

**A BRIEF STUDY ON THE IMPACT OF SPECIAL PLYOMETRIC TRAINING,  
SKILL DEVELOPMENT, AND GROUPING TRAINING ON SELECTED BIO  
MOTOR, BIO CHEMICAL, AND PERFORMANCE VARIABLES AMONG SPORTS  
PERSON**

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**Abstract**

The reason for the review was to think about the impacts of plyometric preparing, yogic activities and expertise skill development training preparing selected bio motor, bio chemical and performance among sports individual. To accomplish the reason for the review, absolutely sixty school going sports players were chosen as subjects from 4 different schools. In that, 15players are chosen from each school and their age went from 17 to 23 years. The subjects were partitioned into four equivalent gatherings of fifteen sports players each. Bunch I went about as Experimental Group I (Plyometric preparing), Group II went about as Experimental Group II (Yogic activities), and Group III went about as Experimental Group III (Skill training) Group IV went about as and Control Group. The length of exploratory period was 12 weeks. The pre-test and post test scores were exposed to measurable investigation utilizing Analysis of Covariance (ANCOVA) to figure out the importance among the mean distinctions, at whatever point the 'F' proportion for changed test was viewed as huge; Scheffe's post hoc test was utilized. In all cases 0.05 degree of certainty was fixed to test theories. In contrasting the impact of trial bunches on response time, visual convenience and profundity discernment from the got f-proportions, it was seen that every one of the gatherings delivered comparable result. Total Cholesterol was used as the dependent variable for this study (TC). The calorie-metric approach was used to measure total cholesterol (TC). All of the subjects were examined for each of the chosen factors both before and right after the training. ANCOVA was used to collect and statistically evaluate the data. To ascertain whether there was a significant difference between the matched means, Scheffe's post hoc test was used. The study's findings revealed a substantial difference in the total cholesterol levels among all experimental

groups, including those who underwent plyometric training, skill training, and combined plyometric and skill training (TC). Additionally, the study's findings demonstrated that the combined plyometric and skill training group

**Keywords:** Plyometric training, yogic exercises, game specific training, sports player

## **Introduction**

Plyometrics suggests practice that engages a muscle to accomplish most outrageous power in the briefest possible time[1]. With a concentric muscle improvement, the muscle condenses while it contracts. With an odd muscle pressure, the muscle extends while it is applying power. The muscle is stacked with an unusual (broadening) movement, sought after rapidly by a concentric (shortening) action[2]. A muscle that is reached out before a concentric choking, will get even more powerfully and even more rapidly. A commendable model is a dive just going before an upward jump. By cutting down the point of convergence of gravity quickly, the muscles drew in with the bounce are immediately expanded conveying an even more predominant turn of events [3]. Yoga can be practiced by all ages and it might be taken up at any period of life. It is never beyond the place where it is feasible to begin. The unusual condition of sports anxiety angers body care and impact physiological limits which go against the smooth improvement of muscles, joints, etc. Various kinds of yogic activity increment the adaptability of back, spine, hip, work on the focus and adjusting skill, work on the productivity of liver and stomach related framework, fix the hypochondria and heart illnesses, eliminate the pulse issues, fortify the back and shoulder muscles, further develop breath and delivery the psychological strain and focusing feelings of the athletes which are the fundamental basics connected with the presentation of the players in various games and sports of massive use in working on the feeling of style in sports[4]. Yoga can add to improve the stylish viewpoints. So players further develops ease in developments and expertise execution. Sports explicit preparation can work on quality, versatility and endurance by which the players can work on his show in unambiguous games. For this specific preparation is denied to about making actual embellishment to further develop execution and aptitudes at a particular game.

