

# The Physical Characteristics of Early Adolescent Girls

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## I. Introduction

Recently in the apparel industry, early adolescent girls are emerging as a new consumer group. In response to this, companies are developing clothes, cosmetics, underwear, etc. targeting exclusively for the consumer group. They are neither children nor adults, having unique physical characteristics, but there have been few researches on their body shape.

The purpose of this study is, therefore, to identify the physical characteristics of early adolescent girls by comparing their physical characteristics by age.

## II. Method

A total of 529 girls aged between 10 and 14 were measured in Seoul and Kyungki-do. Data were collected from 47 anthropometric measurements and 42 photographic measurements per a person. The anthropometric measurements was based on R. Martin' Method and Anthropometric Measurement Terminology<sup>1)</sup>. SAS 8.1 was used in data analysis including means, standard deviations, t-test, Duncan test and frequency analysis.

## III. Results

According to the results of comparing the measurements of early adolescent girls' somatotype by age, most items related to height and length increased significantly at the age of 10~11 and the growth slowed down at the age of 13~14. In addition, it was found that the growth of height or length in the lower part of the body is somewhat later than that in the upper part. As for items related to circumference, the growth rate was high at the age of 11~12, somewhat later than the age of the growth of height and length, and gradually slowed down afterward. Out of hip circumference, bust circumference and waist circumference, which determine the contour of the body, hip circumference showed the highest growth rate.

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1) Agency for Technology and Standards, Anthropometric measurement terminology, Seoul: Ministry of Commerce, Industry and Energy (2003).

As for items related to thickness and width, thickness-related items grew quickly at the age of 10~12, and among which bust thickness showed the highest growth rate. Width-related items showed a higher growth rate than that of thickness-related items and they appeared to grow steadily throughout all ages.

In case of items related to front and side angles, shoulder angle decreased with the increase of age, which may result from the accumulation of muscle and subcutaneous fat on the shoulder with growth. Among front angle items, belly width angle and hip width angle increased most significantly at the age of 12~13, and side angle items did not change regularly according to the increase of age but were different according to individuals' somatotype.

As for drop, the difference between hip circumference and waist circumference was most remarkable, but the difference between hip circumference and bust circumference was not large, which suggests that they grow at almost the same rate.

Another characteristic resulting from adolescent' fast growth is menarche. The largest number of subjects had their menarche during the age of 11~12 and, after menarche, their horizontal growth became active.

#### **IV. Conclusion and Summary**

According to the result of comparing body measurements by age, adolescent girls showed remarkable growth of items related to height and length at the age of 10~11, having a slender body shape, and then showed horizontal growth with menarche at the age of around 12, having a voluminous body shape. Also, Width-related items showed a higher growth rate than that of thickness-related items and the difference between hip circumference and waist circumference was most remarkable.

The outcome of this study may be used as a basic material for adolescent apparel manufacturers to set their apparel sizing system and to supply their consumers, namely, adolescent girls with products fitting their somatotype.

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