MYTH BUSTERS: NEUROLOGY EDITION

Dr. Richard Harris

OUTLINE

Low Dose Alcohol Is Healthy

Is Sugar Addictive?

Nootropics

BRAIN HEALTH

› Nat Commun. 2022 Mar 4;13(1):1175. doi: 10.1038/s41467-022-28735-5.

Associations between alcohol consumption and gray and white matter volumes in the UK Biobank

Remi Daviet [1], Gökhan Aydogan [2], Kanchana Jagannathan [3], Nathaniel Spilka [3], Philipp D Koellinger [4 5], Henry R Kranzler [3 6], Gideon Nave [7], Reagan R Wetherill [8]

Affiliations + expand

PMID: 35246521 PMCID: PMC8897479 DOI: 10.1038/s41467-022-28735-5

LOW DOSE ALCOHOL IS HEALTHY

Meta-Analysis > JAMA Netw Open. 2023 Mar 1;6(3):e236185.
doi: 10.1001/jamanetworkopen.2023.6185.

Association Between Daily Alcohol Intake and Risk of All-Cause Mortality: A Systematic Review and Meta-analyses

Jinhui Zhao [1], Tim Stockwell [1], Tim Naimi [1], Sam Churchill [1], James Clay [2], Adam Sherk [1]

Affiliations + expand

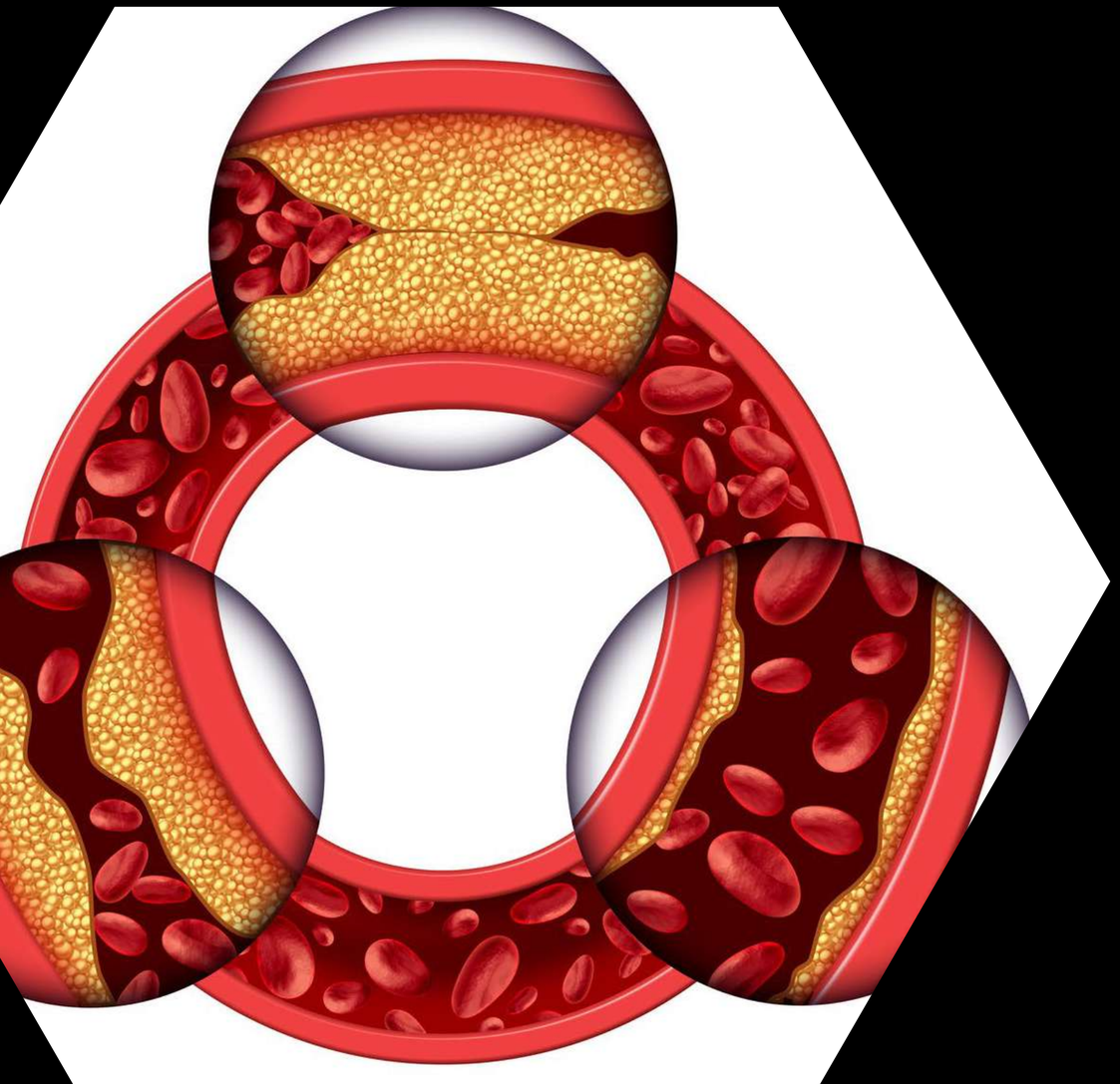
PMID: 37000449 PMCID: PMC10066463 DOI: 10.1001/jamanetworkopen.2023.6185

