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## Impact of various training packages on selected variables of tennis players

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### Abstract

Vision is the first step of information processing and visual skills can improve learning. Time and patience are necessary for the significance of sports vision to be reorganized by every individual participating in sports. The purpose of the study was to find out the effect of game specific training and vision training on Shoulder strength and Reaction time among tennis players. To achieve the purpose of the present study, Forty five male tennis players were randomly selected from Tiruvannamalai district, Tamil Nadu and their age ranged between 18 to 25 years. The groups were assigned as Experimental Group I, Experimental Group II and Experimental Group III in an equivalent manner. Experimental Group I was exposed to game specific training, Experimental Group II was exposed to vision training and Experimental Group III was exposed to combined training respectively for a period of 12 weeks. Analysis of Covariance (ANCOVA) was used to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In All cases 0.05 level of significance was fixed to test hypotheses. The combined training had registered significant improvement on selected strength variables namely shoulder strength and reaction time than the other two experimental groups.

**Keywords:** Game specific, vision training, shoulder strength, reaction time and tennis

### Introduction

Sports also offer an enjoyable, exciting environment in which to learn how to handle both failure and success. Everyone wins and loses some of the time in both sports and other endeavours. Winning feels great and empowering but can also cause a young to feel pressure and anxiety in the next attempt to win. Losing usually produces feelings of sadness, depression and disappointment. Through sports they learn how to cope with these different feelings and foster good mental health. Sports Vision is the branch of optometry concerned with vision and perception, evaluating and enhancing visual performance, and prescribing, where necessary, the most appropriate visual aids. However, not all vision problems can be solved so simply by means of either optical correction or simple changes in posture. There was most likely a vague realization that good eyesight was important in shooting an arrow, catching a ball or driving a chariot. But no one knew what to do about it, knowledge about the physiological and psychological functions of the visual system was very meagre until the nineteenth century, and it was well into the twentieth before science had unrevealed enough of the mysteries to begin considering improving visual performance by some kind of vision therapy. (Gregg, 1987) <sup>[1]</sup>.

### Methodology

The purpose of the study was to find out the effect of game specific training and vision training on Shoulder strength and Reaction time among tennis players. To achieve the purpose of the present study, Forty five male tennis players were randomly selected from Tiruvannamalai district, Tamil Nadu and their age ranged between 18 to 25 years. The groups were assigned as Experimental Group I, Experimental Group II and Experimental Group III in an equivalent manner. Experimental Group I was exposed to game specific training, Experimental Group II was exposed to vision training and Experimental Group III was exposed to combined training respectively for a period of 12 weeks.

Analysis of Covariance (ANCOVA) was used to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant Scheffe's

post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

**Table 1:** Computation of analysis of covariance of mean of game specific training, vision training and combined training group on shoulder strength

	GSTG	VTG	CGSVTG	Source of variance	Sum of squares	DF	Means squares	F-ratio
Pre-Test Means	12.60	12.53	12.52	BG	0.05	2	0.02	0.83
				WG	88.68	42	2.11	
Post-Test Means	16.13	16.49	19.68	BG	114.56	2	57.28	41.19*
				WG	58.40	42	1.39	
Adjusted Post-Test Means	16.13	16.49	19.68	BG	114.47	2	57.23	40.19*
				WG	58.38	41	1.42	

An examination of table - 1 indicated that the pre-test means of game specific training, vision training and combined training group were 12.60, 12.53 and 12.52 respectively. The obtained F-ratio for the pre-test was 0.01 and the F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there was no significant difference between the experimental and combined training group indicating that the process of randomization of the groups was perfect while assigning the subjects to groups.

The post-test means of the game specific training, vision training and combined training group were 16.13, 16.49 and 19.68 respectively. The obtained F-ratio for the post-test was

41.19 and the F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post-test means of the subjects were significant.

The adjusted post-test means of the game specific training, vision training and combined training group were 16.13, 16.49 and 19.68 respectively. The obtained F-ratio for the adjusted post-test means was 40.19 and the F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This proved that there was a significant difference among the means due to the experimental trainings on shoulder strength.

