

Effect of Brisk Walking On Body Fat Percentage of Sedentary College Students

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Abstract

The purpose of the present study was to determine the effect of brisk walking on Body fat percentage of sedentary college students. The sample was consisted of thirty (N 30) sedentary college students and their age ranged between 18-25 years of age. The subjects were briefed in details about the study. The criterion measures for the study was Body fat percentage and it was measured by skinfold caliper in nearest of %. The total research period was of 12 weeks out of which six (6 weeks) of brisk walking programme was employed. Mean fat percentage differed statistically significantly between Observation points ($F(1.58, 45.66) = 110.16, P < 0.000$), insignificant difference was found in case first observation and second observation (MD=0.05, $p=0.49$), whereas significant difference was found in second and third observation (MD=1.30, $p=0.000$), also in third observation and fourth observation (MD=0.59, $p=0.000$) and fourth and fifth observation (MD=0.31, $p=0.01$).

Keywords: Brisk walking, Fat Percentage, Sedentary.

1 Introduction

Walking is one of the best things you can do for your health. It's good for your heart, blood pressure and weight management. When you're walking to get or stay fit, your form, pace, and breathing is especially important. Mastering a good walking technique takes some time. But with practice, it will become second nature and will help you increase and maintain your pace comfortably. It can be said that in the present era, human beings have got so engrossed in earning money, that they have virtually stopped paying attention to their physical and mental fitness. People do not realize the fact that money cannot buy them happiness. There is a saying that "if wealth is lost, something is lost, but if health is lost, everything is lost." So, it is high time, we start giving importance to our health and make a constant effort to work towards maintaining our all round fitness. **According to Mayer (2007)** the anthropologist who made the discovery officially labeled the skeleton A.L.288-1 but affectionately called her Lucy, a name taken from the Beatles song "Lucy in the sky with Diamonds," which was popular in the expedition's camp at that time. Lucy was a small adult female, 3 feet 8 inches tall and weighing about 65 pounds. Lucy's skeleton reveals that she was as adept at upright walking as we are, and it proved conclusively that bipedality was fully in place three million years ago. Bipedal walking became the primary gait of locomotion for all of the species that followed Lucy and ultimately for us humans. **"Lucy could walk, but she could not talk"** She did not have the ability to form words, since there was as yet no language. She had to forage for her food every day; there was no agriculture. Brisk walking essentially means walking at a fast pace. It is believed that walking briskly burns almost as many calories as running or jogging for the same distance, and poses less risk for injury. Brisk walking is also considered aerobic activity. No unpleasant side effects either. One might be wondering if there are any disadvantages. There are innumerable benefits of brisk walking, especially for obese people, as it helps them a great deal in increasing their weight loss program. Talking about the fact, as to how fast should the pace of your aerobic exercise brisk walking be; the answer to it is that the right pace is the one, which is fast but not exhausting. The ideal brisk walking speed is one in which you are capable of talking with your walking companion, while carrying on with your walking session. Thus the investigator

interested in whether six weeks of brisk walking programme is effective in decreasing the fat percentage of sedentary college students.

2. Material and Methods

2.1 Subjects

For the purpose of the study thirty (N=30) male sedentary college students of Lucknow Christian College, Lucknow between 18 to 25 years of age were selected as subjects for the present study and the subjects were briefed in details about the study.

2.2 selections of variables

Based on literary evidence, discussion with expert and scholar's own understanding body fat percentage was selected as variable for the present study.

2.3 Procedure

Periodisation of training and collection of data was showed in table 1

(See table 1)

For the detail of training protocol interested person may contact to the author.

2.4 Administration of test

Body Fat Percentage

Test: - Measurement of Fat folds

Equipment: - Skinfold Caliper

Procedure: - The body fat percentage was measured by skinfold caliper of fat folds: the fat folds measurements are:

MEN: chest, abdomen, and thigh.

Chest: a diagonal fold taken one-half of the distance between the anterior axillary line and the nipple.

