



Brigham & Women's Hospital

Harvard Medical School



Scientific Research on Yoga and Sleep

Yoga Alliance Webinar June 11, 2020

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Sleep

- A biological need
- Sleep : Wakefulness
- An active process
- A complex process



Sleep and Sleep Disorders

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Sleep

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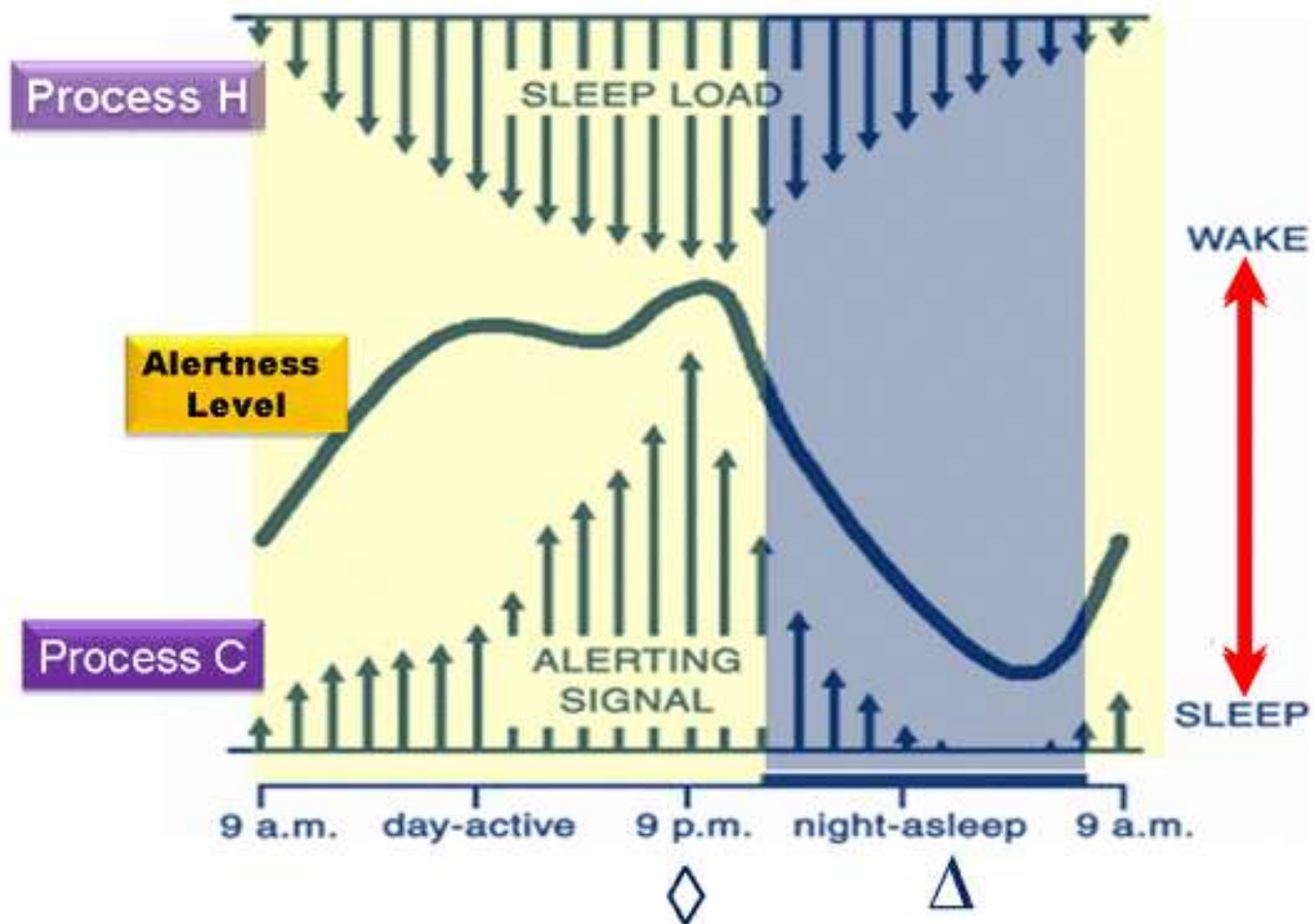
How Much Sleep Do I Need?

How much sleep you need changes as you age.

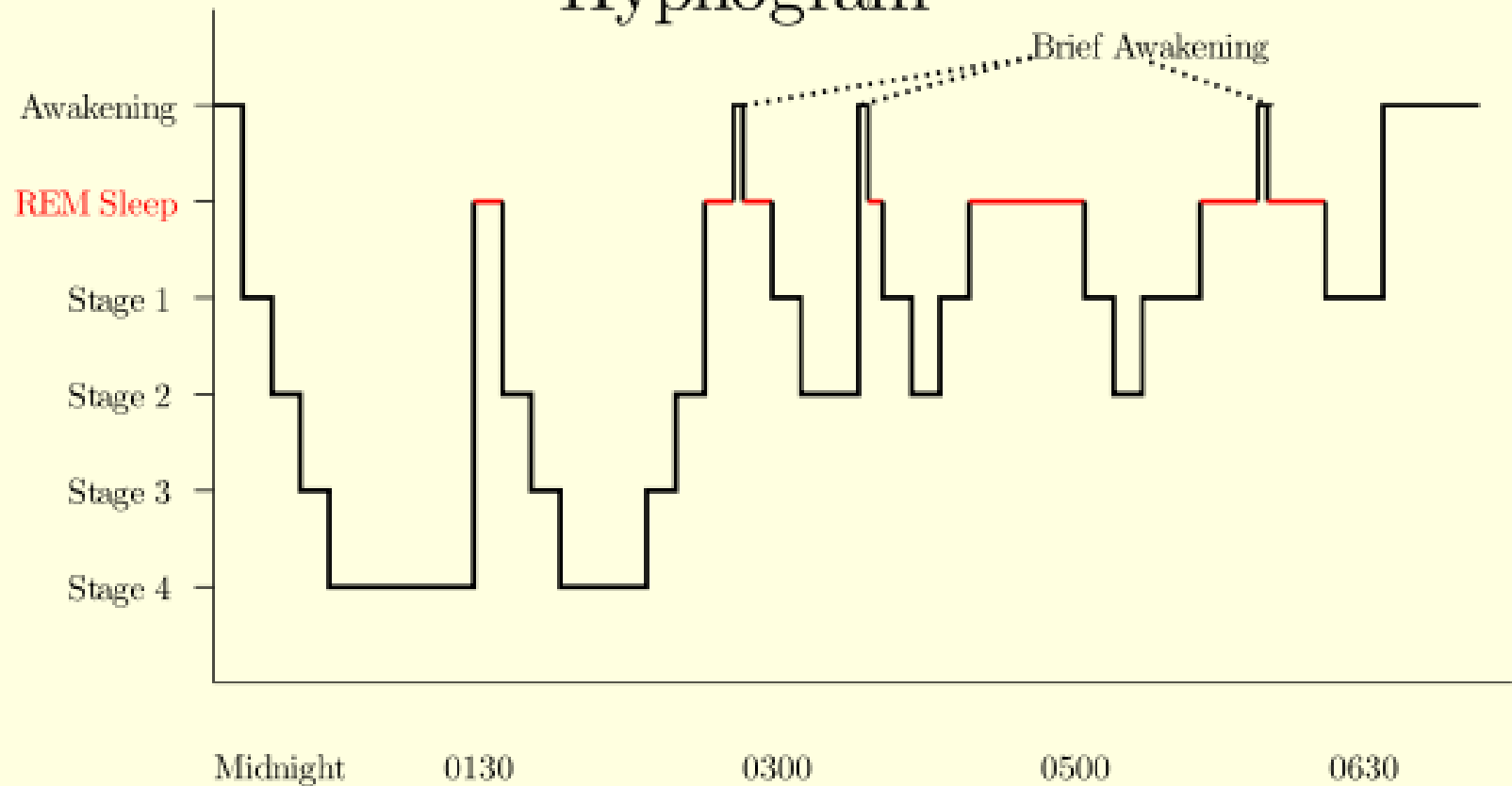
Age Group		Recommended Hours of Sleep Per Day
Newborn	0–3 months	14–17 hours (National Sleep Foundation) ¹ No recommendation (American Academy of Sleep Medicine) ²
Infant	4–12 months	12–16 hours per 24 hours (including naps) ²
Toddler	1–2 years	11–14 hours per 24 hours (including naps) ²
Preschool	3–5 years	10–13 hours per 24 hours (including naps) ²
School Age	6–12 years	9–12 hours per 24 hours ²
Teen	13–18 years	8–10 hours per 24 hours ²
Adult	18–60 years	7 or more hours per night ³
	61–64 years	7–9 hours ¹
	65 years and older	7–8 hours ¹

