# Comparative Study on Selected Anthropometric Measurement of National and State Level Women Soccer Players

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**ABSTRACT:** The purpose of the study was to compare selected anthropometric measurement of national and state level women soccer players, Thirty two (32) National level and State level women soccer players of which Sixteen (16) of each level (age ranging-14-19y.) were selected from different clubs and academic of Manipur, India. Players were selected from especially different playing position of soccer that is forward and Defending players. Subjects Height, Bodyweight, Thigh Girth, Calf Girth and Leg length, were measure as an anthropometric measurement by using Stadiometer, Weighing machine and Freeman Steel tape. To find out the significant differences of collecting data were calculated by applying't' test at 0.05 level of confidence. Results of the study showed that significant difference has been notice on, Bodyweight, Thigh Girth, Calf Girth and Leg length.

**Keywords:** Anthropometric measurement, Height, Bodyweight, Thigh Girth, Calf Girth and Leg length.

## INTRODUCTION

Anthropometry is the branch of Anthropology which is concerned with taking of measurements of human body. This definition has been confined to the kinds of measurements commonly use dinassociating physical performance with body build (Warren1974). Anthropometrical measurement focused on three areas growth measures, body type and bodycomposition. The use of such measures help stop rediction of growth patterns and predictions of success in motor activities as well as assessment of obesity (Correlation1974). The major role for physical performance is partly dependent upon the physique and body composition of an individual (Bubruben1975).Measurements of body size include such descriptive information as height weight and surface area while measurements of body proportion describe the comparative of on height and weight and among length of various body segments. It has been found that top athlete in some sports tends to have those proportions that biomechanically and the particular performance

required (Early1982). Athletes for superior performance in any is selected on the basis of his physical structure and body size, which has proved to appropriate for high performance in the given sports (Tanner 1964) therefore this study has been undertaken with a view to find out the selected anthropometric measurement of national and state level women Soccer players. Football is played in accordance with a set of rules known as the Laws of the Game. The game is played using a single round ball (the football). Two teams of eleven players each complete to get the ball into the other team`s goal (between the posts and under the bar), thereby scoring a goal. The team that has scored more goals at the end of the game is the winner; if both teams have scored an equal number of goals then the game is a draw. In a typical game play, Players attempt to create goal scoring opportunities through individual control of the ball, such as by dribbling, passing the ball to a team-mate, and by taking shots at the goal, which is guarded by the opposing goalkeeper. Opposing players may try to regain control of the ball by intercepting a pass or through tackling the opponent in possession of the ball; however, physical contact between opponents is restricted. Football is generally a free-flowing game, with play stopping only when the ball has left the field of play or when play is stopped by the ref goal keeper. After a stoppage, play recommences with a specified restart.

## AIM OF THE STUDY

The aim of the study was to find out the Comparative Study on Selected Anthropometric Measurement of National and State Level Women Soccer Players.

## METHODS

**Selection of the Subject:** For the purpose of study thirty two (32) National level and State level women soccer players, aged renged between 14-19 years, were randomly selected from different clubs and academic of Manipur, India. Among them sixteen were randomly selected from each level (National level sixteen and State level sixteen women soccer players). Player's weres elected from especially different playing position of soccer that is forward and Defending players.Subjects Height, Bodyweight, ThighGirth, Calf Girth and Leg length (D K Kansal 2007), were measures as an anthropometric measurement by using Stadiometer, Weighing machine and FreemanSteeltape.The Datawere collected with the help of Lady Assistance and their coaches.

**Design of the Study**: Simple randomized group design method was used for the study. For the purpose of the study thirty two (32) National level and State level women soccer players, were selected as subject for the study. In this study the subjects (age ranged between 14 to19 years) were randomly selected from different clubs and academic of Manipur, India, as subjects of the study. The subjects were categorized into two equal levels on random basis consisting on sixteen subjects in each group.

