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An assessment of endurance of football players in relation to their maximal oxygen consumption

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Abstract

Objective: The sole purpose of this study was to explore the relationship between endurance and vo2 max of football players.

Design of the study: Descriptive cum exploratory

Methodology: For accomplish the study a total 50 football players were randomly selected as sample. The age of the samples were ranged from 18-25. To assess the endurance level of subjects "Cooper 12 minute walk and run" test was administered and score was measure in the units of meters. Vo2 max was measured through the values got via Cooper test and put them in an equation to get the vo2 max. To find out the relationship Karl Pearson Correlation test was used and the level of significance was set at 0.01.

Results: A strong Correlation with the score of .987 was found between the endurance and vo2 max of selected subjects.

Conclusion: Endurance is key point in every sport. After the study we proved that if a person have a good endurance than his or her vo2 max (maximum oxygen consumption) will also be good.

Keywords: Endurance, vo2 max, football

Introduction

Soccer requires speed, strength, intensity and athleticism in general. The conditioning exercise for football can help you shape ways to play the game competitively. However, your coach can make it very difficult to reach the best size because they want you to have resistance in the later stages of the game. This is where games are often won and lost; Attempts to increase your stamina can have a dramatic effect on the loss and loss of your play and drama.

Resistance training in football is essential to maintain endurance throughout the season, as well as throughout the session. Although resistance training can be done by the Football Court, but it is possible to increase resistance and endurance during practice through a court conditioning exercise. Resistance training exercises range from online turns to routines to run off the track.

Resistance training in football is divided into many categories. The resistance to speed tests your ability to maintain a certain speed in a game or practice. Endurance speed exercises often include running and shuffling for long periods of time. Strength resistance must be developed to stay physically in full soccer games. The power of resistance of the force is more important for the centers and centers that require rebound and box-out throughout the game. Other categories of resistance training include aerobic endurance and anabolic resistance.

Methodology and Procedure

Selection of the subjects: for accomplish the study a total 50 football players were randomly selected as sample. The age of the samples were ranged from 18 to 25. The competition level of the subjects was All India Inter-university and data were collected during their university camps.

Selection of the variable: To assess the endurance of subjects Cooper 12 minute walk and run test was administered and score was measure in the units of meters. The Vo2 was measured through the values received through the maximum cooperation test and placed in the equation to obtain the maximum Vo2.

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The Pearson correlation was used to find the relationship and the level of significance was set to 0.01.

Administration of test: The Cooper 12 minute run is a popular maximal running test of aerobic fitness, in which participants try and cover as much distance as they can in 12 minutes. There are several other variations of running/walking tests, including the Cooper 1.5 mile run test.

- **Purpose:** to test aerobic fitness (the ability of the body to use oxygen to power it while running)
- **Equipment Required:** flat oval or running track, marker cones, recording sheets, stop watch.
- **Procedure:** Place markers at set intervals around the track to aid in measuring the completed distance. Participants run for 12 minutes, and the total distance of the deck is recorded. Walking is allowed, although participants should be encouraged to become as difficult as they can to maximize coverage.
- **Scoring:** There are Cooper test norm tables for general guidelines for interpreting the results of this test for adults. There are also several equations that can be used to estimate VO_{2max} (in ml/kg/min) from the distance score (a formula for either kms or miles):

$$VO_{2max} = (35.97 \times \text{miles}) - 11.29$$

$$VO_{2max} = (22.35 \times \text{kilometers}) - 11.29$$

- **Target population:** This test can be modified to be suitable for most populations. For those who are unfit or unable to run, there are similar walking tests that can be performed.
- **Validity:** Cooper (1968) reported a correlation of 0.90

between VO_{2max} and the distance covered in a 12 min walk/run.

- **Reliability:** the reliability of this test would depend on practice, pacing strategies and motivation level. There should be good reliability if these issues are addressed.
- **Advantages:** large groups can be tested at once, and it is a very cheap and simple test to perform.
- **Disadvantages:** practice and pacing is required, and performance on this test can be affected greatly by motivation.
- **Comments:** the world record for 5000m is held by Kenenisa Bekele in 12:37.35. Based on that time, he would complete 4752m or 11.88 laps in 12 min.
- **Variations/modifications:** The test can also be conducted by running on a treadmill for 12 minutes, set to level 1 (1 percent) incline to mimic outdoor running. There are also many variations of the walk / run test. A very similar test is the Balke 15 minute run. Testing is generally easier to administer when the distance is fixed and the finishing time measured, so the alternative Cooper 1.5 mile (2.4km) run test was developed.

Results

Variables	N	Mean	SD
Endurance	50	2463.34	385.688
Vo2 _{max}	50	43.9658	8.85057

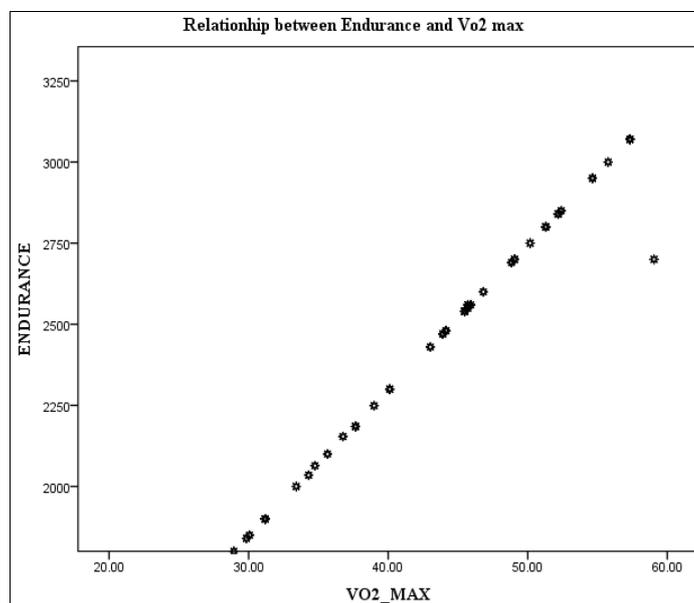
The table no 1 explore the descriptive statistics of the selected subjects. The mean and SD of endurance was 2463.34±385.688 and mean and SD of vo2_{max} was 43.9658±8.85057 respectively.

		Endurance	VO2_Max
Endurance	Pearson Correlation	1	.987**
	Sig. (2-tailed)		.000
	N	50	50
vo2_max	Pearson Correlation	.987**	1
	Sig. (2-tailed)	.000	
	N	50	50

** . Correlation is Significant at the 0.01 level (2-tailed).

Table.2 shows the obtained results of correlation between endurance and vo2 max of football players. The obtained value of the correlation is .987 which is highly significant at

0.01 level of significance. A perfect positive relationship was found between endurance and vo2 max of football players.



Conclusion

Almost every sport which need vigor's physical demands endurance play an important role and maximal oxygen consumption is also a key factor in sports performance. After the study it has been proved that if a person have a good endurance than his or her vo2 max (maximum oxygen consumption) will also be good.

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