

## AB229. 136. Reliability of smartphone goniometric measurements of the modified Thomas test using biofeedback stabilisation—a preliminary report

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**Background:** No studies have examined the reliability of smartphone goniometric (SG) measurements of the modified Thomas test (MTT). The aim of the current study was to determine the reliability of SG measurements of the MTT among an experienced and novice clinician using biofeedback stabilisation.

**Methods:** The MTT was assessed bilaterally in 17 young healthy males (age:  $19.92 \pm 1.7$  yrs, height:  $184.7 \pm 5.2$  cm, mass:  $74.1 \pm 4.7$  kg). Measurements were obtained in a randomised, blinded fashion by an experienced ( $>30$  yrs) and novice ( $<1$  yr) clinician, then repeated 3 hours later. A smartphone was placed on the anterior thigh of the test limb, 5cm proximal to the base of the patella. Using a 'Clinometer'

application, the incline of the test limb thigh was measured in a seated position. Participants then moved into a supine position with a pressure biofeedback cuff positioned immediately proximal to the posterior superior iliac spines. The hip of the non-test limb was then flexed until a reading of 20 mmHg was demonstrated on the biofeedback display. 'Clinometer' application measurements were repeated at this point. The hip flexion/extension angle was calculated by subtracting the initial resting angle from this endpoint angle. Intraclass correlation coefficients (ICCs) with 95% confidence intervals assessed for intertester and intratester reliability. Paired t-tests assessed for systematic intertester bias. P-values were considered significant at  $<0.05$ .

**Results:** Excellent intertester (ICC 0.96) and intratester (ICC 0.94) reliability for experienced and novice clinicians were demonstrated. Intertester differences were not significant ( $P>0.05$ ).

**Conclusions:** SG measurements of the MTT using biofeedback stabilisation, display high intertester and intratester reliability among novice and experienced clinicians.

**Keywords:** Smartphone; goniometry; thomas test

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