

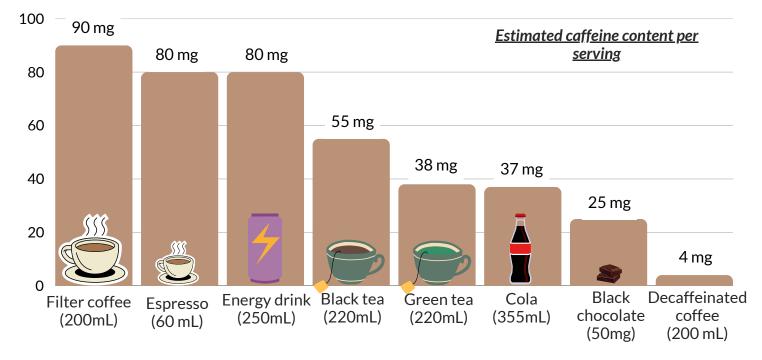
NUTRIACTIS® FOCUS - MAY 2025



CAFFEINE

Document produced as part of the partnership between: BNP Paribas Cardif and CHU Rouen-Normandie For any questions: nutriactis@chu-rouen.fr

Caffeine is the most widely consumed stimulant in the world. It is mainly found in coffee and tea, but it also hides in other food products such as energy drinks, sodas, chocolate, coffee-flavored items, and even chewing gum. As it is present in many everyday foods, it's only natural that caffeine piques our curiosity and raises questions about its effects. In this newsletter, we invite you to further explore the world of caffeine and discover some fun facts about it on the last page.



These values are provided for reference only and may vary.



Did you know?

Theine and caffeine actually the same molecule! Historically, a distinction was made because the two compounds were isolated from different plants. Since then, scientists have discovered they chemically identical. are

The amount of caffeine in a cup of tea or coffee can vary depending on the variety of the also tea/coffee, but preparation method:

- steeping time
- equipment used
- water temperature for
- amount of leaves/beans used

What happens after caffeine ingestion?

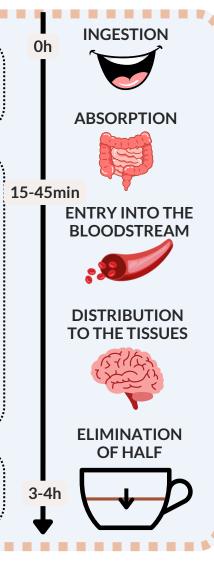
Caffeine is almost entirely absorbed within 15 to 45 minutes after ingestion, reaching the bloodstream.

It is then **distributed throughout the body** (e.g., muscles, organs), including the **brain**, one of its main sites of action. Blood caffeine concentration usually peaks around one hour after ingestion. This is when its stimulating effect on the brain is most intense.

This stimulating effect is due to how caffeine works: it mainly acts by blocking adenosine receptors — adenosine being a substance that promotes drowsiness.

Caffeine's effects are **dose-dependent**, meaning the more you consume, the more noticeable the effects.

About half of the caffeine is eliminated from the body after 3 to 4 hours, depending on the dose.



The above-mentioned durations are averages and can actually vary:



- Caffeine is absorbed more slowly if consumed during a meal.
- The duration of caffeine's effects also varies depending on the individual and their clinical condition (e.g., illnesses, pregnancy, etc.).
- The rate of caffeine elimination can depend on many factors: smoking, age, dietary habits, or the simultaneous use of certain medications.

Common misconceptions



"Caffeine dehydrates" - FALSE

Although caffeine has diuretic effects (substance that increases urine production), moderate consumption of coffee or tea does not lead to significant dehydration and actually contributes to overall hydration.



"Caffeine causes addiction" - PARTIALLY FALSE

Caffeine can lead to use-related disorders, but it is **not officially recognized as an addictive substance by the WHO or the American Psychiatric Association**. However, caffeine withdrawal is well documented, with clearly described symptoms such as headaches.

Consumption Recommendations



Healthy adults: Max 400 mg/day (~4 cups of coffee)



Pregnant/breastfeeding women:

Max 200 mg/day

(~2 cups of coffee)



Children/teenagers: Max 3 mg / kg of body weight / day (~1.5 cups of coffee for a 50 kg teenager)

Don't forget to add up all sources of caffeine (soda, chocolate, etc.). Also, be mindful of the amount of sugar added to your drinks.

Avoid combining:



Both coffee and physical activity increase blood pressure, which can lead to a higher risk of tachycardia.

