Laboratory 14- Respiratory Physiology

Purpose- You will have the opportunity to try one or more of these devices and measure your inspiratory capability. Incentive inspiratory devices, also known as spirometers, are used to help improve lung function and respiratory muscle strength. They provide a visual incentive and feedback to encourage deep breathing and effective inhalation. These devices are often used in respiratory therapy to assist with conditions such as chronic obstructive pulmonary disease (COPD), asthma, and post-operative recovery. By using an incentive inspiratory device, you can strengthen your respiratory muscles, improve lung capacity, and promote better breathing techniques.

14-D: Incentive inspiratory devices

Incentive inspiratory devices are used in clinical settings, such as hospitals, for rehabilitating respiratory and cardiac patients. When patients undergo open-heart surgery, for example, the respiratory muscles are cut and need to be strengthened following surgery to avoid complications such as pneumonia. In addition, these incentive inspiratory devices are sometimes used by patients who remain bed-ridden for long periods. Since inspiration is an active process, these muscles are targeted during rehabilitation. The patient can see the progress that is being made and have incentive to improve. Several different models of these instruments are available but all are based on the same premise of having the patient breath in as deeply as possible. You will have the opportunity to try one or more of these devices and measure your inspiratory capability.

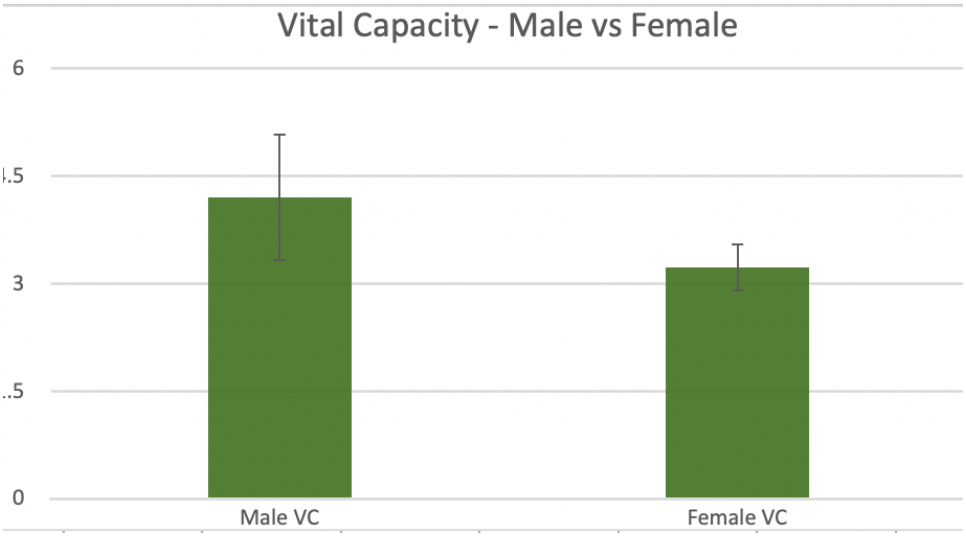
Procedure

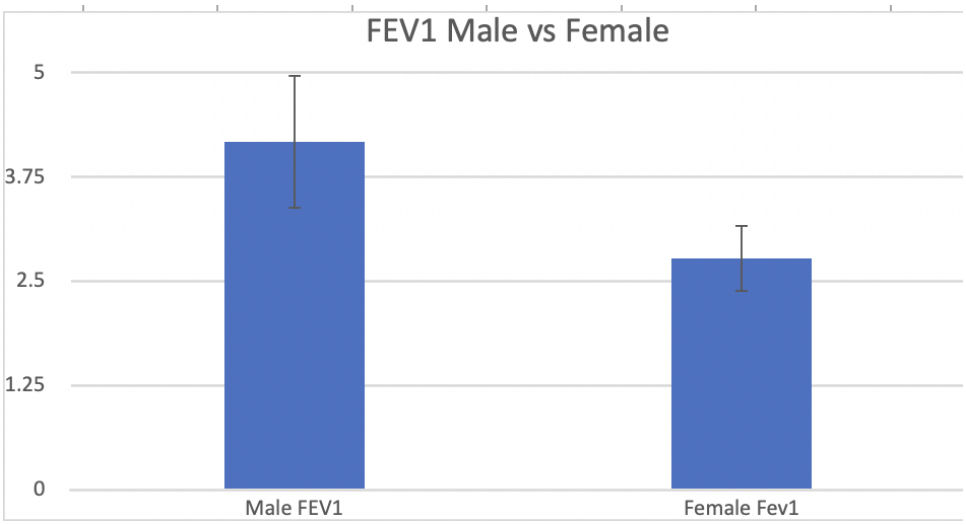
1. Obtain an incentive device and attach your disposable cardboard mouthpiece and white (or blue) filter to the breathing tube. The filter is quite a bit bigger than the breathing tube, so use your hand to try to get the best seal possible, it is not crucial to have a complete seal.

2. Breathe in as deeply as possible and record the measurement given on the device. Depending upon the model, you may have to move colored balls up plastic columns or move a bellows within a column.

3. Record your values. Discard the disposable cardboard mouthpiece and place the filter in the correct tub after use (the tub is labeled).

Results-





Discussion: This lab was very fun, however Justin and I failed to do it correctly about 5 times in a row. I kept redoing the test because I felt like I wasn't blowing hard enough and was getting weird results, come to find out we weren't resetting it to 0 after each trial. By then I had exhausted myself, that's why Jay's vital capacity is higher (lol).

Conclusion: In this lab we learned about the lungs' vital capacity and used 2 different tests to test it out. On average men's vital capacity is higher than women's. This is because women tend to be smaller than men, meaning their lungs are smaller; hence the lower vital capacity.