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Annals of Biological Research, 2011, 2 (1) : 83-87
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ISSN 0976-1233
CODEN (USA): ABRNBW

The effects of isometric exercising method on under-skin fat rate in non-athlete boy students of Islamic Azad University (Shabestar branch- Iran)

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ABSTRACT

The purpose of this research was study the effect of three exercising, Isometric on under-skin fat rate in non-athlete boy students. So, among 15 non-athlete volunteer students with ages 20-27 years old, 12 students who were all healthy, without any surgery in chest, abdomen and lap, selected and their fat thickness in these regions were measured by Caliper and then with the use of table of estimating the fat percentage based on age and the amount of under-skin fat in above mentioned three regions excerpted from "Sairi", the fat percentage of the group was determine.. We used 99% probability level for All Analysis. After 4 weeks of located exercising in 12 sessions, the 3 above mentioned regions were determined again from the viewpoint of fat thickness and fat percentage. To compare the data acquired in pre-test and post-test, we made use of T-test. This study revealed that localized isometric exercises have been effectual in reducing the fat percentage, and there is a significant difference between average fat percent of subjects of exercises group before and after exercises.

Key words: Contractions isometric, isotonic and combination, under skin fat, Non- athlete.

INTRODUCTION

Nowadays exercise and physical activities are regarded as one of the most important necessities of human life especially urban communities which lack the necessary physical motions in various affairs of daily life. However the absence of adequate physical activities and improper nutrition in urban communities totally leads to development of some problems in people such as cardiovascular disease and overweight disease which so called fatness. in this study the terms "Overweight" and "fatness" were used to refer to the excessive under skin fat supplies ; Totally if body during metabolism through physical activities can not drive these existing fat into energy production circle some of them would be accumulated in under skin layers mostly chest abdomen and leprous.

As the name indicates the extra fat in the body is an excess load and doesn't contribute to increase in strength or improved function, and even has fatal and negative features [1]. Also study reveals that excess fat reduces the aerobic readiness, alleviates the capability of performing activities which demand jumping and rapid movements, and is a restrictive factor for movements of joints [2]. Moreover, sometimes the percent of fat in the body is referred to as a prognostic parameter for cardiovascular serious factors, Hence besides the benefits of modern exercising science reducing extra fat has always been regarded by the athlete and non-athlete people and still is so. Further, some people due to their physical status are not able to reduce fat through popular and typical exercising methods. Like people who have problem in lower parts of their body and it is impossible for them to exercise and lose fat through activities such as running, biking and so on. Or people who because of limitations of movement in joints are not able to do motor activities. Hence, finding a theoretic solution through various athletic activities especially isometric exercising methods may aids. Many people in reducing excess fat of the body and provide us with effectual information about the effects of contraction on the changes on the fat percent.

MATERIALS AND METHODS

Statistical population of this study comprised 20-27 years old non-athlete male students of Shabestar Azad Islamic University. To do this, among 15 volunteer, 12 healthful subjects who have had no surgery in the chest, abdomen lap, were selected. The thickness of their fat in these areas was measured by caliper. Then following "Sairi" formula, we used the table of stinting the fat percent based on age and total amount of under skin fat in above mentioned areas to measure the percent of fat.

Table 1: Correlative t-test results in subjects

Parameter	Test stage	mean	d	t	Probability ratio
Chest fat thcknes	Pre-test	13.0833	11	-4.1681929	0.0016*
	Post-test	12.5416			
Abdomen fat thicknes	Pre-test	24.0417	11	-4.5257882	0.0009*
	Post-test	22.5427			
Lap fat thicknes	Pre-test	21	11	-8.6168440	0.0001*
	Post-test	19.5			
Sum of the thicknes of fat in three areas	Pre-test	58.0417	11	-8.1566640	0.0007 *
	Post-test	54.5837			
Fat percent	Pre-test	16.3083	11	-3.72	0.0034*
	Post-test	15.3166			

