

Effect of Electrical Muscle Stimulation on Reducing Fat from the Body

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Abstract

The study was conducted on 120 healthy female volunteer subjects. The volunteers were taken from Patran city of Punjab and the various departments of Punjabi University, Patiala, Punjab. All volunteers were adults within the age range of 20 to 40 years who have Body Mass Index (BMI) >27. All the anthropometric measurements like Weight, height, thickness of skinfold from biceps, triceps, subscapular, suprailiac and abdominal sites were measured on the subjects belonging to four groups, following standard techniques given by *Weiner & Lourie (1969)* before the start of the program, after two weeks and at the end of the four weeks. To the first group of females that was used as the control of the study, no intervention was given to these subjects. To the second group of females was given Interferential Therapy (IFT) only, while the third group of females was given both hot water application and (IFT). Fourth group of females was administered supervised aerobic exercise programme on treadmill / brisk walking in the laboratory. Interferential therapy (Intensity-as tolerated by the subject, Frequency- 4000 Hz ; Beat Frequency –swing mode, time of swing-12 secs, Pattern of swing; method 4Pole vector; Total treatment time-20-30 min) was given to the second and third groups. It was concluded that Fat deposition and Skinfold thickness was reported minimum in Group-IV followed by Group -III and Group-II and maximum in Group - I After given treatment body fat was decreased in Group-II, Group-III, and Group- IV. Maximum fat reduction was seen by IFT machine and IFT + hot water application. The results have shown significant differences among four groups. It has been concluded that % body fat was found less after the treatment.

Key words: Body Mass Index, Skinfold Thickness, Interferential Therapy, Hot Water Application, Aerobic Exercise Program

Introduction:

Obesity is defined as a condition in which excess body fat is accumulated. The practical and clinical definition of obesity is based on the Body Mass Index (BMI expressed as weight (in kg)/height (in m²). It is generally agreed that a BMI of greater than 30 is indicative of obesity, while a BMI of 25.0-29.9 is suggestive of overweight in an individual. BMI ranging from 18.5 to 24.99 is considered normal. Obesity is increasing at an alarming rate throughout the world and has become a global problem.

In the public health arena, obesity constitutes one of the important medical and public health problems (*Berke and*

Morden, 2000). Modernisation has led to over abundance of foods rich in fats along with decrease in physical activity of people leading to conditions that favour obesity. By definition, obesity refers to a condition of building up of body fat beyond that deemed normal for the age, sex, body type of a given individual. Obesity is not only related with a number of health problems but with psychological problems also (*Wadden and Foster, 1992; NIH, 1992; Bray et al, 1996; Food and Drug Administration, 1996; Centers for Disease Control and Prevention, 1997; Connolly et al, 1997*).

Obese people suffer from guilt, depression, anxiety and low self-esteem. In addition to this there is increased