Reviewer’s report

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

Version: 1 Date: 28 November 2010

Reviewer: David Katz

Reviewer’s report:

Major Compulsory Revisions

NONE

Minor Essential Revisions

1) THE PAPER, WHICH IS EXCELLENT OVERALL, HAS A FEW IMPORTANT DEFICIENCIES. WHILE THE DIETARY INTERVENTIONS ARE DESCRIBED WITH REGARD TO MACRONUTRIENT DISTRIBUTION, THEY ARE NOT DESCRIBED IN TERMS OF FOODS. AN ORIENTATION TO WHAT KINDS OF FOODS WERE BEING CONSUMED WOULD BE HELPFUL. RELATED TO THIS IS THE FACT THAT NOT ALL LOW-FAT NOR HIGH-FAT DIETS ARE CREATED EQUAL, AND THUS THE AUTHORS OVERREACH IN SUGGESTING THAT EFFECTS SEEN HERE ARE GENERALIZABLE TO LOW-FAT VS HIGH-FAT. IT MAY BE THAT PARTICULAR APPROACHES TO LOW VS HIGH-FAT ARE GERMANE- THIS WARRANTS DISCUSSION, AND ACKNOWLEDGMENT AS A LIMITATION.

2) ANOTHER ISSUE IS THE SMALL SAMPLE SIZE, WHICH PROVIDES VERY LIMITED STATISTICAL POWER. THIS IMPOSES A RISK OF TYPE 2 ERROR, AND THUS IS NOT A PROBLEM WITH SIGNIFICANT RESULTS. IT IS A PROBLEM, HOWEVER, FOR NON-SIGNIFICANT RESULTS. AT A GLANCE, ONE SEES DIFFERENCES BETWEEN THE TWO GROUPS AT BASELINE- INCLUDING THEIR FMD- WHICH ARE DISMISSED AS 'NON SIGNIFICANT.' THIS LACK OF SIGNIFICANCE MAY MERELY BE A LACK OF STATISTICAL POWER, AND SHOULD BE ACKNOWLEDGED AS SUCH- AND THUS A STUDY LIMITATION. OF NOTE, LOWER FMD IN THE LOW-FAT DIET GROUP AT BASELINE RAISES THE PROSPECT THAT STATISTICAL REGRESSION EFFECTS CONTRIBUTED SOMETHING TO THE RESULTS OBSERVED.

3) A FINAL COMMENT HERE: THE ABSTRACT BOLDLY ASSERTS THAT WEIGHT LOSS WITH BOTH LOW-FAT AND HIGH-FAT DIETS IMPROVE ENDOTHELIAL FUNCTION, BUT THE PAPER DOES NOT SUPPORT THIS STATEMENT, SUGGESTING INSTEAD THAT RESULTS IN THIS AREA CONFLICT. THE OPENING LINE OF THE ABSTRACT SHOULD BE REVISED TO CONFORM WITH THE BODY OF THE PAPER.

Discretionary Revisions
I NOTE HERE THE MINOR TYPOGRAPHICAL ERRORS I DISCERNED:

p. 10, line 195- ‘to’ is missing
p. 15, line 303-304, missing ‘in’

p. 15, line 320, ‘resistin’ is misspelled

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.