Reviewer’s report

Title: Clinical evaluation of error in saturation-readings taken through a skin-protective covering

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Reviewer: Alex Dullenkopf

Reviewer’s report:

The authors James et al present a study evaluating the accuracy of pulse oxymetry taken directly from the skin and taken through underlying skin-protective cover.

The general aim of the study, to show that the accuracy of pulse oxymetry is not influenced by the covering is understandable. However, there are some major drawbacks in methodology and presentation, which in my opinion prevent publication of the manuscript in the actual form.

General comments

The presentation of the manuscript seems somewhat sloppy, regarding typing errors, punctuation marks, formatting of references, page breaking, consecutive numbering of figures, presentation of figures...

As I’m not a native English speaker, I will not try to go into detail, but in my opinion, the language would profit from further editing.

The authors should also be consistent with terms such as pulse oxymetry or oxygen saturation readings.

Special comments

Introduction
If presenting materials, such as Micropore gauze, please specify all material correctly (exact type, manufacturer, country), as the reader should be able to re-do your experiments in exactly the same way. Please also specify the type of gauze used.

Materials and Methods
Was there no Ethics committee involved in planning and conducting the study? This would be sufficient to prevent publication. Otherwise, please specify.

Did the authors really do a test of repeatability? In my opinion, no. Because the so-called test-re-test measurements were taken from the opposite limb, which is not the same, as if just removing and re-applying the probes.

Statistical methods: How was the sample size determined? Please give details.
Please provide a definition for bias in your study.

The last sentence sounds as if Bland Altman suggested the interchangeability personally.

Results
As in the abstract, the authors should provide a maximum of 1 decimal, such as 0.1, not 0.0588), as the original measurement has no decimal at all.

The last para of this section belongs into the Methods section. Further, I do not understand, what "the absorbance was 1.97" means?

Discussion
The authors should try to get the Discussion section more structured, e.g. such as main findings-implications-literature comparison-conclusion.
I would be very carefully with introducing "novel use of the Bland Altman test...". My major point of critics is the conclusion. The authors state "Pressure necrosis can be minimized... However, they didn't even assess pressure necrosis etc. So this conclusion can surely not be held.

Table 1  
The legend should be improved and units should be provided.

Figures  
As the sd etc. are given in the text, it is not necessary to repeat this information in the figures.