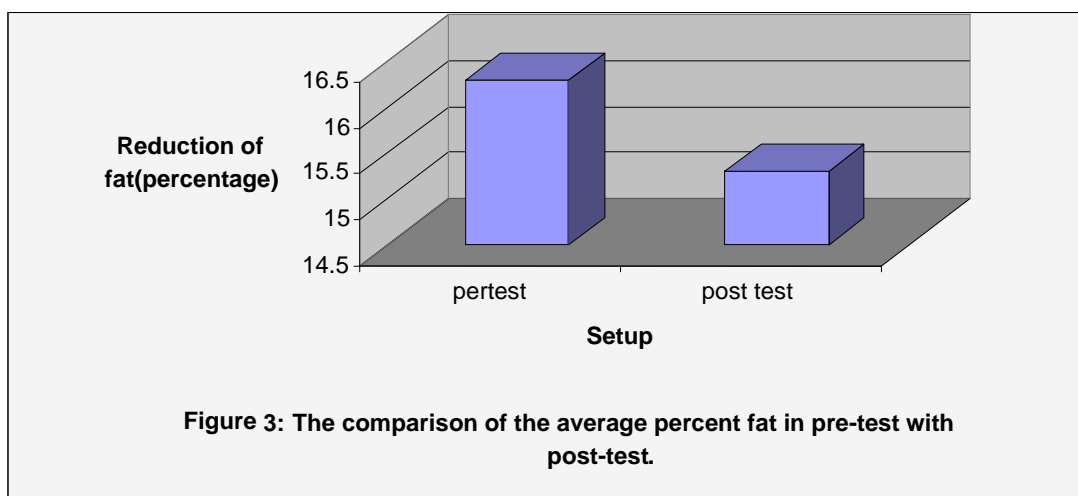
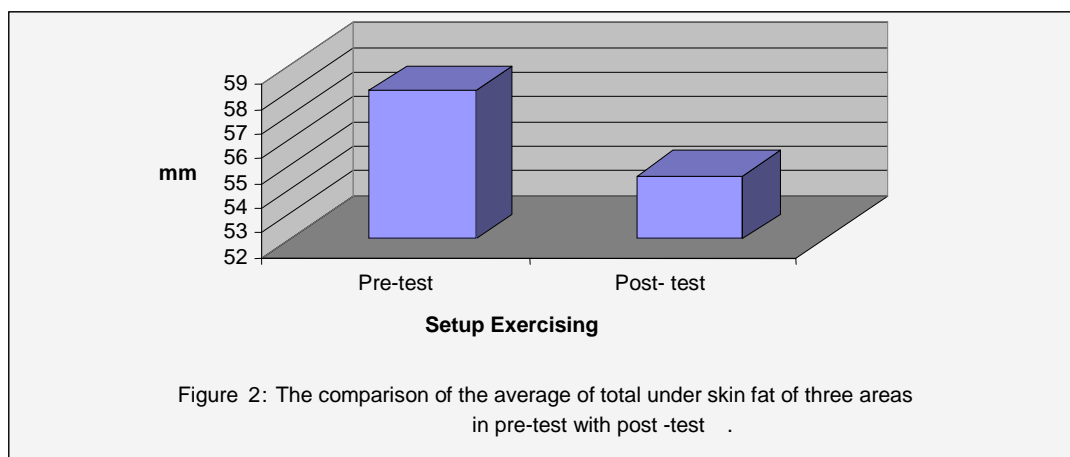
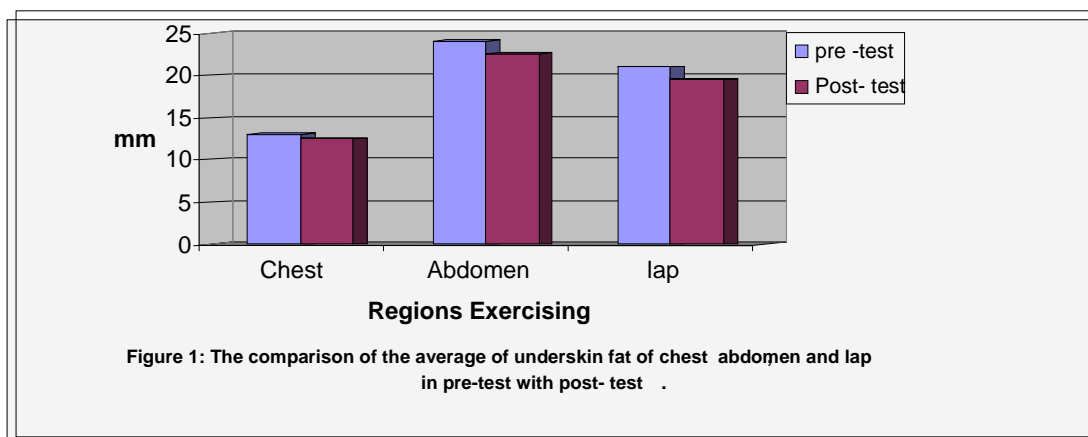
*: It means that there is a significant difference between pretest and post test results in that parameter.

