Does Caffeine Affect Your Academic Performance?

Q1: Research Question & Hypothesis

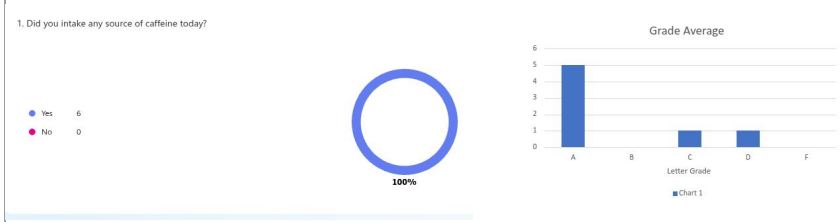
-Does Caffeine Affect Your Academic Performance?

-I believe that more people will say that caffeine has a positive affect on their academic performance because it helps them stay awake and helps them focus.

Q2: Methodology

- Participants will take a survey questioning their intake of caffeine, everyday life, and academic performance.

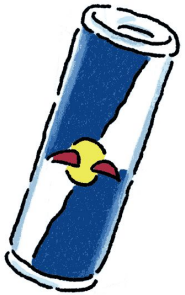
Q3: Data Analysis & Results



Q4: Interpretation & Conclusions

What we can conclude from our research project, is that the more caffeine consumed compared to a students sleep schedule, does nothing for their actual academic performance, proving our hypothesis wrong.

Introduction



For my ISEF project I have decided to research the hypothesis if whether or not caffeine could affect your personal academic performance. I want to prove it to be either fact or fake, I am going to determine this by collecting data from multiple sources (participants) who are either drinking caffeine daily or not.

Question & Hypothesis

Our question for my research project is whether or not caffeine intake will affect the way you perform in school as well as your grades. My hypothesis is that caffeine intake will affect your academic lifestyle in a positive way, giving your body and brain more energy to focus in school and while studying.

Methods

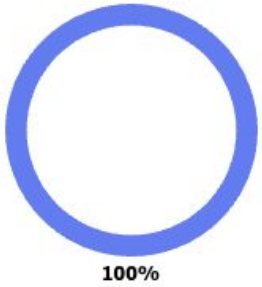
To research I read through multiple scientific articles on the adenosine receptors, neurotransmitter modulation, adrenaline release, dopamine sensitivity, and phosphodiesterase inhibition. To collect data, I surveyed multiple students on their academic life, sleep schedule, and intake of caffeine.

Results

The obvious question that was asked was whether or not the participants had drank caffeine that day. All participants did.

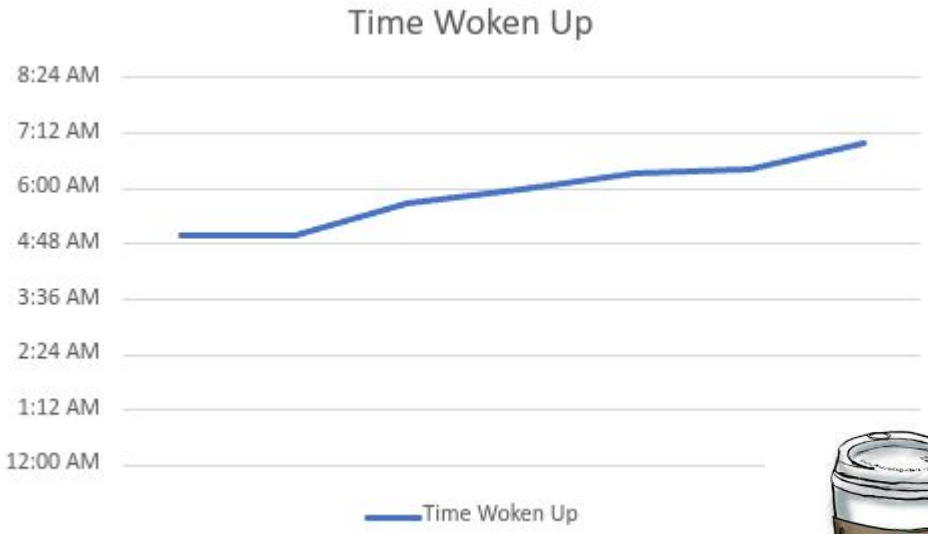
1. Did you intake any source of caffeine today?

Yes	6
No	0



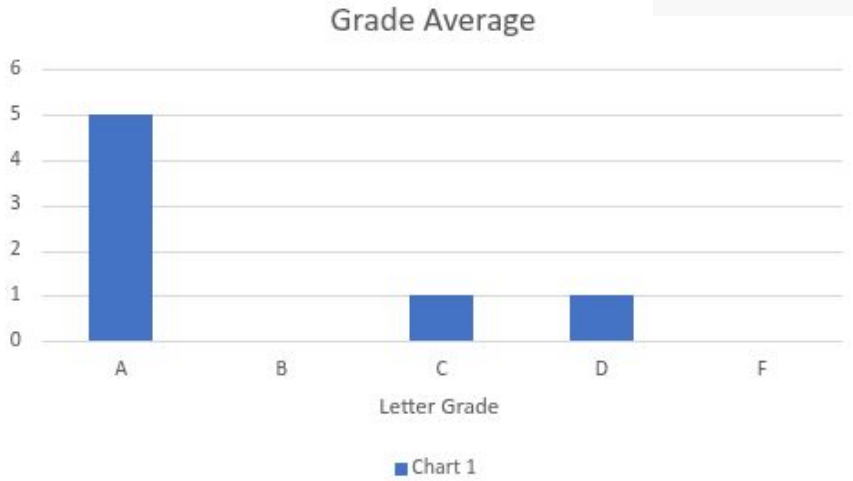
Results

Although this question on the survey may seem out of place, I wanted to know what time the participants had woken up that morning, through analyzation, participants who woke up later in the day have a lower letter grade average, even though they had consumed caffeine.



Results

This data chart shows the participants letter grade average, most participants had a letter A average, while some had lower, even though all have consumed caffeine. How does this connect? Let me explain.



Discussion

Throughout my research and data collection, I noticed that my hypothesis was completely wrong. No, caffeine does not benefit your academic life in anyway, matter of fact it doesn't do more than boost your orexin-producing neurons, which help keep you awake. Yes, few participants drink caffeine and still have a low grade average, this could possibly mean that you have built a tolerance to caffeine, which on the cellular level, means your brain is increasing your adenosine receptors to try and outweigh the adenosine receptor blockade that is also occurring at the same time. While this is happening, your body begins to feel tired regardless of if you consumed caffeine or not, meaning you've built a tolerance, meaning caffeine doesn't do anything for your attention span or comprehension. Therefore, caffeine does not affect your academic performance.

Ideas For Future Research

Some ideas for future research, is that I could take two people, one who drinks caffeine for two weeks straight and one who doesn't, and have them write about their academic performance and if they believe caffeine did anything to contribute to that, as well as trying to find patterns within their routine or changes in behavior.

References

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