



“Integrative Medicine in Palliative Care”

Coleman Palliative Medicine Conference

Friday, September 16, 2016

Sonia Oyola, MD

University of Chicago Pritzker School of Medicine

Department of Family Medicine



THE UNIVERSITY OF
CHICAGO
PRITZKER SCHOOL OF MEDICINE

No disclosures related to the presentation



Objectives

By the end of the talk I hope you are better able to...

- * 1. Describe an integrative (a combo of evidence-based conventional and complementary therapies) approach to relieve pain, nausea/vomiting, dyspnea, depression/anxiety and insomnia
- * 2. Discuss the research supporting various complementary medicine approaches to address the aforementioned conditions
- * 3. List an online resource for investigating drug-herb, drug-disease interactions

How many People Use CAM, What do they use & Why?

- * In the United States, approximately 38 percent of adults (about 4 in 10) and approximately 12 percent of children (about 1 in 9) are using some form of CAM.
- * Nonvitamin, nonmineral natural products with increasing use of breathing exercises, meditation, massage and yoga.
- * Which natural products are most popular?
- * What health conditions prompt CAM use?



Why is this relevant?

Patient Satisfaction

- * Demmer and Sauer^[18] found that patients who received complementary therapies were more satisfied with their hospice services.
- * Sirios^[19] compared consumers seeking consultation with CAM practitioners in 1997 and 2005. Consumer motivation changed in that period from use of CAM due to negative attitudes toward conventional medicine to use of CAM modalities for their positive effects and a whole-person, empowered approach to health care.



What is Integrative Medicine?



Integrative Medicine

Integrative Medicine is the practice of medicine that reaffirms the importance of the **relationship** between practitioner and patient, focuses on the **whole person**, is informed by **evidence**, and makes use of **all appropriate therapeutic approaches**, healthcare professionals and disciplines to achieve **optimal health and healing**.



Defining Integrative, Complementary and Alternative Medicine

- **Integrative Medicine:** combines both conventional and complementary treatments for which there is **evidence of safety and effectiveness.**
- **Complementary Medicine:** any of a range of medical therapies that fall beyond the scope of scientific medicine but may be used alongside it in the treatment of disease and ill health.
- **Alternative Medicine:** any of a range of medical therapies that are regarded as unorthodox by the medical profession, such as herbalism, homeopathy, and acupuncture.

The US Joint Commission on Pain Management's Standard as of 1/1/2015

“... Both pharmacologic and nonpharmacologic strategies have a role in the management of pain. The following examples are not exhaustive, but strategies may include the following:

Nonpharmacologic strategies: physical modalities (for example, acupuncture therapy, chiropractic therapy, osteopathic manipulative treatment, massage therapy, and physical therapy), relaxation therapy, and cognitive behavioral therapy.”

Mr. R



- * 56yr old male with a recent dx of Pancreatic Cancer and a long h/o Anxiety is admitted to your hospital for intractable back pain. He is interested in learning about “other ways”, aside from the Morphine SR 45mg bid and Morphine IR 15mg prn he has been prescribed, to control his pain.

Mr. R's Problem List

- * Back Pain due to Pancreatic Cancer
- * Depression and Anxiety
- * Nausea and Vomiting
- * Insomnia
- * Dyspnea
- * Confusion/Daytime Grogginess
- * Family Stress (Caregiver Stress and Teen entering HS)



What is most important to Mr. R?

Pain Control and Mental Clarity



Small Group Discussion about Mr. R (3 minutes)

Work with your small group to discuss therapies that can address any of Mr. R's issues: pain, N/V, insomnia, confusion, Anxiety, Depression and dyspnea, family stress. You may work from any of the following categories:

- * Pharmacotherapy
- * Supplements
- * Nutrition
- * Physical modalities
- * Mental health modalities
- * Mind-body techniques
- * Therapies from other whole medical systems