## **Methodology**

The reason for the review was to look at the impacts of plyometric preparing, yogic activities and games explicit preparation on chose actual wellness factors of sports persons. To accomplish the reason for the review, absolutely sixty school going sports players were chosen as subjects from 4 different schools. In that, 15players are chosen from each school and their age went from 17 to 23 years. The subjects were partitioned into four equivalent gatherings of fifteen sports players each. Bunch I went about as Experimental Group I (Plyometric preparing), Group II went about as Experimental Group II (Yogic activities), and Group III went about as Experimental Group III (Game-explicit preparation) Group IV went about as and Control Group. The length of exploratory period was 12 weeks. The pre-test and post test scores were exposed to measurable investigation utilizing Analysis of Covariance (ANCOVA) to figure out the importance among the mean distinctions, at whatever

point the 'F' proportion for changed test was viewed as critical; Scheffe's post hoc test was utilized. In all cases 0.05 degree of certainty was fixed to test speculations. Only Total Cholesterol (TC), one of the many Bio-Chemical fitness factors, was chosen as the dependent variable. The calorie-based approach was used to measure Total Cholesterol (TC) . Before and after the training period, chosen Total Cholesterol (TC) was checked on all four groups.

### Data Analysis

Analysis of covariance (ANCOVA) was used to evaluate differences, if any, among the adjusted post test means on individual criterion variables using the data collected from the experimental groups and control group on prior and after experimentation on selected variables. The Scheffe's test was used as a post hoc test whenever they found that the simple effect's f-ratio value was significant in order to identify any matched mean differences. The 0.05 level of significance was set in each case. The Analysis of covariance (ANCOVA) on Total Cholesterol (TC) of Ex- perimental Groups and Control group have been analyzed and presented in Table -1.

Values of Analysis of Covariance for Experimental Groups and Control Group on Total Cholesterol (TC)

Certain Variables	Adjusted Post test Means				Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
	Plyometric Training Group	Skill Training Group	Combined Plyometric and Skill Training Group	Control Group					
<b>Total Cholesterol (TC)</b>	182.05	179.67	176.53	189.61	Between With in	1396.98 588.39	3 55	465.66 10.70	43.53*

#### 1) Significant at.05 level of confidence

*(The table value required for Significance at 0.05 level with df 3 and 55 is 2.77)*

According to Table 1, the adjusted post-test mean value of Total Cholesterol (TC) for the Plyometric Training group, the Skill Training group, the Combined Plyometric and Skill Training group, and the Control group, respectively, is 182.05, 179.67, 176.53, and 189.61. The calculated F-ratio for the adjusted post test mean is 43.53, which is higher than the 2.77 needed in the table for df 3 and 55 to reach significance at the 0.05 level of confidence. The study's findings show that the experimental groups' adjusted post test means for the reduction of total cholesterol show significant variations (TC).

### Results of reaction time

An assessment of data demonstrated that the pre-test method for plyometric preparing, yogic activities, game-explicit preparation and control bunches were 0.25, 0.26, 0.27 and 0.27 individually. The acquired F-proportion for the pre-test was 1.99 and the table F-proportion was 2.76. Subsequently the pre-test mean F-proportion was unimportant at 0.05 degree of certainty for the level of opportunity 3 and 56. This laid out that there were no huge contrast between the exploratory and control bunches showing that the technique of randomization of the gatherings was ideal while passing the subjects on to gatherings. The post-test method for the plyometric preparing, yogic activities, game-explicit preparation and control bunches were 0.21, 0.20, 0.22 and 0.26 separately. The got F-proportion for the post-test was 4.02 and the table F-proportion was 2.76. Consequently the post-test mean F-proportion was huge at 0.05 degree of certainty for the level of opportunity 3 and 56. This demonstrated that the distinctions between the post-test method for the subjects were huge. The changed post-test method for the plyometric preparing, yogic activities, game-explicit preparation and control bunches were 0.21, 0.20, 0.22 and 0.26 individually. The acquired F-proportion for the changed post-test implies was 39.58 and the table F-proportion was 2.77. Subsequently the changed post-test mean F-proportion was huge at 0.05 degree of certainty for the level of opportunity 3 and 55. This demonstrated that there was a tremendous distinction among the means because of the trial phases of preparation on response time. Since tremendous contrasts were recorded, the outcomes were exposed to post hoc examination utilizing Scheffe's post hoc test. The outcomes were introduced in Table-2