Physiologic Determinants Sleep and Wakefulness

- Biological Time of Day (circadian phase)
- Number of Hours Awake
- Nightly Sleep Duration
- Sleep Inertia



Hypnogram



Sleep Disorders

Three major categories:

- Parasomnias
- Disorders of excessive daytime sleepiness
- Insomnia

Insomnia

America Insomnia Study

“...the overall prevalence estimate of broadly defined insomnia [is 23.6%...”

“Insomnia is...associated with substantial decrements in perceived health.”

From: Roth T, Coulouvrat C, Hajak G, Lakoma MD, Sampson NA, Shahly V, Shillington AC, Stephenson JJ, Walsh JK, Kessler RC., Prevalence and perceived health associated with insomnia based on DSM-IV-TR; International Statistical Classification of Diseases and Related Health Problems, Tenth Revision; and Research Diagnostic Criteria/International Classification of Sleep Disorders, Second Edition criteria: results from the America Insomnia Survey, Biological Psychiatry 69(6):592-600, 2011.

America Insomnia Study

“The magnitude of the association between insomnia and days-out-of-role is substantial: an estimated gross 590 million days/year...”

“Insomnia was one of the most important conditions studied...at the aggregate level, where it was associated with 13.6% of all days-out-of-role.”

From: *Days-out-of-role associated with insomnia and comorbid conditions in the America Insomnia Survey.*

Hajak G, Petukhova M, Lakoma MD, Coulouvrat C, Roth T, Sampson NA, Shahly V, Shillington AC, Stephenson JJ, Walsh JK, Kessler RC, *Biological Psychiatry*, 70:1063-73, 2011.

“...insomnia is much more strongly related to presenteeism than absenteeism. This means that workers with insomnia generally put in the same number of work hours as other workers, but that their on-the-job performance is lower than other workers.”

“...estimate of \$59.8 billion annual lost productivity...”

From: *Insomnia and the performance of US workers: results from the America insomnia survey*, Kessler RC, Berglund PA, Coulouvrat C, Hajak G, Roth T, Shahly V, Shillington AC, Stephenson JJ, Walsh JK, *Sleep*, 34:1161-71, 2011.

Insomnia Presentation

- Sleep onset insomnia
- Sleep maintenance insomnia
- Poor quality/non-restorative sleep

Insomnia Diagnostic Criteria

- Sleep onset latency > 30 minutes
- Wake time after sleep onset > 30 minutes
- Frequency at least 3 times/week
- Duration at least 6 months
- Significant daytime impairment

Medications and substances

- Acute use
- Chronic use
- Withdrawal

Circadian Factors

- Jet lag
- Shift work
- Advanced, delayed sleep phases

Medical/Neurological Factors

- Pain, discomfort
- Specific disorders

Environmental Factors

- Physical discomfort
- Noise
- Light

Psychiatric or Psychological Factors

- Depression or Anxiety
- Bereavement
- Acute stress

Primary Sleep Disorders

- Restless Legs Syndrome
- Periodic limb movements
- Respiratory arousals
- Parasomnias

From: *The evaluation and treatment of insomnia*, Buysse DJ, Perlis ML, *Journal of Practical Psychiatry and Behavioral Health*. 10:541-553, 1987.

INSOMNIA

Medications and substances

- Acute use
- Chronic use
- Withdrawal

Circadian Factors

- Jet lag
- Shift work
- Advanced, delayed sleep phases

Medical/Neurological Factors

- Pain, discomfort
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Environmental Factors

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- Bereavement
- Acute stress

Behavioral, Psychophysiological, and Conditioning Factors

- Fear, frustration with insomnia
- Sleep-incompatible behaviors
- Increased arousal

Primary Sleep Disorders

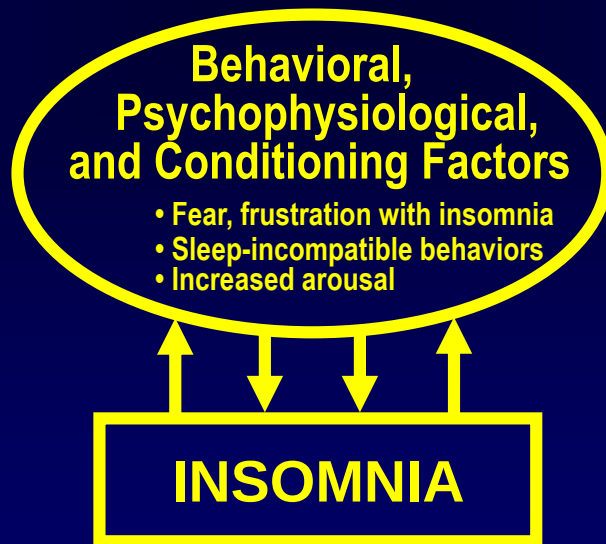
- Restless Legs Syndrome
- Periodic limb movements
- Respiratory arousals
- Parasomnias

INSOMNIA

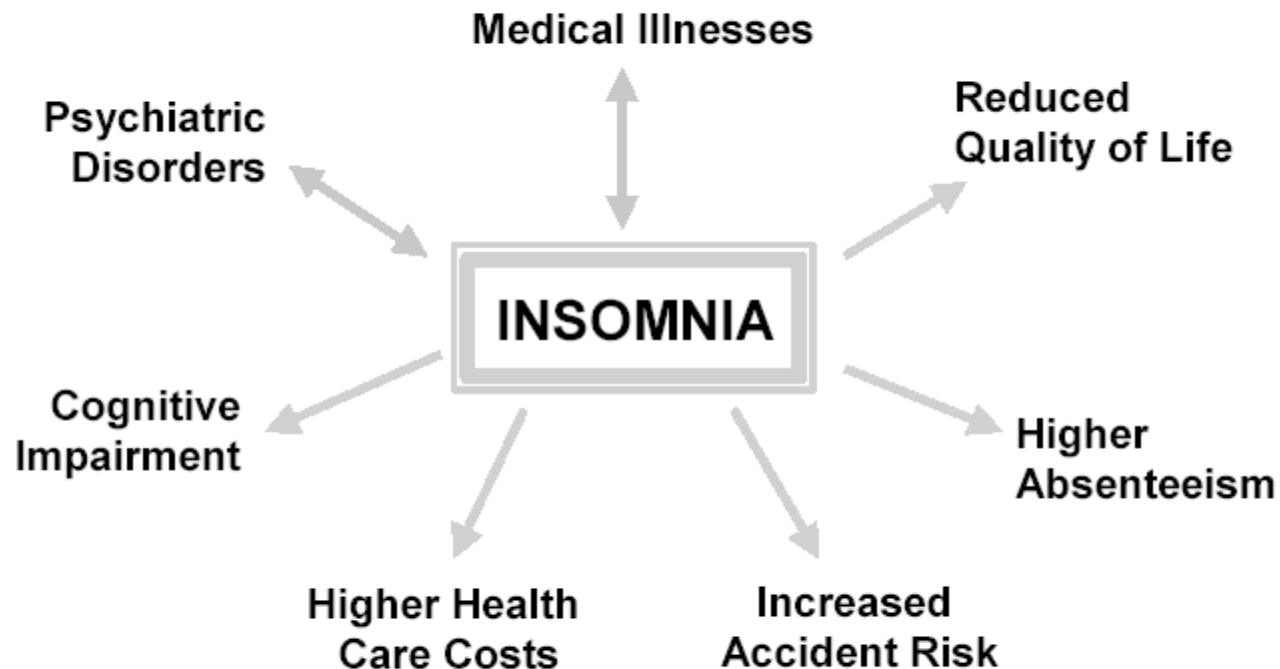
**Behavioral,
Psychophysiological,
and Conditioning Factors**

- Fear, frustration with insomnia
- Sleep-incompatible behaviors
- Increased arousal

INSOMNIA



Impact of Insomnia



Benca RM. *J Clin Psychiatry*. 2001;62(suppl 10):33-38.

