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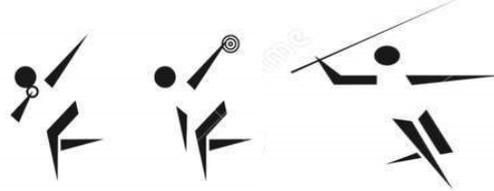
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## An analytical study on arm girth of high and low performance of elite throwers

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### Abstract

The performance of an Athlete in any game is also dependent on his skill training, motivation and various other factor of physical, physiological and psychological aspects. In modern time various throwing techniques exploiting best the principles of mechanics had evolved. This study was framed to establish the difference in the Arm girth of High and Low performance Elite Throwers. Sidhu and Wadhan in (1974) worked on throwers, who were found to be heavy and tall with relatively large limb circumferences and bicondylar diameters. They had better developed lean tissue in the limbs associated with greater amount of fatty tissue. The data was subjected to f-ratio for assessing the significant difference between two groups' means at 0.05 level of significance. Researcher measured the subject Arm girth of 20 Shot putters, Javelin and Discus Throwers and divided them into two groups of 10 each on the basis of their performance. The findings of the study had insignificant difference in the Arm Girth of High and significant difference in Low performance elite Throwers.



**Keywords:** analytical study, arm girth, elite throwers

### Introduction

Yoga The physique and body including size, shape and form are known to play a significant role on the performance of an athlete. The performance of an Athlete in any game is also dependent on his skill training, motivation and various other factor of physical, physiological and psychological. In modern time various throwing techniques exploiting best the principles of mechanics had evolved, they demand events specific physique and advanced scientific training methods for gaining optimum performance.

This study was framed to establish the difference in the Arm girth of High and Low performance Indian Throwers. Sidhu and Wadhan in (1974) worked on throwers, who were found to be heavy and tall with relatively large limb circumferences and bicondylar diameters. They had better developed lean tissue in the limbs associated with greater amount of fatty tissue.

### Methodology

The investigator collects the data from ten Throwers of each group. f-test was applied to assess the significant difference between two group mean at 0.05 level of significance. Biceps muscle girth—The subject were made to raise his right arm to the horizontal position in the sagittal plane with the fully supinated forearms flexed at the elbow to an angle 45° The subject was encouraged to make a muscle by fully tensing his biceps. The measurement is with the help of measuring tape wrapped at right angle to the long axis of the upper arm where the maximum girth is affects in centimeter.



### Collection of data

For the purpose of this Study Researcher went to 76<sup>th</sup> All India Intersarsity Athletics Championship 2015-16 held at Patiala (Punjab), XXXV National Games Kerala 2015, 54<sup>th</sup> National Inter State Athletics (seniors) Championships 2014 held at Lucknow (UP), 75<sup>th</sup> All India Intersarsity Athletics Championship 2014-15 held at Modbhidri, (Tamilnadu), and measured the Arm girth of 20 Shot putter, Javelin and Discus Throwers and divided them into two groups of 10 each on the basis of their performance.

### Statistical Analyses

The data was subjected to F-ratio for assessing the significant difference between three group means at 0.05 level of Significance.

**Table 1:** F-ratio of Arm girth of High performer Shot putter, Javelin and Discus Thrower

Source of variation	Df	SS	MSS	F- ratio
Treatment	2	41.23	20.62	0.749*
Error	27	417.17	15.45	

Significant at .05 level

Tab  $F_{.05}=3.35$

The above Throwers table shows that calculated value of F is 0.749 which is less than table value of F (3.35) at 0.05 level of Significance.

**Table 2:** F-ratio of Arm girth of Low Performer Shot putter, Javelin and Discus Thrower

Source of variation	Df	SS	MSS	F- ratio
Treatment	2	155.32	77.66	7.94*
Error	27	263.91	9.77	

Significant at .05 level

Tab  $F_{.05}=3.35$

The above Throwers table shows that calculated value of f is 7.94 which is higher than table value of F (3.16) at 0.05 level of Significance.

### Result and Discussion

The difference in arm girth of Shot putter, Javelin and Discus Thrower is insignificant and is just matter of chance the difference which is evident. The difference in Low performance of athletes of different events (Shot putter, Javelin and Discus Thrower) is significant and is just matter of chance. Heath Carter in (1982) found athletes who wish to achieve success in sports at a high level can compare their physique with those of Olympic athletes. If the athlete is within the limits of the Olympians, then the appropriate structure for high performance is achieved. Consideration can

then be given to whether changes in physique, such as lower body fat or increased muscles mass would enhance or hinder his performance. This problem is of special significance in games like weight lifting boxing, judo and wrestling which are competed on the basis of body weight. In these games, the competitors are required to compete within their respective weight categories. Out of many measures of physique, the stature being of most common interest has been thoroughly investigated. It has already been mentioned that in some sports greater height is an advantage. Whilst in others, shorter stature is preferable. All these studies are based on adult athletes who in most cases are a product of many years of training starting from childhood.

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