

Stronger Together



Integrative Approaches to Improve Sleep During Cancer Treatment and Survivorship

Ashwin Mehta MD MPH

Medical Director of Integrative Medicine

January 10, 2025

Objectives:

- Define Integrative Medicine and describe our oncology care model
- Screen patients for sleep concerns in the context of cancer care and survivorship
- Apply evidence-based, Integrative methods to improve sleep quality and outcomes

Complementary Versus Alternative

- “Complementary” generally refers to using a non-mainstream approach **together with** *conventional medicine*.
- “Alternative” refers to using a non-mainstream approach **in place of** conventional medicine.

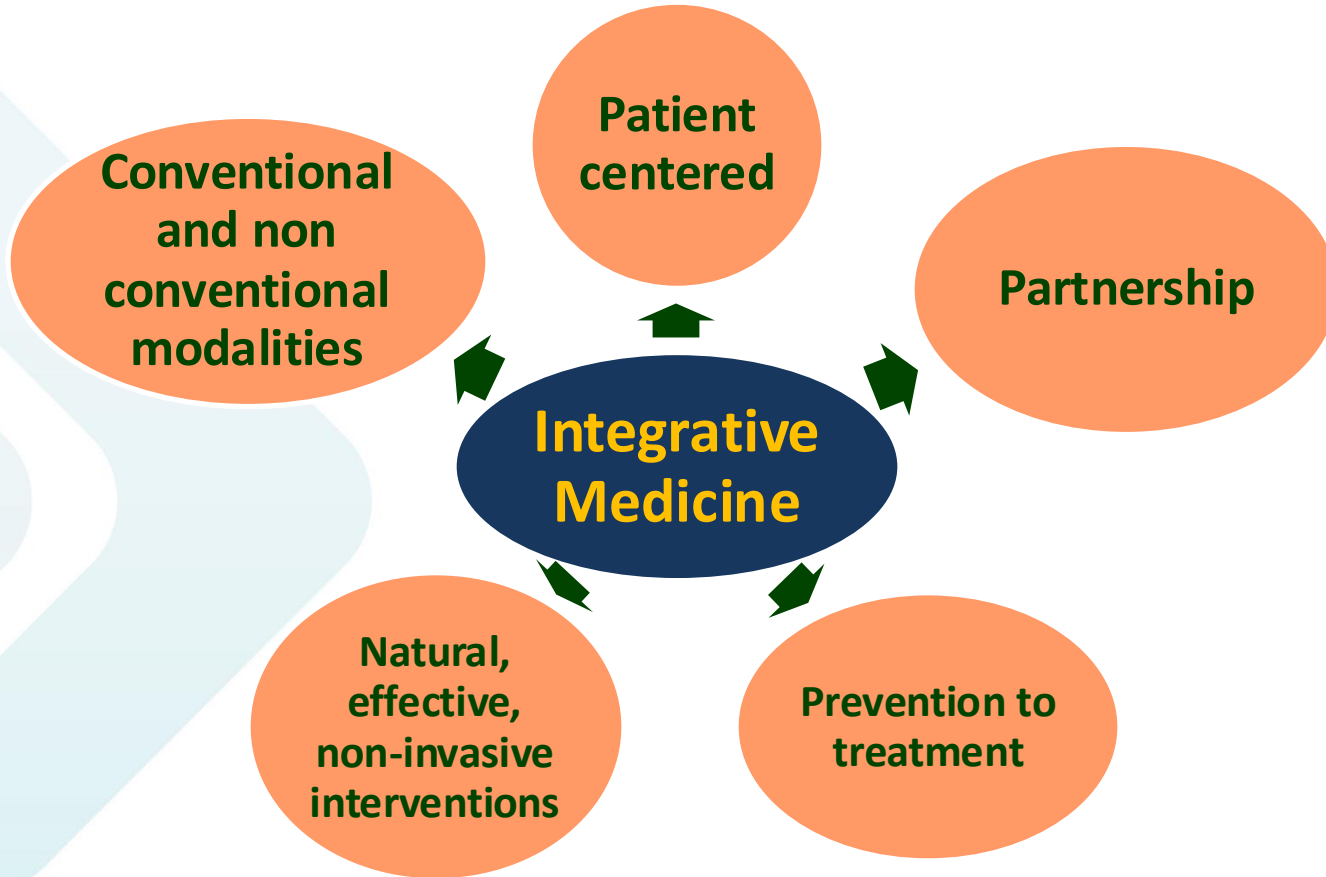
Integrative Medicine

- Unfortunately, some patients gravitate to the use of widely promoted disproved or unproven “alternative” modalities to achieve their goals.
- **No less than mainstream cancer therapies in common use, complementary therapies must be evidence-based or, lacking firm evidence, must at least have a rational basis.**

What is Integrative Medicine?