**Table 2:** The Scheffe's test for the differences between the adjusted post-test paired means on shoulder strength

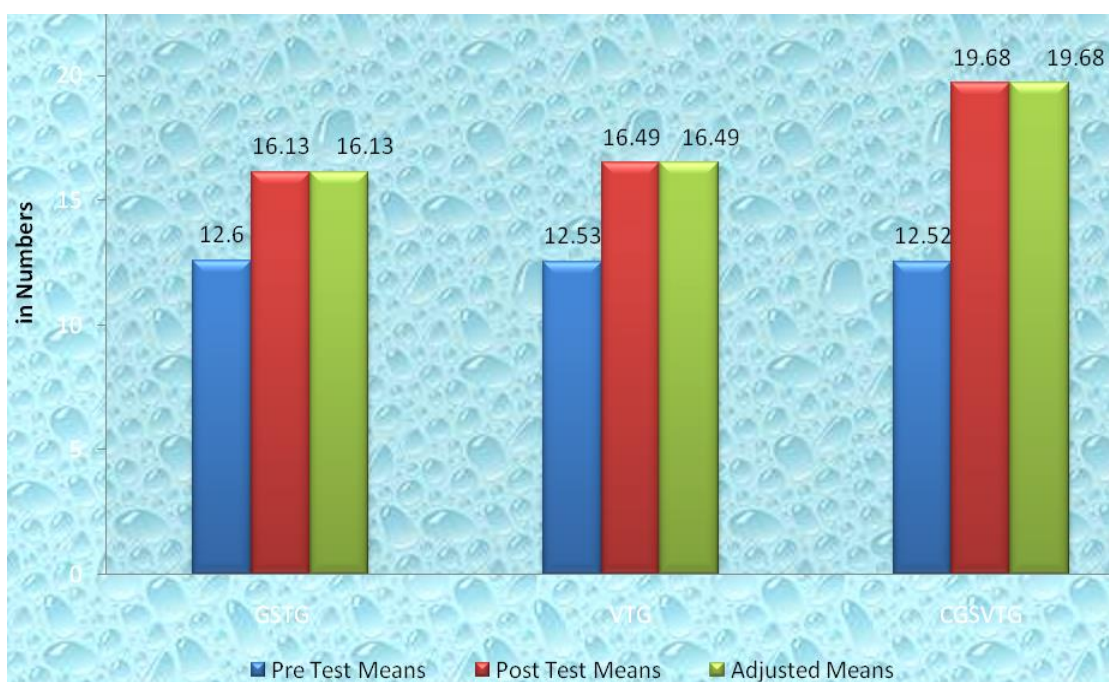
Adjusted post-test means			Mean difference	Required CI
GSTG	VTG	CGSVTG		
16.13	16.49	---	0.36	1.10
16.13	---	19.68	3.55*	
---	16.49	19.68	3.19*	

\*Significant at 0.05 level of confidence

The multiple comparisons showed in Table 2 proved that there existed significant differences between the adjusted means of vision training with combined training group (3.55), game specific training with combined training group (3.19). There was no significant difference between game specific

training and vision training (0.36) at 0.05 level of confidence with the confidence interval value of 1.10.

The pre, post and adjusted means on shoulder strength were presented through bar diagram for better understanding of the results of this study in Figure-1.



**Fig 1:** Pre post and adjusted post-test differences of the, game specific training, vision training and combined training group on shoulder strength

**Table 3:** Computation of analysis of covariance of mean of game specific training, vision training and combined training group on reaction time

	GSTG	VTG	CGSVTG	Source of variance	Sum of squares	DF	Means squares	F-ratio
Pre-Test Means	0.45	0.44	0.46	BG	1.20	2	0.60	0.40
				WG	61.81	42	1.47	
Post-Test Means	0.40	0.38	0.30	BG	203.70	2	101.85	103.30*
				WG	41.40	42	0.98	
Adjusted Post-Test Means	0.40	0.38	0.30	BG	206.27	2	103.13	109.21*
				WG	38.71	41	0.94	

An examination of table - 3 indicated that the pre-test means of game specific training, vision training and combined training group were 0.45, 0.44 and 0.46 respectively. The obtained F-ratio for the pre-test was 0.40 and the F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that there was no significant difference between the experimental and combined training group indicating that the process of randomization of the groups was perfect while assigning the subjects to groups.

The post-test means of the game specific training, vision training and combined training group were 0.40, 0.38 and 0.30 respectively. The obtained F-ratio for the post-test was 103.30 and the F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This proved that the differences between the post-test means of the subjects were significant.

The adjusted post-test means of the game specific training, vision training and combined training group were 0.40, 0.38 and 0.30 respectively. The obtained F-ratio for the adjusted post-test means was 109.21 and the F-ratio was 3.22. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This

proved that there was a significant difference among the means due to the experimental trainings on reaction time.