HEART HEALTH

JAMA Netw Open. 2022 Mar; 5(3): e223849. PMCID: PMC8956974
Published online 2022 Mar 25. doi: 10.1001/jamanetworkopen.2022.3849 PMID: 35333364

Association of Habitual Alcohol Intake With Risk of Cardiovascular Disease

Kiran J. Biddinger, [1,2,3] Connor A. Emdin, MD, DPhil, [1,2] Mary E. Haas, PhD, [1,2,4] Minxian Wang, PhD, [1,2] George Hindy, MD, [1,2,4,5] Patrick T. Ellinor, MD, PhD, [1,3] Sekar Kathiresan, MD, [1,2,6] Amit V. Khera, MD, MSc, [1,2] and Krishna G. Aragam, MD, MS [1,2,3]



HEART HEALTH

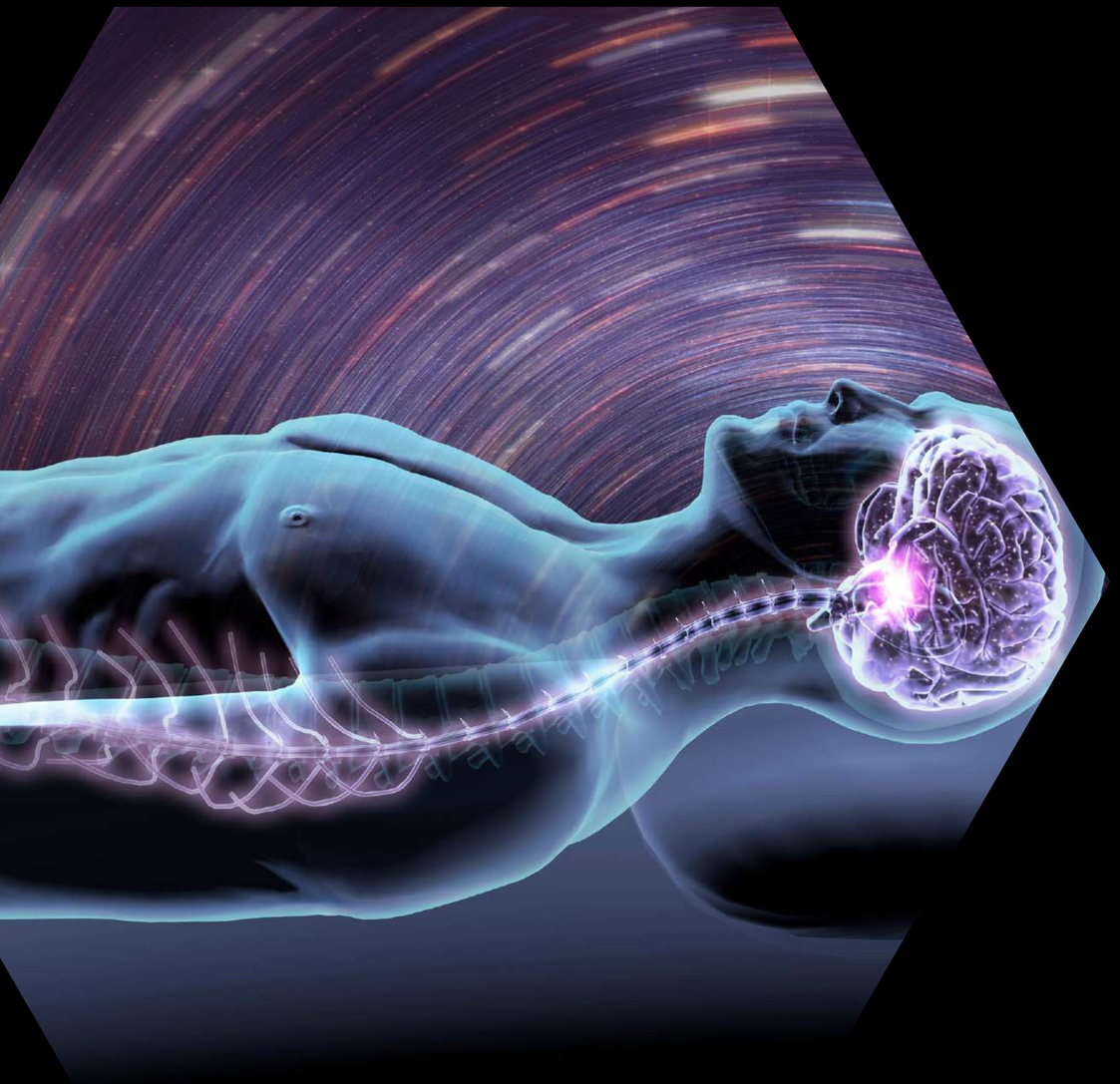
Meta-Analysis > J Stud Alcohol Drugs. 2017 May;78(3):375-386. doi: 10.15288/jsad.2017.78.375.

