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## Effect of resistance and circuit training in relation to flexibility of kabaddi players

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### Abstract

The main objective of the present study was to study the effect on flexibility of kabaddi by resistance and circuit training. In the present study, kabaddi players of MM College Khekra were selected as subject in the present study. Resistance training and circuit training were provided to selected subjects in the present study. Total 45 male kabaddi players were selected and divided into three group i.e., resistance training group, circuit training group and control group of 15 kabaddi players each in the present study. For the measurement of flexibility, sit and reach test was used. To know the effects on resistance training group and circuit training group, one-way analysis of covariance test was applied and significance mean difference was tested at 0.05 level by using least significant post hoc test. The results indicated that remarkable improvement was found in flexibility of selected subjects by systematic eight week resistance and circuit training.

**Keywords:** Circuit training, resistance training

### Introduction

Circuit training is a form of body conditioning that involves endurance training, resistance training, high-intensity aerobics, and exercises performed in a circuit, similar to high-intensity interval training. It targets strength building and muscular endurance. The quick pace and constant changing nature of circuit training places a unique type of stress on the body, which differs from normal exercise activities, like weight training and cardiovascular conditioning. The demands of circuit training tend to prepare the body in a very even, all-round manner. Circuit training is one of the best ways found to condition your entire body (and mind). There are many other reasons why circuit training is a fantastic form of exercise, and what most of these reasons come down to is flexibility. In other words, circuit training is totally customizable to your specific requirements. In fact, circuit training is a favorite form of exercise for the British Royal Marine Commandos because they tend to spend a lot of time on large ships. The confined spaces means that circuit training is sometimes the only form of exercise available to them. Circuit training can be totally personalized, A circuit training workout can be modified to give you exactly what you want, circuit training is time efficient and the most important you don't need expensive equipment. Resistance training is a form of exercise intended to increase muscular strength and endurance. It involves exercising muscles using some form of resistance. This resistance could be weights, bands, or even your own bodyweight working against gravity. According to the Centers for Disease Control and Prevention (CDC), you should do muscle-strengthening activities of moderate or greater intensity, two or more days a week. These exercises should involve all the major muscle groups. Resistance training is intended to increase muscular strength and endurance, but it has a wide variety of health benefits such as boost metabolism and reduce body fat, improve balance, improve mental health, build muscle mass, improve muscle strength and endurance.

### Objective of study

The objective of the present research was to study Effect of resistance and circuit training in relation to flexibility of kabaddi players

**Selection of the subjects:** In the present study, kabaddi players of MM College khekra were selected as subjects in the present study. Resistance training and circuit training were provided to selected subjects. In the present study total 45 male kabaddi were selected and divided into three groups like resistance training group, circuit training group and control group of 15 kabaddi players each in the study.

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**Statistical process:** To know the effects on resistance training group and circuit training group, one-way analysis of covariance test was applied and significance mean difference was tested at 0.05 levels by using Least Significant Post Hoc Test.

**Research design:** Total 45 subjects were selected randomly and two experimental groups were formed. After conducting pre-test on the experimental group, resistance training and circuit training were applied. In resistance training

programme, exercises such pushups, squats, ab crunches, leg lift etc. are done and for circuit training exercise such as, 50 meters run forward and back side run, 50 meters run, leaning and touching the land, 50 meters side running, 50 meters cross step running, high knee running, belt running, sand running etc. were done by subjects on three days a week (Tuesday, Thursday and Saturday) for 02 weeks. After completing the training, the posttest was conducted and data was collected.

**Table 1:** Analysis of covariance of two experimental groups and a control group of flexibility test performance

Test	Group			Analysis of covariance				
	Resistance training	Circuit training	Control	SS	df	MSS	F	
Pre-test mean	16.40	16.136	16.10	A	1.244	2	0.622	0.095
				W	285.333	42	6.794	
Post-test mean	19.132	18.665	16.131	A	78.178	2	39.089	4.454*
				W	368.8	42	8.781	
Adjusted mean	18.747	18.706	16.285	A	64.900	2	32.450	7.957*
				W	167.155	41	4.077	

\* Significance at 0.05 levels 'F' 2,42 = (3.21) & 2,42 = (3.22)

It is observed from table – 1 that 'F' ratio of mean of pretest was found 0.095, which was not found significant at (3.21) 0.05 level when compared with tabular value. 'F' ratio of mean of posttest was found 4.454, which was found significant at (3.21) 0.05 levels when compared with tabular value. Moreover, 'F' ratio of adjusted mean was found 7.957, which was found significant at (3.22) 0.05 levels when compared with the tabular value. Significance was examined with critical difference between adjusted mean in order to test significance of difference between adjusted mean, which is mentioned in table–2.

**Table 2:** Critical ratio between mean of two experimental and a control group of flexibility test performance

Mean			Mean difference	Critical ratio
Resistance training	Circuit training	Control		
18.947	18.706		0.241	1.489
18.947		16.285	2.662*	
	18.706	16.285	2.421*	

\*Significance at 0.05 levels

It is observed from table–2 that higher significant (2.662) improvement was found in resistance training group. Then, significant (2.421) improvement was found in circuit training group. More significant effect of experimental treatment was found in resistance training group than it was in circuit training group. Significant effect of experimental treatment was found in resistance training group and circuit training group in compared with the control group.

**Discussion and findings**

Remarkable improvement in flexibility of selected subjects was found by systematic two weeks resistance training and circuit training.

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