

V. DATA ANALYSIS

FAST TRACK Data Analysis

1. Enter the **Review Saved Data** mode and choose the correct file.

- Note Channel Number (CH) designations:

Channel	Displays
CH 3	EDA
CH 40	Respiration
CH 41	Heart Rate

- Note measurement box settings:

Channel	Measurement
CH 41	Value
CH 40	BPM
CH 3	Value

2. Set up your display window for optimal viewing of the first 5 seconds of the recording.

Data Analysis continues...

Detailed Explanation of Data Analysis Steps

Enter **Review Saved Data** from the **Lessons** menu.

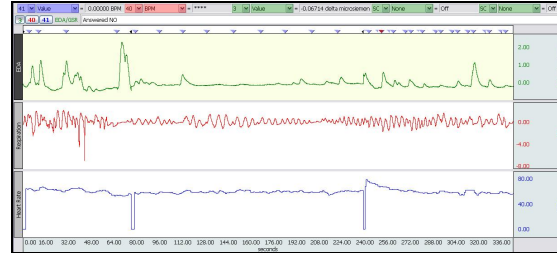


Fig. 9.16 Example data

The measurement boxes are above the marker region in the data window. Each measurement has three sections: channel number, measurement type, and value. The first two sections are pull-down menus that are activated when you click them.

Brief definition of measurements:

Value: Displays the amplitude value at the selected point. If an area is selected, the value is the endpoint of the selected area.

BPM: The Beats or Breaths Per Minute measurement first calculates the difference in time between the beginning and end of the selected area (seconds,) and divides this value into 60 seconds/minute.

The selected area is the area selected by the I-Beam tool (including the endpoints).

Note: The append event markers mark the beginning of each recording. Click on (activate) the event marker to display its label.

Useful tools for changing view:

Display menu: Autoscale Horizontal, Autoscale Waveforms, Zoom Back, Zoom Forward

Scroll Bars: Time (Horizontal); Amplitude (Vertical)

Cursor Tools: Zoom Tool

Buttons: Overlap, Split, Show Grid, Hide Grid, -, +

Hide/Show Channel: ⌘Alt + click (Windows) or ⌘Option + click (Mac) the channel number box to toggle channel display.

- Using the I-Beam cursor, choose a point at the 2-second mark and record the heart rate and EDA values (Fig. 9.17).

A

- Using the I-Beam cursor, select an area from the start of one inhale to the start of the next inhale (Fig. 9.18,) and record the respiration rate (BPM).

A

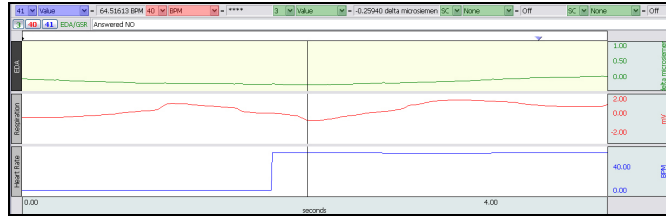


Fig. 9.17 Measurement at 2 second mark

The respiration transducer records chest expansion (inhalation) as positive values and chest deflation (exhalation) as negative values. Therefore, the start of inhalation is recorded as the beginning of the ascending positive waveform.

Note This measurement may be difficult to perform, depending on your data, because small dips in chest expansion can occur within the normal cycle and when the **Subject** answers questions. It may help to zoom further out on the data or to first scroll to better data to get an idea of the expected respiration rate.

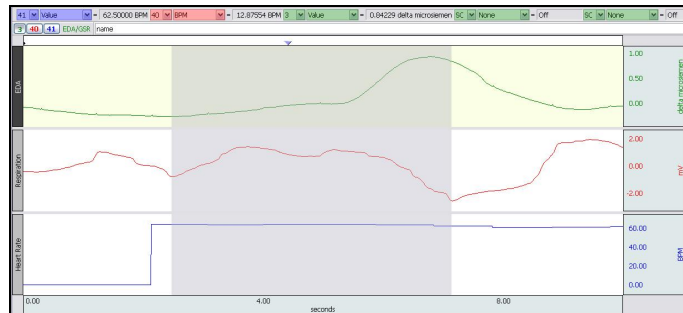


Fig. 9.18 One respiratory cycle

- Scroll to view a 10-second interval beginning at the first event marker inserted in **Data Recording Step 4**.

This 10-second interval in the Respiration data (CH 40) should show the **Subject's** response to the first instruction of the recording.

- Find the point of maximal EDA within this 10-second recording and record the heart rate and EDA values at this point.

