Reviewer's report

Title: Relationship between daily isoflavone intake and sleep in Japanese adults: a cross-sectional study

Version: 1 Date: 12 April 2015

Reviewer: Peter Celec

Reviewer's report:

Summary

This is a very interesting large association study. The results should be published, but the interpretation must be corrected.

Major issues

1. The authors should not forget that association does not necessarily mean causation - the conclusions should contain the warning that experiments and interventional studies must be conducted to see whether there is a causative association between phytoestrogen intake and sleep.

2. What could be the mechanisms? The authors report on the positive effects of estrogens, but phytoestrogens have low estrogenic activity only in men and postmenopausal women. In premenopausal women in an environment with high estradiol phytoestrogens act as antiestrogens.

3. Was there an interaction between sex, age and phytoestrogen intake?

4. There are studies published showing that soy intake has endocrine and cognitive effects. This has to be taken into account and mentioned at least in the Discussion.

5. In addition, sleep quality could have an effect on sex steroids, although studies show controversial results. This has to be mentioned as well. The direction of the causation might be opposite as sometimes shown with CPAP treatment of sleep apnea.

6. According to the methods blood was taken and analyzed - why were the isoflavones not measured? why was estradiol not measured?

7. Differences were found between the groups in vitamin intake - why were these differences not discussed in detail?

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

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