Reviewer's report

Title: Socio-economic class, rurality and risk of cutaneous melanoma by site and gender in Sweden.

Version: 1 Date: 21 August 2007

Reviewer: Adele Green

Reviewer's report:

General

The association between Socio-economic class and incidence of melanoma is of interest to public health in a practical way if it is able to shed light on causation mechanisms and/or prevention. The authors have therefore set out to explore two possible effect modifiers of the association, rurality of residence of people affected and anatomic site of the melanoma. These questions potentially could yield some useful information but the present paper had several limitations, the chief ones being that the methods were one step removed from the nominal aims of the study, and that their results and interpretation did not really add any truly new insights and were in fact rather circular.

Title: Socio-economic class was measured by a proxy, namely occupational sector in registered group data. While this may be satisfactory for hypothesis generation, it is a blunt tool for exploring finer points of the association being aimed at here, which normally required individual level data to be studied to get a true measure and thus understanding of the influence of Socio-economic class. eg -one of the main reasons for the study was to give new insights about the association in women, but occupational sector is a much poorer indicator of Socio-economic class status in women than men, especially 35 years ago when at baseline status was determined for this study.

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

Introduction: For questions of effect modification, specific hypotheses should be stated that can are testable and can yield answers within the Swedish population. As it is, the research question is introduced and justified in a very superficial and non-specific way.

Methods:

As I understand it, occupation and residence in 1970 was assumed to be valid representation of both for all subjects, and furthermore they were assumed to be unchanged for the follow-up of subjects, to a maximum of 19 years later. There needs to be some exploration and presentation of the change of both occupation and residence over the study period. If this is material for either sex then this
needs to be taken account of in the analysis.

-The study period and study population: The study period was 1970 to 1989. How relevant are the findings today, 20 to 30 years later? Also the homogeneity of the Swedish employed population may have been a very large disadvantage in that the range of sex-specific outdoor behaviours would not be generalisable to many populations around the world. It would be helpful for the authors to discuss the relevance and generalisability of the data presented to melanoma in the Western world at present.

Results:

Many of the occupational sector ("Socio-economic class") gradients described were not gradients but rather dichotomous level of association with melanoma ie 0-III (professionals and sales workers showing similar levels of risk) vs IV-IX. The authors need to discuss this and show trend tests if they are claiming gradients exist in table 1 data.

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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)

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Discretionary Revisions (which the author can choose to ignore)