



## INFLUENCE OF RESISTANCE BAND TRAINING ON SELECTED PHYSICAL FITNESS AMONG COLLEGE LEVEL CRICKET PLAYERS

A.MURUGAN<sup>1</sup>& Dr.A.S.NAGESWARAN<sup>2</sup>

<sup>1</sup>Assistant Director of Physical Education, Anna University, BIT - campus, Tiruchirappalli, Tamilnadu, India.

<sup>2</sup>Associate Professor, Department of Physical Education and Centre for Research, H.H. the Rajah's College, Pudukkottai, Tamilnadu, India.

### Abstract

The purpose of the study was to find out the effect of resistance band training on selected physical fitness among college level cricket players. To achieve this study, thirty male Cricket players have been randomly selected from Bharathidasan Institute of Technology Campus, Tiruchirappalli, Tamilnadu, India. The age of subjects were ranged from 19 to 22 years. The subjects had past experience of at least two years in cricket and represented the college teams. The test was carried out on the basis of subjective rating (two skills in batting) was carried out on each participant. The subjects were randomly assigned into two groups of fifteen each, such as one experimental group and a control group. The experimental group participated resistance band training for 3 days a week, one session on every alternate day and for 6 weeks. Each session persisted up to 45 minutes excluding warm up and cool down. The control group carried out their daily routine activities and there was no special training was given to them. The subjects of the two groups were tested on selected variables, prior and immediately after the training period. The collected data were analysed statistically through analysis of covariance (ANCOVA) to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups. The results of the study showed that there was significant level differences exist between Resistance band training group and control group. Resistance band training group showed significant improvement on Push-up and Pull-up when compared to control group.

**Keywords:** Resistance band training, strength, push-up & pull-up.

### INTRODUCTION

Physical activity is defined as any skeletal muscle contraction that results in increased energy expenditure. Thus physical activity might involve walking for a bus or training for a football match and therefore includes all exercise and sports activities (K. Birch 2006). Resistance band training is easily the most cost effect form of resistance training take into consideration the unlimited exercise options and the ability to impact all components of fitness and performance. Elderly groups successfully induce resistance-training responses using resistance bands, as opposed to weights (K. George 2006). Elastic bands have become increasingly more popular as a performance enhancement tool and subsequently have been investigated systematically to better understand the mechanisms responsible for the performance adaptations that have been observed (Anderson et al., 2008; Argus et al., 2011). It has been demonstrated that elastic bands can challenge or assist the strength curve by providing variation in how a muscle complex is challenged over a range of motion (Cronin et al., 2003). To understand why proponents of elastic bands favor this training modality, it is important to consider that the human strength curve (Frost et al., 2010).

### PURPOSE OF THE STUDY

The purpose of the study was to find out the effect of resistance band training on selected physical fitness among college level cricket players.

### METHODS

To achieve the purpose of the study, thirty male cricketers have been selected from Bharathidasan Institute of Technology Campus – Tiruchirappalli, Tamilnadu, India. The age of subjects were ranged from 19 to 22 years. The subjects had past experience of at least two years in cricket and only who those represented the college teams were taken as subjects. The test was carried out on the subjects for Push-up and Pull-up. The subjects were randomly assigned into two groups of fifteen each, such as experimental group and control group. The experimental group participated resistance band training for 3 days a week, one session on every alternate day and for 6 weeks, each session lasted for 45 minutes excluding warm up and cool down. The exercises included - shoulder internal rotation, shoulder external rotation in adduction position elbow 90 degree, shoulder internal rotation, shoulder external rotation in abduction position elbow 90 degree, shoulder front raise, shoulder lateral raise & shoulder horizontal adduction. The control group maintained their daily routine activities and no special training was given. The subjects

of the two groups were tested on selected variables, prior and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significance

difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups.

**TABLE-I  
CRITERION MEASURES**

S.No	Criterion measure	Test items	Unit of measurement
1	Strength	Push-up	In numbers
2	Strength	Pull-up	In numbers

**TABLE – II  
DESCRIPTIVE ANALYSIS OF SELECTED PHYSICAL FITNESS AMONG CONTROL AND EXPERIMENTAL GROUPS**

S. No	Variables	Group	Pre-Test Mean	SD ( $\pm$ )	Post –Test Mean	SD ( $\pm$ )	Adjusted Mean
1	Push-up	FTG	6.67	0.58	8.18	0.50	8.26
		CG	6.51	0.56	6.56	0.61	6.59
2	Pull-up	FTG	5.39	0.52	7.68	0.46	7.85
		CG	5.21	0.53	5.50	0.77	5.61

FTG= Resistance band training group, CG= Control group

In Tables-II, pre-test means, post-test means, standard deviations and adjusted means on Push-up and Pull-up of college level cricket players were numerical

presented. The analysis of covariance on selected variables of Resistance band training and control group is presented in table III.