Alcohol Consumption and Mortality From Coronary Heart Disease: An Updated Meta-Analysis of Cohort Studies

Jinhui Zhao [1], Tim Stockwell [1 2 3], Audra Roemer [1 2], Timothy Naimi [4], Tanya Chikritzhs [3 5]

Affiliations + expand

PMID: 28499102 PMCID: PMC5440363 DOI: 10.15288/jsad.2017.78.375



SLEEP & ALCOHOL

Review > Handb Clin Neurol. 2014:125:415-31. doi: 10.1016/B978-0-444-62619-6.00024-0.

Alcohol and the sleeping brain

Ian M Colrain [1], Christian L Nicholas [2], Fiona C Baker [3]

Affiliations + expand

PMID: 25307588 PMCID: PMC5821259 DOI: 10.1016/B978-0-444-62619-6.00024-0

> Sleep Health. 2019 Oct;5(5):495-500. doi: 10.1016/j.sleh.2019.06.005. Epub 2019 Aug 12.

Use of alcohol as a sleep aid, unhealthy drinking behaviors, and sleeping pill use among women veterans

C Amanda Schweizer [1], Katherine J Hoggatt [2], Donna L Washington [3], Bevanne Bean-Mayberry [1], Elizabeth M Yano [4], Michael N Mitchell [5], Cathy A Alessi [6], Jennifer L Martin [7]

Affiliations + expand

PMID: 31416799 PMCID: PMC6801087 DOI: 10.1016/j.sleh.2019.06.005

SLEEP & ALCOHOL

Sleep. 2018 Aug 1;41(8):zsy091. doi: 10.1093/sleep/zsy091.

Insomnia as a path to alcoholism: tolerance development and dose escalation

Timothy Roehrs [1] [2], Thomas Roth [1] [2]

Affiliations + expand

PMID: 29762764 PMCID: PMC6093330 DOI: 10.1093/sleep/zsy091


R.
E.
M.


SLEEP

SLEEP & ALCOHOL

Sleep. 2018 Aug 1;41(8):zsy091. doi: 10.1093/sleep/zsy091.

Insomnia as a path to alcoholism: tolerance development and dose escalation

Timothy Roehrs [1] [2], Thomas Roth [1] [2]

Affiliations + expand

PMID: 29762764 PMCID: PMC6093330 DOI: 10.1093/sleep/zsy091

SUGAR ADDICTION

› Front Nutr. 2022 Aug 18:9:897952. doi: 10.3389/fnut.2022.897952. eCollection 2022.

Trends in added sugars intake and sources among U.S. adults using the National Health and Nutrition Examination Survey (NHANES) 2001–2018

Loretta DiFrancesco [1], Victor L Fulgoni 3rd [2], P Courtney Gaine [3], Maria O Scott [3], Laurie Ricciuto [4]

Affiliations + expand

PMID: 36061886 PMCID: PMC9434277 DOI: 10.3389/fnut.2022.897952


point of
Addiction
some habit
narcotic d

SUGAR ADDICTION

Review > Eur J Nutr. 2016 Nov;55(Suppl 2):55-69. doi: 10.1007/s00394-016-1229-6. Epub 2016 Jul 2.

Sugar addiction: the state of the science

Margaret L Westwater [1 2], Paul C Fletcher [2 3 4], Hisham Ziauddeen [5 6 7 8]

Affiliations + expand

PMID: 27372453 PMCID: PMC5174153 DOI: 10.1007/s00394-016-1229-6

DOPAMINE

$C_8H_{11}NO_2$

SUGAR ADDICTION

Addict Behav Rep. 2015 Jun 5:2:41-48. doi: 10.1016/j.abrep.2015.05.007. eCollection 2015 Dec.

Foods and dietary profiles associated with 'food addiction' in young adults

Kirrilly M Pursey [1 2], Clare E Collins [1 2], Peter Stanwell [1 3], Tracy L Burrows [1 2]

Affiliations + expand

PMID: 29531992 PMCID: PMC5845925 DOI: 10.1016/j.abrep.2015.05.007


NOOTROPIC

MINDFULNESS

› Aging (Albany NY). 2023 Mar 22;15(6):1833-1839. doi: 10.18632/aging.204602. Epub 2023 Mar 22.

Potential reversal of biological age in women following an 8-week methylation-supportive diet and lifestyle program: a case series

Kara N Fitzgerald [1], Tish Campbell [2], Suzanne Makarem [2], Romilly Hodges [3]