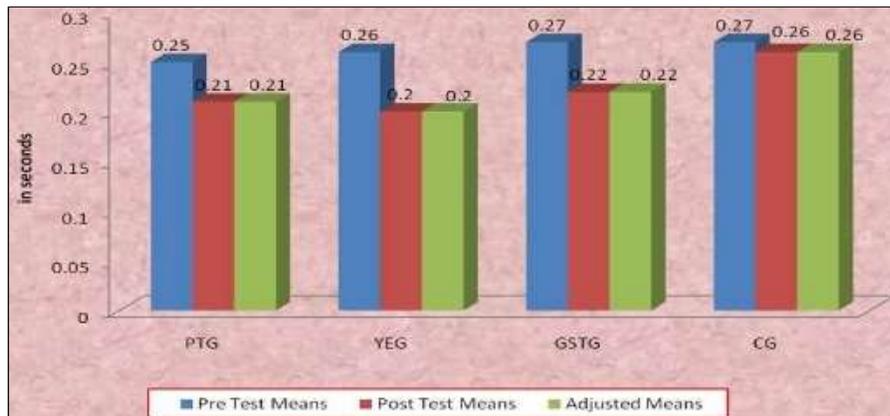
**Table 2:** The scheffe's test for the differences between the adjusted post-test means on reaction time

Adjusted Post-Test Means				Mean Difference	Confidence interval
PTG	YEG	GSTG	CG		
0.21	0.20	---	---	0.01	0.03
0.21	---	0.22	---	0.01	
0.21	---	---	0.26	0.05*	
---	0.20	0.22	---	0.02	
---	0.20	---	0.26	0.06*	
---	---	0.22	0.26	0.04*	
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\* Significant at 0.05 level of confidence

The various correlations displayed in Table 2 demonstrated that there existed tremendous contrasts between the changed method for plyometric preparing and control bunch (0.05), yogic activities and control bunch (0.06), game explicit preparation gathering and control bunch (0.04). There was no tremendous contrast between plyometric preparing and yogic activities (0.01), plyometric preparing and game explicit preparation bunch (0.01) and yogic activities and game explicit preparation bunch (0.02) at 0.05 degree of certainty with the certainty stretch worth of 0.03. The pre, post and changed implies on response time were introduced through bar outline for better comprehension of the consequences of this

concentrate in Figure-1



**Fig 1:** Plyometric training, yoga exercises, game-specific training, and control group changes on response time between pre-post and adjusted post-test

### Discussion on reaction time

The outcomes introduced in table 2 showed that acquired changed implies on response time among yogic activities bunch was 0.20, trailed by plyometric preparing bunch with mean worth of 0.21, trailed by game-explicit preparation bunch with mean worth of 0.22 and control bunch with mean worth of 0.26. The distinctions among pre-test scores, post test scores and changed mean scores of the subjects were measurably treated utilizing ANCOVA and the got F values were 1.99, 44.02 and 39.58 separately. It was found that acquired F esteem on pre test scores were not huge and the got F values on post-test and changed implies were critical at 0.05 degree of certainty as these were more prominent than the necessary table F worth of 2.76 and 2.77. The post hoc investigation through Scheffe's Confidence test demonstrated that because of twelve weeks preparing of plyometric preparing, yogic activities and game explicit preparation bunch has expanded response time than the benchmark group and the distinctions were critical at 0.05 level. Further, the post hoc examination showed that there was huge contrasts exist between the trial and control gatherings.

