

Abstract

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Correlation Between Maximum Inspiratory Pressure and Hand-Grip Force in Healthy Young and Middle-Age Individuals.

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Abstract

BACKGROUND: This study aimed to examine the relationship between hand-grip force and maximum inspiratory pressure (P_{imax}) in healthy young and middle-age individuals.

METHODS: All individuals underwent assessment of inspiratory muscle strength by maximum inspiratory pressure using a U-type water manometer and evaluation of hand-grip force by a hydraulic hand dynamometer.

RESULTS: The correlation of P_{imax} and hand-grip force was strong (r = 0.76). A multilinear regression model was built to investigate the ability of various parameters, such as hand-grip force, sex, and body mass index measurements, to predict P_{imax}. P_{imax} can be accurately predicted by 80% (r = 0.76) with a simple equation of easily evaluable factors, such as hand-grip force, body mass index, and sex.

CONCLUSION: The results showed significant correlation between hand flexors' force and strength of inspiratory muscles in healthy individuals. This appears to be an easy way to evaluate the results indirectly and can help to assess the relationship between hand flexor and inspiratory muscle capacity, especially the diaphragm. Our study should be viewed as a hypothesis-generating one, and further studies are required in the population of critically ill or difficult-to-wean patients.

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KEYWORDS: hand grip; healthy subjects; maximum inspiratory pressure; respiratory assessment; strength

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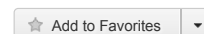
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