Reviewer's report

Title: Blood spot collection as an alternative for participation in genetic association studies

Version: 1 Date: 13 February 2009

Reviewer: Liz Milne

Reviewer's report:

- Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

1) There appear to be 2 aims: 1) to see whether blood spots can be used to increase DNA collection in people who don't want a venepuncture, and 2) to see whether the incentive makes a difference. However, these have not been clearly stated anywhere in the paper. The aims should be clearly stated in the Introduction, the Abstract and reflected in the Title. Also, the Results should be presented in a way that reflects these explicit aims. Not doing so detracts from the clarity of the paper.

2) The numbers of subjects in the Study Population paragraph (p4) don’t add up to the totals given – please correct.

3) It is sufficient to state the %s or means and the p-value for the appropriate statistical test, or odds ratios and their confidence intervals. It is not necessary to make statements about ‘statistical significance’ as though this was a binary concept. It is the magnitude of the effect measure or difference in means / %s between the groups that is central to determining the importance of any observed association.

4) Is collection of blood spots, whereby the subject has to use a lancet to draw blood, really ‘minimally invasive’? (p3) This should be addressed in the Discussion, and compared with the ‘invasiveness’ of venepuncture.

5) The Discussion is very limited and needs to be strengthened in several areas, including a more complete description of the study’s limitations.

6) The first sentence of the final paragraph of the Discussion has not been substantiated in the paper. The study has shown that blood spots may be a feasible method for blood collection when venepuncture is not possible. However, the authors need to comment on two important issues relating to this. Firstly, how generalisable are the results to the wider population, given that this study was conducted in a cohort of non-Hispanic female radiographers? Secondly, what quantity of DNA was collected and what could it be used for? What were its limitations?

7) Could the ‘brief questionnaire’ sent out with the blood spot card have
influenced the response fraction? This should at least be addressed in the Discussion.

8) It would be useful to present the participation fractions for the main breast cancer case-control study, and what % (as well as the number) of these women declined to provide a blood sample by venepuncture.

9) The Journal requires a structured abstract, but this requirement has not been complied with. The authors should also ensure that their References and Section titles conform to Journal requirements.

- Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

10) When describing the results, it is not clear why the authors have presented percentages and chisquare p values in the text, but odds ratios in the Table referred to in the text. There is no mention of odds ratios in the results section.

11) There are several unnecessary spaces (eg. p4 line 4 and 3rd last line) that need to be removed.

- Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

12) Table 2 adds little to the paper and could be deleted.

13) I would prefer to see the term ‘fraction’ used for response, as it not really a ‘rate’ (which involves a time component)

**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