


## CLINICAL INQUIRIES

Evidence-based answers from the  
Family Physicians Inquiries Network 

Irene Belle Skowronek, PhD; Anne Mounsey, MD  
Department of Family  
Medicine, University of  
North Carolina at Chapel  
Hill

Lara Handler, MSLS  
Health Sciences Library,  
University of North  
Carolina at Chapel Hill

ASSISTANT EDITOR  
Richard Guthmann, MD,  
MPH  
University of Illinois  
at Chicago, Advocate  
Illinois Masonic  
Medical Center, Chicago

## Q / Can yoga reduce symptoms of anxiety and depression?

### EVIDENCE-BASED ANSWER

**A** / YES, yoga can reduce symptoms of anxiety and depression (strength of recommendation [SOR]: **B**, systematic reviews of randomized controlled trials [RCTs] with significant heterogeneity). Across multiple RCTs using varied yoga in-

terventions and diverse study populations, yoga typically improves overall symptom scores for anxiety and depression by about 40%, both by itself and as an adjunctive treatment. It produces no reported harmful side effects.

### Evidence summary

Across 3 systematic reviews of yoga for depression, anxiety, and stress, yoga produced overall reductions of symptoms between 12% and 76%, with an average of 39% net reduction in symptom scores across measures (TABLE).<sup>1-3</sup> The RCTs included in the systematic reviews were too heterogeneous to allow quantitative analyses of effect sizes.

#### Yoga found to significantly reduce depression symptoms

Two 2012 systematic reviews of yoga for depression evaluated 13 RCTs with a total of 782 participants, ages 18 to 80 years with mild to moderate depression. In the 12 RCTs that reported gender, 82% of participants were female; in 6 RCTs a total of 313 patients had cancer.<sup>1,2</sup>

The RCTs compared yoga to wait-list controls, counseling, education, exercise, or usual care. They evaluated yoga both as a stand-alone intervention and an adjunct to usual care. Yoga sessions varied from 1 hour weekly to 90 minutes daily over 2 to 24 weeks and included physical postures, relaxation, and breathing techniques.

Eight moderate- to high-quality RCTs with a total of 483 participants reported statistically significant reductions in depression symptoms in the yoga groups compared with control groups. In 3 RCTs, yoga was equiva-

lent to wait-list controls; 2 RCTs showed results equivalent to exercise and superior to wait-list controls.

#### Yoga alleviates anxiety and stress without adverse effects

A 2012 systematic review of yoga for stress and anxiety evaluated 10 RCTs with a total of 813 heterogeneous participants, ages 18 to 76 years, including pregnant women, breast cancer patients, flood survivors, healthy volunteers, patients with chronic illnesses, perimenopausal women, adults with metabolic syndrome, and people working in finance, all with a range of anxiety and stress symptoms.<sup>3</sup> The RCTs compared yoga, as an adjunctive or stand-alone treatment, with wait-list controls, relaxation, therapy, anxiety education, rest, or exercise. Yoga regimens varied from a single 20-minute session to 16 weeks of daily 1-hour sessions, with most regimens lasting 6 to 10 weeks.

Of the 10 RCTs reviewed, 7 moderate- to high-quality studies with a total of 627 participants found statistically significant reductions in anxiety and stress in yoga groups compared with control groups. Of the remaining 3 studies, 1 found yoga equivalent to cognitive therapy; 1 found a nonsignificant benefit for yoga compared with wait-list controls; and 1 found no improvement with either yoga or relaxation.

TABLE

## What effect does yoga have on depression and anxiety?

RCT cited in systematic review	Number	Control group	Yoga as adjunct or stand-alone?	Scale	P value	% reduction in symptom scores following yoga intervention
Krishnamurthy 2007 <sup>1</sup>	69	Ayurveda and wait list	Stand-alone	GDS	<.001	37%
Shahidi 2011 <sup>1</sup>	70	Exercise and wait list	Stand-alone	GDS	.04	38%
Vedamurthachar 2006 <sup>1</sup>	60	Treatment as usual	Adjunct	BDI	<.001	76%
Woolery 2006 <sup>1</sup>	28	Wait list	Stand-alone	BDI	<.01	69%
Banerjee 2007 <sup>2</sup>	68	Supportive counseling	Adjunct	HADS	<.001	58%
Berger 1992 <sup>2</sup>	87	Exercise and wait list	Stand-alone	POMS	.25	61%
Cohen 2004 <sup>2</sup>	39	Wait list	Adjunct	CES-D	.56	12%
Culos-Reed 2006 <sup>2</sup>	38	Wait list	Stand-alone	POMS	<.10	53%
Javnbakht 2009 <sup>2</sup>	65	Wait list	Stand-alone	BDI	.13	16%
Danhauer 2009 <sup>2</sup>	44	Wait list	Stand-alone	CES-D	.026	50%
Raghavendra 2007 <sup>2</sup>	62	Supportive therapy	Stand-alone	BDI	<.01	Not reported
Vadiraja 2009 <sup>2</sup>	62	Supportive therapy	Stand-alone	HADS	.002	45%
Williams 2009 <sup>2</sup>	90	Standard medical care	Stand-alone	BDI-II	<.01	46%
Chattha 2008 <sup>3</sup>	120	Physical exercises	Stand-alone	PSS	<.001	34%
Cohen 2008 <sup>3</sup>	24	Wait list	Stand-alone	PSS	.22	Not reported
Granath 2006 <sup>3</sup>	31	Cognitive therapy	Adjunct	PSS	Not reported	19%
Gupta 2006 <sup>3</sup>	225	No intervention	Adjunct	STAI	<.001	12%
Khemka 2009 <sup>3</sup>	86	Supine rest	Stand-alone	STAI	<.001	15%
Lee 2007 <sup>3</sup>	46	Anxiety education	Adjunct	HAM-A STAI	Not reported	49% 28%
Rao 2009 <sup>3</sup>	38	Supportive therapy	Adjunct	STAI	<.001	41%
Satyapriya 2009 <sup>3</sup>	90	Physical exercises	Stand-alone	PSS	.001	32%
Smith 2007 <sup>3</sup>	131	Relaxation	Adjunct	STPI	.45	Not reported
Telles 2010 <sup>3</sup>	22	Wait list	Stand-alone	VAS-A	<.05	22%