Integrative Medicine and Palliative Care Philosophies

Relationship-
Centered

Relief of
Symptoms

**Whole-
Person**
(Mind-Body-Spirit)

Support of
Families

Peaceful and
Meaningful
life and
death

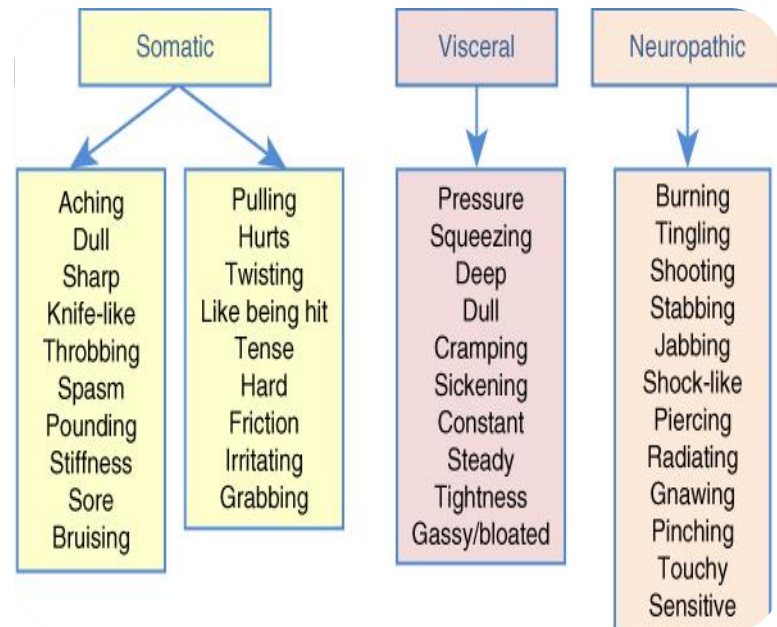


Evidence Updates



Important 1st Pain Management Steps

- * 1. Regularly screen for pain and assess intensity
- * 2. Characterize the pain properly (acute vs. chronic vs. due to cancer or other reasons vs. **somatic**, visceral, neuropathic, is there breakthrough pain?)

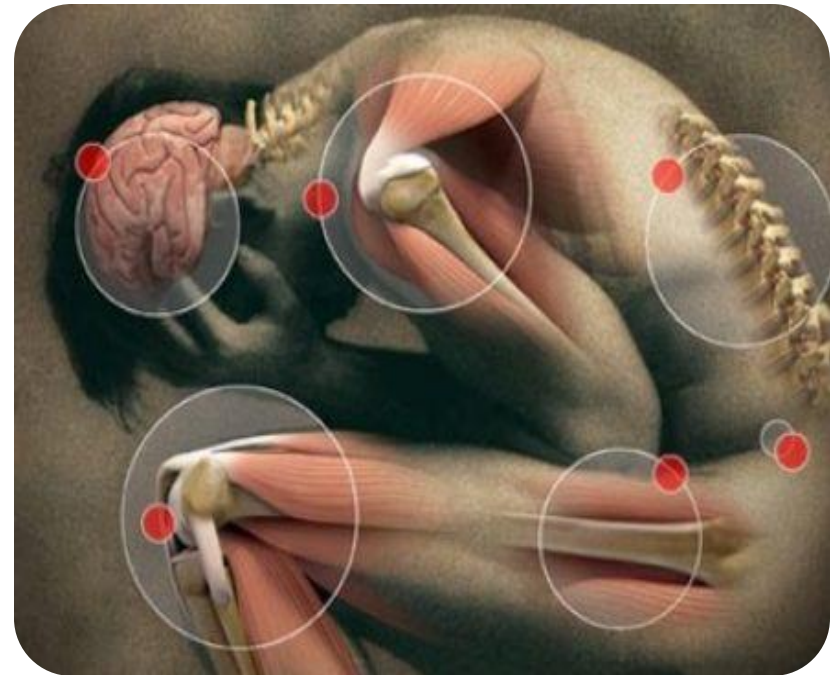


Pain Management: Consider the Mind

Depression, anxiety, and spiritual distress can all increase the perception of pain intensity, and addressing these components of pain can reduce the need for pain medication. [\[1\]](#)[\[2\]](#)

Depressed pain-free individuals are **twice as likely** to develop chronic musculoskeletal pain than those who are not depressed. [\(3\)](#)

It's important to screen for Depression and Anxiety. Refer pts for Mindfulness-Based Cognitive Behavioral Therapy.



