

European Respiratory Society Annual Congress 2012

Abstract Number: 3853

Publication Number: 4706

Abstract Group: 4.1. Clinical physiology and Exercise

Keyword 1: Exercise **Keyword 2:** Lung mechanics **Keyword 3:** Asthma - mechanism

Title: Dynamic hyperinflation and effects of pursed lips breathing on chest wall kinematics during exercise in patients with asthma

Prof. Dr Guilherme 22694 Fregonezi fregonezi@ufrnet.br¹, Ms. Janaina Dantas 22695 Pinto jajafisio@hotmail.com¹, Ms. Lailane 22696 Saturnino lailanesaturnino@yahoo.com.br¹, Mr. Bruno Henrique 22697 Ferreira da Silva bh_enrique@hotmail.com¹, Ms. Illia 22698 Nadinne illialima@yahoo.com.br¹, Ms. Rêncio Florencio 22699 Bento rencio.bf@hotmail.com¹, Ms. Fernando Augusto 22704 Lavezzo Dias faldias@ufrnet.br¹, Ms. Selma 22705 Bruno sbruno@ufrnet.br¹ and Ms. Vanessa 22707 Resqueti vanessaesqueti@hotmail.com¹. ¹ Physical Therapy, Federal University of Rio Grande do Norte, Natal, RN, Brazil .

Body: To assess the effects of exercise on lung volumes and the influence of Pursed Lips Breathing (PLB) on operational lung volumes in asthma patients. In 14 patients, 33.9±10 years/old, FEV1%:65.7±18.6, lung volumes were assessed by opto-electronic plethysmography. Two incremental submaximal cycling test (ISET) sets based on 3 min. rest, 1 min. unloaded pedaling and 30w increase in workload every min. during free breathing and PLB were done. We identified two patterns of changes in operational volumes at 100%max. workload in free breathing. Patients that increase End Expiratory Lung Volume (EELV) $\Delta EELV=0.27\pm 0.5L$ and developed Dynamic Hyperinflation (DH), hyperinflators (HG, n=6) and patients that decrease EELV euolumics (EG, n=6) $\Delta EELV=-1.07\pm 0.8 L$. Rib cage pulmonary (RCp) was the main responsible to increase in EELV in HG. Variation of End Inspiratory Lung Volume ($\Delta EILV$) in HG was significantly different from EG, 1.5±0.8 vs 0.31±0.4. PLB induced changes in EILV in both groups during in chest wall and RCp compartment. In abdominal compartment $\Delta EILV$ significantly increased with PLB in all moments except at 50%max. workload. PLB induced changes on EELV in RCp compartment at 100%max. workload in EG and at 50%max. workload, 1st and 2nd recovery time in HG.

Exercise induces different changes in operation lung volume in patients with asthma. PLB modulate breathing pattern and improve operational lung volumes.