

# Caffeine

Caffeine is a central nervous system stimulant. It is one of the most popular drugs in the world, consumed by up to 90% of people in the world in one form or another, but mostly in beverages. It is a naturally occurring substance found in plants like cocoa beans, tea leaves, and kola nuts.

Caffeine's strongest effects are felt for about an hour after taking it, but some effects last 4 to 6 hours. Caffeine causes increased neuron firing in the brain, which the pituitary gland perceives as an emergency and therefore causes the adrenal glands to release adrenaline. Caffeine also increases dopamine levels, the neurotransmitter that is affected by drugs like amphetamines and heroin. Obviously, it does this on a much lower level than those drugs, but this may be the source of caffeine's addictive quality.

While caffeine is mildly addictive, it has not been shown to have a direct link with any serious health risks. Still, anyone who has been up all night after drinking too much coffee can tell you that caffeine can affect a person's mood and sleep pattern.

Here are some of the frequent effects of caffeine:

- *Caffeine is a diuretic.* Caffeine prompts the body to lose water through urination. This can lead to dehydration and is the reason that caffeinated drinks are not a good idea when working out or doing other activities that require fluids. In fact, it is suggested that you add 8 ounces of water for every cup of coffee you drink.
- *Caffeine can cause you to feel jittery, skittish, restless, excitable or anxious.* It can temporarily speed the heart rate. If you're feeling stressed out, a cup of coffee can exacerbate, rather than help, this feeling. Too much caffeine can hurt a person's ability to concentrate, making it difficult to study.
- *Caffeine can cause insomnia.* It can be very hard to fall asleep when you take a lot of caffeine. This is especially true if you take it at night, but is also true of higher doses earlier in the day.
- Caffeine at high doses can cause headaches.
- *Some caffeinated beverages can have other health effects.* For instance, the acid in coffee can upset the stomach, and coffee (though not the caffeine in it) can worsen ulcers, raise blood pressure and blood cholesterol, and speed up the heart rate, increasing the risk of heart disease.
- *Caffeine can have negative effects on pregnant women or on women who would like to become pregnant* including an increased risk for difficult conception and miscarriage. Caffeine is transmitted through the placenta and through breast milk to the baby. Therefore, if you're pregnant or thinking about becoming pregnant, the FDA recommends that you stop taking caffeine or cut back to 1 cup per day.

## HOW DO I CUT BACK ON CAFFEINE?

Remember that caffeine is addictive. If you feel like you cannot get going in the morning, feel overtired during the day from not having caffeine, or get headaches when you try to stop taking caffeine regularly, these are signs of dependence.

If you are having trouble sleeping, feel like you are consuming too much caffeine or you do not like the effects of caffeine on your body, here are some suggestions for quitting or cutting back:

- Switch to decaffeinated beverages, or to a mixture of decaffeinated and regular coffee.

- Reduce the number of caffeinated drinks you have every day. If you have coffee in the morning and a Coke in the afternoon, try skipping the Coke and replace it with water or juice.
- Brew tea for a shorter time. The less time you brew it, the less caffeine it will contain. Try herbal teas, which usually do not contain caffeine.
- Watch out for soft drinks and energy drinks like Red Bull, which can contain added caffeine. The amount of caffeine will be listed on the label.
- If you are trying to quit and feel yourself getting a headache, you can try having a small amount of caffeine to alleviate the headache. For some people, this helps keep up the momentum to quit.
- Know what is in over-the-counter medications. They can contain large doses of caffeine.
- Drink water or non-caffeinated drinks when you are thirsty. Remember, caffeinated beverages will only add to your body's dehydration.

## HOW MUCH CAFFEINE AM I HAVING?

In the U.S., the average person drinks 200 milligrams a day (about two 8 ounce cups of coffee).

