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## Geographical influences on anthropometric measurements and body composition among football players

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### Abstract

The purpose of the study was to analyze the geographical influences on anthropometric measurements and body composition among football players. A total subject's 30 boys was selected from two different geographical locations namely coastal and plain areas in which 15 from each locations. The coastal area school Selected for the study are L. K. higher secondary school kayalpatnam, Tuticorin district, and St. Thomas higher secondary school veerapandian patanam tuticorin district, Tamil Nadu. The plain area school Selected Sri Ragavendra vidyalaya matric higher secondary school pommanapalayam Coimbatore district and premier vidya vikash matriculation school Coimbatore, Tamil Nadu. The selected body composition measurement thigh circumference, calf circumference was assessed with standardized test. To find out the mean difference among the groups independent" t "test was used.

**Keywords:** geographical football players, BMI, thigh circumference, calf circumference

### Introduction

Body composition is central to the development of a football player. Increase in fat-free mass have a direct correlation to strength, speed and explosiveness. The body mass of football players has increased significantly over the past 40 years with lineman increasing body mass by 30 kg where, body composition is important factor for performance. Studies has proud that increase in body mass or height is associated with increased playing time as well as greater performance. In addition to performance, there is growing interest in body composition of football athletes because of its impact on health. Studies using BMI as a measure of obesity suggest that up to 56% of football players including high school players are obese. Specific measure characteristics required to achieve success in certain sporting events. It's conjointly energetic to notice that there square measure some variations in anatomical structure and composition of sports persons concerned in numerous sporting event. the method whereby the physical demands of a sport cause choice of body sorts best suited there to sport is thought as "morphological optimization"<sup>[1]</sup>. Developing smart learning programs supported the precise morphological and physiological demand of every sport is taken into account as a key issue for successes. Truly each measuring and body composition have relationship with association football performance. However still a lot of clarification is needed on measuring and body composition qualities Ethiopian beginner association football players<sup>[1]</sup>. Physical fitness in soccer is also the foremost necessary issue to achieve success with technical and plan of action skills. Speed, power, strength and therefore the ability of modification of direction are a number of key factors to reach success in trendy soccer still as body composition<sup>[2]</sup>. In soccer, the importance of body composition on performance remains unclear; but, it's a Primary concern in learning programs throughout a season in any respect levels of competition. However body composition measures are wide wont to bring down fascinating body weights, to optimize competitive performance, and to assess the results of coaching. A lower relative body fat is fascinating for fortunate competition in most of ball games. this can be as a result of extra body fat adds to the load of the body while not causative to its force production or energy manufacturing capabilities, which implies a decrease in relative strength<sup>[1]</sup>.

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## Means and methods

For the present study forty male football players aged from 16-18 years were participated in this study participants were all active football players who are competing in the inter school and district tournaments. The study was analyzed for two groups. Group 1 was named as coastal area players for group-2 was named as plain area players. For group -1 the data were collected from L.K. higher secondary school, kayalpatnam, tucicorin district, and St. Thomas higher secondary school veerapandian patanam tucicorin district, Tamil Nadu for group-2 the data were collected from Ragavendra vidyalaya matriculation school, Coimbatore and

premier vidya vikash matriculation school Coimbatore, Tamil Nadu. All the measurements like BMI was calculated as weight/height<sup>2</sup>. thigh and calf circumference measurement using in tape were performed on the same day. The data were collected to analyze the study.

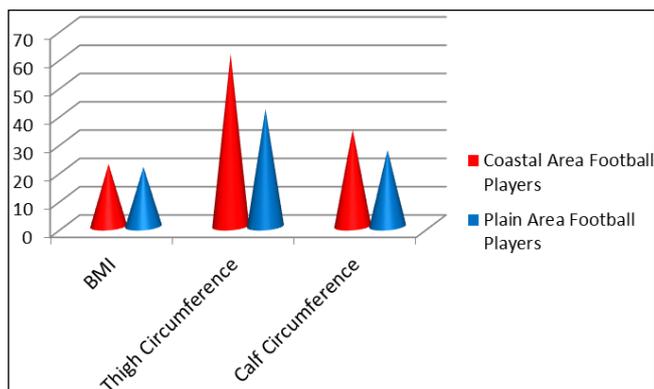
## Statistical analysis

Statistical analysis was calculated using SPSS 16.5 statistical analysis software. The normality test was used to test of normality. To find out the difference between the two groups for the variables 't' test was used. The derived results are discussed in the below table.

**Table 1:** Shows the comparison of body composition variables of the players of the coastal and plain area football players

Variables	Area	Mean	SD	't'
BMI	Coastal area football players	21.93	1.50	2.76*
	Plain area football players	20.89	0.73	
Thigh Circumference	Coastal Area Football Players	60.90	5.95	12.4*
	Plain Area Football Players	41.45	3.64	
Calf circumference	Coastal Area Football Players	34.15	4.18	6.99*
	Plain Area Football Players	26.90	1.99	

**Table 1:** Shows the comparison of body composition variables of the players of the coastal and plain area football players. The mean values on body mass index (BMI) of the football players of coastal and plain area state were 21.93 and 20.89. The mean values of thigh circumference of the football players of the coastal and plain area state were 60.90 and 41.45 respectively. The mean values of calf circumference of the players of coastal and plain area state were 34.15 and 26.90 respectively. The 't' value of the thigh circumference, calf circumference of the coastal and plain football players were 12.4 and 6.99 respectively which was tested at the level of significant at 0.05 level and the tabulated value of 't' = 2.145 which showed that significant difference in mean value of BMI, thigh circumference and calf circumference.



**Fig 1:** Showed that significant difference in mean value of BMI, thigh circumference and calf circumference

## Discussion on findings

Geography of the coastal plains impacted the people who made this region their home. Their area is generally wet with marshes, scam land and rivers. The overall moisture contributed to a rich environment with many natural food sources. There is a wide diversity of species in this area and the land is generally low and flat. The existence of waterways rich with fish and other foods made this prime area population growth and development. Fish and other aquatic creature were common for both diet and other uses amongst the people of this area. Coastal region peoples is different from the plain

region living people. They lead their life with natural resources. The resources like sea foods, water, swamp lands and the fresh air. This resource and life style will have the difference in anthropometric and physiological aspects of individual. The subject taken for the study were from thoothukudi district. This area people play football as the recreation game. Most of the people are from the age group of 10 years to 40 years play their game. The game is played in sea land. It has natural resistance training for the muscle so the size of the muscle bundle in the lower extremities are stronger. So there will be changes in their anthropometric measurements and body composition because of their regular practice in sand when compared to the plain area people. Many of supporting study suggest that BMI will be greater generally for football players. This study also proves that there is a significant difference in BMI for among the coastal and plain area players. Thigh circumference and calf circumference branches also have significant difference among them. Our finding conform that true is significant difference on BMI, thigh circumference and Calf circumference among the coastal and plain area players.

## Conclusion

The present study data showed that the mean scores of plain area football player for anthropometric measurements and body composition variables BMI, thigh circumference and calf circumference were better than coastal area football players.

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