Insomnia Treatment

- Treat underlying cause (secondary insomnia)
 - Pain, depression, anxiety, sleep disordered breathing, RLS/PLMD
- Pharmacological Treatments
- Behavioral Treatments

Behavioral Treatments for Insomnia

<i>Sleep Hygiene</i>	General sleep-specific recommendations for facilitating sleep
<i>Stimulus control</i>	Association/Reassociation of the bed/bedroom solely for sleep or sex
<i>Cognitive therapy</i>	Challenge dysfunctional beliefs and misperceptions about sleep and insomnia
<i>Sleep restriction</i>	Improve sleep continuity by limiting time spent in bed
<i>Relaxation training</i>	Relaxation treatments employing cognitive and/or somative techniques to reduce tension and arousal

Yoga Practices

Postures, Breathing, Relaxation, Meditation

Fitness

↑Flexibility
↑Strength
↑Coordination/Balance
↑Respiratory Function
↑Self-Efficacy

Self-Regulation

↑Stress Regulation
↑Emotion Regulation
↑Resilience
↑Equanimity
↑Self-Efficacy

Awareness

↑Attention
↑Mindfulness
↑Concentration
↑Cognition
↑Meta-cognition

Spirituality

↑Unitive State
↑Transcendence
↑Flow
↑Transformation
↑Life Meaning/Purpose

Global Human Functionality

↑Physical & Mental Health, ↑Physical Performance
↑Stress & Emotion Regulation, ↑Awareness/Mindfulness, ↑Meta-cognition
↑Positive Behavior, ↑Wellbeing, ↑Values, ↑Life Purpose & Meaning, ↑Spirituality

Yoga for Sleep



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*This morning was brought to you
by a good night's sleep.*

As you know, Tylenol Extra Strength capsules are the most powerful over-the-counter pain reliever and fever reducer available. They're also gentle on your stomach and won't irritate your heart or blood pressure. So when you're looking for relief, Tylenol Extra Strength is the best choice.



For great mornings, take comfort in our strength.

Mind-body interventions for the treatment of insomnia: a review

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“Mind-body interventions were able to improve sleep efficiency and total sleep time. Most can ameliorate sleep quality; some can reduce the use of hypnotic drugs in those who are dependent on these drugs.”

“...self-reported sleep was improved by all mind-body treatments, among them yoga, relaxation, Tai Chi...”

<https://www.scielo.br/pdf/rbp/v32n4/a18v32n4.pdf>

Yoga Therapy in Practice

Yoga as the “Next Wave” of Therapeutic Modalities For Treatment of Insomnia

Sarah L. Kennedy, PhD

Baylor College of Medicine, Houston, Texas, USA

Sarah.Kennedy2@va.gov

“Yoga practice is well suited to complement existing therapies and to address sleep problems in a more holistic way.”

“Yoga teachers and practitioners have long touted the positive effects of yoga and meditation on sleep...improvements in sleep are among the first (and often most valued) changes observed by new practitioners (Cimini, 2010). Yoga is already one of the top five alternative medicine interventions for insomnia, based on consumer surveys...”



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journal homepage: www.elsevier.com/locate/smr



CLINICAL REVIEW

The effect of meditative movement on sleep quality: A systematic review



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SUMMARY

The purpose of this systematic review was to identify and assess evidence related to the efficacy of meditative movement (MM) on sleep quality. We conducted a comprehensive review of relevant studies drawn from English and Chinese databases. Only randomized controlled trials (RCTs) reporting outcomes of the effects of MM (tai chi, qi gong, and yoga) on sleep quality were taken into consideration. Twenty-seven RCTs fulfilled our inclusion criteria and formed the basis for this review. Due to clinical heterogeneity, no meta-analysis was performed. Seventeen studies received a Jadad score of ≥ 3 and were considered high-quality studies. Findings of the 17 studies showed that MM has beneficial effects for various populations on a range of sleep measures. Improvement in sleep quality was reported in the majority of studies and was often accompanied by improvements in quality of life, physical performance, and depression. However, studies to date generally have significant methodological limitations. Additional RCTs with rigorous research designs focusing on sleep quality or insomnia and testing specific hypotheses are needed to clearly establish the efficacy of MM in improving sleep quality and its potential use as an intervention for various populations.

Integrative Medicine for Insomnia

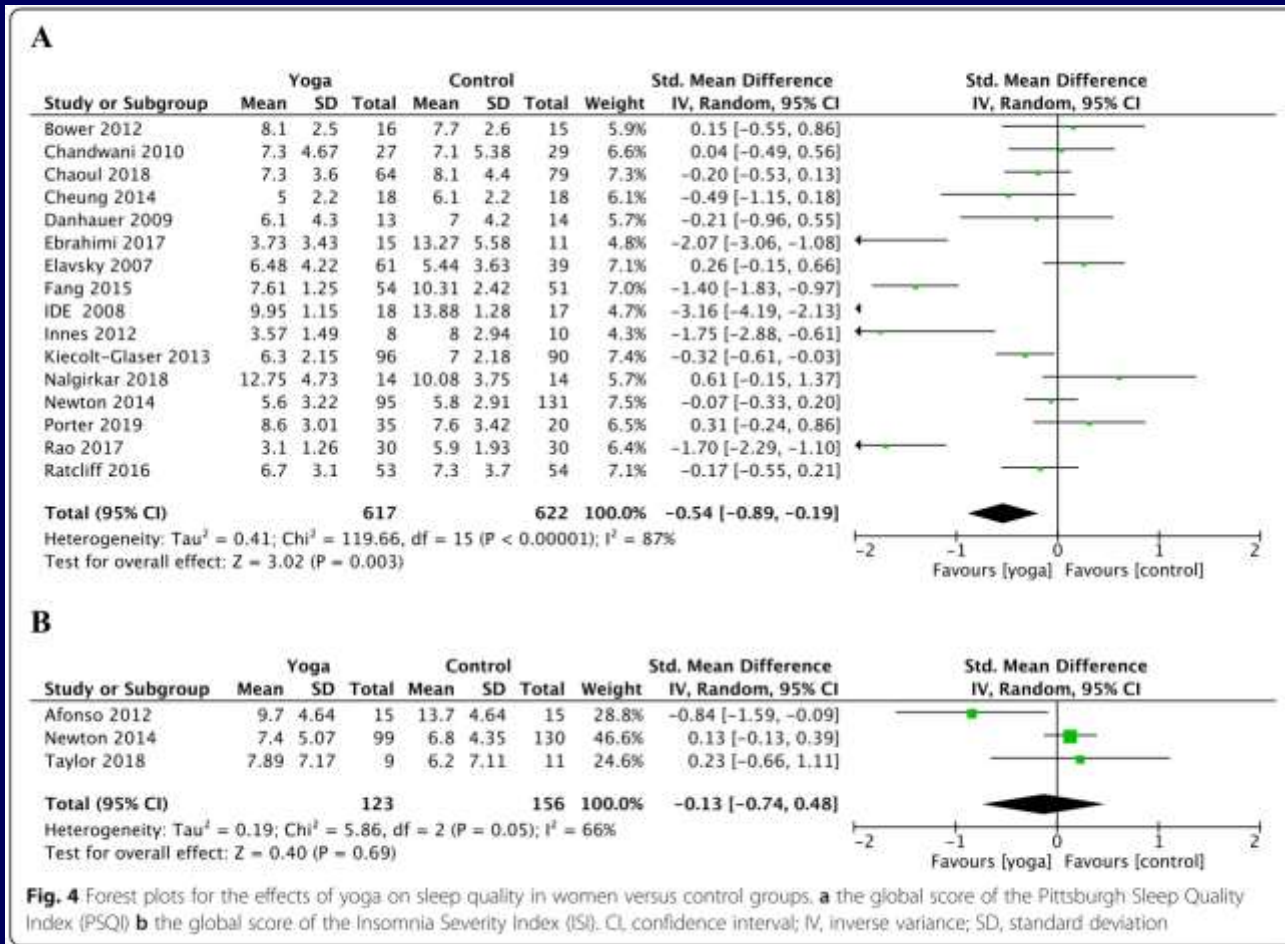
Eric S. Zhou, PhD^{a,*}, Paula Gardiner, MD, MPH^b, Suzanne M. Bertisch, MD, MPH^c