- “Integrative medicine”—increasingly has replaced CAM as a preferred term
- Integrative oncology is a synthesis of mainstream treatment and complementary therapies in cancer care.
 - Noninvasive, non-pharmacologic adjuncts to mainstream treatment that improve patients’ strength and control the physical and emotional symptoms associated with cancer and cancer treatment.
 - Provide patients with a sense of control and self-empowerment at a time when many feel vulnerable and life seems out of control.

Deng, G, Frenkel M, Cohen L, et al: Evidence-based clinical practice guidelines for integrative oncology: Complementary therapies and [J Soc Integr Oncol 7:85-120, 2009](#)



Integrative Medicine

- Engages mind, body, spirit and community
- Encourages providers to model healthy lifestyles for their patients
 - Focuses attention on lifestyle choices for prevention & maintenance of health
 - Maintains that healing is always possible even when cure is not

Symptom Clusters

- Fatigue
- Weight loss/gain
- **Poor sleep quality**
- Depression
- Anxiety
- Neuropathy
- Cognitive slowing
- Pain
- Physical deconditioning
- Sexual dysfunction
- Lymphedema



Integrative Medicine in Cancer Care

Nutrition

Exercise

Mindfulness

Sleep

Acupuncture

Massage

Yoga



Sleep is a natural and innate process that is inherent to our physiology.

Integrative Sleep Medicine

- Sleep is a multidimensional process
 - “A four movement symphony”
 - Stage 1, 2, 3, and REM
- Brain and body cooling
- Multidisciplinary field
- Growing science
- Behavior-based, not an organ based science



“Sleep medicine focuses on the clinical assessment, physiologic testing, diagnosis, management and prevention of sleep and circadian rhythm disorders. Sleep specialists treat patients of any age and use multidisciplinary approaches”

— American Academy of Sleep Medicine

Importance of restful sleep

- Reverse damage from wakefulness
 - Reverse oxidative stress
 - Replete energy stores
- Brain and body cooling
- Stimulate brain development (REM sleep)
- Regulate ion channels
- Learning and memory
- Optimize regulation of other physiological functions

Biochemistry of sleep

- Substance P, glutamate (pronociceptive – arousal provoking)
- GABA (inhibitory) – alpha 2 delta receptors of Ca channels
- Serotonin – Dorsal raphe nucleus
- Almost every medication for depression (SSRI, MAO-i) will decrease REM sleep

Marshall NS et al. *Sleep Medicine Reviews*, 2008.

Metabolic Changes Associated with Poor Sleep

- Sleep loss adversely affects metabolic hormones



Evening cortisol



Sympathetic activation



Thyrotropin



Glucose tolerance



Ghrelin



Leptin

- These endocrine changes contribute to altered signaling of hunger and appetite which may promote weight gain and obesity

Physiologic effects of sleep loss

- Sleep loss also alters immune function
 - Reduced natural killer cell activity
 - Changes in circulating levels of leukocytes and cytokines (increased TNF, IL-6)
 - Decreased antibody titers influenza vaccination
 - Inflammatory markers increased (CRP)
 - **What is the most common sleep condition?**

