



Physiology Lessons  
for use with the  
Biopac Student Lab

PC under Windows® 98SE, Me, 2000 Pro  
or Macintosh® 8.6 – 9.1

Manual Revision  
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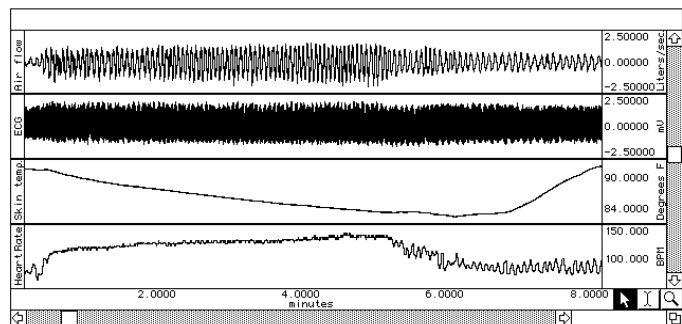
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## Lesson 15 Data Report

### Aerobic Exercise Physiology

#### *Cardiovascular and Respiratory Adjustments*

- *ECG During and Post-Exercise*
- *Ventilation During and Post-Exercise*
- *Heat Exchange*



Lesson 15

# Aerobic Exercise Physiology

## *Cardiovascular and Respiratory Adjustments*

- \* *ECG During and Post-Exercise*
- \* *Ventilation During and Post-Exercise*
- \* *Heat Exchange*

## DATA REPORT

Student's Name: \_\_\_\_\_

Lab Section: \_\_\_\_\_

Date: \_\_\_\_\_

### I. Data and Calculations

#### Subject Profile

Name \_\_\_\_\_

Height \_\_\_\_\_

Age \_\_\_\_\_

Weight \_\_\_\_\_

Gender: Male / Female

Calculated maximum heart rate: \_\_\_\_\_

#### A. Pre-exercise

Complete Table 15.1 with the requested measurements for data in the 5-second interval before exercise.

**Table 15.1**

Heart Rate [CH 41] Value	Breathing Rate [CH 1] BPM)	Airflow [CH 1] max	Skin Temp [CH 3] Value

## B. During Exercise

Complete Table 15.2 with the requested measurements for data during exercise.

*\*Note* Time references are the starting points of the exercise segment and do not correspond to the data window's horizontal time scale. If you did not collect 5 minutes of data, leave excess entries blank.

**Table 15.2**

<b>Time* (min)</b>	<b>Time* (secs)</b>	<b>Heart Rate [CH 41] Value</b>	<b>Breathing Rate [CH 1] BPM)</b>	<b>Airflow [CH 1] max</b>	<b>Skin Temp [CH 3] Value</b>
0	0				
	30				
1	60				
	90				
2	120				
	150				
3	180				
	210				
4	240				
	270				
5	300				

## C. Post-Exercise

Complete Table 15.3 with the requested measurements for data after exercise.

*\*Note* Time references are the starting points of the post-exercise segment and do not correspond to the data window's horizontal time scale. If you did not collect 5 minutes of data, leave excess entries blank.

**Table 15.3**

<b>Time* (min)</b>	<b>Time* (secs)</b>	<b>Heart Rate [CH 41 Value]</b>	<b>Breathing Rate [CH 1 BPM]</b>	<b>Airflow [CH 1 max]</b>	<b>Skin Temp [CH 3 Value]</b>
0	0				
	30				
1	60				
	90				
2	120				
	150				
3	180				
	210				
4	240				
	270				
5	300				

**II. Questions:**

D. Using your data, describe the timing and types of physiological changes observed during exercise:

i. ECG: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

ii. Heart Rate: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

iii. Breathing Rate \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

iv. Temperature: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

v. Ventilation Depth: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

E. i. When did the Subject start sweating? \_\_\_\_\_

ii. Describe the temperature changes before and after sweating commenced.

\_\_\_\_\_

\_\_\_\_\_

iii. When exercising, does wiping off sweat help cool down the body? Why or why not?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

F. i. How long did it take before the Subject's physiological measurements returned to resting levels?

ii. What physiological mechanisms are operating during the post-exercise period?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

G. i. Define **anaerobic threshold**.

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ii. How does anaerobic threshold change with training?

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H. Compare the changes in airflow (ventilation) rates:

i. Within Subject: (rest, maximal rate during exercise, post-exercise)

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ii. Between Subjects: (For the same level of exercise, did people differ in their ventilation rates? Explain.)

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**End of Lesson 15 Data Report**