Reviewer’s report

Title: Reproducibility and day time bias correction of optoelectronic leg volumetry: a prospective cohort study

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Reviewer: Robert J Damstra

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title: Reproducibility and day time bias correction of optoelectronic leg volumetry: a prospective cohort study

authors: Engelberger et al

Review:

General remarks.
The subject researched is very relevant: reproducibility of a measuring device for legs. A second outcome parameter is daytime variability in hairdressers. The question is well proposed, the methods are appropriate described. The limitations are clearly stated and the manuscript is relevant.

Some specific remarks:

As discussed and shown as limitation, only intra observer variability is studied. Why no inter observability, which give more strong information about the validity of this device.

Patients were seen by a vascular medicine specialist. The results of this consultation are mentioned as the “c” from CEAP. Is that correct? Ultrasound duplex scanning was not performed. What is the reason? We all know that duplex finding are essential in investigating venous insufficiency and especially when is focussed on edema, a more functional investigation is crucial. This item should be discussed and mentioned as limitation. see: Krijnen RM, de Boer EM, Adèr HJ, Bruynzeel DP Venous insufficiency in male workers with a standing profession. Part 2: diurnal volume changes of the lower legs. Dermatology. 1997;194(2):121-6.

A exclusion criteria was deep venous thrombosis and arterial insufficiency. Was duplex performed or wrist/ankle pressures and which score is abnormal?

Was a power calculation performed to state the sample size of the study population?

In the study a cohort of patients with risk on swelling was chosen. The authors presume that hair dressers are at risk. Why was there no control group, eg housewives without CVI or office clerks? Please explain in the discussion.

In the discussion (line 2) there is stated that all participants are healthy. But
according the the “c” in CEAP, 74,6% had C1, 9,5% had C2 and even 7,9% had already clinically edema. So I the statement “healthy” should be reconsidered. Therefore more precise duplex finding should be very illustrative. In the discussion this item of “C” should be discussed more intensely and not just mentioned in the limitations. This finding is to important.

In the conclusion (line 11): reliability is just stated by intra-observer variability.

**Level of interest:** An article of outstanding merit and interest 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'