## STATISTICALANALYSIS

The gathered data were duly analyzed through statistical procedure using descriptive statistic and 't' test was applied to find out significant differences between selected Anthropometric measurement and of National and State level Athletes, the level of significant was set at 0.05 level of confidence.

## RESULTS

### Table-1

| Mean, SD and 't' Test on **height** of national and state level women soccer players. | | | | |
|---|---|---|---|---|
| **Level** | **Mean** | **SD** | **Mean Difference** | **"t" Value** |
| National | 158.0625 | 3.923752 | 5.625 | 0.000175* |
| State | 152.4375 | 3.632607 | | |
| *Significance at 0.05 levels, Tabulated t $_{0.05}$ (30)=1.697 | | | | |

In the Table.1, It is clearly revealed that significant exist on height between national and state level women soccer player as because Cal t value (0.000175) is lowerthan tab t value 0.05 (30) value (1.697).
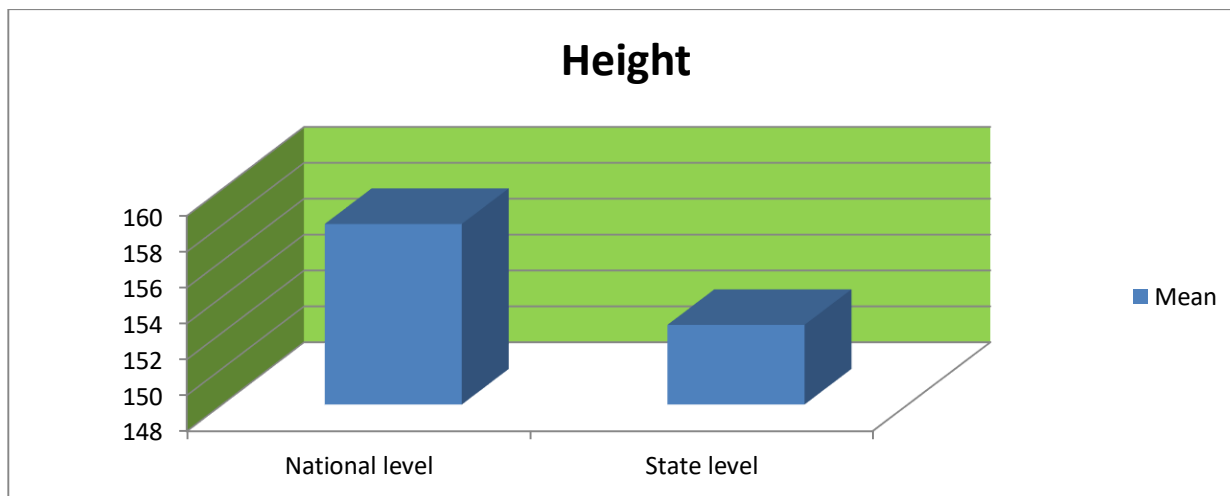


**Figure- 1: Graphical Representation of Test Mean for National and State level Distinct Groups on Height.**

### Table-2

| Mean, SD and 't' Test on **Body weight** of national and state level women soccer players. | | | | |
|---|---|---|---|---|
| **Level** | **Mean** | **SD** | **Mean Difference** | **"t" Value** |
| National | 53.875 | 5.352569 | 3.0625 | 0.044107* |
| State | 50.8125 | 4.563898 | | |
| *Significance at 0.05 levels, Tabulated t $_{0.05}$ (30)=1.697 | | | | |

