

EXHIBIT 11



Overview

What is a caffeine overdose?

A caffeine overdose happens when you consume too much **caffeine** and it makes you sick. Healthcare providers sometimes call it caffeine toxicity. It's a type of **poisoning**.

Experts estimate that around 9 in 10 people in the U.S. have at least some caffeine every day. In small amounts, it has a stimulant effect — it can make you feel more awake, alert or like you have extra energy.

For most people, it's perfectly safe to enjoy a coffee, tea or soda. But there's a limit to how much caffeine your body can take in and process at once. If you have more than what's safe, you'll experience symptoms that can damage your body.

How much caffeine is too much?

The U.S. Food and Drug Administration (FDA) says that most adults can safely consume 400 milligrams of caffeine per day. That's around two or three 12-ounce cups of coffee.

The FDA doesn't list a safe amount of caffeine for children. But experts say that kids younger than 2 shouldn't have any caffeine. Children and teens should avoid highly caffeinated energy drinks.

Everyone's body responds differently to caffeine. Some people naturally have a higher tolerance to its effects than others. Certain health conditions and medications can make you more sensitive to its effects.

Talk to a healthcare provider about how much caffeine is safe for you or your kids. They'll give you a more specific amount based on your unique health.

Symptoms and Causes

Image content: This image is available to view online.

View image online (<https://my.clevelandclinic.org/-/scassets/images/org/health/articles/caffeine-overdose>)

You may experience overdose symptoms if you have an unsafe amount of caffeine.

What are caffeine overdose symptoms?

Caffeine overdose can cause lots of symptoms.

You might notice any of these symptoms at first:

- Increased heart rate
- Feeling like your heart is racing (heart palpitations)
- Headache
- Anxiety
- Feeling jittery or agitated
- Increased peeing
- Increased thirst (polydipsia)
- Diarrhea

- Trouble sleeping

Symptoms of a more serious overdose include:

- Trouble breathing or shortness of breath (dyspnea)
- Sudden high blood pressure (hypertension)
- Muscle twitching
- Confusion
- Nausea and vomiting
- Seizures

What causes a caffeine overdose?

Consuming too much caffeine causes a caffeine overdose.

Caffeine occurs naturally in some plants. It can also be a human-made chemical added to foods, drinks, medications and supplements. You can probably guess some of the most well-known caffeinated drinks, including:

- Coffee
- Tea
- Soda
- Hot chocolate
- Energy drinks

Manufacturers also add caffeine to lots of other products (including some you may not think of), including:

- Protein bars and pre- or post-workout snacks

- Sports or exercise recovery drinks
- Over-the-counter (OTC) medications like some decongestants and pain relievers
- Energy supplements advertised to help keep you awake (caffeine pills)
- OTC diet pills or appetite suppressants
- Chewing gum

It's more common for people to experience a caffeine overdose from supplements mixing highly caffeinated drinks with medication. But no matter where it comes from, if you ingest too much caffeine, your body can't process it fast enough and you may have an overdose.

What are caffeine overdose complications?

Severe complications of a caffeine overdose are rare, but can include:

- Low potassium in your blood (hypokalemia)
- High blood sugar (hyperglycemia)
- Too much acid in your blood (metabolic acidosis)
- Kidney damage
- Brain damage
- Heart damage

Diagnosis and Tests

How do healthcare providers diagnose a caffeine overdose?

A healthcare provider will diagnose a caffeine overdose with a **physical exam** and some tests. They might do a **neurological exam**.

They'll ask about your symptoms and when they first started.

Tell your provider anything you've drank, eaten or taken that has caffeine in it (and how much or how many you had).

Your provider will use **blood tests** to check for caffeine and/or higher levels of acid that mean your body is breaking down and processing it. They may also do a **urinalysis** to check your pee. You might need an **EKG** or **chest X-ray**, too, to see how your heart is working.

Management and Treatment

How do you treat a caffeine overdose?

Your provider will suggest treatments to manage any symptoms you're experiencing and help your body process the caffeine as safely as possible. What you'll need will depend on how much caffeine you've had and how it's affecting you.

You might not need any specific treatment. Your provider may suggest drinking water to stay hydrated and keeping an eye on any changes in your body. If you do need treatment, your provider may use:

- Intravenous (IV) fluids for hydration
- Medications to stabilize your blood pressure
- Activated charcoal to help your body process the caffeine
- Dialysis to support your kidneys

- **Defibrillation** to restore your normal heart rate

You might need other medications or treatments for specific symptoms.

Your provider will tell you what to expect.

Outlook / Prognosis

How long do caffeine overdose symptoms last?

How long a caffeine overdose lasts depends on its severity and how much excess caffeine you had. Caffeine usually takes three to 10 hours to break down in our bodies. But an overdose can last longer than that because your stomach absorbs caffeine very quickly when you first ingest it.

Some factors that can affect how long you experience symptoms include your:

- Age
- Weight
- Natural caffeine tolerance

Your healthcare provider will tell you what to expect and which signs of any complications to watch out for. They'll tell you when it's safe to return to eating and drinking normally and if it's safe to have caffeine again.

Can you die from a caffeine overdose?

It's rare, but a caffeine overdose can be fatal.

Even if you don't experience an overdose, regularly having unsafe levels of caffeine can damage your heart and central nervous system.

Prevention

Can you prevent a caffeine overdose?

Consuming only a safe amount of caffeine each day is the best way to avoid a caffeine overdose. That might sound obvious, but lots of foods and drinks may have more caffeine in them than you realize. Check the nutrition and ingredient labels on items to see if they contain caffeine (and how much).

The U.S. Department of Agriculture (USDA) keeps a **searchable database** that shows how much caffeine is in foods and drinks.

Help kids and teens understand the risks of having too much caffeine, and help your family make safe choices. Talk to a healthcare provider about how much caffeine is safe for you and your children.

Living With

When should I seek care for a caffeine overdose?

Get medical attention as soon as you think you're having any symptoms of a caffeine overdose — especially if you know you've had a lot of caffeine. Go to the emergency room or call 911 (or your local emergency services number).

In the U.S., you can also call the national Poison Help hotline at 1.800.222.1222. An expert will tell you what you should do and how to stay safe while you're waiting to get treatment.

Don't try to treat a caffeine overdose at home. Never make yourself or someone else vomit unless a poison control expert or healthcare provider tells you to.

Which questions should I ask my healthcare provider?

- Which treatments will I need?
- How long will it take me to recover?
- Is it safe for me to have caffeine again in the future?
- Which foods, drinks, medicines or supplements should I avoid?

A note from Cleveland Clinic

Everyone who drinks coffee or tea knows that pleasant extra zip can help you get through a long day. And using caffeine (even regularly) can be completely safe. But you might be having more caffeine every day than you realize. Keep an eye on how much you're having, and talk to a healthcare provider about how much caffeine is safe for you to use.

It usually takes a large amount of caffeine to cause an overdose, but it can cause some serious symptoms. Get medical help or call a poison control center right away if you think you're experiencing a caffeine overdose.

✓ **Medically Reviewed.** Last updated on 12/04/2024.

References

Cleveland Clinic's health articles are based on evidence-backed information and review by medical professionals to ensure accuracy, reliability and up-to-date clinical standards.

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