



ISSN: 2456-0057  
IJPNPE 2019; 4(1): 1566-1567  
© 2019 IJPNPE  
www.journalofsports.com  
Received: 12-11-2018  
Accepted: 14-12-2018

**Dr. W Vinu**  
Assistant Professor,  
Department of Physical  
Education and Sports Sciences,  
Annamalai University,  
Chidambaram, Tamil Nadu,  
India

## Outcome of progressive resistance training on thigh girth

**Dr. W Vinu**

### Abstract

The purpose of the study was to find out the effect of progressive resistance training on thigh girth. Twenty men students studying in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Tamil Nadu were randomly selected as subjects and their aged ranged from 18 to 24 years. The selected subjects were randomly assigned into two equal groups namely experimental (N : 10) which underwent progressive resistance training for 8 weeks with 3 sessions per week and control (N : 10) which did not undergo any special training. Thigh girth was selected as criterion variable. The subjects were tested for thigh girth prior to and after training programme. The obtained data was statistically assessed for any significant difference using ANCOVA. The result showed a significant improvement in thigh girth ( $53.45 \pm 3.99$  Vs  $51.65 \pm 4.07$ ,  $p \leq 0.05$ ) between the experimental group and control group. On the basis of the findings, it was concluded that progressive resistance training significantly improved thigh girth among male students.

**Keywords:** Progressive training, resistance training, thigh girth

### Introduction

In recent years athletic performance has been transformed skill technique and training standard are being constantly improved. Physical Education Scientists have been training to develop new methods of training and technique to attain a high level of performance in sports and games. The principles of training have undergone many changes in the past decades. The training principles, therefore, are not static, but they undergo changes in keeping pace with the development of knowledge in various sciences.

In resistance training load refers to the mass or amount of resistances utilized for specific exercises. The percentage of one repetition maximum (IRM) method was used in this training programme. It is the maximum load that can be lifted successfully one time through the full range of movement. In percentage method the load of IRM is treated as hundred percent. Progressive resistance training is used to develop the size of the thigh muscles. The point of maximal thigh circumference is the thigh girth (Johnson Barry, L. & Nelson Jack, K. 1982) [1]. The muscle through use becomes stronger and larger. Rigorous training, particularly when done against resistances usually results in muscle fibre thickening. There is also an increase in the number of capillaries surrounding and nourishing the muscles and a thickening of connective tissues, similarly with the muscle tendons that connect muscles and ligaments that connect muscle to bone. These kinds of changes are likely to result in again in body resistance.

### Methodology

The purpose of the study was to find out the effect of progressive resistance training on selected physical parameter. To achieve the purpose of the study, twenty men students studying in the Department of Physical Education and Sports Sciences, Annamalai University, Tamil Nadu were selected as subjects at random. The selected subjects were divided into two equal groups of ten subjects each, such as progressive resistance training group and control group. Group I underwent progressive resistance training programme for three sessions per week for eight weeks. Group II acted as control, which did not participate in any special training programme apart from their regular physical activities as per the curriculum.

**Correspondence**  
**Dr. W Vinu**  
Assistant Professor,  
Department of Physical  
Education and Sports Sciences,  
Annamalai University,  
Annamalainagar, Tamil Nadu,  
India

Before collection of data, the subjects were oriented about the purpose of the study and investigator explained the test to the subjects and about the procedure to be adopted for measuring thigh girth. The experimental group underwent the training with an intensity of 60-95% of effort with a gradual increases in intensity with number of weeks. The data was collected prior to and immediately after the training programme for

criterion variables. They were statistically examined for significant differences, if any, by applying analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05.

### Analysis of the Data and Results of the Study

**Table 1:** Analysis of Covariance of Data on Thigh Girth between Pre-test and Post-test of Experimental and Control Groups

Test		Experimental Group	Control Group	SOV	Sum of Squares	df	Mean squares	F ratio
Pretest	Mean	52.25	51.38	Between within	4.38	1	2.19	0.15
	SD	4.03	4.11		395.93	18	14.66	
Post test	Mean	53.45	51.65	Between within	20.20	1	10.10	0.70
	SD	3.99	4.07		387.69	18	14.36	
Adjusted Post test	Mean	53.11	52.18	Between within	5.91	1	2.96	98.67
					7.80	17	0.03	

The table value required for significance at 0.05 level of confidence with df 1 and 18 and 1 and 17 are 4.41 and 4.45 respectively.

The table shows that the pre test mean of experimental and control groups are 52.25 and 51.38 respectively. The obtained F ratio of 0.15 for pre test mean is less than the table value 4.41 for df 1 and 18 required for significance at 0.05 level. The obtained F ratio of 0.70 for post test mean is less than the table value 4.41 for df 1 and 18 required for significance at 0.05 level. The adjusted post test mean of experimental and control groups are 53.11 and 52.18 respectively. The obtained F ratio of 98.67 for adjusted post test mean is more than the required table value 4.45 for df 1 and 17 for significant 0.05 level.

The results of the study indicated that there was a significant difference between the adjusted post test mean of progressive resistance training group and control group on thigh girth.

### Conclusion

Based on the results of the study, it was concluded that progressive resistance training improves girth or size of the particular muscles.

### References

1. Barry L, Johnson, Jack K Nelson. Practical Measurement of Evaluation in Physical Education, 1982, 25.
2. Bidwell JP, Gibbson CE, Godsiff S. Acute Compartment Syndrome of the Thigh after Resistance Training. British Journal of Sports Medicine, 1996, 30.
3. Bosco, Custafson. Measurement and Evaluation in Physical Education Fitness and Sports. New Jersey: Prentice Hall Inc, 1993.
4. Dick Frank W. Sports Training Principles. London: Henry Kimpton Publishers Limited, 1996.
5. Hooks Gene. Application of Resistance Training to Athletics. New York: Ronald Press Company, 1962.
6. Hosler William W. Electromyographic Strength and Girth Alternations in Selected Male and Female subjects consequent to a seven weeks strength improvement programme. Abstract of Research Paper, 1976.
7. Reilly Daniel P. Strength Training. 2<sup>nd</sup> Ed. New York, Leisure Press, 1982.
8. Shea Patrich. Effect of Selected Resistance Training Programme on the Development of Strength and Muscle Hypertrophy. Research Quarterly, 1966, 37.