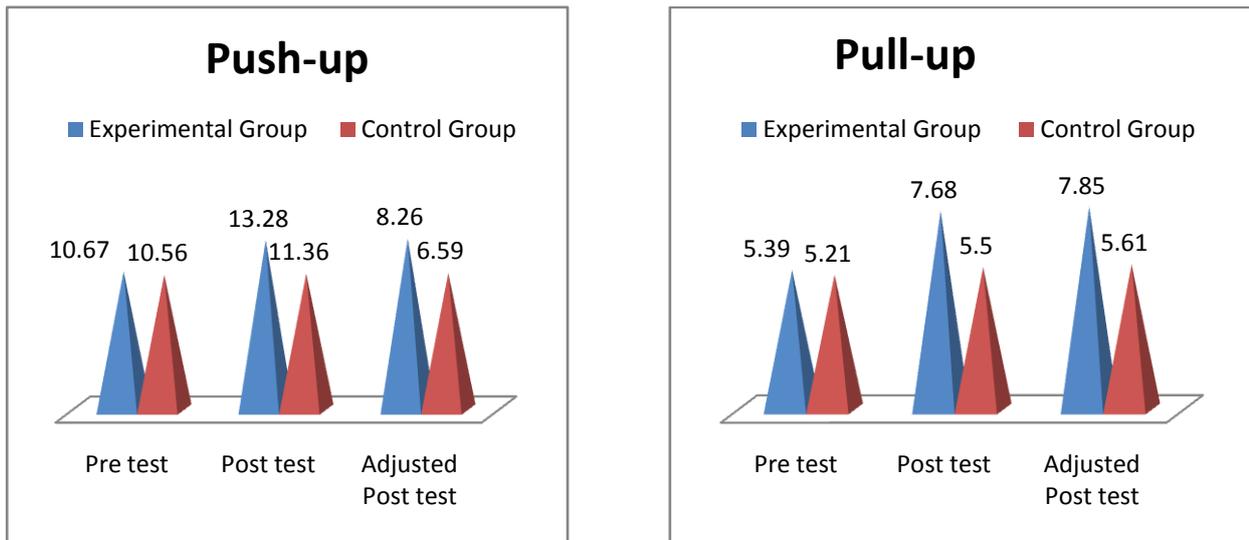
**TABLE – III  
ANALYSIS OF COVARIANCE COMPUTED FOR EXPERIMENTAL AND CONTROL GROUP FOR SELECTED DEPENDENT VARIABLES**

S.No	Variables	Source of Variation	SS	df	MS	F ratio
1	Push-up	Groups	4.32	1	4.32	11.38*
		Error	10.26	27	0.38	
2	Pull-up	Groups	18.07	1	18.07	17.89*
		Error	27.27	27	1.01	

\*Significant at 0.05 level of confidences. (Table value for df1 and 27 was 4.21)

The obtained F-ratio of 11.38 for adjusted mean was greater than the table value 4.21 for the degree of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant level difference among control and experimental groups on Push-up. The obtained F-ratio of

17.89 for adjusted mean was greater than the table value 4.21 for the degree of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant level difference among control and experimental groups on Pull-up.



FIGURE

THE PRE, POST AND ADJUSTED MEAN VALUES OF PUSH-UP AND PULL-UP OF EXPERIMENTAL AND CONTROL GROUP ARE GRAPHICALLY REPRESENTED

### DISCUSSION OF FINDINGS

(Anderson et al., 2008) concluded in his study with the similar result shown that there is some significant difference in the basic strength. (Argus et al., 2011) found the result similar to the present study said that, significant difference in the strength after conducting the resistance band training. The results of the study indicate that the experimental group which underwent Resistance band training group showed significant improvement on Push-up and Pull-up. The control group did not show significant improvement in Push-up and Pull-up drive.

### CONCLUSIONS

From the analysis of data, the following conclusions were drawn.

1. The experimental group Cricketers showed significant improvement in Push-up and Pull-up.
2. The control group Cricketers did not show significant improvement in any of selected variables.

### REFERENCES

1. K. Birch D. MacLaren & K. George, (2006) *Sport and Exercise Physiology*, Bios scientific publisher ISBN 1-85996-249-1 Page no: 1.
2. Colado Juan C & Triplett N Travis (2008) *Journal of Strength & Conditioning Research* Effects of a Short-Term Resistance Program Using Elastic Bands Versus Weight Machines for Sedentary Middle-Aged Women. Volume 22 - Issue 5 - pp 1441-1448, doi: 10.1519/JSC.0b013e31817ae67a.
3. Wagner Rodrigues Martins Email author, Marisete Peralta Safons†, Martim Bottaro, Juscelino Castro Blasczyk, Leonardo Rios Diniz, Romulo Maia Carlos Fonseca, Ana Clara Bonini-Rocha, Ricardo Jacó de Oliveira & Martins et al (2015). *Effects of short term elastic resistance training on muscle mass and strength in untrained older adults: a randomized clinical trial*. BMC Geriatrics 2015:15:99, <https://doi.org/10.1186/s12877-015-0101-5>.
4. Todd C. Shoepe, David A. Ramirez, Robert J. Rovetti, David R. Kohler, and Hawley C. Almste (2011). *The Effects of 24 weeks of Resistance Training with Simultaneous Elastic and Free Weight Loading on Muscular Performance of Novice Lifters*. Published online Oct 4. doi: 10.2478/v10078-011-0043-8 PMID: PMC3588619.
5. Anderson CE, Sforzo GA, and Sigg JA (2008) *The effects of combining elastic and free weight resistance on strength and power in athletes*. J Strength Cond Res 22: 567–574.
6. Argus CK, Gill ND, Keogh JW, Blazeovich AJ, and Hopkins WG (2011) *Kinetic and training comparisons between assisted, resisted, and free countermovement jumps*. J Strength Cond Res 25: 2219–2227.
7. Cronin J, Mcnair P, and Marshall R. The effects of bungee weight training on muscle function and functional performance. J Sport Sci 21: 59–71, 2003.
8. Frost DM, Cronin J, and Newton RU. A biomechanical evaluation of resistance. Sports Med 40: 303–326, 2010.