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Meaning of Brachial Girth in Sports Players

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1. To investigate the nutritive conditions of sports players in various categories, a comparative study was carried out by subjecting a total of 1357 student sports players (33 categories) to measurement of height, weight, girth of chest, right brachial girth, thickness of brachial sebum and thickness of abdominal sebum.
2. By height, the majority of the students (92.3%) ranged from 160 cm to 180 cm, and very few were smaller than 160 cm (3.7%) and higher than 180 cm (4.0%).

   Those with a height over 170cm belonged to the categories, such as volley-ball, boating, basket-ball and base-ball in comparatively large number, and were very few in the fields of weight-lifting and heavy gymnastics.
3. Based on the fact that the brachial girth is very correlative with weight variation (deviation from standard weight by percentage), regression lines for the brachial girth relative to the weight variation were obtained in respect to the sports players and male adults in general for a comparsion. The regression line for the sports players was found at a higher level than that for male adults in general, with a sharp gradient. This means that, under the equal weight variation, many sports players are larger than their counterparts in brachial girth, with a higher rate for increase in the brachial girth by weight gain.

   This difference seems attributable to the fact that the gain in weight in the sports players involves larger increase in muscular weight than in adults in general.

   Then, regression lines were obtained by sports categories in the similar manner. When points intersecting with standard weight lines were assumed to be the weight-compensated brachial girths, it was found that there was difference by categories.

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This means that the rates at which the muscular and fat amounts increase in the weight gain differ by categories, and this difference should be attributable greatly to different training methods and quantity of movement.

The above has reported the finding that use of brachial girth vs. weight variation regression lines enables the assumption as to whether the weight gain is comparatively due to the increase in muscular amount or due to that in fat.