Supplementary Information

This file contains the following additional tables.

Supplementary Table 1: Dietary, nutraceutical and herbal interventions for treating depression in human subjects found in reviews of dietary interventions for depression.

Supplementary Table 2: Dietary, nutraceutical and herbal interventions for treating depression in preclinical models found in reviews of dietary interventions for depression.

Supplementary Table 3: Lifestyle interventions for treating depression in humans found in reviews of lifestyle interventions for depression

Supplementary Table 4: Psychedelic interventions for treating depression found in reviews of psychedelic interventions for depression.

Supplementary Table 1: Dietary, nutraceutical and herbal interventions for treating depression in human subjects found in reviews of dietary interventions for depression. +, positive effect; -, negative effect; n.s. not significant; Mixed, mixed positive, negative and/or non significant findings.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
| *S*-Adenosylmethionine (SAMe) | + |  | + | + (n.s.) | + |  |  | + | + |  |  |  |  |  |
| Folic Acid | + |  |  |  |  |  | + |  | + |  |  |  |  |  |
| B vitamins | +(ns) | + | +/n.s. |  |  |  | + | n.s. |  |  |  |  |  |  |
| Methyl folate | + |  | + |  | + |  |  |  | Mixed |  |  |  |  |  |
| Vitamin B-12 | + |  |  |  |  |  |  |  | n.s. |  |  |  |  |  |
| Omega 3 (EPA+DHA) | + | + | + | + | + |  | + | + | + |  |  |  |  |  |
| Ethyl-EPA | + |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Tryptophan | n.s. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DL-Tryptophan | + |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5-HTP | + |  |  |  | + / n.s. |  |  |  |  |  |  |  |  |  |
| Zinc | +/ns |  | + |  |  | + |  |  | + |  |  |  |  |  |
| Vitamin C | +/ns |  |  |  |  |  | n.s. |  |  |  |  |  |  |  |
| Vitamin D3 | + |  | + |  |  |  | n.s. | n.s. | Mixed |  |  |  |  |  |
| Inositol | n.s. |  |  |  | + / n.s. |  |  |  | n.s. |  |  |  |  |  |
| Amino Acids | + |  | + |  |  |  |  |  |  |  |  |  |  |  |
| Creatine | + |  | + |  |  |  |  |  |  |  |  |  |  |  |
| Catechins |  | + |  |  |  |  |  |  |  |  |  |  |  |  |
| Cocoa |  | + |  |  |  |  |  |  |  |  |  |  |  |  |
| Probiotics |  |  | +/n.s |  |  |  |  |  |  |  |  |  |  |  |
| Magnesium |  |  | + |  |  | + |  |  |  |  |  |  |  |  |
| Calcium |  |  | + |  |  |  |  |  |  |  |  |  |  |  |
| Selenium |  |  | n.s. |  |  | + |  |  |  |  |  |  |  |  |
| Caffeine |  |  | + |  | + | +[[1]](#footnote-1) |  |  |  |  |  |  |  |  |
| Curcumin |  |  | + |  |  |  |  |  |  |  |  |  |  |  |
| Hydroxytyrosol |  |  | + |  |  |  |  |  |  |  |  |  |  |  |
| Cannabidiol (CBD) |  |  | n.s. |  |  |  |  |  |  |  |  |  |  |  |
| Gingko Biloba |  |  |  |  |  |  |  | n.s. |  |  |  | n.s. |  |  |
| St. John’s Wort |  |  |  | + | + |  |  | +/n.s. |  |  | + | + | + | + |
| Valerian |  |  |  | + |  |  |  |  |  |  |  |  |  |  |
| Rhodiola |  |  |  |  | +/n.s. |  |  |  |  | + | n.s. |  | + | + |
| Empower plus |  |  |  |  | Mixed |  |  |  |  |  |  |  |  |  |
| Chromium |  |  |  |  | Mixed |  |  |  |  |  |  |  |  |  |
| Acetyl L-carnitine |  |  |  |  | + |  |  |  |  |  |  |  |  |  |
| N-acetyl cystein |  |  |  |  | +/Mixed |  |  |  |  |  |  |  |  |  |
| Alpha lipoic acid |  |  |  |  | Mixed |  |  |  |  |  |  |  |  |  |
| Antioxidants |  |  |  |  |  | + |  |  |  |  |  |  |  |  |
| Coenzyme Q10 |  |  |  |  |  | + |  |  |  |  |  |  |  |  |
| Crocin (Saffron) |  |  |  |  |  | + |  |  |  | + | + | + | + | + |
| Lavender |  |  |  |  |  |  |  |  |  | + | n.s. | + | + | + |
| Borage(Echium) |  |  |  |  |  |  |  |  |  | +(n.s.) | n.s. |  | + | + |
| Chamomile |  |  |  |  |  |  |  |  |  |  | n.s. |  |  |  |
| Ginseng |  |  |  |  |  |  |  |  |  |  | n.s. |  | + |  |
| Kava |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Dan zhi xiao yao |  |  |  |  |  |  |  |  |  |  |  |  |  | + |

Supplementary Table 2: Dietary, nutraceutical and herbal interventions for treating depression in preclinical models found in reviews of dietary interventions for depression.

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Evidence | Source/ Scientific name of organism | Geographical range |
| Southern Maidenhair Fern | Preclinical improvement (16, 17) | Adiantum capillus-veneris | USA |
| Bell Agapanthus | Preclinical improvement (18) | Agapathius campanulatus | South Africa |
| Flat-crown Albizia | Preclinical improvement (19, 20) | Albizia adianthifolia | Tropical & S. Africa, E. & E. Central Madagascar. |
| Tarragon | Preclinical improvement (21, 22) | Artemesia dracunculus | S. Europe to W. Asia. |
| Bushman Poison Bulb | Preclinical improvement (18) | Boophone disticha | Eastern and southern Africa  |
| CBD | Preclinical improvement (23)(24) | Cannabis sativa | Native to Eastern and southern AfricaCultivated worldwide |
| THC | Preclinical improvement (25)  | Cannabis sativa | See above |
| Gotu Kola | Preclinical improvement (26) | Centella asiatica | E. Asia and Australia |
| Camphor Tree | Preclinical improvement (27) | Cinnamomum camphora | E. Asia |
| Hoodia | Preclinical improvement (28) | Hoodia gordonii | Namibia, South Africa |
| St. John’s Wort | Preclinical improvement (29)(30) | Hypericum perforatum | Europe, including Britain, south and east to N. Africa, the Azores, Madeira and W. Asia. |
| Wrinkled St. John's Wort | Preclinical improvement (31) | Hypericum revolutum | Nigeria to Bioko, Eritrea to E. Cape Prov., SW. Arabian Peninsula |
| Namib Bottle Tree | Preclinical improvement (32) | Maerua angolensis | Drier areas in Tropical Africa - Mauritania to Somalia, south to S. Africa. |
| Neem | Preclinical improvement (33) | Melia azedrach | native to Southeast Asia and northern Australianaturalised include parts of central and southern Australia, southern Europe, southern and eastern Africa, southern USA, Mexico, Central America, the Caribbean, tropical southern America and many Pacific islands. |
| Spearmint | Preclinical improvement (34) | Mentha spicata | Central Europe |
| White's Ginger | Preclinical improvement (18) | Mondia whitei | Tropical Africa - Senegal to Sudan and Kenya, south to Namibia, Zambia, Zimbabwe and Mozambique. |
| African Olive | Preclinical improvement (35-37) | Olea europaea cuspidate | Eritrea to S. Africa, Mascarenes, Arabian Peninsula to China (Yunnan). |
| Rosemary | Preclinical improvement (38-41) | Rosmarinus officinalis | S. Europe to W. Asia. |
| Serendipity Berry | Preclinical improvement (42) | Securidaca longipedunculata | Africa |
| Kanna | Preclinical improvement (43) | Sceletium tortuosum | South Africa |
| Pink Peppercorn | Preclinical improvement (44) | Schinus mole | Southern and western S. America - Argentina, Uruguay, Paraguay, Brazil, Bolivia, Peru, Ecuador. |
| Honeybush | Preclinical improvement (18) | Xysmalobium undulatum | astern parts of southern Africa (found in all the provinces of South Africa and in Namibia, Botswana, Lesotho and Swaziland). Its range extends to tropical Africa as far north as Kenya. |
| Buffalo Thorn | Preclinical improvement (45) | Ziziphus mucronate | South Africa northwards to Ethiopia and Arabia. |
| Reishi  | Alleviates depression like behaviour in mice (46, 47) | Ganoderma lucidum | Europe and parts of China, naturalized to USA |
| Lion’s Mane | Alleviates depression like behaviour in mice (48) | Hericium erinaceus | North America, Europe, and Asia |
| Polygala | Alleviates depression like behaviour in mice (49) | genus of flowering plants | Temperate zones and tropics |
| Spirulina | Lower immobility time in FST[[2]](#footnote-2) (50, 51) | Spirulina platensis | Widely distributed in alkaline lakes, ponds, and brackish waters |
| Chlorella | Improvement in preclinical models (52) | Chlorella vulgaris | Global distribution in various aquatic environments |
| Hijiki | Improvement in preclinical models (53) | Sargassum fusiforme and Pyropia yezoensis or Pyropia tenera | Western Pacific, including China, Japan, and Korea |
| Sea Lettuce | Improvement in preclinical models (54) | Ulva lactuca | Worldwide, commonly found in coastal areas |
| Wakame | Improvement in preclinical models (53) | Undaria pinnatifida and Pyropia yezoensis or Pyropia tenera | Japan, Korea |
| Seaweed | Improvement in preclinical models (55) | Seaweed (general) | Worldwide |
| Botryococcus braunii  | Improvement in preclinical models (56) | Botryococcus braunii  | Global distribution in freshwater ecosystems |
| Chlorella | Improvement in preclinical models (57) | Chlorella vulgaris | Global distribution in various aquatic environments |
| Haematococcus | Improvement in preclinical models (58) | Haematococcus pluvialis | Worldwide distribution in freshwater habitats |
| Nizamuddinia zanardinii | Improvement in preclinical models (59) | Nizamuddinia zanardinii  | Mediterranean region, Red Sea, Arabian Sea |
| Stoechospermum marginatum | Improvement in preclinical models (59) | Stoechospermum marginatum | Indian and Pacific Oceans, including the Red Sea |
| Sargassum swartzii C. Agardh | Improvement in preclinical models (59) | Sargassum swartzii C. Agardh | Indian and Pacific Oceans, including the Red Sea |
| Solieria filiformis | Improvement in preclinical models (60) | Solieria filiformis | Atlantic and Pacific Oceans |
| Sea Lettuce | Improvement in preclinical models (61) | Ulva sp. | Worldwide distribution in coastal areas |
| Brazilin | Alleviates depression like behaviour in mice (62) | Brazilwood tree (Caesalpinia ssp.) | Brazil |
| Catechins | Reduced immobility time in forced swimming and tail suspension tests and lowered serum levels of corticosterone and adrenocorticotrophic hormone  | Tea |  |
| Resveratrol | Alleviates depression like behaviour in mice (63) | Grapes |  |
| Anthocyanidins | Alleviates depression like behaviour in mice (64) | Berries |  |
| Lemon Balm | Evidence of anti-depressant effect in humans (65) | Melissa officinalis | Europe, Asia, North Africa |
| Mexican Bay | Improvement in preclinical mouse model (66) | Litsea glaucescens | Mexico, Central America |
| St. John's Wort |  | Hypericum perforatum L | Worldwide |
| Lavender | Improvements in human depression (67) | Lavandula angustifolia Mill. (Lamiacae) | Mediterranean region, Europe, Asia, North Africa |
| Essential oils of cataia | Improvements in mouse models(68) | Pimenta pseudocaryophyllus (Gomes) L.R. Landrum (Myrtaceae) | Brazil |
| Sensitive Plant | Improvement in rat model (69) | Mimosa pudica (Fabaceae) | Native to South America, now widespread tropical distribution |
| Alkaloid extract of Cherimoya | Improvement in mouse model (70) | Annona cherimola Mill.(Annonaceae) | Andes Mountains in South America, now grown in various regions |
| Mexican Tarragon | Improvement in rat model (71) | Tagetes lucida Cav. (Asteraceae) | Central and South America |
| Bugambilia glabra extract | Improvement in rat models (72) | Bougainvillea spectabilis Willd | Puebla, Coxcatlán |
| Kava kava | Improvement in symptoms in human subjects(73) | Piper methysticum G. Foster  | South Pacific |
| Valerian | Improvements in human subjects (74, 75) | Valeriana officinalis L.  | Europe, Asia |
| Novel herbal treatment | Improvements in mouse models (76) | [*Crataegus pinnatifida*](https://www.sciencedirect.com/topics/pharmacology-toxicology-and-pharmaceutical-science/crataegus-pinnatifida), *Triticum aestivu*, [*Lilium*](https://www.sciencedirect.com/topics/pharmacology-toxicology-and-pharmaceutical-science/lilium)*brownie* and *Fructus zizyphi jujubae* |  |
| Banxia houpu | Improvement in rat model (77) | Pinellia ternata, Poria cocos, Magnoliaofficinalis,Perilla frutescens and Zingiber officinale | China |

Supplementary Table 3: Lifestyle interventions for treating depression in humans found in reviews of lifestyle interventions for depression. +, positive effect; -, negative effect; n.s. not significant; Mixed, mixed positive, negative and/or non significant findings.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (78) | (79) | (80) | (81) | (82) | (83) | (84) | (85) | (86) |
| Whole foods diet | + |  |  |  | + |  |  |  |  |
| Mediterranean diet |  |  |  | + |  |  |  |  |  |
| Exercise | ++ |  |  | + | + | + |  |  |  |
| Hobbies | Limited evidence |  |  |  |  |  |  |  |  |
| Meditation | + | + |  |  |  |  |  |  |  |
| Sleep | ++ |  |  | + |  | + |  |  |  |
| Natural environment | ++ |  |  |  | + |  |  |  |  |
| Animals | + |  |  |  |  |  |  |  |  |
| Socialization | ++ |  |  |  |  |  |  |  |  |
| Smoking | - |  |  |  | - | - |  |  |  |
| Alcohol | - |  |  |  | Mixed | Mixed |  |  |  |
| Combined healthy lifestyle |  | + | + |  |  |  | ++ | ++ | ++ |

Supplementary Table 4: Psychedelic interventions for treating depression found in reviews of psychedelic interventions for depression. +, positive effect; -, negative effect; n.s. not significant; Mixed, mixed positive, negative and/or non significant findings.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (88) | (89) | (90) | (91) | (92) | (93) | (94) | (95) | (96) | (97) | (98) | (99) | (100) | (101) |
| Psychedelic (any) |  |  | + |  | + | + |  |  | + |  | + (n.s.) |  |  | ++ |
| Ayahuasca |  | + |  | + |  |  |  |  | + | + |  |  |  |  |
| Psilocybin |  | + |  | + |  |  | + | + | + | + |  | + | + |  |
| Psychedelic- assisted psychotherapy |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| LSD |  | + (n.s.) |  | + |  |  |  |  | + | + |  |  |  |  |
| MDMA |  |  |  |  |  |  |  |  |  | + |  |  |  |  |

**References**

1. Jerome Sarris, Ph.D., M.H.Sc. ,, Jenifer Murphy, Ph.D. ,, David Mischoulon, M.D., Ph.D. ,, George I. Papakostas, M.D. ,, Maurizio Fava, M.D. ,, Michael Berk, M.D., Ph.D. ,, Chee H. Ng, M.D. Adjunctive Nutraceuticals for Depression: A Systematic Review and Meta-Analyses. American Journal of Psychiatry. 2016;173(6):575-87.

2. Nabavi SM, Daglia M, Braidy N, Nabavi SF. Natural products, micronutrients, and nutraceuticals for the treatment of depression: A short review. Nutritional Neuroscience. 2017;20(3):180-94.

3. Alvarez-Mon MA, Ortega MA, García-Montero C, Fraile-Martinez O, Monserrat J, Lahera G, et al. Exploring the Role of Nutraceuticals in Major Depressive Disorder (MDD): Rationale, State of the Art and Future Prospects. Pharmaceuticals. 2021;14(8):821.

4. Mischoulon D. Popular Herbal and Natural Remedies Used in Psychiatry. Focus (Am Psychiatr Publ). 2018;16(1):2-11.

5. Mischoulon D, Iovieno N. Supplements and Natural Remedies for Depression. In: Shapero BG, Mischoulon D, Cusin C, editors. The Massachusetts General Hospital Guide to Depression: New Treatment Insights and Options. Cham: Springer International Publishing; 2019. p. 195-209.

6. Wang H, Jin M, Xie M, Yang Y, Xue F, Li W, et al. Protective role of antioxidant supplementation for depression and anxiety: A meta-analysis of randomized clinical trials. Journal of Affective Disorders. 2023;323:264-79.

7. Hoffmann K, Emons B, Brunnhuber S, Karaca S, Juckel G. The Role of Dietary Supplements in Depression and Anxiety – A Narrative Review. Pharmacopsychiatry. 2019;52(06):261-79.

8. Varteresian T, Lavretsky H. Natural products and supplements for geriatric depression and cognitive disorders: an evaluation of the research. Curr Psychiatry Rep. 2014;16(8):456.

9. Schefft C, Kilarski LL, Bschor T, Köhler S. Efficacy of adding nutritional supplements in unipolar depression: A systematic review and meta-analysis. European Neuropsychopharmacology. 2017;27(11):1090-109.

10. Dwyer AV, Whitten DL, Hawrelak JA. Herbal medicines, other than St. John's Wort, in the treatment of depression: a systematic review. Altern Med Rev. 2011;16(1):40-9.

11. Szafrański T. [Herbal remedies in depression--state of the art]. Psychiatr Pol. 2014;48(1):59-73.

12. Ernst E. Herbal remedies for depression and anxiety. Advances in Psychiatric Treatment. 2007;13(4):312-6.

13. Sarris J, Panossian A, Schweitzer I, Stough C, Scholey A. Herbal medicine for depression, anxiety and insomnia: A review of psychopharmacology and clinical evidence. European Neuropsychopharmacology. 2011;21(12):841-60.

14. Sarris J. Herbal medicines in the treatment of psychiatric disorders: a systematic review. Phytotherapy Research. 2007;21(8):703-16.

15. Yeung W-F, Chung K-F, Ng K-Y, Yu Y-M, Ziea ET-C, Ng BF-L. A systematic review on the efficacy, safety and types of Chinese herbal medicine for depression. Journal of Psychiatric Research. 2014;57:165-75.

16. Ahmadpoor J, Chahardahcheric SV, Setorki M. The Protective effect of hydroalcoholic extract of the southern maidenhair fern (adiantum capillus-veneris) on the depression and anxiety caused by chronic stress in adult male mice: an experimental randomized study. Iranian Red Crescent Medical Journal. 2019;21(3).

17. Rabiei Z, Setorki M. Effect of ethanol Adiantum capillus-veneris extract in experimental models of anxiety and depression. Brazilian Journal of Pharmaceutical Sciences. 2019;55.

18. Pedersen ME, Szewczyk B, Stachowicz K, Wieronska J, Andersen J, Stafford GI, et al. Effects of South African traditional medicine in animal models for depression. Journal of Ethnopharmacology. 2008;119(3):542-8.

19. Aderibigbe A. Antidepressant activity of ethanol extract of Albizia adianthifolia (Schumach) WF Wight leaf in mice. African Journal of Medicine and Medical Sciences. 2018;47(2):133-40.

20. Beppe GJ, Dongmo AB, Foyet HS, Dimo T, Mihasan M, Hritcu L. The aqueous extract of Albizia adianthifolia leaves attenuates 6-hydroxydopamine-induced anxiety, depression and oxidative stress in rat amygdala. BMC Complementary and Alternative Medicine. 2015;15(1):1-13.

21. Jahani R, Khaledyan D, Jahani A, Jamshidi E, Kamalinejad M, Khoramjouy M, Faizi M. Evaluation and comparison of the antidepressant-like activity of Artemisia dracunculus and Stachys lavandulifolia ethanolic extracts: an in vivo study. Research in Pharmaceutical Sciences. 2019;14(6):544.

22. Ilkhanizadeh A, Asghari A, Hassanpour S, Safi S. Anti-depressant effect of Artemisia dracunculus extract is mediated via GABAergic and serotoninergic systems in ovariectomized mice. Journal of Basic and Clinical Pathophysiology. 2021;9(2):32-41.

23. Zanelati T, Biojone C, Moreira F, Guimarães FS, Joca SRL. Antidepressant‐like effects of cannabidiol in mice: possible involvement of 5‐HT1A receptors. British journal of pharmacology. 2010;159(1):122-8.

24. Sales AJ, Crestani CC, Guimarães FS, Joca SR. Antidepressant-like effect induced by Cannabidiol is dependent on brain serotonin levels. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2018;86:255-61.

25. El-Alfy AT, Ivey K, Robinson K, Ahmed S, Radwan M, Slade D, et al. Antidepressant-like effect of Δ9-tetrahydrocannabinol and other cannabinoids isolated from Cannabis sativa L. Pharmacology Biochemistry and Behavior. 2010;95(4):434-42.

26. Selvi PT, Kumar MS, Rajesh R, Kathiravan T. Antidepressant activity of ethanolic extract of leaves of Centella asiatica. Linn by In vivo methods. Asian Journal of Research in Pharmaceutical Science. 2012;2(2):76-9.

27. Rabadia J, Satish S, Ramanjaneyulu J, Narayanaswamy V. An investigation of anti-depressant activity of Cinnamomum camphora oil in experimental mice. Asian Journal of Biomedical and Pharmaceutical Sciences. 2013;3(20):44.

28. Citó M, Silva MIG, Santos LKX, Fernandes M, Melo FHC, Aguiar JAC, et al. Antidepressant-like effect of Hoodia gordonii in a forced swimming test in mice: evidence for involvement of the monoaminergic system. Brazilian Journal of Medical and Biological Research. 2014;48:57-64.

29. Tian J, Zhang F, Cheng J, Guo S, Liu P, Wang H. Antidepressant-like activity of adhyperforin, a novel constituent of Hypericum perforatum L. Scientific Reports. 2014;4(1):5632.

30. Fiebich BL, Knörle R, Appel K, Kammler T, Weiss G. Pharmacological studies in an herbal drug combination of St. John's Wort (Hypericum perforatum) and passion flower (Passiflora incarnata): in vitro and in vivo evidence of synergy between Hypericum and Passiflora in antidepressant pharmacological models. Fitoterapia. 2011;82(3):474-80.

31. Ejigu A, Engidawork E. Screening of the antidepressant-like activity of two hypericum species found in Ethiopia. Eth Pharm J. 2014;30(1):21-32.

32. Benneh CK, Biney RP, Adongo DW, Mante PK, Ampadu FA, Tandoh A, et al. Anxiolytic and antidepressant effects of Maerua angolensis DC. Stem bark extract in mice. Depression Research and Treatment. 2018;2018.

33. Ishaq H. Anxiolytic and antidepressant activity of different methanolic extracts of Melia azedarach Linn. Pakistan journal of pharmaceutical sciences. 2016;29(5).

34. Jedi-Behnia B, Abbasi Maleki S, Mousavi E. The antidepressant-like effect of Mentha spicata essential oil in animal models of depression in male mice. Journal of Advanced Biomedical Sciences. 2017;7(1):141-9.

35. Badr AM, Attia HA, Al-Rasheed N. Oleuropein reverses repeated corticosterone-induced depressive-like behavior in mice: evidence of modulating effect on biogenic amines. Scientific reports. 2020;10(1):3336.

36. Perveen T, Hashmi BM, Haider S, Tabassum S, Saleem S, Siddiqui MA. Role of monoaminergic system in the etiology of olive oil induced antidepressant and anxiolytic effects in rats. International Scholarly Research Notices. 2013;2013.

37. Tariq U, Butt MS, Pasha I, Faisal MN. Neuroprotective effects of Olea europaea L. fruit extract against cigarette smoke‐induced depressive‐like behaviors in Sprague–Dawley rats. Journal of Food Biochemistry. 2021;45(12):e14014.

38. Machado DG, Bettio LE, Cunha MP, Capra JC, Dalmarco JB, Pizzolatti MG, Rodrigues ALS. Antidepressant-like effect of the extract of Rosmarinus officinalis in mice: involvement of the monoaminergic system. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2009;33(4):642-50.

39. Sasaki K, El Omri A, Kondo S, Han J, Isoda H. Rosmarinus officinalis polyphenols produce anti-depressant like effect through monoaminergic and cholinergic functions modulation. Behavioural Brain Research. 2013;238:86-94.

40. Sasaki K, Ferdousi F, Fukumitsu S, Kuwata H, Isoda H. Antidepressant-and anxiolytic-like activities of Rosmarinus officinalis extract in rodent models: Involvement of oxytocinergic system. Biomedicine & Pharmacotherapy. 2021;144:112291.

41. Abdelhalim A, Karim N, Chebib M, Aburjai T, Khan I, Johnston GA, Hanrahan J. Antidepressant, anxiolytic and antinociceptive activities of constituents from Rosmarinus officinalis. Journal of Pharmacy & Pharmaceutical Sciences. 2015;18(4):448-59.

42. Adebiyi R, Elsa A, Agaie B, Etuk E. Antinociceptive and antidepressant like effects of Securidaca longepedunculata root extract in mice. Journal of ethnopharmacology. 2006;107(2):234-9.

43. Loria MJ, Ali Z, Abe N, Sufka KJ, Khan IA. Effects of Sceletium tortuosum in rats. Journal of ethnopharmacology. 2014;155(1):731-5.

44. Machado DG, Kaster MP, Binfaré RW, Dias M, Santos AR, Pizzolatti MG, et al. Antidepressant-like effect of the extract from leaves of Schinus molle L. in mice: evidence for the involvement of the monoaminergic system. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2007;31(2):421-8.

45. Wado EK, Kubicki M, Ngatanko AHH, Blondelle KDL, Roland RN, Balbine K, et al. Anxiolytic and antidepressant effects of Ziziphus mucronata hydromethanolic extract in male rats exposed to unpredictable chronic mild stress: Possible mechanisms of actions. Journal of ethnopharmacology. 2020;260:112987.

46. Li H, Xiao Y, Han L, Jia Y, Luo S, Zhang D, et al. Ganoderma lucidum polysaccharides ameliorated depression-like behaviors in the chronic social defeat stress depression model via modulation of Dectin-1 and the innate immune system. Brain Research Bulletin. 2021;171:16-24.

47. Mi X, Zeng G-R, Liu J-Q, Luo Z-S, Zhang L, Dai X-M, et al. Ganoderma Lucidum Triterpenoids Improve Maternal Separation-Induced Anxiety- and Depression-like Behaviors in Mice by Mitigating Inflammation in the Periphery and Brain. Nutrients. 2022;14(11):2268.

48. Nagano M, Shimizu K, Kondo R, Hayashi C, Sato D, Kitagawa K, Ohnuki K. Reduction of depression and anxiety by 4 weeks <I>Hericium erinaceus</I> intake. Biomedical Research. 2010;31(4):231-7.

49. Zhou Y, Ma C, Li B-M, Sun C. Polygala japonica Houtt. reverses depression-like behavior and restores reduced hippocampal neurogenesis in chronic stress mice. Biomedicine & Pharmacotherapy. 2018;99:986-96.

50. Kim NH, Jeong HJ, Lee JY, Go H, Ko SG, Hong SH, et al. The effect of hydrolyzed Spirulina by malted barley on forced swimming test in ICR mice. Int J Neurosci. 2008;118(11):1523-33.

51. Suresh D, Madhu M, Saritha C, Shankaraiah P. Antidepressant activity of spirulina platensis in experimentally induced dipression in mice. 2014.

52. Soetantyo GI, Sarto M. The antidepressant effect of Chlorella vulgaris on female Wistar rats (Rattus norvegicus Berkenhout, 1769) with chronic unpredictable mild stress treatment. J Trop Biodivers Biotechnol. 2019;4:72-81.

53. Miyake Y, Tanaka K, Okubo H, Sasaki S, Arakawa M. Seaweed consumption and prevalence of depressive symptoms during pregnancy in Japan: Baseline data from the Kyushu Okinawa Maternal and Child Health Study. BMC pregnancy and childbirth. 2014;14(1):1-7.

54. Allaert F-A, Demais H, Collén PN. A randomized controlled double-blind clinical trial comparing versus placebo the effect of an edible algal extract (Ulva Lactuca) on the component of depression in healthy volunteers with anhedonia. BMC psychiatry. 2018;18:1-10.

55. Guo F, Huang C, Cui Y, Momma H, Niu K, Nagatomi R. Dietary seaweed intake and depressive symptoms in Japanese adults: a prospective cohort study. Nutrition journal. 2019;18(1):1-8.

56. Sasaki K, Othman MB, Demura M, Watanabe M, Isoda H. Modulation of neurogenesis through the promotion of energy production activity is behind the antidepressant-like effect of colonial green alga, Botryococcus braunii. Frontiers in physiology. 2017;8:900.

57. Panahi Y, Badeli R, Karami G-R, Badeli Z, Sahebkar A. A randomized controlled trial of 6-week Chlorella vulgaris supplementation in patients with major depressive disorder. Complementary therapies in medicine. 2015;23(4):598-602.

58. Talbott S, Hantla D, Capelli B, Ding L, Li Y, Artaria C. Astaxanthin supplementation reduces depression and fatigue in healthy subjects. EC Nutrition. 2019;14(3):239-46.

59. Siddiqui PJA, Khan A, Uddin N, Khaliq S, Rasheed M, Nawaz S, et al. Antidepressant-like deliverables from the sea: evidence on the efficacy of three different brown seaweeds via involvement of monoaminergic system. Bioscience, Biotechnology, and Biochemistry. 2017;81(7):1369-78.

60. Abreu TM, Monteiro VS, Martins ABS, Teles FB, da Conceição Rivanor RL, Mota ÉF, et al. Involvement of the dopaminergic system in the antidepressant-like effect of the lectin isolated from the red marine alga Solieria filiformis in mice. International journal of biological macromolecules. 2018;111:534-41.

61. Violle N, Rozan P, Demais H, Nyvall Collen P, Bisson J-F. Evaluation of the antidepressant-and anxiolytic-like effects of a hydrophilic extract from the green seaweed Ulva sp. in rats. Nutritional neuroscience. 2018;21(4):248-56.

62. Wang X, Xiu Z, Du Y, Li Y, Yang J, Gao Y, et al. Brazilin Treatment Produces Antidepressant- and Anxiolytic-Like Effects in Mice. Biological and Pharmaceutical Bulletin. 2019;42(8):1268-74.

63. Xu Y, Wang Z, You W, Zhang X, Li S, Barish PA, et al. Antidepressant-like effect of trans-resveratrol: Involvement of serotonin and noradrenaline system. Eur Neuropsychopharmacol. 2010;20(6):405-13.

64. Shewale PB, Patil RA, Hiray YA. Antidepressant-like activity of anthocyanidins from Hibiscus rosa-sinensis flowers in tail suspension test and forced swim test. Indian J Pharmacol. 2012;44(4):454-7.

65. Ghazizadeh J, Sadigh-Eteghad S, Marx W, Fakhari A, Hamedeyazdan S, Torbati M, et al. The effects of lemon balm (Melissa officinalis L.) on depression and anxiety in clinical trials: A systematic review and meta-analysis. Phytotherapy Research. 2021;35(12):6690-705.

66. Guzmán-Gutiérrez SL, Gómez-Cansino R, García-Zebadúa JC, Jiménez-Pérez NC, Reyes-Chilpa R. Antidepressant activity of Litsea glaucescens essential oil: Identification of β-pinene and linalool as active principles. Journal of Ethnopharmacology. 2012;143(2):673-9.

67. Kim M, Nam ES, Lee Y, Kang HJ. Effects of Lavender on Anxiety, Depression, and Physiological Parameters: Systematic Review and Meta-Analysis. Asian Nurs Res (Korean Soc Nurs Sci). 2021;15(5):279-90.

68. Fajemiroye JO, Martins JL, Ghedini PC, Galdino PM, de Paula JA, Realino de Paula J, et al. Antidepressive-Like Property of Dichloromethane Fraction of Pimenta pseudocaryophyllus and Relevance of Monoamine Metabolic Enzymes. Evid Based Complement Alternat Med. 2013;2013:659391.

69. Molina M, Contreras CM, Tellez-Alcantara P. Mimosa pudica may possess antidepressant actions in the rat. Phytomedicine. 1999;6(5):319-23.

70. Martínez-Vázquez M, Estrada-Reyes R, Araujo Escalona AG, Ledesma Velázquez I, Martínez-Mota L, Moreno J, Heinze G. Antidepressant-like effects of an alkaloid extract of the aerial parts of Annona cherimolia in mice. J Ethnopharmacol. 2012;139(1):164-70.

71. Gabriela GC, Javier AA, Elisa VA, Gonzalo VP, Herlinda BJ. Antidepressant-like effect of Tagetes lucida Cav. extract in rats: involvement of the serotonergic system. Am J Chin Med. 2012;40(4):753-68.

72. Ali SM, Shamim S, Younus I, Anwer L, Khaliq SA. Anxiolytic, antidepressant and inhibitory effect on MAO isoenzymes by Bougainvillea glabra flower extract in rats. Pak J Pharm Sci. 2021;34(5(Supplementary)):1963-8.

73. Sarris J, Kavanagh DJ, Byrne G, Bone KM, Adams J, Deed G. The Kava Anxiety Depression Spectrum Study (KADSS): a randomized, placebo-controlled crossover trial using an aqueous extract of Piper methysticum. Psychopharmacology (Berl). 2009;205(3):399-407.

74. Kazemian A, Parvin N, Raisi Dehkordi Z, Rafieian -Kopaei M. The Effect of Valerian on the Anxiety and Depression Symptoms of the Menopause in Women Referred to Shahrekord Medical Centers. Journal of Medicinal Plants. 2017;16(61):94-101.

75. Tammadon MR, Nobahar M, Hydarinia-Naieni Z, Ebrahimian A, Ghorbani R, Vafaei AA. The Effects of Valerian on Sleep Quality, Depression, and State Anxiety in Hemodialysis Patients: A Randomized, Double-blind, Crossover Clinical Trial. Oman Med J. 2021;36(2):e255.

76. Doron R, Lotan D, Einat N, Yaffe R, Winer A, Marom I, et al. A novel herbal treatment reduces depressive-like behaviors and increases BDNF levels in the brain of stressed mice. Life Sciences. 2014;94(2):151-7.

77. Li JM, Yang C, Zhang WY, Kong LD. [The effects of banxia houpu decoction on a chronic mild stress model of depression]. Zhongguo Zhong Yao Za Zhi. 2003;28(1):55-9.

78. Sarris J, O’Neil A, Coulson CE, Schweitzer I, Berk M. Lifestyle medicine for depression. BMC Psychiatry. 2014;14(1):107.

79. Wong VW-H, Ho FY-Y, Shi N-K, Sarris J, Chung K-F, Yeung W-F. Lifestyle medicine for depression: A meta-analysis of randomized controlled trials. Journal of Affective Disorders. 2021;284:203-16.

80. Gómez-Gómez I, Bellón JÁ, Resurrección DM, Cuijpers P, Moreno-Peral P, Rigabert A, et al. Effectiveness of universal multiple-risk lifestyle interventions in reducing depressive symptoms: Systematic review and meta-analysis. Preventive Medicine. 2020;134:106067.

81. Lopresti AL, Hood SD, Drummond PD. A review of lifestyle factors that contribute to important pathways associated with major depression: Diet, sleep and exercise. Journal of Affective Disorders. 2013;148(1):12-27.