BDI, Beck Depression Inventory; CES-D, Center for Epidemiological Studies Depression Scale; GDS, Geriatric Depression Scale; HADS, Hospital Anxiety and Depression Scale; HAM-A, Hamilton Anxiety Rating Scale; HbA1c, hemoglobin A1c; POMS, Profile of Mood States; PSS, Perceived Stress Scale; RCT, randomized controlled trial; STAI, State-Trait Anxiety Inventory; STPI, State-Trait Personality Inventory anxiety subscale; VAS-A, Visual Analog Scale for Anxiety.

Study limitations included a range of symptom severity, variable type and length of yoga, lack of participant blinding, wait-list rather than active-treatment controls, and a lack of consistent long-term follow-up data. The RCTs didn't report any adverse effects of yoga, and yoga is considered safe when taught by a competent instructor.<sup>3,4</sup>

### Recommendations

The Institute for Clinical Systems Improve-

ment and the Canadian Network for Mood and Anxiety Treatments recommend yoga as an effective adjunctive treatment to decrease the severity of depression symptoms.<sup>5,6</sup>

The Veterans Health Administration and the US Department of Defense recommend yoga as a potential adjunctive treatment to manage the hyperarousal symptoms of post-traumatic stress disorder (PTSD).<sup>7</sup>

The Work Loss Data Institute recommends yoga as an intervention for workers compensation conditions including

CONTINUED ON PAGE 407

CONTINUED FROM PAGE 399

occupational stress, major depressive disorder, PTSD, and other mental disorders.<sup>8</sup> JFP

References

1. Balasubramaniam M, Telles S, Doraiswamy PM. Yoga on our minds: a systematic review of yoga for neuropsychiatric disorders. *Front Psychiatry*. 2012;3:117.
2. D'Silva S, Poscablo C, Habousha R, et al. Mind-body medicine therapies for a range of depression severity: a systematic review. *Psychosomatics*. 2012;53:407-423.
3. Li AW, Goldsmith CA. The effects of yoga on anxiety and stress. *Altern Med Rev*. 2012;17:21-35.
4. Brown RP, Gerbarg PL. Sudarshan Kriya Yogic breathing in the treatment of stress, anxiety, and depression. Part II—clinical applications and guidelines. *J Altern Complement Med*.

2005;11:711-717.

5. Mitchell J, Trangle M, Degnan B, et al. Institute for Clinical Systems Improvement. Adult depression primary care. Available at: [https://www.icsi.org/\\_asset/fnhdm3/Depr-Interactive0512b.pdf](https://www.icsi.org/_asset/fnhdm3/Depr-Interactive0512b.pdf). Updated September 2013. Accessed March 6, 2014.
6. Ravindran AV, Lam RW, Filteau MJ, et al; Canadian Network for Mood and Anxiety Treatments (CANMAT). Canadian Network for Mood and Anxiety Treatments (CANMAT) clinical guidelines for the management of major depressive disorder in adults. V. Complementary and alternative medicine treatments. *J Affect Disord*. 2009;117(suppl 1):S54-S64.
7. US Department of Veterans Affairs. VA/DoD clinical practice guideline for management of post-traumatic stress disorder and acute stress reaction. US Department of Veterans Affairs Web site. Available at: <http://www.healthquality.va.gov/ptsd/>. Accessed March 6, 2014.
8. Agency for Healthcare Research and Quality. Mental illness & stress. Agency for Healthcare Research and Quality Web site. Available at: <http://www.guideline.gov/content.aspx?id=47588>. Updated May 2011. Accessed June 17, 2014.

NOW AVAILABLE IN THIS ISSUE AND ONLINE

A SPECIAL SUPPLEMENT ON  
**Management of Obesity  
in Adults**

Topics covered in this comprehensive update include:

- Pathophysiology, Epidemiology, and Assessment of Obesity in Adults
- Tips for Communicating With Overweight and Obese Patients
- Principles and Nonpharmacologic Management of Obesity in Adults
- The Pharmacological and Surgical Management of Adults With Obesity
- Evolving Directions in Obesity Management

With an introduction by Stephen A. Brunton, MD, FAAFP



AVAILABLE NOW AT  
JFPONLINE.COM



This supplement was sponsored by Primary Care Education Consortium and Primary Care Metabolic Group and is supported by funding from Novo Nordisk Inc. It was edited and peer reviewed by *The Journal of Family Practice*.

