Reviewer's report

Title: Postmenopausal hormones and sleep quality in the elderly: a population based study

Version: 1 Date: 24 August 2009

Reviewer: Nathaniel Marshall

Reviewer's report:

1. Is the question posed by the authors well defined? Y
2. Are the methods appropriate and well described? Y
3. Are the data sound? Y
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Y
5. Are the discussion and conclusions well balanced and adequately supported by the data? Y
6. Are limitations of the work clearly stated? Y
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? See below
8. Do the title and abstract accurately convey what has been found? Y
9. Is the writing acceptable? Y

This is an excellent study, thoroughly analysed and appropriately interpreted. I have only two minor suggestions with regard to interpretation that the authors may want to incorporate?

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

1. Do the authors want to comment on the potential confounding effects of sleep apnea and the findings of Bixler et al AJRCCM 2001, Young et al 2003, Shahar et al AJRCCM 2003 and perhaps Woodward &Freedman SLEEP 1994? The last reference may not be relevant for hot flashes as you state in the discussion. However, the possibility of an HT effect on sleep apnea coupled with the potential problems of interpreting actigraphy when substantial OSA is present (Wang et al J Clin Sleep Med 2008) might be worth a mention?

2. One of the key issues that was raised by the differences between the clinical cohorts and the clinical trials of HRT was that of uncontrolled confounding by socioeconomic status. When I read that former use of HRT was associated with better sleep this was the first thing I thought of. HRT is associated with higher SES and higher SES people have better sleep and SES is not completely captured by the available education and race measures (particularly for women of this generation education may not have been a measure of SES). Do you want
to briefly discuss this potential reason for your findings in the paper?

**Level of interest:** An article of importance in its field

**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