

16. Caffeine

(2021 version)

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Introduction

Caffeine is a substance found in coffee, tea, cocoa, cola-based drinks, some energy drinks and chocolate. It is also an active ingredient in some cold and flu

medicines, decongestants and painkillers. Caffeine mainly comes from the coffee shrub, tea plant, coca beans and kola nuts but can also be made in laboratories.

How It Is Taken

Within the last few years, energy drinks including caffeine have become more popular, along with the more concentrated versions, known as 'shots'.

The content in caffeine drinks is often unknown by consumers. Some drinks contain less caffeine but are drunk in larger quantities with the end result of more caffeine consumed. Filter coffee has the highest caffeine content, as the coffee grounds stay in contact with the water for a longer time. Below is a table, which indicates these ranges but does not give exact amounts as caffeine content can vary greatly between similar products.

Drink/Product	Caffeine content (in mg)	
	Per 100ml	Per mug/can/tablet
Brewed tea	25-55	55-140
Tea	17-20	15-75
Green tea	10	10
Brewed coffee	45-85	97-210
Instant coffee	24-45	57-110
Decaffeinated coffee	1-3	5
Hot chocolate	2-3	5-17
Coca cola	10	32-40 (330ml can)
Coke Zero	9.5	45
Diet coke	12.8	42-45 (330ml can)
Pepsi cola	7-10	22
Red Bull	133	80
Red bull shot	32	80
Powerade Energy + Relentless	32	160
Double Espresso	174	150
Tall cappuccino	21	75
Tall Latte	21	75
Zen republic	46.5	116
Lucozade Alert	200	120
Plain chocolate		50 (one 50g bar)
Milk chocolate		25 (one 50g bar)
Pro Plus		50
Active Brain energy shot	306	68

200-500mg per day is seen as moderate use, 600-750mg per day is seen as high use and over 1,000mg per day is seen as a toxic amount but there are no official guidelines in the UK. In Canada, guidelines advice 4-6 year-olds not to have more than 45mg/day, 7-9 year-olds not to have more than 62mg per day and 10-12 year-olds not to have more than 85mg per day.

Teenagers have been advised not to have more than 100mg/day.

Health

Caffeine is a stimulant drug. It stimulates (speeds up) the working of the brain and body.

Short-term effects

Levels of caffeine in the blood tend to peak within an hour, and then drop after 3-4 hours. The timings depend on the individual's age, body make-up and liver function.

Once in the bloodstream, caffeine helps the user concentrate better and think more clearly. It increases heart rate and pulse, breathing and adrenaline. It is often part of socialising and can be an attractive break from work. It helps the user feel awake and alert instead of drowsy and tired, and can help speed up reaction times.

The negative short-term effects of caffeine on the body can include:

- Increased heart rate and blood pressure
- Anxiety
- Restlessness and irritability
- Production of more stomach acid and urine
- Heartburn, indigestion, irritation of stomach lining
- Stress
- Nausea
- Headache
- Muscle tremor
- Heart palpitations and irregular heart beats
- Insomnia

Long-term effects

Regular use of caffeine may lead to:

- Sleep problems
- Head aches
- Irritability, agitation
- Shaking hands and legs, palpitations

- Heart attack

Particularly for children and young people, sleep disruption can affect schools work as well as growth and brain development.

Caffeine and pregnancy

Caffeine consumption during pregnancy has been linked to babies with low birth weight, which can result in health problems later on in life. Too much caffeine can also cause miscarriage. Pregnant women are advised to limit their caffeine intake to no more than 200mg per day.

Caffeine and alcohol

This is a popular combination. However, caffeine makes the user feel less drunk and more alert, even though it does not actually improve reaction time and coordination. This can result in higher risk taking while drinking and is therefore a dangerous combination.

Dependence

Caffeine is physically addictive. Withdrawal symptoms usually appear around 18-24 hours after stopping and may last for 3-4 days. Symptoms may include nausea, headache, drowsiness, lethargy, depression, irritability and nervousness. The headache may be particularly severe if heavy use of caffeine is stopped suddenly. Heavy users are therefore advised not to stop all caffeine consumption at once, but to gradually reduce it, starting with the strongest sources of caffeine.

Tolerance

The body builds up tolerance towards caffeine so more is needed to achieve the same effect.

The Law

There are no legal restrictions around the sale or use of caffeine products. Some medicines containing caffeine are prescription-only.

The Food Standards Agency also states that drinks containing more than 150mg of caffeine per litre (15mg/100ml) must be labelled with the term 'high caffeine content' and it must indicate the amount of caffeine per 100ml. This does not apply to drinks like tea and coffee.

A code of practice was introduced in April 2010, which recommends labelling on drinks that contain caffeine from whatever source at a level over 150mg per litre. The label must say 'High caffeine content. Not recommended for children or pregnant or breast-feeding women'. It also states that drinks with high caffeine content should not be promoted or marketed to persons under age 16.

Caffeine Statistics

Last updated December 2020

Caffeine and children:

Findings from a European survey show that just under a quarter (24%) of children aged 6-10 surveyed in the UK had drunk energy drinks in the past year.

Across all countries surveyed, boys were more likely to have drunk them than girls. On average, these children drank about half a litre per week. A small proportion (16% of consumers or 3% of all the children surveyed) drank them three times a week or more.

Most children consuming energy drinks drank them at home (35%), during sport and physical exercise (27%) and at parties (26%). They mainly drank them for their taste (60%) and/or as a source of energy (31%). When asked whether they thought that drinking energy drinks was the same as drinking colas, just over half (55%) of consumers said that they were very different, 19% thought they were the same and 23% didn't know.

Caffeine and young people:

Results were also analysed for young people aged 10-18: About 7 in 10 (69%) of UK teenagers drank an energy drink in the past year. UK energy drink consumers drank more each on average (3.1 litres a month) compared to teenagers in other countries (around 2 litres average). About 13% of all young people surveyed in the UK drank energy drinks 4-5 times a week or more. About 8% of young people said they drank around a litre or more in a single session (i.e. over a couple of hours).

Again, across all countries, more boys than girls drank energy drinks. The main reasons young people gave were taste (40%), the need for energy (21%) and the need to stay awake (17%).

(Source: Mentor-ADEPIS Caffeine fact sheet, 2013)