

## Reliability and temporal stability of the Van Dijk-Asaumi method for measuring backfoot alignment

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**Introduction:** Rear foot deformities are associated with pain, instability, and joint degeneration, with kinetic repercussions throughout the lower limb, making their quantitative evaluation fundamental. This study aimed to evaluate the interobserver reliability and temporal stability of a new proposed method for measuring the coronal alignment of the hindfoot.

**Methods:** Cross-sectional, analytical, and prospective study, including 42 adults without apparent clinical deformities in the feet. Loaded radiographs were performed in the anteroposterior, lateral, and long axial views of the calcaneus. The alignment of the hindfoot was measured using the Van Dijk-Asaumi method, a new approach proposed by four evaluators with varying levels of experience. Interobserver and test-retest reliability were analyzed using the intraclass correlation coefficient (ICC). The standard error of measurement (SEM), minimum detectable difference (MDD), Bland-Altman analysis, and Lin coefficient of agreement were also calculated.

**Results:** Interobserver reliability was moderate, between 0.54 and 0.61. The test-retest reliability showed high temporal stability (ICC between 0.57 and 0.61). The SEM was low (0.12°-0.14°), with MDD less than 0.4°. The Bland-Altman analysis showed practically no bias and narrow limits of agreement. The Lin coefficient indicated almost perfect agreement (0.996-0.997).

**Conclusions:** The new method exhibited low measurement error, excellent temporal stability, and high global agreement, making it a practical, objective, and reliable alternative for quantitative evaluation of hindfoot alignment in clinical practice.

**Keywords:** Reproducibility of results; Calcaneus; Foot.

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