



Intra-test and test-retest reliability of exercise oximetry in arterial claudication

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BACKGROUND: Transcutaneous oxygen pressure (tcpO₂) reliability is blunted by an unpredictable transcutaneous gradient through the skin. We hypothesized that the "Decrease from Rest of Oxygen pressure (DROP: subtraction of limb-changes from chest-changes from the respective starting values) would show a good to excellent reliability during Exercise -tcpO₂ investigations.

METHODS: In three different experiments we tested: The intra-test variability at the peripheral level (Experiment A: 32 patients, 16 at each location), at the chest level (Experiment B: 45 patients) and the test-retest reproducibility within 3 months (Experiment C: 67 patients). We calculated the intra-class coefficient of correlation (ICC) with 95% confidence interval [Lower/upper limit]. ICC between 0.60 and 0.749 indicate a good agreement. ICC above 0.750 indicates an excellent agreement.

RESULTS: ICC values for DROP-min were 0.848 [0.723/0.935] at the buttock and 0.920 [0.846/0.967] at the calf levels, in experiment A; ICC were 0.873 [0.799/0.923] at the buttock and 0.898 [0.790/0.953] at the calf levels, in experiment B; 0.806 [0.716/0.871] at then buttock level (n = 67) and 0.807 [0.722/0.868] at the calf in experiment C.

CONCLUSIONS: Intra-test and test-retest reliability is excellent using the DROP calculation for exercise-tcpO₂ investigations.

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