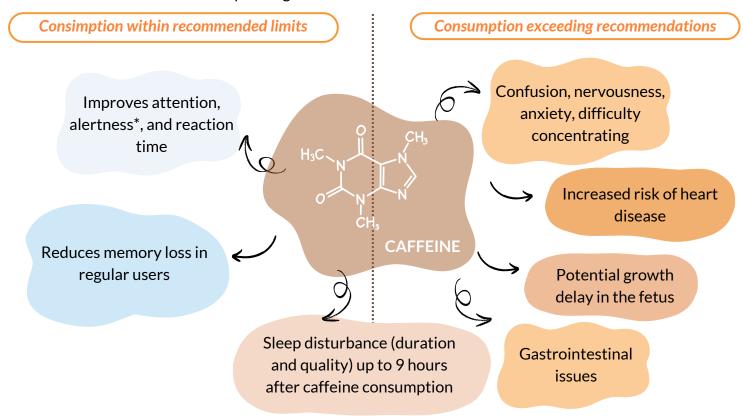


Alcohol and caffeine

Coffee can mask the effects of alcohol, potentially encouraging risky behaviors.

Effects of caffeine consumption

Caffeine has different effects depending on the amount consumed:



*Attention: ability to focus on a specific task

Alertness: ability to stay awake and perform a task over a long period

Conclusion

When **consumed in moderation**, caffeine can offer certain **short-term benefits**. However, in excess, it can quickly cause **side effects** and negatively **impact health and quality of life**.

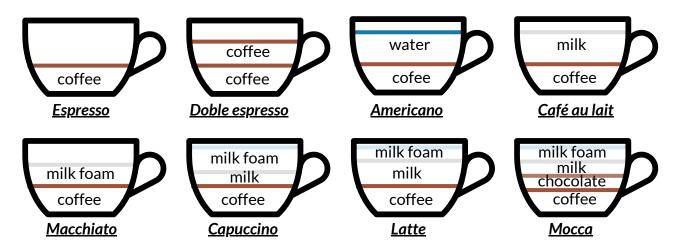
To enjoy its benefits, remember: moderation is key!



Coffee Preparation: A True Art



Some Popular Coffee Types



Latte art

Different coffee types can be beautifully enhanced with decorative patterns on the surface, giving rise to what we call latte art.



References

- Abalo, Raquel. 2021. « Coffee and Caffeine Consumption for Human Health ». Nutrients 13 (9): 2918. https://doi.org/10.3390/nu13092918.
- Borro, Lucas. s. d. « Effets cognitifs et comportementaux du café et de la caféine ».
- Gardiner, Carissa, Jonathon Weakley, Louise M. Burke, Gregory D. Roach, Charli Sargent, Nirav Maniar, Andrew Townshend, et Shona L. Halson. 2023. « The Effect of Caffeine on Subsequent Sleep: A Systematic Review and Meta-Analysis ». Sleep Medicine Reviews 69 (juin):101764. https://doi.org/10.1016/j.smrv.2023.101764.
- « La caféine : nos conseils pour éviter des effets indésirables ». 2022. Anses Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail. 30 septembre 2022. https://www.anses.fr/fr/content/la-cafeine-nos-conseils-pour-eviter-des-effets-indesirables.
- Maughan, R. J., et J. Griffin. 2003. « Caffeine Ingestion and Fluid Balance: A Review ». Journal of Human Nutrition and Dietetics: The Official Journal of the British Dietetic Association 16 (6): 411-20. https://doi.org/10.1046/j.1365-277x.2003.00477.x.
- McLellan, Tom M., John A. Caldwell, et Harris R. Lieberman. 2016. « A review of caffeine's effects on cognitive, physical and occupational performance ». Neuroscience & Biobehavioral Reviews 71 (décembre):294-312. https://doi.org/10.1016/j.neubiorev.2016.09.001.
- Reddy, Vundrala Sumedha, S. Shiva, Srinidhi Manikantan, et Seeram Ramakrishna. 2024. « Pharmacology of caffeine and its effects on the human body ». European Journal of Medicinal Chemistry Reports 10 (avril):100138. https://doi.org/10.1016/j.ejmcr.2024.100138.
- « Safety of Caffeine | EFSA ». 2015. 27 mai 2015. https://www.efsa.europa.eu/en/efsajournal/pub/4102.
- Song, Xinjie, Mahendra Singh, Kyung Eun Lee, Ramachandran Vinayagam, et Sang Gu Kang. 2024. «
 Caffeine: A Multifunctional Efficacious Molecule with Diverse Health Implications and Emerging
 Delivery Systems ». International Journal of Molecular Sciences 25 (22): 12003.
 https://doi.org/10.3390/ijms252212003.
- « Teneur en caféine de différents aliments et boissons ». s. d. Consulté le 17 février 2025. https://www.eufic.org/fr/une-vie-saine/article/teneur-en-cafeine-de-differents-aliments-et-boissons/.