

Name: _____ Date: _____ Ambient heart rate: _____

Workload, the total stress on the body during exercise, is calculated by multiplying intensity, frequency, and duration (or time). Because weight is a component of intensity, increased body weight increases training load. An increase in body weight from inactive tissue such as adipose, or fat, tissue results in the body having to work harder, in essence lifting or pulling dead weight. Adding adipose tissue is like weighing the body down with tissue that does not contribute to movement.

The purpose of this lesson is to help you understand the effect of adding dead weight to your frame in terms of your cardiac response. This effect is simulated with either hand weights or a weighted vest. You will complete two 5-minute workouts, one with added weights and one without, and then measure the cardiac cost of each workout in terms of your average heart rate.

Instructions

1. Put on your heart rate monitor. If you are using a downloadable monitor, program your average heart rate. If you are using a continuous-read monitor, get a partner to record your heart rate every 30 seconds during the workout. Calculate 3 to 5 percent of your body weight (fill in step 1); then get weights of this same amount. Example: Body weight is 100 lbs. 5% of 100 lbs is 5 lbs. So run through the obstacle course holding 5 lbs.
2. Go through the obstacle course with weight, and enter your average heart rate number from your monitor (fill in step 2).
3. Rest by sitting or lying down for 10 minutes. Measure your recovery heart rate one minute and two minutes after completing the course (fill in step 3).
4. At the same speed as your first run-through, go through the course a second time without weights.
5. After completing both workouts and the recovery period, complete step 2 and the Cardiac Cost table.

Questions

Step 1

Calculate 3 to 5 percent of your body weight:

$$0.03 \times \text{body weight} = \underline{\hspace{2cm}} \text{ added weight}$$

$$0.05 \times \text{body weight} = \underline{\hspace{2cm}} \text{ added weight}$$

Step 2

Record your average heart rate.

- If your monitor has an average heart rate function:

Average heart rate without additional weight: _____ bpm

Average heart rate with additional weight: _____ bpm

If you are using a continuous-read monitor, average your heart rate by having a partner record your heart rate every 30 seconds and record your data in the following table.

Step 3

Record your recovery heart rate.

One minute: _____ bpm

Two minutes: _____ bpm

CARDIAC COST OF ADDING WEIGHT TO MOVEMENT

Elapsed time (min)	A Heart rate without additional weight (bpm)	– B Heart rate with additional weight (bpm)	= Cardiac cost (bpm)
0:30			
1:00			
1:30			
2:00			
2:30			
3:00			
3:30			
4:00			
4:30			
5:00			
Average bpm:			

Calculate your recovery heart rate using the following formula:

Immediate postexercise heart rate (or the last reading on the heart rate monitor, if downloadable): _____ bpm

One-minute recovery heart rate: _____ bpm

Two-minute recovery heart rate: _____ bpm

Immediate postexercise heart rate – two-minute recovery heart rate: _____ bpm

Questions

What is the purpose of this activity?

What was your heart's response to the same workout with and without added weight? Explain.

Why is the recovery heart rate response different with and without added weight?

What effect does additional body fat have on the body?