



**“EFFECT OF FARTLEK TRAINING ON CARDIO RESPIRATORY ENDURANCE AND MUSCULAR ENDURANCE AMONG HANDBALL PLAYERS”**

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**ABSTRACT**

The purpose of the study was to find out the effect of fartlk training on cardio respiratory endurance and muscular endurance among handball players. To achieve this purpose thirty male handball players were selected as subjects, their aged between 18 to 25 years, they are studying in the Department of physical education and sports sciences. Annamalai University, Tamilnadu. The selected subjects were divided into two equal groups of fifteen subjects each, namely fartlek training group and control group. The fartlek training group trained for three alternative days in a week for twelve weeks. Fartlek training group after a warm up for 5 minutes underwent fartlek exercises such as hill running. Uphill and down hill, running on different surfaces having with variation of slow, medium, high, medium and slow speed walk and sprints alternatively and finished each session with cool down exercises. Cardio respiratory endurance and muscular endurance were selected as criterion variables and they were tested by using cooper’s 12 minutes run/walk test and Bent knee sit ups respectively. ANCOVA was used to find out the significant different if any between the groups. The results of the study showed that there was a significant improvement on selected endurance parameters such as cardio respiratory endurance and muscular endurance due to twelve weeks of fartlek

**KEYWORDS**

Fartlek Training, Cardio Respiratory Endurance, Muscular Endurance and Handball

**INTRODUCTION**

A training individual is in a better state of physical fitness than the individual who follows a sedentary, and inactive life. Fartlek Training exercise convergent and at the same time provides aerobic conditioning strength and endurance.

Fartlek is a Swedish term which means “speed play” and has been used by distance runners for years. Fartlek is a form of road running on cross-country running in which the runner, usually changes the pace significantly during the run.

Fartlek is similar to interval training in that short fast runs alternate with slow running or jogging recovery intervals. However, in Fartlek the running is done on the road or on parkland or bush tracks. There is no predetermined schedule to follow, but instead the athlete will set her/his own interval lengths and pace in response to their own feeling of the work load. An advantage of Fartlek is that the athlete can pace judgement skills. Also the athlete is free to experiment with pace and endurance, and to experience changes of pace.

“It is primarily a technique for advanced runners because it requires ‘honesty’ to put in a demanding workload, and also ‘maturity’ to not overdo the pace or length of the intervals. With these qualities, Fartlek makes for an excellent component of a distance runners training programme. A ‘mild’ form the Fartlek can also be of benefit for the ‘average runner’. You can use this approach to develop more self-awareness, by concentrating on what you are feeling while running at the different paces. From the foregoing it may be that the aim of fartlek training is to raise the special conditions: techniques, tactics and physical condition as well as the spiritual attributes indispensable in effectively participating in handball games to the highest possible level.

**METHODOLOGY**

The purpose of the study was to find out the effect of fartlek training on selected endurance parameters such as cardio respiratory endurance and muscular endurance among handball players to achieve this, thirty handball players were ran-

Variables	Test		Fartlek Group	Control Group	Source of Variance	SS	df	Mean Square	‘F’ Ratio
	Mean	S.D							
Cardio respiratory Endurance	Pre test	Mean	2475	2458	Between	0.03745	1	0.03745	0.520
		S.D	151.20	104.5	Within	2.017	28	0.07202	
	Post test	Mean	2572	2515	Between	1.391	1	1.391	13.807
		S.D	92.64	61.84	Within	2.821	28	0.101	
	Adjusted Post test	Mean	2576	2492	Between	87631.4	1	87631.4	53.94*
					Within	43862.1	27	1624.5	
Muscular Endurance	Pre test	Mean	27.63	27.40	Between	48.133	1	48.133	3.44
		S.D	1.64	2.09	Within	391.33	28	13.976	
	Post test	Mean	31.75	27.08	Between	307.2	1	307.2	22.25
		S.D	1.25	1.25	Within	386.67	28	13.81	
	Adjusted Post test	Mean	31.75	27.11	Between	157.21	1	157.21	95.79
					Within	44.31	27	1.64	

domly from the Department of physical education and sports sciences, Annamalai University in the age group of 18 to 25 years were selected as subjects at random with their consent. The selected subjects were divided into two equal groups of fifteen subjects each namely fartlek training group and control group. The selected criterion variables were assessed using standard tests and procedures, before and after training regimen. Cardio respiratory endurance and muscular endurance were tested before (pre) and after (post) the training program for both experimental and control group by using Cooper's 12 minutes run/walk test and Bent knees sit ups respectively.

The selected subjects had undergone the fartlek training for twelve weeks with three days per week in alternate days. The fartlek training group trained for three alternative days in a week for twelve weeks. Fartlek training group after a warm up for 5 minutes underwent fartlek exercises such as hill running. Uphill and down hill, running on different surfaces having with variation of slow, medium, high, medium and slow speed walk and sprints alternatively and finished each session with cool down exercises. The control group did not participate in any specialized training during the period of study. Analysis of covariance (ANCOVA) was used as to determine the significant difference. If any, existing between pretest and posttest data on selected variables separately.

## RESULTS

The descriptive analysis of data collected on selected endurance parameters before and after twelve weeks of Fartlek training is presented in Table-1

### TABLE – I

(The table value required for significant at .05 level with df 1 and 28; and 1 and 27 are 4.20 and 4.215 respectively).

The result of the study indicates that the fartlek training group had significantly improved the selected dependent variables namely cardio respiratory endurance and muscular endurance however, control group did not show any improvement on the selected variables as it was not involved in any of the specific training means. It is inferred from the results of the present study that all the dependent variables were significantly improved due to the influence fartlek training programme

## DISCUSSION

In the present study, a significant increase was predicted on endurance in the fartlek training group. Such an improvement is consistent with previous exercise training literature (Pollock et al., 1998) and may appear unexceptional. However, it is noteworthy that this improvement in cardio respiratory fitness was associated with relatively low volumes of exercise.

Fartlek training of approximately 6 minutes per day resulted in a similar improvement in maximum oxygen consumption as walking for 45 min per day (Duncan et al., 1991). Furthermore, continuing this level of training by a further 4-6 weeks has been shown to further improve and in the case of very unfit men by as much as 25% (Ilmarinen et al., 1979).

It therefore appears that short bouts of endurance training performed at the high end of the intensity zone recommended for cardiorespiratory conditioning can elicit similar improvements in  $\dot{V}O_{2\max}$  as endurance training performed at low-moderate intensities for longer durations. The duration of the training bout may therefore be relatively insignificant to the overall training effect of a programme designed to improve cardiorespiratory fitness relative to the frequency and, especially, the intensity of training (Pollock et al., 1998).

## CONCLUSION

Based on the result, the fartlek training was significantly improves the endurance parameters such as cardio respiratory endurance and muscular endurance among handball players.

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