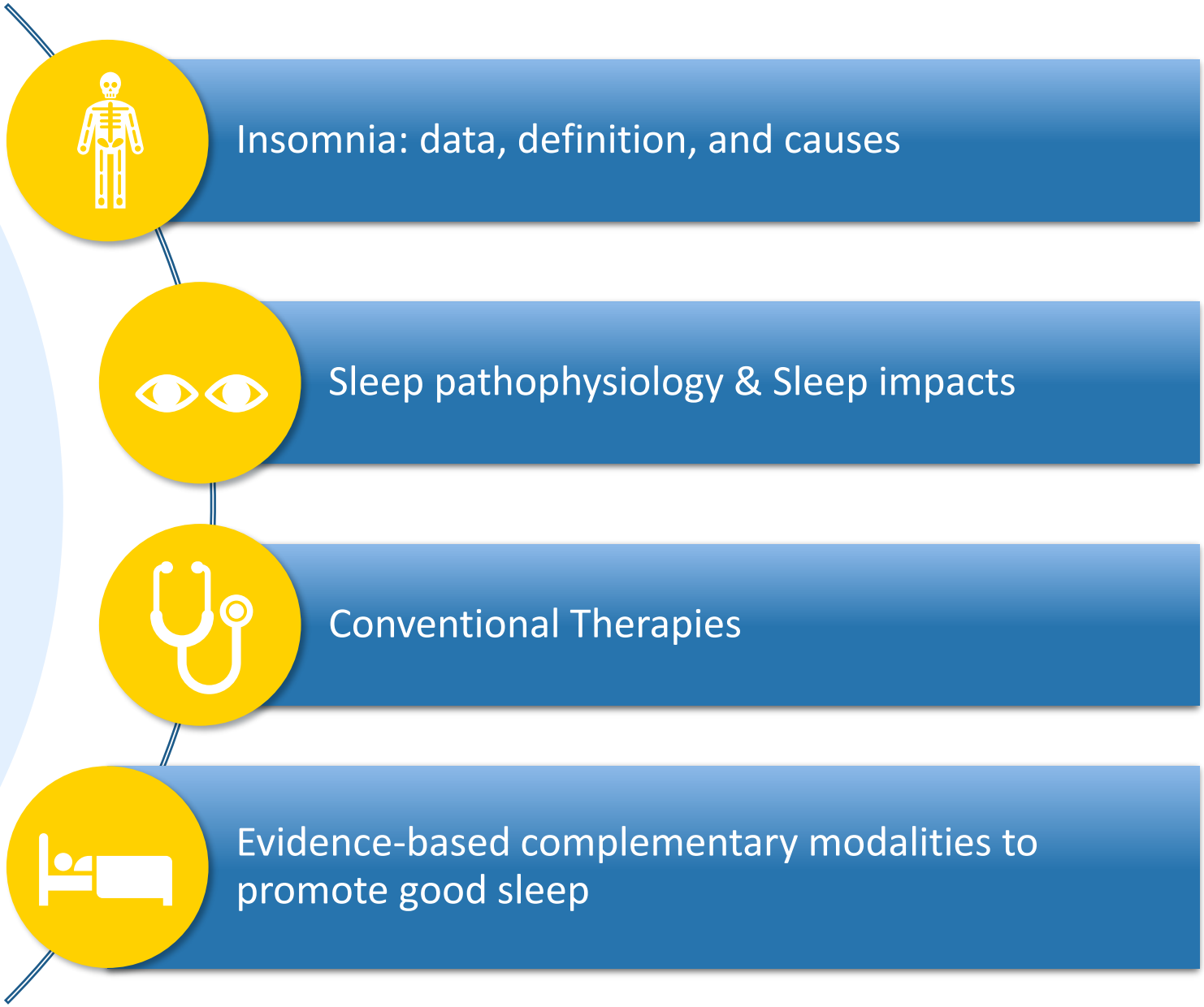
UCLA Center for East-West Medicine

Integrative East-West Approaches to Sleep

Katie Hu, MD, ABOIM
Associate Director, UCLA Center For East-West Medicine
Program Director, UCLA East-West Integrative Medicine Fellowship
Associate Clinical Professor, Department of Medicine
David Geffen School of Medicine at UCLA

Learning Objectives



Disclosures

- None

Case:

- 71 yo M with hx of alcohol dependence with intoxication, substance abuse, anxiety, depression, CAD, arthritis of hips and knees, DDD, Afib, BPH and prostate cancer, GERD, HTN, HLD, insomnia, melanoma, opioid dependence, obesity, and OSA presenting with chronic low back pain.
- Currently on buprenorphine and wanted other ways to adderess pain. Upcoming knee replacement in June
- Lifestyle:
  - Poor sleep since 2012. Takes ambien or valium but still waking up frequently
  - In Poland half of the year with on and off girlfriend. Stress with relationship
  - 1-2 cups of coffee daily. 3-5 beers per night. Working on more fruits. Not much vegetables. Reduced carbs. Lost 20 pounds already but goal is to lose more. 210 lbs, BMI 34
  - Swims 20-25 minutes daily
- Meds:
  - Tramadol, buprenorphine, Tylenol, naproxen, meloxicam prn, baclofen, hydroxyzine, diazepam, trazodone, mirtazapine, amitriptyline, metoprolol, zolpidem, myrbetriq

Insomnia: Who?

- Prevalence of chronic insomnia is 30-40%[1]
- NIH report 60 million adults in the US have insomnia annually [2]
- 1.6 million adults use CAM to treat insomnia[3]
- Prevalence increases with age, female gender, and with broad range of medical and psychiatric comorbidities[4]

1. Perlis ML, Vargas I, Ellis JG, et al. The Natural History of Insomnia: the incidence of acute insomnia and subsequent progression to chronic insomnia or recovery in good sleeper subjects. Sleep. 2020 Jun;43(6):zsz299.
2. Pearson NJ, Johnson LL, Nahin RL. Insomnia, trouble sleeping, and complementary and alternative medicine. Arch Intern Med. 2006;166:1775–1782.
3. National Institute of Neurological Disorders and Stroke: Brain basics: understanding sleep, NIH publication no.06-3440-c. http://www.ninds.nih.gov/disorders/brain_basics/understanding_sleep.htm./, 2007. Accessed 05.07.11.
4. 5. Mai E, Buysse DJ. Insomnia: prevalence, impact, pathogenesis, differential diagnosis, and evaluation. Sleep Med Clin. 2008;3:167–174.

Why is this topic important?

- Insomnia associated with increased risk for comorbid medical disorders[1]
- Psychiatric illness (depression or anxiety) are the most common comorbidities (40%)[2] increase risk of insomnia
- Chronic insomnia often precedes psychiatric illness (anxiety, depression, substance abuse)[3]

1. Mai E, Buysse DJ. Insomnia: prevalence, impact, pathogenesis, differential diagnosis, and evaluation. Sleep Med Clin. 2008;3:167–174.
2. Ford DE, Kamerow DB. Epidemiologic study of sleep disturbances and psychiatric disorders: an opportunity for prevention?. JAMA. 1989;262:1479–1484.
3. Roth T. Comorbid insomnia: current directions and future challenges. Am J Manag Care. 2009;15(Suppl):S9–S13.

What is the economic impact?

- Insomnia associated with significant issues with quality of life, higher risk of accidents, decreased work productivity[1]
- Medicare study showed untreated insomnia increases all-cause health care usage and costs[2]
- Economic burden of insomnia in US estimated as high as $64.2 billion annually[3]

1. McHorney CA, Ware Jr JE, Raczek AE. The MOS 36-item short form health survey (SF-36) II Psychometric and clinical tests of validity in measuring physical and mental health constructs. Med Care. 1993;31:247–263.
2. Wickwire EM, Tom SE, Scharf SM, et al. Untreated insomnia increases all-cause health care utilization and costs among Medicare beneficiaries. Sleep. 2019;42(4):zsz007 https://doi.org/10.1093/sleep.zsz007 pii.
3. Kessler RC, Berglund PA, et al. Insomnia and the performance of US workers: results from the America Insomnia Survey. Sleep. 2011;34(9):1161–1171.

Definition of Insomnia disorder

- ***Difficulties with initiating or maintaining sleep, or undesired early awakening, leading to nonrestorative sleep and associated with excessive sleepiness or fatigue for at least 4 weeks***
  - **Primary insomnia- not attributable to medical or psychiatric causes**
  - **Secondary insomnia- symptom of primary disorder that would resolve with treatment**
- **Chronic insomnia**
  - **More than 3x a week for > 3months**

How many hours of sleep do we need?

Newborn: 14-17 hrs

Infant (4-11 mo): 12-15 hrs

Toddler (1-2 yrs): 11-14 hrs

Preschool (3-5 yr): 10-13 hrs

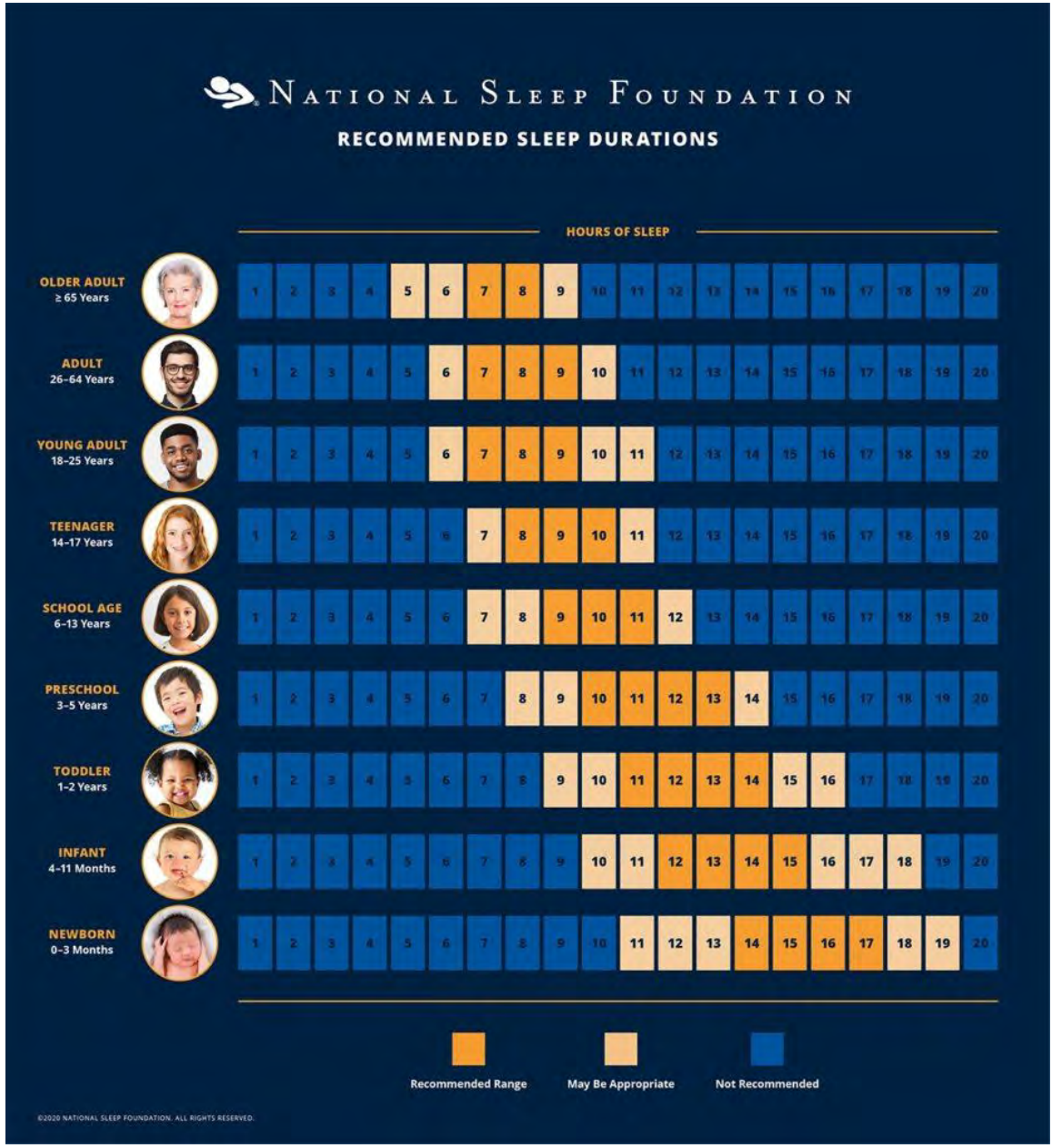
School age (6-13 yrs): 9-11 hrs

Teenager (14-17 yrs): 8-10 hrs

Young adult (18-25 yrs): 7-9 hrs

Adults (25-64 yrs): 7-9 hrs

Older adult (>65 yrs): 7-8hrs



Causes: Primary Sleep Disorders

- Restless leg syndrome
- Periodic limb movement disorders
- Delayed sleep phase disorders
- Sleep related breathing disorders
- Narcolepsy
- Obstructive sleep apnea (1/3 of patients with insomnia)

Causes: Underlying Medical Conditions

- **Prostatic hypertrophy (BPH)**
  - Nocturia
  - Urine frequency/hesitancy
- **Diabetes**
  - Polyuria, polydipsia, nocturia
- **Heart failure**
  - Paroxysmal nocturnal dyspnea
- **Menopausal**
  - Hot flashes, night sweats
- **GERD**
  - Reflux, awakenings
- **Cancer**
  - Night sweats, cancer pain
- **Mental health**
  - Depression, Anxiety, PTSD
- **Asthma**
- **Hyperthyroidism**
- **Parkinson's disease**
- **Alzheimer's disease**
- **Chronic pain disorders**

Causes: Medications/substances that can interfere with quality of sleep (deep Non-REM or REM sleep)

