



Comparison of Calf girth, Thigh girth & Upper Arm girth between teenage male soccer player of Hill area & Plain area

Dr.SANJOY GHOSH

PET, DV(BOYS),Chittaranjan, CLW,Eastern Railway.

ABSTRACT

The objective of the study was to find out the differences in the girth of Calf, Thigh and Upper Arm between the teenage soccer player of hill & plain area because it assumes that power of legs are proportionate to girth.

And to find out the differences, 100 subjects each from hill & plain areas were randomly chosen and their Calf, Thigh & Upper Arm girth were recorded by using non-stretchable steel tape. The data were analyzed by using independent 't' test where the level of significance was set at A significant difference is observed in all the three girths and Mean difference showed that the hill area subjects had better Calf, Thigh & Upper Arm girth.

The result suggest that the hill area subjects were more muscular than the plain area subjects.

KEYWORDS : Calf girth, Thigh girth, Upper Arm girth, Independent 't' test.

Introduction : Man in action is frequently exposed to environmental condition that might be classified as a typical, if not abnormal. The physiological concepts discussed until now have dealt with the body's response to normal exercise and training. But optimal condition do not always prevail the day may be excessively hot and humid and cold, the clothing or uniform may be inadequate or the individual may journey into unusual environmental circumstances such as high altitude or under water (David H.Clerk.1975).

Climates, season and weather exert such an influence on physical activities and sports that sub-area, bio-climatic of sports appears justified with in the field of sports medicine. The physical, physiological and psychological reaction of man are very depended on environmental conditions. Temperature, atmospheric pressure, humidity, the composition and pollution of the air, solar radiation and other environmental factors may have a positive or negative influence on the human organism. As the general state of the health can be effected so will the efficiency and capacity of physical performance, and the susceptibility to fatigue vary with extreme change in environmental conditions. The season of the year are characterized by typical metrological and climatologically phenomena that are directly related to physical performance, training and sports (Wolf Gong Wolf.p.851).

Physical characteristics include such descriptive information as height, weight, leg length, thigh length. It has been found that top athletes in some sports tends to have those proportions that bio-mechanically aid the particular performance required. For the selection of players rough assessment of their physical condition were made. No attempt whatsoever was made to relate the players physique with their playing ability and assigning of players to different positions on the basis of their body type and fitness in terms of speed, strength etc. The permanent striving towards achieving top performance and improving upon it linked to the term "sport". You select your game to choice according to your constitution, deposition and choice. Thus not only you play it well, you enjoy it also and feel at ease. You find it suitable because your ability makes it possible for you to produce movements and behaviour required by the game (Karl H.Heddergott.1973).

Methods & Materials : The purpose of the study was to investigate the differences on selected anthropometric measurements between hill & plain area teenage male soccer player.

Methodology : For the purpose of the study 200 teenage male soccer players(100 each from hill & plain area), age ranges between 14-18 were taken randomly.

Study Location

For Plain Areas— West Bengal (Birbhum District)

1. Kurumbo

2. Nichupatty Nirodhbarani High School
3. Bandhgora KaliKrishna High School
4. Bahiri High School
5. Hool
6. SAI Kolkata (Kolkata District)

Study Location : For Hill Area ----Shillong(Meghalaya)

1. Army Boys Sports Company, 58 GTC, Happy Valley, Shillong
2. SAI, Shillong
3. Laban Sports Club

Shillong is the capital of Meghalaya and headquarter of the East Khasi Hills district and is situated at an average altitude of 4908feet(1496 mts) above sea level.

Subjects Age : Age ranges from 14-18 years.

Sample Size : 200 (100 each from Plain & Hill area)

Sampling procedure : For this study random group design is adopted. The subjects were randomly chosen from above mentioned areas.

The subjects were randomly chosen to measure Upper Arm girth, Thigh girth & Calf girth . The measurements were taken by non stretchable steel tape circling the broadest part and the values are recorded in centimeter.

Result and Discussion :

Independent 't' test was applied to compare the anthropometric variables between hill & plain area teenage male soccer player.

