

## EFFECT OF SPORTS SPECIFIC CIRCUIT TRAINING ON PERFORMANCE OF POWER LIFTER FOR ALL INDIA UNIVERSITY

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### Abstract

The purpose of the study was to investigate the effectiveness of sports specific circuit training on performance of power lifting skills. Total ten male students of power lifting group who were selected for final selected trials for all India Inter-university from Lakshmbai National Institute of Physical Education (LNIFE), Gwalior were taken as subject for the purpose of the study. The chronological average age of subjects was between 22-25 years. There were only one group i.e., experimental. The pretest-Posttest design was used to collect the data. The subjects were exposed to selected sports specific circuit training for one hour four sessions per week for three weeks. The criterion variable was assessment of performance testing of power lifting skills by using Pre and final selections trials for participating in all India Inter university. Dependent 't' test was computed for finding out the effectiveness of sports specific circuit training on power lifting performance. After conducting the pre and final selection trials before and after training, the training significantly affects the performance of power lifting in male group.

**Keywords:** Bench Press, Squat, Dead Lift, Sets and Repetition.

### Introduction

Power lifting is the toughest sports played at both amateur and professional level. The physical demands of power lifting place a great emphasis on physical power and maximum muscular strength. Maximum strength is very crucial, as is the capacity to do heavy strength in a game over very short duration. There is the physical stress, that tackles heavy weights in almost every training session and in this respect power lifting has been called as a 'Strength sport'. Power lifting forwards require the ability to accelerate over very short duration, but will need to be able to repeat this many times in practice to perform well in competition. Although the power lifting is of different demands, all rely on an-aerobic power of an energy system that can easily be trained with the right circuit methodology. Strength training is central to successful athletic performance in power sports. It involves the development of aspects of specific fitness such as maximum muscular strength and power. Athletes need good levels of strength and conditioning related to their sport to help them attain their sporting goals. For maximum benefit, sports specific circuit training methods need to be applied in an e

effective manner. The most appropriate time to use an anaerobic or specific circuit is just before and during the competitive season. An anaerobic circuit should only be used with athletes who have a good overall level of fitness and who participate in a sport with a high anaerobic demand. The aim of such a circuit is to develop power, speed and anaerobic endurance. It stimulates the body to develop the anaerobic energy systems through bouts of maximum-intensity, short-duration performances. To meet the specific requirements of a sport, it is necessary to design a circuit that is sport-specific and it should be related to the fitness levels (in particular the fitness weaknesses) and desires / aims of the athletes. Focus on major muscle groups used in the patterns of movement involved in the sport. In addition, sport-specific circuits can be designed to address the specific skill and specific fitness requirements of a sport. But only the well-conditioned athletes should complete this sports specific circuit with relevant training behind them. The circuit is progressed by increasing the intensity rather than repetitions when players are ready and able to cope. When the season drew closer the emphasis on trail increased and this in itself became more physical as contact elements were introduced, the circuit quantity was reduced accordingly. Circuits can develop these qualities and the stamina needed to endure the stop-start action.

### Methodology

Ten male students were taken from power lifting group those who were doing B.P.E. and M.P.E courses from Lakshmbai National Institute of Physical Education, Gwalior served as the subjects for the study. The procedure for selection of the subjects was based on non random technique i.e. Quota sampling technique. The chronological average age of the subjects was 22 year. In order to test the hypothesis of the study the criterion variables selected for the study was assessment of performance testing of power lifting skills by using Pre and final selections trials for participating in all India Inter university of power lifting.

The training was carried out between the pre and final trials of three weeks for all India Inter University. Pre and post test data was collected through pre and final selection selection trial of power lifting for All India Inter University Power Lifting. The subjects were exposed in sports specific circuit training programme of chest, back, thighs, trunk, hips, triceps, growing and abdominal part in morning four days a week for three weeks. The training is progressed by increasing the intensity rather than repetitions when players were ready and able to

cope up and the movement of exercise was very slow. Recovery between exercises was minimal and recovery between each set was sufficient. The exercise was prepared in such a manner that two to three muscles involve together from selected muscles in a day training session after normal routine of power lifting practice.

The subjects were exposed to training in morning after moderate intensity routine practice of power lifting which was work out as pre exercises or specific warming up for circuit training in power lifting hall of Lakshmbai National institute of Physical Education with high intensity exercises in Standing and lying (prone, supine & sideward) positions and six to ten repetitions of two to three sets of seven to nine different exercises for four days with the help of additional resistance like dumbbell, barbell, weight plates and exercise machines followed by cooling down exercise. Duration of exercise, intensity & repetition was set according to the principal for developing maximum strength. The collected data was analyzed by using t test. Statistical significance was set at 0.05 level of significance.

**Results and Discussion**

Table 1 to 4 shows significant difference in pre and post testing at 0.05 level of significance.

Effect of sports specific circuit training on performance of Squat lift of Power Lifter for all India University is given in Table - 1.