Alcohol	SSRI	Antiarrhythmics
Caffeine	TCA anti-depressants	Diuretics
Nicotine	MOA inhibitors	Lipophilic Beta blockers
Antihistamine	Sympathomimetics (ADHD meds)	Statins
Benzodiazepine	Estrogen	Anticonvulsants
Sedatives	Thyroid hormones	Bronchodilators
Appetite suppressants	Corticosteroids	Tetrahydrozoline (Visine)
Decongestants/ Pseudoephedrine	Carbidopa/levodopa	

Causes: circadian rhythm disorders

- Shift work
- Jet lag
- Advanced or delayed sleep-phase syndromes

Causes: precipitating factors and perpetuating behaviors

- Precipitation
  - STRESS!!! Family, work, health anxiety ←→birth of child, retirement, transition
- Perpetuating behaviors and environmental factors
  - Excessive waking time in bed
  - Irregular sleep-wake schedule (napping)
  - Substances (caffeine, alcohol)
  - Screen time, too little sunlight during day/not dark enough
  - Sound, temperature, air and bedding quality
  - Sleeping partners (spouses, kids, pets)

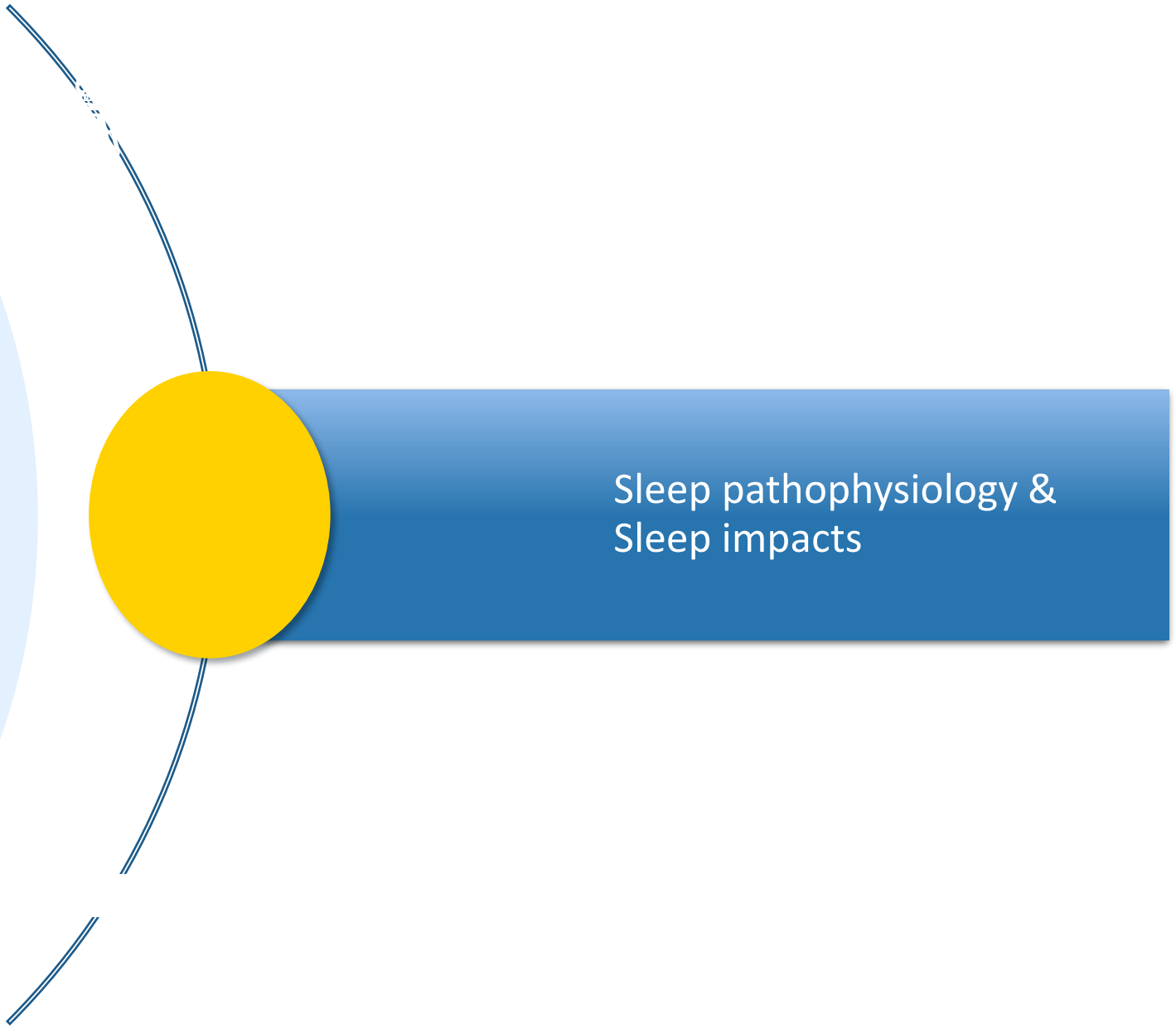
Case: What are the risk factors?

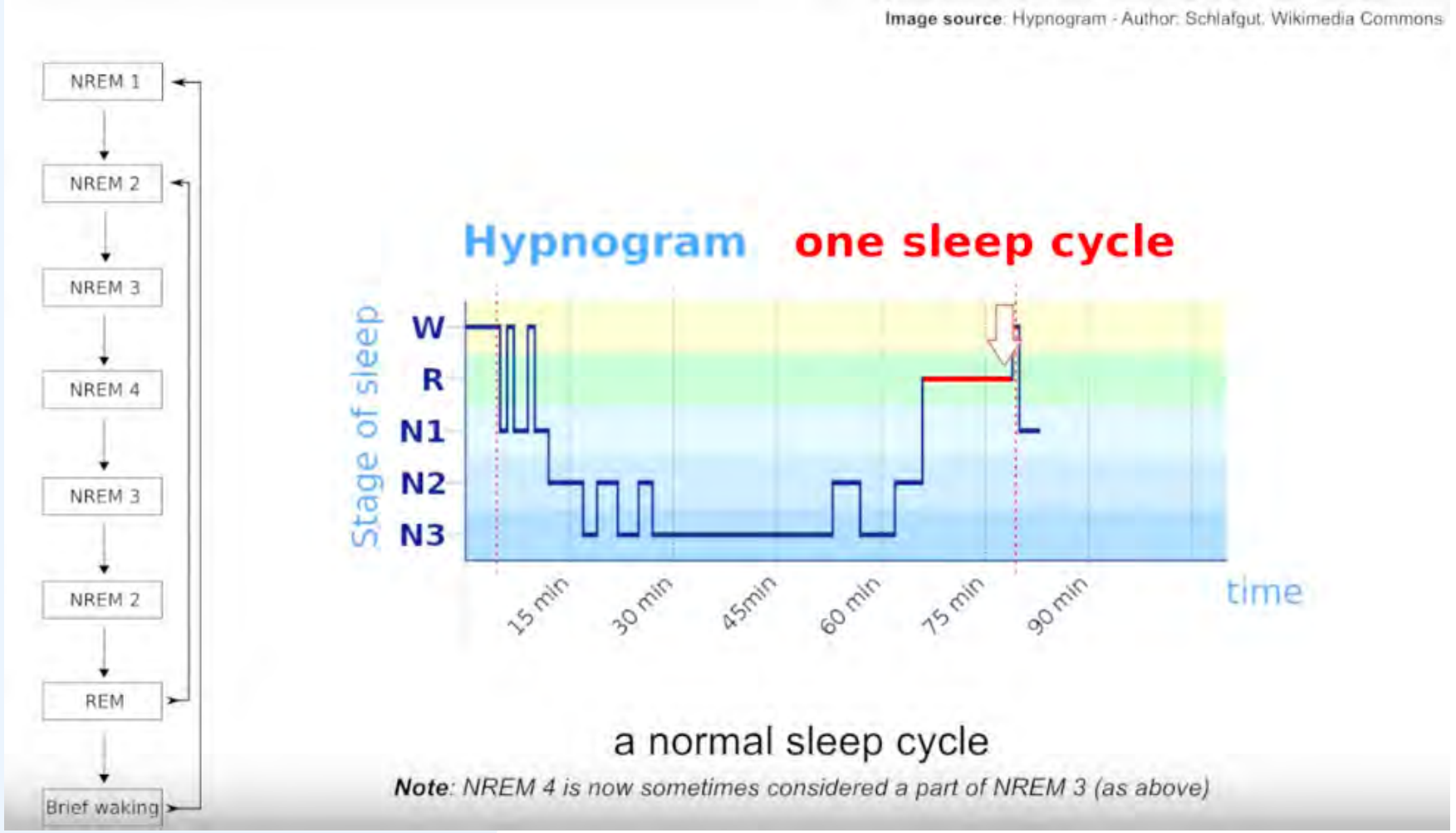
- 71 yo M with hx of alcohol dependence with intoxication, substance abuse, anxiety, depression, CAD, arthritis of hips and knees, DDD, Afib, BPH and prostate cancer, GERD, HTN, HLD, insomnia, melanoma, opioid dependence, obesity, and OSA presenting with chronic low back pain.
- Currently on buprenorphine and wanted other ways to address pain. Upcoming knee replacement in June
- Lifestyle:
  - Poor sleep since 2012. Takes ambien or valium but still waking up frequently
  - In Poland half of the year with on and off girlfriend. Stress with relationship
  - 1-2 cups of coffee daily. 3-5 beers per night. Working on more fruits. Not much vegetables. Reduced carbs. Lost 20 pounds already but goal is to lose more. 210 lbs, BMI 34
  - Swims 20-25 minutes daily
- Meds:
  - Tramadol, buprenorphine, Tylenol, naproxen, meloxicam prn, baclofen, hydroxyzine, diazepam, trazodone, mirtazapine, amitriptyline, metoprolol, zolpidem, myrbetriq,

Clinical History is key!

Questions	Questions
• Complaint • Sleep-wake routine • Daytime functioning and symptoms • Sleep conditions and routines • Previous treatment effects • Other sleep disorder symptoms • Comorbid medical conditions	• Psychiatric conditions and stressors • Medication and substance use • Relevant family history • Trauma/ACE history • Dreams/ nightmares

Learning Objectives





- Each cycle is 90 min
- Always 1st Non-REM ➔ REM sleep
- REM sleep increases throughout the night

Sleep & Memory : NREM and REM

Need BOTH Non-REM & REM sleep

- NREM: Stage N1: Alpha Waves
  - Short term memory consolidation
- NREM: Stage N3: Delta Waves ”Deep Non-REM”
  - Long term memory consolidation
- REM “Dream” Sleep:
  - Creativity, problem solve, dream-inspired insight = **WISDOM**

Stickgold et al (2007, *Sleep Medicine*)
Djonlagic et al (2014, *PLoS One*)

Review > Lancet Neurol. 2019 Mar;18(3):296-306. doi: 10.1016/S1474-4422(18)30450-2. Epub 2019 Jan 17.

Implications of sleep disturbance and inflammation for Alzheimer's disease dementia

Michael R Irwin [1], Michael V Vitiello [2]

Affiliations + expand

PMID: 30661858 DOI: 10.1016/S1474-4422(18)30450-2

Abstract

Nearly half of all adults older than 60 years of age report sleep disturbance, as characterised either by reports of insomnia complaints with daytime consequences, dissatisfaction with sleep quality or quantity, or the diagnosis of insomnia disorder. Accumulating evidence shows that sleep disturbance contributes to cognitive decline and might also increase the risk of Alzheimer's disease dementia by increasing β-amyloid burden. That sleep disturbance would be a candidate risk factor for Alzheimer's disease might seem surprising, given that disturbed sleep is usually considered a consequence of Alzheimer's disease. However, a bidirectional relationship between sleep and Alzheimer's disease is supported by advances in our understanding of sleep disturbance-induced

Sleep & Immunity

0021-972X/00/$03.00/0
The Journal of Clinical Endocrinology & Metabolism

Vol. 85, No. 10
Printed in U.S.A.

Effects of Sleep and Sleep Deprivation on Interleukin-6, Growth Hormone, Cortisol, and Melatonin Levels in Humans*

LAURA REDWINE, RICHARD L. HAUGER, J. CHRISTIAN GILLIN, AND MICHAEL IRWIN

Department of Psychiatry, University of California and San Diego Veterans Healthcare System, San Diego, California 92161

- Increases systemic pro-inflammation markers (IL-6) and cortisol
- Decrease growth Hormone

Review > Nat Rev Endocrinol. 2023 Feb;19(2):82-97. doi: 10.1038/s41574-022-00747-7. Epub 2022 Oct 24.

