

## Effect of game specific aerobic training on motor fitness components among handball players

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### Abstract

The reason of this study was to explore the effect of game specific aerobic training on motor fitness components among handball players. To achieve this purpose of the study thirty school level boys basketball players were selected from St. Britto has, Madurai, Tamil Nadu, India were randomly selected as subjects. Their age ranged in between 14 and 17 years. The subjects were divided into two groups namely resistance band group and control group. The resistance band group was subjected to game specific aerobic training (for weekly three days Monday, Wednesday, Friday) at evening session for eight weeks. Speed, agility & endurance was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed by using paired 't' test. The level of significance was set at 0.05. The result of the present study showed that the game specific aerobic training has significant improvement on Speed, agility & endurance of handball players.

**Keywords:** specific aerobic training, speed, agility & endurance, handball players

### Introduction

Aerobic training specifically targets the aerobic energy system and the cardiovascular system, which improves the delivery of oxygen to enhance its use. Aerobic training should be done at least 3 times a week, at intensity between 70% and 80% of their maximum heart rate, and normally goes for 30+min in duration. Aerobic training is suited for all sports as it provides the base work for an athlete's fitness. This is because it is the training that will specifically develop the cardiovascular system, and because the delivery of oxygen is vital in the recovery of each energy system. There are specific sports that aerobic training is the best suited for and these include: marathons, triathlons, long distance cycling such as the Tour de France, Iron Man events, cross-country skiing, and Australian rules football. This type of training affects performance by increasing the delivery of oxygen to the muscles, improving removal of waste products for all energy systems and enhancing the muscles ability to use the aerobic energy system. These improvements allow the athlete to perform at higher workloads for longer, because they become a lower intensity for the trained athlete. This training will also improve the recovery time for the lactic acid energy system. There are various training methods that can be utilised in this training type, which include: Fartlek, aerobic interval & circuit training.

### Reasons for selection of the topic

The investigator reviewed the number of scientific articles, journals, books, self analyzed and found that selected motor fitness component would influence of aerobic training. The investigator, being a Handball player, coach, selector, and official was motivated to find out the impact of effect of game specific aerobic training on motor fitness components among Handball players. Moreover, very little research had been done on game specific aerobic training among Handball

players. This also motivated the investigator to take-up the study.

### Methodology

The reason of this study was to explore the effect of game specific aerobic training on motor fitness components among handball players. To achieve this purpose of the study thirty school level boys basketball players were selected from St. Britto hss, Madurai, Tamilnadu, India were randomly selected as subjects. Their age ranged in between 14 and 17 years. The subjects were divided into two groups namely resistance band group and control group. The resistance band group was subjected to game specific aerobic training (for weekly three days Monday, Wednesday, Friday) at evening session for eight weeks. Speed, agility & endurance was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed by using paired 't' test. The level of significance was set at 0.05.

The test used to assess the motor fitness components are given in.

**Table 1:** Criterion Measures

Variables	Test items	Unit of measurement
Speed	50 metres dash	Second (1/100 sec)
Agility	Zig Zag run	Second (1/100 sec)
Endurance	12 minutes run & walk	In Metres

### Training procedure

For game specific aerobic group underwent their training programme as three days per week for eight weeks. Training was given in the evening session. The training session includes warming up and cool down. Every day the workout lasted for 45 to 60 minutes approximately. The subjects underwent their training programmes as per the schedules

such as slow movements, medium movements & fast movements under the strict supervision of the investigator.

During experimental period control group did not participate in any of the special training.

