

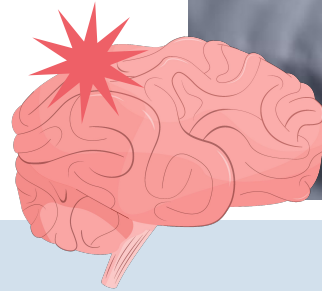
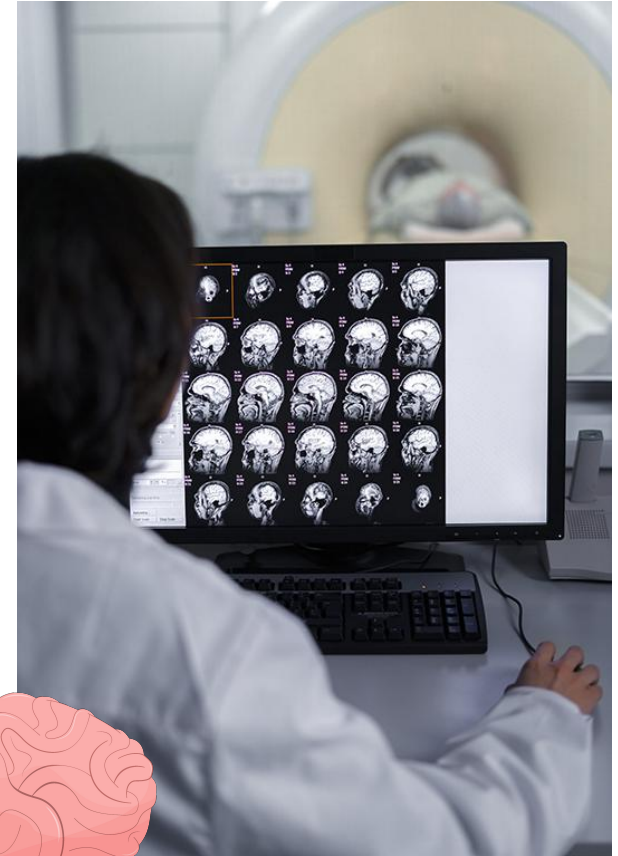
Caffeine Intoxication *In Adolescents*

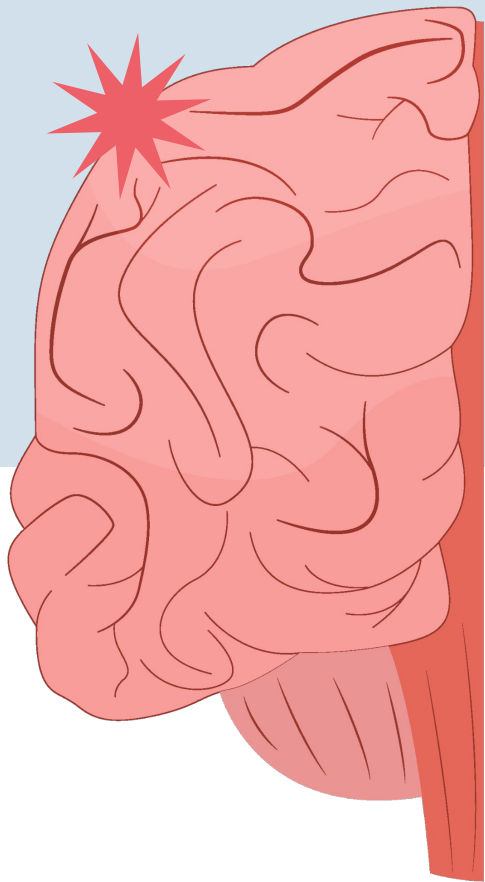
Jakeline A., Lauren G., Hailey M., Daniela V., Ana P.

Child Mind Institute, Youth Mental Health Academy
Manuel Dominguez High School

What is Caffeine Intoxication?

Caffeine Intoxication occurs when someone consumes an excessive amount of caffeine leading to a range of physical and psychological effects. It is important to recognize how caffeine has an impact on our health as many teens rely on caffeine as an energy boost to keep up with daily life, but to what extent is too much?





01

Introduction

How is Caffeine Relevant To Our Daily Lives?

Statement

Caffeine is found in many popular drinks such as coffee, energy drinks, soda, and tea. It is a central nervous system stimulant of the methylxanthine class and the most widely consumed psychoactive substance globally.