In the Table .2, It is clearly revealed that significant exist on height between national and state level women soccer player as because Cal t value (0.044107) is higher than tab t value 0.05 (30) value (1.697).
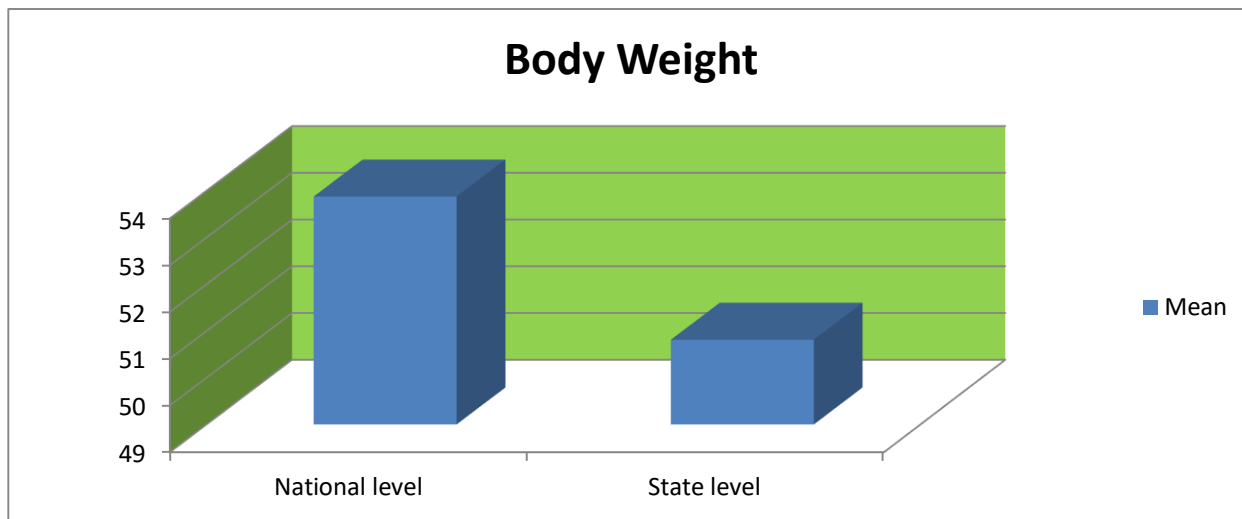
## Body Weight

Figure- 1: Graphical Representation of Test Mean for National and State level Distinct Groups on Height.

**Table-3**

| Mean, SD and 't' Test on **thigh girth** of national and state level women soccer players. | | | | |
|---|---|---|---|---|
| **Level** | **Mean** | **SD** | **Mean Difference** | **"t" Value** |
| National | 40 | 3.623994 | -0.9375 | 0.239436* |
| State | 40.9375 | 4.186785 | | |
| *Significance at 0.05 levels, Tabulated t $_{0.05}$ (30)=1.697 | | | | |

In the Table .3, It is clearly revealed that significant exist on height between national and state level women soccer player as because Cal t value (0.239436) is higher than tab t value 0.05 (30) value (1.697).
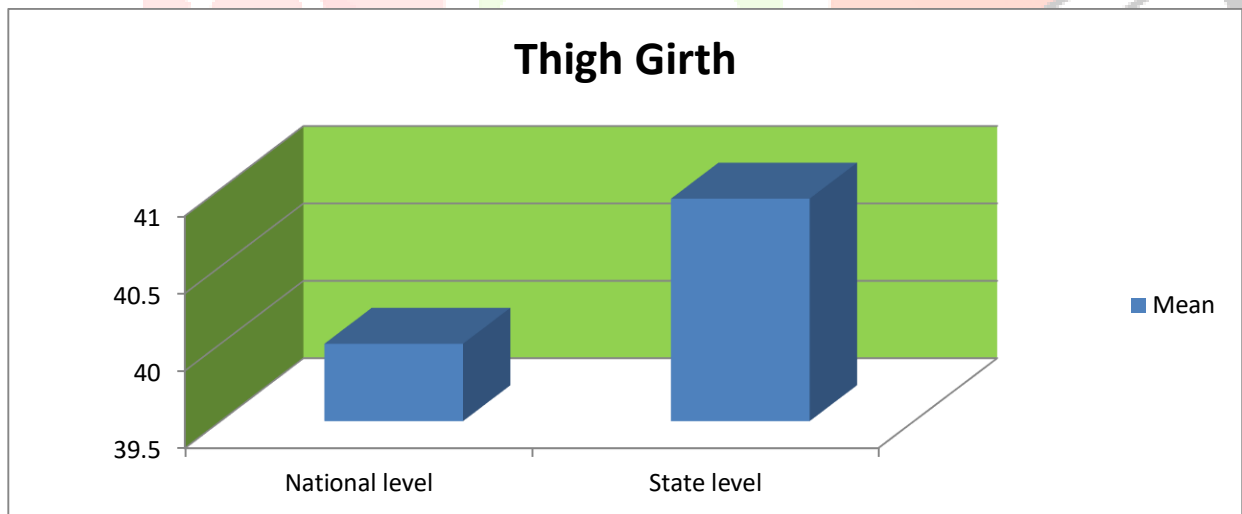
## Thigh Girth

