Reviewer’s report

Title: Reliability of retinal vessel calibre measurements using a retinal oximeter

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Reviewer: Wenzhong Liu

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Retinal vessel size measurement is very important for retinal disease detection, retinal blood flow, and retinal oxygen metabolic rate quantification and so on. In the paper,” Reliability of retinal vessel calibre measurements using a retinal oximeter”, the author compared the vessel size measurements between monochromatic photographs and oximeter (dual wavelength). The research is interesting. I have a few concerns.

1: The language expression in the manuscript needs major editing. I listed part of them as follows:

Page 3, line 38-41, “For example, decreased CRAE is associated with increased arterial stiffness in early-stage hypertension and has the potential to be a predictive marker for both, retinal arteriolar narrowing and arterial stiffness in regards to cardiovascular mortality and morbidity and could be useful for risk stratification of hypertensive (HT) patients” This sentence is too long and very misleading.

Page 3, line 48, “Each device is often developed with one or more markers in mind to assess”, I would suggest as: “Each device is developed to access one or more markers”

Page 3, line 47-48,”In recent years there has been a rapid increase in the number of devices available to image the human eye”, I would suggest as: “Recently, there has been an increasing amount of ocular imaging devices available”

Page 3, line 56-59, “While it is important for any device to obtain highly repeatable measurements this does not necessarily mean that the parameters calculated will show the same repeatability or even be in agreement with the same markers obtained using a different technique or software.”, I am really confused about this sentences, the author may need to rephrase it.

2: I would suggest the authors provide the sample fundus images, and indicate where they measured vessel diameters in fundus images. This will help readers to follow the manuscript.

3: What’s the resolution of the reported system? What’s the central wavelength for monochromatic photographs? Since different wavelengths have different aberrations in eye, will this influence the vessel calibre measurement in present study?

4: In the present study, the retinal vessel diameters were only measured by
single observer. This may not be enough, more observers should be involved.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**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