Beverage/Food	Serving Size	Average Amt. (mg)	Range (mg)
Brewed Coffee	8 ounce	85	65-120
Instant Coffee	8 ounce	75	60-85
Decaf, Brewed	8 ounce	3	2-4
Decaf, Instant	8 ounce	3	1-4
Espresso	2 ounce	80	60-100
Cappuchino/Latte	2 ounce	80	60-100
Moccachino	2 ounce	90	70-110
Black Tea	8 ounce	40	30-60
Decaf Black Tea	8 ounce	4	<5
Green Tea	8 ounce	40	30-50
Iced tea mix, unsweetened	8 ounce	13	
Iced tea, ready to drink	8 ounce	30	
Cocoa Beverage	5 ounce	5	2-20
Chocolate Milk	8 ounce	5	2-7
Dark Chocolate, semi-sweet	1 ounce	20	5-35

## WHAT OTHER STIMULANTS CONTAIN CAFFEINE?

Some herbal stimulants can contain naturally occurring caffeine, especially guarana and mate. This caffeine can have the same effects as coffee or tea. Be careful of energy drinks, which can contain up to 80 mg of caffeine and other stimulant ingredients.

## ENERGY DRINKS (ENERGY BOOSTING DRUGS)

Energy drinks are beverages like Red Bull, Venom, Adrenaline Rush, 180, ISO Sprint, and Whoopass, which contain large doses of caffeine and other legal stimulants like ephedrine, guarana, and ginseng. Energy drinks may contain as much as 80 mg of caffeine, the equivalent of a cup of coffee. In comparison, Mountain Dew has 37 mg of caffeine and Coca-Cola Classic has 23 mg.

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These drinks are marketed to people under 30, especially to college students, and are widely available both on and off campus. Many of these drinks are illegal in Canada because they use caffeine as an additive.

### DANGERS OF ENERGY DRINKS

Individual responses to caffeine vary. These drinks should be treated carefully because of how powerful they are.

- The stimulating properties of energy drinks can boost the heart rate and blood pressure (sometimes to the point of palpitations), dehydrate the body, and, like other stimulants, prevent sleep.
- Energy drinks should not be used while exercising as the combination of fluid loss from sweating and the diuretic quality of the caffeine can leave the user severely dehydrated.
- Energy drinks are also used as mixers with alcohol. This combination carries a number of dangers. Since energy drinks are stimulants and alcohol is a depressant, the combination of effects may be dangerous. The stimulant effects can mask how intoxicated you are and prevent you from realizing how much alcohol you have consumed. Fatigue is one of the ways the body normally tells someone that they have had enough to drink.
- The stimulant effect can give the person the impression they are not impaired. No matter how alert you feel, your blood alcohol concentration (BAC) is the same as it would be without the energy drink. Once the stimulant effect wears off, the depressant effects of the alcohol will remain and could cause vomiting in your sleep or respiratory depression.
- Both energy drinks and alcohol are very dehydrating (the caffeine in energy drinks is a diuretic). Dehydration can hinder your body's ability to metabolize alcohol and will increase the toxicity, and therefore, the hangover the next day.

Know what you are drinking. Energy drinks are not necessarily bad for you, but they should not be seen as "natural alternatives" either. Some of the claims they make like "improved performance and concentration" can be misleading. If you think of them as highly caffeinated drinks, you will have a more accurate picture of what they are and how they affect you. You would not use Mountain Dew as a sports drink. A drink like Red Bull and vodka is more like strong coffee and whisky than anything else.

### LINKS

#### How Stuff Works: Caffeine

<http://www.howstuffworks.com/caffeine.htm>

#### Center for Science in the Public Interest - Caffeine content of food and drugs

<http://www.cspinet.org/new/cafchart.htm>

#### Caffeine Addiction

[www.myaddiction.com/education/articles/caffeine\\_addiction.html](http://www.myaddiction.com/education/articles/caffeine_addiction.html)

#### Medline Plus

<http://www.nlm.nih.gov/medlineplus/druginfo/uspidi/202105.html>  
CNN - "Energy drinks pack a punch, but is it too much?"

<http://www.cnn.com/2001/HEALTH/diet.fitness/>

"Red Bull's Energy-Drink Claims May Be Hype -- But Not Its Sales"

<http://www.businessweek.com/bwdaily/>