

# Intake of Caffeine

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<b>Aim</b>	To compare about the intake of caffeine in college students and adults in the urban population.
<b>Objective- Methods</b>	The main objective is to measure the amount of caffeine, a person consumes and the effect it has on the person. The study will be held in a group of college going and adults about their intake of caffeine where they are made to record their regular intake of caffeine.
<b>Background</b>	Coffee is the most frequently consumed caffeine-containing beverage. The caffeine in coffee is a bioactive compound with stimulatory effects on the central nervous system. Not only coffee but also soft drinks like cola and also tea contain caffeine. This study is about the scientific and changing caffeine landscape that includes new caffeine-containing energy drinks and supplements, often targeting children and adolescents. At the cardiovascular level, caffeine-taurine interaction leads to adverse cardiovascular symptoms. An interaction between gender and caffeine dose, also is done.
<b>Reason-</b>	To create an awareness about the effects caffeine has on people.

## INTRODUCTION

Caffeine is a drug that is naturally produced in the leaves and seeds of many plants. It's also produced artificially and added to certain foods. Caffeine is defined as a drug because it stimulates the central nervous system, causing increased alertness. Caffeine gives most people a temporary energy boost and elevates mood.

Caffeine is in tea, coffee, chocolate, many soft drinks, and pain relievers and other over-the-counter medications. In its natural form, caffeine tastes very bitter. But most caffeinated drinks have gone through enough processing to camouflage the bitter taste.

Beverages containing caffeine are ingested to relieve or prevent drowsiness and to increase one's energy level. Caffeine is extracted from the plant part containing it for making beverages by steeping it in water, a process called infusion. These beverages are very popular: in North America, 90% of adults consume caffeine daily.<sup>[1]</sup>

## USES

### Medical

Caffeine is used in

- bronchopulmonary dysplasia in premature infants for both prevention<sup>[2]</sup> and treatment.<sup>[3]</sup> It may improve weight gain during therapy<sup>[4]</sup> and reduce the incidence of cerebral palsy as well as reduce language and cognitive delay. On the other hand, subtle long-term side effects are possible.
- apnea of prematurity as a primary treatment, but not prevention.
- orthostatic hypotension treatment.<sup>[4]</sup>

### Increase in performance

Caffeine is a central nervous system and metabolic stimulant,<sup>[5]</sup> and is used to reduce physical fatigue and to prevent or treat drowsiness. It produces increased wakefulness, faster and clearer flow of thought, increased focus, and better general body coordination.<sup>[6]</sup> The amount of caffeine needed to produce these effects varies from person to person, depending on body size and degree of tolerance<sup>[7]</sup>. Desired effects begin less than an hour after consumption, and a moderate dose usually subsides in about five hours.<sup>[8]</sup>

Caffeine has the desired effect of delaying/preventing sleep, but does not affect all people in the same way. It also improves performance during sleep

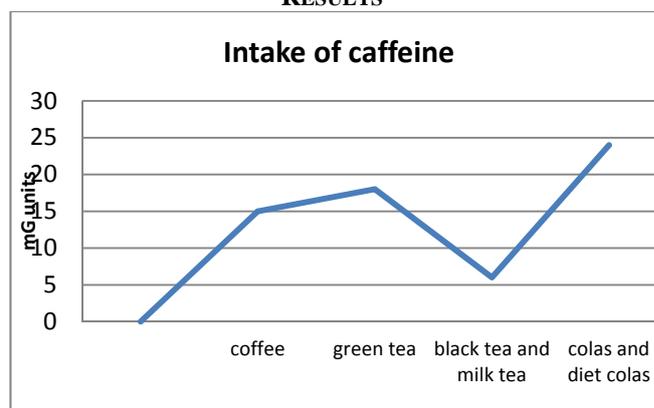
deprivation.<sup>[9]</sup> In shift workers it leads to fewer mistakes caused by drowsiness.<sup>[10]</sup>

