

Cedars-Sinai

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Autism Symptoms

Deficits in language, communication, and ritualistic/ repetitive behaviors

ANXIETY

SLEEP

BEHAVIOR

ATTENTION



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Autism Treatment

*Deficits in language, communication, and ritualistic/
repetitive behaviors – **INTENSIVE THERAPY***

Anxiety - **SSRIs**

Sleep - **MELATONIN**

Behavior -
ANTIPSYCHOTICS

Attention -
STIMULANTS



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Why Yoga?



Yoga Studies



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Yoga and Sleep

- Harvard study shows faster return to sleep after night awakenings when practicing yoga (Kudesia RS, Bianchi MT Decreased nocturnal awakenings in young adults performing bikram yoga: a low-constraint home sleep monitoring study. *ISRN Neurol.* 2012;2012:153745. Epub 2012 Apr12.)
- Yoga improves sleep, reduces anxiety/ depression, and improves quality of life in cancer survivors (Côté A, Daneault S. Effect of yoga on patients with cancer: Our current understanding. *Can Fam Physician.* 2012 Sep;58(9):e475-9.)
- Yoga reduces insomnia and improves quality of life in post-menopausal women. (Afonso RF, Hachul H, Kozasa EH, Oliveira Dde S, Goto V, Rodrigues D, Tufik S, Leite JR. Yoga decreases insomnia in postmenopausal women: a randomized clinical trial. *Menopause.* 2012 Feb;19(2):186-93.)
- Further support for possible sleep benefits with yoga. (Taibi DM, Vitiello MV. A pilot study of gentle yoga for sleep disturbance in women with osteoarthritis. *Sleep Med.* 2011 May;12(5):512-7. Epub 2011 Apr 13.)
- Yoga may help sleep in pregnant women. (Beddoe AE, Lee KA, Weiss SJ, Kennedy HP, Yang CP. Effects of mindful yoga on sleep in pregnant women: a pilot study. *Biol Res Nurs.* 2010 Apr;11(4):363-70.)

Yoga and Anxiety

- Harvard study shows that yoga reduces performance anxiety (Khalsa SB, Shorter SM, Cope S, Wyshak G, Sklar E. Yoga ameliorates performance anxiety and mood disturbance in young professional musicians. *Appl Psychophysiol Biofeedback*. 2009 Dec;34(4):279-89. Epub 2009 Aug 6.)
- Yoga reduces stress and anxiety (Sengupta P. Health Impacts of Yoga and Pranayama: A State-of-the-Art Review. *Int J Prev Med*. 2012 Jul;3(7):444-58.)
- A neuroimaging study that yoga increases the anxiety reducing molecule, GABA, more than walking - (Streeter CC, Whitfield TH, Owen L, Rein T, Karri SK, Yakhkind A, Perlmutter R, Prescott A, Renshaw PF, Ciraulo DA, Jensen JE Effects of yoga versus walking on mood, anxiety, and brain GABA levels: a randomized controlled MRS study. *J Altern Complement Med*. 2010 Nov;16(11):1145-52. Epub 2010 Aug 19.)
- Yoga reduces anxiety, more than just exercise – (Nidhi R, Padmalatha V, Nagarathna R, Amritanshu R. Effect of holistic yoga program on anxiety symptoms in adolescent girls with polycystic ovarian syndrome: A randomized control trial. *Int J Yoga*. 2012 Jul;5(2):112-7.)

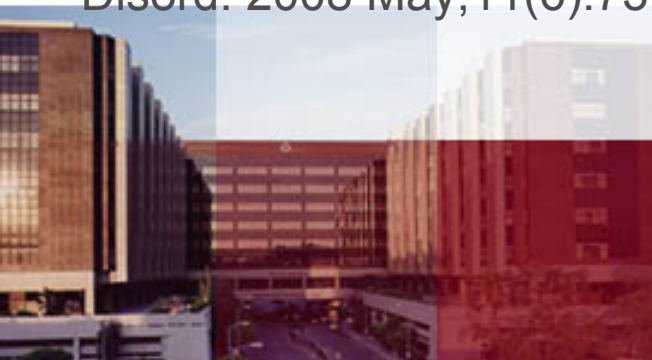


Yoga and Quality of Life

- Yoga improved psychosocial well-being and some mood symptoms (Noggle JJ, Steiner NJ, Minami T, Khalsa SB. Benefits of yoga for psychosocial well-being in a US high school curriculum: a preliminary randomized controlled trial. *J Dev Behav Pediatr.* 2012 Apr;33(3):193-201.)
- Yoga improves sleep, reduces anxiety/ depression, and improves quality of life in cancer survivors (Côté A, Daneault S. Effect of yoga on patients with cancer: Our current understanding. *Can Fam Physician.* 2012 Sep;58(9):e475-9.)
- Yoga helps with anger control and reduces fatigue in healthy adolescents. (Khalsa SB, Hickey-Schultz L, Cohen D, Steiner N, Cope S. Evaluation of the mental health benefits of yoga in a secondary school: a preliminary randomized controlled trial. *J Behav Health Serv Res.* 2012 Jan;39(1):80-90.)
- Yoga has been shown to reduce anxiety and improve subjective well being in patients with chronic disease (Yadav RK, Magan D, Mehta M, Mehta N, Mahapatra SC. A short-term, comprehensive, yoga-based lifestyle intervention is efficacious in reducing anxiety, improving subjective well-being and personality. *Int J Yoga.* 2012 Jul;5(2):134-9.)

Yoga and ADHD

- Yoga may improve ADHD symptoms (larger study needed) – (Jensen PS, Kenny DT. The effects of yoga on the attention and behavior of boys with Attention-Deficit/hyperactivity Disorder (ADHD). *J Atten Disord.* 2004 May;7(4):205-16.)
- Yogic breathing, more than just breath awareness, can improve fine motor and visual discrimination tasks – (Telles S, Singh N, Balkrishna A. Finger dexterity and visual discrimination following two yoga breathing practices. *Int J Yoga.* 2012 Jan;5(1):37-41.)
- Study out of Columbia U shows yoga may improve ADHD symptoms – (Mehta S, Mehta V, Mehta S, Shah D, Motiwala A, Vardhan J, Mehta N, Mehta D. Multimodal behavior program for ADHD incorporating yoga and implemented by high school volunteers: a pilot study. *ISRN Pediatr.* 2011;2011:780745. Epub 2011 Aug 11.)
- Mindfulness meditation may help ADHD symptoms – (Zylowska L, Ackerman DL, Yang MH, Futrell JL, Horton NL, Hale TS, Pataki C, Smalley SL. Mindfulness meditation training in adults and adolescents with ADHD: a feasibility study. *J Atten Disord.* 2008 May;11(6):737-46. Epub 2007 Nov 19.)



Pre- and Post- Measures

Bridgeport school, ages 5-8, autism diagnosis

Sleep
questionnaire

PARS

SRS

SRS-TRF

Peds QoL



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