

*Activity level measured as average weekly aerobic activity: low = 0-2 hours; medium= 2-5 hours; high = 5 or more hours of activity with elevated heart rate.

Lab report write-up

Introduction: provide background information on lung volumes, specifically vital capacity- definition, factors that influence it, and why it is important. Provide a hypothesis with explanation for which variable you think will have the greatest effect on vital capacity. **You should formulate this hypothesis prior to collecting the data.** (125-150 words) -200words.

Methods: Brief description of everything you did so someone else could repeat the experiment. (no specific word count)

Results: Data table and graphs. Each table and each graph should be numbered and have a caption (Table 1, Figure 1 followed by a description). Written description of the results from the table and from the graphs. In the text, reference the table and graphs as applicable. Each graph and table must be referenced. No interpretations, just objective summary of the results. (no specific word count)

Include data table and a graph of each variable.

Discussion: Use the following analysis questions to guide your discussion. (250-300 words) -500

1. Compare the participants' vital capacity and variables listed (age, height, sex, activity level). Based on your data, which factors have the GREATEST impact on vital capacity. Was your hypothesis supported? (reference table or figures as appropriate: as seen in Fig 1...)
2. Which variables seem to have the LEAST effect on a person's vital capacity?
3. How does the experimental vital capacity of the participants compare to their estimated vital capacity using the online calculator? Why might the experimental vital capacity be different than the estimated vital capacity? Which do you think is more accurate and why? Which variables do the online calculator take into account? What other factors affect lung volume?
4. **How might an athlete's vital capacity compare to a non-athlete? Explain your reasoning. MAYBE not necessary since activity level is one of the variables measured.**
5. How could this study be improved or extended? For example, did your data (participants) capture a good range of the variables you were looking at? Was the age range and height range of your participants sufficient to show a pattern? Did the aerobic activity intervals provide enough of a difference among the groups? How could you change the participant pool to better look at the effect of age, height or exercise? It's easiest to look at 1 variable at a time, otherwise you won't know what is affecting the independent variable. What are some variables you could/should control for as you are looking at a particular dependent variable, for example sex?

References: You must use at least 3 primary literature references. **(Books are not primary lit)** Non-primary sources of good quality may be used as well (but do not count towards the 3 primary lit

references). Each reference (both primary and non-primary) should be cited within the text (introduction and discussion sections) and listed in the reference section **in alphabetical order**.

See separate handout on how to properly cite references within the text as well as proper formatting of your references in the reference section. **Mention references go in alphabetical order.**