Affiliations + expand

PMID: 36947707 PMCID: PMC10085584 DOI: 10.18632/aging.204602

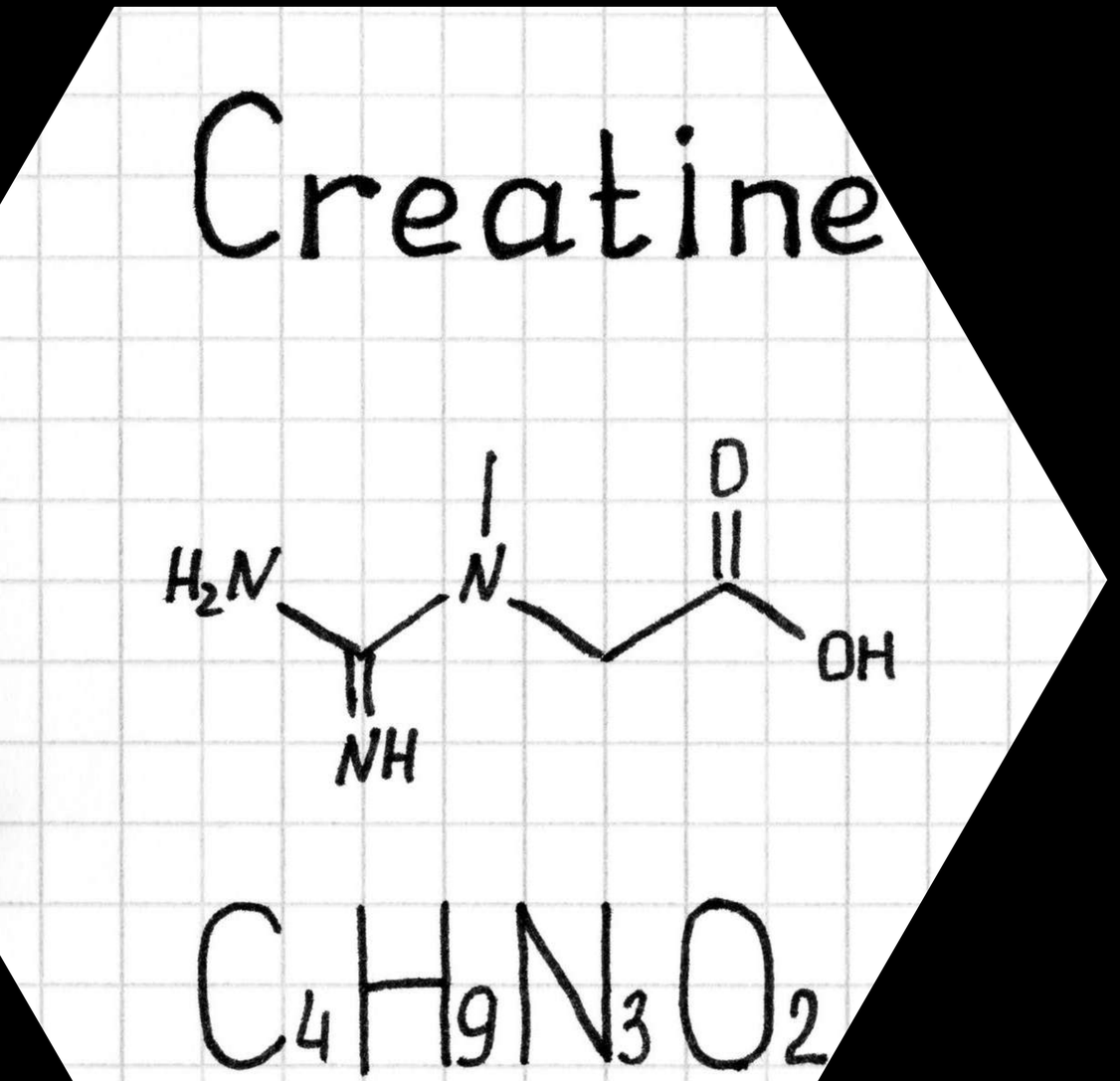
Randomized Controlled Trial › Sci Rep. 2023 Nov 24;13(1):20646.
doi: 10.1038/s41598-023-46578-y.

The effect of ten versus twenty minutes of mindfulness meditation on state mindfulness and affect

Robert Palmer [1], Corey Roos [1], Nilofar Vafaie [1 2], Hedy Kober [3]

Affiliations + expand

PMID: 38001316 PMCID: PMC10673854 DOI: 10.1038/s41598-023-46578-y



CREATINE

Exp Gerontol. 2018 Jul 15:108:166-173. doi: 10.1016/j.exger.2018.04.013. Epub 2018 Apr 25.

Effects of creatine supplementation on cognitive function of healthy individuals: A systematic review of randomized controlled trials

Konstantinos I Avgerinos [1], Nikolaos Spyrou [2], Konstantinos I Bougioukas [3], Dimitrios Kapogiannis [4]

Affiliations + expand

PMID: 29704637 PMCID: PMC6093191 DOI: 10.1016/j.exger.2018.04.013

CREATINE

Meta-Analysis > Nutr Rev. 2023 Mar 10;81(4):416-427. doi: 10.1093/nutrit/nuac064.

Effects of creatine supplementation on memory in healthy individuals: a systematic review and meta-analysis of randomized controlled trials

Konstantinos Prokopidis [1 2], Panagiotis Giannos [2 3], Konstantinos K Triantafyllidis [2 4], Konstantinos S Kechagias [2 5 6], Scott C Forbes [7], Darren G Candow [8]

Affiliations + expand

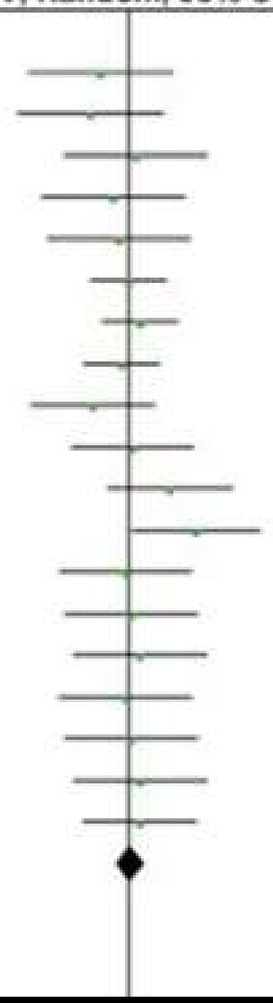
PMID: 35984306 PMCID: PMC9999677 DOI: 10.1093/nutrit/nuac064

