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## Impact of Yogic Exercise on Body Fat Percentage on Middle Aged Obese People

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### Abstract

**Purpose:** The Purpose of the study was to find out the effect of yogic exercises on body fat percentage of middle aged obese people.

**Selection of Subjects:** For the present study 20 male obese people from locality of Bilaspur were selected randomly as the subjects for the study. The age of the subjects ranged between 40-50 years.

**Selection of Variables:** The variables selected for the present study were yogic training (independent variable), body fat percentage (dependent variable).

**Methodology:** For the study pretest – post-test randomized group design, which consists of control group (10 subjects) and experimental group (10 subjects) were used. The data were collected through the pretest, before training and post-test, after six weeks of yogic exercises training.

**Statistical Technique:** For comparing pre and post-test means of experimental and control groups, descriptive analysis and Analysis of Co-Variance (ANCOVA) were used and the level of significance was set at 0.05 level of confidence.

**Result:** The result of the study showed that there was insignificant difference between pre and post-test (experimental group) of body fat percentage.

**Keywords:** Yogic Training, body fat percentage, middle age, obesity

### 1. Introduction

Yoga is a method of learning that aims to attain the unity of mind, body, and spirit through these three main Yoga structures: Exercise, Breathing, and Meditation. The exercises of Yoga are designed to put pressure on the Glandular Systems of the body, thereby increasing its efficiency and total health. The body is looked upon as the primary instrument that enables us to work and evolve in the world, a Yoga student; therefore, treats it with great care and respect. The Breathing Techniques are based on the concept that breath is the source of life in the body. Yoga students gently increase their breath control to improve the health and the function of both body and mind. These two systems prepare the body and mind for Meditation, making it easier for students to achieve a quiet mind and be free from everyday stress. Regular daily practice of all three parts of this structure of Yoga produce a clear, bright mind and a strong, capable body.

Body fat is a lipid (fat) produced in the body, and this may be influenced by diet, exercise and genetics. Body fat percentage is that percentage of body mass that is not made up of bone, muscle, connective tissue and fluids; that is, everything else. A person's total body fat percentage is the total weight of the person's fat divided by the person's weight. The resulting number reflects both essential fat and storage fat. Having high cholesterol can cause life-threatening diseases. However, it can be controlled through diet and exercise. When there is high cholesterol, the HDL and LDL cholesterol levels are reversed making LDL level higher than HDL level. It is also important to consult a physician before starting any diet or exercise routine. He/she will monitor the progress to determine if medication will be needed to control the high cholesterol.

### 2. Objective of the study

To find out the effect of yogic practice on body fat percentage on middle aged obese people.

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### 3. Methodology

#### 3.1 Selection of Subjects

For the present study total 20 male obese people with age ranging between 40-50 years were randomly selected as subject from locality of Bilaspur.

#### 3.2 Selection of Variables

Keeping the feasibility criterion in mind, the researcher selected the following variables for the present study:

- Independent variables:-
  - Yogic training
- Dependent variables:
  - Body Fat %

#### 3.3 Criterion Measures

- The body fat % was measured by skinfold caliper by using siri's formula.

### 4. Result and findings of the study

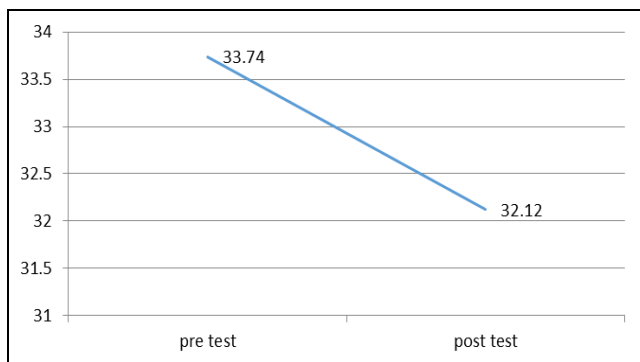
**Table 1:** Analysis of variance of comparison of experimental and control group in relation to body fat percentage

	Mean	Source of variance	Sum of squares	df	Mean square	F
Pretest	33.74	Between groups	2.278	1	2.278	4.125
		Within groups	9.941	18	.552	
Post-test	32.12	Between groups	11.503	1	11.503	4.401
		Within groups	47.041	18	2.613	

Required  $F_{05}(1, 18) = 4.41$ .

In relation to pretest, table 1 revealed that the obtained F value (4.125) was found to be insignificant at 0.05 level since this value was found lower than the tabulated value 4.41 at 1,18 df, from which it is clear that the pretest means does not differ significantly and that the random assignment of subjects to the experimental was quite successful.

In relation to post-test, insignificant difference was found between experimental group and control group pertaining to body fat percentage, since F value (4.40) was lesser than the tabulated F value (4.41).



**Fig 1:** Graphical representation of pre and post-test in relation to body fat percentage

**Table 2:** Analysis of covariance of comparison of adjusted post-test means of experimental and control group in relation to body fat percentage

Source of variance	Sum of squares	df	Mean square	F
Contrast	10.566	1	10.566	4.15
Error	43.18	17	2.54	

Required 0.05 level,  $F_{05}(1,17) = 4.45$ .

Table 2 revealed that the obtained F value (4.15) was found to be insignificant at 0.05 level, since the value was found lesser than the tabulated F value (4.45).

### 3.4 Experiment Design and Training Schedule

For the study pretest- post-test randomized group design was used in which the pretest was taken prior to the yogic training and post-test was taken after eight weeks of yogic training. Selected Yoga Asanas and Pranayam were given to subjects on 6 days i.e. (Monday to Saturday) sessions per week. Each yoga session consisted of 10 minutes of pranayamas (breath-control exercises), 10 minutes of dynamic warm-up exercises, 30 minutes of asanas (yoga postures), and 10 minutes of supine relaxation in savasana (corpse pose).

### 3.5 Statistical Procedure

The data were analyzed by applying descriptive statistical and analysis of co-variance (ANCOVA). The level of significance was set at 0.05.

### 5. Discussion of the findings

Excessive amount of adipose tissue in selected people and simple obesity in particular constitute a growing health problem throughout the world. Adverse health effects of obesity of selected people justify the need to look for efficient treatment, among the dietary treatment. In present study fat % were decreased from pre to post-test but changes were not sufficient to establish statistical significance. There may be two probable reasons for such observations: 1) the yogic exercises included in this programme were not exhaustive in nature. The exhaustive exercises lead to burning of adipose tissue as increase and sustained heart rate may increase the demand of oxygen in working muscles. 2) It may possible that the six weeks yogic practices were not enough to make the changes in fat %. The long duration training programme more than twelve weeks may be cause to desirable changes. It is evident from the fact that yogic practices can't help to reduce the percentage of fat but it may help to control fat percentage in the future. However, to get significant changes in the percentage of fat, one should focus on aerobic exercise along with diet management.

### 6. Conclusion

On the basis of findings of the study, the following conclusions may be drawn:

- The results of the study indicate that the insignificant difference was found in pre and post-test (experimental group) of body fat percentage.
- The results of the study indicate that the insignificant difference was found in adjusted post-test means of experimental and control group in relation to body fat percentage.

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