Reviewer’s report

Title: Genetic pathways influencing breast size are shared with breast cancer

Version: 1 Date: 18 January 2012

Reviewer: Amanda Toland

Reviewer’s report:

The study by Eriksson et al. of the company 23andme reports the results of a GWAS to look for genetic markers associated with breast size. They report 4 SNPs that meet genomewide significance, all of which are near genes previously reported to be associated with breast cancer or estrogen metabolism. Whereas the results of this study are very intriguing there are some details regarding methodology that need clarification.

Major compulsory revisions:

In addition to cup size, the study collected information on breast cancer status, age height, weight, and bra band size. The authors are missing some details on study inclusion and exclusion. There is an unstated assumption that none of the women included in this study were pregnant or breast-feeding or had breast augmentation or reductions. If this information was collected and individuals were excluded from study for any of these (or other) reasons this should be made clear. If this information was not available then the authors should mention these possible confounders to breast size.

There does not appear to be much of an additive effect of the four SNPs given a 0.93 cup size difference between ladies with none versus 5-8 of the “large” snps. The authors should comment on this.

What was the result of the rs9397435 SNP and cup size in the people who were not typed for the rs9397436 SNP?

Minor essential revisions:

The authors should include a description of what the * mean in Figure 1.

Discretionary revisions:

The authors allude to previous studies about breast size and breast cancer risk. They should include information in their population if there was any evidence of breast cancer risk based on breast size and if this associates with any of the four most significant SNPs in this study.

Level of interest: An article of importance in its field

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.