



Reliability and minimal detectable change of the Timed Up & Go test in COPD

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Abstract

Background: Patients with COPD often exhibit balance impairments which impact on their daily life activities. Hence, health professionals should routinely monitor balance in this population. One simple and easy-to-employ clinical measure for this purpose is the Timed Up & Go (TUG) test. This measure has been increasingly used in COPD; however, its reliability and minimal detectable change (MDC) have not been established, limiting the interpretation of results.

Aim: This study aimed to determine the inter- and intra-rater reliability and MDC for the TUG test in older patients with COPD.

Methods: Patients (aged ≥ 60 years) were invited to attend 2 sessions, with 48-72h interval. They performed the TUG test twice in each session. Tests were assessed by two raters in session 1 and one rater in session 2. Inter- and intra-rater reliability were calculated for the exact scores (using data from trial 1) and mean scores (mean of 2 trials) using Intraclass Correlation Coefficients ($ICC_{2,1}$ and $ICC_{2,2}$, respectively). The MDC_{95} was calculated from the standard error of measurement (SEM).

Results: Sixty participants (72.43 ± 6.90 years, FEV_1 $65.03 \pm 22.60\%$ predicted) completed session 1 and 41 participants session 2. Excellent ICC values were found for inter-rater ($ICC_{2,1}$ 95%CI 0.995-0.998; $ICC_{2,2}$ 95%CI 0.999-1) and intra-rater ($ICC_{2,1}$ 95%CI 0.855-0.957; $ICC_{2,2}$ 95%CI 0.931-0.981) reliability. The SEM was 0.97s and 0.66s and the MDC_{95} was 2.68s and 1.84s considering the exact and mean scores, respectively.

Conclusions: The TUG test is highly reliable in COPD and has an acceptable random measurement error. Findings may help health professionals to interpret when a change in patient's performance corresponds to a true