Diana Valencia

Laboratory 14-Respiratory Physiology

Purpose:
The purpose of this lab is to teach us different ways that we can measure our lung capacity. By the end of this lab we should be able to successfully use a portable spirometry. We will also be calculating VC and FEV1, and the meaning of those terms.

Procedures:
14-B: The Forced Vital Capacity (FVC) or Forced Expiratory Volume (FEV_T)– MorganComPAS Pneumotrac:

1. The Morgan ComPAS computer program has already calculated and factored in the BTPS (Body Temperature Pressure Saturation) correction factor.
2. Fully insert the Pneumotrac filter/mouthpiece you purchased at the bookstore. If you have difficulty keeping air from leaking through your nose, you may need to wear a nose clip, as air leakage will result in inaccurate results.
3. Be sure the correct student information is loaded up before you start the FVC test.
4. After starting the FVC test, follow the verbal instructions of your instructor: begin with your mouth off the mouth piece so the pneumotach can equilibrate; after getting a good seal with your mouth, start with tidal breathing; when you are ready, take in the deepest breath possible, then forcefully blow it out as fast as you can and keep squeezing until instructed to stop. The instructor will print out your "FVCVolume TimeCurve" (part of your 14-B results), and it should look similar to Figure 14-2

14-C: Portable spirometry

1. Open the grey plastic box on your lab desk that says "BASELINE LungCapacitySpirometer" on the lid. Inside the lid of the box is a white paper that has specific instructions, please read the whole inside page with "how to use."
2. Insert the clear plastic mouthpiece on the "Windmill-Type" spirometer and make sure the measurement indicator is at the zero position before beginning.
3. Make sure you only exhale into the spirometer, DO NOT inhale from it.
4. After exhaling, record the measurement from the spirometer.Be sure to place your used plastic mouthpiece in the correct tub after use (the tub is labeled).
5. Calculate your predicted vital capacity from the nomograms available in lab. Using a straight edge, make a line matching your height and age to the vital capacity prediction. Note that the VC is in liters whereas other measurements have been taken in milliliters.
6. Compare the values obtained from the portable spirometer, the predicted values from the nomograms, and the value obtained from the Koko spirometer, if available. How can you account for any differences? (NOTE: your predicted VC from the nomogram, anda comparison to the measured VC in 14-A should be included in your discussion of 14-A).

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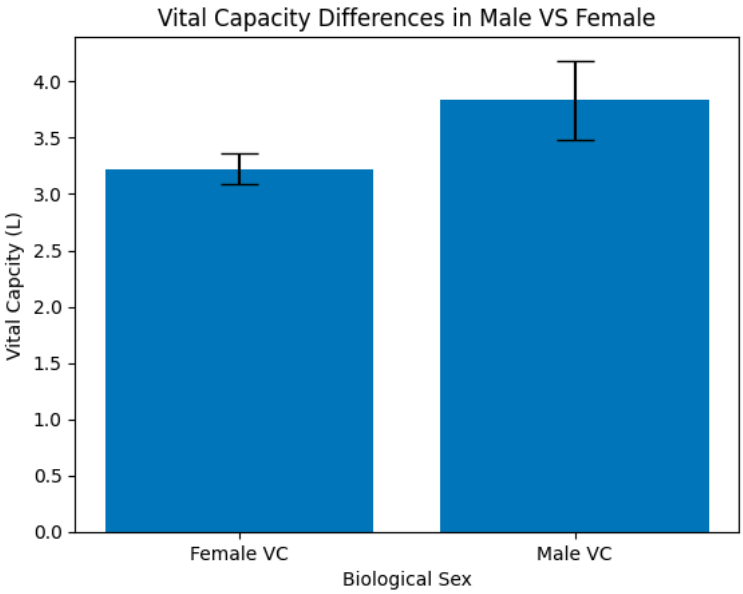
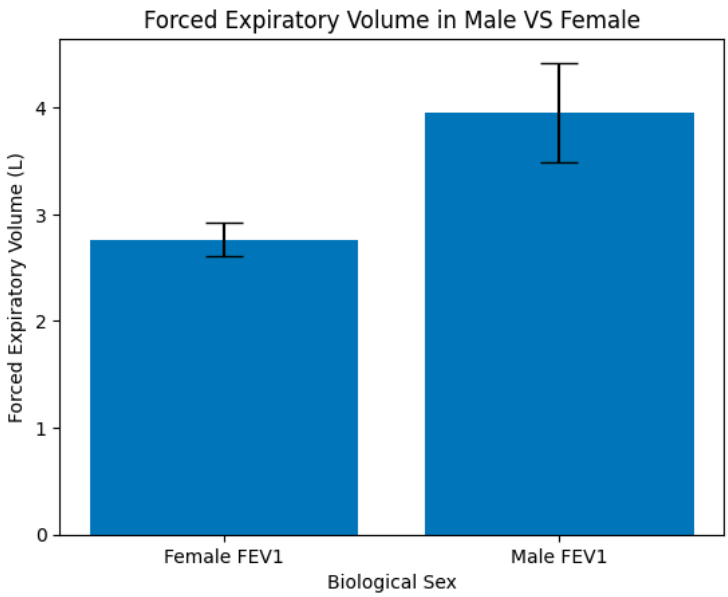
Results:





Sex	VC	FEV1
F	2.7	2.37
F	3.7	3.37
M	3.3	3.3
F	3.2	2.6
F	3.45	2.69
M	4.5	4.86
M	3.7	3.7
F	3.2	3.13
F	3.1	2.44

Discussion:

As we can see in the result in both Vital capacity and forced expiratory volume, men have a higher lung capacity than women. The mean VC in females was 3.225, and the average in men was 3.833. The mean FEV1 in women was 2.765, while in men it was 3.953

Conclusion:

In conclusion, in this lab we learned how to use a portable spirometry. We also learned that FEV1 measures how much air you can exhale in one second, while FVC measures the total amount of air you can exhale forcefully in one breath. These test help Doctors determine, if a patient has any lung conditions.