The role of insufficient sleep and circadian misalignment in obesity

Jean-Philippe Chaput [1 2], Andrew W McHill [3], Rebecca C Cox [4], Josiane L Broussard [5 6], Caroline Dutil [7 8], Bruno G G da Costa [9], Hugues Sampasa-Kanyinga [7 10], Kenneth P Wright Jr [4 6]

Affiliations + expand

PMID: 36280789 PMCID: PMC9590398 DOI: 10.1038/s41574-022-00747-7

Abstract

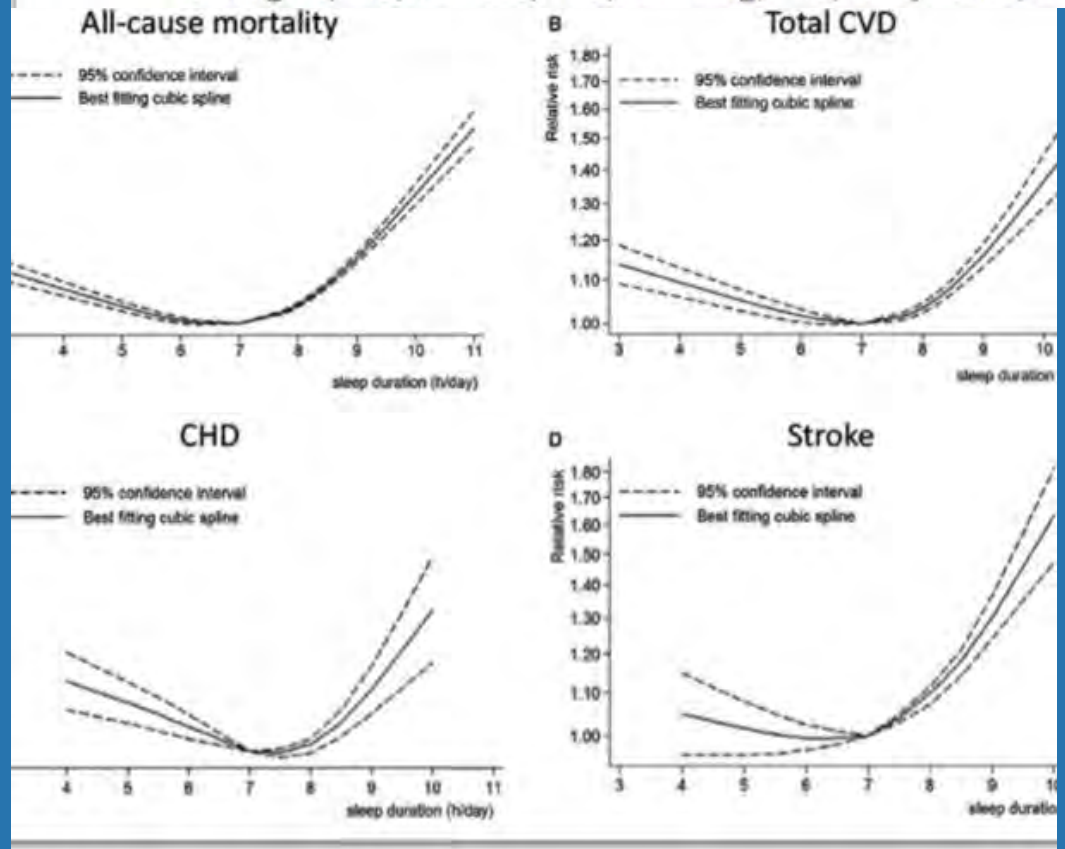
Traditional risk factors for obesity and the metabolic syndrome, such as excess energy intake and lack of physical activity, cannot fully explain the high prevalence of these conditions. Insufficient sleep and circadian misalignment predispose individuals to poor metabolic health and promote weight gain and have received increased research attention in the past 10 years. Insufficient sleep is defined as sleeping less than recommended for health benefits, whereas circadian misalignment is defined as wakefulness and food intake occurring when the internal circadian system is promoting sleep. This Review discusses the impact of insufficient sleep and circadian misalignment in humans on appetite hormones (focusing on ghrelin, leptin and peptide-YY), energy expenditure, food intake and choice, and risk of obesity. Some potential strategies to reduce the adverse effects of sleep disruption on metabolic health are provided and future research priorities are highlighted

SYSTEMATIC REVIEW AND META-ANALYSIS

American Heart Association | American Stroke Association

Relationship of Sleep Duration With All-Cause Mortality and Cardiovascular Events: A Systematic Review and Dose-Response Meta-Analysis of Prospective Cohort Studies

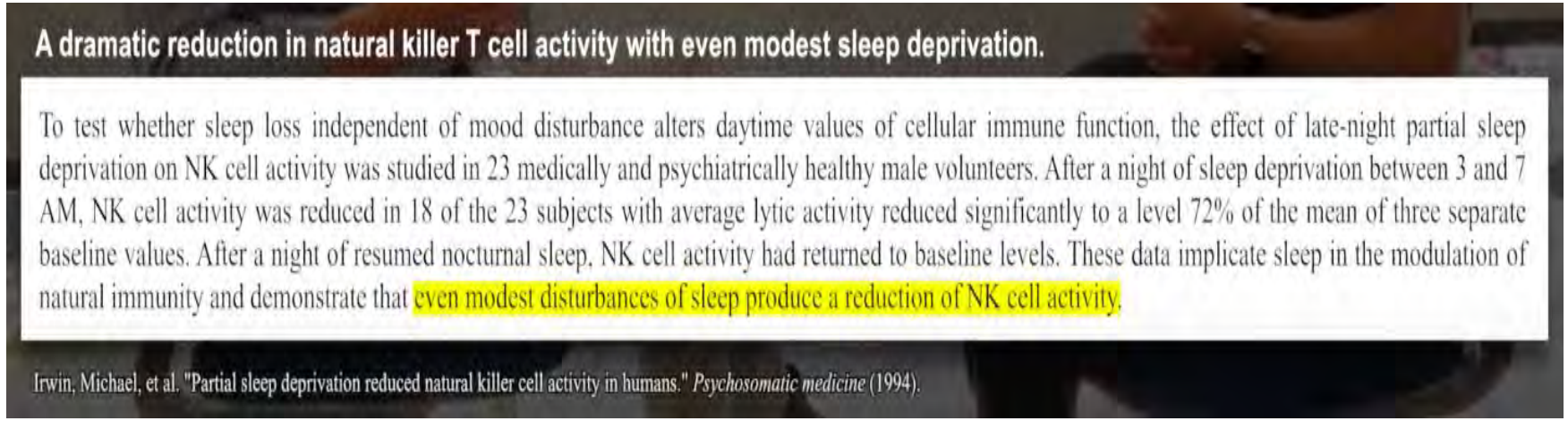
Jiawei Yin, MD; Xiaoling Jin, MD; Zhilei Shan, PhD; Shuzhen Li, MD; Hao Huang, MD; Peiyun Li, MD; Xiaobo Peng, MD; Zhao Peng, MD; Kaifeng Yu, MD; Wei Bao, PhD; Wei Yang, PhD; Xiaoyi Chen, MD, PhD; Liegang Liu, MD, PhD

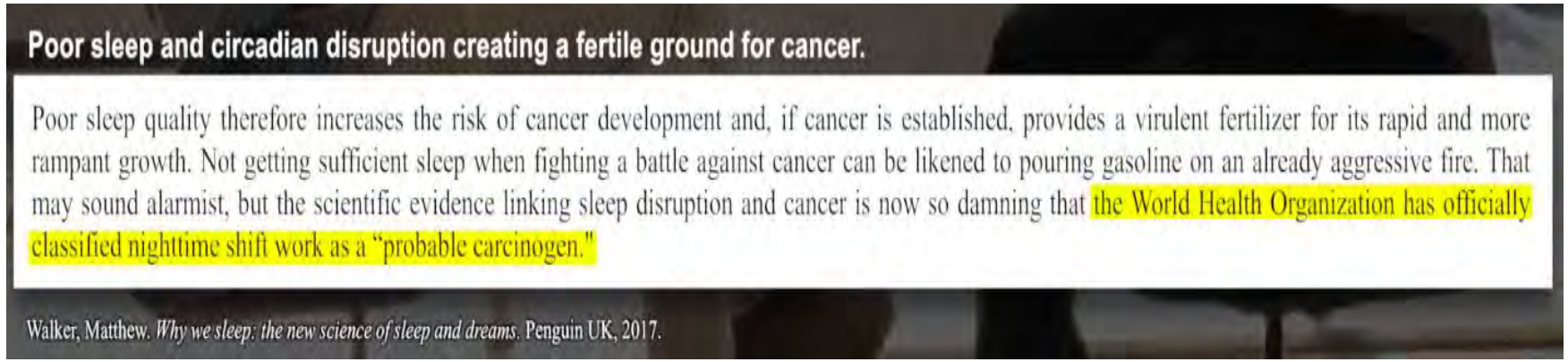


Nonlinear dose-response analyses of sleep duration and risk of all-cause mortality (A), total CVD (B), CHD (C), and strok
coronary heart disease; CVD, cardiovascular disease.

- **BOTH** short & long sleep **< 7 hours** or **> 7 hours**
- Associated with ↑:
  - All-cause mortality
  - Total CV disease
  - heart disease
  - Stroke
- Lowest risk ≈ **7 hrs**

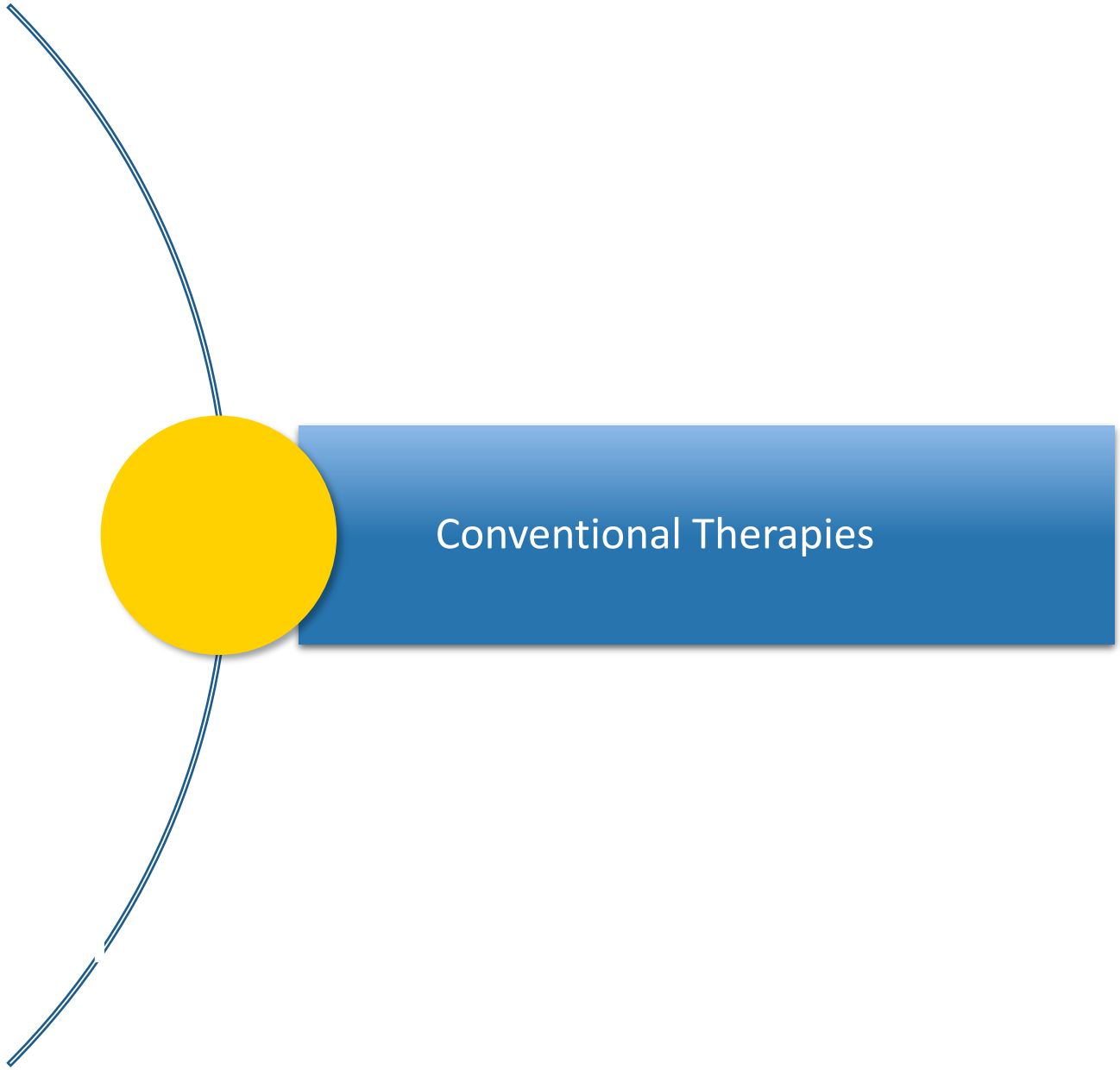
Sleep & Cancer





- NK cells destroy cancer cells. After **only 1 night** of 4 hours of sleep, **70% decrease** in NK cells activity
- WHO officially classified nighttime shift work as a "probable carcinogen"!

