**BioPac Lesson 12: Pulmonary Function I**

Student Name: Date:

Student Height: Student Weight:

Student Age: Student Gender: Male / Female

We will begin with the Student’s Tidal Volume: (Fill-in the box below with the TV)

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| --- |
|  |

(Normal Tidal Volumes are in the range of 500 ml (0.5 L).

Next is the Student’s Inspiratory Reserve Volume: (Fill-in the box below with the IRV)

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| --- |
|  |

(Normal Inspiratory Reserve Volumes are in the range of 1900-3300 ml (1.9 – 3.3 L).

Now is the Student’s Expiratory Reserve Volume: (Fill in the box below with the ERV)

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| --- |
|  |

(Normal Expiratory Reserve Volumes are in the range of 700-1200 ml (0.7 – 1.2 L).

Why would Expiratory Reserve Volume be less than Inspiratory Reserve Volume?

Let’s now calculate the ‘Predicted Vital Capacity’:

|  |  |
| --- | --- |
| Male | V.C. in Liters = 0.052 \* Height (in centimeters) – 0.022 \* Age (in years) – 3.60 |
| Female | V.C. in Liters = 0.041 \* Height (in centimeters) – 0.018 \* Age (in years) – 2.69 |

Enter your ‘Predicted Vital Capacity’ in the box below:

|  |
| --- |
|  |

Your measured Vital Capacity is obtained by adding what three measured volumes?

Enter your measured Vital Capacity in the box below:

|  |
| --- |
|  |

How does your measured Vital Capacity compare with your predicted Vital Capacity?

For the Labs, use a value of 1200 ml for your Residual Volume. **(RV = 1200 ml)**

What four lung volumes need to be added in order to calculate your Total Lung Capacity?

In the box below, enter your Total Lung Capacity:

|  |
| --- |
|  |

The average total lung capacity in a normal healthy male is 5700 ml (4200 ml in female).

How does your total lung capacity compare with the average?

Define Tidal Volume:

Define Inspiratory Reserve Volume:

Define Expiratory Reserve Volume:

How does emphysema affect total lung capacity?