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Mental health and substance use
information you can trust



**University
of Victoria**

Canadian Institute for
Substance Use Research

learn about **caffeine**



Because caffeine is a stimulant, it speeds up activity in the brain and other parts of the central nervous system.

What is caffeine?

Caffeine is a stimulant drug that is found in the seeds, leaves and fruit of over 60 types of shrubs, including coffee and tea plants. Caffeine can also be manufactured in a laboratory.

People have been using caffeine products for thousands of years. Today it is found in a variety of everyday foods and beverages such as chocolate, cocoa, coffee, tea, soft drinks and energy drinks. It is also commonly used in the making of pain relievers, cold medicines and other medications.

How does caffeine work?

Caffeine is absorbed through the stomach into the bloodstream. Because caffeine is a stimulant, it speeds up activity in the brain and other parts of the central nervous system.

Caffeine also blocks sleep-inducing chemicals and increases adrenaline production. Adrenaline is a “fight or flight” hormone that causes the heart to beat faster, blood to flow faster, muscles to tense up and other signs of alertness.

Why do people use caffeine?

Many people enjoy the taste of products that contain caffeine. Sipping a latte at lunch, or eating a piece of chocolate after dinner, brings pleasure to some people.

Students sometimes use caffeine tablets to power through long nights at the study table. Shift workers also use caffeine products to help adjust their minds and bodies to odd work hours.

An increasing number of young people use caffeinated energy drinks to improve their endurance and physical performance while playing sports. Some just like the extra boost they get.

In addition to keeping people alert and active, caffeine suppresses the appetite. This has made it popular as a diet aid.

Some people use painkillers containing caffeine because they want to avoid the drowsiness that often results from taking medication. Medical experts sometimes prefer that people use medications containing caffeine since

caffeine



the stimulant drug helps circulate the active ingredients in medicines. The more active the central nervous system, the faster the medicine flows through the body. Caffeine itself can also help cure headaches in some people.

What are the health effects of using caffeine?

Small amounts of caffeine can increase a person's heart rate, blood pressure and rate of urination.

A healthy adult who consumes a small amount of caffeine will usually experience wakefulness and an increase in their ability to concentrate. Caffeine may even improve a person's physical performance.

Some people are more sensitive to the effects of caffeine than others. Small amounts may make them feel nervous, irritable or restless. Large amounts may cause

- headaches,
- tremors,
- diarrhea,
- insomnia,
- anxiety, and
- rapid, irregular heartbeat.

When is using caffeine a problem?

Whenever a person's caffeine use negatively affects their life, or the lives of others, they have a problem with the substance.

Regular caffeine use can lead to mild dependence. This means users come to rely on the boost they get from the products they enjoy. Withdrawal symptoms from caffeine include irritability and fatigue.

These symptoms usually begin 12 to 24 hours after a person stops consuming caffeine, and will gradually fade within a few days.

Health Canada recommends healthy adults consume no more than 400 mg of caffeine per day, or the equivalent of about three 8-oz (237 ml) cups of brewed coffee.

caffeine

Using more than the recommended amounts of caffeine over time can increase the risk of health problems, including

- chronic insomnia,
- anxiety and depression,
- stomach upset,
- irregular heartbeat, and
- loss of bone density and increased risk of osteoporosis.

Excessive use of caffeine can be especially problematic when it involves

- **alcohol use.** Since caffeine (e.g., energy drinks) is a stimulant and alcohol is a depressant, combining energy drinks and alcohol may be dangerous. The stimulant effects can mask how intoxicated a person is and prevent them from realizing how much alcohol they have consumed. Fatigue is one of the ways the body normally tells someone that they've had enough to drink. What's more, both caffeine and alcohol are diuretics. Dehydration can hinder the body's ability to metabolize alcohol and will increase its toxicity. This means the person may suffer from a more severe hangover the next day.

- **sports and physical exercise.** The combination of fluid loss from sweating and the diuretic quality of caffeine can leave a person severely dehydrated. This is important to keep in mind when using energy drinks while playing sports.
- **children.** Excessive amounts of caffeine can cause behavioural problems in young people. Children 12 and under should not consume more than 2.5 mg of caffeine per kilogram of body weight.
- **pregnancy.** Caffeine is linked to miscarriages and low birth weight. Pregnant women should avoid caffeine or reduce their intake to no more than 300 mg per day.
- **mental health disorders.** Large amounts of caffeine can trigger nervousness and anxiety in people who have panic attacks.

- **low iron levels.** When consumed during or shortly after a meal, caffeine decreases iron absorption. People who need to take iron should avoid caffeine around eating times.

The recommended maximum daily amounts of caffeine for children are:

- 45 mg for children aged 4–6
- 62.5 mg for children aged 7–9
- 85 mg for children aged 10–12

These recommended amounts are equivalent to one to two 12 ounce (355 ml) cans of cola.

Caffeine counts

Coffee	1 cup = 40–180 mg
Decaffeinated coffee	1 cup = 2–5 mg
Tea	1 cup = 10–110 mg
Cola	12 oz or 355 ml = 30–60 mg
Stimulants	1 tablet = 100–250 mg
Painkillers	1 tablet = 30–100 mg
Dark chocolate	2 oz or 56 g = 40–50 mg
Milk chocolate	2 oz or 56 g = 3–20 mg
Energy drinks	8–16 oz or 237–480 ml = 80–300 mg

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What to do if you or someone you know is experiencing a substance use problem

For information about treatment options and resources throughout BC, call

Alcohol and Drug Information and Referral Service

1-800-663-1441 (throughout BC)

604-660-9382 (in Greater Vancouver)

For information about other drugs including nicotine and alcohol, visit the Here to Help website: www.heretohelp.bc.ca. The website also features detailed information on substances and mental health disorders.

You can also find information on a wide variety of substance use issues on the Canadian Institute for Substance Use Research website: www.cisur.ca.

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