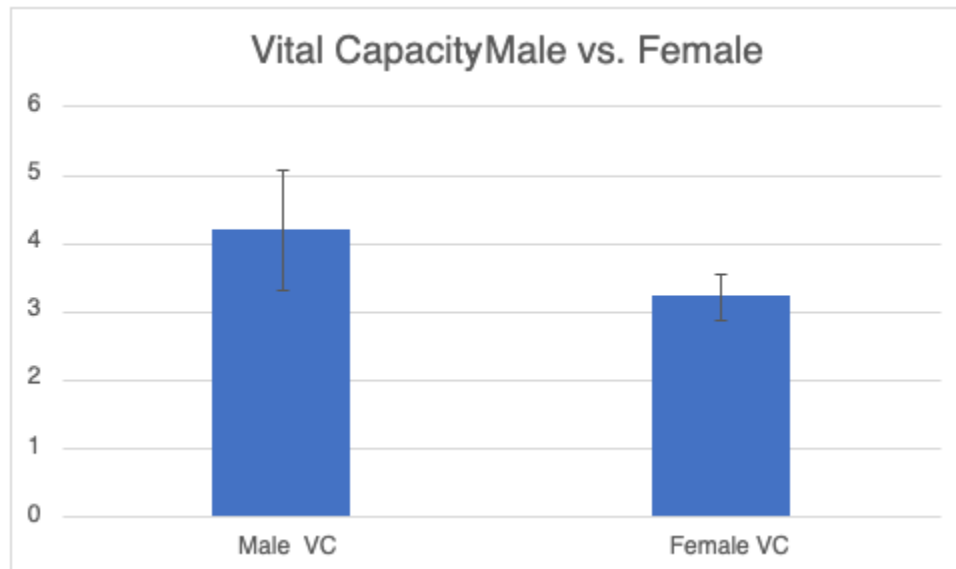


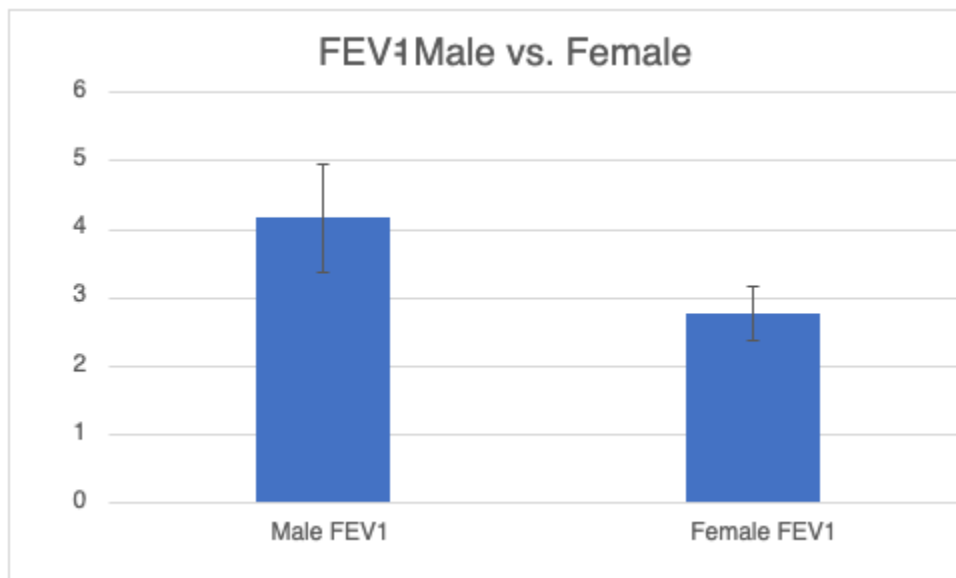
Laboratory 14-Respiratory Physiology

Purpose- The movement of the air going in and out of our lungs is very important to maintain the process of cellular respiration, the oxidation of nutrients. The inflation and deflation of the lungs simultaneously satisfies the demands of cells for supply of oxygen and subsequent elimination of carbon dioxide. The volume of air involved in our lungs may be measured with a device known as the spirometer. The purpose of laboratory 14 was to get the vital capacity using a portable spirometer and compare it to average vital capacities of humans depending on age. In laboratory 14 some students also used a Morgan ComPAS machine to measure our timed vital capacity also known as our forced expiratory volume.

Procedures- In laboratory 14 the procedure was to first open the “BASELINE Lung Capacity Spirometer” gray box and take out the materials inside. We then inserted the clear plastic mouthpiece onto the “Windmill-Type” spirometer and made sure the measurement indicator was placed on zero. We then inhaled and ONLY exhaled into the mouthpiece for 5-6 seconds. After exhaling into the spirometer we were to record the vital capacity reading that it gave us and repeat the procedure two more times. In experiment 14B we used the Morgan ComPAS computer program to get our FVC test. First we fully inserted the Pneumotrac filter/mouthpiece, making sure no air is leaking from our nose causing inaccurate readings. After the mouthpiece was inserted we made sure the device had our correct information in it to start the test. First we had the mouthpiece out so the pneumotach could equilibrate, then after we got a good reading we inserted the mouthpiece in and began with tidal breathing. Once we were ready we were to take in the deepest breath possible, then forcefully blow it out as fast as we could while still squeezing until instructed to stop. After the test was finished we waited on the professor to give us our FVC test readings.

Results-





Discussion- In experiment 14C we exhaled into the portable spirometer for 5-6 seconds and got our vital capacity reading. After viewing my results and viewing the sheet that gave age along with what the vital capacity should be for that specific age, I saw that my results were pretty low for my age. My results for the first exhale was 2.3, for my second time it was 2.8, and for my third time it was 2.6, from these results I could see that my vital capacity was pretty low compared to other lungs. My results could have been low due to me not blowing into the spirometer long enough, or simply just because the spirometer readings were not equilibrated. In experiment 14B some students performed it to find out the forced expiratory volume of their lungs. I was not one of the students to perform this procedure but after viewing the results I could see that males had higher lung volumes than females, and same with the results of their vital capacities. Overall these were very interesting experiments to do and it was interesting to

see that males results are higher than females, I honestly didn't really think gender had anything to do with it.

Conclusion- The results of the experiments in laboratory 14 showed each student's vital capacity and forced expiratory volume using a portable spirometer and the Morgan ComPAS computer program, this was also the whole purpose of the laboratory. Once we obtained the results from the experiment we were to compare them to healthy peoples vital capacities and determine if there was something wrong for instance if our lungs indicated asthma, chronic bronchitis, or emphysema. In conclusion these experiments were very important to determine if our lungs are healthy or not by viewing the readings of people with healthy lungs.