

## The influence of a specific exercise program on ventilatory muscle strength in individuals with Ankylosing Spondylitis

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### ABSTRACT

**BACKGROUND:** Ankylosing Spondylitis is a systemic chronic rheumatic inflammatory disease that progressively leads to structural changes that condition the functionality and quality of life of the individuals with the disease. These structural changes can also lead to changes in the respiratory system namely the decrease in ventilatory muscle strength. **OBJECTIVES:** Evaluate the influence of a specific exercise program in ventilatory muscle strength in a population of people with AS though the values of MIP and MEP, and its relationship with the Bath indices. **METHODS:** Quasi-experimental study applied to 13 individuals with Ankylosing Spondylitis, divided in two groups (control and experimental). A subject selection questionnaire was applied before the first evaluation and in both of the evaluation moments the BASDAI, BASFI and BASMI scales were used and the MIP and MEP of the subjects were measured using a manovacuometer. The statistic treatment was done using the SPSS software version 24. The established level of significance was  $\alpha = 0,05$ . **RESULTS:** There we verified statistically significant improvements in the Bath Ankylosing Spondylitis Disease Activity Index ( $p=0,047$ ) and Bath Ankylosing Spondylitis Functional Index ( $p=0,016$ ) scores in the experimental group. There weren't verified statistically significant changes in the Maximum Inspiratory Pressure and Maximum Expiratory Pressure values between groups in any of the evaluation moments. **CONCLUSIONS:** The applied specific exercise program influenced significantly the BASDAI and BASFI indices scores, however, the same was not verified relatively to ventilatory muscle strength of the analyzed individuals.

**Keywords:** *bath indexes; physical exercise; ventilatory muscle strength*

### References:

[1] Akyol G, Özalevli S, Uçan ES. The relationship between pulmonary function and exercise capacity and quality of life in patients with ankylosing spondylitis. Tuberk Toraks; 2013.

- [2] Berdal G, Halvorsen S, Hejide DV, Mowe M, Daffinrud H. Restrictive pulmonary function is more prevalent in patients with ankylosing spondylitis than in matched population controls and is associated with impaired spinal mobility: a comparative study. *Arthritis Research & Therapy*. 2012.
- [3] Buyukavci R, Sag S, Ozakarafakili MA, Kuran B. The effects of respiratory functions on disease activity, functionality, spinal mobility and quality of life in patients with ankylosing spondylitis. *Medicine Science International Medical Journal*. 2016.
- [4] Lopes S, Costa S, Mesquita C, Duarte J. Programas de exercício no domicílio e em grupo em doentes com espondilite anquilosante: revisão sistemática. *Acta Reumatol Port*. 2016; 41: 104-111.



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