

Body Composition

Introduction: What is body composition?

The make-up of the body in terms of the relative percentage of fat-free mass and body-fat.

What is fat-free mass?

That part of the body composition that represents everything but fat- blood, bones, connective tissue, organs and muscle; is the same as lean body mass.

It is one aspect of health related physical fitness. There are also four others. Anyone remember what they are?

How is body composition measured?

- 1. Hydrostatic weighing – is also known as underwater weighing and is considered the “gold standard” or most accurate method of assessing body composition. Although very accurate this method is often impractical in terms of expense, time and equipment.**
- 2. Body Mass Index – can be useful in estimating body composition by utilizing this formula:**

$$\text{BMI} = \text{Weight (kg)}/\text{Height(squared)(m)}$$

To convert weight from pounds to kilograms divide pounds by 2.2.

To convert height from inches to centimeters, and then to meters, by multiplying by 2.54 and then divide by 100.

Students will practice this in class and cross check answers arrived at by using the chart.

3. Anthropometric measures are perhaps the easiest and least expensive method for assessing body composition. This information is obtained using skinfold calipers, but requires training and practice to be consistent.
4. Bioelectrical impedance is a popular method for determining body composition. It is based on the principle that the conductivity of an electrical impulse is greater through lean tissue than through fatty tissue. This method is fast and easy and requires very little training.

Students will practice this in class using a bioelectrical impedance monitor.

Closure: Teacher will review benefits of being in a good range for body fat. Teacher will also remind students that this is one measure of fitness and is influenced by other factors.