Reviewer's report

Title: Secular trends in age at menarche and time to establish regular menstrual cycling in Japanese women born between 1930 and 1985: cross-sectional study

Version: 1 Date: 26 November 2011

Reviewer: Ken K Ong

Reviewer's report:

Major Compulsory Revisions

1. I am not aware of much evidence that women with regular cycles have higher estradiol levels than those without irregular cycles? See PMID:10770172. Possibly with undernutrition related amenorrhoea, but there are other causes of irregular cycles. This is a key tenet to their analyses and should be explicitly discussed and referenced.

2. Rather than indirectly conjecturing that the distribution of the age at start of ovulatory cycles has widened, the authors could directly calculate age at onset of regular menstrual cycles and explore how this variable and its variance directly changes with birth year.

- Minor Essential Revisions

3. While they present an impressive total sample size (n~48,000), the numbers born in the 1930s (n=106) and 1980s (n=278) are very small so in effect they study changes between 1940s and 1970s. For comparisons it would be better to select 1970s as the reference decade.

4. The associations between age at menarche and cancer risks are linear, so it is unclear why such a rare high risk group needs to be defined by menarche by 10 years and regular cycles within one year.

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'