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## The Effects of Complex Training in the Development of Speed and Explosive Power of Young Children

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### Abstract

*The purpose of the study is to find the Effects of Complex Training in the Development of Speed and Explosive Power of Young children. To achieve the purpose of the study, 60 male young children were selected from RRR School, Karnataka, India. The subject's age ranged from 15-17 years and they put to speed in (50 meter Dash) and explosive power (vertical jump). Pre-test data was taken before the training and the post test data was collected after the completion of a twelve week training period. The subjects were randomly assigned by different groups. The first group (n=15, OBRTG group) underwent own body strength training, the second group (n=15; PTG group) underwent Polymeric training, the third group (n=15) underwent complex training (own body strength training followed by Polymeric training) the group IV (n=15, CG group) did not have any specific trainings. Based on this study's ratio was applied to find out the significant difference between the pre and post tests with regards to the selected variables and analysis of covariance was applied. The results show the complex training programmer shows significant improvement in speed and explosive power of young children.*

**Keywords:** OBRTG group - Own Body Resistance Training, PTG group- Polymeric Training Speed, Explosive Power.

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### Introduction

The own body strength training is in combination of some explosives types of exercises be recommended as a part of overall physical training to maintain the functional capacity in middle-aged and elderly people. For explosive muscle performance, the underlying factors are, muscle fiber type, muscle hypertrophy and enzymatic and neural adaptations. It is also important to investigate the impact of power-type strength training on the low back and leg muscles and joints, as well as the injury risks and adherence, and motivation to training. For being effective in improving the explosive muscle performance, training programs should be designed so as to motivate, easy to achieve, effectively spending time in exercises, low in expenses and they should consider the exercise history and present exercise activity, health status and musculoskeletal symptoms and diseases of the individual. Hakkinen (1998). Combination of both strength training and polymeric explosive power training helps to use the combination of strength and Polymeric exercises to effectively engage the nervous system and activate more fibers (Beachle & Earle, 1994). Ebban

(2002) states that resistance training followed by Plyometric training alternates biomechanically similar to high load weight training exercises with Plyometric exercises. This type of training describes a power-developing workout that combines weights and Plyometric exercises. About ten years ago, these workouts were greeted with great acclaim as research indicated that they could significantly enhance fast twitch muscle fiber power, therefore, produce dynamic sports performance. The logic behind this pair of exercise is that the resistance work gets the nervous system into full action so that type II b fibers are available for the explosive exercise. Hence a better training benefit of complex training programme can be used in the general, specific and competitive phase of training.

### Statement of the Problem

The purpose of the study is to find out the effects of complex training on the development of speed and explosive power of young children.

### Hypotheses

1. The own strength training can significantly improve the speed and explosive power of young children.
2. The Plyometric training can significantly improve the speed and explosive power of young children.

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3. The complex training can significantly improve the speed and explosive power of young children.
4. The complex training may significantly improve better than the strength training, Plyometric training and control group on speed and explosive power of young children.
5. The Plyometric training may significantly improve better than the strength training and control group on speed and explosive power of young children.
6. The own body strength training may significantly improve better than the control group on speed and explosive power of young children.

### Methodology

The purpose of the study is to find the Effects of Complex Training in the Development Speed and Explosive Power of Young Children. To achieve the purpose of the study, 60 male young children were

selected from RRR school, Karnataka, India. The subject's age ranged from 15-17 years and the students voluntarily participated in this study. The selected variables were tested by speed in (50 meter Dash) and explosive power (vertical jump). Pre-test data was taken before the training and the post- test data was collected after the completion of a twelve week training period. The subjects were randomly assigned by the different groups. The first group (n=15, OBRTG group) underwent own body strength training, the second group (n=15; PTG group) underwent Plyometric training, the third group (n=15) underwent complex training (own body strength training followed by Plyometric training) the group IV (n=15, CG group) did not have any specific trainings. Based on this study 't' ratio was applied to find out the significant difference between the pre and post tests with regards to the selected variables and analysis of covariance was applied.