Abdomen: vertical fold measured 1 inch to the right of the umbilicus.

Thigh: vertical fold measured at the anterior midline of the thigh, midway between the knee cap and the hip.

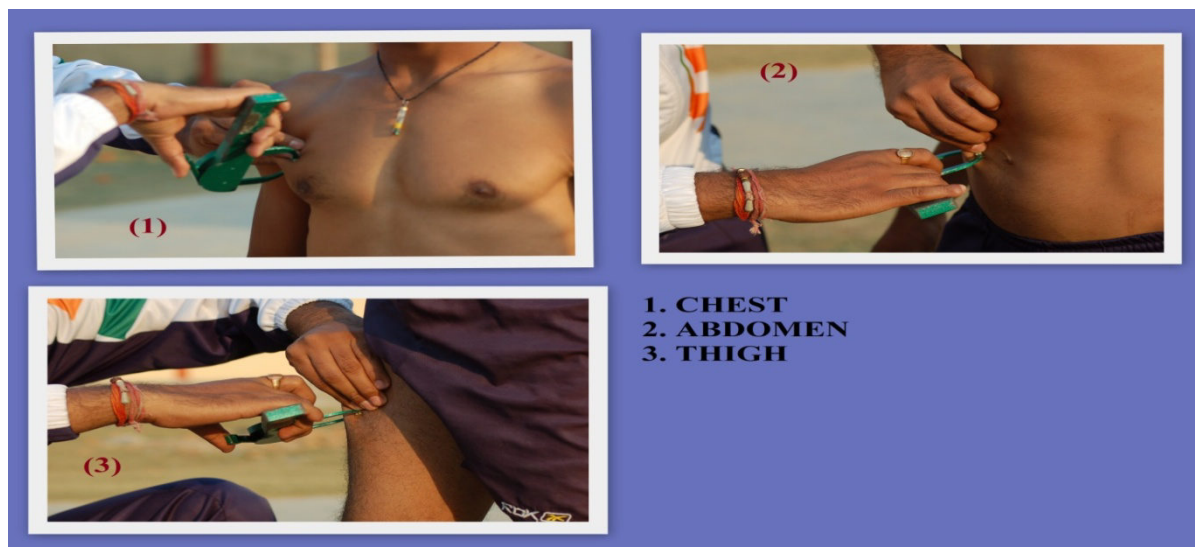


Figure:-1 Measurement of three sites for calculation of Fat Percentage.

The body fat percentage was calculated from particular web site via feeding the data on the site www.linearsoftware.com/online.html.

Scoring: - The score recorded in %.

2.5 Statistical Analysis

To determine the level of Fat percentage, descriptive statistics was applied. To determine the effect of brisk walking on Fat percentage in sedentary college students one factor repeated measures analysis of variance was used to compute the data.

3 Findings

The findings and discussion of findings with regard to the present study have been presented in two sections. Section one deal with the mean and standard deviation of Fat percentage. Section two deals with the one factor repeated measures Analysis of variance of Fat percentage variable.

4. Discussion of Findings

It was evident from the mean of Fat Percentage in table-1 that there was slight increase in Fat Percentage from observation one to observation second (**obs A 14.32, obs B 14.37**, whereas after second observation to fourth observation there was sequential decrease in Fat Percentage till the training phase **obs C 13.07, obs D 12.48**). Whereas at obs E of detraining phase there was slight increase in Fat Percentage 12.79. Mean Fat Percentage differed statistically significantly between Observation points ($F(1.58, 45.66) = 110.16, P < 0.000$), insignificant difference was found in case first observation and second observation (MD=0.05, $p=0.49$), whereas significant difference was found in second and third observation (MD=1.30, $p=0.000$), third observation and fourth observation (MD=0.59, $p=0.000$) and fourth and fifth observation (MD=0.31, $p=0.01$). We can, therefore, conclude that a brisk walking training program (6 weeks) elicits a statistically

significant reduction in Fat Percentage. **R Mendes, N Sousa and J L Barata** Brisk walking seems to be the preferred aerobic exercise. Vigorous intensity aerobic exercise and resistance exercises for muscle strengthening, at least two days an observation is also recommended. **Paul A. Ford, Gill Perkins & Ian Swaine, et al (2012)** show that regular accumulated bouts of brisk walking during the school day can positively affect body composition in primary school children.