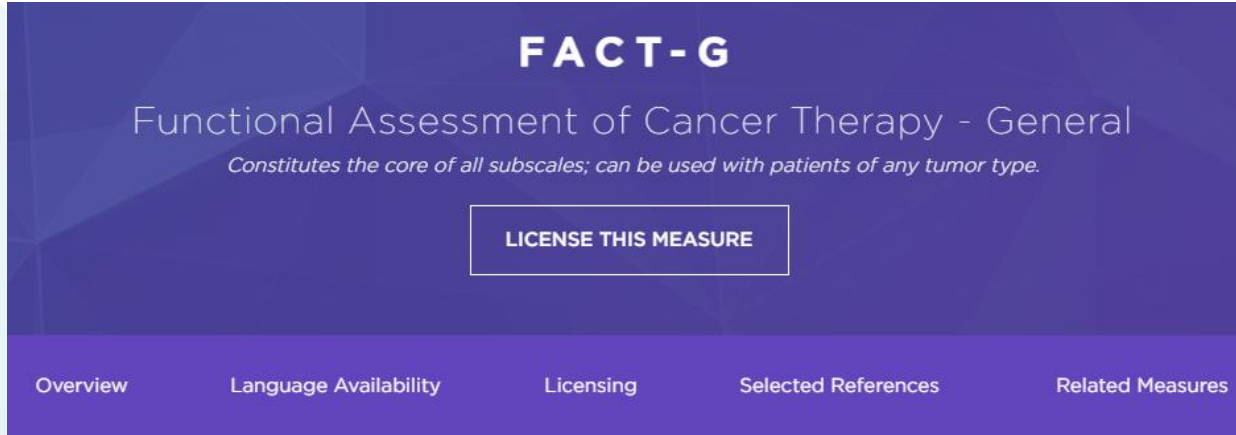
Banks S, et al. J Clin Sleep Med, 2007.

Sleep Medicine: Insomnia and Cancer

- Natural course of insomnia comorbid with cancer: an 18-month longitudinal study
 - Purpose: assess prevalence and natural course of comorbid insomnia with cancer over an 18-month period
 - **Insomnia is a frequent and enduring problem in patients with cancer**
 - Early intervention strategies could prevent the problem from becoming more severe and chronic
 - Cognitive-behavioral therapy (i)
 - Mindfulness techniques

Savard J, et al. J Clin Oncol. 2011 Sep 10; 29(26):3580-6.

Care Design: Screening



The screenshot shows a webpage for the FACT-G measure. At the top, it says "FACT-G" in large white letters. Below that, it says "Functional Assessment of Cancer Therapy - General" in a smaller white font. Underneath, there is a line of italicized text: "Constitutes the core of all subscales; can be used with patients of any tumor type." In the center, there is a white rectangular button with the text "LICENSE THIS MEASURE". At the bottom of the page, there is a horizontal navigation bar with five white text links: "Overview", "Language Availability", "Licensing", "Selected References", and "Related Measures".

Overview

The Functional Assessment of Cancer Therapy - General (FACT-G) is a 27-item questionnaire designed to measure four domains of HRQOL in cancer patients: Physical, social, emotional, and functional well-being.

Sleep Quality Related to Cancer Symptoms

- Sleep dysfunction and psychosocial adaptation among women undergoing treatment for non-metastatic breast cancer
 - Purpose:
 - Determine frequency of sleep disturbances in women prior to adjuvant therapy for breast cancer
 - Determine whether greater sleep dysfunction predicts poorer functional outcomes
 - Results of the Study
 - Consistent associations between sleep quality and psychosocial adaptation
 - Associations independent of anxiety and depression
 - **Important: Comprehensive psychosocial interventions that consider sleep problems**

Integrative Sleep Clinical Pearl

- 3 hours – no food
- 2 hours – limit fluids
- 1 hour – avoid bright-screened electronic devices

Prolonged Nightly Fasting and Breast Cancer Prognosis.

[Marinac CR](#)¹, [Nelson SH](#)², [Breen CI](#)³, [Hartman SJ](#)⁴, [Natarajan L](#)⁴, [Pierce JP](#)⁴, [Flatt SW](#)³, [Sears DD](#)⁵, [Patterson RE](#)⁴.

Author information

¹University of California, San Diego Moores Cancer Center, La Jolla²Graduate School of Public Health, San Diego State University, San Diego, California³Department of Family Medicine and Public Health, University of California, San Diego, La Jolla.

²University of California, San Diego Moores Cancer Center, La Jolla²Graduate School of Public Health, San Diego State University, San Diego, California.

³University of California, San Diego Moores Cancer Center, La Jolla.

⁴University of California, San Diego Moores Cancer Center, La Jolla³Department of Family Medicine and Public Health, University of California, San Diego, La Jolla.

