



BIOPAC
Systems, Inc.

Physiology Lessons
for use with the
Biopac Student Lab

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

Manual Revision
PL3.6.7-ML3.0.7/112403

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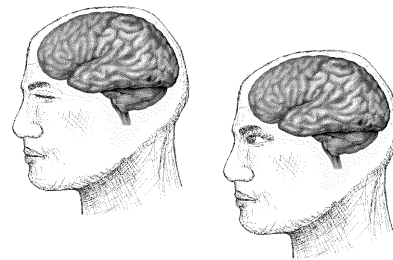
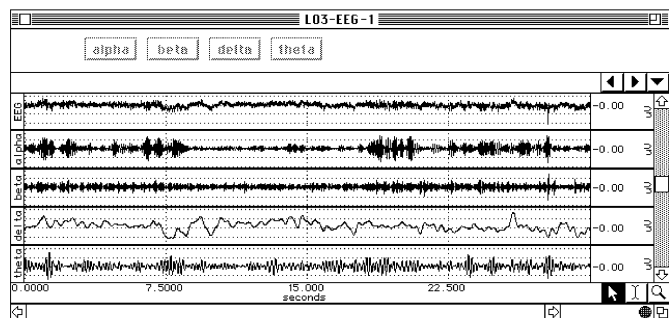
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Lesson 3 Data Report

ELECTROENCEPHALOGRAPHY I

EEG I

Relaxation and Brain Rhythms
Alpha, beta, delta, and theta rhythms



Lesson 3

ELECTROENCEPHALOGRAPHY I*EEG I***DATA REPORT**

Student's Name: _____

Lab Section: _____

Date: _____

I. Data and Calculations

Subject Profile

Name _____

Height _____

Age _____

Weight _____

Gender: Male or Female

A. EEG Amplitude Measurements

Complete Table 3.2 with Standard Deviation measurements:

Table 3.2 Standard Deviation [stddev]

| Rhythm | Channel | Eyes Closed | Eyes Open | Eyes Re-closed |
|---------------|----------------|--------------------|------------------|-----------------------|
| Alpha | CH 2 | | | |
| Beta | CH 3 | | | |
| Delta | CH 4 | | | |
| Theta | CH 5 | | | |

B. EEG Frequency Measurements

Complete Table 3.3 with the frequencies for each rhythm and calculate the mean frequency:

Table 3.3 Frequency (Hz)

| Rhythm | Channel | Cycle 1 | Cycle 2 | Cycle 3 | Mean |
|--------|---------|---------|---------|---------|------|
| Alpha | CH 2 | | | | |
| Beta | CH 3 | | | | |
| Delta | CH 4 | | | | |
| Theta | CH 5 | | | | |

II. Questions

C. List and define two characteristics of regular, periodic waveforms.

D. Compare and contrast synchrony and alpha block.

E. Examine the alpha and beta waveforms for change between the “eyes closed” state and the “eyes open” state.

i. Does **desynchronization** of the alpha rhythm occur when the eyes are open?

ii. Does the beta rhythm become more pronounced in the “eyes open” state?

- F. The amplitude measurements (stddev) are indicative of how much alpha activity is occurring in the subject. But, the amplitude values for beta do not truly reflect the amount of mental activity occurring with the eyes open. Explain.

- G. Examine the delta and theta rhythm. Is there an increase in delta and theta activity when the eyes are open? Explain your observation.

- H. Define the following terms:

i. Alpha rhythm

ii. Beta rhythm

iii. Delta rhythm

iv. Theta rhythm

End of Lesson 3 Data Report