

Screening for Clinically Relevant Thresholds of the Incremental Shuttle Walk in People With COPD Using the One-minute Sit to Stand

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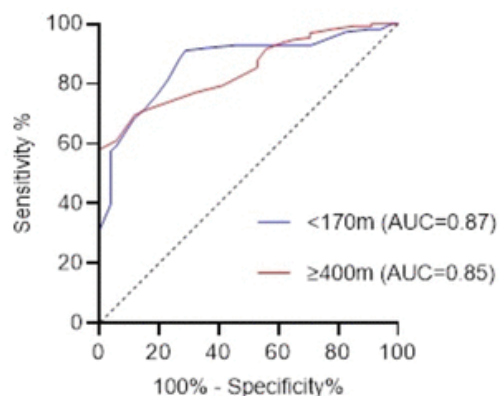
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Background: The incremental shuttle walk test (ISW) is a well established field walking test that is widely used for the evaluation of exercise capacity in chronic obstructive pulmonary disease (COPD) and other respiratory diseases. Clinically relevant thresholds have been identified; <170 metres is associated with increased mortality in COPD (Ringbaek et al., 2010), whilst >400 metres is used to identify those with good exercise capacity and fitness to undergo curative lung cancer surgery (Win et al., 2006). However, the ISW may not always be feasible in clinic or home settings. The one-minute sit to stand (1MSTS) is a simple functional measure that requires little space or equipment and may have potential as a screening tool. **Aims:**To evaluate the predictive ability of the 1MSTS as a screening tool to identify clinically relevant thresholds of the ISW. **Methods:**165 individuals with COPD were assessed at a community respiratory clinic with 1MSTS and ISW. We constructed receiver operating characteristics (ROC) plots to determine 1MSTS thresholds to identify clinically relevant thresholds of the ISW (<170m and ≥400m). **Results:**Mean (SD) age 68.5 (10.8) years, BMI 28.4 (6.3) kgm⁻², COPD Assessment Test 23 (7), MRC 3 (1). Mean (SD) 1MSTS 17 (7) repetitions; median (25th, 75th centiles) ISW 250metres (125, 355). ROC plots are shown in Figure 1. 1MSTS correlated with ISW ($r=0.71$; $p<0.001$). A 1MSTS <15 repetitions had 78% sensitivity and 81% specificity in identifying those with ISW <170m with an area under curve of 0.87 ($p<0.0001$). 1MSTS ≥20 repetitions had 85% sensitivity and 71% specificity in identifying those with ISW ≥400m with an area under curve of 0.85 ($p<0.0001$). **Conclusion:**In COPD, the 1MSTS may have value as a rapid clinic screening tool to identify clinically relevant thresholds of ISW.



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