A

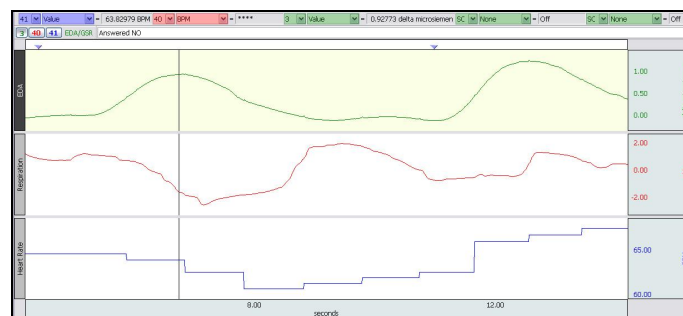


Fig. 9.19 Point of maximal EDA

- Using the I-Beam cursor, select an area from the start of one inhale to the start of the next inhale, closest to the point used in Step 6, and record the respiration rate (BPM).

A

- Repeat Steps 6 & 7 for each condition in **Count and touch** recording of your data.

A

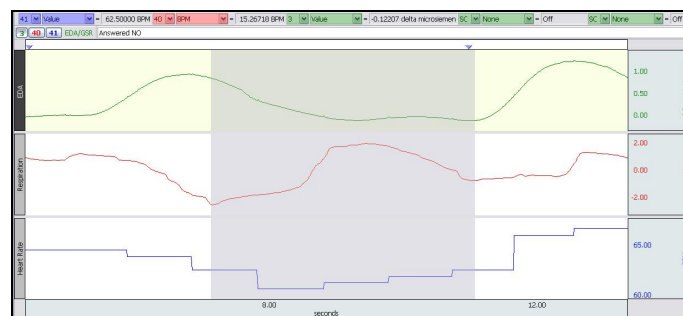


Fig. 9.20 Measurement of respiration rate

Data Analysis continues...

9. Perform Steps 5 ó 7 for “Colored squares” data.



10. Perform Steps 5 ó 7 for “Yes-No questions” data, using a 5-second interval beginning at the “A” marker.



11. Answer the questions at the end of the Data Report
12. **Save** or **Print** the data file.
13. **Quit** the program.

Measurements should be taken in the interval that begins when the **Subject** started to answer.

An electronically editable **Data Report** is located in the journal (following the lesson summary,) or immediately following this Data Analysis section. Your instructor will recommend the preferred format for your lab.

END OF DATA ANALYSIS

END OF LESSON 9

Complete the Lesson 9 Data Report that follows.

ELECTRODERMAL ACTIVITY & POLYGRAPH

DATA REPORT

Student's Name: _____

Lab Section: _____

Date: _____

Subject Profile

Name: _____ Height: _____

Age: _____ Gender: Male / Female Weight: _____

I. Data and Calculations

A. Complete Table 9.1 with “Count and touch” data.

Mark **I** for increase, **D** for decrease, and **NC** for no change relative to baseline. (Add or paste results into the Measurement column.)

Table 9.1 “Count and touch” Data

Procedure	Heart Rate		Respiratory Rate		EDA	
	41 Mark	Value Meas	40 Mark	BPM Meas	3 Mark	Value Meas
Resting (baseline)						
Quietly say name						
Count from 10						
Count from 30						
Face touched						

B. Complete Table 9.2 with “Colored squares” data.

Mark **I** for increase, **D** for decrease, and **NC** for no change relative to baseline. (Paste measurements in cells on right)

Table 9.2 “Colored squares” Data

Square Color	Heart Rate		Respiratory Rate		EDA	
	41 Mark	Value Meas	40 Mark	BPM Meas	3 Mark	Value Meas
white						
black						
red						
blue						
green						
yellow						
orange						
brown						
pink						

C. Complete Table 9.3 with “Yes-No questions” data.

Mark **I** for increase, **D** for decrease, and **NC** for no change relative to baseline. (Paste measurements to cells on right)

Table 9.3 “Yes-No questions” Data

Question	Answer	Truth	Heart Rate		Respiratory Rate		EDA	
			41 Mark	Value Meas	40 Mark	BPM Meas	3 Mark	Value Meas
Student?	Y N	Y N						
Blue eyes?	Y N	Y N						
Brothers?	Y N	Y N						
Earn “A”?	Y N	Y N						
Motorcycle?	Y N	Y N						
Less than 25?	Y N	Y N						
Another planet?	Y N	Y N						
Aliens visit?	Y N	Y N						
“Survivor”?	Y N	Y N						
Truthful?	Y N	Y N						

II. Questions

D. Of what practical value is the EDA information obtained from the color experiment?

E. What major physiological changes account for the electrodermal activity?

F. Give three reasons why polygraph testing of a person’s sincerity and honesty may yield inconclusive results.

III. OPTIONAL Active Learning Portion

A. *Hypothesis*

B. *Materials*

C. *Method*

D. *Set Up*

E. *Experimental Results*