**Table 3:** Compilation of the analysis of covariance between the control groups and the plyometric training, yoga, and game-specific training for visual accommodation (in numbers)

	PTG	YEG	GSTG	CG	Source of Variance	Sum of Squares	Df	Means Squares	F-ratio
Pre-Test Means	30.13	30.40	30.80	30.26	BG	3.733	3	1.244	0.51
					WG	136.667	56	2.440	
Post-Test Means	36.66	36.33	36.40	30.46	BG	405.933	3	135.311	68.88*
					WG	110.000	56	1.964	
Adjusted Post-Test Means	36.68	36.33	36.37	30.47	BG	403.734	3	134.578	67.65*
					WG	109.407	55	1.989	

BG- Between Group \* - Significant

WG- Within Group (Table Value for 0.05 Level for df 3 & 56 = 2.76) df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 55 = 2.77)

**Results of visual accommodation**

An assessment of table-3 showed that the pre-test method for plyometric preparing, yogic activities, game-explicit preparation and control bunches were 30.13, 30.40, 30.80 and 30.26 separately. The acquired F-proportion for the pre-test was 0.51 and the table F-proportion was 2.76. Thus the pre-test mean F-proportion was unimportant at 0.05 degree of certainty for the level of opportunity 3 and 56. This laid out that there were no huge contrast between the trial and control bunches demonstrating that the method of randomization of the gatherings was ideal while passing the subjects on to gatherings. The post-test method for the plyometric preparing, yogic activities, game-explicit preparation and control bunches were 36.66, 36.33, 36.40 and 30.46 separately. The acquired F-proportion for the post-test was 68.88 and the table F-proportion was 2.76. Subsequently the post-test mean F-proportion was huge at 0.05 degree of certainty for the level of opportunity 3 and 56. This demonstrated that the distinctions between the post-test method for the subjects were huge. The changed post-test method for the plyometric preparing, yogic activities, game-explicit preparation and control bunches were 36.68, 36.33, 36.37 and 30.46 individually. The got F-proportion for the changed post-test implies was 67.65 and the table F-proportion was 2.77. Consequently the changed post-test mean F-proportion was critical at 0.05 degree of certainty for the level of opportunity 3 and 55. This demonstrated that there was a tremendous distinction among the means because of the trial phases of preparation on visual convenience. Since tremendous contrasts were recorded, the outcomes were exposed to post hoc examination utilizing Scheffe's post hoc test.

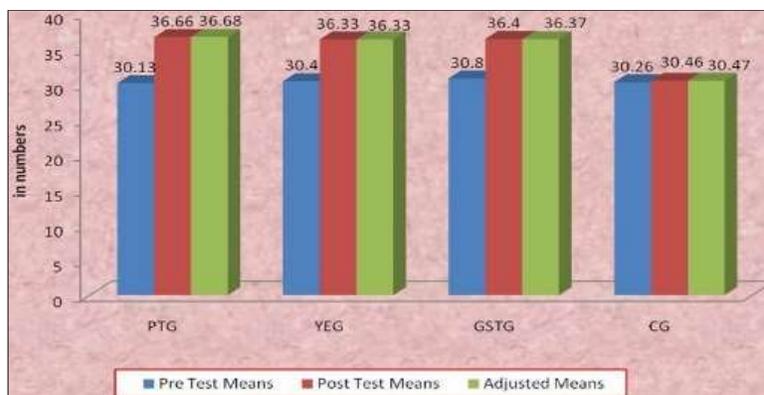
**Table 4:** The scheffe's test for disparities between the post-test means that have been adjusted for visual accommodation

Adjusted Post-Test Means				Mean Difference	Confidence Interval
PTG	YEG	GSTG	CG		
36.68	36.33	-	-	0.35	1.48
36.68	-	36.37	-	0.31	
36.68	-	-	30.47	6.21*	
-	36.33	36.37	-	0.04	
-	36.33	-	30.47	5.86*	
-	-	36.37	30.47	5.90*	

\* Significant at 0.05 level of confidence

The different examinations displayed in Table 4 demonstrated that there existed massive contrasts between the changed method for plyometric preparing and control bunch (6.21), yogic activities and control bunch (5.86), game explicit preparation gathering and control bunch (5.90). There was no huge contrast between plyometric preparing and yogic activities

(0.35), plyometric preparing and game explicit preparation bunch (0.31) and yogic activities and game explicit preparation bunch (0.04) at 0.05 degree of certainty with the certainty stretch worth of 1.48.