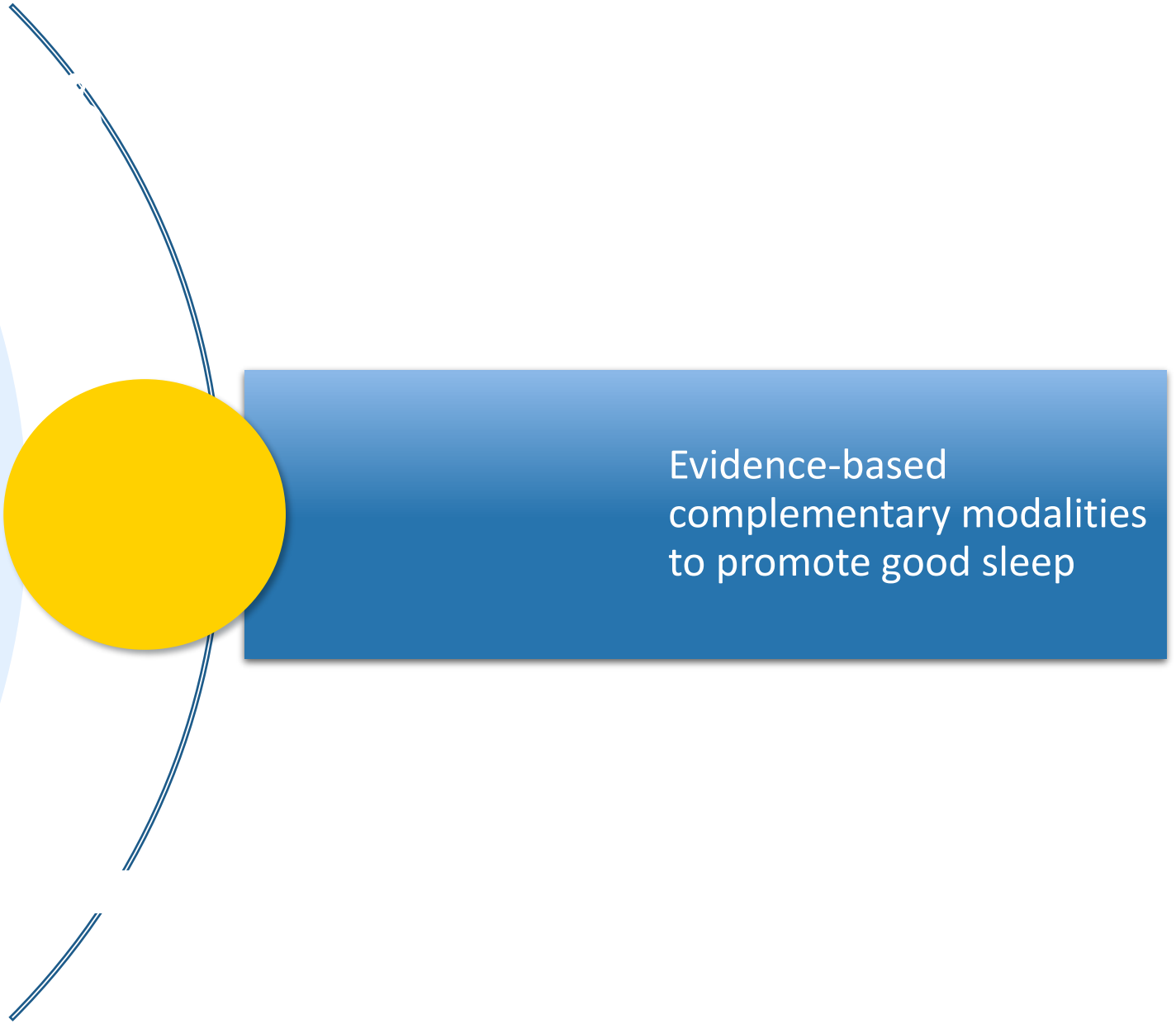
Learning Objectives



Conventional Insomnia Therapies

- **Pharmaceutical Prescription Drugs**
  - **Hypnotics:** Benzo's and non-benzo hypnotic (Ambien, Lunesta, Sonata)
  - **Melatonin receptor agonists:** Ramelteon
  - **Antidepressants:** TCA, Doxepin, Remeron, Trazodone
  - **Others:** Gabapentin, clonidine, Orexin receptor antagonist (Belsomra, Quviviq, Dayvigo), Seroquel
- **OTC:**
  - Benadryl, Unisom
- **CBTi**
- **Referral to Sleep medicine – rule out primary sleep disorders**

Learning Objectives



Evidence-based complementary modalities to promote good sleep

General Sleep Tips

"The best cure for insomnia is sleep"
–W.C. Fields

Exercise:	>10 min of aerobic exercise Avoid strenuous workouts close to bed Tai Chi, Qigong
Sunlight:	5-10 minutes minimum but aim for 30 minutes
Limiting day time naps	Limit naps to 30 minutes After lunch. Not too late in the day.
Food:	Avoid heavy or rich foods and eat 2-3 hours before bed. Minimize alcohol and caffeine
Relaxing sleep environment	Cool environment, Dark (blackout curtain), Ear plugs/ white noise.
Establish relaxing routine	Read a book, bath, yoga stretches, massage tools, nighttime tea, music

Reduce Body Noise

- Manage comorbid conditions: other sleep disorders, depression, chronic pain*
- Manage sleep side effects of medication
- Manage alcohol and caffeine use
- Manage women's health issues *

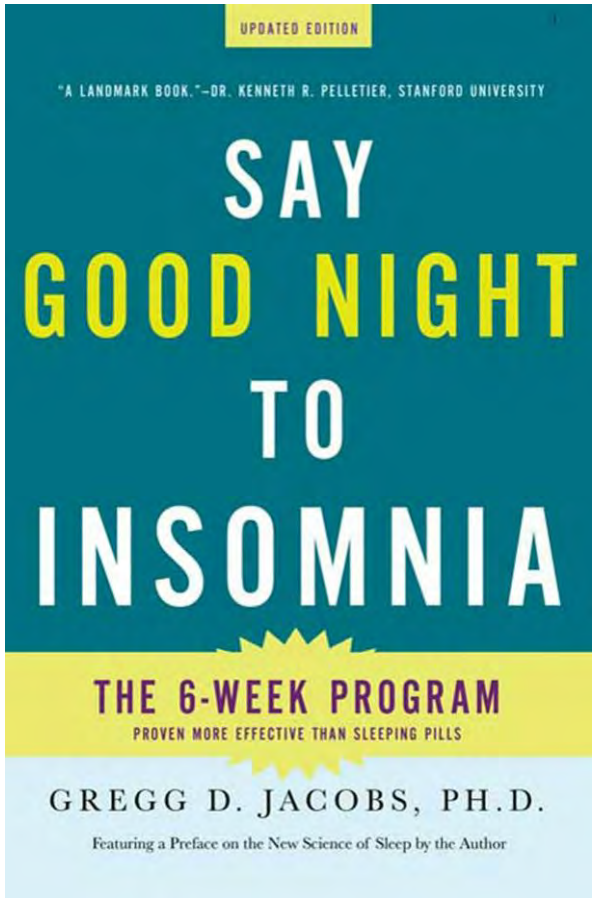
Reduce Mind Noise: CBTi

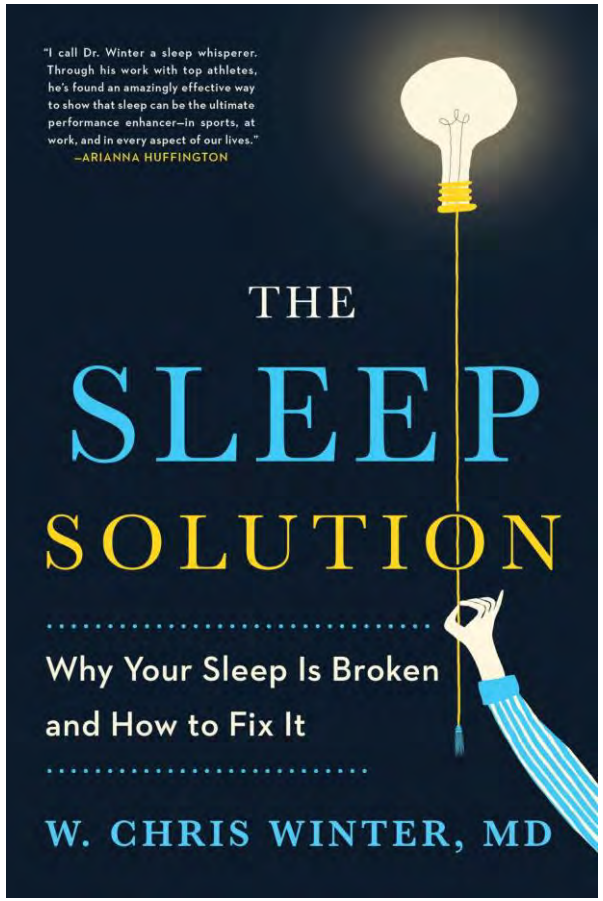
- CBT-I includes:
  - Sleep hygiene → Cognitive restructuring → Stimulus control therapy → Sleep restriction therapy → Relaxation practices: Breathing exercises, MBSR*

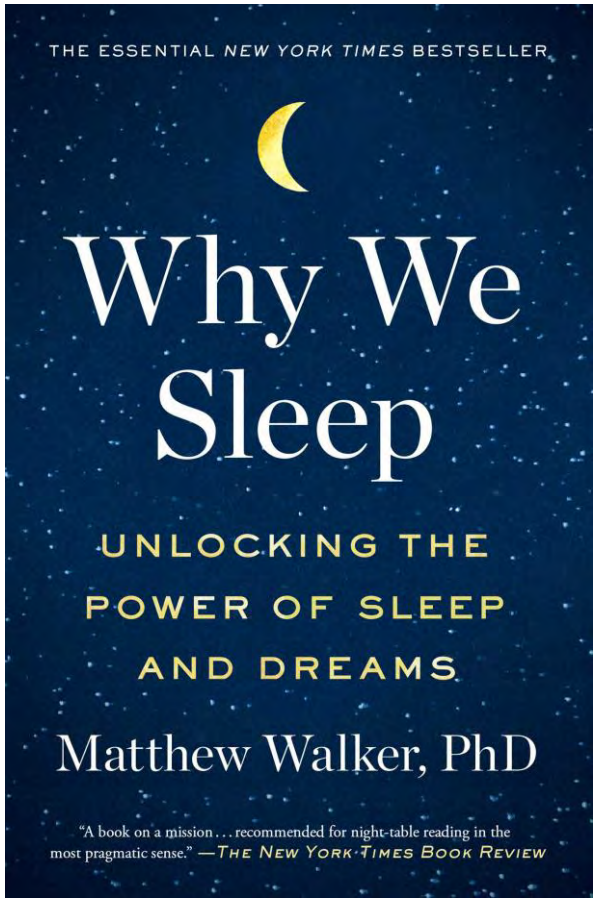
- Compelling evidence for effectiveness of CBT-I for primary insomnia and comorbid insomnia growing[1,2]
- Limitations: shortage of CBTi specialists, 25-40% patients still symptomatic after treatment[3], severe insomnia less responsive[4]

1. Edinger JD, Means MK. Cognitive-behavioral therapy for primary insomnia. Clin Psychol Rev. 2005;25:539–558.
2. Morin CM, Bootzin RR, Buysse DJ, et al. Psychological and behavioral treatment of insomnia: update of the recent evidence (1998–2004). Sleep. 2006;29:1398–1414.2
3. Baron Kelly Glazer, Hooker Stephanie. Next Steps for Patients Who Fail to Respond to Cognitive Behavioral Therapy for Insomnia (CBT-I): the Perspective from Behavioral Sleep Medicine Psychologists. Current Sleep Medicine Reports. 2017;3(4):327–332.
4. Bathgate Christina J, Edinger Jack D, Krystal Andrew D. Insomnia patients with objective short sleep duration have a blunted response to cognitive behavioral therapy for insomnia. Sleep. 2017;40:1.

Books for CBT-i







Commercially available CBTi platforms evaluated in published studies

CBT-i Coach (developed by US VA)

Big Health: Sleepio

Night Owl Sleep Coach

Meta-Analysis > Am J Psychiatry. 2002 Jan;159(1):5-11. doi: 10.1176/appi.ajp.159.1.5.

Comparative meta-analysis of pharmacotherapy and behavior therapy for persistent insomnia

Michael T Smith [1], Michael L Perlis, Amy Park, Michelle S Smith, JaeMi Pennington, Donna E Giles, Daniel J Buysse

Affiliations + expand

PMID: 11772681 DOI: 10.1176/appi.ajp.159.1.5

Abstract

Objective: Although four meta-analytic reviews support the efficacy of pharmacotherapy and behavior therapy for the treatment of insomnia, no meta-analysis has evaluated whether these treatment modalities yield comparable outcomes during acute treatment. The authors conducted a quantitative review of the literature on the outcome of the two treatments to compare the short-term efficacy of pharmacotherapy and behavioral therapy in primary insomnia.

Method: They identified studies from 1966 through 2000 using MEDLINE, psycINFO, and bibliographies. Investigations were limited to studies using prospective measures and within-subject designs to assess the efficacy of benzodiazepines or benzodiazepine receptor agonists or behavioral treatments for primary insomnia. Benzodiazepine receptor agonists included zolpidem,

Randomized Controlled Trial > JAMA. 2006 Jun 28;295(24):2851-8.
doi: 10.1001/jama.295.24.2851.

Cognitive behavioral therapy vs zopiclone for treatment of chronic primary insomnia in older adults: a randomized controlled trial

Børge Sivertsen [1], Siri Omvik, Ståle Pallesen, Bjørn Bjorvatn, Odd E Havik, Gerd Kvale, Geir Høstmark Nielsen, Inger Hilde Nordhus

Affiliations + expand

PMID: 16804151 DOI: 10.1001/jama.295.24.2851

Abstract

Context: Insomnia is a common condition in older adults and is associated with a number of adverse medical, social, and psychological consequences. Previous research has suggested beneficial outcomes of both psychological and pharmacological treatments, but blinded placebo-controlled trials comparing the effects of these treatments are lacking.

Breathing Exercise

What is 4-7-8 breathing?

The 4-7-8 breathing technique is a style of intentional breathwork that can calm y
and body. Though popularized in 2015 by integrative medicine specialist Andrew
has ancient roots in the yogic practice of pranayama, or focusing on the breath.

The gist of it goes like this:

1. Inhale through your nose for **four** counts.
2. Hold your breath for **seven** counts.
3. Exhale through your mouth for **eight** counts.

But there's a little bit more to it if you want to ensure that you're tapping into all of its health benefits.

> Physiol Rep. 2022 Jul;10(13):e15389. doi: 10.14814/phy2.15389.