TABLE-1
SIGNIFICANCE OF DIFFERENCE OF MEAN OF PLAIN AND HILL AREAS TEENAGE MALE SOCCER PLAYERS ON CALF GIRTH

School	Mean	S.D	differ b/w mean	't' ratio
Plain area	30.85 cm	2.32	3.065	11.293*
Hill area	33.91 cm	1.39		

***t'0.05 (198) = 1.65**

It is obvious from the table- 1 that there was significant difference exists between the plain area and hill area teenage male soccer players in the calf girth, since the calculated't' value 11.293 which was found to be more than tabulated 't' value 1.65.

Calf girth mean of hill area teenage soccer players was more (33.91) in comparison to plain area teenage soccer players (30.85).

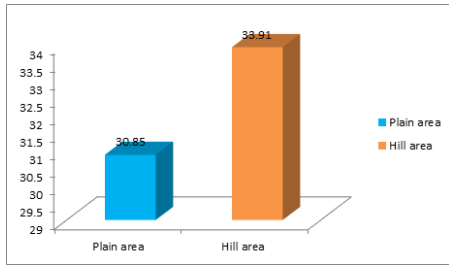


Figure-1
Mean Comparison of Calf Girth of Plain and Hill Area Teenage Male Soccer Players

TABLE-2
SIGNIFICANCE OF DIFFERENCE OF MEAN OF PLAIN AND HILL AREAS TEENAGE MALE SOCCER PLAYERS ON THIGH GIRTH

School	Mean	S.D	differ b/w mean	't' ratio
Plain area	45.12 cm	3.33	4.89	9.89*
Hill area	50.01 cm	3.65		

* $t'_{0.05(198)} = 1.65$

It is evident from the table - 2 that there was significant difference exists between the plain area and hill area teenage male soccer players in the thigh girth, since the calculated 't' value 9.89 which was found to be more than tabulated 't' value 1.65.

Thigh girth mean of hill area teenage soccer players was more (50.01) in comparison to plain area teenage soccer players (45.12).

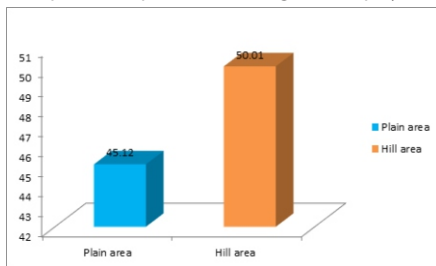


Figure-2
Mean Comparison of Thigh Girth of Plain and Hill Area Teenage Male Soccer Players

TABLE-3
SIGNIFICANCE OF DIFFERENCE OF MEAN OF PLAIN AND HILL AREAS TEENAGE MALE SOCCER PLAYERS ON UPPER ARM GIRTH

School	Mean	S.D	differ b/w mean	't' ratio
Plain area	22.02 cm	1.93	2.61	10.48*
Hill area	24.63 cm	1.56		

* $t'_{0.05(198)} = 1.65$

It is evident from the table - 3 that there was significant difference exists between the plain area and hill area teenage male soccer players in the upper arm girth, since the calculated 't' value 10.48 which was found to be more than tabulated 't' value 1.65.

Upper arm girth mean of hill area teenage soccer players was more (24.63) in comparison to plain area teenage soccer players (22.02).

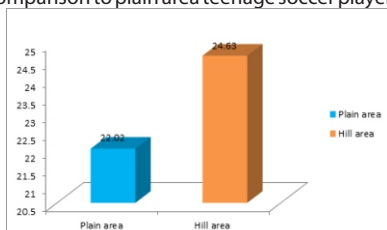


Figure-3
Mean Comparison of Upper Arm Girth of Plain and Hill Area Teenage Male Soccer Players

Conclusion:

On the basis of result & discussion following conclusions were drawn :
The teenage male soccer players are more muscular than the plain area teenage male soccer player.

The differences in the girth are so huge that may be due to the geographical condition.

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