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Relationship between Weight Deviation and Body Composition

By *Sadayoshi Imae**

The body height, weight and skinfold thickness (the upper arm, back and abdomen) of ninety male university students aged 18 to 22 were measured, and based on the values obtained from the measurement, by calculating values of weight deviation, body fat (%), body fat (kg), lean body mass (kg), body fat (kg)/height (m) and lean body mass (kg)/height (m), studies were made on the relationship between the weight deviation and the values thus calculated, obtaining the following results.

1. The correlative coefficient between the weight deviation and body fat (%) was 0.5618, and a regression formula, $Y=0.15X+11.28$ was obtained. [Y: body fat (%), X: weight deviation ($\pm\%$)]
2. The correlative coefficient between the weight deviation and body fat (kg) was 0.7280, and a regression formula, $Y=0.16X+7.20$ was obtained. [Y: body fat (kg), X: weight deviation ($\pm\%$)]
3. The correlative coefficient between the weight deviation and lean body mass (kg) was 0.7399, and a regression formula, $Y=0.48X+56.13$ was obtained. [Y: lean body mass (kg), X: weight deviation ($\pm\%$)]
4. The correlative coefficient between the weight deviation and body fat (kg)/height (m) value in kilogram was 0.7396, and a regression formula, $Y=0.09X+4.19$, was obtained. [Y: body fat (kg)/height (m) value in kilogram, X: weight deviation ($\pm\%$)]
5. The correlative coefficient between the weight deviation and lean body mass (kg)/height (m) value in kilogram was 0.8804, and a regression formula, $Y=0.27X+32.88$ was obtained. [Y: lean body mass (kg)/height (m) value in kilogram, X: weight deviation ($\pm\%$)]

From the results described above, it is assumed that the increase in the weight deviation in the students of the age subjected to the study reflected, of course, the increase of the body fat, and also reflected further more, the increase of the lean

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body mass.

Concerning the problems of the body fat and lean body mass, it is thought that an age factor may perform significant functions, therefore, it is an important theme in the future to make studies on persons of middle and high age who are involved mostly in a problem of obesity.