

**Effect Of Core Strength Training Exercises for the development of  
Abdominal Strength among Sprinters of Hyderabad District**

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**Abstract**

The purpose of the study was to find out the effect of Core strength Training exercises on the development of abdominal strength among Sprinters of Hyderabad District in Telangana State. To achieve this purpose Twenty Sprinters of Govt. College of Physical Education, Domalguda in the age group of 18 to 20 Years taken as subjects. The selected twenty subjects were divided into two equal groups of ten members each as one experimental groups and one control group, in which group – I (n=10) underwent core strength training exercises for three days per week for six weeks and group – II (n=10) acted as control who are not participate any training apart from their regular activities. The Sit Ups Test Pre and Post Test were conducted among two groups to assess the abdominal strength. The results of the study it was found that there was a significant difference of performance due to core strength training exercises when compared with the control group for development of abdominal strength Key words: Sprinters, Core Strength Training, abdominal strength etc.

**Introduction :**

Good core strength plays an essential role in achieving optimal performance in your chosen sport. Since the core is the foundation of all bodily movements, training it to work effectively helps you achieve the kinds of fast and powerful body movements required by your sport, and reduces your risk of injury because it helps your muscles and joints to function more efficiently.

Core training is important for sports, because all sports involve core based movements of one form or another. Because training your core helps your mobility, stability, and strength, it will increase the power, efficiency, and consistency of the movements you make, while improving your stability and balance, and reducing your chances of injury.

Suraram Suresh Kumar, Prof. Rajesh Kumar (2023) studied the Effect of Core Strength Training Exercises for development of Speed among Kabaddi Players of Osmania University. The objective of the study is to determine the effect of Core Strength training exercises for development of Speed among Kabaddi Players of Osmania University between the age group of 18 to 25 Years. The sample for the present study consists of 20 Male Kabaddi Players out of which 10 are experimental group and 10 are controlled group. Core Strength training exercises were given to the Experimental Group along with general training of Kabaddi and control group has doing general Training of Kabaddi for six weeks. To assess the Speed 50 M Run were used in the Pre Test and Post Test of the Study. This study shows that the Experiment Group increase the Speed compare to the control group. It is concluded that due to core strength training there is a improvement of speed among Kabaddi players.

Rajesh Kumar and Erika Zemková (2022) studied The Effect of 12-Week Core Strengthening and Weight Training on Muscle Strength, Endurance and Flexibility in School-Aged Athletes. This study investigates the effect of 12-week core strengthening and weight training on muscle strength, endurance and flexibility in school-aged athletes. Ninety male athletes at the age of 12 were randomly divided into three equal groups (30 in each). Group 1 underwent core strengthening training, group 2 underwent weight training, and group 3 was the control. The training was for 12 weeks, with three sessions per week (one hour per session). Prior to and after the training, abdominal strength, endurance, and flexibility were evaluated using the sit-ups test, the Cooper 12 min run test and the sit and reach test. The analysis of variance was used to analyze pre- and post-intervention data. The results showed that both the core strength training group and the weight training group significantly ( $p = 0.00$ ) improved in abdominal strength, represented by the number of sit-ups (from 18.70 3.20 to 22.21 3.50 and from 17.60 3.29 to 21.60 3.63, respectively); endurance, represented by distance covered in and flexibility, represented by the sit and reach distance (from 23.48 2.75 cm to 25.96 2.38 cm and from 23.66 2.92cm to 25.86 2.55cm, respectively) when compared to the control group (from 17.20 3.20 to 16.39 2.69; from 1813 224.69 m to 1778.15 05.28 m; from 23.46 3.06 cm to 21.76 2.56 cm). More specifically, abdominal strength and endurance improved slightly more in the weight training group than in the core strength training group, whilst flexibility increased slightly more in the core strength training group than in the weight training group. These findings indicate that both core strengthening training and weight training are effective in improving physical fitness in school-aged athletes; however, the improvement is to differing extents regarding their endurance, flexibility, and abdominal strength

**Methodology:**

The purpose of the study was to find out the effect of Core strength Training exercises on the development of abdominal strength among Sprinters of Hyderabad District in Telangana State. To achieve this purpose Twenty Sprinters of Govt. College of Physical Education, Domalguda in the age group of 18 to 20 Years taken as subjects. The Sprinters are athletes of 100 M Run, 200 M Run, 400 M Run and Relay events.

