



BIOPAC
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Physiology Lessons
for use with the
Biopac Student Lab

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

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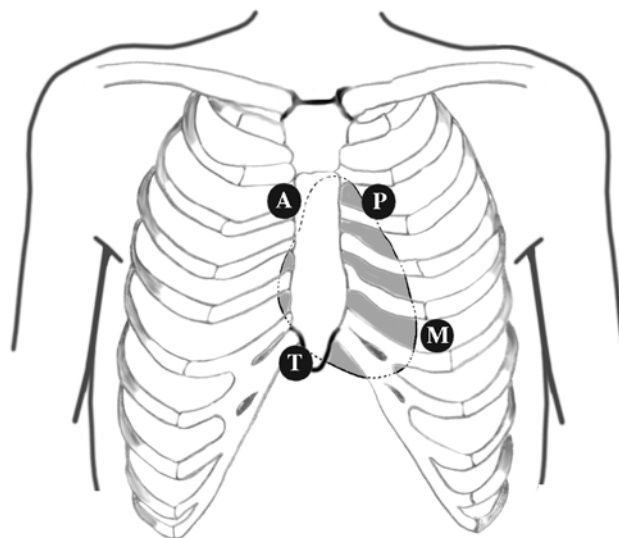
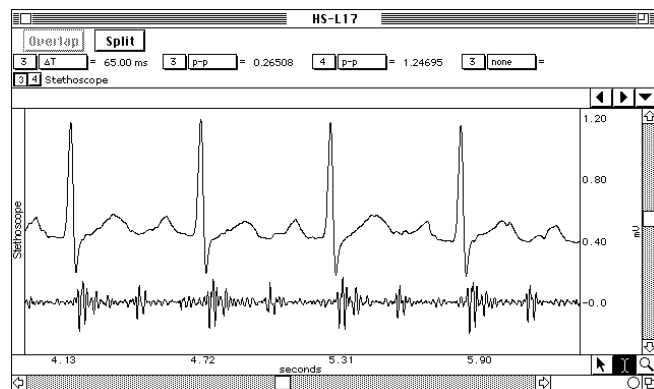
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Lesson 17 Data Report

Heart Sounds

- *Cardiac valve functions*
- *Relationship between electrical and mechanical events of the cardiac cycle*



Lesson 17

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DATA REPORT

Student's Name: _____
 Lab Section: _____
 Date: _____

I. Data and Calculations

Subject Profile

Name _____ Height _____
 Age _____ Weight _____
 Gender: Male / Female

A. Heart Sound Measurements

Complete Table 17.1 with **Segment 2** and **Segment 3** data and complete the required calculations.

Table 17.1

Measurement	CH. #	Segment 2			Segment 3
		At Rest	Inhalation	Exhalation	Post-exercise
BPM	CH. 3				
ΔT R-wave to first sound	CH. 3				
ΔT R-wave to second sound	CH. 3				
ΔT first to second	calculate				
ΔT second sound to next first sound	CH. 3				
p-p first sound	CH. 3				
p-p second sound	CH. 3				

B. Description of Heart Sounds

Describe the first heart sound (aortic) and then describe the other sounds in terms of intensity (loudness), pitch and duration relative to the first sound. This is a subjective description.

Note: You may paste your descriptions from the Lesson 17 Journal here.

Aortic _____

Pulmonic _____

Tricuspid _____

Mitral _____

II. Questions

1. Refer to Table 17.1 for this question.

Relative to the electrical and mechanical events of the cardiac cycle, what do each of the measurements in the table represent?

BPM: _____

ΔT R-wave to first sound: _____

ΔT R-wave to second sound: _____

ΔT first to second: _____

ΔT second sound to next first sound: _____

p-p first sound: _____

p-p second sound: _____

2. Refer to Table 17.1 for this question.

Note whether the measured values increased, decreased or did not change from the resting value when heart rate increased.

Measured Value	Increased	Decreased	No Change
BPM			
ΔT R-wave to first sound			
ΔT R-wave to second sound			
ΔT first to second			
ΔT second sound to next first sound			
p-p first sound			
p-p second sound			

3. Explain why each of these would change.

4. Briefly describe the cause of the turbulence associated with each of the four heart sounds:

1st sound _____

2nd sound _____

3rd sound _____

4th sound _____

5. Which of the four heart sounds is loudest? Give a reason.

6. Does ventricular ejection occur during ventricular depolarization or during ventricular repolarization? Refer to your experimental record before you answer, and explain your answer.

7. Which cardiac valves close during ventricular systole? Which cardiac valves close during ventricular diastole?

Systole: _____

Diastole: _____

8. Define “**systolic murmur**” and give one example of a cause.

9. Define “**diastolic murmur**” and give one example of a cause.

10. Define “**cardiac cycle**.”

11. Briefly characterize the relationship between the electrical events and the mechanical events of the cardiac cycle.