Effects of sleep deprivation and 4-7-8 breathing control on heart rate variability, blood pressure, blood glucose, and endothelial function in healthy young adults

Jaruwan Vierra [1], Orachorn Boonla [1 2], Piyapong Prasertsri [1 2]

Affiliations + expand

PMID: 35822447 PMCID: PMC9277512 DOI: 10.14814/phy2.15389

Abstract

This study investigated the effects of sleep deprivation on heart rate variability (HRV), blood pressure (BP), fasting blood glucose (FBG), and endothelial function as well as the immediate effects of 4-7-8 breathing control on HRV and BP. In total, 43 healthy participants aged 19-25 years were classified into two groups: Twenty two in the with sleep deprivation group and 21 in the without sleep deprivation (control) group. Resting heart rate (HR), BP, HRV, FBG, and endothelial function were examined. Subsequently, participants practiced 4-7-8 breathing control for six cycles/set for three sets interspersed between each set by 1-min normal breathing. Thereafter, the HR, BP, and HRV were immediately examined. The HRV, HR, and BP variables and FBG were not

Mindfulness Based Stress Reduction

Shown to significantly improve sleep quality as well as mental health(anxiety/ depression) measures

Meta-Analysis > J Psychosom Res. 2020 Aug:135:110144.

doi: 10.1016/j.jpsychores.2020.110144. Epub 2020 May 21.

Effects of mindfulness-based stress reduction on sleep quality and mental health for insomnia patients: A meta-analysis

Tsai-Ling Chen [1], Shu-Chen Chang [2], Hsiu-Fen Hsieh [1], Chin-Yi Huang [3], Jui-Hsiang Chuang [4], Hsiu-Hung Wang [5]

Affiliations + expand

PMID: 32590218 DOI: 10.1016/j.jpsychores.2020.110144

Abstract

Objective: Mindfulness-based stress reduction (MBSR) is a potentially effective supplement for the treatment of insomnia; however, there is no comprehensive review of its mental health effects among insomnia patients. This study aimed to synthesize relevant quantitative evidence and evaluate MBSR application and effectiveness for insomnia patients' sleep quality and mental health.

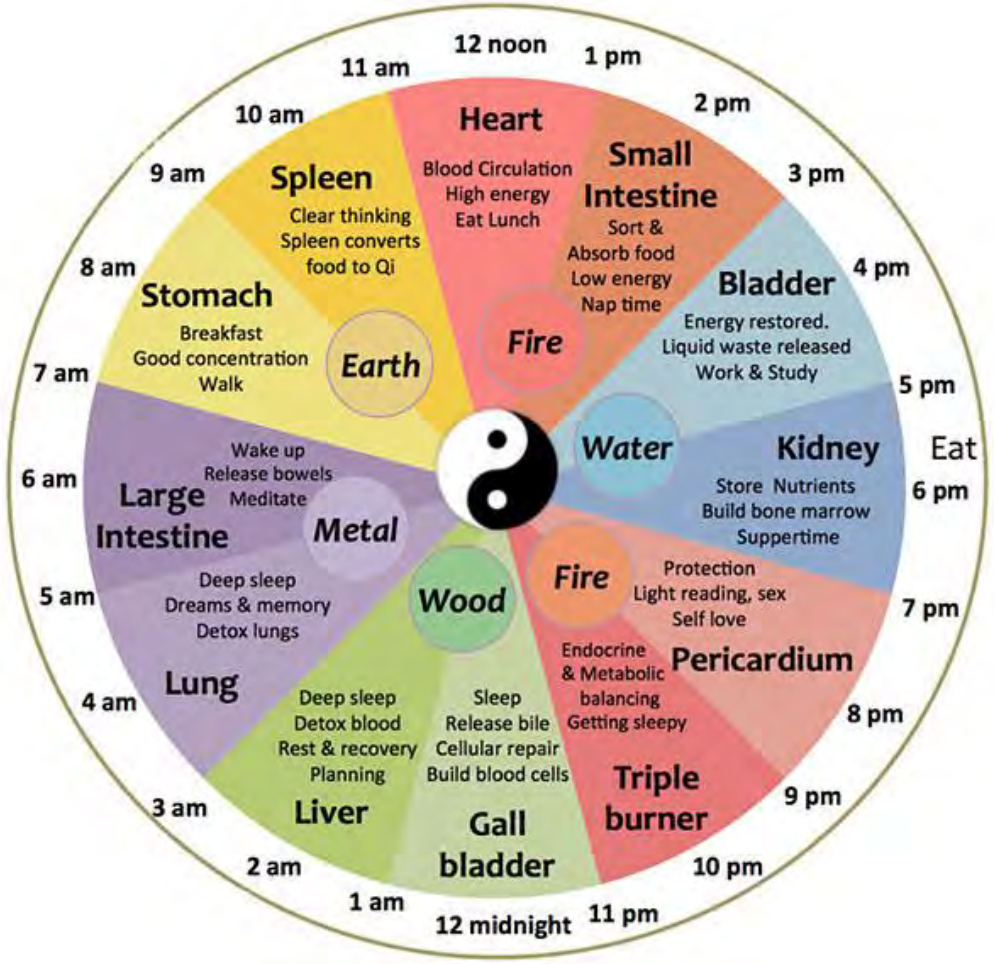
Methods: A systematic search through eight databases from the earliest available dates until

Reduce Bed Noise

- Environment
  - Avoid allergies/irritants (HEPA filter, houseplants)
  - Comfortable pillow and mattress
  - Dark, quiet and cool (68 degrees F or lower)[1]
- Circadian Rhythms
  - Regular sleep-wake pattern
  - Dim lights 1-2 hours before sleep. Goal: Regular light/dark pattern
  - Create sense of sanctuary: stress free, work free zone, peace with bed partners

Baniassadi A, Manor B, Yu W, Travison T, Lipsitz L. Nighttime ambient temperature and sleep in community-dwelling older adults. Sci Total Environ. 2023 Nov 15;899:165623. doi: 10.1016/j.scitotenv.2023.165623. Epub 2023 Jul 19. PMID: 37474050; PMCID: PMC10529213.

TCM Meridian Clock



- Sleep cycle between **9pm to 5am**
  - **Goal to be asleep before 11**
- **1am -3am**: Liver cycle
  - Staying up late depletes Liver Qi
  - Stress/anger causes awakening here
- **3am -5am**: Lung cycle
  - Grief causes awakening here

Supplements:

- Generally, botanicals and nutraceuticals are more gentle assists
- Should be recommended with lifestyle and mind-body recommendations
- Should have a plan for discontinuing use

Supplements

- **Melatonin:**
  - **MOA: Neurohormone.** Regulates circadian rhythms; mediates sleep and dreaming; decreases nocturnal body temperature
  - **Dose: 0.3-1mg** (higher doses may disrupt sleep), take **30-60 mins** before bed
    - Probably safe: up to 8mg for 6 months or 10mg for 2 months
  - **Formulation:** sublingual, oral immediate release (for sleep onset), oral sustained release (for sleep maintenance)
  - **Precautions:** Avoid in pregnancy, SEs w/high doses (ie more vivid dreams, melatonin hangover)
  - **Cost:** $5-10 for 3 month supply

Review > Sleep Med Rev. 2022 Dec:66:101692. doi: 10.1016/j.smrv.2022.101692.
Epub 2022 Sep 13.

Efficacy of melatonin for chronic insomnia: Systematic reviews and meta-analyses

Kyungseon Choi [1], Yu Jeong Lee [2], Seonyoung Park [3], Nam Kyung Je [3], Hae Sun Suh [4]

Affiliations + expand

PMID: 36179487 DOI: 10.1016/j.smrv.2022.101692

Abstract

We conducted systematic reviews and meta-analyses to evaluate the efficacy of melatonin versus placebo or other hypnotic agents in improving sleep quality and quantity in patients with chronic insomnia. A literature search on Ovid-MEDLINE, EMBASE, and the Cochrane Library was performed up to November 2020. Sleep onset latency, total sleep time, sleep efficiency, sleep quality and quality of life were examined as outcomes. We identified 24 randomized controlled trials of chronic insomnia including four studies of patients with comorbid insomnia. All studies were compared with placebo. Due to heterogeneity, we conducted subgroup analyses by age group. In non-comorbid insomnia, melatonin was only significantly effective in sleep onset latency and total sleep time in children and adolescents. In adults group, melatonin was not significantly effective in improving sleep onset latency, total sleep time, and sleep efficiency. In comorbid insomnia, melatonin significantly improved sleep onset latency in all age groups, but there was only one study in adults group. In conclusion, melatonin did not appear to be effective in adults but might be effective in children and adolescents with chronic insomnia for both comorbid insomnia and non-comorbid

Randomized Controlled Trial > Sleep Med. 2020 Dec:76:113-119.
doi: 10.1016/j.sleep.2020.10.018. Epub 2020 Oct 17.

Efficacy of melatonin for sleep disturbance in middle-aged primary insomnia: a double-blind, randomised clinical trial

Huajun Xu [1], Chujun Zhang [1], Yingjun Qian [1], Jianyin Zou [1], Xinyi Li [1], Yupu Liu [1], Huaming Zhu [2], Lili Meng [1], Suru Liu [1], Weitian Zhang [3], Hongliang Yi [1], Jian Guan [4], Zhengnong Chen [1], Shankai Yin [1]

Affiliations + expand

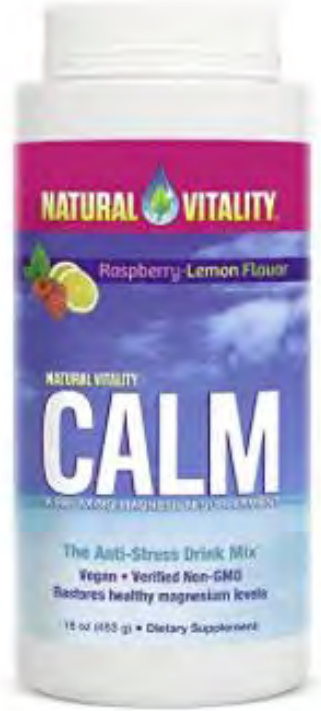
PMID: 33157425 DOI: 10.1016/j.sleep.2020.10.018

Abstract

Background: The aim of this study was to determine the efficacy of exogenous melatonin supplementation for sleep disturbances in patients with middle-aged primary insomnia.

Methods: This is a randomized double-blind, placebo-controlled parallel study. Participants were recruited from Tianlin community, Xuhui district, Shanghai. Ninety-seven consecutive middle-aged patients with primary insomnia were randomized to receive 3 mg fast-release melatonin (n = 51) or placebo (n = 46) for four-weeks. Objective sleep parameters tested by overnight polysomnography,

Supplements



- **Magnesium**
  - **MOA:** GABA agonist, NMDA antagonist (pain), muscle relaxer
  - **Dose:** 100 - 400 mg QHS
  - **Formulation:** Powder, capsules, gummies
    - Magnesium oxide, citrate, glycinate, L-threonate
    - avoid taking w/other supplements including calcium which can compete w/absorption
  - **Precautions/SE:** GI side effects, avoid >1g daily, avoid high doses in CKD or patients on Cabidopa/Levidopa.
  - **Cost:** $10-20 per month
  - **Safe**: Kids, adults, pregnant women

Meta-Analysis > BMC Complement Med Ther. 2021 Apr 17;21(1):125.
doi: 10.1186/s12906-021-03297-z.

Oral magnesium supplementation for insomnia in older adults: a Systematic Review & Meta-Analysis

Jasmine Mah [1], Tyler Pitre [2 3]

Affiliations + expand

PMID: 33865376 PMCID: PMC8053283 DOI: 10.1186/s12906-021-03297-z

Erratum in

Correction: Oral magnesium supplementation for insomnia in older adults: a Systematic Review & Meta-Analysis.

Mah J, Pitre T.

BMC Complement Med Ther. 2024 Dec 19;24(1):418. doi: 10.1186/s12906-024-04721-w.

PMID: 39702257 **Free PMC article.** No abstract available.

Abstract

Background: Magnesium supplementation is often purported to improve sleep; however, as both an over-the-counter sleep aid and a complementary and alternative medicine, there is limited evidence to support this assertion. The aim was to assess the effectiveness and safety of magnesium supplementation for older adults with insomnia.

Supplements

- **LEMON BALM LEAVES *(Melissa officinalis)***
  - **MOA**: Lemon scented, mint family herb with mild sedative and anxiolytic effects, inhibits GABA- transaminase, binds to nicotinic and muscarinic acetylcholine receptors.
  - **Dose:** 300-500mg capsules of dried leaf; 40-60 drops of tincture
  - **Formulation**: capsules, teas, essential oils
  - **Precautions/SE:** generally very safe, avoid in pregnant or lactating women. Safe for kids.
    Cost: $5-10 per month

Medical Cannabis:

- **Cannabis**
  - **MOA**: CBD promotes relaxation and THC reduces sleep onset latency at low doses
  - **Dose:** low dose sublingual based full extract cannabis oil or capsule: 1-3mg. (1:1 THC:CBD or THC:CBN). Titrate slowly
  - **Formulation**: oil, or capsule, edible
  - **Precautions/SE: may impair sleep quality in the long term, disrupts dreaming.**
    Cost: $$$

Meta-Analysis > Sleep. 2022 Feb 14;45(2):zsab234. doi: 10.1093/sleep/zsab234.

Medical cannabis and cannabinoids for impaired sleep: a systematic review and meta-analysis of randomized clinical trials

Mahmood AminiLari [1 2], Li Wang [2], Samuel Neumark [3], Taranah Adli [3 4], Rachel J Couban [2], Aidan Giangregorio [1 5], Colleen E Carney [6], Jason W Busse [1 2 5 7 8]

Affiliations + expand

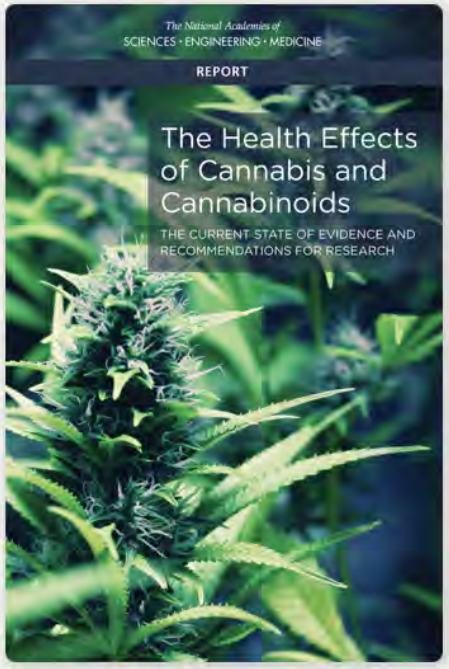
PMID: 34546363 DOI: 10.1093/sleep/zsab234

Abstract

Study objectives: We conducted a systematic review to explore the effectiveness of medical cannabis for impaired sleep.

