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Phys. Lab

Lab 14 report

Lab 14 C: Portable Spirometry

Purpose: Vital Capacity: this is a primary indicator for lung function and lung health. Vital Capacity is measured by a maximum inhalation followed by the maximum amount of air a person can expel. When there is no computer technology available, a Portable Spirometer is used to and is as efficient as anything else that measures vital lung capacity. It is important to understand measurement of Vital Lung Capacity for it is a way to analyze what is being worked with for example: Doctors will use this data to assess the overall health of the lungs and identify any abnormalities or restrictions in respiratory functions. It is also used as a tool to diagnose or monitor any respiratory illnesses. This knowledge is also used in sports in order to understand an athletes' lung health.

Procedure: First, we must understand what the vital lung capacity is used for. After attaining the information, we proceeded to unbox a Portable Spirometer labeled "BASELINE Lung Capacity Spirometer". Just to be law abiding citizens in the lab, we took out the instructions manual in order to comprehend how this tool is operated. Once we read the instructions, we inserted the plastic mouthpiece onto the "Windmill-Type". We made sure the measurement read ZERO before using.

I took a massive inhale without my mouth on the mouth piece. After I had the maximum air in my lungs that I could hold, I placed my mouth on the mouthpiece and exhaled as hard as I could. I watched the measuring stick move up and I got 6.3L for my Vital Capacity (VC). I then recorded my data. In this lab we only used the data recorded of 8 people. We took the data from 8 people who recorded their Forced Expiratory Volume (FEV1).

Results: The results we finished with were as I had anticipated. I used common knowledge when reviewing the data. It came out to show that males (sharing their results) have a relatively

higher capacity in both Vital Capacity and Forced Expiratory Volume. For the reason that men naturally have more capability to endure almost anything physical, the lung capacity in males is much higher than females. **The results are posted on the Github repository**

Discussion: Again, using common knowledge of the human body, men have much larger chest cavities and larger lung dimensions. Although we did not take into consideration the overall health of males and females in the lab, I strongly believe that the differences would show little to no change. Since it was a small population being tested on, the results can potentially go deeper into specifications if we take into account factors like: lung diseases, lung damage, birth defects, healthy diet, activity levels, etc. Something that might have altered the results was that someone in the lab did not know how to properly operate the Portable Spirometer… maybe someone in the lab did not blow into the Spirometer hard enough. It is highly unlikely but it is still a possibility.

Conclusion: In any field of work that at some point demands the understanding of Vital Lung Capacity and Forced Expiratory Volume, it is important to know how this affects people. Although there are factors (smoking, genetics, environmental exposure, health and fitness, etc.) that can manipulate the end results on someone's true VC or FEV1, there is no doubt that the differences between male and female anatomy will always show its true marker when data is recorded such as in this particular lab.