5. Conclusion and recommendation

From the above discussion it is concluded that a brisk walking training programme (6 weeks) elicits a statistically significant reduction in fat percentage of sedentary college students. The results of this study may be used by Physical Education teachers, Health trainers and Fitness experts for prescribing the brisk walking programme for different age groups and sex.

6. Acknowledgement

The research scholar extends his sincere gratitude to the Vice Chancellor of Lucknow University, Lucknow for giving the opportunity to work on this study and providing the facilities. A deep sense of gratitude is expressed to **Dr. Kunnath Mathai Valsaraj**, Associate Professor, Lucknow Christian Degree College, Lucknow for his encouragement, valuable guidance, and precious suggestions in the formulation and completion of this study. The Scholar extended his thanks to the staff of the Department of Physical Education Lucknow Christian College, Lucknow for the assistance rendered. The research scholar would wish to extend heartfelt thanks to all the Subjects who performed so willingly and effectively.

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Periodisation of training and collection of data presented in Table 1

Table- 1
Periodisation of training and collection of data

Phase-1				Phase-2				Phase-3								
Training	Weeks	Days	Obs	Training	Weeks	Days	Obs	Training	Weeks	Days	Obs	Training	Weeks	Days	Obs	
No	1	1	A	Brisk Walking	4	22	Brisk Walking	7	10	De	64					
		2	23			43										65
		3	24			44										66
		4	25			45										67
		5	26			46										68
		6	27			47										69
		7	28			48										70
	2	8	29		49	50		71								
		9	30		51	72										
		10	31		52	73										
		11	32		53	74										
		12	33		54	75										
		13	34		55	76										
		14	35		56	77										
	3	15	36		57	78										
		16	37		58	79										
		17	38		59	80										
		18	39		60	81										
		19	40		61	82										
		20	41		62	83										
21		B	42	C	63	D	84	E								

Note:- obs = observation

The Total research period was of 84 days. obs A=day1, obs B=21st day, obs C=42nd day, obs D=63rd day and obs E=84th day).

SECTION ONE

Mean and Standard deviation of Fat Percentage

Table-2

Variable	Observation									
	obs A		obs B		obs C		obs D		obs E	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Flexibility(cm)	14.32	2.13	14.37	2.14	13.07	1.73	12.48	1.69	12.79	1.54

The Mean of Fat percentage in Table-2 shows that there was slight increase in Fat percentage from observation one to observation second (**obs A 14.32 (%)**, **obs B 14.37 (%)**), whereas after second observation to fourth observation there was sequential decrease in Fat percentage till the training phase **obs C 13.07 (%)**, **obs D 12.48 (%)**. Whereas at obs E of detraining phase there was slight increase in Fat percentage **12.79 (%)**.

SECTION TWO

The findings pertaining to brisk walking one factor repeated measure analysis of variance was computed and data pertaining to that have been presented in tables.

FAT PERCENTAGE

Mauchly's Test of Sphericity for Fat Percentage presented in Table -3

Table-3

Mauchly's Test of Sphericity for Fat Percentage

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	Df	Sig.	Epsilon		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Observation	.018	109.98	9	0.000	.394	.412	.250

The above table reveals that the Mauchly's Test of Sphericity was significant $X^2(9) = 109.98$, $p = 0.00$, (i.e. has a probability value less than 0.05) and it is concluded that there was significant variance of difference and thus the condition of Sphericity has been violated. Further, as the value of Epsilon of Greenhouse-Geisser correction was less than 0.75, therefore in test within subject effect, Greenhouse-Geisser value of 'F' was taken into consideration.