**Results**

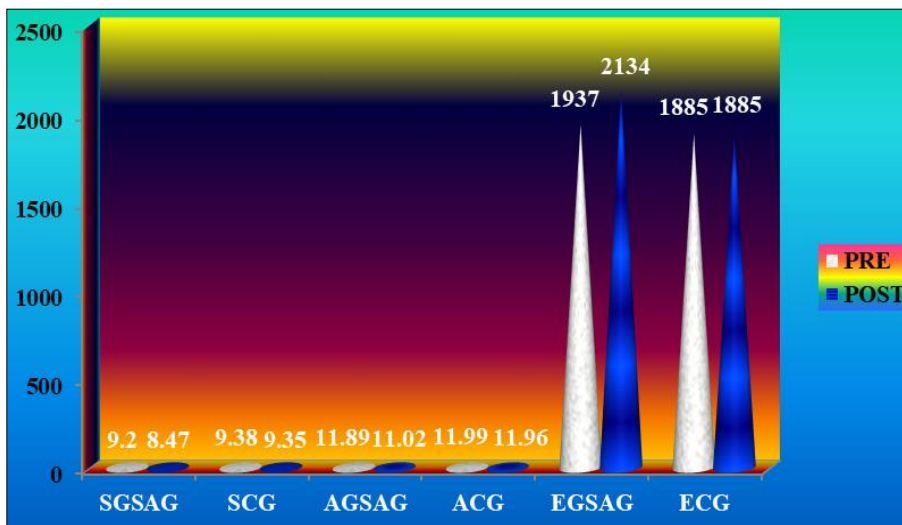
**Table 2:** Comparison of Mean, and ‘t’-Values of Motors Fitness Components between Pre & Post Test among Game Specific Aerobic and Control Groups

S. No	Motors Fitness Components	Groups	Test	Mean	‘t’ Values
1.	Speed	Game Specific Aerobic group	Pre Test	9.20	8.41*
			Post Test	8.48	
		Control group	Pre Test	9.38	1.10
			Post Test	9.35	
2.	Agility	Game Specific Aerobic group	Pre Test	11.89	11.63*
			Post Test	10.92	
		Control group	Pre Test	11.99	1.16
			Post Test	11.96	
3.	Endurance	Game Specific Aerobic group	Pre Test	1937	47.13*
			Post Test	2134	
		Control group	Pre Test	1885	1.23
			Post Test	1885	

\*Significant at 0.05 level of confidence

Table-II reveals that the obtained mean values of per test and post-test of resistance game specific aerobic group for Speed, agility & endurance were 9.20 and 8.47, 11.89 and 11.02, 1937 and 2110 respectively; the obtained ‘t’ ratio were 8.41\*, 11.63\* and 47.13\* respectively. The tabulated ‘t’ value is 2.14 at 0.05 level of confidence for the degree of freedom 14. The calculated ‘t’ ratio was greater than the table value. It is found to be significant change in Speed, agility & endurance of the handball players. The obtained mean values of pre-test and

post test scores of control group were 9.38 and 9.35, 11.99 and 11.96, 1885 and 1885 respectively, the obtained ‘t’ ratio was 1.10, 1.16 and 1.23. The required table value is 2.14 at 0.05 level of confidence for the degree of freedom 14. The calculated ‘t’ ratio was lesser than the table value. It is found to be insignificant changes in Speed, agility & endurance of the handball players. The mean values of motor fitness components among game specific aerobic group and control group are graphically represented in figure-1.



**Fig 1:** Bar Diagram Showing the Pre Test and Post Test on Selected Skill Performance Variables of Resistance Band and Control Groups (SGSAG, SCG, AGSAG, ACG, EGSAG & ECG)

**Discussion on findings**

The result of the study indicates that the experimental group namely game specific aerobic training groups had shown significant improvement in all selected motor fitness components among the Handball players. The control group Handball players had not shown significant changes in any of the selected variables. The analysis of the study indicates that the game specific aerobic training group had shown

significant level difference in speed, agility, and endurance among Handball players.

It is inferred from the literature and from the result of the present study. That systematically designed training develops dependent variables are very importance quilts for better performance in almost all sports and games. Hence it is concluded that systematically designed training may be programmes of all the discipline in order to achieve maximum

given due recognition and implemented properly in the training performance. These findings are in accordance with the findings of Rashiti (2016)<sup>[1]</sup> and Kumar (2013)<sup>[2]</sup>.

### **Conclusions**

From the analysis of the data, the following conclusions were drawn.

1. The Handball players of control group had not shown significant changes in any of the selected variables.
2. The Game specific aerobic training group shown significant improvement in all selected motor fitness components among Handball players.
3. There Handball players who had undergone 8 weeks of specific aerobic training showed significant improvement in speed, agility and endurance when compared with control group.

### **References**

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