Reviewer's report

Title: Heritability and genome-wide association analysis of renal sinus fat accumulation in the Framingham Heart Study

Version: 1 Date: 10 June 2011

Reviewer: Adebowale Adeyemo

Reviewer's report:

The manuscript describes a study of the genetics of renal sinus fat in the Framingham Study (Offspring and Third Generation). Nearly 3000 subjects were studied, with 2946 used to estimate heritability and 2809 in a genome wide association study (GWAS). Validated SNPs for related traits (renal function, body mass index and waist-hip ratio) were also tested for association with renal sinus fat. Heritability of the trait was 39%; however, no SNP reached genome wide significance and none of the variants in the candidate gene study remained significant after adjusting for multiple comparisons. The study was well-designed and the methods clearly described. The results were presented appropriately and the conclusions are supported by the data.

There are two minor but essential issues that should be addressed by the authors:

1. What was the power of the study? The authors state that the study was underpowered, however no statements were made about the effect sizes the study is powered to detect given the sample size and specific assumptions about allele frequencies and genetic model.

2. What were the findings of linkage analyses or family based association tests (which test linkage and association)? It would be useful to compare these with the findings of the GWAS.

Level of interest: An article whose findings are important to those with closely related research interests

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