Coffee and Heart Health: How Many Cups Are Safe to Drink Each Day?

American Heart Association says consuming up to five cups of caffeinated coffee per day is safe for most adults and may be linked to cardiovascular health benefits.

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Statement Highlights:

- The latest research indicates that consuming up to 400 mg of caffeine/day (equivalent to up to five 8-ounce cups of caffeinated coffee per day) is generally safe for most adults and appears to be linked to a lower risk of several cardiovascular conditions, including heart failure, heart disease and stroke in some individuals.
- However, higher amounts of caffeine, such as levels found in energy drinks including energy shots, may increase the risk of high blood pressure and/or irregular heart rhythm or arrhythmia.
- More research is needed to better understand caffeine's impact on the body, how different sources of caffeine impact heart health and how its impact may vary among different people, according to the scientific statement.

DALLAS — Previous studies have found that caffeine is the world's most popular stimulant and psychoactive substance, and coffee is the most common way people consume caffeine. The latest research supports the conclusion that for most adults, consuming up to 400 mg of caffeine/day (or up to five 8-ounce cups of caffeinated coffee per day) is safe and appears to be linked to a lower risk of cardiovascular disease for some individuals. However, higher doses of caffeine, such as levels found in energy drinks including energy shots, may cause cardiovascular harm, according to a new American Heart Association scientific statement, "Caffeine and Cardiovascular Disease," published today [July 20] in the American Heart Association's flagship peer-reviewed scientific journal Circulation.

"Caffeine consumed in coffee is a key part of daily life for millions of people, and in our review of the most recent research, for most adults, intake of up to 400 mg of caffeine/day, the equivalent of up to five cups of caffeinated coffee per day without added sugars or fillers, is safe and does not

increase cardiovascular risk," said Chair of the scientific statement volunteer writing group Gregory M. Marcus, MD, MAS, FAHA, a professor of medicine at the University of California, San Francisco School of Medicine and the associate chief of Cardiology for Research at the University of California, San Francisco Health. "However, high doses of caffeine, such as those found in energy drinks including energy shots, may have harmful effects on the heart and should be avoided."

The statement authors note that studying the effects of caffeine on the cardiovascular system is challenging. Coffee is the main source of caffeine in most research studies, and the observed cardiovascular effects may be due to other compounds in coffee. For example, experimental studies suggest that the bioactive compounds in coffee may have antioxidant and anti-inflammatory properties, which may help explain some health benefits. It's also difficult to separate the effects of caffeine from other ingredients usually added to coffee, such as milk, cream, flavored syrups and/or sugar. In addition, most studies on caffeine are observational, meaning they cannot prove cause and effect.

Although coffee is the main source of caffeine for most adults, tea, chocolate, soda and energy drinks, as well as over-the-counter and prescription medications, also contribute to overall caffeine intake. More research is needed about other products with caffeine in order to understand caffeine content and caffeine's impact on cardiovascular health.

The new scientific statement details the most recent research primarily on caffeinated coffee and the potential impact of caffeine in coffee on high blood pressure, cholesterol, type 2 diabetes, coronary heart disease, stroke, heart failure, atrial fibrillation, other arrhythmias and other cardiovascular conditions.

Caffeine and cardiovascular health: key things to know

- Based on the results of the latest research studies reviewed, consuming up to 400 mg of caffeine per day, or no more than three to five 8-ounce cups of regular black caffeinated coffee per day (without sugars, sweeteners, flavors or added fillers), is considered safe for most adults. A regular brewed, non-specialty, caffeinated coffee typically contains 9.4 to 20.6 mg of caffeine per fluid ounce.
- Consuming caffeinated coffee without added sugars, flavors or cream was linked to a lower risk of type 2 diabetes, heart disease, stroke, heart failure and some irregular heart rhythms.
- Randomized trials, the most rigorous and reliable type of study design, have shown that caffeine consumption in coffee is associated with a lower risk of atrial fibrillation but also a higher risk of premature ventricular contractions.

- Adding sugar, flavored syrups, milk and/or cream to coffee likely reduces its potential health benefits, and more research is needed to understand the impact of these additives.
- Higher caffeine intake, such as levels found in energy drinks including energy shots, was associated with cardiovascular harm, such as increased risk of high blood pressure and irregular heart rhythm. Energy drink shots may contain 40 to 69 mg of caffeine per fluid ounce, three to four times more caffeine than regular caffeinated coffee.

How does caffeine affect the body?

