

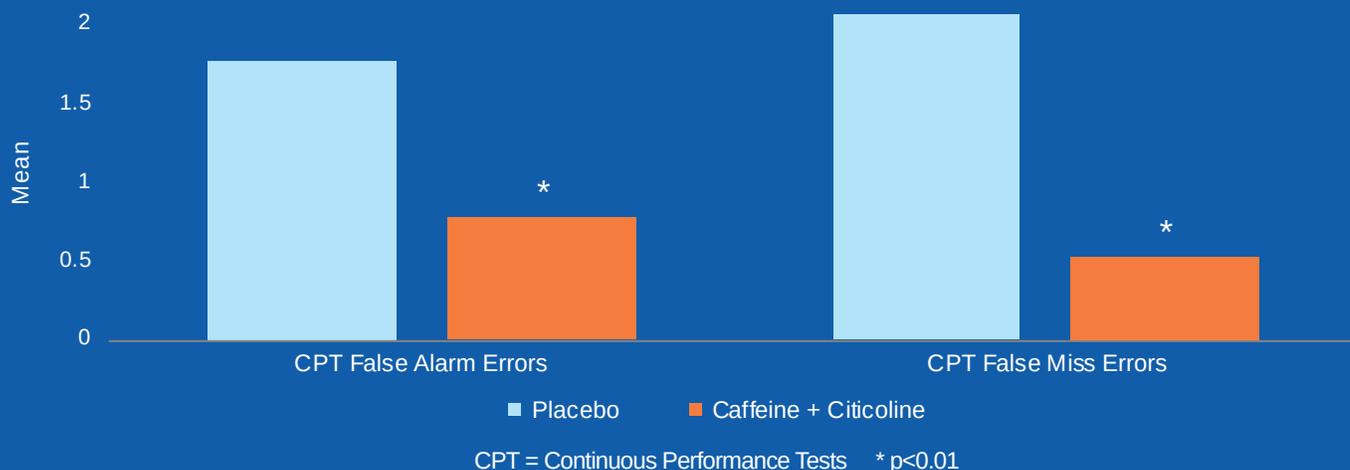
Health & Nutrition Sciences

Caffeine and Citicoline: Help Support Mental Boost

Consumers want to focus, and are turning to other ingredients beyond just caffeine.

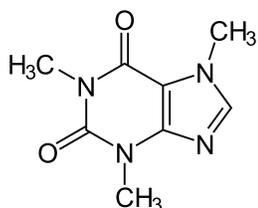
In addition to caffeine's positive effect on attention,^{1,2} its combination with citicoline has also been shown to help improve attention.^{3,4}

Two studies showed that people who consumed 100mg caffeine with 250mg citicoline had improved performance (i.e. fewer errors and better accuracy) or brain activity, compared to placebo, during a series of sustained attention cognitive tests.^{3,4}



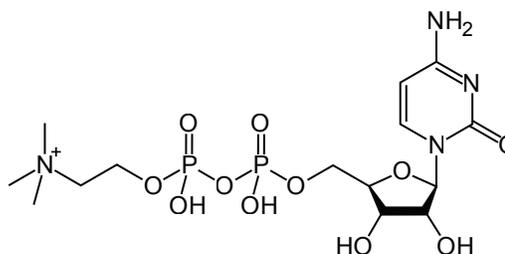
Adapted from Bruce et al. 2014⁴

What is caffeine?



A stimulant found in several edible plants such as cocoa beans, kola nuts, tea leaves and coffee beans.

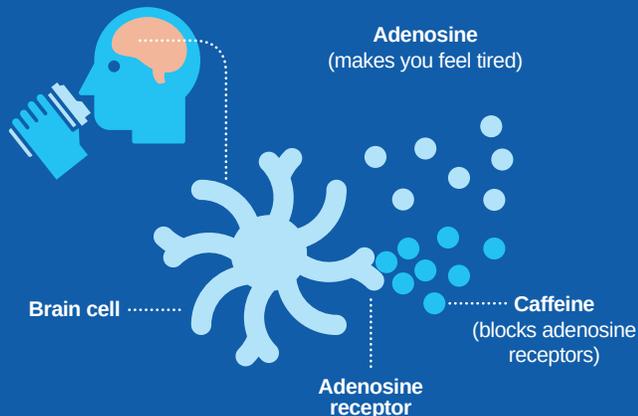
What is citicoline?



A nucleotide composed of a combination of cytidine and choline. It is present in every cell of the human body and found in very small amounts in food (e.g. organ meats).

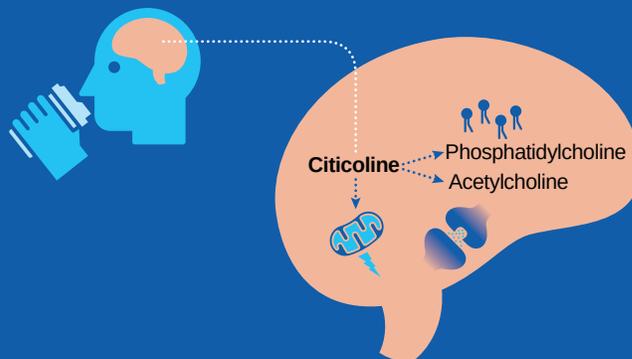
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What does caffeine do in the brain?



- Blocks the action of adenosine on its receptors which prevents the onset of drowsiness induced by adenosine

What does citicoline do in the brain?



- Stabilizes neuronal cell membranes by increasing phospholipids such as phosphatidylcholine
- Boosts neurotransmitters such as acetylcholine that keep the nervous system running smoothly
- Stimulates mitochondria to produce more energy

Mountain Dew Energy contains 180mg of caffeine and 250mg of citicoline in combination to help support mental boost.



References:

1. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA.) (2011.) Scientific Opinion on the substantiation of health claims related to caffeine and increased fat oxidation leading to a reduction in body fat mass (ID 735, 1484), increased energy expenditure leading to a reduction in body weight (ID 1487), increased alertness (ID 736, 1101, 1187, 1485, 1491, 2063, 2103) and increased attention (ID 736, 1485, 1491, 2375) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal, 9(4), 2054.
2. Einöther, S. J., & Giesbrecht, T. (2013). Caffeine as an attention enhancer: reviewing existing assumptions. Psychopharmacology, 225(2), 251–274.
3. Bruce, S. E. (2012). Improvements in quantitative EEG following consumption of a natural citicoline-enhanced beverage. International Journal of Food Sciences and Nutrition, 63(4), 421-425.
4. Bruce, S. E., Werner, K. B., Preston, B. F., & Baker, L. M. (2014). Improvements in concentration, working memory and sustained attention following consumption of a natural citicoline–caffeine beverage. International Journal of Food Sciences and Nutrition, 65(8), 1003-1007.