Tutorial 3: Aerobic Fitness Assessment I

The purpose of this lab is to administer the modified Canadian Aerobic Fitness Test (mCAFT) protocol, to calculate participant results and use accordingly to determine if the participant’s oxygen cost and health benefits zone from the calculated aerobic fitness score. The mCAFT is used to measure cardiovascular fitness, which refers to the ability of the heart, lungs and circulatory system to transport oxygen throughout the body and to the working muscles. The mCAFT, as well as other indirect, submaximal protocols were developed to estimate maximal oxygen capacity (VO2max) without the need to exercise up to maximal levels. This protocol looks at a client’s heart rate (HR) response to progressively increasing pre-determined workloads, which consists of lifting their body weight up and down a set of double steps. This modified test allows an individual to complete the number of stages necessary to reach their target HR within 85% of their age-predicted maximum, which can be linearly related to 100% maximum oxygen uptake. Participants may take manual HR via palpating any place that allows for an artery to be compressed against a bone, most commonly used include the neck (carotid artery) or the wrist (radial artery), etc. HR monitors are recommended to use for convenience and verification of values. This test may not be suitable for people whose ability to balance is diminished because a handrail is not typically used. Certain precautions should be taken while administering the test, as it is also difficult to monitor individuals while they are stepping (Noonan & Dean, 2000).

**Results: Aerobic Capacity**

Client: Stephanie Kendall

Age: 20

Aerobic fitness:

Score = 10 x [17.2+ (1.29x O2 cost of the last completed stage)- (0.9 x body mass) –(0.18 x age)]

=10 x [17.2+ (1.29 x 26.3) – (0.09 x 85.5) – (0.18 x 20)]

= 10 x [17.2 + (33.9) – (7.7) – (3.6)]

= 10 x [39.8]

= **398** mL \* kg -1 \* min-1

CPAFLA Health Benefit Zone: “Good” A Health Benefit Zone rating of “Good” indicates that her aerobic fitness falls within a range that is generally associated with many health benefits.

Helpful Calculations:

Maximal Heart Rate: HRmax = 220 - age

Heart Rate Reserve: HRR = HRmax - RHR

Training Zones: (HRR x % intensity) + RHR

Note: It is best to take resting heart rate before getting out of bed in the morning and averaged over 5 days.

**References**

V, Noonan & E, Dean. (2000). Submaximal Exercise Testing: Clinical Application and Interpretation. *Journal of the American Physical Therapy Association*, 80(8): 782- 807.