



Survey of Cardiovascular Endurance Levels of Smoker and Non-Smoking Football Athletes (Gawang FCC Tumpang Malang Regency)

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ABSTRACT

This research aims to determine the cardiovascular endurance of smoking and non-smoking football athletes which can be used as information for coaches or athletes in implementing lifestyle and exercise patterns. The research method used is quantitative descriptive without testing a particular hypothesis. The instruments used are tests and measurements using the Bleep Test. The results obtained showed that there were 3 (30%) athletes in the good category, and 7 (70%) athletes in the medium category. The results of cardiovascular tests on non-smoking players at the Gawang FCC Tumpang, Malang Regency, were that there were 3 (30%) athletes in the very good category, 6 (60%) athletes in the good category, and 1 (10%) athlete in the fair category. So it is recommended that trainers pay more attention to improving cardiovascular endurance when preparing training programs without neglecting technical or tactical training. Meanwhile, football athletes should use these results as a guide and tool to motivate themselves to have better cardiovascular endurance and avoid things that can damage their body's health, especially smoking.

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- Conception and design of the study;
- Acquisition of data;
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- Manuscript preparation;
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INTRODUCTION

Sports is one form of effort to improve human quality directed at the formation of character, personality, and physical condition abilities that aim to improve individual or team achievements, especially in football games. Football is a team game, a team consisting of eleven players and including one goalkeeper. The game of football has two rounds with a match length of 45 minutes each half. So it takes optimal training and application of a healthy lifestyle to become a professional football player. The things that must be prepared and improved are strong technique, physique, strategy, and



endurance. Endurance includes all sports activities such as walking, running, jumping, etc. limited by the capacity of the circulatory system (heart, blood vessels, and blood) and respiratory system (lungs) to deliver oxygen to the muscles that are working and transport chemical waste from these muscles. All of these things are called cardiovascular endurance (Rahmatina, 2010). Humans have different cardiovascular endurance or health, some have good cardiovascular endurance and there are humans whose cardiovascular endurance is lacking, this depends on the body's immune system, so we must protect our bodies from everything that can cause us to get sick, including exercising, not smoking, eating according to our body's nutritional needs and living a healthy lifestyle. People know that smoking cigarettes is an unhealthy habit because in cigarette smoke many substances contain toxins, but now there are still many who smoke, even freely anywhere both in offices, on public transportation, on the streets, and so on.

For football players being able to take O₂ to the maximum can be raised between 10-12%. But if the football player smokes one pack per day his ability to take O₂ to the maximum can be reduced between 7-10% (Barnard, Christiaan, 2002: 147). Thus football players who also smoke one pack of cigarettes per day then their cardiovascular endurance does not increase and will not improve, because cigarettes contain many toxic chemicals such as nicotine which stimulation the heart to beat faster and interferes with blood circulation, nicotine also causes addiction, carbon monoxide is a toxic gas that can result in reduced ability in take oxygen. For a team to achieve maximum performance, the coach needs to know the level of endurance of the players for the progress of individual play for his team. By knowing the endurance of each player, the coach can determine which players can play optimally in each match. The results of the research can also be used as material for the evaluation of trainers to apply a healthy lifestyle.

METHODS

This research is quantitative and descriptive. This study did not test a specific hypothesis. The method used is a survey by conducting tests and measurements. The variables to be studied are the cardiovascular endurance of football athletes, smokers and non-smokers, Gawang FCC Tumpang, and Malang Regency. The population in this study was all Gawang FCC Tumpang football athletes, Malang Regency. The sample collection technique used is *purposive sampling*, which is a sampling technique that uses criteria to obtain samples. The criteria include Football athletes, smokers and non-smokers, and Gawang FCC Tumpang. Based on the sample collection technique, the number of samples taken from the population amounted to 20 people. With details of 10 smoker football athletes and 10 non-smoker football athletes Gawang FCC Tumpang Malang Regency. This research was conducted in April 2022 and the location of this

research was carried out at Tumpang Stadium, Street Tumpang 1, Tumpang, Tumpang District, Malang Regency, East Java.

Research instruments are used with the aim that the data used in this study can be obtained quickly and relevantly. The research instruments used are tests and measurements with the *Bleep Test*. The *bleep* test is a form of test that can be used to measure an individual's cardiovascular levels by running back and forth following a predetermined rhythmic sound with a track length of 20 meters. Data collection techniques use pre-prepared assessment forms. The data analysis technique used is a percentage, has the aim of collecting data, presenting data, and determining value. The following categories or norms are used:

Table 1.
 Norms of cardiovascular endurance with bleep test

No.	Value	Category
1	> 51.6	Very good
2	42.6 – 51.5	Good
3	33.8 – 42.5	Currently
4	25.0 – 33.7	Bad
5	< 25.0	Very bad

After the data is grouped in each category, then find the percentage of each data with the percentage formula. The formula used is:

$$P = \frac{F}{N} \times 100\%$$

RESULTS AND DISCUSSION

The data results contain the presentation of research data that has been obtained from the results of surveys in the field. Before the data is processed in detail, the data will be analyzed based on test norms. To determine cardiovascular levels for both smoker and non-smoker athletes, researchers used the *Bleep Test*. This research was conducted in April 2022 at the Tumpang stadium, Malang Regency with a total of 20 players. Based on research that has been conducted through the process of collecting cardiovascular test results for smokers and non-smoking players on the Gawang FCC Tumpang team, Malang district in 2022.