Figure- 1: Graphical Representation of Test Mean for National and State level Distinct Groups on Thigh girth.

**Table-4**

| Mean, SD and 't' Test on **Calf girth** of national and state level women soccer players. | | | | |
|---|---|---|---|---|
| **Level** | **Mean** | **SD** | **Mean Difference** | **"t" Value** |
| National | 31.625 | 0.806226 | 0.5 | 0.041932* |
| State | 31.125 | 1.23153 | | |
| *Significance at 0.05 levels, Tabulated t $_{0.05}$ (30)=1.697 | | | | |

In the Table .4, It is clearly revealed that significant exist on height between national and state level women soccer player as because Cal t value (0.041932) is higher than tab t value 0.05 (30) value (1.697).
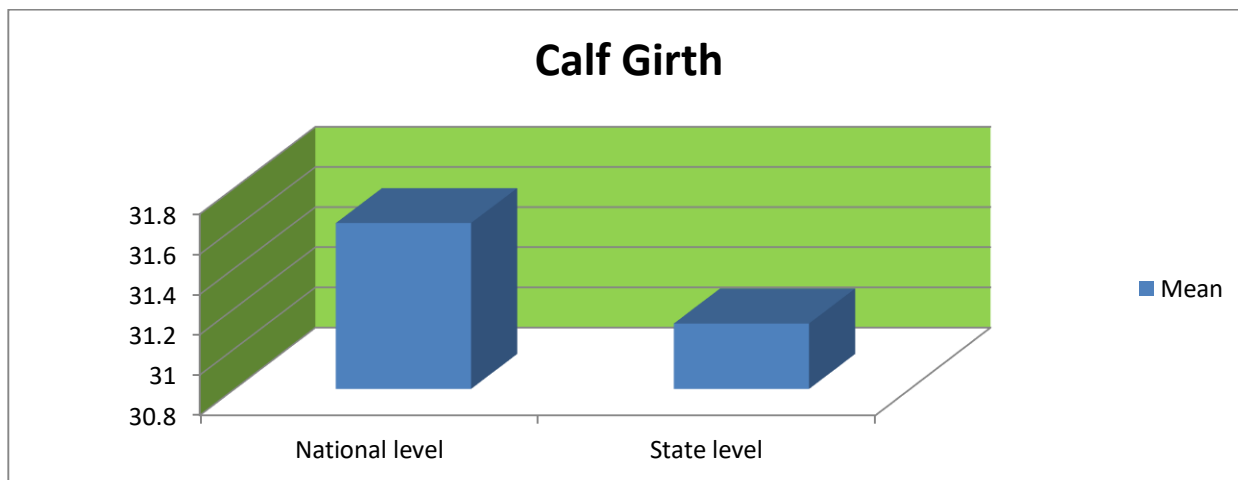