B

Study or Subgroup	Creatine Mean	Creatine SD	Creatine Total	Placebo Mean	Placebo SD	Placebo Total	Weight	Std. Mean Difference IV, Random, 95% CI
Younger adults and children								
McMorris 2006 (Backward Spatial Recall)[28]	-0.5	1.27	10	-0.11	0.78	9	3.2%	-0.35 [-1.26, 0.56]
McMorris 2006 (Backward Verbal Recall)[28]	-0.1	1.17	10	0.33	0.24	9	3.2%	-0.47 [-1.39, 0.44]
McMorris 2006 (Forward Spatial Recall)[28]	-0.7	0.85	10	-0.78	0.91	9	3.2%	0.09 [-0.81, 0.99]
McMorris 2006 (Forward Verbal Recall)[28]	0.51	0.72	10	0.67	0.87	9	3.2%	-0.19 [-1.10, 0.71]
McMorris 2007a (Forward Number Recall)[27]	0.2	0.93	10	0.33	1.13	9	3.2%	-0.12 [-1.02, 0.78]
Merege-Filho 2017 (RAVLT Learning)[36]	3.5	3.17	35	3.5	4.17	32	4.6%	0.00 [-0.48, 0.48]
Merege-Filho 2017 (RAVLT Long-Term Memory)[36]	0.6	1.48	35	0.4	1.29	32	4.6%	0.14 [-0.34, 0.62]
Merege-Filho 2017 (RAVLT Short-Term Memory)[36]	0.7	0.82	35	0.8	1.38	32	4.6%	-0.09 [-0.57, 0.39]
Pires 2020 (Corsi Block Test)[33]	0.8	1.08	13	1.3	1.08	13	3.6%	-0.45 [-1.23, 0.33]
Pires 2020 (Differentiation Test)[33]	1.3	5.54	13	1	6.54	13	3.6%	0.05 [-0.72, 0.82]
Pires 2020 (Reverse Corsi Block Test)[33]	1.2	2.41	13	0	2.05	13	3.6%	0.52 [-0.26, 1.30]
Pires 2020 (Visual Forward Digit Span)[33]	3.3	3.17	13	0.5	3.26	13	3.5%	0.84 [0.04, 1.65]
Rawson 2008 (Memory Recall All)[34]	-21.3	76.17	11	-17.7	100.43	11	3.4%	-0.04 [-0.87, 0.80]
Rawson 2008 (Memory Recall Correct)[34]	-14.7	65.6	11	-17	72.73	11	3.4%	0.03 [-0.80, 0.87]
Rawson 2008 (Memory Recall Throughput)[34]	5.2	19.76	11	2	24.14	11	3.4%	0.14 [-0.70, 0.98]
Rawson 2008 (Running Memory All)[34]	-21.3	76.14	11	-17.6	100.15	11	3.4%	-0.04 [-0.88, 0.80]
Rawson 2008 (Running Memory Correct)[34]	-14.7	65.6	11	-17.1	72.73	11	3.4%	0.03 [-0.80, 0.87]
Rawson 2008 (Running Memory Throughput)[34]	5.1	19.76	11	1.8	24.14	11	3.4%	0.14 [-0.69, 0.98]
Turner 2015 (Composite Memory)[30]	-8.2	14.32	15	-9.9	8.62	15	3.8%	0.14 [-0.58, 0.86]
Subtotal (95% CI)			**288**			**274**	**68.6%**	**0.03 [-0.14, 0.20]**

Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 9.76$, df = 18 ($P = 0.94$); $I^2 = 0\%$

Test for overall effect: $Z = 0.36$ ($P = 0.72$)



