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# A Study on Body Composition

— Body fat / Height, LBM / Height, Weight deviation,  
based on classification of per cent body fat —

by *Sadayoshi Imae\**

The purpose of this paper is to discuss body fat (kg) per height (m), LBM (kg) per height (m) and weight deviation, based on classification of per cent body fat.

218 healthy male college students, 18–24 years of age, at Keio University, served as subjects.

Measurements were taken of height, body weight and skinfold thickness (chest, Triceps, subscapular, abdomen, thigh, calf).

Based on these data, weight deviation was calculated by using Matsuki's Height-Weight Table;

body density was calculated by using Nagamine's formula;

% body fat was calculated by using Brozek's formula.

These results were following;

1. The mean value of Body fat/Height of subjects whose values were 20% body fat and over was extremely and significantly higher than that of subjects whose values were 19% body fat or less.

It was suggested that the subject whose value of Body fat/Height was 9 kg and over was over-fat;

The subject whose value of Body fat/Height was 3 kg or less was very lean, in the students of the age subjected to this study.

2. The mean value of LBM/Height of subjects whose values were 20% body fat and over was significantly higher than that of subjects whose values were 19%

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body fat or less.

It was suggested that the subject whose value of LBM/Height was 33 kg and over was extremely muscular; the subject whose value of LBM/Height was 27 kg or less was lean, in the students of the age subjected to this study.

3. It was suggested that the subject whose value of Body fat/Height was 3 kg or less and the subject whose value of LBM/Height was 27 kg or less was very lean, in the students of the age subjected to this study.

4. There was positive relationship between weight deviation and % body fat.

The correlation coefficient was 0.7338. It was suggested that the more % body fat, the higher weight deviation.