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## Effect of speed based skill training on-speed and serving ability of tennis players

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### Abstract

The purpose of the study was to investigate the effect of speed-based skill training on the speed and serving ability of tennis players. To achieve this objective, thirty (N=30) tennis players were randomly selected as subjects from Tenniglo Tennis Academy in Coimbatore, Tamil Nadu, India. Their ages ranged from 12 to 14 years. The selected participants were then randomly divided into an experimental group and a control group (n=15 each). The experimental group underwent speed-based skill training for three days per week over a period of twelve weeks. Meanwhile, the control group did not receive any training beyond their routine practice. Speed and serving ability were assessed before and after the twelve-week treatment period. The data collected from the subjects were statistically analyzed using the 't' ratio. The results of the study indicated that the speed and serving ability of the tennis players improved significantly due to the twelve weeks of speed-based skill training.

**Keywords:** Speed-based skill training, tennis, speed and serving ability

### Introduction

Tennis is a game in which two individuals or four doubles team members use rackets to hit a ball over a net that stretches the width of the court. The game has evolved from ancient times to the modern version we play and watch today. Tennis has been an integral part of European life for over a thousand years, and it holds significant cultural importance, now being a prominent part of the sports culture in the modern world.

Speed is a crucial aspect of every sport and can be expressed in various forms, including maximum speed, elastic strength (power), and speed endurance. Speed is influenced by the athlete's mobility, special strength, strength endurance, and technique (Doug Lentz and Jay Dawes, 2005) [9]. The technique of sprinting must be practiced at slow speeds and then transferred to maximum-speed runs. The stimulation, excitation, and correct firing order of the motor units, which consist of a motor nerve (neuron) and the group of muscles it supplies, enable high-frequency movements to occur. Developing speed involves making frequent use of various technical exercises involving a ball. This approach is preferred because the ball adds an element of interest to the exercises and brings them closer to match play. Consequently, it helps to maintain the player's enthusiasm for training (Arpad Csanadi, 1965) [12].

### Purpose of the study

The purpose of the study was to find out the effect of twelve weeks of speed-based skill training on speed and serving ability of tennis players.

### Hypothesis

The hypothesis was that twelve weeks of speed-based skill training would lead to remarkable improvements in the speed and serving ability of tennis players.

### Methodology

In order to achieve the purpose of the study, thirty tennis players were randomly selected as subjects from Tenniglo Tennis Academy in Coimbatore, Tamil Nadu, India. Their ages ranged from 12 to 14 years. The selected participants were then randomly assigned to two groups: the experimental group, which received speed-based skill training (n=15), and the control group

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(n=15). Before the start of the training experiment, all the subjects underwent tests for speed (thirty meters dash) and serving ability (Hewitt test), and the readings were recorded as pre-test scores. After pre-test the experimental group participated in a speed-based skill training program, which was designed to last 60 minutes per session, with three sessions held on alternative days each week (Monday, Wednesday, and Friday) over a period of twelve weeks. The 60-minute sessions included 5 minutes for warm-up, 50 minutes for speed-based skill training, and 5 minutes for cool-down. Additionally, every two weeks of training, the intensity of the load was increased by 5%, ranging from 55% to 80% of the workload. The volume of speed-based skill training was

prescribed based on the number of sets and repetitions. On the other hand, the control group did not receive any specialized training and continued with their routine activities. Following the twelve weeks of training, all the subjects from both groups were re-tested for speed and serving ability, and the readings were recorded as post-test scores. The collected pre and post-test scores of both groups were analyzed using the paired 't' test.

**Analysis and Interpretation of Data**

The collected pre and post test scores of experimental and control groups were analyzed with paired 't' test and the results were presented in the form of tables and figures.

**Table I:** Computation of 't' ratio on speed and serving ability of Experimental Group and Control Group

		Experimental Group					't' ratio
Group	Variable	Mean	N	Std. Deviation	Std. Error Mean		
Experimental Group	Speed	Pre test	4.23	10	0.10	0.02	5.8*
		Post test	4.18	10	0.11	0.03	
Control Group	Speed	Pre test	4.22	10	0.11	0.028	1.08
		Post test	4.23	10	0.11	0.030	
Experimental Group	Service	Pre test	37.50	10	1.58	0.50	23.71*
		Post test	42.50	10	2.01	0.63	
Control Group	Service	Pre test	37.50	10	1.58	0.50	1.80
		Post test	37.10	10	2.07	0.65	

\*significant level 0.05 level (df,1 and 9)

Table reveals the computation of mean, standard deviation and 't' ratio speed and serving ability, of experimental and control group. The obtained 't' ratio on speed was 5.8\* and 1.08 respectively. The obtained 't' ratio on service were 23.71\* and 1.80 respectively. The required table value was 2.26 for the degrees of freedom 9 at the 0.05 level of significance. Since the obtained t values were greater than the table value in experimental group though it was found statistically significant and t values were less than the table value in control group though it was found statistically insignificant.