CAFFEINE

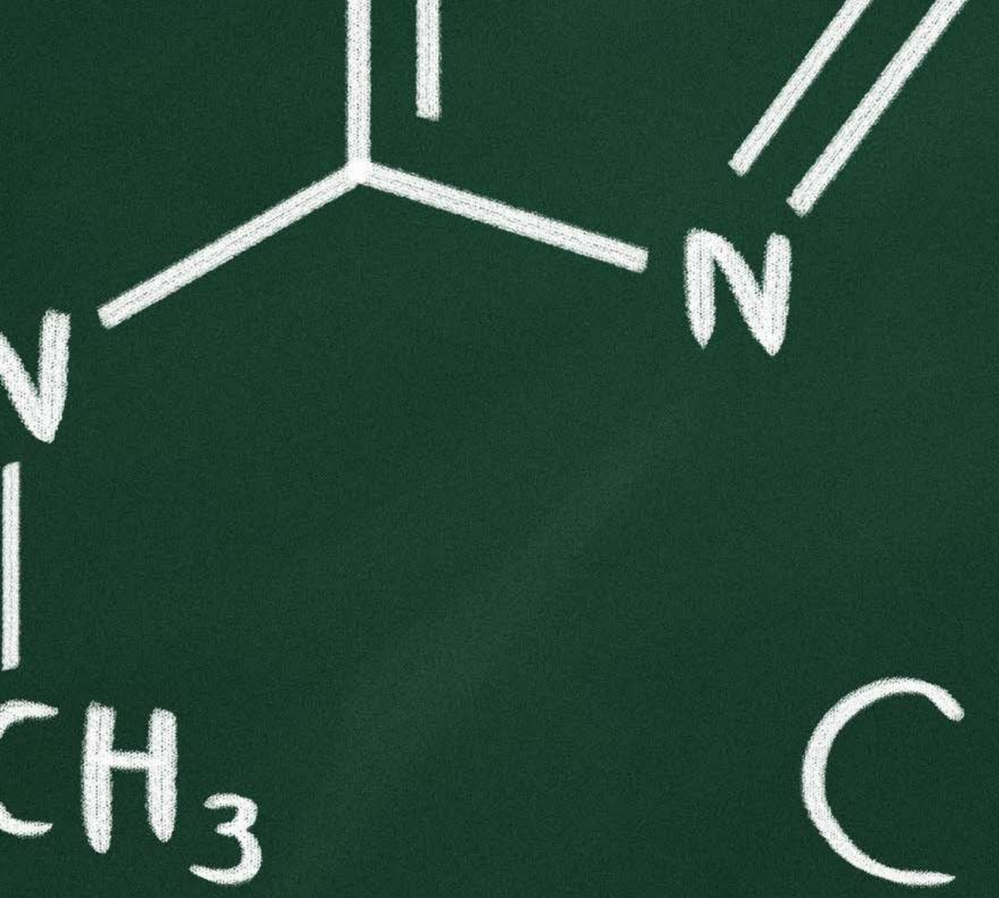
Review > Neurosci Biobehav Rev. 2016 Dec:71:294-312. doi: 10.1016/j.neubiorev.2016.09.001. Epub 2016 Sep 6.

A review of caffeine's effects on cognitive, physical and occupational performance

Tom M McLellan [1], John A Caldwell [2], Harris R Lieberman [3]

Affiliations + expand

PMID: 27612937 DOI: 10.1016/j.neubiorev.2016.09.001



Caffeine

$C_8H_{10}N_4O_2$

CAFFEINE

Review > BMJ. 2017 Nov 22:359:j5024. doi: 10.1136/bmj.j5024.

Coffee consumption and health: umbrella review of meta-analyses of multiple health outcomes

Robin Poole [1], Oliver J Kennedy [1], Paul Roderick [1], Jonathan A Fallowfield [2], Peter C Hayes [2], Julie Parkes [1]

Affiliations + expand

PMID: 29167102 PMCID: PMC5696634 DOI: 10.1136/bmj.j5024


CAROTENOID

CAROTENOIDS

Antioxidants (Basel). 2021 Feb; 10(2): 223.
Published online 2021 Feb 2. doi: 10.3390/antiox10020223
PMCID: PMC7913239
PMID: 33540909

Carotenoids and Cognitive Outcomes: A Meta-Analysis of Randomized Intervention Trials

Sergio Davinelli,[1,*] Sawan Ali,[1] Vincenzo Solfrizzi,[2] Giovanni Scapagnini,[1] and Graziamaria Corbi[1]

