limitations: Although changes in arterial function were associated with plasma adipokine profile, it is also likely that the observed changes in plasma lipid profile in subjects consuming the low fat diet may have contributed to improved vascular function. The authors are encouraged to include an examination of the association between plasma lipids and vascular function.

Conclusion: The manuscript contributes substantially to our understanding of adipocyte metabolism and vascular health and is of particular relevance to researchers and clinicians seeking to understand the relationship between obesity and cardiovascular disease progression.

Major Compulsory Revisions

P2, L36 - Increased FMD by the LF diet was ‘related to’ increased adiponectin….Would prefer the phrase ‘associated with’ here and throughout manuscript to underscore that this is an association rather than a cause and effect scenario.

Why was there such a discrepancy between the dietary fiber content between the low and high fat groups? Do the authors believe that this may have contributed to changes in arterial function?

Was the FMD measurements taken on day 1 used as a covariate to examine changes in arterial function at the 6 week period?

Were changes in plasma lipid profile associated with FMD outcomes? This
should be addressed within the discussion.

Minor Essential Revisions
No minor revisions to report

**Level of interest:** An article of importance 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