KEY POINTS

- Insomnia is a common sleep disorder that is associated with poorer physical and psychological health.
- The comprehensive evaluation of a patient's health status is important when diagnosing insomnia and devising a treatment plan.
- Consistent evidence has demonstrated the efficacy of cognitive-behavioral therapy (CBT) for insomnia. CBT should be considered as first-line treatment.
- There is a growing body of literature suggesting that mindfulness-based stress management, yoga, and tai chi may improve insomnia symptoms. Current data do not support routine use of dietary supplements for sleep.
- Well-designed research studies are needed to better understand the impact of other complementary treatment approaches for insomnia (eg, acupuncture).

From: *Integrative Medicine for Insomnia*, Zhou ES, Gardiner P, Bertisch SM, *Medical Clinics of North America*, 101:865-879, 2017.

Yoga for Sleep Problems in Women



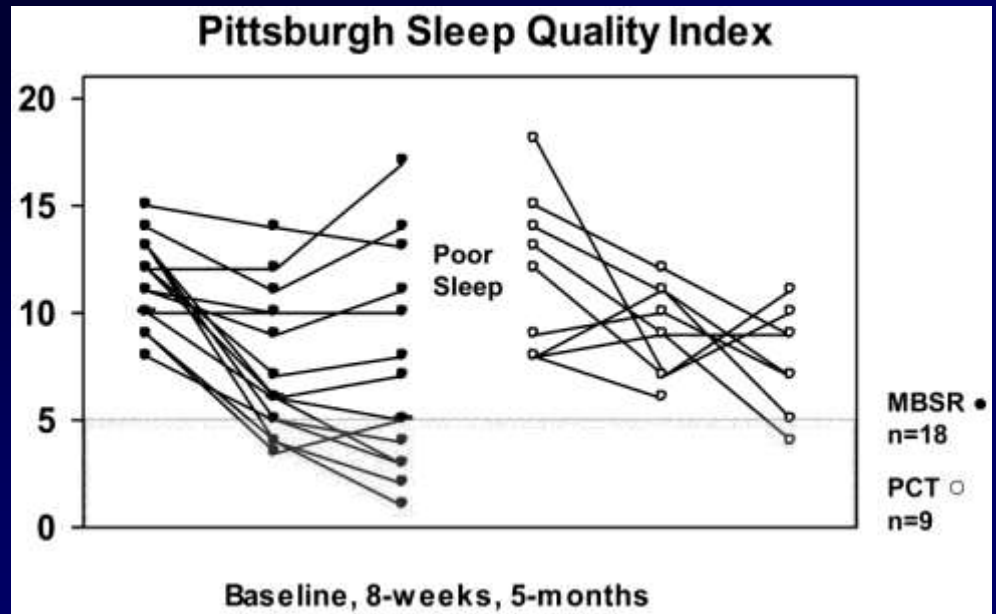
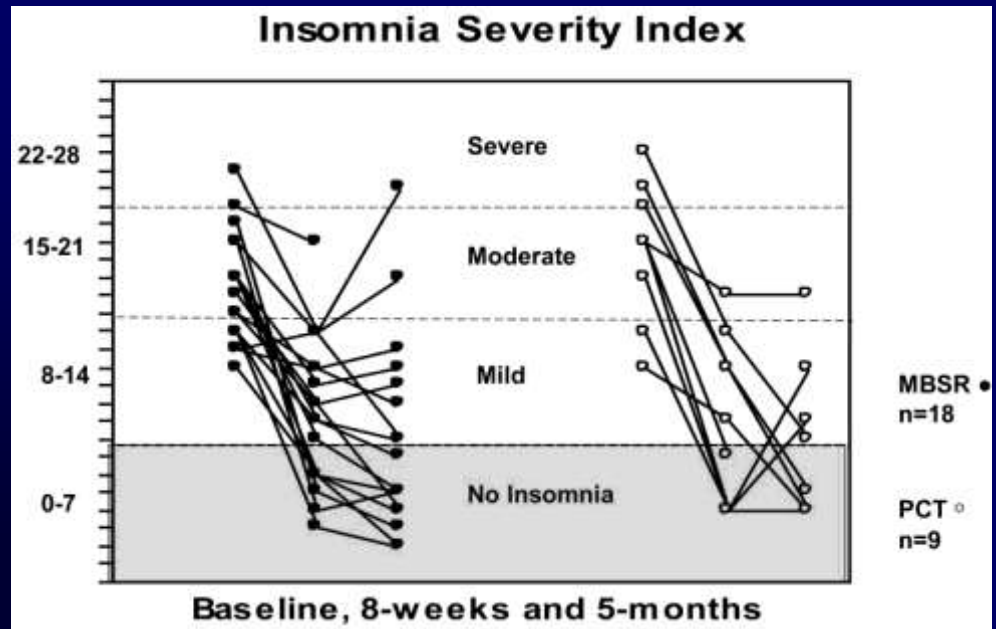
From: *The effect of yoga on sleep quality and insomnia in women with sleep problems: a systematic review and meta-analysis*. Wang WL, Chen KH, Pan YC, Yang SN, Chan YY. *BMC Psychiatry*, May 1;20:195, 2020.

<https://bmcpsychiatry.biomedcentral.com/track/pdf/10.1186/s12888-020-02566-4>

MBSR as a Treatment for Insomnia

From: *Mindfulness-based stress reduction versus pharmacotherapy for chronic primary insomnia: a randomized controlled clinical trial*, Gross CR, Kreitzer MJ, Reilly-Spong M, Wall M, Winbush NY, Patterson R, Mahowald M, Cramer-Bornemann M. *Explore (NY)*, 7:76-87, 2011.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3077056/pdf/nihms260691.pdf>



Multicomponent Cognitive Behavioral Treatment for Insomnia

TABLE II

Components of the Multifactor Behavioral Insomnia Intervention

- | | |
|-----------|---|
| Session 1 | Sleep education and cognitive restructuring concerning sleep (ie, recognizing, challenging, and changing distorted, inaccurate attitudes and beliefs about sleep requirements, attributions, effects of sleep loss, and subjective perception of amount of sleep obtained). |
| Session 2 | Medication withdrawal (ie, gradual reduction of dose and then medication nights under the patient's physician supervision as behavioral techniques are learned and implemented) and sleep hygiene (ie, reducing alcohol, caffeine, and nicotine use, increasing late-day exercise but not within 3 hours of bedtime, and establishing a regular wind-down period prior to bedtime). |
| Session 3 | Sleep scheduling (ie, employing a regular arising time, only allowing naps of less than 45 minutes duration and no later than 4 PM, and limiting time in bed to 1.5 hours beyond the average sleep length, as calculated from weekly sleep diaries, to improve sleep efficiency). |
| Session 4 | Modified stimulus control (ie, using the bedroom for sleep or relaxing activities only, going to bed only when drowsy, and, if not asleep within 20 to 30 minutes, opening eyes and engaging in relaxing activity in bed or another room with no attempt to sleep until drowsy again [repeat as necessary]). |

Session 5 Relaxation response (ie, a set of integrated physiologic changes that are consistent with reductions in sympathetic nervous system activity and that are elicited when an individual engages in a repetitive mental activity [eg, muscular relaxation and breathing focus] and passively ignoring distracting thoughts*) combined with stimulus control (ie, if not asleep within 20 to 30 minutes, opening the eyes and engaging in a relaxing activity until drowsy). Patients were instructed to elicit the relaxation response daily for 2 weeks and then daily and at bedtime or upon awakening thereafter.

