Individual Analysis 2

Zach

Our New Research Topic

Analyzing change in blood pressure (MAP - mean arterial pressure) in both men and women after a short intense exercise (running up and down the stairs)

A Similar Experiment for Reference

Arterial blood pressure in female students before, during and after exercise

This experiment is similar to the one we are planning to do, however in more detail and comparing athletes vs. non athletes rather than men vs. women

Summary of findings from similar experiment

	Athletes (mean ± SD)	Non-athletes (mean ± SD)	P
MAP rest	109 ± 3.2	109.8 ± 1.5	> 0.05
MAP max	153.8 ± 7.1	142.8 ± 6.6 a	0.001
MAP after	113.6 ± 7.1	109.8 ± 4.6 b	0.01
PP rest	33.7 ± 3.8	30.2 ± 4.7 c	0.003
PP max	82.8 ± 7.7	75 ± 6.1 d	0.001
PP after	41.5 ± 6.8	40.3 ± 7.3	> 0.05

As you can see, this study measured MAP (mean arterial pressure) as well as PP (pulse pressure) before, during and after exercise.

We are planning to use MAP, as it is a holistic measurement, incorporates both blood pressure numbers and lowers our error chance with the home blood pressure machine

In this study, they also calculated P values for each mean measurement using a t test, ensuring accuracy. Our group will employ a similar analysis on a smaller scale in our experiment.

What can we take away from this study to use in our own?

From the data found in this experiment, we see we have a very limited time frame to measure our “after” blood pressure values, as MAP drops almost all the way back to rest just five minutes after exercise. Therefore, we must take our two blood pressure measurements a relatively short time after our subjects do the stair exercise in order to maximize the accuracy of the results of our experiment. This plays a major role in how we will design our methods.

Secondly, we will also use a sample t test to analyze our data and give us a p value, a value which will tell use the legitimacy of our test and whether we can say our data is statistically significant.

Works Cited

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3448395/