

Is the 1-minute sit-to-stand test related to respiratory muscle strength in patients with COPD?

Sara Miranda^{1,2}, Ana Machado^{1,2}, Hélder Melro^{1,2}, Ana Oliveira^{1,2}, Carla Valente³, Alda Pires Marques^{1,2}

¹Lab3R – Respiratory Research and Rehabilitation Laboratory, School of Health Sciences, University of Aveiro, Aveiro, Portugal; ²iBIMED – Institute for Research in Biomedicine, University of Aveiro, Aveiro, Portugal; ³Pulmonology Department, Centro Hospitalar do Baixo Vouga, Aveiro, Portugal

It has been suggested that patients with chronic obstructive pulmonary disease (COPD) with respiratory muscle weakness achieve poorer results in exercise capacity tests, namely in the six-minute walk test (6MWT). 1-min. sit-to-stand (1min STST) is a reliable and valid indicator of functional exercise capacity that correlates well with 6MWT. However, its association with respiratory muscle strength in COPD is unknown. This study explored the relationship between 1-min STST and maximum inspiratory (MIP) and expiratory pressures (MEP) in patients with COPD. 66 outpatients with COPD (66±11y; 75%♂; FEV1 58±26% pred) were recruited from routine pulmonology appointments. 1-min STST and MIP/MEP were collected. Correlations were explored using Pearson coefficient correlation. Moderate and low positive correlations were found between 1-min STST and MIP ($r=0.51$; $p<0.001$) and 1-min STST and MEP ($r=0.46$; $p<0.001$), respectively (Fig. 1). 1-min STST correlated significantly with respiratory muscle strength, especially MIP, in patients with COPD. Patients with respiratory muscle impairments seem to have worse functional capacity than those with better MIP/MEP. Thus, respiratory muscle training may play an important role in the improvement of functional capacity in patients with COPD with respiratory muscle weakness.

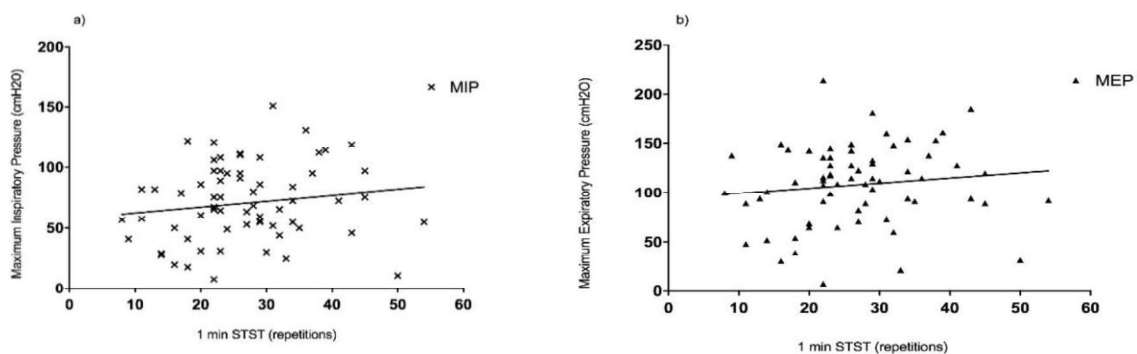


Figure 1 – a) Correlation between Maximum Inspiratory Pressure (MIP) and 1-minute sit-to-stand test (1-min STST); b) Correlation between Maximum Expiratory Pressure (MEP) and 1-min STST.

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