Methods: We searched MEDLINE, EMBASE, CENTRAL, and PsychINFO to January 2021 for randomized trials of medical cannabis or cannabinoids for impaired sleep vs. any non-cannabis control. When possible, we pooled effect estimates for all patient-important sleep-related outcomes and used the GRADE approach to appraise the certainty of evidence.

Results: Thirty-nine trials (5100 patients) were eligible for review, of which 38 evaluated oral cannabinoids and 1 administered inhaled cannabis. The median follow-up was 35 days, and most



VIEW LARGER COVER

The Health Effects of Cannabis and Cannabinoids

The Current State of Evidence and Recommendations for Research

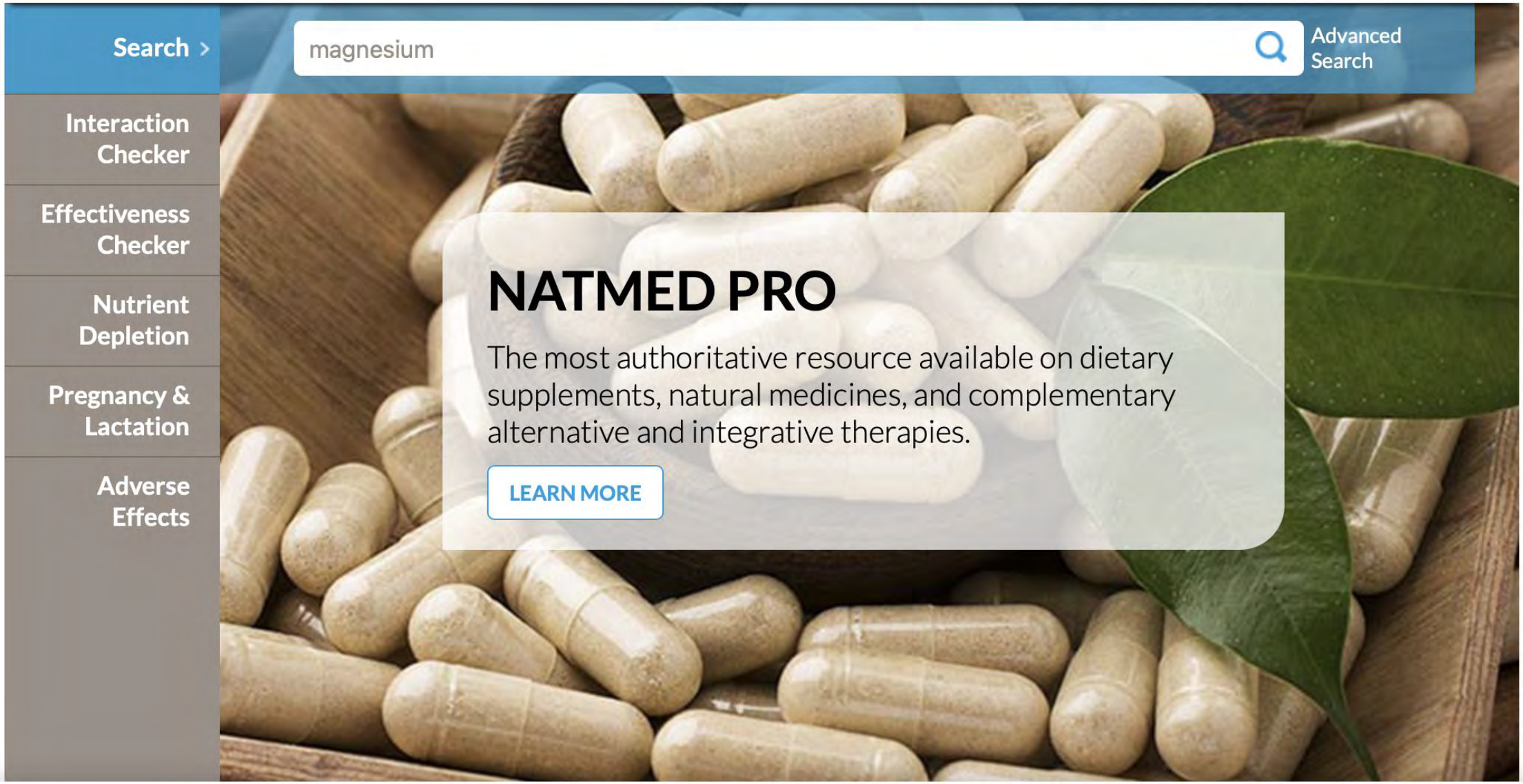
(2017)

Download Free PDF | Read Free Online | Buy Paperback: $85.00 | Buy Ebook: $69.99

Epub, Kindle, MobiPocket
What is an Ebook?

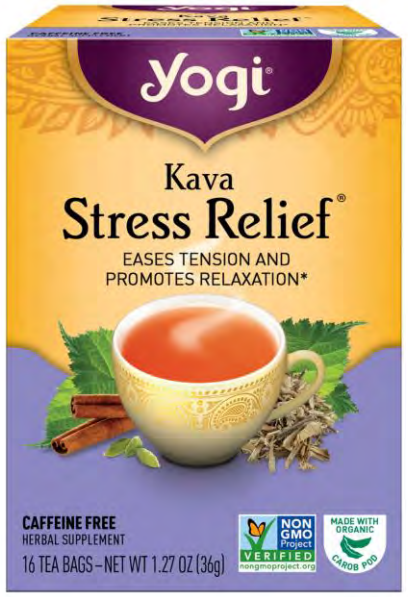
Significant changes have taken place in the policy landscape surrounding cannabis legalization, production, and use. During the past 20 years, 25 states and the District of Columbia have legalized cannabis and/or cannabidiol (a component of cannabis) for medical conditions or retail sales at the state level and 4 states have legalized both the medical and recreational use of cannabis. These landmark changes in policy have impacted cannabis use patterns and perceived levels of risk.

[read full description]


NatMed
a trchealthcare brand
Get Your Login ID
Logged In
Databases
Tools
CE/CME Center
News
About Us
Search
magnesium
Advanced Search
Interaction Checker
Effectiveness Checker
Nutrient Depletion
Pregnancy & Lactation
Adverse Effects
NATMED PRO
The most authoritative resource available on dietary supplements, natural medicines, and complementary alternative and integrative therapies.
LEARN MORE

Teas

- Lavender
- Chamomile
- Rose Petal
- Kava
- Passionflower
- Sleepy Time Blends
- Lemon balm



Acupuncture for insomnia

Review > Cochrane Database Syst Rev. 2012 Sep 12;2012(9):CD005472.
doi: 10.1002/14651858.CD005472.pub3.

Acupuncture for insomnia

Daniel K L Cheuk [1], Wing-Fai Yeung, K F Chung, Virginia Wong

Affiliations + expand

PMID: 22972087 PMCID: PMC11262418 DOI: 10.1002/14651858.CD005472.pub3

Abstract

Background: Although conventional non-pharmacological and pharmacological treatments for insomnia are effective in many people, alternative therapies such as acupuncture are widely practised. However, it remains unclear whether current evidence is rigorous enough to support acupuncture for the treatment of insomnia.

Objectives: To determine the efficacy and safety of acupuncture for insomnia.

Search methods: We searched the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, PsycINFO, Dissertation Abstracts International, CINAHL, AMED, the Traditional

Review > Phytomedicine. 2022 Jul 20:102:154160. doi: 10.1016/j.phymed.2022.154160. Epub 2022 May 14.

Acupuncture for cancer-related insomnia: A systematic review and meta-analysis

Jialing Zhang [1], Zhinan Zhang [2], Shengtao Huang [3], Xiaoke Qiu [3], Lixing Lao [4], Yong Huang [5], Zhang-Jin Zhang [6]

Affiliations + expand

PMID: 35636168 DOI: 10.1016/j.phymed.2022.154160

Abstract

Background: Cancer-related insomnia is a highly prevalent complaint in cancer patients. However, there is no meta-analytic synthesis explored the efficacy of acupuncture for cancer-related insomnia among cancer patients undergoing active cancer treatments.

Objective: This systematic review and meta-analysis were performed to explore the efficacy and safety of acupuncture for insomnia in people diagnosed with cancer.

Study design: Systematic review and meta-analysis of existing randomized controlled trials on acupuncture in the treatment of cancer-related insomnia.

Methods: According to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-

Acupressure for Insomnia

> Phytomedicine. 2022 May:99:153993. doi: 10.1016/j.phymed.2022.153993. Epub 2022 Feb 15.

Self-administered acupressure for insomnia disorder: A randomized controlled trial

Wing Fai Yeung [1], Branda Yee-Man Yu [2], Ka-Fai Chung [3], Zhang-Jin Zhang [4], Lixing Lao [5], Fiona Yan-Yee Ho [6], Lorna Kwai-Ping Suen [7], Lai-Ming Ho [8]

Affiliations + expand

PMID: 35193046 DOI: 10.1016/j.phymed.2022.153993

Abstract

Background: Insomnia is a significant health problem in the community. Self-administered acupressure (SAA) may be an alternative strategy to alleviate insomnia.

Purpose: This study is the first to investigate the effects of SAA delivered through a training course in alleviating insomnia disorder compared with sleep hygiene education (SHE).

Methods: A randomized controlled trial was conducted on 200 participants with insomnia disorder. The eligible participants were randomized into the SAA or SHE group. Both groups attended the allocated training courses (two sessions, 2 h each) and then were followed up at weeks 4 and 8.

Acupressure for Sleep

Research

Original Investigation

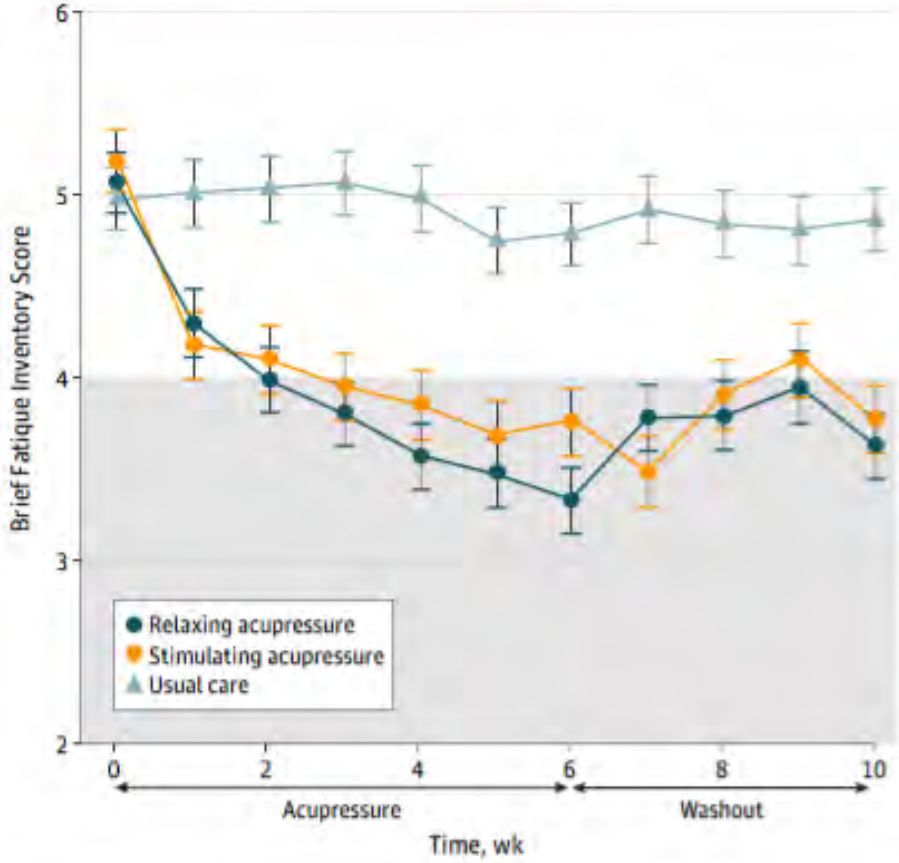
Investigation of 2 Types of Self-administered Acupressure for Persistent Cancer-Related Fatigue in Breast Cancer Survivors
A Randomized Clinical Trial

Suzanna M. Zick, ND, MPH; Ananda Sen, PhD; Gwen K. Wyatt, PhD, RN; Susan L. Murphy, PhD; J. Todd Arnedt, PhD; Richard E. Harris, PhD

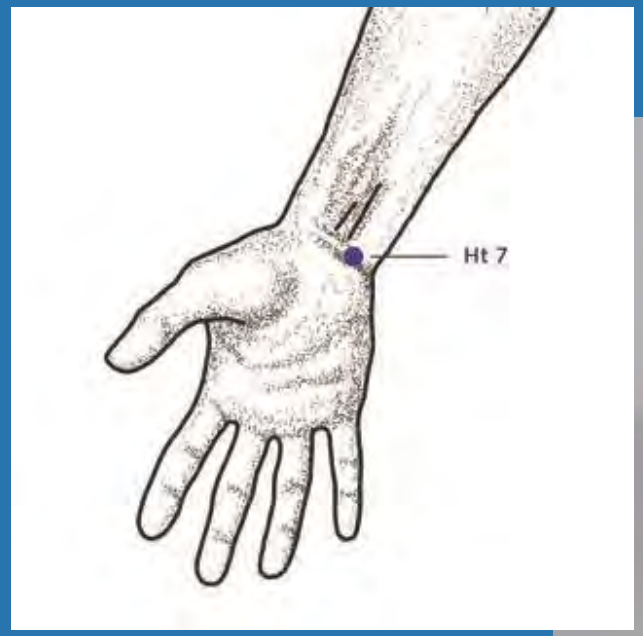
IMPORTANCE Fatigue is a common and debilitating late-term effect of breast cancer that is associated with poor sleep and decreased quality of life, yet therapies remain limited. Acupressure has reduced fatigue in previous small studies, but rigorous clinical trials are needed.