Session 6 Cognitive restructuring for stress management (ie, recognizing, challenging, and changing distorted negative cognitive appraisals concerning daily stressors).

Session 7 Maintaining and enhancing therapeutic gains (ie, employing an overall review of the multifactor behavioral intervention, the importance of compliance, and the follow-up data to facilitate coping appraisals regarding maintenance and enhancement of therapeutic gains).

*Benson H. *The Relaxation Response*. New York: William Morrow; 1975.

From: *Perceived benefits in a behavioral-medicine insomnia program: a clinical report*, Jacobs GD, Benson H, Friedman R, *American Journal of Medicine* 100:212-216, 1996

Multi- component Behavioral Treatment for Insomnia

From: *Perceived benefits
in a behavioral-medicine
insomnia program: a
clinical report,*
Jacobs,G.D.; Benson,H.;
Friedman,R., *American
Journal of Medicine*
100:212-216, 1996

TABLE III

Posttreatment Improvements in Sleep and Sleep Medication Use

Patients reporting improved sleep (n = 102)	
Significant improvement	58%
Moderate improvement	33%
Slight improvement	9%
No improvement	0%
Sleep worse	0%
Patients reporting sleeping medication reduction or cessation (n = 68)	
Eliminated medication	38%
Reduced dosage or increased number of medication-free nights	53%
No change	9%
Increased medication use	0%
Patients reporting maintenance or enhancement of improvement in sleep at 6-month follow-up (n = 70)	
Improvement enhanced	47%
Improvement maintained	43%
Sleep worse	10%

Yoga on Insomnia in the Elderly

Table 2. Subjective Sleep Quality Pre- and Postintervention Results

Variable	Group	Subset Groups	n	Preintervention M (SD)	Postintervention M (SD)	df	P Value
PSQI Global Score							
	WLC		21	10.14 (3.21)	10.00 (3.08)	1.64	.81
	Total YI		45	9.82 (3.49)	8.67 (3.62)	1.64	.011
	YI subsets	YLC	18	9.17 (3.94)	9.72 (4.03)	1.63	.39
		YHC	27	10.26 (3.14)	7.96 (3.22)	1.63	<.001
PSQI Sleep Quality Score							
	WLC		25	1.84 (0.62)	1.72 (0.54)	1.78	.44
	Total YI		55	1.60 (0.65)	1.27 (0.52)	1.78	.002
	YI subsets	YLC	25	1.56 (0.71)	1.28 (0.46)	1.77	.076
		YHC	30	1.63 (0.61)	1.27 (0.58)	1.77	.012
PSQI Sleep Latency Score							
	WLC		22	2.45 (0.67)	2.00 (0.93)	1.62	.012
	Total YI		42	1.86 (0.98)	1.48 (1.02)	1.62	.004
	YI subsets	YLC	17	1.94 (1.03)	1.82 (1.07)	1.61	.56
		YHC	25	1.80 (0.96)	1.24 (0.93)	1.61	.001
PSQI Sleep Duration Score							
	WLC		23	2.04 (0.82)	2.26 (0.75)	1.73	.17
	Total YI		52	2.00 (0.99)	1.77 (0.85)	1.73	.042
	YI subsets	YLC	23	1.74 (1.10)	1.87 (0.87)	1.72	.41
		YHC	29	2.21(0.86)	1.69 (0.85)	1.72	<.001

From: *Yoga for improving sleep quality and quality of life for older adults*, Halpern J, Cohen M, Kennedy G, Reece J, Cahan C, Baharav A, *Alternative Therapies in Health and Medicine*, 20:37-46, 2014.

Yoga on Insomnia Post-Menopause

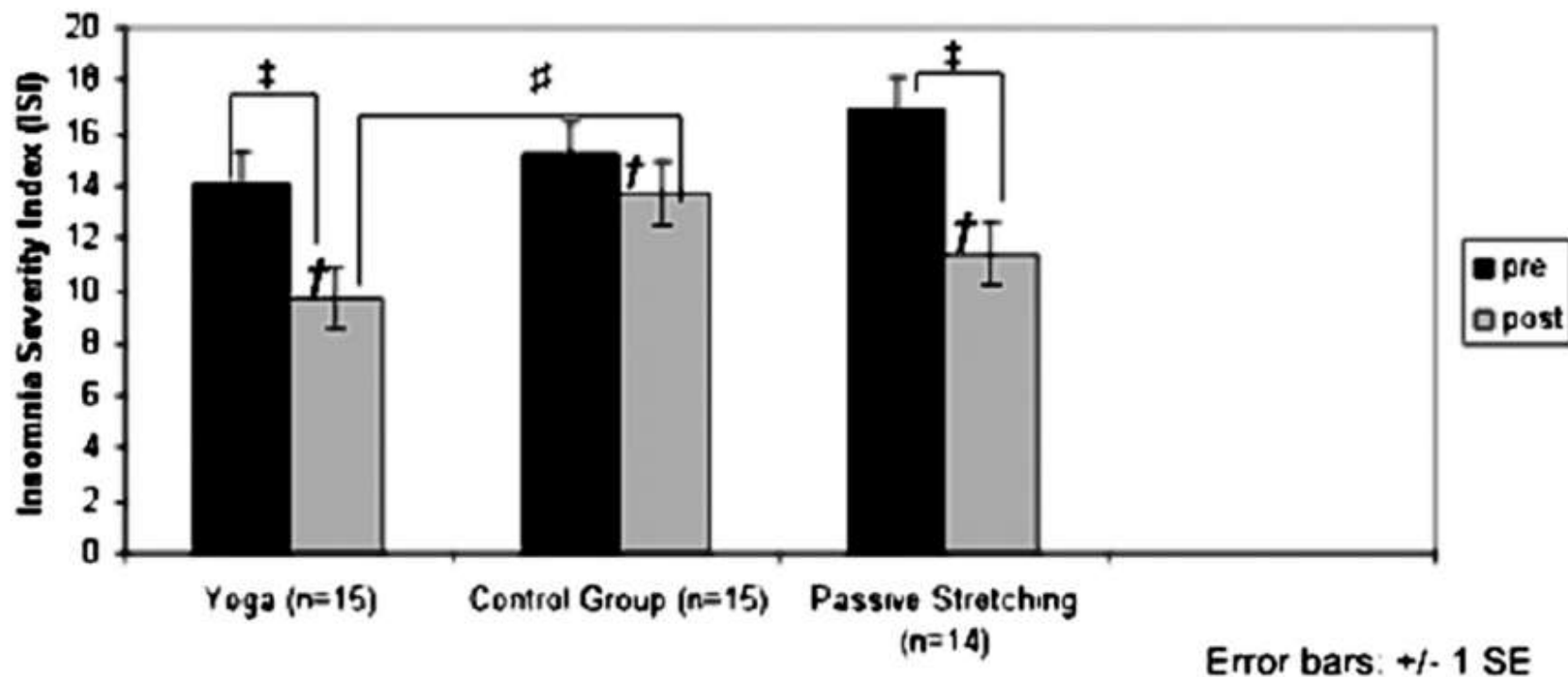


FIG. 2. Results of pretreatment and posttreatment ISI scores for the three groups: control, passive stretching, and yoga. ‡Comparison between the preintervention and postintervention time points for each group; †comparison of the effect of treatment between groups; #comparison of the groups at the postintervention time point ($P < 0.05$). ISI, Insomnia Severity Index.