In athletes, moderate doses of caffeine can improve sprint,<sup>[11]</sup> endurance,<sup>[12]</sup> and team sports performance,<sup>[13]</sup> but the improvements are usually not substantial. Some evidence suggests that coffee does not produce the performance enhancing effects observed in other caffeine sources.<sup>[14]</sup>

## MATERIALS AND METHODS

The study was carried out through proper channel after getting ethical approval from The Department of Research, Saveetha Dental College and Hospitals, Saveetha University. The subjects consisted of 70 people chosen at random in Chennai consisting mainly of college students and adults of the urban population. They were asked to fill up questions by which their complete intake of caffeine can be found out. The questionnaire comprised of various drinks containing caffeine in them and they were asked to tick appropriately the frequency by which they consume the drink. The questionnaires were then evaluated and the intake of caffeine was found out and data was recorded.

## RESULTS



There is a considerable amount (high levels) of coffee consumption among the subjects especially adults, also among selective college going children. On an average there is a 15mg/day consumption of coffee in the urban population. This includes decaffeinated coffee, instant coffee, espresso drinks like latte etc. Similar to the coffee

consumption the green tea consumption in the urban population is also high. On an average there is a 17mg/day consumption among the population. Probably there is an increase of green tea consumption than the coffee consumption as green tea is believed to have good effects on the body upto a certain limit. The black tea and milk tea consumption is low when compared to the others. There is only about 6mg/day consumption on an average. Whereas, the colas and diet colas consumption is very high. People in the urban population seem to consume very high levels of colas which contain caffeine. On an average the levels are upto 24mg. The colas include all the fizz drinks which contain caffeine in them.

### DISCUSSION

Last year, on a study suggesting that consuming three cups of coffee a day may reduce the risk of liver cancer by 50%, while another study suggests that drinking four cups a day could halve the risk of mouth and throat cancer.

Caffeine consumption has also been associated with positive effects on the brain.

Last year, a study from the Harvard School of Public Health suggested that drinking between two and four cups of coffee a day may reduce suicide risk in adults, while more recent research found that ingesting 200 mg of caffeine each day may boost long-term memory.

Other studies have also suggested that caffeine intake may protect against type 2 diabetes, Parkinson's disease, cardiovascular disease and stroke[15].

### Caffeine addiction

This can trigger symptoms such as headache, fatigue, drowsiness, depression, irritability, concentration difficulties, nausea and vomiting.[15]

### Withdrawal

Caffeine withdrawal results in typical symptoms, of which the most commonly reported are the following:

- Headaches
- Fatigue
- Weakness
- Drowsiness
- Impaired concentration
- Work difficulty
- Depression
- Anxiety
- Irritability
- Increased muscle tension
- Tremor, nausea, and vomiting (occasionally)

Withdrawal symptoms generally begin 12-24 hours after sudden cessation of caffeine consumption and reach a peak after 20-48 hours. In some individuals, however, these symptoms can appear within only 3-6 hours and can last for 1 week.[16]

### Tolerance

In humans, tolerance to some physiologic actions of caffeine can occur. This is the case for the effects of caffeine on blood pressure, heart rate, diuresis, plasma adrenaline and noradrenaline levels, and renin activity. Tolerance usually develops within a few days. Tolerance to

some subjective effects of caffeine, such as tension-anxiety, jitteriness, nervousness, and the strength of drug effect, has been shown.

### CONCLUSION

Caffeine is presented in many commercial products and has been proven to induce ergogenic effects in exercise, mainly related to redox status homeostasis, inflammation and oxidative stress-related adaptation mechanisms.[17]

Within a very large cohort of women, our findings show that higher caffeinated coffee intake is associated with a modest lowering in risk of postmenopausal breast cancer. Decaffeinated coffee intake does not seem to be associated with risk of breast cancer. The mechanism by which caffeinated coffee impacts breast cancer risk warrants further investigation.[18] Thus caffeine consumption must be limited and not to be consumed at larger levels.

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