



Respiratory muscle strength: a systematic review with equation testing in Portuguese healthy adults

Sara Souto-Miranda, Cristina Jácome, Ana Alves, Ana Machado, Cátia Paixão, Ana Oliveira, Liliana Santos, Alda Marques
European Respiratory Journal 2019 54: PA2193; DOI: 10.1183/13993003.congress-2019.PA2193

[Article](#)[Figures & Data](#)[Info & Metrics](#)

Abstract

Respiratory muscle weakness is frequent in chronic respiratory diseases. Several equations exist to predict maximum respiratory pressures but there are no recommendations of which should be used and none was developed for Portugal.

This study revised predictive equations of maximum inspiratory (MIP) and expiratory (MEP) pressure for healthy adults and explored their suitability for the Portuguese population.

A systematic review was conducted. Studies were eligible if they presented at least 1 equation for MIP or MEP developed for healthy adults. For equation testing, MIP/MEP were collected from healthy adults. Predicted values were computed from the equations and compared with actual values using Wilcoxon tests and Bland-Altman plots.

19 studies were included. 36 MIP and 30 MEP equations were found but only 32 and 25 were possible to test in 229 subjects (62%♂, 101.8±20.5FEV1pp, 66.7±9.7yrs). 4 MIP equations showed no significant differences between actual and predicted values ($p>0.05$, $r_s=0.32-0.47$, $R^2=9-47\%$). From these, 3 overestimated (bias=0.19-4.06 cmH₂O, men) and 1 underestimated (bias=0.99 cmH₂O, women) the actual values (Fig. 1). All MEP equations showed significant differences between actual and predicted values.

WE USE COOKIES ON THIS SITE TO ENHANCE YOUR USER EXPERIENCE

By clicking any link on this page you are giving your consent for us to set cookies.

[OK, I agree](#)[No, give me more info](#)

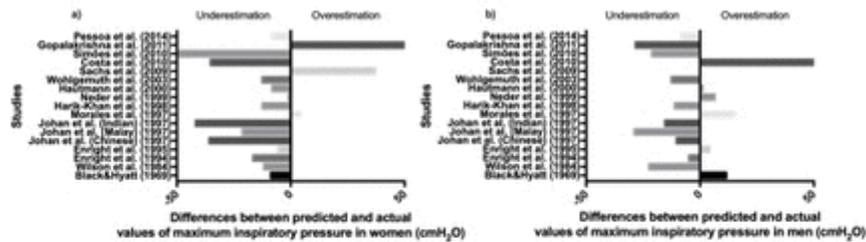


Figure 1. Estimation differences across studies between predicted and actual values of a) maximum inspiratory pressure in women; b) maximum inspiratory pressure in men.

[Download figure](#)

[Open in new tab](#)

[Download powerpoint](#)

Respiratory muscle Adults

Footnotes

Cite this article as: European Respiratory Journal 2019; 54: Suppl. 63, PA2193.

This is an ERS International Congress abstract. No full-text version is available. Further material to accompany this abstract may be available at www.ers-education.org (ERS member access only).

Copyright ©the authors 2019

We recommend

Analysis of respiratory function in patients with multiple sclerosis

Tamara Del Corral Nuñez-Flores et al., European Respiratory Journal, 2019

Evaluation of Respiratory Muscle Strength and Balance in Berardinelli-Seip Congenital Lipodystrophy (BSCL) Patients from Brazil

Julliane Tamara Araújo de Melo Campos et al., European Respiratory Journal, 2018

Respiratory Muscle Strength in Stroke Patients and Healthy Controls: A Case Control Study

Endotracheal Tube Cuff Pressures in Intubated Patients

Joseph Tennyson et al., Medscape

Pulmonary Function Tests: Controversies and New Developments in Testing and

Neil MacIntyre et al., Medscape

Check the findings from VARGADO: Nintedanib plus docetaxel after progression on immune checkpoint inhibitor therapy

Future Oncology

WE USE COOKIES ON THIS SITE TO ENHANCE YOUR USER EXPERIENCE

By clicking any link on this page you are giving your consent for us to set cookies.

OK, I agree

No, give me more info