From: *Yoga decreases insomnia in postmenopausal women: a randomized clinical trial.* Afonso RF, Hachul H, Kozasa EH, Oliveira Dde S, Goto V, Rodrigues D, Tufik S, Leite JR, *Menopause* 19:186-93, 2012.



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Shabad Kriya for Deep, Relaxing Sleep

The best time to practice this kriya is every night before bed, but it can be practiced any time of the day. It is said that if it is practiced regularly, sleep will be deep and relaxed, and the nerves will regenerate. After a few months, the rhythm of your breath as you sleep will be subconsciously regulated in the rhythm of the mantra. You will think better, work better, share better, love better, and fight better.

This rhythmic mantra will eventually progress so that even in daily activities you will automatically hear the mantra and take on the breath rhythm.

The breath is regulated into 22 beats. In Numerology, the number 11 is the number of Infinity. The number 22 is the mastery of the mental realm. This 22 beat breath gives the mind the power to stretch to the Infinite.

There cannot be enough praise of this meditation and its growth-promoting effect on the personality. It gives radiance, and the radiance gives patience, which is the first condition of real love. In love you give without attention to all the mistakes of another as the sun gives light and warmth to all people.

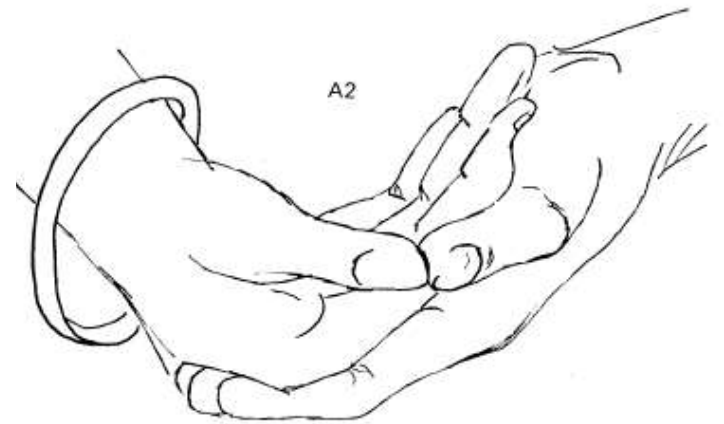
Posture: Sit in any comfortable posture with the spine straight. Place the hands in the lap, palms up with the right hand over the left. The thumbs are together and point forward.

Eyes: Focus the eyes on the tip of the nose, the eyelids 9/10 closed.

Breath and Mantra: Inhale in 4 equal parts, mentally vibrating the mantra *Sa-Ta-Na-Ma*. Hold the breath, vibrating the mantra 4 times for a total of 16 beats. Exhale in 2 equal strokes projecting mentally *Wahe Guru*. Continue for 15 to 62 minutes.

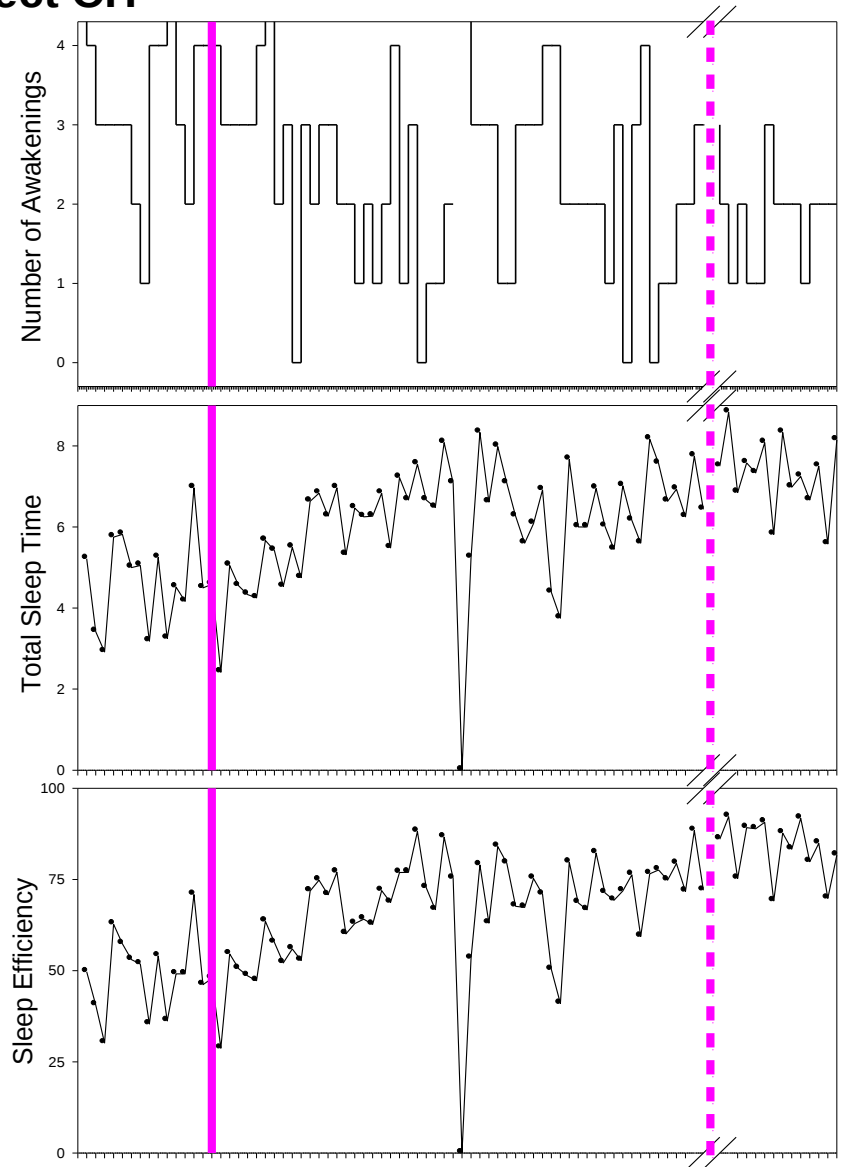
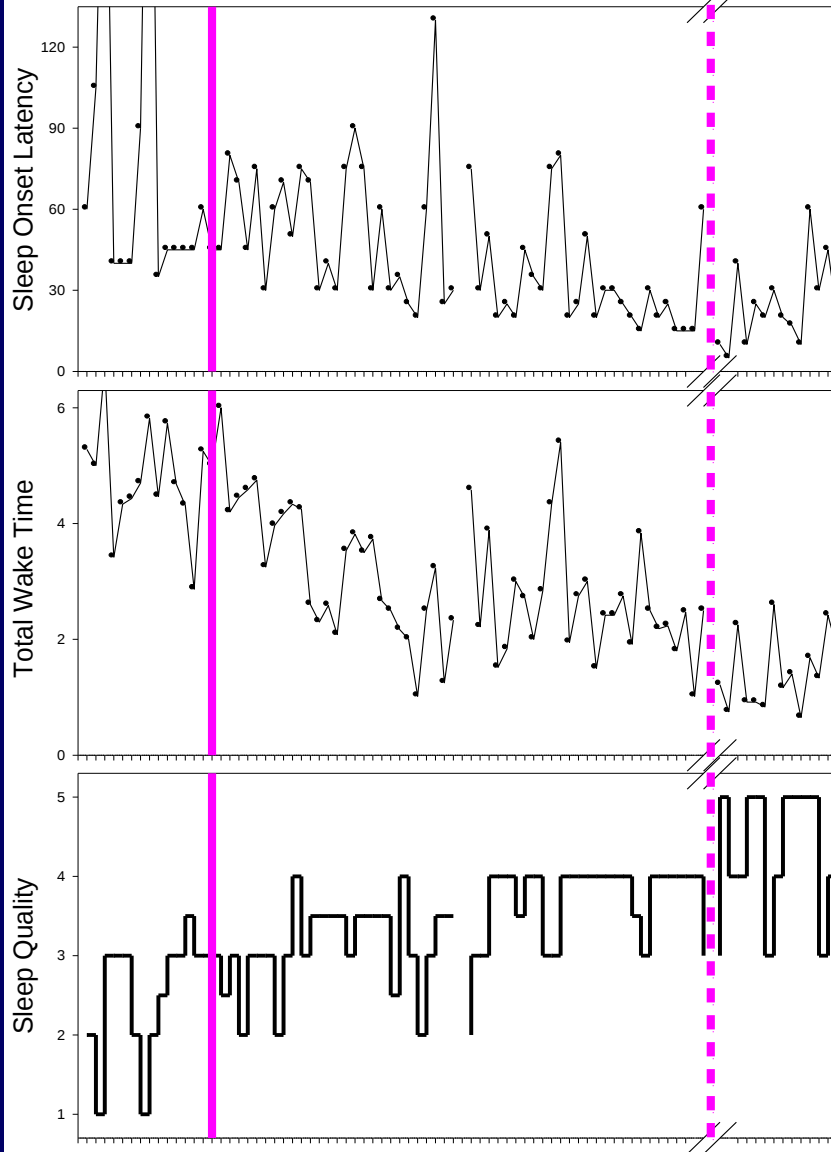
©1975 The Teachings of Yogi Bhajan

