

## **Physiological Variables between Attacker and Defender Soccer Players**

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(Received 11 November 2016- Accepted & Published 25 November 2016)

### ***ABSTRACT***

The purpose of the study was to compare the vital capacity, peak flow rate of attacker and defender soccer players. 20 soccer players (10 attackers and 10 defenders), aged 16-25 were selected on the basis of random sampling technique from State Level Competition in Delhi. Vital capacity, peak flow rate, body fat percentage, height and weight were measured by Spiro meter, peak flow meter, skin fold calliper, stadiometer and electronic weighing machine respectively. To compare the attacker and defender soccer players in selected physiological and anthropometric variables the independent t-test was employed and found t value was greater than tabulated value at 18 df and vital capacity and peak flow rate were found insignificant. Results indicated that the Vital Capacity and Peak Flow Rate have not any significant difference in attackers and defenders.

Key Words:- Attackers & Defender Footballers, Peak Flow Rate, Vital Capacity.

### **INTRODUCTION**

In many cases, exercise training is more an art than a science. The success of different conditioning program is usually evaluated by individual achievement or won-loss records rather than by scientific inquiry and discovery (William et al 1981). The physiological response of soccer players to match-play denoted that a combination of demands is imposed on soccer players during competition. The critical phases of play for an individual call for anaerobic efforts but these are superimposed on a background of largely aerobic sub-maximal activities (Thomas 1996). Top soccer teams spend a great deal of time to practicing with the ball. Some of this is devoted to rehearsing set pieces but a major part of the average training session is given over to honing basic ball skills, so that they become instinctive. There are two aspects to training without the ball. The first consists of running and building stamina; players recovering from injury also do strength work in the gym. The second concerns how players look after themselves away from the training grounds; diet, rest, and self discipline are all important. If a player runs out of energy towards the ends of a match, the team is likely to suffer. Footballers need considerable stamina and their training should help them to develop it. A typical stamina building session might consist of three 900m runs followed by three at 600m and 300m with a two-to-three-minute break between each run for that a player must have an optimum level of fitness (CSANADI. ET AL 1965). Playing fitness means that the player must have a high standard of physiological and psychological condition, which makes possible, through the perfect functioning of the organs of locomotion and circulation, and of the nervous system, the maximum possible use and application of his physical and mental capabilities and knowledge of football. Football players are familiar with the feeling that makes its appearances after the long, through preparatory training sessions or the first relatively easy practice matches. After a session or the game of this kind, they may feel unusually tired although they have not done as much work as in moderately heavy training session of the kind to basic period. This feeling indicates that the general fitness accumulated during the basic period has not yet been transformed into special fitness. Today when the

football coaching is very advanced and scientific so that we can't give the same type of training to all the players and to give that individualized training a coach should be able to identify that which player can be suitable for which place and we need to have some idea that which player can play better at which place so that we can give training according to that playing position today because we need the highly expertise players who are specialist for that place to fulfil the concept of total football. The purpose of this study was to compare the selected physiological variables between attackers and defenders of youth soccer players of the university soccer team. The study frames the following hypothesis that the youth soccer players need different physiological capabilities than the other games and sports.

## METHODOLOGY

### Selection of the subjects

For the purpose of the study 20 soccer players from State Level Competition in Delhi were selected as the subjects for the present study, 10 attackers and 10 defenders and the age level (16-25) years.

### Selection of variables

For the purpose of study the following variables are measured  
 -Vital capacity, Peak flow rate.

### Criterion measures

- (1) Vital capacity was measured Dry Spirometer.
- (2) Peak flow rate was measured by peak flow meter.

### Statistical analysis

The comparison of physiological variables between attackers and defender soccer players was calculated by using independent t-test. For testing the hypothesis the level of significance was set at 0.05 levels.