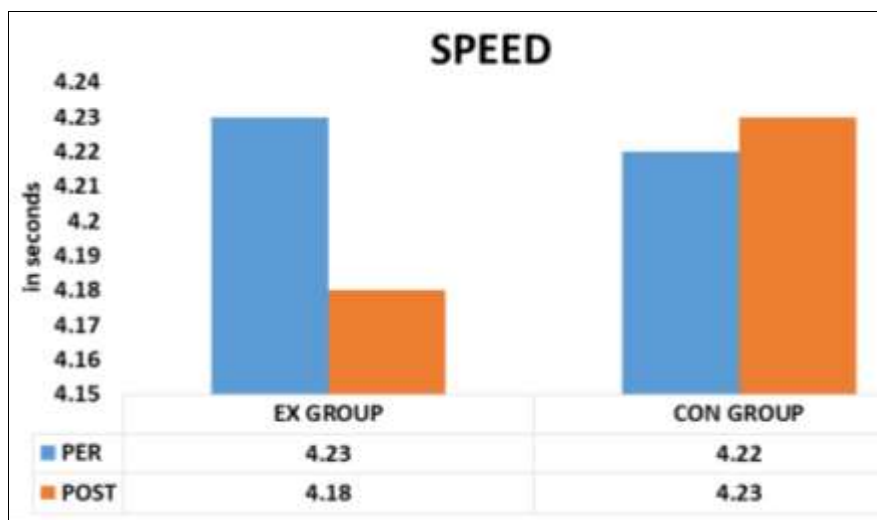
**Findings**

Based on the analysis of the study it was found that twelve

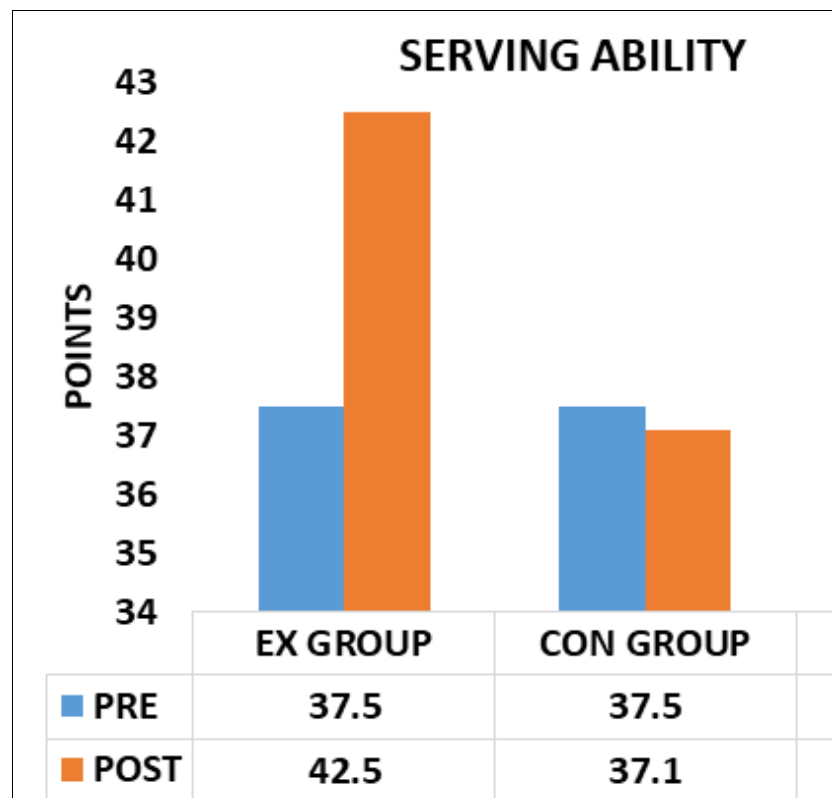
weeks of speed-based skill training produced significant improvement on speed (4.23 < 4.18) and serving ability (37.50 < 42.50) of Tennis players

**Discussion and Findings**

The present study experimented with the effect of speed-based skill training on the speed and serving ability of tennis players. The results of this study indicated that speed-based skill training was more efficient in bringing about desirable changes in the speed and serving ability of tennis players. Investigators have extended their interest to consider the commencement of speed and serving ability from the approach of skill performance of tennis players in relation to speed-based skill training.



**Fig 1:** Bar Diagram Showing the Mean Value of Speed Tennis Players on Experimental Group and Control Group



**Fig 2:** Bar Diagram Showing the Mean Value on Service of Tennis Players on Experimental Group and Control Group

Pre and post-test scores on speed and serving ability between the experimental and control groups were examined, revealing a significant difference in the speed and serving ability of tennis players. Malliou *et al.*, (2010) <sup>[1]</sup>, conducted a study on the effect of strength training on the Tennis service performance of junior tennis players with a specific training program in addition to their tennis training sessions, which resulted in significant performance improvement in serving. Radhakrishnan T, <sup>[2]</sup> studied the effect of periodized, speed-based and combination of periodized and speed-based resistance cum plyometric training on performance-related components, skill performance variables and overall playing ability of football players. In this study it was observed that speed-based and a combination of periodized speed-based resistance training produced a significant effect on speed and selected performance variables due to specific speed-based and speed-based combined training Following this, Benko *et al.*, (2007) <sup>[3]</sup>, Salonikidis *et al.*, (2008) <sup>[5]</sup>, and Gül *et al.*, (2021) <sup>[11]</sup> studies results were in lined with the findings of the present study.

### Conclusions

Based on the findings of this study, it was concluded that a systematic and scientifically designed twelve-week speed-based skill training program produced remarkable improvements in the speed and serving ability of Tennis players aged twelve to fourteen years. Additionally, it was determined that speed-based skill training is an appropriate method to develop the speed and serving ability of Tennis players.

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