This meditation was practiced for 31 minutes in a successful pilot sleep trial for chronic insomnia conducted by Sat Bir Singh Khalsa, Ph.D. at Harvard Medical School. For 20 participants completing the protocol, statistically significant improvements in sleep were observed.



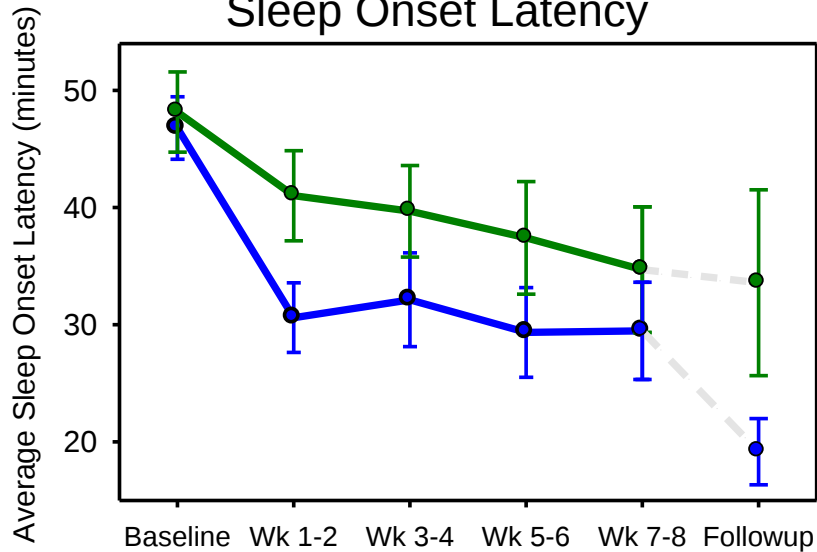
<https://www.3ho.org/articles/shabad-kriya-deep-sleep-and-radiance>

Subject CH

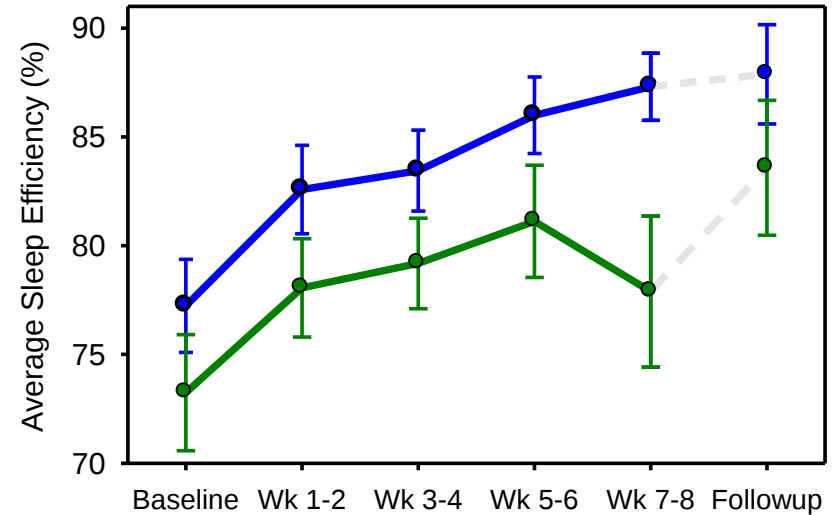


Shabad Kriya for Chronic Insomnia

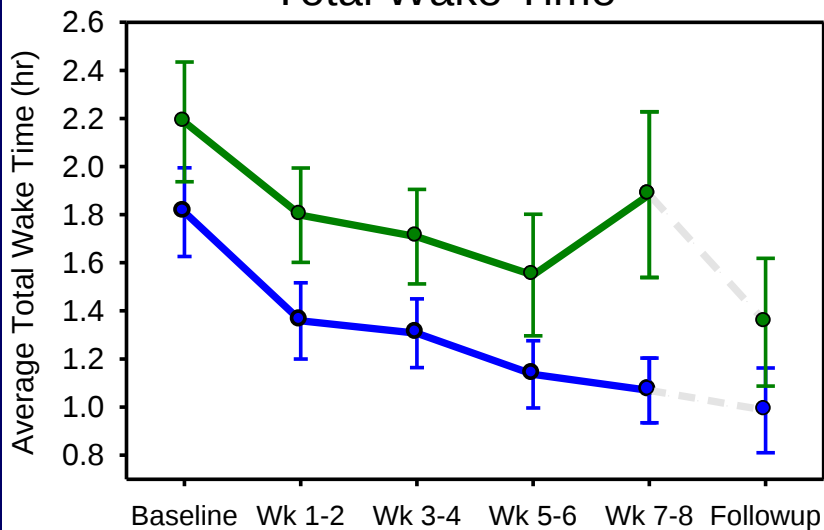
Sleep Onset Latency



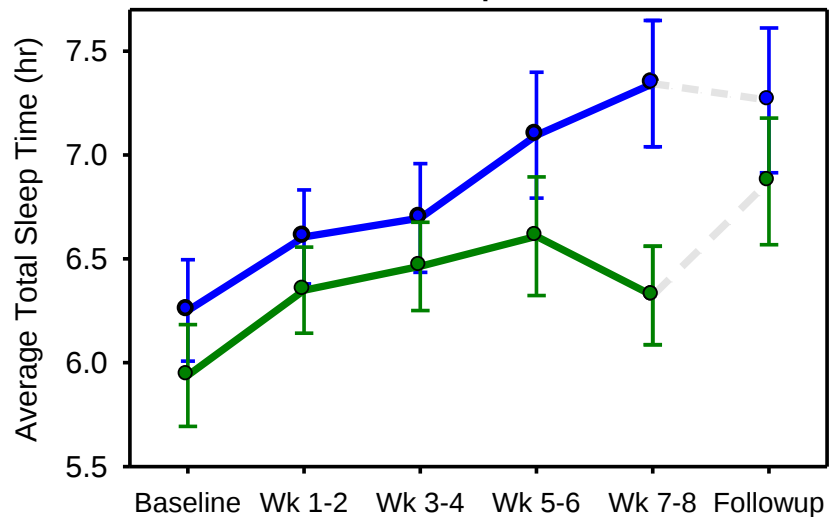
Sleep Efficiency



Total Wake Time



Total Sleep Time



Kriya for Conquering Sleep

1. Sit on the heels with the palms on the thighs. Keep the spine straight and lean back 30 degrees from the vertical position. Hold the posture with long deep breathing for 1 minute. Then relax.