Table 2.
 Description of Cardiovascular Test Data for Smokers and Non-Smokers on Gawang FCC Tumpang Teams

Variable	Mean	Min	Max	STD	Category
Smoker	42.54	38.5	48.7	3.12594874	Currently
No Smoking	49.31	41.5	57.4	0.228059179	Good

Based on data on the level of cardiovascular endurance of smoker football athletes with a score range between 38.5 to 48.7, obtained an average (mean) of 42.54, standard deviation (STD) of 3.12594874. Based on data on the level of cardiovascular endurance of non-smoker football athletes with a score range between 41.5 to 57.4, obtained an average (mean) of 49.31, standard deviation (STD) of 0.228059179.

Table 3.

Cardiovascular test results for players who smoke Gawang FCC Tumpang in Malang Regency in 2022

No.	Category	Frequency	Percentage
1	Very Good	0	0
2	Good	3	30%
3	Keep	7	70%
4	Less	0	0
5	Very Lacking	0	0

Table 3 above explains that the level of cardiovascular endurance of smoker football athletes is 3 (30%) athletes in the good category, and 7 (70%) athletes in the medium category.

Table 4.

Cardiovascular test results of non-smoking players. Gawang FCC Tumpang in Malang Regency in 2022

No.	Category	Frequency	Percentage
1	Very Good	3	30%
2	Good	6	60%
3	Keep	1	10%
4	Less	0	0%
5	Very Lacking	0	0%

Table 4 above explains that the level of cardiovascular endurance of smoker football athletes is 3(30%)athletes in the very good category, 6(60%)athletes in the good category, and 1(10%)athletes in the sufficient category. maximum value.

CONCLUSION

Based on the results of the study it has been found that the percentage of cardiovascular endurance tests in smokers and non-smokers is quite different, where it has been found that it is still quite good for football athletes who do not smoke. Based on the results of research that researchers have conducted on football athletes of smokers and non-smokers of the Gawang FCC Tumpang in Malang Regency in 2022, the researchers provide the following suggestions:

(1) For football athletes who smoke, the importance of endurance levels in football so that all athletes increase their endurance so that later they can give maximum performance in the game and reduce or even quit smoking. (2) For non-smoking football athletes, the importance of endurance levels in football is so that all athletes increase their endurance so that later they can give maximum performance in the match avoid exposure to cigarette smoke, and do not consume cigarettes. (3) For coaches, to have a reference that technical training, tactics alone cannot help to achieve the maximum ability of their athletes but by completing technical training, tactics by knowing the endurance of players so that later they can arrange training programs appropriately and have clear targets. (4) For researchers as one of the studies that can later be used as a reference by future researchers who discuss the level of cardiovascular endurance, to

be able to reference and perfect this study where there are still many shortcomings that might be even better.

REFERENCES

- Anas Sudjiono. 2012. *Pengantar Evaluasi Pendidikan*. Jakarta: PT. Raja Grafindo Persada
- Arikunto, Suharsimi. 2010. *Prosedur Penelitian Suatu pendekatan Praktek*. Jakarta: Rineka Cipta.
- Bernard Christian. 2002. *Kiat Jantung Sehat*. Jakarta. Kaifa
- Bustan, M.N, 1997. *Epidemiologi Penyakit Tidak Menular*. Jakarta: Rineka Cipta
- Danurwindo, Indra Sapri. 2017. *Panduan Kepelatihan Sepak Bola*. Erlangga Group
- Depdikbud, 2002. *Kamus Besar Bahasa Indonesia* (Jakarta : Balai Pustaka,).
- Dwijowinoto, Kasiyo. 1993. *Dasar Ilmiah Kepelatihan*. Semarang: IKIP Semarang.
- Ismaryati. 2011. *Tes Dan Pengukuran Olahraga*. Surakarta: Universitas Sebelas Maret.
- Jumsul, Hairy. 2003. *Daya Tahan Aerobik*. Direktorat Jendral Olahraga, Jakarta: Depdiknas
- Junusul Hairy (1989). *Fisiologi olahraga*. Jakarta : Depdikbud
- Klašnja-Milićević, A., Vesin, B., Ivanović, M., & Budimac, Z. (2011). E-Learning personalization based on hybrid recommendation strategy and learning style identification. *Computers & education*, 56(3), 885-899.
- Nurhasan Hasanudin Cholil. 2007. *Tes dan Pengukuran Keolahragaan*. Jurusan Pendidikan kepelatihan: UPI: Bandung
- Rinawati. 1996. *Asuhan Keperawatan pada Klien Tuberkulosis Paru di Unit Rawat Inap di RS. Achmad Muchtar Bukittinggi* (skripsi). Padang: Akper Baiturrahmah: Padang.
- Sajoto, M, (1998). *Peningkatan & Pembinaan Kekuatan Kondisi Fisik dalam Olahraga*,Semarang: Dahara Prize,.
- Sajoto, Mochamad. 1988. *Pembinaan Kondisi Fisik Dalam Bidang Olahraga*. Jakarta: Depdikbud Dirjen Dikti.
- Suharsimi Arikunto. 2006. *Metodologi Penelitian*. Jakarta: Reineka Cipta
- Syafruddin. (2011). *Ilmu Kepelatihan Olahraga Teori dan Aplikasinya Dalam Pembinaan Latihan*. Padang: UNP Press Padang
- Wannamethee, S. Goya, et al, 2005, Body fat distribution, body composition and respiratosty function in elderly men, *Am J Clin Nutr* 2005; 82 : 996-1003.
- Wiaro, G. (2013). *Atletik*. Yogyakarta: Graha Ilmu.
- Yanbaeva D.G., Dentener M.A., Creutzberg E.C., Wesseling G., and Wouters E.F. 2007. Systemic effect of Smoking. *Chest* 135(5): 1557-1