Tutorial 2.0: Body Composition Assessment

The purpose of this lab is to determine if a participant is within the healthy body range for body composition. Body composition is a key component of an individual’s health. There are various methods to assess body composition, including the use body mass index (BMI), sum of (five) skinfolds (SO5S) and waist circumference (WC). BMI is a measure of an individual’s weight (kg) in relation to their height (m2). BMI provides a score that gives an indication of an individual’s body status and is predictive of clinical outcomes such as Type 2 diabetes. BMI is a global index of nutritional status- used, for example, to categorize both overweight and/or obesity (Wells & Fewtrell, 2006). Limitations of BMI include overestimation of body fat in athletes and others who have a muscular build and underestimation of body fat in older persons or others who have lost muscle. A risk of false positives is associated with the use of BMI, however, if used with skin folds it is an accurate measure. SO5S can provide a good measurement of overall fat distribution provided that care is taken in identifying the skinfold site (triceps, biceps, subscapular, iliac crest and medial calf) and obtaining accurate measurements. WC provides an indication of abdominal fat. The measure is typically taken in centimeters around an individual’s waistline. Excess fat around the waist and upper body is associated with increased risk of developing health problems such as diabetes, heart disease and high blood pressure (Health Canada, 2005).

**Results: Body Composition**

Client: Stephanie Kendall

Age: 20

Anthropometric Measures

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Height** | **Weight** | **BMI** | **Sum of 5 Skinfolds** | **Waist Girth** |
| **5' 7¼"**  **171.0 cm** | **188.1 lbs**  **85.5 kg** | **29.0 kg/m2** | **55.0 mm** | **94.0 cm** |

Using Body Composition Scoring charts for females with a BMI of 25.0-29.9, this individual’s waist circumference, BMI and SO5S give her a Health Benefit Rating of 3, or “Very Good.” A Health Benefit Rating of “Very Good” is a body composition that is generally associated with considerable health benefits.

Location of skinfold measurements:

* + Triceps: vertical fold; posterior midline of the upper arm, halfway between the acromion and the olecranon processes
  + Biceps: vertical fold; anterior aspect of the arm, over the belly of the biceps, 1cm above the level used to mark the triceps site
  + Subscapular: diagonal fold (45° angle); 1-2 cm below the inferior angle of the scapula
  + Iliac crest: diagonal fold; in line with the natural angle of iliac crest, taken in anterior axillary line immediately superior to the iliac crest
  + Medial calf: vertical fold; at maximum circumference of calf on midline of its medial border

**References**

Health Canada. (2005). Canadian Guidelines for Body Weight Classification in Adults.

Retrieved from: http://www.hc-sc.gc.ca/fn-an/nutrition/weights-poids/guide-ld-adult/qa-qr-pub-eng.php

Wells, J.C.K., & Fewtrell, M.S. (2006). Measuring body composition. *Archives of Disease in Childhood*, 91(1): 612-617.