Reviewer’s report

Title: Association Between Dietary Fat and Skin Cancer in an Australian Population Using Case-Control and Cohort Study Designs

Version: 2 Date: 11 February 2006

Reviewer: André Nkondjock

Reviewer’s report:

General

This is a well-writing paper on the possible association between dietary intake of fat and skin cancer risk. This case-control study involved 652 cases of melanoma or non-melanoma skin cancer and a common set of 471 population-based controls. The authors report a statistically significant 36% risk reduction of melanoma associated with dietary fat. However, the manuscript suffers a number of limitations, including the fact that the abstract does not accurately convey what has been found as well as a lack of consideration for energy intake and stage of the disease in the attempt to confirm the findings with prospective data.

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

1) Abstract. Page 2. The authors reported the ORs of 0.70 and 0.69 that are not shown in Table 2. In the conclusion, they should state their main finding that is the significant risk reduction of cutaneous malignant melanoma related to dietary fat.

2) Page 3; 2nd paragraph. What was the stage of the disease? Please clarify.

3) Page 3; 3rd paragraph, line 3. Although the authors did cite reference 19, the reader should know how both skin phenotype and sun sensitivity were measured.

4) Page 5; 3rd paragraph. It is quite surprising that dealing with dietary fat, the authors did not consider energy intake since these 2 macronutrients are highly correlated. The authors should address this issue.

5) Page 6; 2nd paragraph, lines 2-4. … the controls had higher sex-adjusted mean score for dietary fat intake …. The authors did give some data for male and female in Table 1. Where does sex-adjusted mean score come from? Please justify?

6) Page 6; last paragraph. In a case-control design, cut-points for the independent variable of interest are based on the repartition of that underlying variable among controls. The authors did argue that each category contains about one-third of the data. I do not see the same thing in Table 2. Please clarify!

7) Page 7; 1st paragraph, line 4. Could the authors tell how usual sun exposure was measured?

8) Page 7; 1st paragraph, lines 5-6. Higher waist-to-hip ratios …. reduced risk of BBC (p<0.01). This is not shown in your tables. What were the ORs?
9) Page 8; 1st paragraph. I cannot find any consistency from data based on the same study population. The last sentence should be removed.

10) Page 9; last paragraph, lines 10-12. Data on socioeconomic status and sport participation are not shown. Where does this claim come from?

11) Page 10; 1st paragraph. This speculation does raise the necessity of considering other nutritional factors, at least total energy intake in the analysis.

12) Page 10; last paragraph. Again, it is surprising that the authors do not conclude their work based on their main finding. Are they testing the null hypothesis that there is no association between fat intake and the risk of melanoma and non-melanoma skin cancers?

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

Page 3; 1st paragraph. It should be mentioned why the remaining 9.9% of eligible CMM cases, 11.8% of eligible BCC cases, 12.9% of eligible SCC cases and 19.3% of eligible controls did not respond.

Page 5; 2nd paragraph. While it does make sense to consider the date of interview as initiating date for the control group, it is not clear how the initiating date was set for the cases. Was the stage of disease taken into account?

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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests.