



Search

Advanced

User Guide

Save

Email

Send to

Display options 

> [Nutr Rev.](#) 2013 Oct;71(10):665–81. doi: 10.1111/nure.12065.

Effects of chocolate on cognitive function and mood: a systematic review

[Andrew Scholey](#), [Lauren Owen](#)
PMID: 24117885 DOI: [10.1111/nure.12065](#)

Abstract

A systematic review was conducted to evaluate whether chocolate or its constituents were capable of influencing cognitive function and/or mood. Studies investigating potentially psychoactive fractions of chocolate were also included. Eight studies (in six articles) met the inclusion criteria for assessment of chocolate or its components on mood, of which five showed either an improvement in mood state or an attenuation of negative mood. Regarding cognitive function, eight studies (in six articles) met the criteria for inclusion, of which three revealed clear evidence of cognitive enhancement (following cocoa flavanols and methylxanthine). Two studies failed to demonstrate behavioral benefits but did identify significant alterations in brain activation patterns. It is unclear whether the effects of chocolate on mood are due to the orosensory characteristics of chocolate or to the pharmacological actions of chocolate constituents. Two studies have reported acute cognitive effects of supplementation with cocoa polyphenols. Further exploration of the effect of chocolate on cognitive facilitation is recommended, along with substantiation of functional brain changes associated with the components of cocoa.

[PubMed Disclaimer](#)

Similar articles

[Effect of cocoa on blood pressure.](#)

Ried K, Sullivan TR, Fakler P, Frank OR, Stocks NP.
Cochrane Database Syst Rev. 2012 Aug 15;(8):CD008893. doi: 10.1002/14651858.CD008893.pub2.
Update in: [Cochrane Database Syst Rev.](#) 2017 Apr 25;4:CD008893. doi: 10.1002/14651858.CD008893.pub3.
PMID: 22895979

[Effect of cocoa on blood pressure.](#)

Ried K, Fakler P, Stocks NP.
Cochrane Database Syst Rev. 2017 Apr 25;4(4):CD008893. doi: 10.1002/14651858.CD008893.pub3.
PMID: 28439881 **Free PMC article.**

[Folic acid with or without vitamin B12 for cognition and dementia.](#)

Malouf M, Grimley EJ, Areosa SA.
Cochrane Database Syst Rev. 2003;(4):CD004514. doi: 10.1002/14651858.CD004514.
Update in: [Cochrane Database Syst Rev.](#) 2008 Oct 08;(4):CD004514. doi: 10.1002/14651858.CD004514.pub2.
PMID: 14584018

[Pharmacotherapy for chronic cognitive impairment in traumatic brain injury.](#)

Dougall D, Poole N, Agrawal N.
Cochrane Database Syst Rev. 2015 Dec 1;2015(12):CD009221. doi: 10.1002/14651858.CD009221.pub2.
PMID: 26624881 **Free PMC article.**

[Interventions for the treatment of brain radionecrosis after radiotherapy or radiosurgery.](#)

Chung C, Bryant A, Brown PD.
Cochrane Database Syst Rev. 2018 Jul 9;7(7):CD011492. doi: 10.1002/14651858.CD011492.pub2.
PMID: 29987845 **Free PMC article.**

[See all similar articles](#)

Cited by

[Fuel for Thought? A Systematic Review of Neuroimaging Studies into Glucose Enhancement of Cognitive Performance.](#)

Peters R, White D, Cleeland C, Scholey A.
Neuropsychol Rev. 2020 Jun;30(2):234–250. doi: 10.1007/s11065-020-09431-x. Epub 2020 Mar 11.
PMID: 32162177 **Free PMC article.**

[Beneficial Effects of Dark Chocolate for Episodic Memory in Healthy Young Adults: A Parallel-Groups Acute Intervention with a White Chocolate Control.](#)

Lamport DJ, Christodoulou E, Achilleos C.
Nutrients. 2020 Feb 14;12(2):483. doi: 10.3390/nu12020483.
PMID: 32075015 **Free PMC article.**

[Chocolate, Air Pollution and Children's Neuroprotection: What Cognition Tools should be at Hand to Evaluate Interventions?](#)

Calderón-Garcidueñas L, San Juan Chávez V, Vacaseydel-Aceves NB, Calderón-Sánchez R, Macías-Escobedo E, Frías C, Giacometto M, Velasquez L, Félix-Villarreal R, Martin JD, Draheim C, Engle RW.
Front Pharmacol. 2016 Aug 11;7:232. doi: 10.3389/fphar.2016.00232. eCollection 2016.
PMID: 27563291 **Free PMC article.** Review.

[Plant-Based Dietary Patterns, Plant Foods, and Age-Related Cognitive Decline.](#)

Rajaram S, Jones J, Lee GJ.
Adv Nutr. 2019 Nov 1;10(Suppl_4):S422–S436. doi: 10.1093/advances/nmz081.
PMID: 31728502 **Free PMC article.** Review.

[Swiss chocolate and free beverages to increase the motivation for scientific work amongst residents: a prospective interventional study in a non-academic teaching hospital in Switzerland.](#)

Rühle A, Oehme F, Link BC, Metzger J, Fischer H, Stickel M, Delagrammaticas DE, Babst R, Beeres FJP.
Trials. 2020 Jan 13;21(1):74. doi: 10.1186/s13063-019-3956-5.
PMID: 31931852 **Free PMC article.**

[See all "Cited by" articles](#)

Publication types

- > [Research Support, Non-U.S. Gov't](#)
- > [Systematic Review](#)

MeSH terms

- > [Affect / drug effects*](#)
- > [Affect / physiology](#)
- > [Cacao* / chemistry](#)
- > [Candy](#)
- > [Cognition / drug effects*](#)
- > [Cognition / physiology](#)
- > [Humans](#)
- > [Polyphenols / pharmacology*](#)
- > [Xanthines / pharmacology*](#)

Substances

- > [Polyphenols](#)
- > [Xanthines](#)
- > [methylxanthine](#)

Related information

[Cited in Books](#)
[PubChem Compound \(MeSH Keyword\)](#)

LinkOut – more resources

Full Text Sources
[Ovid Technologies, Inc.](#)
[Silverchair Information Systems](#)
[Wiley](#)

Other Literature Sources
[scite Smart Citations](#)

Miscellaneous
[NCI CPTAC Assay Portal](#)

FULL TEXT LINKS



ACTIONS

-  [Cite](#)
-  [Collections](#)
-  [Permalink](#)

PAGE NAVIGATION

< [Title & authors](#)

- [Abstract](#)
- [Similar articles](#)
- [Cited by](#)
- [Publication types](#)
- [MeSH terms](#)
- [Substances](#)
- [Related information](#)
- [LinkOut – more resources](#)