⁵University of California, San Diego Moores Cancer Center, La Jolla³Department of Family Medicine and Public Health, University of California, San Diego, La Jolla⁴Division of Endocrinology and Metabolism, Department of Medicine, University of California, S.

2413 women with breast cancer but without DM, aged 27 to 70 years at diagnosis and participated in the prospective Women's Healthy Eating and Living study between March 1, 1995, and May 3, 2007

Clinical outcomes were invasive breast cancer recurrence and new primary breast tumors during a mean of 7.3 years of study follow-up as well as death from breast cancer or any cause during a mean of 11.4 years of surveillance

Nightly fasting duration was estimated from 24-hour dietary recalls collected at baseline, year 1, and year 4 – sleep duration self reported, archived blood samples used for HgbA1c and CRP

- Fasting < 13 hours per night (lower 2 tertiles of nightly fasting distribution) was assoc with an increase in the risk of breast cancer recurrence compared with fasting 13 or more hours per night (hazard ratio, 1.36; 95% CI, 1.05-1.76)
- Not assoc with higher risk of breast ca mortality or all cause
- Prolonging the length of the nightly fasting interval may be a simple, non-pharmacologic strategy for reducing the risk of breast cancer recurrence. Improvements in **glucoregulation** and sleep may be mechanisms linking nightly fasting with breast cancer prognosis.

June 10, 2019

Association of Exposure to Artificial Light at Night While Sleeping With Risk of Obesity in Women

Yong-Moon Mark Park, MD, PhD¹; Alexandra J. White, PhD¹; Chandra L. Jackson, PhD, MS¹; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

JAMA Intern Med. 2019;179(8):1061-1071. doi:10.1001/jamainternmed.2019.0571

Instead of using our phones or watching TV prior to bedtime, what shall we recommend?

Mindfulness Improves Sleep and Quality of Life





- Effectiveness of Mindfulness-Based Stress Reduction in Mood, Breast- and Endocrine-Related Quality of Life, and Well-Being in Stage 0 to III Breast Cancer: A Randomized, Controlled Trial
 - Mindfulness was more effective than standard care for improving:
 - Mood
 - Breast- and endocrine-related quality of life
 - Well-being
 - **Improvements maintained at three months**
 - **Mindfulness can help alleviate long-term emotional and physical adverse effects of medical treatments, including endocrine treatments**

Sleep: The Mind-Body Connection

- **Mind-body treatments for the pain-fatigue-sleep disturbance symptom cluster in persons with cancer**
 - Co-occurring pain, fatigue, and sleep disturbance comprise a common symptom cluster in patients with cancer
 - Identify treatment approaches that target the cluster of symptoms
 - **Mind-body interventions could help patients manage all symptoms in the cluster with a single treatment strategy**
 - Studies needed to examine the impact of:
 - Relaxation
 - Imagery/hypnosis
 - CBT/CST
 - Meditation
 - Music interventions

Special Articles

Integrative Oncology Care of Symptoms of Anxiety and Depression in Adults With Cancer: SIO-ASCO Guideline Summary and Q&A

Linda E. Carlson, PhD, RPsych¹ ; Nofisat Ismaila, MD² ; Elizabeth L. Addington, PhD³ ; Gary N. Asher, MD, MPH⁴; Joke Bradt, PhD, MT-BC⁵; Ashwin Mehta, MD⁶; and Julia H. Rowland, PhD⁷ ; on behalf of the SIO-ASCO Expert Panel

DOI <https://doi.org/10.1200/OP.23.00358>

Accepted June 18, 2023

Published August 15, 2023

- Overview of recommendations
- How can people access these therapies?
- Are there disparities in accessing integrative therapies?
- Questions regarding dietary supplements?

51

Yoga for Cancer Survivors

[Integr Cancer Ther.](#) 2015 Nov 29. pii: 1534735415617021. [Epub ahead of print]

YOCAS® Yoga Reduces Self-reported Memory Difficulty in Cancer Survivors in a Nationwide Randomized Clinical Trial: Investigating Relationships Between Memory and Sleep.

[Janelsins MC](#)¹, [Peppone LJ](#)², [Heckler CE](#)², [Kesler SR](#)³, [Sprod LK](#)⁴, [Atkins J](#)⁵, [Melnik M](#)⁶, [Kamen C](#)², [Giguere J](#)⁷, [Messino MJ](#)⁵, [Mohile SG](#)², [Mustian KM](#)².