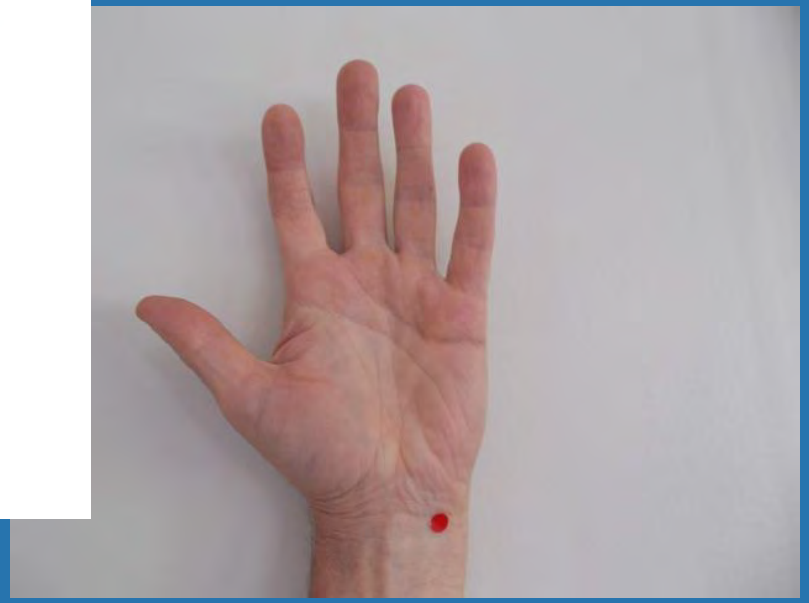
Supplemental content at jamaoncology.com

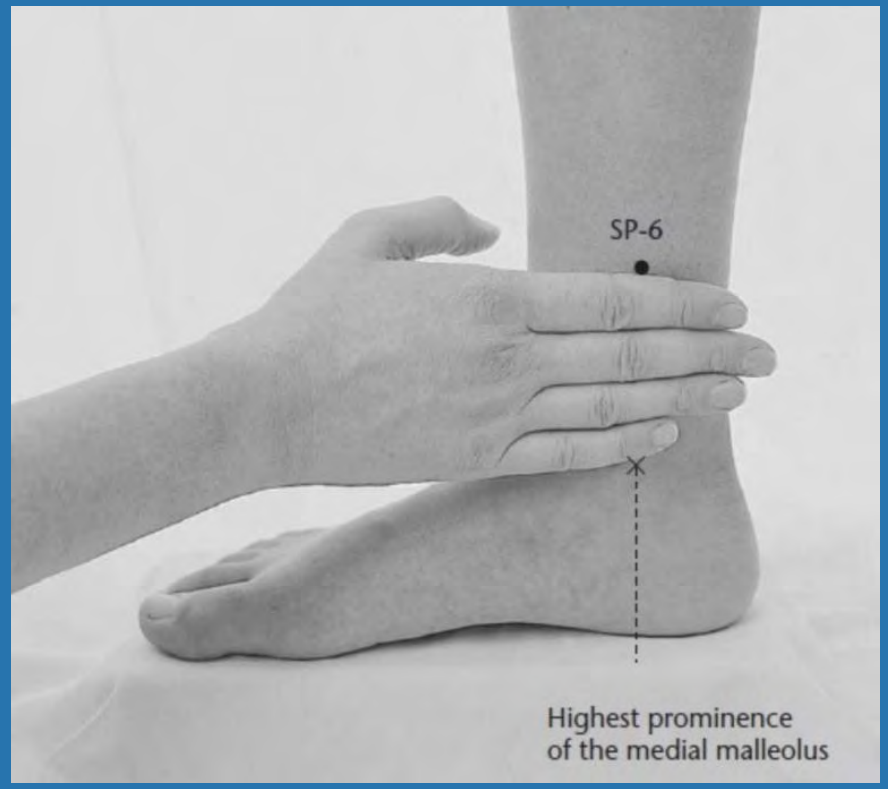
Figure 2. Fatigue by Week and Group Assignment



The Brief Fatigue Inventory consists of 9 items, each measuring fatigue on a scale of 0 to 10, and the score is calculated from the mean of completed items. Scores of 4 or higher indicate clinically relevant fatigue. The shaded area represents nonclinical or normal levels of fatigue.





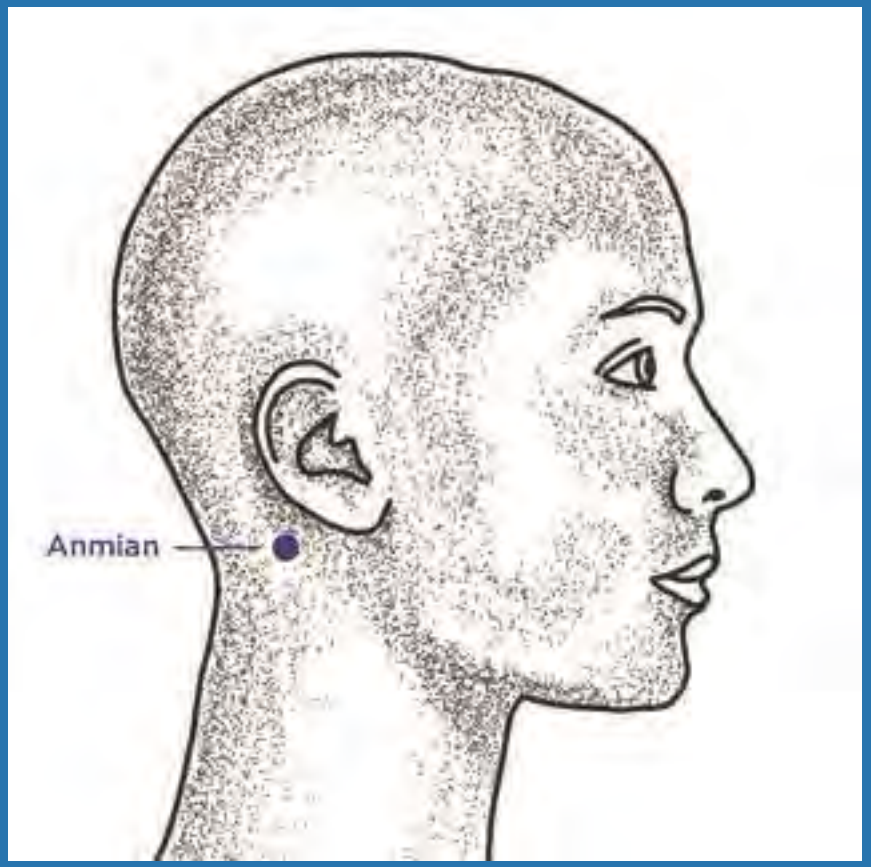


- **Heart 7: (Shen Men) "Spirit Gate"**
  - Stress/ Anxiety/ Panic
  - Insomnia
  - Memory loss

- **Spleen 6: (Sanyinjiao) "3 Yin intersection"**
  - GI Symptoms
  - Pelvic GU symptoms (men/women)
  - Insomnia

◯ Liver 3: (Tai Chong) “Great Surge”

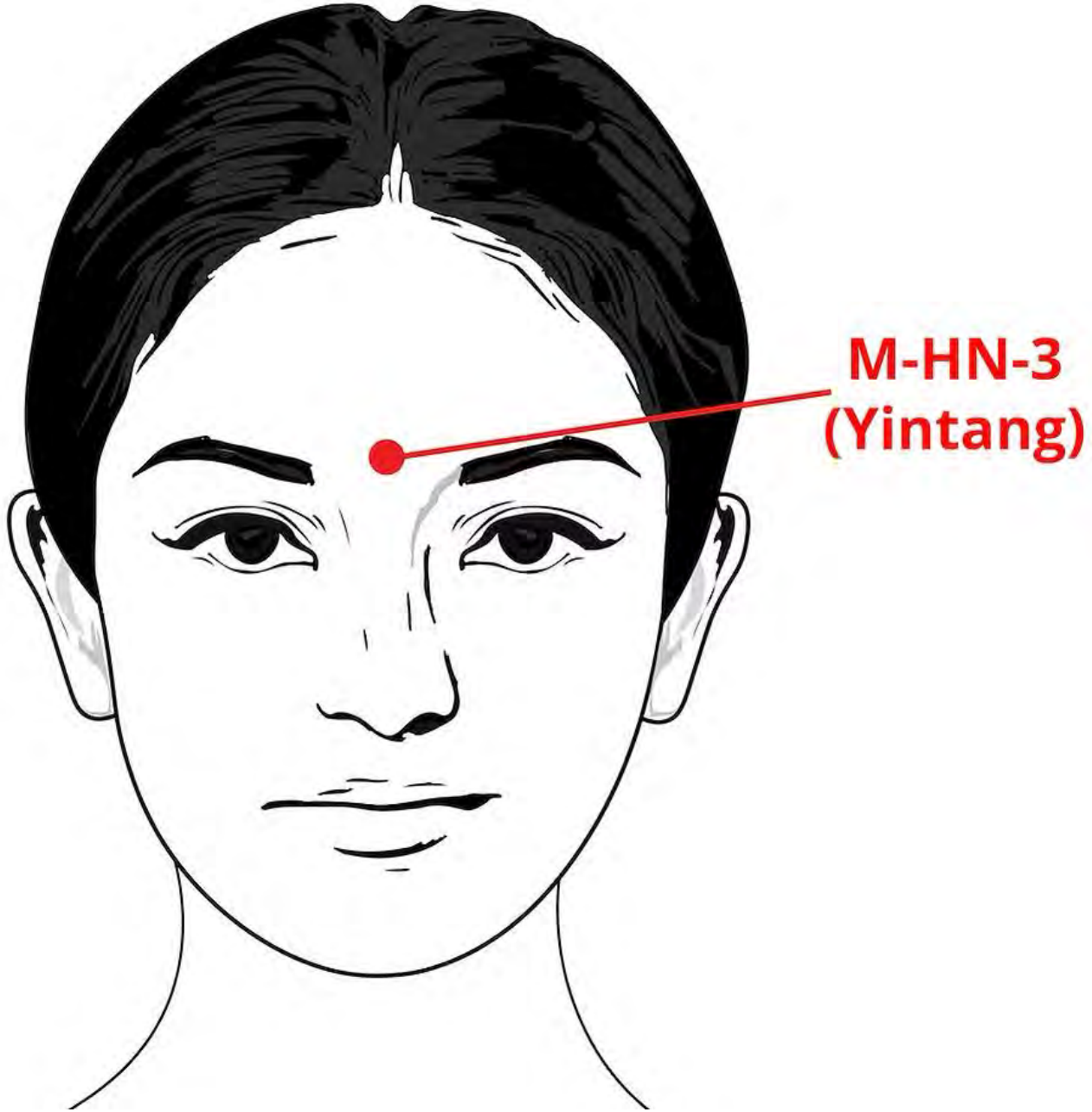
- Anger/Frustration
- Vision issues
- Headaches
- Anxiety/ Insomnia



- **An-Mian: "Restful Sleep" Extra Point**
  - Behind mastoid process on SCM
  - At the superior ganglion of vagus nerve
- **Indications**
  - Insomnia
  - Headaches, dizziness
  - High BP, mental health

YinTang: “Third Eye Center” (Extra Point)

Headaches
Sinus pressure
Calms the mind
Stress and anxiety



Tai Chi for Insomnia

Randomized Controlled Trial > Sleep. 2014 Sep 1;37(9):1543-52. doi: 10.5665/sleep.4008.

Cognitive behavioral therapy vs. Tai Chi for late life insomnia and inflammatory risk: a randomized controlled comparative efficacy trial

Michael R Irwin, Richard Olmstead, Carmen Carrillo, Nina Sadeghi, Elizabeth C Breen, Tuff Witarama, Megumi Yokomizo, Helen Lavretsky, Judith E Carroll, Sarosh J Motivala, Richard Bootzin, Perry Nicassio

PMID: 25142571 PMCID: PMC4153053 DOI: 10.5665/sleep.4008

Abstract

Study objectives: To investigate the comparative efficacy of cognitive behavioral therapy (CBT), Tai Chi Chih (TCC), and sleep seminar education control (SS) on the primary outcome of insomnia diagnosis, and secondary outcomes of sleep quality, fatigue, depressive symptoms, and inflammation in older adults with insomnia.

Randomized Controlled Trial > JAMA Netw Open. 2021 Feb 1;4(2):e2037199. doi: 10.1001/jamanetworkopen.2020.37199.

Effects of Tai Chi or Exercise on Sleep in Older Adults With Insomnia: A Randomized Clinical Trial

Parco M Siu [1], Angus P Yu [1], Bjorn T Tam [2], Edwin C Chin [1], Doris S Yu [3], Ka-Fai Chung [4], Stanley S Hui [5], Jean Woo [6], Daniel Y Fong [3], Paul H Lee [7], Gao X Wei [8], Michael R Irwin [9]

Affiliations + expand

PMID: 33587135 PMCID: PMC7885034 DOI: 10.1001/jamanetworkopen.2020.37199

Abstract

Importance: Previous studies that have shown tai chi to improve sleep were mainly based on subjective assessments, which might have produced results confounded by self-reporting bias.

