



## Effect of circuit training and speed training programme on the selected Speed of Kho-Kho players

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**Abstract :** The purpose of this research study was Effect of circuit training and speed training programme on the selected Speed of Kho-Kho players. In order to achieve this purpose of the study, total 60 boys' Kho-Kho players; who have participated in the Kho-Kho competition were selected from different secondary schools of Surat district. The age of the subjects were ranged in between 14 to 17 years. The subjects were later randomly assign to experimental group-1 (circuit training group), experimental group-2 (speed training group) and control group-3 of equal numbers. In this research study, speed was measured by running test 50 yard desh. The experimental group design were used for this study in three groups (two experimental groups and one control group). Involving 60 school boys' kho-kho players, there were two experimental groups and one control group. Each group of twenty subjects in each experimental and control group. Group - 1 acted as the experimental (circuit training group), group - 2 acted as the experimental (speed training group) and group - 3 acted as the control group. Later the training programs were administered on the experimental groups two in a week for a period of eight weeks. The control group was left free to participate in any of the activities of their own choice. The collection of data from the three groups prior to and immediately after the training program on selected criterion variable will be statistically of covariance (ANCOVA) the post hoc pair wise comparison using the LSD test analysis. For testing the hypothesis, the level of confidence was set at .05 level. The conclusion of the research study was found as follows. Remarkable improvement was found in Speed of selected subjects by 08 weeks systematic Circuit training and Speed training program.

### Introduction :

Sport is established as an important part of human life from the ancient time. From the origin of mankind, its main and big movements are its movement of hand, leg and back. He walks, runs, jumps, and swims on foot. It picks, throws, pulls and pushes things with the help of hand. It turns to right or left side and forward and backward by back. And turns the body from waist. All these movements are necessary for its life. The efforts to obtain food or defend from enemies are not possible without these movements. The horses in form of muscles are driven by the driver mind with the help of bridle in form of vessels and thus the chariot of human body moves. All these movements are as old as mankind. The young and children like to play, sports give joy to young and children and development of body is achieved. Thus, it can be easily understood that, sports are inevitable for the physical, mental and social development of a child.

Exercise is an important factor in the base of complete development. The show of body, skill, balance, speed balance, etc are better developed by it. The inner organism is improved by exercise. Natural activities are stimulated. Breathing becomes easy. Muscles develop. Too small vessels and heat increases. Skin is enlarged. Because of this the control of heat improves and chemical changes suitable to heavy work take place.

Certain exercises and activities are suitable in certain whether and atmosphere. But the timing of the exercise depends upon approach, availability of free time and other decisive circumstances. In view of health, for

exercise, after morning the time after 5 P.M is proper and advisable. The dust produced after the work of whole day is removed and the parts of body stimulate.

It should be the goal of every person to get best and proper health. The exercises given in this book are useful for the purpose. Not only that, to keep the body ready for various sports it is useful, that means it is very much useful to develop power, explosive force, tolerance power, skill and balance power. With beginning of easy and light exercise the force should be increased slowly day by day, and should go to heavy exercise. The conditions for conditioning of the sports should be carried on without hesitation. Not only that, it also should be seen that keeping in view the movements in these exercises rhythm and tune should be maintained.

Circuit training is very important for development of elements necessary for muscular fitness. Trainee has to do 8 to 12 exercises in this circuit training. The cycles for each type of exercise are also fixed. The sequence of exercises is also fixed. The resting time after finishing one exercise is also fixed. After completing the first exercise, 8 to 12 exercises are to be taken in sequence of second, third and next without stopping for a while. In this way, one cycle of circuit training is completed. Generally, three to five cycles are planned according to need of the players in the circuit training. After the player had finished the first cycle, the rest is given according to training weightage. Weight lifting exercises, other obstructive exercises, calisthenics, race, swimming or stretching exercises etc are included in the circuit training.

To form the structure of the circuit training, the coach measures characteristics of physical fitness of layers by giving a physical fitness test and decides which competencies they lack. Then, the coach constructs the training programme for development of lacking competencies. For example, if the coach sees less strength of shoulder muscles, he will include the exercise helpful to increase the strength of shoulder muscles in the circuit training. If the coach finds less speed, one or two exercises for increasing speed will be selected. In the same way, if developing the muscles of thigh or abdomen, some exercises for development of muscles of thigh or abdomen can be selected. Thus, one or two exercises for muscular power, flexibility, endurance etc are to be included in the circuit training and the structure of the training programme is prepared. Selections of exercises, exercise cycles, duration of training, density of exercise etc are to be determined while preparing structure for the circuit training.

If the speed of movement and complex reaction are analyzed at same time, and it becomes more or complicate. Some persons give response immediately. But their movement is slow. Some also shows reaction from starting point. But they run fast after starting. However, if response and movement are measured separately, they don't show their relation with one another as significant. But when their relation is found both cannot be separated.