### Result of the Study

Table 1

*Significance of mean gain /loses between pre and post test of own body strength training on the development of speed and explosive power of young children*

Variables		Mean	S.D	M.D	S.E.M	't' ratio
Speed (in seconds)	Pre-Test	8.62	0.43	0.31	0.04	7.084*
	Post -Test	8.31	0.42			
Explosive Power	Pre-Test	37.2	3.53	2.80	0.67	4.133*
	Post -Test	40.06	3.67			

0.05 level of Significance (2.14)

Table 2

*Significance of mean gain /loses between pre and post test of plyometric training in the development of speed and explosive power of young children*

Variables		Mean	S.D	M.D	S.E.M	't' ratio
Speed	Pre-Test	8.55	0.33	0.55	0.06	8.25*
	Post -Test	7.99	0.36			
Explosive Power	Pre-Test	37.60	4.17	2.93	0.54	5.35*
	Post -Test	40.53	4.01			

0.05 level of Significance (2.14)

Table 3

*Significance of mean gain /loses between pre and post test of complex training in the development of speed and explosive power of young children*

Variables		Mean	S.D	M.D	S.E.M	't' ratio
Speed	Pre-Test	8.44	0.25	0.48	0.11	4.21*
	Post -Test	7.96	0.29			
Explosive Power	Pre-Test	37.46	4.8	3.53	0.60	5.88*
	Post -Test	41.00	5.04			

0.05 level of Significance (2.14)

Table 4

Significance of mean gain /loses between pre and post test of control group on the development of speed and explosive power of young children

Variables		Mean	S.D	M.D	S.E.M	't' ratio
Speed	Pre-Test	8.7047	0.22	0.009	0.008	1.13
	Post -Test	8.7140	0.21			
Explosive Power	Pre-Test	38.1333	3.85	0.13	0.29	0.45
	Post -Test	38.2667	3.86			

0.05 level of Significance (2.14)

Table 5

Analysis of variance on pre test means among obstg, ptg, ctg and cg on the development of speed and explosive power of young children

Variables	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Spedpre	Between Groups	.554	3	0.185	1.78	0.161
	Within Groups	5.796	56	0.104		
Exppre	Between Groups	6.183	3	2.061	0.12	0.948
	Within Groups	958.000	56	17.107		

0.05 level of Significance ( 2.77)

Table 6

Analysis of variance on post test means among obstg, ptg, ctg and cg on the development of speed and explosive power of young children

Variables	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
SPEED	Between Groups	5.490	3	1.830	16.200*	.000
	Within Groups	6.326	56	.113		
EXPLOSIVE POWER	Between Groups	64.333	3	21.444	1.226	.309
	Within Groups	979.600	56	17.493		

0.05 level of Significance (2.77 )

Table 7

Analysis of variance on adjusted post test means among obstg, ptg, ctg and cg on the development of speed and explosive power of young children

Variables	Source of Variance	Sum of Squares	Df	Mean Square	F	Sig.
Speed	Between Groups	3.317	3	1.106	17.066	.000
	Within Groups	3.563	55	.065		
Explosive Power	Between Groups	97.062	3	32.354	7.450	.000
	Within Groups	238.851	55	4.343		

0.05 level of Significance (2.77 )

## Results

1. The result of the study shows that the own strength training significantly improved the speed and explosive power of young children.
2. The result of the study shows that the Plyometric training significantly improved the speed and explosive power of young children.
3. The result of the study shows that complex training significantly improved the speed and explosive power of young children.
4. The result of the study shows that the complex training significantly improved better than the strength training, Plyometric training and control group on speed and explosive power of young children.
5. The result of the study shows that the Plyometric training significantly improved better than the strength training and control group on speed and explosive power of young children.
6. The result of the study shows that the own body strength training significantly improved better than the control group on speed and explosive power of young children.

## Conclusion

It is concluded that complex training is the best training to improve the speed and explosive power among young children.

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