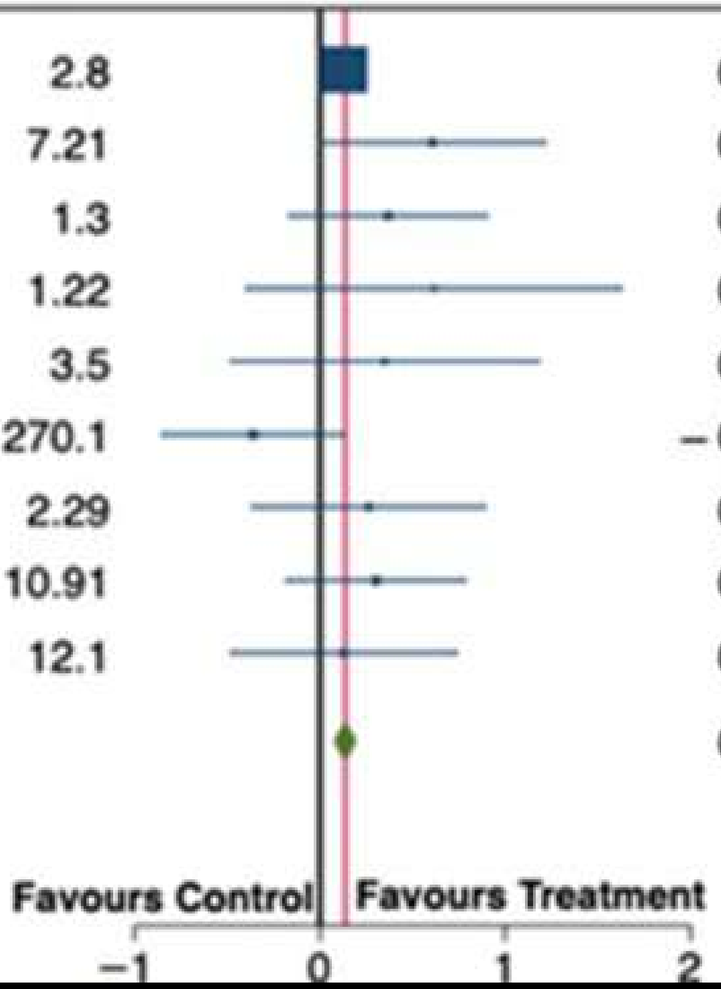
Adrianne Bendich, Academic Editor

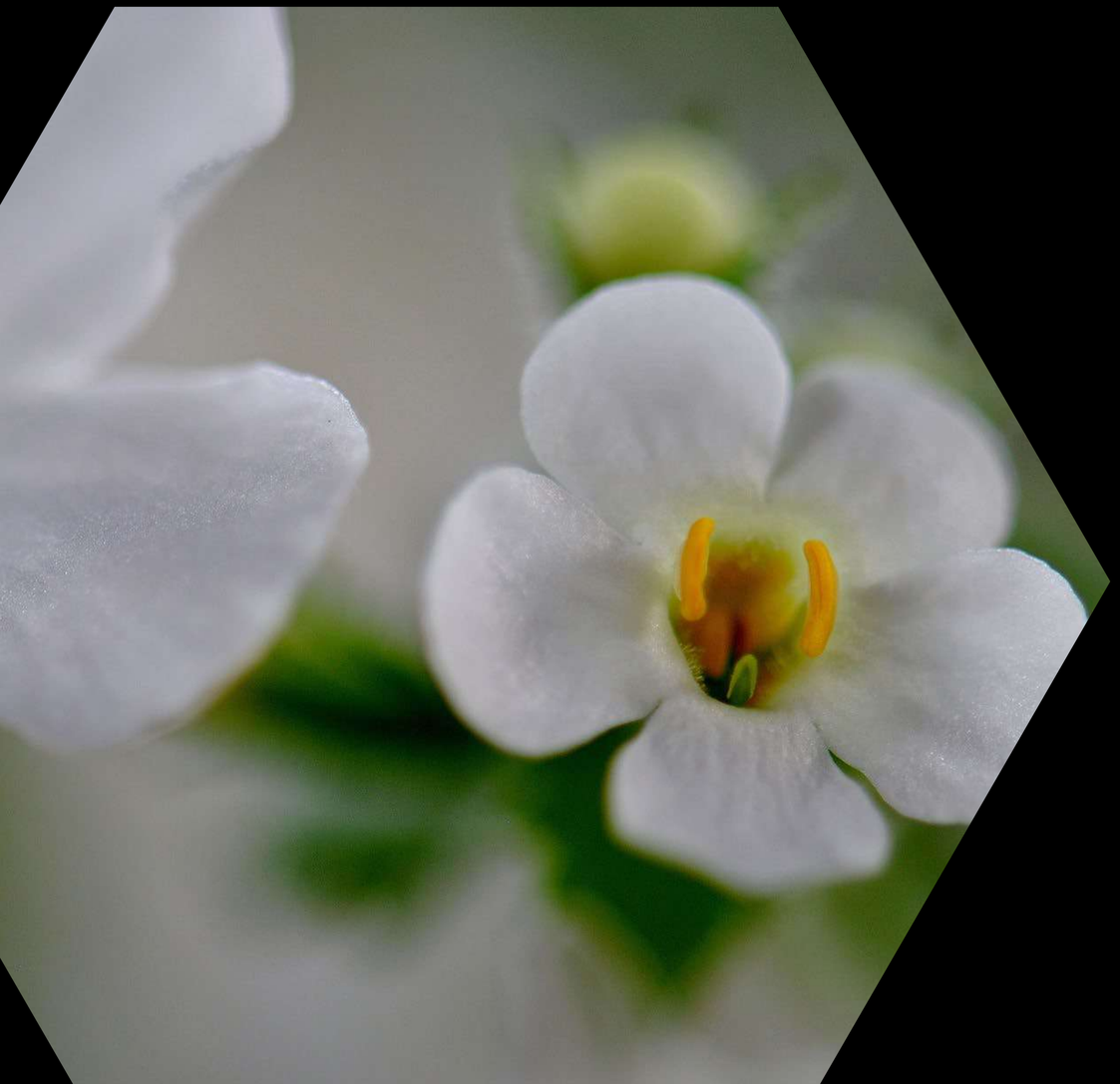
A

Study	Treatment n	Treatment Mean	Treatment SD	Control n	Control Mean	Control SD	Hedges's g with 95% CI	Weight (%)
Grodstein 2007	2031	34.41	2.73	2021	34.23	2.8	0.13 [0.07, 0.19]	92.13
Hammond 2017	36	16.83	11.12	15	10.55	7.21	0.61 [0.00, 1.21]	0.96
Hayashi 2018	28	5.9	0.8	26	5.5	1.3	0.37 [−0.16, 0.90]	1.24
Ito 2018	7	3.89	3.26	7	2.27	1.22	0.62 [−0.39, 1.62]	0.35
Johnson 2008	11	15.5	5.5	10	13.8	3.5	0.35 [−0.48, 1.18]	0.51
Katagiri 2012	29	818.3	195.9	31	903.8	270.1	−0.36 [−0.85, 0.13]	1.47
Lindbergh 2018	30	8.8	2.16	14	8.21	2.29	0.26 [−0.36, 0.89]	0.89
Power 2018	36	50.11	15.55	30	45.93	10.91	0.30 [−0.18, 0.78]	1.51
Scott 2017	20	84.7	13.5	20	83	12.1	0.13 [−0.48, 0.74]	0.95
Overall	**2228**			**2174**			0.14 [0.08, 0.20]	