Caffeine consumed in coffee is metabolized by the liver and generally reaches peak concentration for most people within an hour. However, how quickly individuals process caffeine depends on their genetics, metabolism, age and past caffeine use. When more caffeinated coffee is consumed regularly, some people may develop a tolerance to higher levels of caffeine. Other people may feel stronger effects from the same amount of caffeine. Short-term effects of caffeine may include temporary increases in blood pressure, heart rate, blood sugar and alertness. Some people may experience heart palpitations and/or sleep disruption.

Specific health impacts of caffeine:

- Effects on blood pressure: Studies have found that caffeinated coffee consumption may affect blood pressure differently depending on how much is consumed. In people with optimal blood pressure, drinking one to three cups a day was associated with an increased risk of developing high blood pressure, while drinking more than three cups per day was associated with a lower risk. High doses of caffeine (such as those from energy drinks or energy shots) can significantly increase blood pressure, especially in people who already have high blood pressure.

- Effects on type 2 diabetes: Research suggests that caffeinated coffee may reduce insulin sensitivity in the short term. In addition, drinking black, caffeinated coffee (no additives, flavors or sweeteners) regularly was linked to a lower risk of developing type 2 diabetes. However, this benefit may be due to compounds in coffee other than caffeine. More research is needed to clarify the impact on type 2 diabetes of caffeinated coffee vs. various compounds in coffee.

- Effects on cholesterol: Data from randomized clinical trials indicate cafestol, a component in

both caffeinated and decaffeinated coffee, was associated with higher levels of low-density lipoprotein (also known as “bad” cholesterol). Cafestol is present in unfiltered coffee (such as espresso, French press, Turkish coffee or boiled coffee) but not present in coffee brewed with paper filters or instant coffee. More research is needed to understand which products have higher levels of cafestol and their mechanisms.

- Effects on heart rhythm: The most recent analyses of health measures with self-reported information from participants have found that drinking one to three cups of caffeinated coffee per day was not associated with an increased risk of atrial fibrillation or abnormal heart rhythm. However, caffeinated coffee at that same level may be associated with more early beats from the lower chamber of the heart, called premature ventricular contractions (or PVCs). Very high doses of caffeine (such as those in caffeinated energy drinks or energy shots) have been linked to abnormal heart rhythm in people usually considered to have low cardiovascular disease risk, such as healthy adults younger than age 30.

- Effects on heart disease and stroke: Drinking two to four cups of caffeinated coffee per day was linked to a lower risk of heart disease, heart failure and stroke. However, drinking more than four cups of caffeinated coffee a day may increase the risk of heart failure.

Not all sources of caffeine are the same

More research is necessary to investigate the different health impacts of various types of caffeinated coffee and other products with caffeine, such as tea, soda, energy drinks and energy shots, and foods. There have been fewer studies focused on tea vs. coffee; however, tea has been associated with reduced risk of atrial fibrillation, heart failure and stroke, similar to caffeinated coffee.

Energy drinks, bars, gels and caffeine-based supplements often contain other added ingredients that may increase the absorption of caffeine, may accelerate its effects on the body, may raise blood pressure and increase the risk of cardiovascular harm.

More randomized controlled trials investigating the effects of caffeine in coffee and other products that have caffeine on cardiovascular health are needed to better understand how caffeine affects different people and how different sources of caffeine impact heart health. The writing group emphasized that there is also a need for research focused on caffeinated energy drinks and other popular products containing caffeine. Due to the lack of sufficient, rigorous data to develop

guidance on recommendations for caffeine intake, caffeine was not referenced in the Association's 2026 Dietary Guidance to Improve Cardiovascular Health.

"Although research suggests that caffeine consumption may be associated with certain cardiovascular benefits for some people, it's important to remember that there is no 'one-size-fits-all' strategy for safe caffeine consumption. People can respond very differently to caffeine based on various factors, such as age, medications, underlying health conditions, genetics and how quickly their bodies metabolize it. What may be a reasonable amount for one person could cause unwanted effects, such as heart palpitations, anxiety or sleep disruption, in another. That's why it's important to pay attention to how your body responds to caffeine and talk with your healthcare team about what is right for you," Marcus said.

This scientific statement was prepared by the volunteer writing group on behalf of the American Heart Association's Council on Lifestyle and Cardiometabolic Health; the Council on Clinical Cardiology; and the Stroke Council. American Heart Association scientific statements promote greater awareness about cardiovascular diseases and stroke issues and help facilitate informed health care decisions. Scientific statements outline what is currently known about a topic and what areas need additional research. While scientific statements inform the development of guidelines, they do not make treatment recommendations. American Heart Association guidelines provide the Association's official clinical practice recommendations.

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