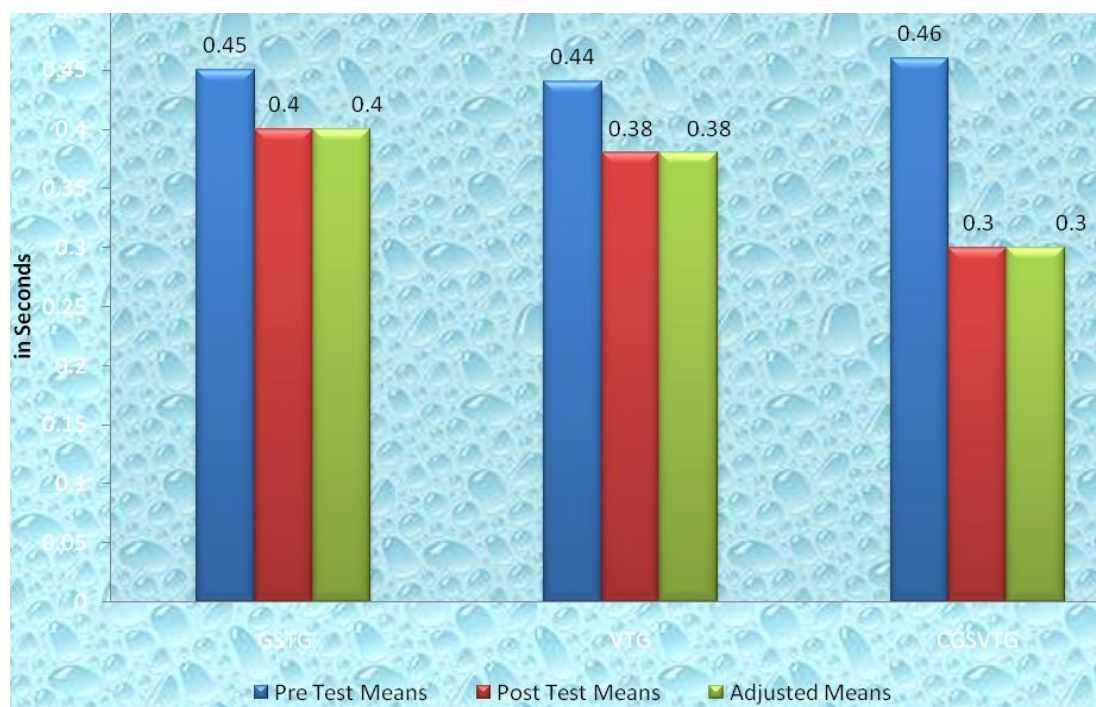
**Table 4:** The Scheffe’s test for the differences between the adjusted post-test paired means on reaction time

Adjusted post-test means			Mean difference	Required CI
GSTG	VTG	CGSVTG		
0.40	0.38	---	0.02	0.04
0.40	---	0.30	0.10*	
---	0.38	0.30	0.08*	

\* Significant at 0.05 level of confidence

The multiple comparisons showed in Table 4 proved that there existed significant differences between the adjusted means of vision training with combined training group (0.10), game specific training with combined training group (0.08). There was no significant difference between game specific training and vision training (0.02) at 0.05 level of confidence with the confidence interval value of 0.04.

The pre, post and adjusted means on reaction time were presented through bar diagram for better understanding of the results of this study in Figure-2.



**Fig 2:** Pre post and adjusted post-test differences of the, game specific training, vision training and combined training group on reaction time

**Discussion on findings**

The results of the study indicate that the experimental groups namely game specific training group, vision training group and combined training group had shown significant improvement in shoulder strength and reaction time among tennis players. The results of the study indicate that the combined training group had shown significant improvement

in shoulder strength and reaction time among tennis players. This study supports the findings of Justin *et al.*, (2018) [12], Fernandez *et al.*, (2017) [6], Playersi *et al.*, (2017) [7], Terraza *et al.* (2017) [10], Ozdemir (2017) [11], Barber *et al.* (2015) [5], Khanal (2015) [14], Pialoux *et al.* (2015) [9], Justy *et al.*, (2015) [13], Ariel (2013) [2], Sebastian *et al.*, (2012) [8], Asuman *et al.*, (2009) [15] and Bressan (2003) [3].

## Conclusions

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

1. The game specific training had registered significant improvement on selected variables namely shoulder strength and reaction time after undergoing game specific training for a period of twelve weeks.
2. The vision training had registered significant improvement on selected variables namely shoulder strength and reaction time after undergoing vision training for a period of twelve weeks.
3. The combined training had registered significant improvement on selected variables namely shoulder strength and reaction time after undergoing combined training for a period of twelve weeks.
4. The combined training had registered significant improvement on selected variables namely shoulder strength and reaction time than the other two experimental groups.

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