CRSCI LAB

THE UPS & DOWNS OF PULSES
FEELING HOMEOSTASIS

NAME: DATE:

INTRODUCTION

Homeostasis is your body's natural ability to maintain a stable internal environment. When conditions are not in equilibrium (a steady state), your body will fight to fix it. For example, when your body is in an environment that is too cold, it shivers as a physical attempt to warm you up.

Your heart maintains homeostasis, too. It has the important job of pumping oxygenated blood to all of the other organs. If stress is added to your body, then your heart will try to compensate by beating faster to pump more blood. This explains why your heart rate increases when you are frightened. Your body perceives danger and immediately tries to increase blood flow to help you survive.

You can feel your heart rate at various points on your body. These are known as pulses. The two easiest pulses to feel are on your neck (carotid) and on your wrist (radial). In this lab, you will calculate your pulse before and after exercising by counting how fast your heart beats per minute. If your heart beats 100 times in 1 minute, then your pulse is 100 bpm (beats per minute).

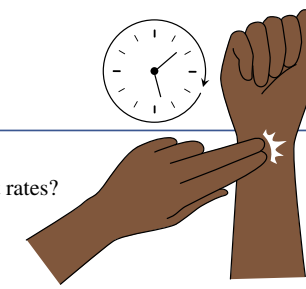
$$\text{Pulse} = \frac{\text{Heart beats}}{\text{Minute}} = \frac{\text{100 beats}}{\text{1 minute}} = \text{100 bpm}$$

PROCEDURE

1. Practice finding your carotid and/or radial pulse.
2. Have person #1 sit and rest 1 minute. DO NOT do anything!
3. Find their carotid or radial pulse.
4. Using a timer, count their heart beats within 1 minute.
5. Record the number of beats as INITIAL RESTING.
6. Have person #1 perform 20 jumping jacks or push ups.
7. IMMEDIATELY find their carotid or radial pulse after exercise.
8. Count their heart beats within 1 minute.
9. Record the number of beats as ACTIVE.
10. Have person #1 rest again for 1 minute.
11. Find their carotid or radial pulse.
12. Count their heart beats within 1 minute.
13. Record the number of beats as FINAL RESTING.
14. Repeat ALL steps for person #2.

DATA & OBSERVATIONS

Person #1	Pulse (bpm)	Person #2
	Initial Resting	
	Active	
	Final Resting	



CONCLUSION

1. Which person had the highest INITIAL RESTING pulse? Why might two people have two different heart rates?

2. **Compare** initial resting pulse to active pulse. How does this prove homeostasis?

3. **Compare** initial resting pulse to final resting pulse. How does this also prove homeostasis?

4. Besides heartrate, how else did your body change immediately after exercise? Why may this be the case?