Context

The human body can only intake 400 milligrams of caffeine which is roughly 5 cups but it is recommended that children and adolescents limit their intake to 100 milligrams per day.

Physical symptoms: Increased heart rate, high blood pressure, heart palpitations, nausea, restlessness, digestive issues

Psychological symptoms: Anxiety, Insomnia, Hallucinations, (severe) Seizures, (severe) Panic Attacks

Symptoms range in severity.



Background

History

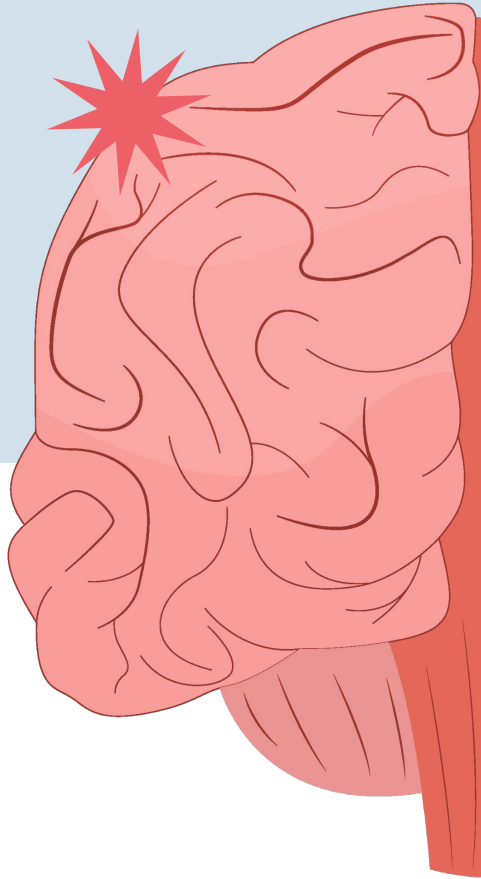
- The first paper describing caffeine intoxication was published by Jokela al. in 1959. However newer research of caffeine intoxication has evolved over time as a distinct medical condition.

Prior Research

- High caffeine and sleep problems, especially non-restorative sleep (NRS)
- People who drink more caffeine and sleep less are more prone to insomnia symptoms.
- Anxiety and race/ethnicity influence the relationship between caffeine use and sleep
- Overusing caffeine when already sleep-deprived can worsen sleep quality, creating a cycle of poor rest.

Overview

- In our study we will be using quantitative data (survey) to collect how much caffeine the students in YMHA Manuel Dominguez High School consume and the level of awareness when drinking caffeinated drinks.



03

Research Question

Research Question(s)

Main Research Question :

To what extent does caffeine intoxication affect adolescent mental health, leading to panic attacks, insomnia, anxiety, nervousness, and irritability, and how can we raise awareness about its hidden impact on teens' daily lives?

Hypothesis:

Many teens rely on caffeine to keep up with school and social life, but too much of it can quietly take a toll on their mental health, causing anxiety, panic attacks, trouble sleeping, and more. This project explores how caffeine affects the minds and bodies of adolescents and why it's so important to raise awareness about its hidden impact on their daily lives.



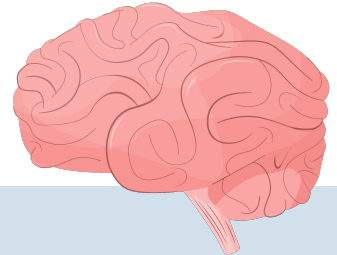
Decision Conclusion

Why We Chose This Topic: Caffeine Overconsumption :

- Caffeine overuse links to many physical and mental health issues.
- Teens often lack awareness about safe caffeine limits.
- Many don't read nutrition labels, leading to unintentional overconsumption.
- Caffeine intoxication symptoms often go unnoticed in daily life.
- Serious effects include anxiety, insomnia, panic attacks, and physical problems.
- We wanted to raise awareness about this hidden but harmful issue.
- This led us to ask: **How does caffeine intoxication affect adolescent mental health?**

Hypothesis Development :

- Teens often use caffeine to manage school, homework, and busy schedules.
- Growing caffeine dependence may have harmful effects.
- We predict excessive caffeine causes issues like insomnia since it's used to stay awake.
- Lack of sleep from caffeine can worsen brain function and increase anxiety.
- Anxiety may escalate to panic attacks and other mental health problems.
- Overall, caffeine overuse negatively impacts both body and mind.

