

**Ministry of Higher Education & Scientific Research  
University of Babylon  
College of Physical Education & Sport Sciences**



**Effect of Two Rehabilitation Programs by using Moderate Intensity  
Interval Training Method and Aero Threshold Loading Device  
during Unsupported Arm Elevation on Some of Breathing Variables  
in Chronic Obstructive Pulmonary Disease Patients**

**By  
Ammar Hamza Hadi**

**To The Council of college of Physical Education & Sport Sciences  
University of Babylon Partial Fulfillment Requirement of The  
Doctorate Degree in Philosophy of Physical Education**

**Principal Supervisor  
Prof. Dr. Jamal Sabri Faraj**

**Co-supervisor  
Prof. Dr. Alla Hussain Abbas**

**1436 H**

**2015 A.D**

**((Effect of Two Rehabilitation Programs by using Moderate Intensity Interval Training Method and Aero Threshold Loading Device during Unsupported Arm Elevation on Some of Breathing Variables in Chronic Obstructive Pulmonary Disease Patients))**

**Supervision**

**Prof. Dr. Jamal Sabri Faraj &  
Prof. Dr. Alla Hussain Abbas**

**Researcher**

**Ammar Hamza Hadi**

**Abstract:**

Chronic Obstructive Pulmonary Disease patients are characterised by dyspnoea and impair their quality of life which is a real problem, so researcher tried to deal with it through using sport exercise to make a scientific study which shows the role of sport in the life of human and present community.

This study aimed to:

- 1- Prepare two rehabilitation programs for COPD patients by using MIIT and aero threshold loading device.
- 2- Identify the effect of both rehabilitation programs by using MIIT and aero threshold loading device during UAE on forced vital capacity (FVC), forced expiratory volume at first second (FEV1), FEV1\FVC, peak expiratory flow rate (PEFR), maximum inspiratory pressure (PI,Max ), dyspnoea intensity, six minute walking distance test, and oxygen saturation (Spo2) in COPD patients.
- 3- Identify the differences between training by using threshold inspiratory muscle trainer with UAE and MIIT on improvement of forced vital capacity (FVC), forced expiratory volume at first second (FEV1), FEV1\FVC, peak expiratory flow rate (PEFR), maximum inspiratory pressure (PI,Max ), dyspnoea intensity, six minute walking distance test, and oxygen saturation (Spo2) in COPD patients.

This study hypothesized to:

- 1- MIIT and threshold loading training with UAE programs improve forced vital capacity (FVC), forced expiratory volume at first second (FEV1), FEV1\FVC, peak expiratory flow rate (PEFR), maximum inspiratory pressure (PI,Max ), dyspnoea intensity, six minute walking distance test, and oxygen saturation (Spo2) in COPD patients.
- 2- Threshold loading training program with UAE improves forced vital capacity (FVC), forced expiratory volume at first second (FEV1), FEV1\FVC, peak expiratory flow rate (PEFR), maximum inspiratory pressure (PI,Max ), dyspnoea intensity, six minute walking distance test, and oxygen saturation (Spo2) more than MIIT program.

The number of participants required for this study was calculated to be (48) patients aged (50-60) years, based on the prevalence of low to moderate COPD in Babylon, Iraq and they selected randomly from research society amounted (200) patients. Moreover, we used an experimental approach design (equal groups) with pre and post-tests. Subject of the study was divided to three groups (first experimental group, second experimental group, and control group) and each group included (16) patients. Researcher used (SPSS) to analyse the results of present study which involving (mean, standard deviation, median, skewness coefficient, coefficient of simple correlation, one sample T Test, F value, and L.S.D.

The most important conclusions are:

- 1- Moderate intensity interval training method and aero threshold loading training device effected in improving forced vital capacity (FVC), forced expiratory volume at first second (FEV1), FEV1\FVC, peak expiratory flow rate (PEFR), maximum inspiratory pressure (PI,Max ), dyspnoea intensity, six minute walking distance test, and oxygen saturation (Spo2) for first and second groups.
- 2- No improvement was shown for control group.