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## Effect of plyometric exercises for development of speed among sprinters of Khammam district

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### Abstract

The Purpose of the study to find out the effect of Plyometric Exercises for development of Speed among Sprinters of Khammam District in Telangana State. The sample for the present study consists of 40 Male Sprinters of Khammam District out of which 20 are experimental group and 20 are controlled group. Plyometric exercises such as hopping, bounding depth jumps, hurdle jumps etc. given to the experimental group along with the Sprint training for six weeks and control group were given the general training of the Sprints Pre Test and Post Test were conducted on 30 M flying Start Run to assess the speed to both the groups. This Study shows that due to the Plyometric training there is a improvement of speed among Experimental group compare the control group. It is concluded that due to plyometric training there is a improvement of speed among Sprinters. It is also recommended to coaches to include the plyometric training program for Sprinters for enhancing the performance and speed.

**Keywords:** plyometric training, speed, sprinters t

### Introduction

Prof. Rajesh Kumar (2020) studied about the effect of Plyometric and Circuit Training on selected Physical Variables among Sprinters of Hyderabad District of Telangana State. To achieve this purpose, forty five Sprinters in the age group of 16 to 20 years those who have participated in the Hyderabad Open Sprints Athletics Championships at Gachibowli Stadium, Hyderabad for the year 2019 taken as subjects. The selected forty five subjects were divided into three equal groups of fifteen each as two experimental groups and one control group, in which group – I (n=15) underwent plyometric training for three days per week for Twelve weeks, group – II (n=15) underwent the Circuit Training for three days per week for Twelve weeks and group – III (n=15) acted as control who are not participate any training apart from their regular activities. The selected Physical variables such as abdominal strength, speed and leg explosive power were assessed before and after the training period. Sit Up Test, 50 M Dash and Standing Broad Jump are the Tests were used to conduct the pre test and post for Measuring the Physical Variables such as Abdominal Strength, Speed and explosive power of legs. The results of the study it was found that there was a significant difference of performance due to Plyometric and circuit training when compared with the control group. Dr. Pradeep Kumar Lenka (2019) studied the Effect of Resistance Training and Circuit Training on selected Physical and Physiological Variables Among College Male Boxing Players Thirty male Boxers were selected from Jivan Jyoti Trust Education Society who have represented an inter collegiate tournament. It has proved that Resistance Training and circuit Training is helpful for development of Physical and Physiological variables among boxers.

### Methodology

The sample for the present study consists of 40 Male Sprinters of Khammam District out of which 20 are experimental group and 20 are controlled group. The following Plyometrics Exercises were given to Sprinters Experimental Group for six weeks.

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1. Hopping
2. Bounding
3. Depth jumps
4. Hurdle jumps
5. Box jumps
6. Tuckjumps

The control group were given the general training of the cricket.

Pre Test and Post Test were conducted on 30 M flying Start Run to assess the speed to both the groups.

### 30 Meter Run

Sprint or speed tests can be performed over varying distances, depending on the factors being tested and the relevance to the sport.

- **Purpose:** The aim of this test is to determine acceleration and speed.
- **Equipment required:** measuring tape or marked track, stopwatch or timing gates, cone markers, flat and clear surface of at least 50 meters.
- **Procedure:** The test involves running a single maximum sprint over 30 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. This starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed. The tester should provide hints for maximizing speed (such as keeping low, driving hard with the arms and legs) and encouraged to continue running hard through the finish line.
- **Results:** Two trials are allowed, and the best time is recorded to the nearest 2 decimal places. The timing starts from the first movement (if using a stopwatch) or when the timing system is triggered, and finishes when the chest crosses the finish line and/or the finishing timing gate is triggered.

### Results

This results of the study shows that due to the plyometric training there is a improvement of experimental group in Speed and controlled group is decreased in performance of speed due to the general training.

**Table 1:** Mean values of 30 M run test between experimental and control group of Cricketers

Variables	Group	Pre Test Mean	Post Test Mean	t	P - Value
30 M Run Test	Experimental	4.53	4.23	2.58	0.000
	Control	4.66	4.73		

The Experimental Group of 30 M Run Mean is 4.53 in Pre Test and Controlled Group mean is 4.66 in Pre Test there is a difference of 0.13 in Pre Test. The Experimental Group Mean is 4.23 in Post Test and Controlled Group mean is 4.73, the Experimental Group mean in Post Test in 30 M Run is decreased from 4.53 to 4.23 there is a improvement of 0.30 from Pre Test to Post and Control Group Mean is post test is 4.73 there is a increase of 4.66 to 4.73 from Pre Test to Post, the performance is come down to 0.07 in the controlled group. Due to the Plyometric Training the Experimental group of Sprinters has improved a lot.

### Conclusions

Plyometric training exercises helps in quick, powerful, jumping and bounding movements. The purpose of the plyometric exercises is to increase muscular power and dynamic strength and big gains in sprints.

### Recommendations

It is Recommended that the due to the Plyometric training there will be improvement of strength and speed in legs. It also improve the co-ordination in the arms and legs and promotes in developing the Strength and Speed.

Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve the motor abilities of the sports persons.

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