2. Still sitting on the heels, fold the arms across the chest and hold onto the elbows. Rotate the torso in a circle from right to left. Continue this grinding motion for 3 minutes.



3. Immediately stretch the legs out straight. Put the hands on the ground next to the hips. With the inhale lift the heels and body off the ground. With the exhale drop the body. Do 20 of these "body drops" with the breath.



4. Repeat Exercise 2 for 3 minutes.

5. Repeat Exercise 3 for 15 body drops.

6. Come into Bridge Pose. Raise the hips up and bend at the knees. The palms and feet are on the ground. Let the head relax back. Hold the pose for 1 minute with normal breathing. Continue with breath of fire for 3 minutes. Then inhale, exhale completely, and hold the breath out as you apply mulaband. Relax.

7. Repeat Exercise 3 for 10 body drops.

8. Repeat Exercise 6 (Bridge Pose) for 3 minutes with breath of fire.

9. Relax completely on the back for 2 to 3 minutes.



10. Come into Bridge Pose. Raise the right leg 60 degrees. Point the toes forward. Do a powerful breath of fire for 1 1/2 minutes. Then inhale deeply, exhale completely, and apply mulaband. Repeat the exercise with the left leg raised. Relax.

11. Sit in Crow Pose. Squat down with the feet flat on the ground. With the palms facing down, extend the arms in front parallel to the ground. Inhale deeply as you stand up; exhale completely as you squat down. Keep the spine as straight as possible. Do 30 of these Crow Pose squats.

12. Lie on the stomach. Put the palms on the ground under the shoulders. Slowly arch up into Cobra Pose. Hold the pose with normal breathing for 1 minute. Then kick the buttocks with one leg for 2 minutes. Each time the heel strikes the buttocks, exhale slightly. Kick with the other leg for 2 more minutes. Relax.

13. Sit on the heels in Rock Pose. Extend the arms straight over the head with the palms flat together. Bring the palms down halfway toward the top of the head with the elbows slightly bent. Raise the eyes up and focus at the center of the skull on the pineal gland and through the top of the head. Continue for at least 3 minutes.

Comments:

If sleep is a constant problem for you, practice this kriya regularly for 90 days. It can be done before bed at night or in the morning. We waste billions of dollars on sleeping aids and stimulants when a much safer and more stable approach exists in exercise and meditation. Unfortunately, the exercises take effort; a pill doesn't. If you choose to put the effort into this kriya, it will eliminate sleep disturbances and give you alertness throughout the day.

© The Teachings of Yogi Bhajan

This Kriya can be found in the *Sadhana Manual* available from KRI.

Note: Always seek the advice of a trained health professional before beginning any exercise program. The information presented here is not intended to diagnose, treat, cure, or replace proper medical care. The benefits attributed to the practice of yoga come from the centuries-old yogic traditions. Results will vary with individuals.



Hold for 5 minutes and then let it go. Repeat a second time for 5-10 minutes and a third time if you can.

<https://www.3ho.org/3ho-lifestyle/health-and-healing/kriya-conquering-sleep>

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Scientific Research on Yoga

Substantial research has been done on many of the populations and parts of the body that COVID-19 preys on most. Use this section of Yoga Alliance's website to learn more about scientific research on the effects of yoga on the **elderly**, **respiratory function**, **anxiety**, and **depression**, to name a few.

Perhaps more than ever, yoga is being widely studied and evaluated for its positive effects and benefits. At Yoga Alliance, we curate the latest and most relevant research on yoga's applications in health, wellness, and disease. We have filtered it in a digestible manner for our Registered Yoga Schools and Registered Yoga Teachers as well as for the broader yoga community.

This evidence-based research not only reveals the science of yoga, it also explains its therapeutic efficacy when used in conjunction with conventional medicine. Our goal is that this impactful content will be utilized in a way that highlights even more of yoga's ancient, multi-faceted ability to improve lives.

Join us! Let us know how research on yoga is important or valuable to you on social media (@YogaAlliance) or by emailing us at research@yogaalliance.org. We honor and value your personal experiences and look forward to featuring your stories.

Our Research Conversation

Our Director of Yoga Research



Our Director of Yoga Research Dr. Sat Bir Singh Khalsa is a renowned yoga research expert and yoga teacher who has committed his professional life to clinical research surrounding yoga's full spectrum of healing efficacy.

[Learn More](#)

Featured Research Video



Learn about the process of aging and how yoga affects (and even slows down) aging.

[Watch Now](#)

Featured Health News



Visit our COVID-19 website, YourYA.org, for the most recent and applicable information on the coronavirus and the COVID-19 pandemic.

[Learn More](#)

Main Research Categories



Basic
Research



Special
Populations



Disease and
Disorders

Archived Videos

Browse our selection of **yoga research videos** to learn more about research done in specific categories of health and wellness.

Other Mental Health Conditions Addictions, Substance Abuse, Trauma, Post-Traumatic Stress Disorder, Neuroses, Psychotic Conditions, Insomnia

HOW TO READ THIS MATERIAL

Each citation is either:



A full-text article, or an abstract (summary) of a full-text article.



A Review Paper or Notable Publications.

Our hope is for yoga schools and yoga teachers to utilize this impactful content in their teachings to promote and highlight yoga's evident multi-faceted ability to improve lives. Let us know how research on yoga is important or valuable to you on social media (@YogaAlliance) or by emailing us at research@yogaalliance.org. We honor and value your personal experiences and look forward to featuring your stories.

These citations were curated by Yoga Alliance's Director of Yoga Research, **Dr. Sat Bir Singh Khalsa**.

Main Research Categories



Basic Research



Special Populations



Disease and Disorders

Review Papers (What's this?)

Integrative Body-Mind-Spirit (I-BMS) Practices for Schizophrenia: An Outcome Literature Review on Randomized Controlled Trials.

Wang X, Beauchemin J, Liu C, Lee MY.

Community Ment Health J. 2019 Oct;55(7):1135-1146.

[[abstract](#)]

The effect of mind-body and aerobic exercise on negative symptoms in schizophrenia: A meta-analysis.

Vogel JS, van der Gaag M, Slofstra C, Knegtering H, Bruins J, Castelein S.

Psychiatry Res. 2019 Sep;279:295-305.

[[full text](#)]

Meditation-based mind-body therapies for negative symptoms of schizophrenia: Systematic review of randomized controlled trials and meta-analysis.

Sabe M, Sentissi O, Kaiser S.

Schizophr Res. 2019 Aug 1. pii: S0920-9964(19)30310-X.

[[abstract](#)]

Notable Publications (What's this?)

Psychological wellness, yoga and quality of life in patients affected by schizophrenia spectrum disorders: A pilot study.

Caponnetto P, Auditore R, Maglia M, Pipitone S, Inguscio L.

Ment Illn. 2019 Jun 17;11(1):8003.

[[full text](#)]

The use of mind-body medicine among US individuals with sleep problems: analysis of the 2017 National Health Interview Survey data.

Voiß P, Höxtermann MD, Dobos G, Cramer H.

Sleep Med. 2019 Apr;56:151-156.

[[abstract](#)]

Meals, Mindfulness, & Moving Forward: A feasibility study to a multi-modal lifestyle approach in early psychosis.

Usher C, Thompson A, Griebeler M, Senders A, Seibel C, Ly R, Murchison C, Hagen K, Afong KA, Bourdette D, Ross R, Borgatti A, Shinto L.

Early Interv Psychiatry. 2019 Feb;13(1):147-150.

[[full text](#)]