Objective: To compare the effectiveness of tai chi for improving sleep in older adults with insomnia with conventional exercise and a passive control group using actigraphy-based objective measurements.

Design, setting, and participants: This randomized, 3-arm, parallel group, assessor-masked

Yoga for Insomnia

Meta-Analysis > BMC Psychiatry. 2020 May 1;20(1):195. doi: 10.1186/s12888-020-02566-4.

The effect of yoga on sleep quality and insomnia in women with sleep problems: a systematic review and meta-analysis

Wei-Li Wang [1], Kuang-Hui Chen [1], Ying-Chieh Pan [1], Szu-Nian Yang [2], Yuan-Yu Chan [3 4]

Affiliations + expand

PMID: 32357858 PMCID: PMC7193366 DOI: 10.1186/s12888-020-02566-4

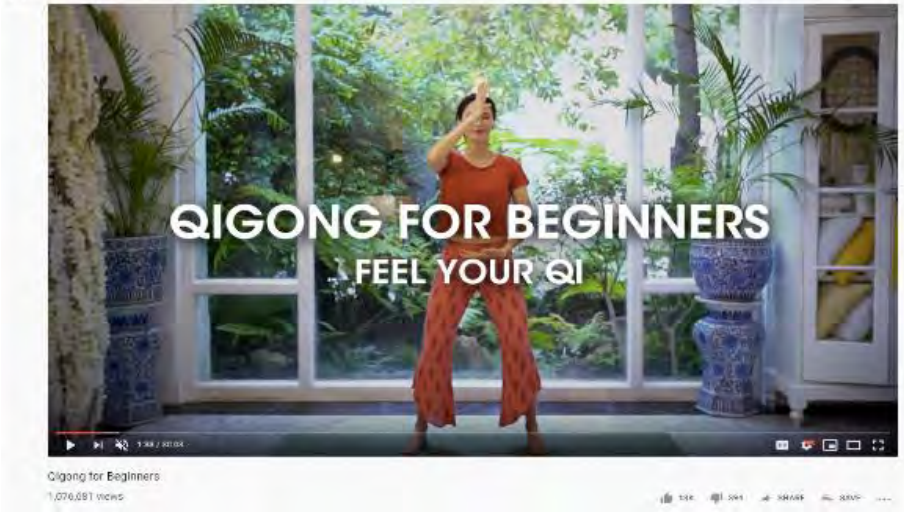
Abstract

Background: To examine the effectiveness and safety of yoga of women with sleep problems by performing a systematic review and meta-analysis.

Methods: Medline/PubMed, ClinicalKey, ScienceDirect, Embase, PsycINFO, and the Cochrane Library were searched throughout the month of June, 2019. Randomized controlled trials comparing yoga groups with control groups in women with sleep problems were included. Two reviewers independently evaluated risk of bias by using the risk of bias tool suggested by the Cochrane Collaboration for programming and conducting systematic reviews and meta-analyses. The main outcome measure was sleep quality or the severity of insomnia, which was measured

Free online Yoga and Qigong

Qigong - by Yoqi Yoga Qigong on Youtube
30 minutes



- 1. Qigong for Beginners
- https://www.youtube.com/watch?v=IyINAjEoTIs
- 2. Mood Lifter (15min)
- https://www.youtube.com/watch?v=cwlvTcWR3Gs
- 3. Sitting qigong (25min)
- https://www.youtube.com/watch?v=LKX9oRQ17kQ
- 4. 8 Silk Brocades Exercise (Ba Duan Jin) (20 min)
- https://www.youtube.com/watch?v=irCaKtqWmik&t=122s

Yoga: Light and restorative forms of Yoga

- 1. Restorative flow yoga
- https://www.youtube.com/watch?v=c56tAJ9KjRg&feature=youtu.be
- 2. Yin Yoga
- https://www.youtube.com/watch?v=UR469yFLX2w

Sleep Technology

Table 3—Advantages and disadvantages of consumer technologies.

Advantages	Disadvantages
Tool to engage patient awareness and patient-provider interaction	Largely unproven clinical tool: • Inability for providers to analyze overwhelming amounts of unvalidated PGHD • CST may have uncertain clinical validation: Raw data collection and algorithms are not standardized, disclosed, or validated for stated purposes[11,*] • Resource utilization required to analyze and document PGHD may outweigh value added to clinical discussions • Largely unproven to accurately measure sleep[12]; possible data misrepresentation or improper use of data
Popular, inexpensive, readily accessible for consumers	CST are generally advertised as "entertainment" • May not be FDA cleared or validated for clinical use • CST technology advances more rapidly than can be studied systematically
Real time and visual data feedback for consumers • May increase sleep awareness and patient engagement • May encourage patients to seek formal sleep evaluation	May have unintended clinical consequences: • Negative impact on sleep hygiene (screen time/light) • Overestimation of the presence of a sleep problem may cause unnecessary anxiety • Underestimation of a sleep problem may cause delayed evaluation and treatment
Potential to become more meaningful with CST validation and ongoing technology advances • For EHR integration and telemedicine use • For remote consumer generated data between visits • Long-term data collection	Potential problems with clinical use of technology and remote PGHD: • PGHD may not adhere to HIPAA security standards[13] • Unvalidated data may be documented in patient charts without provider review • Increased CST training, personnel, and IT cost burden for clinical, EHR integration, and telemedicine use • Reimbursement may be less than care delivery costs

Khosla et al. Journal of Clinical Sleep Medicine, Vol. 14, No. 5. *Consumer Sleep Technology: An American Academy of Sleep Medicine Position Statement*

Summary Integrative Insomnia Management

- **Reduce Body noise**
  - Address underlying comorbid conditions, medications, substances
- **Reduce Mind noise**
  - CBT-I (sleep hygiene, meditation, breathing exercises)
- **Reduce Bed noise**
  - Environment and circadian rhythm
- **Mind-Body interventions:**
  - Tai-Chi
  - Yoga
- **Acupuncture/Acupressure**
- **Sleep Supplements or teas**
  - Melatonin
  - Magnesium
  - Lemon balm

Thank you for your time!

••• Questions??

GOOD →

← BAD

Recommended APPS

- Sleep cycle: Tracks your sleep with optional paid upgrade
- Balance
- Insight Timer: Free version contains lots of content
- Calm: Free trial but requires paid membership later
- Headspace: Free trial but requires paid membership later
- Stop, breath and Think

Online Resources

- Video interview / Podcast with Dr. Matthew Walker, PhD. Neuroscientist at UC Berkley
  - https://www.foundmyfitness.com/episodes/matthew-walker
  - https://www.youtube.com/watch?time_continue=88&v=bEbtf7uS6P8

- https://www.sleepfoundation.org
- https://www.sleep.org

UCLA Health | Center for East-West Medicine

INTEGRATIVE MEDICINE FELLOWSHIP

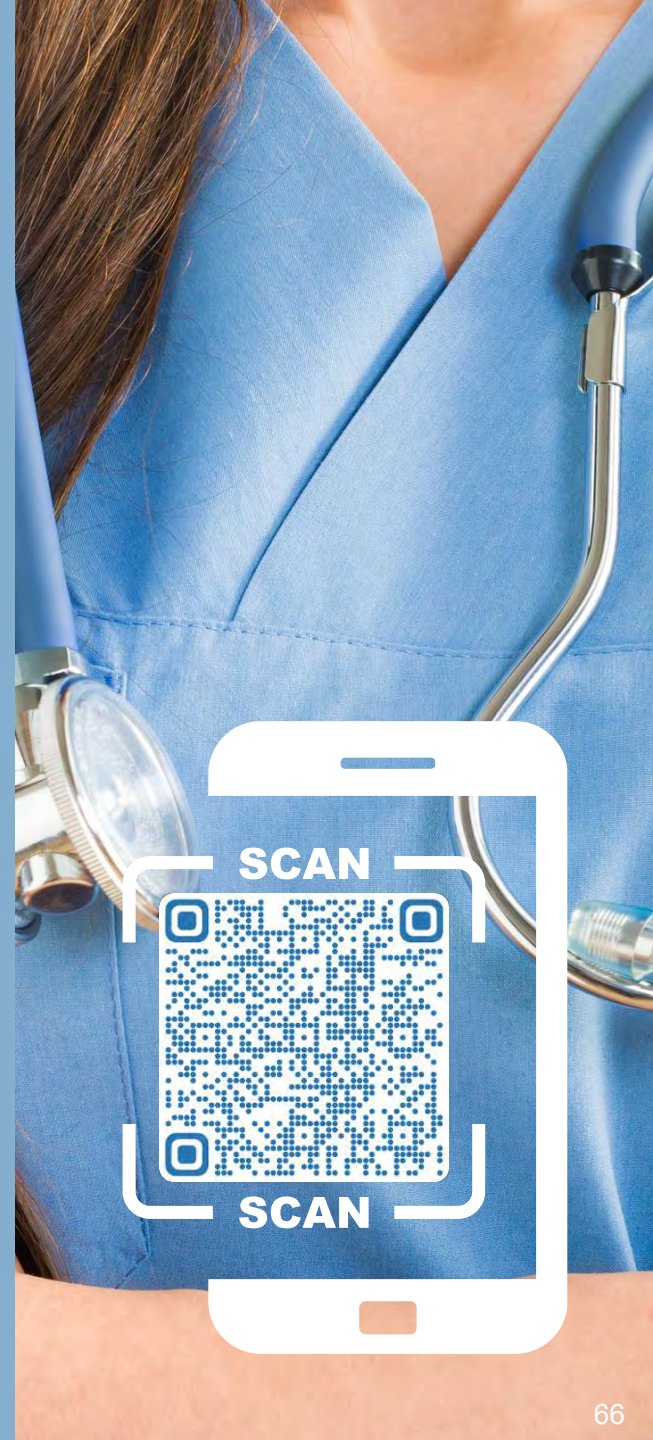
Now accepting applications for 2026-2027 East-West Consultative Specialty!

DUE DECEMBER 1, 2025

BENEFITS OF THE FELLOWSHIP:

- Training and mentorship from our CEWM expert team of faculty and clinicians.
- Training by UCLA Integrative medicine collaborative specialist faculty.
- Training in physician acupuncture and Traditional Chinese medicine.
- Opportunities for teaching medical trainees, research & academic scholarship.
- Upon completion, you will be qualified to take the American Board of Integrative Medicine (ABOIM) and the American Board of Medical Acupuncture (ABMA) exams.

TO APPLY: tinyurl.com/CEWMFellowship



66

UCLA Health | Center for East-West Medicine

Online and In-Person

The Andrew & Peggy Cherng

Integrative East-West Health Professional Advanced Training Certificate Program

Expand Your Clinical Practice & Opportunities through

Integrative East-West Medicine

Designed exclusively for UCLA Health physicians, this unique program combines in-depth education with hands-on clinical experience. Learn directly from expert faculty and apply East-West Medicine approaches in real clinical settings. Elevate your practice with this immersive, high-impact training—available only at UCLA.

Exclusive

For staff physicians and clinical faculty at UCLA Health

Hybrid

Online didactics, in-person clinical training and workshops

200 hours

over one year

Minimum of 72 hours of in-person clinical training

Benefit

Graduates may request acupuncture privileges at UCLA Health

REQUIREMENTS:

- **Eligibility:** Staff physicians and clinical faculty (MD/DO) at UCLA Health
- **Prerequisite:** 12-hour online CME course – Person-Centered Integrative East-West Approach in Addressing Chronic Pain (https://ucla.cloud-cme.com/east_west_medicine)

APPLICATION DEADLINE:

June 1, 2025

Please note: *This is not a clinical fellowship program. Completion of this program would NOT qualify you to sit for the American Board of Integrative Medicine (ABOIM) exam.*

For more information or questions, contact cewm@mednet.ucla.edu.

Supported by Panda Charitable Family Foundation

UCLA Center for East-West Medicine

UCLA Health | Center for East-West Medicine

Continuing Medical Education Course

Person-Centered Integrative East-West Approach in Addressing Chronic Pain

Online | 12.00 AMA PRA Category 1 Credit(s)™

Learn about UCLA Center for East-West Medicine's person-centered integrative East-West approach to chronic pain and other co-morbid conditions.

TOPICS INCLUDE:

- Stress & Inflammation
- Acupressure
- Tai Chi
- Lifestyle Medicine
- Supplements for Pain & Stress
- Myofascial Pain & Trigger Points
- Integrative Oncology
- Integrative Palliative Care
- Case Reviews

REGISTRATION FEES

UCLA Students, Trainees and Healthcare Providers (MD, DO, and Other Healthcare Providers)

$ 25

Non-UCLA Students and Trainees	Other UC Healthcare Providers	Non-UC Healthcare Providers
$ 50	$ 120	$ 180

SCAN TO REGISTER

68

UCLA Health | Center for East-West Medicine

INTEGRATIVE EAST-WEST PEDIATRICS:
Non-Pharmacological Approaches to Whole Child Mental Health

Join the conversation on East-West mind-body practices for whole child mental health, featuring pediatric mindfulness, acupuncture, nutrition and interactive breakout sessions.

Saturday, May 17, 2025 | 8:30 AM – 4:00 PM
Tamkin Auditorium | Ronald Reagan UCLA Medical Center

FEATURED KEYNOTE SPEAKERS

Rebecca Avern, L.Ac.
Founder of the Hub of Pediatric Acupuncture
The Little Acupuncture Room
The Panda Clinic

Kim John Payne, M.ED
Director of The Center for Social Sustainability
Author of "Simplicity Parenting"

Lonnie Zeltzer, M.D.
Emerita Distinguished Professor of Pediatrics, Anesthesiology, Psychiatry and Biobehavioral Sciences
UCLA David Geffen School of Medicine

Sponsored by The Tellis Family Foundation

RSVP by April 1