Reviewer's report

Title: Macular Thickness Measurements in Healthy Norwegian Volunteers: An Optical Coherence Tomography Study.

Version: 1 Date: 4 February 2010

Reviewer: Mitra Sehi

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Review for BMC Ophthalmology
Re: 'Macular Thickness Measurements in Healthy Norwegian Volunteers: An Optical Coherence Tomography Study.' Alexandra Wexler, Trond Sand and Tor B Elsås

This is an interesting study that may provide insight toward the gender and age differences in macular thickness of healthy Norwegians. Research question is relevant and well defined. Title, abstract and writing style are clear. The authors have collected high quality data and applied good methodology. My only concern about methodology is that the authors used a low cut-off for scan quality, which they might address by answering the following questions. The main issue is that the Discussion is very weak. The authors have mainly restated the results in the Discussion instead of providing potential physiological reasons behind their results, and strong background evidence to support their findings.

Major compulsory revisions
• Methods, page 7. Signal strength (SS) of 3 has been defined as the cut-off. This is very low signal strength. Usually SS of 6 or higher are used for inclusion criteria, considering the fact that the participants of this study were healthy with good BCVA. Please provide the number of subjects/scans with SS of 3-5 and the number of subjects/scans with SS of 6 and above in the manuscript.
• Methods, page 8, last paragraph. These data belong to Results section. Please provide these data in a table and a summary of the table in the Results section.
• Methods, page 10. What posthoc analysis did you use with ANOVA to address the issue of multiple comparisons?
• Discussion, page 12. Please provide the reference numbers after Huang’s and Guedes’ names.
• Tables. Please provide the definitions of abbreviations clearly, separately and in order of appearance, in the captions of all tables.

Minor essential revisions
• Discussion. Why a significant interaction between region and parity was observed? Why parity has an impact but contraceptive does not? What is the possible physiology behind these findings? Please discuss properly.
• Discussion, page 13. Overall the Discussion is weak. It mainly restates the results; whereas it can provide great insight toward gender, hormones and macular thickness in Norwegians. You need to discuss the physiology behind aging, macular thickness and AMD risk factors. How and why it is more frequent in Norwegians? What do supporting literatures say? Why gender differences existed in all areas? Is it a hormonal effect, a chromosome dependent factor or something else? There is no proper discussion for why the mean foveal thickness was higher in parous women.

• Discussion, page 13, last paragraph. There are publications regarding estrogen and increased risk of macular hole; hormones and retinal thickness; contraceptive and macula; hormones and macular thickness and estrogen and AMD in PubMed. You may gain insight by reviewing these publications to enrich your discussion.

• Introduction, page 4: It has been stated that hormonal factors seem to be associated with ARMD and that the prevalence of early ARMD seems to be higher in the urban Norwegians. Is there any data/publication indicating earlier age of menopause in Norwegian women? Please include in Introduction.

**Level of interest:** An article whose findings are important to those with closely related research interests

**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 interest.