

Effect Of Surgically Induced Weight Reduction In Morbid Obesity On Pulmonary Function Tests

Thesis

*Submitted for partial fulfillment of master degree in chest
diseases and tuberculosis*

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المرضية على اختبارات وظائف التنفس
دراسة

توطئة للحصول على درجة الماجستير
فى الأمراض الصدرية
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List Of Abbreviations

AgRP	Agouti-related peptide
BMI	Body mass index
DLCO	Diffusing capacity of the lung
DVT	Deep venous thrombosis
DXA	Dual-energy x-ray absorptiometry
ERV	Expiratory reserve volume
FEF25-75	Forced expiratory flow 25-75
FET	Forced expiratory time
FEV1	Forced expiratory volume in 1 second
FEV1/FVC	Ratio of FEV1 to FVC
FRC	Functional residual capacity
FVC	Forced vital capacity
HDL	High density lipo proteins.
IL	Inter leukiens
MVV	Maximal voluntary ventilation
NASH	Non-Alcoholic Steato-Hepatitis
NPY	Neuropeptide Y
Ob gene	Obesity gene
OHS	Obesity hypoventilation syndrome
OSA	Obstructive sleep apnea syndrome
P/D1 cells	Parietal cells type D1 lining the fundus of the stomach

PE	Pulmonary embolism
PEF	Peak expiratory flow
PFT	Pulmonary function test.
REM	Rapid eye movement
RV	Residual volume
SO	Simple obesity
SSRIs	Selective serotonin reuptake inhibitors
t test	Student's t test
TLC	Total lung capacity
TNF- α	Tumor necrosis factor alpha
V/Q ratio	Ventilation/perfusion ratio
VBC	Vertical band gastroplasty
VC	Vital capacity
VTE	Venous thromboembolism
α -MSH	α -melanocyte-stimulating hormone

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INTRODUCTION

Obesity is fundamentally the result of a long-term imbalance between energy intake and energy expenditure (*Hill et al., 2003*).

It is one of the most frequently found health risks. Its prevalence appears to be increasing all over the world. Also it was found that health risks increase with increasing degree of obesity (*Seidell and Bouchard, 1999*).

In the past decade, there has been an alarming increase in the prevalence of obesity. Data from the National Health and Nutrition Examination Survey demonstrated that nearly two of three adults are overweight/obese (i.e., body mass index [BMI] is ≥ 25 kg/m²), and that nearly one of three adults are obese (i.e. BMI is ≥ 30 kg/m²) (*Mclnnis et al., 2003*).

Obesity must be recognized as a chronic condition requiring long-term therapy and like any chronic condition it worsens when medications are withdrawn. If it is not

treated for the duration of the patient's life, obesity re-emerges as a potent co-morbid risk factor for disability or premature death. Therefore, recent studies have focused on long-term weight maintenance with drug therapy(***Astrup and Lundsgaard, 1998***).

Several chronic illnesses are associated with obesity, such as hypertension, Type II diabetes mellitus, cardiovascular diseases and osteoarthritis (***Camargo et al., 1999***).

Recently, there is an evidence of strong association between asthma and obesity. Also obesity is regarded as a major risk factor for obstructive sleep apnea syndrome (***Wilson and Irwin, 1999***).

The increasing numbers of obese individuals have led to intensified interest in surgical treatments to achieve weight loss, and a variety of surgical procedures have been used (***Buchwald and Williams, 2004***).

In weight loss studies, weight loss of 5% to 10% has been associated with a significant improvement in both symptoms and objective findings of respiratory problems and other chronic illnesses associated with obesity (*Avenell et al., 2004*).

AIM OF THE WORK

To assess the effect of weight reduction surgery ,as a method of management of morbid obesity, on pulmonary function tests.

Obesity

Etymology

Obesity is the nominal form of obese which comes from the Latin *obesus*, which means " fat, or plump." *Esus* is the past participle of *edere* (to eat), with *ob* added to it. In Classical Latin, this verb is seen only in past participial form (*Kolotkin et al., 2001*).

Definition:

Obesity is a condition in which a person has excess body weight relative to other people of the same gender and height. Excess weight generally relates predominantly to excess body fat and, to a lesser degree, increased fat-free mass and excess body water (*Bray, 1999*).

Aetiology of obesity

When energy intake exceeds energy expenditure, fat cells (and to a lesser extent muscle and liver cells) throughout the body take the energy and store it as fat. In its simplest conception, therefore, obesity is only made