## RESULTS

**Table 1**

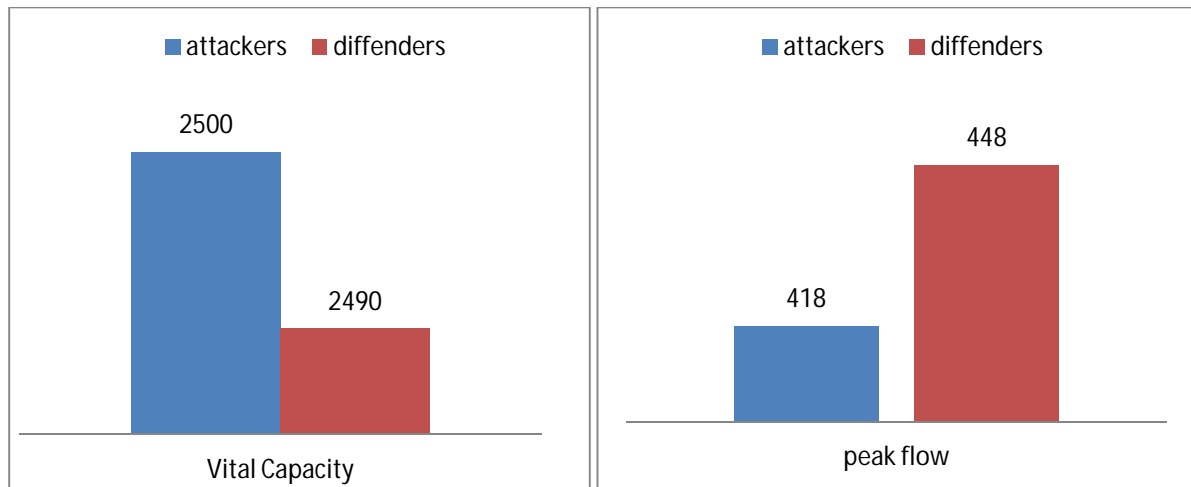
Variables	Position	N	Mean	Std. De
Vital Capacity	Attackers	10	2500.0000	839.31189
	Defenders	10	2490.0000	357.30473
Peak Flow	Attackers	10	418.0000	52.66245
	Defenders	10	448.0000	39.17199

Table 1 shows that:

The mean of youth attackers (2500) is greater than the mean of youth defenders (2490) on vital capacity.

The mean of youth attackers (418) is lesser than the mean of youth defenders (448) on peak flow.

**The Graphical Representation of the Means of both the Group (Attackers and Defenders) on Physiological and Anthropometrical Variables is given Below in Figures**



• Above Figures shows that the means of both the groups on vital capacity, peak flow, are unequal.

For the comparison of the means of the two groups the independent 't' test was employed

**Table 2: Independent Samples t-test between Attacker and Defender Soccer Players on Physiological and Anthropometrical Variables**

Variables	T	df	Sig. (2-tailed)	Mean Difference
Vital Capacity	.035	18	.973	10.00000
Peak Flow	-1.445	18	.166	-30.00000

\*Significant at 0.05 level of significance

Table-2 reveals that there is insignificant difference in Vital capacity and Peak flow rate in defenders and attackers because the calculated t value is less than tabulated value.

**DISCUSSION AND CONCLUSIONS**

The purpose of the present study was to compare the selected physiological variables among attacker and defender soccer players. The results of the study have shown that the difference of mean of attackers and defenders was found to be insignificant. Lago-Peñas (2011) has conducted a study on soccer players to compare the physiological variables of: Goalkeepers, Central Defenders, External Defenders, Central Midfielders, External Midfielders, and Forwards and he also found similar results in his study. Sporis G (2005) has conducted a study on Fitness profiling in soccer: physical and physiologic characteristics of elite players and he found that there was a significant difference in some physiological variables like resting heat rate, resting respiratory rate in them.

The insignificant difference indicates that the attackers and the defenders are almost have same physiological abilities which gives an idea that they are getting almost same type of training in their training sessions which may or may not be beneficial for the team because in the modern soccer there is no need to give the specialized training for attackers and defenders if the teams are playing with some special tactics like overlapping. According to the modern soccer demand, the training should be more specialized and specific which will be more beneficial for the soccer in future. So, it is suggested that the similar type of study should be conducted in future to see the difference.

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