TABLE - 1  
COMPARISON OF PRE AND POST TEST OF SPORTS SPECIFIC CIRCUIT TRAINING ON SQUAT LIFT PERFORMANCE

Variable	MEAN		STD. DEV.		T-RATIO
	PRE	POST	PRE	POST	
SQUAT LIFT	1.68	1.79	21.24	21.05	9.234*

\* Significant at 0.05 level significance 't' (0.05) (9) = 1.833

Table - 2 clearly reveals that the sports specific sports training for power lifters undergo one hour four sessions per week for three weeks sports specific power training for selection trials for all Indian Inter Universities power lifting significantly improve the performance level of squat lift as calculated t 9.234 is greater than tabulated t 1.833 at 0.05 level of significant with 9 degree of freedom.

Effect of sports specific circuit training on performance of Bench Press of Power Lifter for all India University is given in Table - 2.

TABLE - 2  
COMPARISON OF PRE AND POST TEST OF SPORTS SPECIFIC CIRCUIT TRAINING ON BENCH PRESS PERFORMANCE

Variable	MEAN		STD. DEV.		T-RATIO
	PRE	POST	PRE	POST	
BENCH PRESS	0.98	1.03	11.50	10.99	9*

\* Significant at 0.05 level significance 't' (0.05) (9) = 1.833

Table - 2 clearly reveals that the sports specific sports training for power lifters undergo one hour four sessions per week for three weeks sports specific power training for selection trials for all Indian Inter Universities power lifting significantly improve the performance level of bench press as calculated t 9 is greater than tabulated t 1.833 at 0.05 level of significant with 9 degree of freedom.

Effect of sports specific circuit training on performance of Dead Lift of Power Lifter for all India University is given in Table - 3.

TABLE - 3  
COMPARISON OF PRE AND POST TEST OF SPORTS SPECIFIC CIRCUIT TRAINING ON DEAD LIFT PERFORMANCE

VARIABLE	MEAN		STD. DEV.		T-RATIO
	PRE	POST	PRE	POST	
DEAD LIFT	2.08	2.22	42.55	42.42	6.55*

\* Significant at 0.05 level significance 't' (0.05) (9) = 1.833

Table - 3 clearly reveals that the sports specific sports training for power lifters undergo one hour four sessions per week for three weeks sports specific power training for selection trials for all Indian Inter Universities power lifting significantly improve the performance level of dead lift as calculated t 6.55 is greater than tabulated t 1.833 at 0.05 level of significant with 9 degree of freedom.

Effect of sports specific circuit training on performance of Power Lifter for all India University is given in Table - IV.

TABLE - 4  
COMPARISON OF PRE AND POST TEST OF SPORTS SPECIFIC CIRCUIT TRAINING ON POWER LIFTING PERFORMANCE

VARIABLE	MEAN		STD. DEV.		T-RATIO
	PRE	POST	PRE	POST	
POWER LIFTING PERFORMANCE	4.658	4.940	54.972	54.239	10.871*

\* Significant at 0.05 level significance 't' (0.05) (9) = 1.833

Table - IV clearly reveals that the sports specific sports training for power lifters undergo one hour four sessions per week for three weeks sports specific power training for selection trials for all Indian Inter Universities power lifting significantly improve the performance level of power lifting as calculated t 10.871 is greater than tabulated t 1.833 at 0.05 level of significant with 9 degree of freedom.

**Finding**

In this investigation, sports specific circuit training shows impact on performance of all skills of power lifter which evident from the table that there is significant difference in the performance in all three events of power lifting i.e., Squat lift, Bench press and Dead Lift through one hour four sessions per week for three week sports specific circuit training as

calculated t ratio is greater than tabulated t at 0.05 level of significant with 9 degree of freedom.

The sports specific circuit training showed significant effect in improving performance and helps to overcome stagnated performance during post selection trials for all India University of power lifting. The training helps to improve and maintain the maximum strength and anaerobic strength for power lifters during competitive phase. The actions of the body or muscle during sports specific circuit training with lesser repetitions with high intensity helps to improve efficiency in performance of power lifters; it may be because it helps to increase anaerobic capacity of muscular system which develops strength. Sports specific circuit training not only improves performance capacity but also decreasing the duration of skill performance in power lifting events and for that the intensity which requires improving performance through specific circuit training should be 85 % to 110 %. And Sports specific circuit training for power lifting stimulates the body function to improve the anaerobic energy systems through bouts of maximum-intensity for short-duration exercises. Consequently, finding a balance between fitness, resistance and specific exercises would be appropriate in a sports specific circuit. But it should only be used with athletes who have a good overall level of fitness and who participate in a sport with a high anaerobic demand.

The finding of the study is also supported by Chitara M at all s study. The purpose of his study was to examine the influence of the sequence order of high-intensity endurance training and circuit training on changes in muscular strength and anaerobic power. Forty-eight physical education students (ages, 21.4 +/- 1.3 years) were assigned. Subjects performed 2 sessions per week for 12 weeks. Resistance-type circuit training targeted strength endurance and explosive strength and power. Circuit training alone induced strength and power improvements that were significantly greater than when resistance and endurance training were combined, irrespective of the intersession sequencing.

### Conclusion

There was significantly effect of sports specific circuit training on power lifting performance of power lifters of male group.

There was significantly effect of sports specific circuit training on performance of full squat in power lifters of male group.

There was significantly effect of sports specific circuit training on performance of bench press in power lifters of male group.

There was significantly effect of sports specific circuit training on performance of dead lift in power lifters of male group.

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