

Correlation Between Single Breath Count and Single Breath Hold Time with Maximum Expiratory Pressure and Maximum Inspiratory Pressure in Healthy Adult Individuals: An Observational Study

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ABSTRACT

Introduction: Maximal inspiratory pressure (MIP) and maximum expiratory pressure (MEP) are the measures of the strength of inspiratory and expiratory muscles, and allows for the assessment of respiratory muscle strength. Breath holding Time (BHT) and single breath count (SBC) are bedside tests which do not require any equipment or time. Using a time-efficient technique such as the SBC and BHT will be an important adjunct in evaluating respiratory muscle strength. Hence, this study is performed to find the correlation between MIP, MEP, SBC and BHT.

Method: An Observational Study of 300 healthy individuals were recruited. MEP and MIP were measured using micro-RPM equipment. Single breath count was measured using a metronome with the cadence of 2 beats per second and Breath-holding time with mercury manometer. 3 trials of each test were taken and the best reading was considered.

Result: The result of this study showed that there was minimal correlation between MIP & SBC ($r=0.206$), and minimal correlation between MEP & SBC ($r=0.245$), and minimal to moderate correlation between MIP with BHT ($r=0.448$), minimal to moderate correlation between MEP with BHT ($r=0.416$).

Conclusion: In this study we found that there was minimal correlation between single breath count and maximum inspiratory and maximum expiratory pressures. And there was minimal to moderate correlation between breath holding time and maximum inspiratory and maximum expiratory pressures. Thus, BHT and SBC can be reasonable alternatives for MIP and MEP.

Keywords: MIP, MEP, Breath hold time

