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**Title:** Effects of diaphragm release manual technique on diaphragm mobility, chest Wall kinematics and functional exercise capacity of COPD patients

Taciano 22810 Rocha taciano\_rocha@hotmail.com <sup>1</sup>, Helga 22811 Muniz helgamuniz@yahoo.com.br <sup>1</sup>, Daniella 22815 Drandao daniellacunha@hotmail.com <sup>1</sup>, Shirley 22816 Campos shirleycampos@uol.com.br <sup>1</sup>, Andrea 22814 Aliverti andrea.aliverti@polimi.it <sup>2</sup> and Armele 22817 Dornelas de Andrade armeledornelas@yahoo.com <sup>1</sup>. <sup>1</sup> Physicaltherapy, Universidade Federal De Pernambuco, Recife, Brazil and <sup>2</sup> Dipartimento Di Elettronica, Informazione e Bioingegneria, Politecnico Di Milano, Milano, Italy .

**Body:** Aims: To evaluate the effects of Diaphragm Release manual technique on diaphragm mobility, chest wall kinematics and functional exercise capacity of COPD patients. Methods: Randomized controlled trial(double blinded) with 19 COPD patients, randomly allocated in two group: intervention(IG), n=10 that received the Diaphragm Release manual technique on 6 non-consecutive sessions and control group(CG), n=9 that received a sham protocol(light touch) with the same parameters of IG. The outcomes were evaluated as acute effects (1 session) and chronic effects (whole treatment): diaphragm displacement (ultrasonography evaluation), chest wall kinematics measured by Optoelectronic Plethysmography, respiratory muscles strength and six minutes walking distance (6MWT). Results: Evaluation of the immediate effects showed that after receiving the technique, IG group had a significant increase ( $p<0.05$ ) in maximal inspiratory (MIP) maximal expiratory pressure (MEP) and nasal inspiratory pressure (NIP) compared to GC. The chronic effects of treatment observed in IG were: significant increase of: diaphragmatic motion( $p<0.007$ ), values of vital and inspiratory capacity( $p<0.01$ ), distance walked during the 6MWT min( $p<0.001$ ) and NIP( $p<0.006$ ) at the intergroup analysis. There were no changes in the compartmental chest wall volume between the groups. Conclusions: Manual Diaphragm release technique improves respiratory muscle functionality(strength and mobility), inspiratory capacity and exercise performance in 6MWT suggesting its association with treatment protocols in pulmonary rehabilitation programs. This study was supported by: CNPq, FACEPE and CAPES/PROCAD-NF.