One Factor Repeated-Measure Analysis of Variance for Fat Percentage presented in Table- 3.1

Table-3.1

One Factor Repeated-Measure Analysis of Variance for Fat Percentage

Source	SS	Df	MS	F	P
Between-Subject	480.40	29	16.56		
Within-Subject					
Observation	94.05	1.58	59.49		
Subject x Observations	24.72	45.66	.54	110.16	.000*

*Sig, at 0.05 level of confidence ($F(1.58, 45.66) = 110.16, P < 0.000$).

Mauchly's test indicated that the assumption of Sphericity had been violated, $X^2(9) = 109.98, p = 0.00$, therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of Sphericity ($\epsilon = .39$). The results show that there was significant effect of brisk walking on Fat percentage, ($F(1.58, 45.66) = 110.16, P < 0.000$).

Pair Wise Comparison of observations in relation to fat percentage presented in Table 3.2

Table-3.2

Pair Wise Comparison of observations in relation to fat percentage

(I) Observation	(J) Observation	Mean Difference (I-J)	Sig. ^a
1) 14.32	2) 14.37	0.05	0.49
2) 14.37	3) 13.07	1.30*	0.00
3) 13.07	4) 12.48	0.59*	0.00
4) 12.48	5) 12.79	0.31*	0.01

Significant at 0.05 level of confidence.

a:- Adjustment for multiple comparison:Bonferroni

Post hoc tests using the Bonferroni correction revealed that insignificant difference was found in case first observation and second observation (MD=0.05, p=0.49),whereas significant difference was found in second and third observation

(MD=1.30, p=0.00) , third observation and fourth observation (MD=0.59, p=0.00) and fourth and fifth observation (MD=0.31, p=0.01). We can, therefore, conclude that a brisk walking training program (6 week) elicits a statistically significant reduction in Fat Percentage after a certain time interval.

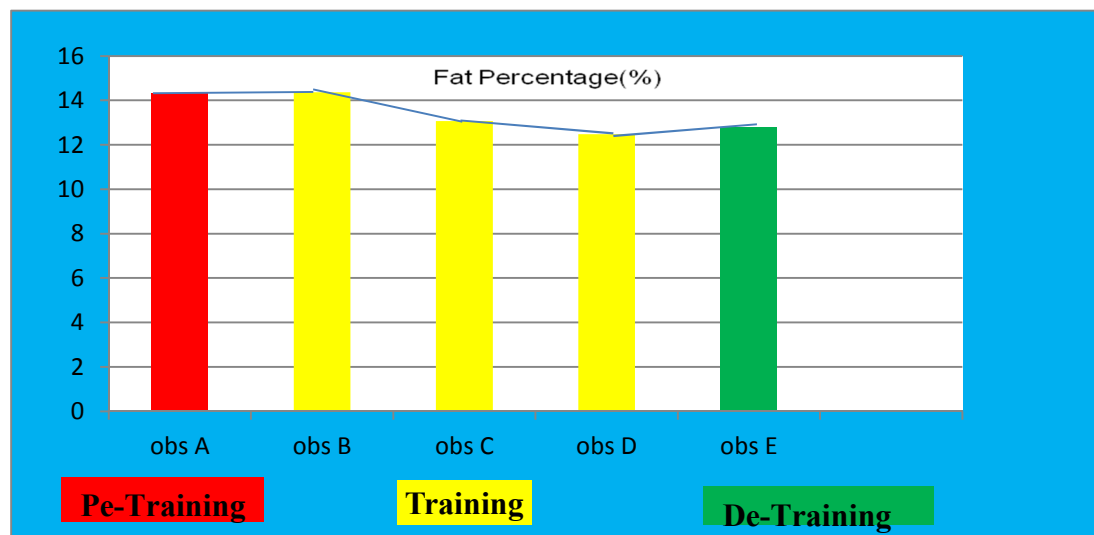


Figure: 2 Graphical presentation of means on repeated observation in relation to Fat (%).