In this study the subjects attended in exercising place for four weeks every other day from 10 A.M to 12, and participated in exercises. Each week composed of three 50 minutes session containing 10 minutes for general warm up, about 30 minutes for individual exercises, and 10 minutes for recovery. Every session's individual exercises consisted of four set of bench press by barbell, sit-ups and extension of knee by universal system and each exercise unlimitedly lasted until the individual get tired. Isometric group in static way. It must be noted that bench press by barbell and extension were done by barber equal to 60 or 70 percent of maximum

power of the subjects. Maximum power of subjects was calculated using "poliquin" table. To do this, a few days before the beginning of exercises, consulting with subjects, they were asked to repeat the favorable barbell as much as they can. Then for each exercise the amount of maximum power of subjects were calculated by "poliquin" table.

To analysis the data obtained from pretest and post test we used correlative T-test with probability ratio of 1%. For statistical analysis EXCELL and SPSS softwares were used.

RESULTS AND DISCUSSION



The effects of isometric exercising method on fat thickness of fat in these areas and fat percent of subjects are shown in table 1.

This study revealed that localized isometric exercises have been effectual in reducing the fat thickness of subjects, chest and there is a significant difference between the thickness of fat in subjects, chest before and after exercises [Figure 1, 2 and 3]. These findings correspond with findings of Vahidian, Nikzad, Skinner, Karter, Vilmore and Johnson [3,4,5,6,7,8]. This study also revealed that local Isometric exercises have been effectual in reducing the abdomen fat thickness of subjects and there is a significant difference between abdomen fat subjects in exercising group before and after exercises. These findings correspond with finding of Nikzad, Skinner, karter, Philips, Wilmore, Johnson and verney [4,5,6, 7, 8, 9, 10], but conflict with Hunter and colleagues, study outcomes. Probably this conflict is due to the low fat percent of subjects of their study.

Besides, according to the finding of this study Isometric local exercises have been effectual in reducing the lap fat thickness of subjects and there is a significant difference between lap fat thickness of subjects in exercising group before and after exercises. These findings corresponds with finding of Nikzad, Riahi, Skinner, Boilio, Johnson, Stanly [5, 8, 11, 12, 13, 14]. But they conflict with finding of Riahi and Stanly. This conflict with findings of Riahi is probably due to the generality of exercises and about stanly's study, this conflict may be due to the potency nature of exercises presented in it [12, 14].

The outcomes of previous studies have shown that staminal physical activities have been effectual in reducing the fat percent. The present study revealed that there is a significant difference between average fat percent of subjects of exercising groups before and after exercises. This corresponds with findings of Yunesian, Hodjat, Maasumi, Alijani, patun, verney and khan [11, 4, 3, 1, 7, and 16].

Researchers contribute this difference to the spattering of some hormones from adrenal which lead to decomposition of extra fat or the body. One of the most important hormones of this kind is "Epinephrine" hormone [16].

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