ABSTRACT

**Background:** The identification of asymmetrical inter-limb ankle dorsiflexion range of motion (DF ROM) has the potential to influence the course of treatment during the rehabilitation process, with limitations in ankle DF ROM potentially increasing injury risk. However, reliability for methods to identify ankle DF ROM asymmetries remain under described in the literature.

**Purpose:** To determine the reliability of the trigonometric calculation method for measuring ankle DF ROM during the weight-bearing lunge test (WBLT) for both a single limb and the symmetry values. The secondary purpose was to establish values of ankle DF ROM asymmetry and identify the influence of leg dominance on ankle DF ROM.

**Study Design:** Cross-sectional study.

**Methods:** Ankle DF ROM was measured bilaterally in 50 healthy and recreationally active participants (28 men, 22 women, age = 22 ± 4 years, height = 172.8 ± 10.8 cm, body mass 71.5 ± 15.1 kg), using the trigonometric measurement method during the WBLT. Each ankle was measured twice in a single testing session to establish within-session reliability.

**Results:** Values are presented for asymmetries in DF ROM. No differences were identified between the dominant and non-dominant limb ($p = 0.862$). Within-session reliability for measuring a single limb was classified as ‘good’ (ICC = 0.98) with a minimal detectable change value of 1.7°. For measuring ankle DF ROM asymmetry, reliability was established as ‘good’ (ICC = 0.85) and a minimal detectable change value of 2.1° was determined.

**Conclusions:** Although symmetry in ankle DF ROM may not be assumed, the magnitude of asymmetry may be less than previously reported in a population of recreationally active individuals. Discrepancies between previous research and the findings of the present study may have been impacted by differences in measurement methods. Furthermore, clinicians should be aware that the error associated with measures of asymmetry for ankle DF ROM during the WBLT is greater than that of a single limb.

**Level of Evidence:** 2b

**Key words:** ankle dorsiflexion, inter-limb asymmetry, reliability, trigonometric calculation method