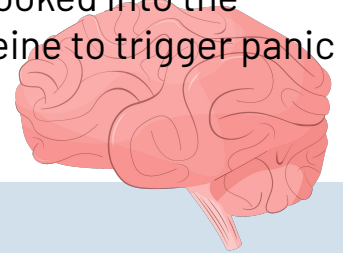


Sub-Research Question(s)

- **How does caffeine affect the body and mind?**
- **How does caffeine affect sleep and lead to insomnia symptoms?**
- **How does caffeine affect the creation of anxiety?**
- **How does caffeine intoxication cause panic attacks?**

Decision Conclusion:

- Each group member's assigned topic for literary analysis.
- Each member explored a specific disorder that could be linked to caffeine intoxication.
- Jackie focused on general information about caffeine and its effects.
- Lauren examined how caffeine intake can lead to insomnia.
- Hailey researched the connection between caffeine and anxiety.
- Ana and Daniela looked into the potential for caffeine to trigger panic attacks.



Methodology

Study design

Incorporated a review of existing articles to establish background information, alongside quantitative and archival methods to develop a survey. This survey was then used to collect real data on people's caffeine intake.

Data collection

To collect our data we created a survey that asked a series of questions to understand caffeine intake among freshmen to seniors, while ensuring anonymity for more accurate results.

Data analysis

We collected a series of graphs that shows the results of ages 15-18+ intake caffeine and the types of consumption. Resulting in different physical effects.

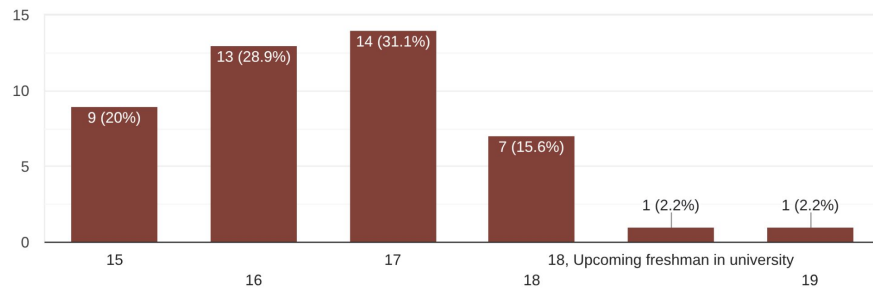
Results validation

Results obtained we concluded that caffeine intake can lead to a lot of physical effects and not just insomnia, it's also having an upset stomach, trouble sleeping, shakiness, headaches, anxiety/nervousness, and fast heart rate.



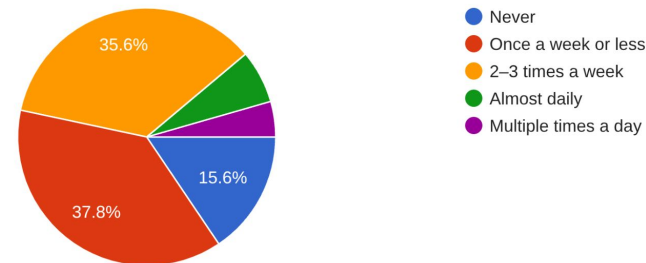
What is your age?

45 responses



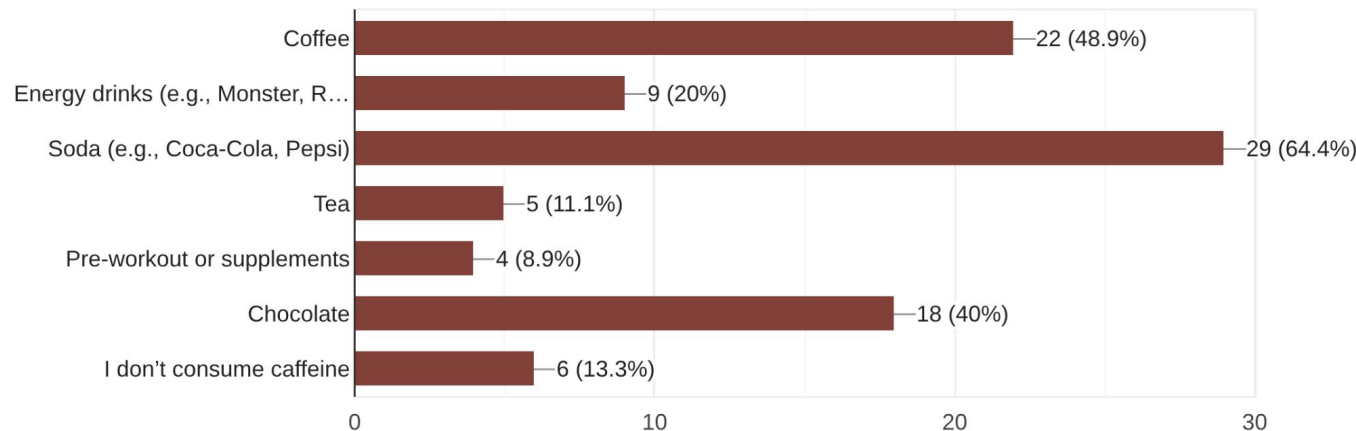
How often do you consume caffeinated drinks?