Sl. NO	Name of the College	Sample	Total number of subjects
1	GCPE.Domalguda	Sprinters 10 Members Experimental Group- Core strength Training	20
		Sprinters 10 Members Control Group	

.The selected twenty subjects were divided into two equal groups of ten members each as one experimental groups and one control group, in which group – I (n=10) underwent core strength training exercises for three days per week for six weeks and group – II (n=10) acted as control who are not participate any training apart from their regular activities.

**EXPERIMENTAL GROUP: 1: CORE STRENGTH TRAINING**

Table 1: Test description of Week One and Week six Training – 30 to 45 Min per day

Day	Name of the Exercises	Repetitions and Sets
Tuesday	Both Elbow Prone Bridge, Supine Bridge,Lateral Bridge,Planks, Superman etc.	30sec x 3 reps x 3 sets
Thursday	Both Elbow Prone Bridge, Supine Bridge,Lateral Bridge,Planks, Superman etc.	30sec x 3 reps x 3 sets
Saturday	Both Elbow Prone Bridge, Supine Bridge,Lateral Bridge,Planks, Superman etc.	30sec x 3 reps x 3 sets

The Sit Ups Test Pre and Post Test were conducted among two groups to assess the abdominal strength.

The following Tests were conducted at In Pre Test and Post Test for measuring explosive power.

1. Sit Ups (One Min) Test – Abdominal Strength

**Results and Discussion:**

The data collected prior to and after the experimental periods on abdominal strength Core strength training group and control group were analyzed and presented in the following table -I.

Table-I: Mean Values of abdominal strength for core strength training, and control group.

Variables	Group	Pre Test Mean ± SD	Post Test Mean ± SD	T	P - Value
Sit ups	Core strength Training	32.9 ± 1.29	37.4 ± 0.82	-18.291	0.000*
	Control	31.9 ± 1.45	31.5 ± 1.40	1.252	0.226

\*Significant at 0.05 level

The Mean Values of Core Strength Training group is 32.9 and Control group is 31.9 and in Post Test Mean Values of Core Strength Training group is 37.4 and Control group is 31.5. There is a difference due to the Core Strength Training in Experimental Group of Core strength training.

**Conclusions**

The results of the study also shown Core Strength training group has significantly improved in Sit ups test due to core strength training from 32.9 to 37.4 compare to the Control group Group is 31.9 to 31.5. Hence Core strength Training is effective for development of Abdominal strength

**Recommendations:**

This study is helpful to the coaches to use the core strength training for the development of motor abilities among sprinters.

**References:**

Suraram Suresh Kumar, Prof. Rajesh Kumar (2023) studied the Effect of Core Strength Training Exercises for development of Speed among Kabaddi Players of Osmania University, ©2023, IRJEdT Volume:05 Issue:06 | June-2023 Pages 274-278

The Effect of 12 Week Core Strengthening and Weight Training on Muscle Strength, Endurance and Flexibility in School Aged Athletes – Prof. Rajesh Kumar and Prof. Erika Zemkova, *Appl. Sci.* **2022**, 12(24), 12550; <https://doi.org/10.3390/app122412550> indexed within Scopus, SCIE (Web of Science), Inspec, CAPlus / SciFinder, and other databases. Q2 (Engineering, Multidisciplinary) / CiteScore - Q2 (General Engineering) **Impact Factor: 2.838 (2021); 5-Year Impact Factor: 2.921 (2021) ISSN: 2076-3417**