بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

EFFECT OF AEROBIC EXERCISE ON VENTILATORY FUNCTIONS IN SMOKING ADOLESCENTS

By

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بسم الله الرحمن الرحيم

« فتعالى الله الملك الحق ولا تعجل
بالقرآن من قبل أن يُقضَى إليك
وحيه وقل رب زدنى علماً »

(الآية ١١٤ ، سورة طه)

THIS WORK
IS DEDICATED
TO MY FAMILY AND
MY PARENTS

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Effect of Aerobic Exercise on Ventilatory functions in Smoking Adolescents / Ahmed Sayed Mohammed / Department of Physical Therapy for Cardiopulmonary Disorders and Geriatrics, Faculty of Physical Therapy, Cairo University, 2007, Master thesis. / Supervisors: **Assistant Prof. Dr. Azza Fikry Ismail**. In Department of Physical Therapy for Cardiopulmonary Disorders and Geriatrics, Faculty of Physical Therapy, Cairo University. **Assistant Prof. Dr. Hossam Hosni Massoud**. In Department of Chest Disease, Faculty of Medicine, Cairo University. **Dr. Amany Raafat Mohamed**. Lecturer of Physical Therapy, Department of Critical Care, Kasr El Ainy.

Abstract

The aim of this study was to determine the effect of aerobic exercise on the ventilatory functions in smoking male adolescents. Sixty cigarette smoking male adolescents participated in the study, their ages ranged from 14 to 19 years. They were divided into two equal groups. The exercise group's subjects performed aerobic exercise, while the control group's subjects did not take part in the exercise intervention program and were instructed to maintain their usual activities during the experimental period. The program continued for 10 weeks (three sessions per week), ventilatory functions were measured at the beginning and after the exercise program for both groups. No statistically significant changes were found in ventilatory functions. The investigation concluded that 10 weeks of aerobic exercise were insufficient to result in significantly positive changes in almost all ventilatory functions, except for the MVV. So, it is recommended to use aerobic exercise in order to improve the MVV in smoking male adolescents.

Key words: aerobic exercise, ventilatory function, smoking, adolescents.

LIST OF CONTENTS

Definition of terms

Adolescent - A person between 10 and 19 years of age defined by World Health Organization1998 **(World Health Organization, 1998).**

Aerobic capacity - A measure of the ability to perform work or participate in activity over time using the body oxygen uptake and delivery and energy released metabolisms **(American College of Sports Medicine, 1995).**

Aerobic exercise - Any physical activity or exercise that requires additional effort by the lungs, heart to meet the increased demand by the skeletal muscles for oxygen. (The performance of therapeutic exercise and activity to increase the endurance) **(American College of Sports Medicine, 1995).**

Aerobic training - Exercise of sufficient intensity, duration and frequency to improve the efficiency of oxygen consumption during activity or work **(American College of Sports Medicine, 1995).**

Anaerobic exercise - Exercise or activity without oxygen. Oxygen cannot keep up with the level of activity, so the oxygen debt occurs **(American College of Sports Medicine, 1995).**

COPD - Abbreviation for chronic obstructive pulmonary disease, it is a broad term that describes generalized airway obstruction **(Scanlan *et al.*, 1995).**

Endurance exercise - Exercise used to increase ability of the muscle to sustain force or to repeatedly generate force **(American College of Sports Medicine, 1995).**

Forced Expiratory Flow 25-75 ($FEF_{25-75\%}$) - This measurement reflects the status of the medium- to small-airways and is the maximum expiratory flow after 25%, 50% and 75% of the forced vital capacity has been exhaled **(Ruppel, 2003).**

Forced Expiratory Flow in One Second (FEV_1) - This is the maximum volume of gas that can be exhaled during the first second of the forced vital capacity maneuver **(Ruppel, 2003).**

FEV_1/FVC Ratio - The ratio of the volume of gas that can be forcefully exhaled in one second to the total volume of gas that can be forcefully exhaled after a maximum inspiration. It is also an indication of expiratory power and overall resistance to air movement in the lungs **(Ruppel, 2003).**

Forced Vital capacity (FVC) - The maximum volume of gas that can be exhaled as forcefully and rapidly as possible after a maximal inspiration **(Ruppel, 2003).**

Maximum oxygen consumption (vo_2 max) - The greatest volume of oxygen used by cell of body per unit time **(Ruppel, 2003).**

Minute ventilation - Is the total amount of gas that flows into and out of the respiratory tract in one minute (equal to the product of tidal volume timed the breathing frequency) **(Ruppel, 2003).**

Moderate exercise - Type of aerobic exercise with intensity ranging from 50% to 70% of maximum oxygen consumption (vo_2 max) **(American College of Sports Medicine, 1995).**

Peak Expiratory Flow (PEF) - The maximum flow achieved after forced exhalation from total lung capacity **(Ruppel, 2003).**

Pulmonary function test - Measure of air flow, air flow resistance, lung volumes and gas exchange **(Ruppel, 2003).**

Tidal volume - Is the volume of air breathed in one inhalation and exhalation **(Ruppel, 2003).**

Total Lung Capacity (TLC) - It is the total amount of gas in the lungs after a maximum inspiration **(Ruppel, 2003).**

Physical Activity - A bodily movement that is produced by the contraction of the skeletal muscles and that substantially increases energy expenditure **(American College of Sports Medicine, 1995).**

Physical fitness - Attributes related to how well individual perform physical activity **(American College of Sports Medicine, 1995).**