Speed and reaction both are considered obvious and natural strength, However, but both can be developed by practice and training. To measure reaction time is more complicated and expensive. Because, one

is required to depend on Measurement machine. In such machines, simulative mechanism is fixed. E.g. to press switch by subject as a part of light and bell ringing stimulation. Such machines note the time period between stimulation and response. Nelson has discovered the formula for time measurement.

Today's Medical Science, instead of talking about improving health or eligibility, remains active on treatment after man is ill. This is a serious problem. It would not be surprising if the tomorrow's society may feel more problems of health and physical capacity.

Physical capacity is measured by the measurement of activeness of the person and facing the situation. So they can live better life. In the modern age, person does not work hard but to keep the body healthy he does other activities. On that baseman question arises in our mind, what is capacity? And how much it is needed ? For the Physical capacity of a person physical labor is not the only requirement, but the requirement of Emotional, Social and spiritual matters same. The physical trainers say, all these matters are loosely related with physical capacity.

#### **Purpose of the Study :**

The purpose of this research study was Effect of circuit training and speed training programme on the selected Speed of Kho-Kho players.

#### **Selection of Subjection :**

In order to achieve this purpose of the study, total 60 boys' Kho-Kho players; who have participated in the Kho-Kho competition were selected from different secondary schools of Surat district. The age of the subjects were ranged in between 14 to 17 years. The subjects were later randomly assign to experimental group-1 (circuit training group), experimental group-2 (speed training group) and control group-3 of equal numbers.

#### **Criterion Measurement :**

Sr. No	Variables	Test	Units of Measurement
1	Speed	50 M Dash Test	1/100 <sup>th</sup> of a second Stopwatch

#### **Design of the Study :**

The experimental group design were used for this study in three groups (two experimental groups and one control group). Involving 60 school boys' kho-kho players, there were two experimental groups and one control group. Each group of twenty subjects in each experimental and control group. Group - 1 acted as the experimental (circuit training group), group - 2 acted as the experimental (speed training group) and group - 3 acted as the control group. Later the training programs were administered on the experimental groups two in a

week for a period of eight weeks. The control group was left free to participate in any of the activities of their own choice.

### Statistical Procedure

The collection of data from the three groups prior to and immediately after the training program on selected criterion variable will be statistically of covariance (ANCOVA) the post hoc pair wise comparison using the LSD test analysis.

For testing the hypothesis, the level of confidence was set at .05 level.

### Result of the Study :

Table – 1

#### Analysis of Covariance of Mean Scores of Speed of Two Experimental Groups and a Control Group

Test	Groups			Analysis of variance				
	Circuit Training	Speed Training	Control	Sum of classes (SS)	Degree of Freedom (df)	Mean Sum of Square (MSS)	'F'	
Pretest mean	13.587	13.667	13.854	A	0.750	2	0.375	1.686
				W	12.680	57	0.222	
Post-test mean	13.098	13.094	13.702	A	4.897	2	2.448	9.784*
				W	14.263	57	0.250	
Adjusted mean	13.187	13.121	13.585	A	2.407	2	1.203	10.013*
				W	6.729	56	0.120	

\* Significant level at 0.05 = (2, 57) = 3.159 & (2, 56) = 3.162

In the Table-1 Accordingly, in the performance of Speed Test 'F' ratio of means of pre-test was found to be 1.686. Comparing it with Table value (3.159), it was found insignificant at 0.05 level. The 'F' ratio of Post Test Means of all the three groups was found 9.784. Comparing it with Table value (3.159) it was found significant at 0.05 level. Therefore, it is proved that, because of the given training, the performance of the subjects is improved at significant level. In addition, the 'F' ratio of Adjusted Means was found to be 10.013. Comparing it with Table value (3.162) it was found significance at 0.05 level. The differences between Adjusted Means of all the three groups through 'F' ratio become significant. To check the significance of difference between Adjusted Means and to see which training effective from the training is given to Circuit Training Group

and Speed Training Groups the significance of Adjusted Means and critical difference was checked. It is shown in Table-2.

**Table – 2**

**Critical difference of mean scores of Speed of two experimental groups and a control group**

Mean			Mean difference	Critical difference
Circuit Training	Speed Training	Control Group		
13.187	13.121		0.066	<b>0.220</b>
13.187		13.585	0.398*	
	13.121	13.585	0.464*	

**\* Significance at 0.05 levels**

It is observed in table – 2 that higher significant improvement (0.464) was found in Speed group with compared to the control group. Then, higher significant improvement (0.398) was found in Circuit group with compared to the control group. Significant effect of experimental treatment was found higher in Circuit training group and Speed training group with compared to control group, whereas significant effect of experimental treatment was not found between Circuit group and Speed group.

**Conclusion :**

- Remarkable improvement was found in Speed of selected subjects by 08 weeks systematic Circuit training and Speed training program.

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