45 responses



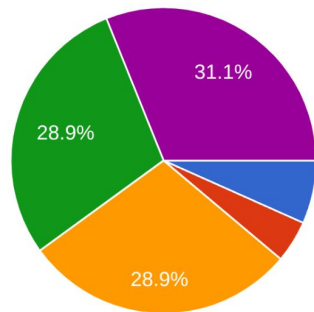
What types of caffeinated products do you consume regularly?

45 responses



Do you feel like caffeine affects your mood or anxiety levels?

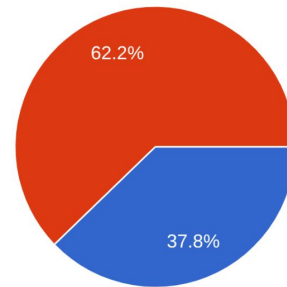
45 responses



- Yes, a lot
- Yes, a little
- Not really
- Not at all
- I'm not sure

Do you ever use caffeine to cope with stress, pressure, or staying awake for schoolwork?

45 responses



- Yes
- No

get on a school night?

- Less than 4 hours
- 4–5 hours
- 6–7 hours
- 8+ hours

Caffeine's impact on adolescent mental health: Regular intake, even from common sources like sodas and energy drinks, has been linked to anxiety, insomnia, nervousness, jitters, fast heart rate, and irritability, fitting DSM-5 criteria for caffeine-induced anxiety or sleep disorders

Awareness is key: Teens and caregivers often underestimate hidden caffeine in everyday items. Raising awareness through product labeling, school education, and discussions during awareness campaigns (e.g., National Caffeine Awareness Month) can help highlight the risks and promote safer consumption thresholds (<100 mg/day for adolescents).

Discussion

Conclusions

To what extent does caffeine intoxication affect adolescent mental health, leading to panic attacks, insomnia, anxiety, nervousness, and irritability, and how can we raise awareness about its hidden impact on teens' daily lives?

Caffeine intoxication can seriously impact adolescents mental health which does lead to the things we thought like anxiety, panic attacks, insomnia, nervousness, and irritability. According to research from Chaudhary and Shirlow & Mathers they state high levels of caffeine consumption are strongly associated with shorter sleep durations and symptoms of non-restorative sleep (NRS). These sleep disturbances often lead teens to consume even more caffeine to try and cancel out the fatigue this creates a dangerous cycle for teens which negatively impacts their mental health.

Bibliography:

Chaudhary, N. S., Grandner, M. A., Jackson, N. J., & Chakravorty, S. (2016). Caffeine consumption, insomnia, and sleep duration: Results from a nationally representative sample. *Nutrition*, 32(11-12), 1193–1199. <https://doi.org/10.1016/j.nut.2016.04.005>

SHIRLOW, M. J., & MATHERS, C. D. (1985). A Study of Caffeine Consumption and Symptoms: Indigestion, Palpitations, Tremor, Headache and Insomnia. *International Journal of Epidemiology*, 14(2), 239–248. <https://doi.org/10.1093/ije/14.2.239>

Whalen, R. (2004). Ongoing caffeine anaphylaxis: A differential for mental illness. *Medical Veritas*, 1(2), 252–260.

medicalveritas.com

Nardi, A. E., Lopes, F. L., Valença, A. M., Freire, R. C., Veras, A. B., de-Melo-Neto, V. L., Nascimento, I., King, A. L., Mezzasalma, M. A., Soares-Filho, G. L., & Zin, W. A. (2007). Caffeine challenge test in panic disorder and depression with panic attacks. *Comprehensive Psychiatry*, 48(3), 257–263. <https://doi.org/10.1016/j.comppsy.2006.12.001>