- Previously showed in a phase III randomized clinical trial that yoga - a program that consists of breathing exercises, postures, and meditation -significantly improved sleep quality in cancer survivors
- 328 participants from 12 centers who provided data on the memory difficulty item of the MD Anderson symptom inventory included – 8 sessions of yoga for 75 minutes
- Sleep quality measured using the Pittsburgh Sleep Quality Index
- Yoga significantly reduced patient-reported memory difficulty in cancer survivors

Obstructive Sleep Apnea

- Screening questions
 - Berlin Index (Stop BANG)
 - Epworth Scale

APM ANNALS OF PALLIATIVE MEDICINE
AN OPEN ACCESS JOURNAL FOR HIGH-QUALITY RESEARCH IN PALLIATIVE MEDICINE

[Home](#) [Journal Info](#) [For Authors](#) [For Reviewers](#) [Ethics and Policies](#) [Special Contents](#) [Archives](#) [Online First](#)

[Home](#) / [Vol 11, No 12 \(December 28, 2022\)](#) / [Head and neck cancer radiotherapy and obstructive sleep apnea](#)

Editorial



Head and neck cancer radiotherapy and obstructive sleep apnea

Ahmed Amine Alaoui^{1*}, Souad Alaoui², Roy Hajjar¹, Daniele Urso^{3,4*}, Valentina Gnoni^{3,4*}

¹Faculty of Medicine, University of Montreal, Quebec, Canada; ²Faculty of Dental Medicine, University of Montreal, Quebec, Canada;

³Department of Clinical Research in Neurology, Center for Neurodegenerative Diseases and the Aging Brain, University of Bari 'Aldo Moro',

'Pia Fondazione Cardinale G. Panico', Tricase, Lecce, Italy; ⁴Department of Neurosciences, Institute of Psychiatry, Psychology and Neuroscience, King's College London, De Crespigny Park, London, UK

*These authors contributed equally to this work.

Correspondence to: Ahmed Amine Alaoui. 2900, boul. Édouard-Montpetit, Montreal, Quebec H3T 1J4, Canada. Email: ahmedaminealaoui1@gmail.com.

Comment on: Inoshita A, Sata N, Ohba S, *et al.* Impact of radiotherapy for head and neck cancer on obstructive sleep apnea: a prospective study. *Ann Palliat Med* 2022;11:2631-40.

Submitted Aug 18, 2022. Accepted for publication Nov 07, 2022.

OSA in Head and Neck Cancer

- 81.3% of patients diagnosed with HNC presented with OSA.
- Mean AHI 20.8 ± 19.0 events/hr.
- OSA was found in 72% of patients with nasopharyngeal cancer.

SCIENTIFIC INVESTIGATIONS

Impact of Arterial Stiffness on WatchPAT Variables in Patients With Obstructive Sleep Apnea

Taku Kinoshita, MD¹; Misuzu Yahaba, MD, PhD¹; Jiro Terada, MD, PhD¹; Takuma Matsumura, MD¹; Yoriko Sakurai, MD, PhD¹; Kengo Nagashima, PhD²; Seiichiro Sakao, MD, PhD¹; Koichiro Tatsumi, MD, PhD¹

¹Department of Respiriology, Graduate School of Medicine, Chiba University, Chiba, Japan; ²Department of Global Clinical Research, Graduate School of Medicine, Chiba University, Chiba, Japan



Nap time

- Sleep loss recovery
 - REM rebound
- A restful space
 - After lunch, rest a while. After dinner, walk a mile.

Caffeine

- Often used to address fatigue
- Associated with disrupted sleep architecture

What about Ashwagandha and Cannabinoids?

- Be careful about drug-herb, drug-supplement interactions
- Magnesium, Vitamin D 25-OH, B12, Folate

Summary

- Sleep disturbances are common in cancer survivors
- Screening for and treatment of sleep concerns can help improve quality of life in people with cancer
- Integrative medicine modalities can be used to address sleep complaints in people living beyond cancer
- Lifestyle modification is at the core of addressing sleep concerns
- More research needs to be done on sleep and how to use integrative medicine treatments effectively in cancer
- Contact: asmehta@mhs.net