Percentage of Body Fat

Overview

A variety of popular health books suggest that the readers assess their health, at least in part, by estimating their percentage of body fat. Percentage of body fat for an individual can be estimated once body density has been determined. Volume, and hence body density, can be accurately measured a variety of ways. The technique of underwater weighing "computes body volume as the difference between body weight measured in air and weight measured during water submersion. In other words, body volume is equal to the loss of weight in water with the appropriate temperature correction for the water's density " (Katch and McArdle (1977), p. 113).

However, accurate measurement of body fat is inconvenient/costly and it is desirable to have easy methods of estimating body fat.

Variables

Variables from left to right on the bodyfat.txt file are:

- Density determined from underwater weighing

- Percent body fat from Siri's (1956) equation

- Age (years)

- Weight (lbs)

- Height (inches)

- Neck circumference (cm)

- Chest circumference (cm)

- Abdomen 2 circumference (cm)

- Hip circumference (cm)

- Thigh circumference (cm)

- Knee circumference (cm)

- Ankle circumference (cm)

- Biceps (extended) circumference (cm)

- Forearm circumference (cm)

- Wrist circumference (cm)

These variables were measured on 252 men.

References

- Katch, Frank and McArdle, William (1977). Nutrition, Weight Control, and Exercise, Houghton Mifflin Co., Boston.

- Siri, W.E. (1956), "Gross composition of the body", in Advances in Biological and Medical Physics, vol. IV, edited by J.H. Lawrence and C.A. Tobias, Academic Press, Inc., New York.

Data Source

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