**Figure- 1: Graphical Representation of Test Mean for National and State level Distinct Groups on Calf girth.**

**Table-5**

| Mean, SD and 't' Test on **leg length** of national and state level women soccer players. | | | | |
|---|---|---|---|---|
| **Level** | **Mean** | **SD** | **Mean Difference** | **"t" Value** |
| National | 89.8125 | 1.030776 | 1.1875 | 0.052323* |
| State | 88.625 | 2.232338 | | |
| *Significance at 0.05 levels, Tabulated t $_{0.05}$ (30)=1.69 | | | | |

In the Table.5, It is clearly revealed that significant exist leg length on between national and state level women soccer player as because Cal t value (0.052323) is higher than tab t value 0.05 (30) value (1.697).
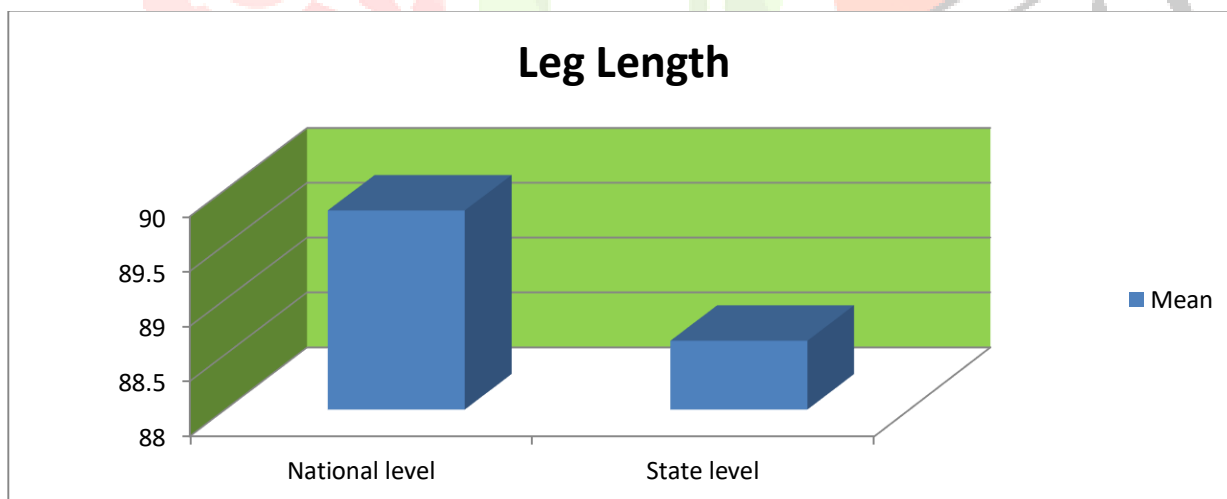


**Figure- 1: Graphical Representation of Test Mean for National and State level Distinct Groups on Leg length.**

## DISCUSSION

The main results of the present study, conducted 32 National and state level women soccer players age range from 14 to 19 yrs from Manipur are following :

Results of the study showed that Anthropometric characteristic such as Height, body weight, thigh girth, calf girth and leg length were found to be significant difference. In the present study average height of the national soccer players158.06 cm was recorded which is better than State players 152.43cm. Here researcher believed that due to biological, environmental and genetic makeup of the players may be causes of obtaining grater height (nudry et al 1996). Rather it can be said that in the adolescence stage (14 to 19yrs) height is increase steadily and obtained near top height than other growth stage(singh A.et al 2007). Leg lengths of the National players were found better than state soccer players. Leg length also increases due to increasing over all height of the players and development of lower limb is quicker than upper limb (D gunnell 2001). Calf griths of the National players were found better than state players. Research believed that due to strenuous practice and exercise aspect of the players Calfmuscle hypertrophy is occurred. So that over all circumference of the calf girth is increase.

## CONCLUSION

In the study Anthropometric characteristic such as height, body weight, thigh girth, calf girth and leg length were found to be significant difference between national and state level women soccer players age range from 14 to 19 yrs from Manipur.

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