**Fig 2:** Pre-post and modified post-test variations on visual accommodation between the plyometric training, yogic exercises, game-specific training, and control groups

### Discussion on Visual Accommodation

The outcomes introduced in table 4 showed that got changed implies on visual convenience among plyometric preparing bunch was 36.68 trailed by game-explicit preparation bunch with mean worth of 36.37, trailed by bunch with mean worth of 36.33 and control bunch with mean worth of 30.47. The distinctions among pre-test scores, post test scores and changed mean scores of the subjects were measurably treated utilizing ANCOVA and the acquired F values were 0.51, 68.88 and 67.65 separately. It was found that acquired F esteem on pre test scores were not huge and the got F values on post-test and changed implies were critical at 0.05 degree of certainty as these were more prominent than the expected table F worth of 2.76 and 2.77. The post hoc investigation through Scheffe's Confidence test demonstrated that because of twelve weeks preparing of plyometric preparing, yogic activities and game explicit preparation bunch has expanded visual convenience than the benchmark group and the distinctions were huge at 0.05 level. Further, the post hoc examination showed that there was huge contrasts exist between the trial and control gatherings.

**Table 5:** computation of the analysis of covariance between the control groups, game-specific training, and plyometric training, with respect to depth perception (in millimeters)

	PTG	YEG	GSTG	CG	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
Pre-Test Means	2.20	2.17	2.21	2.20	BG	0.012	3	0.004	0.35
					WG	0.649	56	0.012	
Post-Test Means	1.73	1.71	1.72	2.18	BG	2.387	3	0.796	51.01*
					WG	0.873	56	0.016	

Adjusted Post-Test Means	1.73	1.72	1.71	2.18	BG	2.358	3	0.786	52.87*
					WG	0.817	55	0.015	

BG- Between Group \* - Significant

WG- Within Group (Table Value for 0.05 Level for df 3 & 56 = 2.76) df- Degrees of Freedom (Table Value for 0.05 Level for df 3 & 55 = 2.77)

## Conclusions

In the chosen criteria variable, such as Total Cholesterol, significant variations in performance were discovered between the Plyometric Training group, the Skill Training group, the Combined Plyometric and Skill Training group, and the Control group (TC). In the experimental groups, which included the plyometric training group, the skill training group, and the combined plyometric and skill training group, biochemical variables including total cholesterol had dramatically improved (TC). The plyometric preparing essentially worked on the psychomotor factors. The 't' upsides of the chose factors have arrived at the critical level. The yogic activities altogether worked on the chose psychomotor factors. The 't' upsides of the chose factors have arrived at the critical level. The game-explicit preparation altogether worked on the psychomotor factors. The 't' upsides of the chose factors have arrived at the critical level. In the benchmark group the acquired 't' esteem on every one of the factors were neglected to arrive at the critical level. The critical mean contrast among every one of the four gatherings in the pretest on response time, visual convenience and profundity discernment. In testing posttest mean distinction among the four gatherings measurably critical on factors of response time, visual convenience and profundity insight. In testing the post changed mean among the four gatherings likewise predicts the above outcome. In looking at the impact of plyometric preparing and yogic activities on psychomotor factors, from the got f-proportions, it was seen that YEG showed better execution on adaptability and resting pulse for residual factors both the gatherings delivered comparable result. In looking at the impact of plyometric preparing and game-explicit preparation on psychomotor factors, from the got f-proportions, it was seen that both the gatherings created comparative outcome. In looking at the impact of yogic activities and game-explicit preparation on psychomotor factors, from the acquired f-proportions, it was seen that GSTG showed better execution on breath holding limit and for outstanding factors both the gatherings delivered comparative outcome. Results of the current review make sense of obviously that in the event of psychomotor factors, the noticed outcomes essentially preferred the trial bunches in particular plyometric preparing, yogic activities and game-explicit preparation when contrasted with control bunch. It was reasoned that men volleyball players ought to rehearse plyometric preparing, yogic activities and game-explicit preparation for positive improvement of wellbeing. Thus in view of the outcome, it was reasoned that all the preparation techniques would give better means and strategies to fostering the psychomotor necessary factors Sports person.

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