

# Comparative Study Of Body Composition Of Football Male Players As Their Playing Position

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**ABSTRACT:** *The purpose of present study to find out the difference between forwards and defenders in relation to their Body composition (bone mass, muscle mass and percentage of Fat) of male football players. A total of fifty male football players of age between 18-27 years were selected from Guru Nanak Dev University, Lovely Professional University, Punjabi University Patiala and Govt. College of Physical Education, Patiala through purposive sampling technique after that subjects were equally divided into two groups according to their playing position. The group first is Forwards and second is defenders. The age of the footballers was considered as per matriculation certificate and decimal age was calculated according to the method of Tanner et. al. (1969). The standardized anthropometric measurements were taken by using techniques of Weiner and Lourie (1969) to collect the data. The vertical stature (cms), Body weight (Kg), Humerus and Femur Biepicondylar (cms), wrist and Ankle Diameter (cms), forearm, upper arm, calf and thigh circumferences (cms), Triceps, Forearm, biceps, Suprailiac, subscapula, Supraspinale, calf and thigh skinfolds (mm). The Standardized tools were used to collect the data, i.e. anthropometry rod, weighing machine, sliding caliper and Harpenden skinfold caliper. Bone mass and muscle mass was intended by equations of Matiegka (1921) and Body density was intended equations of Durnin and Wommersly (1974) and percent fat through Brozek et al. (1963). The defenders have possessed greater bone mass, muscle mass and fat percentage as compared to forwards due to less running movement in defenders as compared to forwards.*

**Keywords:** *Anthropometric Variables, Body composition, Bone mass, Muscle Mass, Fat percentage.*

## 1. INTRODUCTION

Sports play very important role in the life of human being. Everyone take interest in sports and need to improve and maintain health status or enjoyment but nobody assess own self to choice the game according to type of body. Sheldon give the different category of body type and Matiegka give some equation to assess the body composition i. e. bone mass, muscle mass and fat percentage. Thus body composition play very important role in sports thus this further specialization according to playing position. So that better team performances will be enhance. Body composition is a constituted from bone mass, muscle mass and fat percentage. "Body composition have more possessed in male volleyball players as per experimental group due to more vigorous training and less running movements" (Kaur, H. et. al. 2019). The body segment of the physique include the different in individual depend upon genetics and their daily exercises and body movement according to their sports and playing positions. The study is mainly focus to specific body type is according to their playing

position in men football players.

## 2. OBJECTIVES

1. To compare the body composition (bone mass, muscle mass and fat percentage) between forward and defender of male football players.

### Hypothesis

1. There would be a significant difference between Forwards and Defenders as related to their body composition (bone mass, muscle mass and fat percentage).

## 3. METHODOLOGY

A total of fifty male football players of age between 18-27 years were selected from Guru Nanak dev University, Punjabi University, Lovely Professional University and Govt. College of Physical Education, Patiala through purposive sampling technique after that subjects were equally divided into two groups according to their playing position. The group first is Forwards and second is defenders. The age of the footballers was considered as per matriculation certificate and decimal age was calculated according to the method of Tanner et. al. (1969). The standardized anthropometric measurements were taken by using techniques of Weiner and Lourie (1969) to collect the data. The vertical stature (cms), Body weight (Kg), Humerus and Femur Biepicondylar (cms), wrist and Ankle Diameter (cms), forearm, upper arm, calf and thigh circumferences (cms), Triceps, Forearm, biceps, Suprailiac, subscapula, Supraspinale, calf and thigh skinfolds (mm). The Standardized tools were used to collect the data, i.e. anthropometry rod, weighing machine, sliding caliper and Harpenden skinfold caliper. Bone mass and muscle mass was intended by equations of Matiegka (1921) and Body density was intended equations of Durnin and Wommersly (1974) and percent fat through Brozek et al. (1963).

### Statistical techniques

In statistically mean, SD and 't' was used to find out the difference between forwards and defenders.

Table-1. Comparison of Body composition between Forward and Defender of male Footballers

Group		N	Mean	SD	df	t-value
Forwards	Bone Mass	25	3.23	0.37	48	2.82**
Defenders	Bone Mass	25	3.36	0.24		
Forwards	Muscle Mass	25	110.75	7.50	48	2.63*
Defenders	Muscle Mass	25	111.39	8.47		
Forwards	Fat	25	12.40	2.10	48	4.03**
Defenders	Fat	25	14.22	2.37		

\*\*Significant at 0.01 level

\*Significant at 0.05 level

Table 1 show the comparison of mean of Body composition between Forwards and Defenders male football players. The mean values of bone mass, muscle mass and percentage of fat of Forwards and Defenders 3.23 and 3.36, 110.75 and 111.39, and 12.40 and 14.22 respectively. The statistically result were found to be significant (t-2.82), (t-2.63) and (t-4.03). The result indicated that Defender Players have possessed greater bone mass, muscle mass and percentage of fat than Forward Players. There was significant difference between forwards and defenders as related to their bone mass, muscle mass and percentage of fat. The finding of the study indicates hypotheses are accepted in all cases.

#### 4. DISCUSSION

The present study shows the difference between forwards and defenders in relation to body composition of football players of 18 and 27 years of age groups. The forwards were found taller and heavier as compare to defenders. This may be due to genetics difference and diet pattern. The defenders were found to be of greater diameters and circumferences than forwards. The Defenders players have possessed greater Bone mass, muscle mass and fat mass as compared to forwards due to less running movement in defenders as compared to forwards. The defenders have short techniques of tackling and power movements of clear the attacking movements of the opponents. The result is also supported by Kaur, H (2019).

#### 5. CONCLUSIONS

The result of the study shows the body composition difference as per playing position of footballers. The defenders players have possessed greater Bone mass, muscle mass and fat mass as compared to forwards due to less running movement in defenders as compared to forwards.

#### 6. RECOMMENDATION

The present study has the following recommendations:

- The results of the present study will be helpful for the football trainers to evaluate the performance of football players and analyze position play.
- Similar studies may be undertaken to analyze skills of the football and other games.

#### 7. REFERENCES

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