Heterogeneity: $\tau^2 = 0.00$, $I^2 = 0.00\%$, $H^2 = 1.00$

Test of $\theta = 0$: $z = 4.54$, $p < 0.0001$





BACOPA

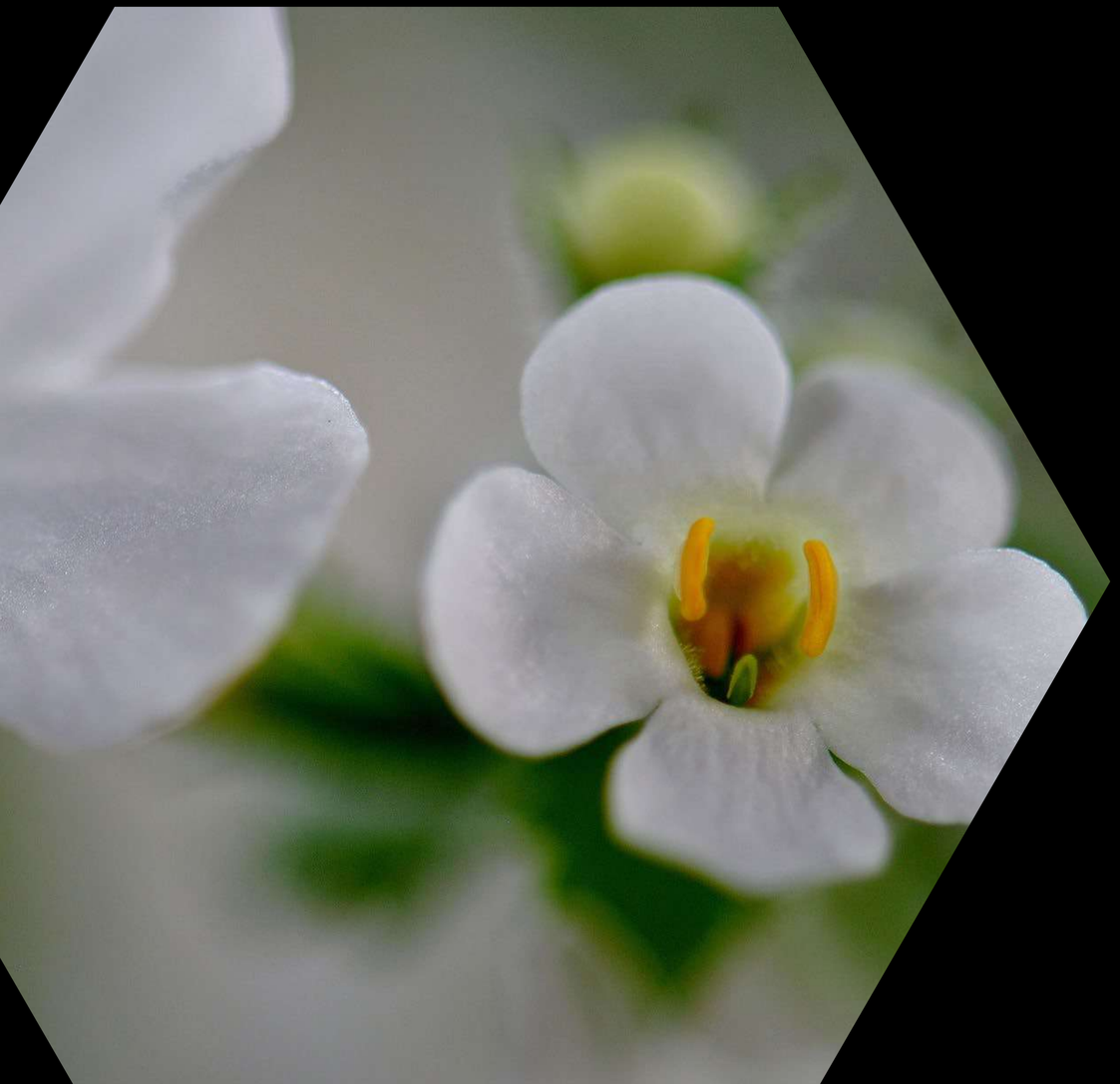
Review > J Altern Complement Med. 2012 Jul;18(7):647-52. doi: 10.1089/acm.2011.0367.
Epub 2012 Jul 2.

The cognitive-enhancing effects of Bacopa monnieri: a systematic review of randomized, controlled human clinical trials

Matthew P Pase [1], James Kean, Jerome Sarris, Chris Neale, Andrew B Scholey, Con Stough

Affiliations + expand

PMID: 22747190 DOI: 10.1089/acm.2011.0367



BACOPA

Effect of *Bacopa monnieri* Extract on Memory and Cognitive Skills in Adult Humans: A Randomized, Double-Blind, Placebo-Controlled Study

Mohan Muttanahally Eraiah[1], Harshith Chandra Shekhar[1], Lincy Joshua[2], Jestin V Thomas[2*]

THANK YOU!
QUESTIONS?

Dr. Richard Harris