Reviewer's report

Title: A Case-Control Study of Occupational Magnetic Field Exposure and Alzheimer's Disease: Results from the California ADDTC

Version: 1 Date: 11 July 2006

Reviewer: Hans Kromhout

Reviewer's report:

General

This paper describes a case-control study on MF exposure and Alzheimer's disease. As such an important topic, but the way the authors have decided to report it is very unusual. On the one hand the manuscript dealt with the description of a case-control study and on the other hand the manuscript is a review of the literature (see Discussion) written on this subject. I think the authors should decide to do the one or the other. If they decide to report the case-control study, the description of the selection of cases and controls, the exposure assessment and the analyses performed should be described in much more detail.

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

1. The description of the selection of the cases and controls (on page 6) is unacceptable. The authors should present the criteria used and the response achieved. It is very unusual in hospital-based case-control studies to have so few controls relative to the number of cases. Make clear why this was the case and discuss what the consequences of this for the outcome of the study might have been.

2. From table 3 it is pretty obvious that cases and controls were not at all comparable with regard to sex, age distribution, ethnicity, education and income. Simple statistical adjustments are by far insufficient, also taken into account the unusual low number of controls. The least the authors should do is to present stratified analyses by sex, age category, ethnic group etc.

3. The choice for a very simple MF exposure characterisation is unsatisfactory, especially in the field of MF exposure where a lot of detailed measurement information is available. Why wasn’t a more quantitative approach chosen with for instance available quantitative JEMs?

4. Why were cases and controls reviewed for exposure by one of the authors if the only criterion was the job performed. If more information coming from cases and controls was used (like tasks performed, industry, etc.) to classify exposure this should be mentioned?

5. The discussion should be re-written and should be more focussed on the study performed. A entire review of the literature is not warranted.

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

What next?: Reject because scientifically unsound

Level of interest: An article of limited interest

Quality of written English: Acceptable
Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests