

The Science of Meditation

A Research-Based Bibliography



Meditation has long been practiced for its mental, emotional, and physical benefits, but in recent decades, scientific research has provided compelling evidence of its profound effects on the brain and body. This bibliography, compiled by The Journey You Own (JYO) brings together key studies that explore meditation's impact on neuroscience, leadership, well-being, and physiological health.

Neuroscience of Meditation

This section highlights key research on how meditation influences brain plasticity, cognitive function, and stress regulation. Studies show structural and functional changes in brain regions associated with attention, emotional regulation, and self-awareness.

1. Basso JC, McHale A, Ende V, Oberlin DJ, Suzuki WA. Brief, daily meditation enhances attention, memory, mood, and emotional regulation in non-experienced meditators. *Behav Brain Res.* 2019;356:208-220. [doi:10.1016/j.bbr.2018.08.023](https://doi.org/10.1016/j.bbr.2018.08.023)
2. Brewer JA, Worhunsky PD, Gray JR, Tang YY, Weber J, Kober H. Meditation experience is associated with differences in default mode network activity and connectivity. *Proc Natl Acad Sci U S A.* 2011;108(50):20254-20259. [doi:10.1073/pnas.1112029108](https://doi.org/10.1073/pnas.1112029108)
3. Rosenkranz MA, Davidson RJ, MacCoon DG, Sheridan JF, Kalin NH, Lutz A. A comparison of mindfulness-based stress reduction and an active control in modulation of neurogenic inflammation. *Brain, Behavior, and Immunity.* 2013;27:174-184. [doi:10.1016/j.bbi.2012.10.013](https://doi.org/10.1016/j.bbi.2012.10.013)
4. Norris CJ, Creem D, Hendler R, Kober H. Brief Mindfulness Meditation Improves Attention in Novices: Evidence From ERPs and Moderation by Neuroticism. *Front Hum Neurosci.* 2018;12:315. [doi:10.3389/fnhum.2018.00315](https://doi.org/10.3389/fnhum.2018.00315)
5. Sood A, Jones DT. On mind wandering, attention, brain networks, and meditation. *Explore (NY).* 2013;9(3):136-141. [doi:10.1016/j.explore.2013.02.005](https://doi.org/10.1016/j.explore.2013.02.005)

Mindfulness and Well-Being

This section encompasses resources that explore the impact of mindfulness practices on overall well-being, including stress reduction, emotional balance, and mental health.

1. Goyal M, Singh S, Sibinga EMS, et al. Meditation programs for psychological stress and well-being: a systematic review and meta-analysis. *JAMA Intern Med*. 2014;174(3):357-368. doi:[10.1001/jamainternmed.2013.13018](https://doi.org/10.1001/jamainternmed.2013.13018)
2. Hilton L, Hempel S, Ewing BA, et al. Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis. *Ann Behav Med*. 2017;51(2):199-213. doi:[10.1007/s12160-016-9844-2](https://doi.org/10.1007/s12160-016-9844-2)
3. Ong JC, Manber R, Segal Z, Xia Y, Shapiro S, Wyatt JK. A Randomized Controlled Trial of Mindfulness Meditation for Chronic Insomnia. *Sleep*. 2014;37(9):1553-1563. doi:[10.5665/sleep.4010](https://doi.org/10.5665/sleep.4010)
4. Galante J, Galante I, Bekkers MJ, Gallacher J. Effect of kindness-based meditation on health and well-being: a systematic review and meta-analysis. *J Consult Clin Psychol*. 2014;82(6):1101-1114. doi:[10.1037/a0037249](https://doi.org/10.1037/a0037249)
5. Basso JC, McHale A, Ende V, Oberlin DJ, Suzuki WA. Brief, daily meditation enhances attention, memory, mood, and emotional regulation in non-experienced meditators. *Behav Brain Res*. 2019;356:208-220. doi:[10.1016/j.bbr.2018.08.023](https://doi.org/10.1016/j.bbr.2018.08.023)
6. Hilton L, Maher AR, Colaiaco B, et al. Meditation for posttraumatic stress: Systematic review and meta-analysis. *Psychol Trauma*. 2017;9(4):453-460. doi:[10.1037/tra0000180](https://doi.org/10.1037/tra0000180)
7. Hofmann SG, Gómez AF. Mindfulness-Based Interventions for Anxiety and Depression. *Psychiatr Clin North Am*. 2017;40(4):739-749. doi:[10.1016/j.psc.2017.08.008](https://doi.org/10.1016/j.psc.2017.08.008)
8. Rod K. Observing the Effects of Mindfulness-Based Meditation on Anxiety and Depression in Chronic Pain Patients. *Psychiatr Danub*. 2015;27 [Suppl 1:S209-211](#).
9. Shohani M, Badfar G, Nasirkandy MP, et al. The Effect of Yoga on Stress, Anxiety, and Depression in Women. *Int J Prev Med*. 2018;9:21. doi:[10.4103/ijpvm.IJPVM_242_16](https://doi.org/10.4103/ijpvm.IJPVM_242_16)

Compassion and Altruism

This section includes studies and articles that delve into how meditation fosters compassion, empathy, and altruistic behavior, contributing to stronger social connections and community well-being.

1. Ashar YK, Andrews-Hanna JR, Yarkoni T, et al. Effects of compassion meditation on a psychological model of charitable donation. *Emotion*. 2016;16(5):691-705. doi:[10.1037/emo0000119](https://doi.org/10.1037/emo0000119)

2. Fredrickson BL, Cohn MA, Coffey KA, Pek J, Finkel SM. Open hearts build lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *J Pers Soc Psychol*. 2008;95(5):1045-1062. doi:[10.1037/a0013262](https://doi.org/10.1037/a0013262)
3. Ashar YK, Andrews-Hanna JR, Yarkoni T, et al. Effects of compassion meditation on a psychological model of charitable donation. *Emotion*. 2016;16(5):691-705. doi:[10.1037/emo0000119](https://doi.org/10.1037/emo0000119)
4. Fredrickson BL, Cohn MA, Coffey KA, Pek J, Finkel SM. Open hearts build lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *J Pers Soc Psychol*. 2008;95(5):1045-1062. doi:[10.1037/a0013262](https://doi.org/10.1037/a0013262)
5. Fredrickson BL, Cohn MA, Coffey KA, Pek J, Finkel SM. Open Hearts Build Lives: Positive Emotions, Induced Through Loving-Kindness Meditation, Build Consequential Personal Resources. *J Pers Soc Psychol*. 2008;95(5):1045-1062. doi:[10.1037/a0013262](https://doi.org/10.1037/a0013262)
6. Fredrickson BL, Boulton AJ, Firestone AM, et al. Positive Emotion Correlates of Meditation Practice: A Comparison of Mindfulness Meditation and Loving-kindness Meditation. *Mindfulness (N Y)*. 2017;8(6):1623-1633. doi:[10.1007/s12671-017-0735-9](https://doi.org/10.1007/s12671-017-0735-9)

Applications of Meditation in Healthcare

This category presents research on the integration of meditation practices in medical settings, focusing on their efficacy in managing chronic conditions, pain, and mental health disorders.

1. Aman MM, Jason Yong R, Kaye AD, Urman RD. Evidence-Based Non-Pharmacological Therapies for Fibromyalgia. *Curr Pain Headache Rep*. 2018;22(5):33. doi:[10.1007/s11916-018-0688-2](https://doi.org/10.1007/s11916-018-0688-2)
2. Ong JC, Manber R, Segal Z, Xia Y, Shapiro S, Wyatt JK. A Randomized Controlled Trial of Mindfulness Meditation for Chronic Insomnia. *Sleep*. 2014;37(9):1553-1563. doi:[10.5665/sleep.4010](https://doi.org/10.5665/sleep.4010)
3. Orme-Johnson DW, Barnes VA. Effects of the transcendental meditation technique on trait anxiety: a meta-analysis of randomized controlled trials. *J Altern Complement Med*. 2014;20(5):330-341. doi:[10.1089/acm.2013.0204](https://doi.org/10.1089/acm.2013.0204)
4. Sessa F, Anna V, Messina G, et al. Heart rate variability as predictive factor for sudden cardiac death. *Aging (Albany NY)*. 2018;10(2):166-177. doi:[10.18632/aging.101386](https://doi.org/10.18632/aging.101386)
5. Bai Z, Chang J, Chen C, Li P, Yang K, Chi I. Investigating the effect of transcendental meditation on blood pressure: a systematic review and meta-analysis. *J Hum Hypertens*. 2015;29(11):653-662. doi:[10.1038/jhh.2015.6](https://doi.org/10.1038/jhh.2015.6)

6. Cearley SM, Immaneni S, Shankar P. Irritable Bowel Syndrome: The effect of FODMAPs and meditation on pain management. *European Journal of Integrative Medicine*. 2017;12:117-121. doi:[10.1016/j.eujim.2017.05.003](https://doi.org/10.1016/j.eujim.2017.05.003)
7. Koike MK, Cardoso R. Meditation can produce beneficial effects to prevent cardiovascular disease. *Horm Mol Biol Clin Investig*. 2014;18(3):137-143. doi:[10.1515/hmbci-2013-0056](https://doi.org/10.1515/hmbci-2013-0056)
8. Tsai SY, Jaiswal S, Chang CF, Liang WK, Muggleton NG, Juan CH. Meditation Effects on the Control of Involuntary Contingent Reorienting Revealed With Electroencephalographic and Behavioral Evidence. *Front Integr Neurosci*. 2018;12:17. doi:[10.3389/fnint.2018.00017](https://doi.org/10.3389/fnint.2018.00017)
9. Hurley RVC, Patterson TG, Cooley SJ. Meditation-based interventions for family caregivers of people with dementia: a review of the empirical literature. *Aging Ment Health*. 2014;18(3):281-288. doi:[10.1080/13607863.2013.837145](https://doi.org/10.1080/13607863.2013.837145)
10. Olex S, Newberg A, Figueredo VM. Meditation: should a cardiologist care? *Int J Cardiol*. 2013;168(3):1805-1810. doi:[10.1016/j.ijcard.2013.06.086](https://doi.org/10.1016/j.ijcard.2013.06.086)
11. Bandedy SS, Sheth NC, Matuella SK, et al. Mind-Body Interventions for Anxiety Disorders: A Review of the Evidence Base for Mental Health Practitioners. *Focus (Am Psychiatr Publ)*. 2021;19(2):173-183. doi:[10.1176/appi.focus.20200042](https://doi.org/10.1176/appi.focus.20200042)
12. Hilton L, Hempel S, Ewing BA, et al. Mindfulness Meditation for Chronic Pain: Systematic Review and Meta-analysis. *Ann Behav Med*. 2017;51(2):199-213. doi:[10.1007/s12160-016-9844-2](https://doi.org/10.1007/s12160-016-9844-2)
13. Krygier JR, Heathers JAJ, Shahrestani S, Abbott M, Gross JJ, Kemp AH. Mindfulness meditation, well-being, and heart rate variability: a preliminary investigation into the impact of intensive Vipassana meditation. *Int J Psychophysiol*. 2013;89(3):305-313. doi:[10.1016/j.ijpsycho.2013.06.017](https://doi.org/10.1016/j.ijpsycho.2013.06.017)
14. Bostock S, Crosswell AD, Prather AA, Steptoe A. Mindfulness on-the-go: Effects of a mindfulness meditation app on work stress and well-being. *J Occup Health Psychol*. 2019;24(1):127-138. doi:[10.1037/ocp0000118](https://doi.org/10.1037/ocp0000118)
15. Shapero BG, Greenberg J, Pedrelli P, de Jong M, Desbordes G. Mindfulness-Based Interventions in Psychiatry. *Focus (Am Psychiatr Publ)*. 2018;16(1):32-39. doi:[10.1176/appi.focus.20170039](https://doi.org/10.1176/appi.focus.20170039)
16. Khoury B, Lecomte T, Fortin G, et al. Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*. 2013;33(6):763-771. doi:[10.1016/j.cpr.2013.05.005](https://doi.org/10.1016/j.cpr.2013.05.005)

17. Hoge EA, Bui E, Marques L, et al. Randomized Controlled Trial of Mindfulness Meditation for Generalized Anxiety Disorder: Effects on Anxiety and Stress Reactivity. *J Clin Psychiatry*. 2013;74(8):786-792. doi:[10.4088/JCP.12m08083](https://doi.org/10.4088/JCP.12m08083)
18. Khalsa DS. Stress, Meditation, and Alzheimer's Disease Prevention: Where The Evidence Stands. *J Alzheimers Dis*. 2015;48(1):1-12. doi:[10.3233/JAD-142766](https://doi.org/10.3233/JAD-142766)
19. Karimi Moridani M, Yousefi P, Safavi Sohi A. The effect of meditation on regulation of heart rate. *Am J Biomed Sci Res*. 2021;12:001736. doi:[10.34297/AJBSR.2021.12.001736](https://doi.org/10.34297/AJBSR.2021.12.001736).
20. Gard T, Hölzel BK, Lazar SW. The potential effects of meditation on age-related cognitive decline: a systematic review. *Ann N Y Acad Sci*. 2014;1307:89-103. doi:[10.1111/nyas.12348](https://doi.org/10.1111/nyas.12348)
21. Boellinghaus I, Jones FW, Hutton J. The Role of Mindfulness and Loving-Kindness Meditation in Cultivating Self-Compassion and Other-Focused Concern in Health Care Professionals. *Mindfulness*. 2014;5(2):129-138. doi:[10.1007/s12671-012-0158-6](https://doi.org/10.1007/s12671-012-0158-6)

Educational Resources and Guides

This section offers instructional materials and guides for individuals interested in beginning or deepening their meditation practice, providing practical steps and insights.

1. Greenblatt L. How to Meditate: A Step-by-Step Guide - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/how-to-meditate/>
2. Staff LR. A Beginner's Guide to Meditation: Read the Introduction and opening meditation instruction from the new Shambhala Sun book - Lion's Roar. Accessed May 27, 2022.
3. Staff LR. A Beginner's Guide to Meditation: Read the Introduction and opening meditation instruction from the new Shambhala Sun book - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/a-beginners-guide-to-meditation-read-the-introduction-and-opening-meditation-instruction-from-the-new-shambhala-sun-book/>
4. Ruiz N. Apps to Support Your Mindfulness Practice. Bhavana Learning Group. May 21, 2018. Accessed May 27, 2022. <https://www.bhavanalearning.com/apps-support-mindfulness-practice/>
5. Greenblatt L. How to Meditate: A Step-by-Step Guide - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/how-to-meditate/>

6. Owens LR. How to Practice Shamatha Meditation - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/how-to-practice-shamatha/>
7. Fischer N. How to Start a Home Meditation Practice - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/how-to-meditate-getting-started-september-2010/>
8. Introduction to lovingkindness meditation. Wildmind. Accessed May 27, 2022. <https://www.wildmind.org/metta/introduction>
9. Wadsworth R. Meditation Instruction. Lion's Roar Dharma Center. Accessed May 27, 2022. <https://lionsroardharmacenter.org/meditation-instruction/>
10. Posture - Key Points and Tips. Accessed May 27, 2022. <https://learn.lionsroar.com/courses/141181/lectures/2647028>
11. Jinpa T. Set Your Intention & Rejoice in Your Day - Lion's Roar. Accessed May 31, 2022. <https://www.lionsroar.com/set-your-intention-rejoice-in-your-day/>
12. Zampella T. The Experience of Being in 12 Practices- C. :7.
13. Pandita SU. What Is Vipassana Meditation and How Do You Practice It? - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/how-to-practice-vipassana-insight-meditation/>
14. Pandita SU. What Is Vipassana Meditation and How Do You Practice It? - Lion's Roar. Accessed May 27, 2022. <https://www.lionsroar.com/how-to-practice-vipassana-insight-meditation/>