82. Berk M, Sarris J, Coulson CE, Jacka FN. Lifestyle management of unipolar depression. Acta Psychiatrica Scandinavica. 2013;127(s443):38-54.

83. Binnewies J, Nawijn L, van Tol M-J, van der Wee NJA, Veltman DJ, Penninx BWJH. Associations between depression, lifestyle and brain structure: A longitudinal MRI study. NeuroImage. 2021;231:117834.

84. Wang X, Arafa A, Liu K, Eshak ES, Hu Y, Dong J-Y. Combined healthy lifestyle and depressive symptoms: a meta-analysis of observational studies. Journal of Affective Disorders. 2021;289:144-50.

85. van Dammen L, Wekker V, de Rooij SR, Groen H, Hoek A, Roseboom TJ. A systematic review and meta-analysis of lifestyle interventions in women of reproductive age with overweight or obesity: the effects on symptoms of depression and anxiety. Obesity Reviews. 2018;19(12):1679-87.

86. Bruins J, Jörg F, Bruggeman R, Slooff C, Corpeleijn E, Pijnenborg M. The Effects of Lifestyle Interventions on (Long-Term) Weight Management, Cardiometabolic Risk and Depressive Symptoms in People with Psychotic Disorders: A Meta-Analysis. PLOS ONE. 2014;9(12):e112276.

87. Ernst E, Rand JI, Stevinson C. Complementary Therapies for Depression: An Overview. Archives of General Psychiatry. 1998;55(11):1026-32.

88. Ko K, Kopra EI, Cleare AJ, Rucker JJ. Psychedelic therapy for depressive symptoms: A systematic review and meta-analysis. Journal of Affective Disorders. 2023;322:194-204.

89. Leger RF, Unterwald EM. Assessing the effects of methodological differences on outcomes in the use of psychedelics in the treatment of anxiety and depressive disorders: A systematic review and meta-analysis. Journal of Psychopharmacology. 2022;36(1):20-30.

90. Luoma JB, Chwyl C, Bathje GJ, Davis AK, Lancelotta R. A Meta-Analysis of Placebo-Controlled Trials of Psychedelic-Assisted Therapy. Journal of Psychoactive Drugs. 2020;52(4):289-99.

91. Galvão-Coelho NL, Marx W, Gonzalez M, Sinclair J, de Manincor M, Perkins D, Sarris J. Classic serotonergic psychedelics for mood and depressive symptoms: a meta-analysis of mood disorder patients and healthy participants. Psychopharmacology. 2021;238(2):341-54.

92. Goldberg SB, Shechet B, Nicholas CR, Ng CW, Deole G, Chen Z, Raison CL. Post-acute psychological effects of classical serotonergic psychedelics: a systematic review and meta-analysis. Psychological Medicine. 2020;50(16):2655-66.

93. Muttoni S, Ardissino M, John C. Classical psychedelics for the treatment of depression and anxiety: A systematic review. Journal of Affective Disorders. 2019;258:11-24.

94. Li N-X, Hu Y-R, Chen W-N, Zhang B. Dose effect of psilocybin on primary and secondary depression: a preliminary systematic review and meta-analysis. Journal of Affective Disorders. 2022;296:26-34.

95. Goldberg SB, Pace BT, Nicholas CR, Raison CL, Hutson PR. The experimental effects of psilocybin on symptoms of anxiety and depression: A meta-analysis. Psychiatry Research. 2020;284:112749.

96. Andersen KAA, Carhart-Harris R, Nutt DJ, Erritzoe D. Therapeutic effects of classic serotonergic psychedelics: A systematic review of modern-era clinical studies. Acta Psychiatrica Scandinavica. 2021;143(2):101-18.

97. Bahji A, Lunsky I, Gutierrez G, Vazquez G. Efficacy and Safety of Four Psychedelic-Assisted Therapies for Adults with Symptoms of Depression, Anxiety, and Posttraumatic Stress Disorder: A Systematic Review and Meta-Analysis. Journal of Psychoactive Drugs.1-16.

98. Sicignano D, Snow-Caroti K, Hernandez AV, White CM. The Impact of Psychedelic Drugs on Anxiety and Depression in Advanced Cancer or other Life-threatening Disease: A Systematic Review With Meta-analysis. Am J Clin Oncol. 2023;46(6):236-45.

99. Vargas AS, Luís Â, Barroso M, Gallardo E, Pereira L. Psilocybin as a New Approach to Treat Depression and Anxiety in the Context of Life-Threatening Diseases—A Systematic Review and Meta-Analysis of Clinical Trials. Biomedicines. 2020;8(9):331.

100. Perez N, Langlest F, Mallet L, De Pieri M, Sentissi O, Thorens G, et al. Psilocybin-assisted therapy for depression: A systematic review and dose-response meta-analysis of human studies. European Neuropsychopharmacology. 2023;76:61-76.

101. Romeo B, Karila L, Martelli C, Benyamina A. Efficacy of psychedelic treatments on depressive symptoms: A meta-analysis. Journal of Psychopharmacology. 2020;34(10):1079-85.

1. Studies tested consumption of coffee and/or tea [↑](#footnote-ref-1)
2. In Forced swim test (FST), which is often used as a mouse measure of depression. Immobility time is associated with depressive phenotype. [↑](#footnote-ref-2)