



# Relationship between Somatotype and Body Mass Index with the Successful Heading of Soccer Athletes

## Original Article

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Submitted : 24-Jan-2023  
Revised : 13-Feb-2023  
Accepted : 31-May-2023

### Abstract

The background of the problem is that there are many influencing factors, one of which is the compatibility of the somatotype body type and body mass index that supports the sport involved. In order to get maximum performance, a condition is needed for players who have good physical abilities, techniques, tactics and are supported by good somatotype conditions. This type of research is quantitative. One dependent variable is the heading ability of a soccer athlete, and two independent variables, namely somatotype and body mass index. The sample of this study were all football athletes from the Senopati club. Data research instruments used body mass index measurement tests, anthropometric tests, and heading ability tests. The results of this study are that there is a good relationship between somatotype and the heading ability of soccer athletes, there is a good relationship between body mass index and heading ability of soccer athletes. The conclusion from the research results is that there is a good relationship between somatotype and the heading ability of soccer athletes, there is a good relationship between body mass index and heading abilities of soccer athletes.

**Keywords:** *heading, body mass index, somatotype*

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## INTRODUCTION

In the world of sports, there are various kinds of sports, one of which is football. The game of football is one of the many sports that is popular in society and even the world. This is evident that soccer is played a lot at school, in the office and in the village. The game of football is loved by people of all ages, children, youth, and adults, both men and women. The game of football has entered the realm of education and professional clubs.

In the game of football, there are various basic techniques, from shooting, passing, dribbling. One of the basic techniques of playing soccer is heading, where heading is one of the techniques for controlling the ball, baiting a teammate, and for scoring goals using the head [1]. Headings are often done by players when the ball is in the air. However, heading can also be done when the ball is under (drive heading). Heading technique requires regular practice because it is not easy to do. Players must maintain balance, timing, and accuracy in reading directions so that the ball can be headed properly and perfectly. The neck, shoulder and waist muscles have good strength, so the ball can slide hard. Heading is mostly done by great soccer players to score goals. The player who will do the heading jumps into the air and directs it to the opponent's goal.

Body type for a soccer player is one of the determining factors in achieving achievement because in soccer games apart from speed of movement and agility and good coordination it is also necessary to pay attention to posture problems, with good posture combined with strength and speed, you can help soccer players to achieve perfect moves. The success of athletes in

various types of sports is determined by their body dimensions and body conditions. Body Mass Index (BMI) or Body Mass Index (BMI) is a tool or a simple way to monitor the nutritional status of adults, especially regarding underweight and overweight [2].

**MATERIAL AND METHODS**

The type of research used by researchers is qualitative. Where this research is intensive, detailed, and in-depth on an organization, institution, and certain symptoms. Case study research can also be interpreted as research to maintain the integrity and depth of the object under study. The independent variables in this study are body mass index and somatotype. The dependent variable in this study is the success of heading football athletes. Data collection techniques using body mass index measurements, somatotype measurements, and heading success measurements.

**RESULTS**

Based on the results of descriptive analysis of percentages and multiple regression testing on the relationship between BMI and Somatotype on the success of heading soccer school athletes.

Table 1. Description of research results

Persent Interval	Criteria	Frequency	Persent
81.25% < Score ≤ 100%	Very Good	10	50,0%
62.5% < Score ≤ 81.25%	Good	9	45,0%
43.75 % < Score ≤ 62.5%	Not Good	0	0,0%
25% < Score ≤ 43.75%	Very Not Good	1	5,0%
Total		20	100%
Highest		100,0%	
Lowest		40,0%	
Average		80,7%	
Criteria		B	

The table above states that the school football athlete students did well in heading.

Tabel 2. Classic assumption test

Interval Persen	Kriteria	Frekuensi	Persentasi
81.25% < Skor ≤ 100%	Sangat Baik	10	50,0%
62.5% < Skors ≤ 81.25%	Baik	9	45,0%
43.75 % < Skor ≤ 62.5%	Tidak baik	0	0,0%
25% < Skors ≤ 43.75%	Sangat tidak baik	1	5,0%
Jumlah		20	100%
Tertinggi		100,0%	
Terendah		40,0%	
Rata-rata		80,7%	
Kriteria		B	

The table above states that the football school athlete students did very well heading with an average score above 62.5%.

## DISCUSSION

Headings are often done by players when the ball is in the air. However, heading can also be done when the ball is under (drive heading). Heading technique requires regular practice because it is not easy to do. Players must maintain balance, timing, and accuracy in reading directions so that the ball can be headed properly and perfectly. Good neck, shoulder, and waist muscle strength, so the ball can slide fast. Heading is mostly done by great soccer players to score goals. The player who will do the heading jumps into the air and directs it to the opponent's goal.

Body type for a soccer player is one of the determining factors in the charm of achievement because in the game of soccer in addition to speed of movement and agility and good coordination it is also necessary to pay attention to posture problems, with good posture combined with strength and speed, you can help soccer players to achieve perfect moves.

## CONCLUSION

Based on the results of the research and discussion above, it can be concluded that there is a relationship between somatotype and the success of heading soccer athletes and there is a relationship between body mass index and the success of heading soccer athletes.

## ACKNOWLEDGMENT

We thank us to say the guidance who has directed well to make this research be completed properly. We also thank those who have contributed to this study, so we can finish this research well without any constrains.

## CONFLICTS OF INTEREST

**Conflict of interest** : Authors state no conflict of interest.

**Disclosure statement** : No author has any financial interest or received any financial benefit from this research.

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