

## Publication

## Reproducibility of oscillometrically measured arterial stiffness indices : results of the SAPALDIA 3 cohort study

## JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

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**Abstract Background.** There is an increasing interest in oscillometric arterial stiffness measurement for cardiovascular risk stratification. We assessed reproducibility of the cuff-based arterial stiffness measures cardio-ankle vascular index (CAVI), brachial-ankle pulse wave velocity (baPWV) and peripheral augmentation index (pAI) in a subsample of the second follow-up of the Swiss Cohort Study on Air Pollution and Lung and Heart Diseases in Adults (SAPALDIA 3). **Methods.** CAVI, baPWV and pAI were measured twice within 90 days in a representative subsample (n = 105) of SAPALDIA 3 with a mean age of 63 years (52.4% female). **Results.** The mean coefficient of variation for CAVI was 4.4%, baPWV 3.9%, and pAI 7.4%. The intraclass correlation coefficient ranged from 0.6 for pAI to 0.8 for CAVI, and 0.9 for baPWV. The mixed linear model revealed that 68.7%/80.1%/55.0% of the CAVI/baPWV/pAI variance was accounted for by the subject, 5.2%/8.1%/ > 0.01% by the fieldworker, 6.7%/7.8%/28.5% by variation between measurement days, and 19.4%/4%/16.5% by measurement error. Bland-Altman plots showed no particular dispersion patterns except for pAI. **Conclusions.** Oscillometric arterial stiffness measurement by CAVI and baPWV has proved to be highly reproducible in Caucasians. Results of the pAI showed lower reproducibility. CAVI and baPWV can be implemented as easy-to-apply arterial stiffness measures in population wide cardiovascular risk assessment in Caucasians.

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