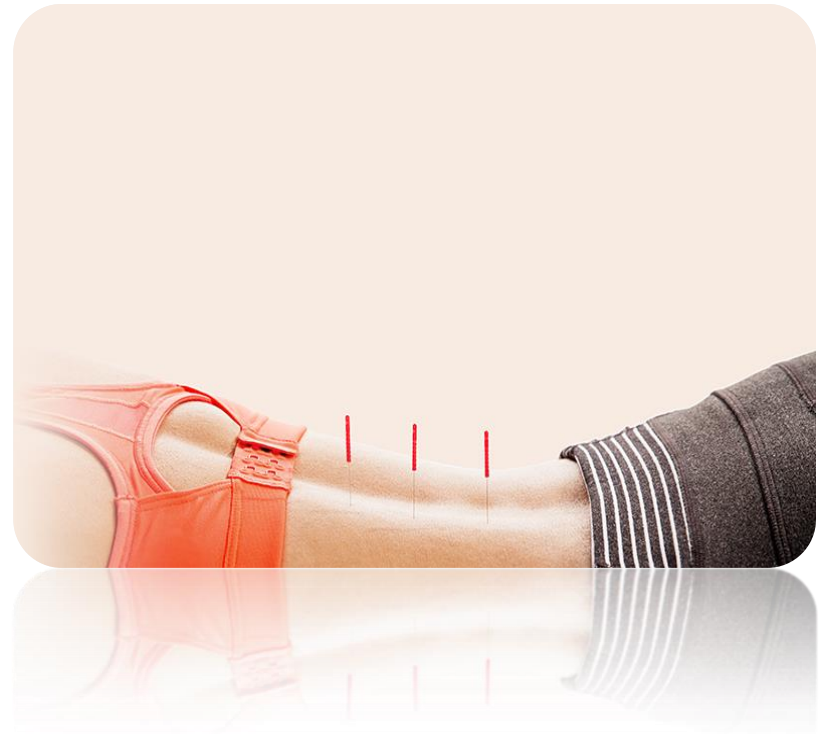
Pain Management: Optimize Opioids

- * No ceiling dose of morphine; careful but rapid titration to achieve relief; dose around the clock; convert IR to SR
- * Consider adding acetaminophen/NSAIDs to opioids when pain is moderate-severe and safe to do so
- * Add Gabapentin or TCA for neuropathic pain
- * Methadone effectively treats both nociceptive and neuropathic pain but needs expert guidance and monitoring (can cause prolonged QT)
- * Always use a stool softener-goal is BM qod
- * Consider a longer acting formulation, eg. patch, when appropriate, takes 8 to 24 hours to take effect and another 24 for effect to stop once patch removed; avoid in pts who are opioid naive



Pain Management: Spinal Manipulation, Acupuncture and Yoga

- * Good evidence that cognitive-behavioral therapy, exercise, **spinal manipulation (high velocity, low amplitude chiropractic adjustments)**, and interdisciplinary rehabilitation are all moderately effective for chronic or subacute (>4 weeks' duration) low back pain.
- * Review of clinical trials found that Acupuncture and Yoga had more positive than negative results for the treatment of back pain.



Pain Management: Medical Cannabis and Cannabinoids

Although Mr. R meets qualifying conditions for debilitation under the Illinois' Compassionate Use of Medical Cannabis Pilot Program Act:

- * Cancer

Studies are equivocal that cannabis can help relieve Mr. R of his:

- * Nausea, vomiting, Neuropathy, Pain, Anxiety
- * But the Cannabinoids: Dronabinol and Nabilone have been shown to be effective against chemo-induced N/V



Pain Management: Massage

A Cochrane review of massage and low back pain in 13 trials demonstrated short- and long-term significant relief of low back pain, outperforming acupuncture, relaxation techniques, and other CAM modalities.^[4]

- * Numerous research reviews and clinical studies have suggested that at least for the short term, massage therapy for cancer patients may reduce pain, promote relaxation, and boost mood.

However, the National Cancer Institute urges massage therapists to take specific precautions with cancer patients and avoid massaging:

- * Open wounds, bruises, or areas with skin breakdown
- * Directly over the tumor site
- * Areas with a blood clot in a vein
- * Sensitive areas following radiation therapy



Supplements for Pain

- * **Devil's Claw** (*Harpagophytum procumbens*): appears to be effective in decreasing spine, knee, and hip pain (Chrubasik, 2007; Ernst, 2011). Side efx: GI upset, hypoglycemia and interaction with anti-coagulants abd digoxin
- * **Willow** (*Salix alba*): Two reviews of clinical trials for back pain found benefits for willow when dosed at 120-240 milligrams of salicin daily (Ernst, 2000, Gagnier, 2006).
- * **Sour Cherry Juice**: 1 tbsp of concentrated syrup mixed in water (for gout and OA)
- * **Glucosamine Sulfate**: start with 3000mg/day (for OA- improves pain and functionality compared to placebo)
- * **Collagen Powder**: 1-2 tbsp. daily dissolved in any liquid (for OA-increases mobility and treats exercise-induced pain)
- * **Turmeric (Curcumin)**: in diet and in capsule form: 1-2 caps per day with food (anti-inflammatory effect, OA; depletes substance p like capsaicin, avoid in patients with gall stones/ gall bladder dz)
- * **Boswellia**: 250-400 mg, 2-3 times per day (anti-inflammatory- for OA, RA)
- * **Omega 3 Fatty Acids**: 500 or more EPA + DHA twice daily with food; source of pro-resolution cytokines
- * **Vitamin D optimization**: 2000 to 4000 units daily, goal-Vit D25OH level at least 40 ng/ml (studied in musculoskeletal pain)

Pain Management: Music Therapy

- * Administered by a music therapist; there's active and receptive therapy
- * Music therapy was found to relieve pain and to help decrease opioid dose needed.^[4]
- * Zimbardo and Gerrig^[5] found that 30 minutes of classical music therapy in an ICU setting equaled the relaxation effects of 10mg of diazepam.
- * Optimal treatment periods are 25 to 90 minutes long and not continuous



Mind-Body Medicine for Anxiety, Pain and Stress

- * Mind-body therapies are efficacious for chronic pain, anxiety, depression, and insomnia. In a telephone survey of 2055 Americans, 18.9% had used one mind-body therapy in the past year.^[6,7]
- * Hypnosis and Guided Imagery have been shown to reduce anxiety, pain, and stress and to promote relaxation. Hypnosis creates a state of “focused awareness and attention,” which can facilitate improvements in coping, well-being, and acceptance of death.^[8]

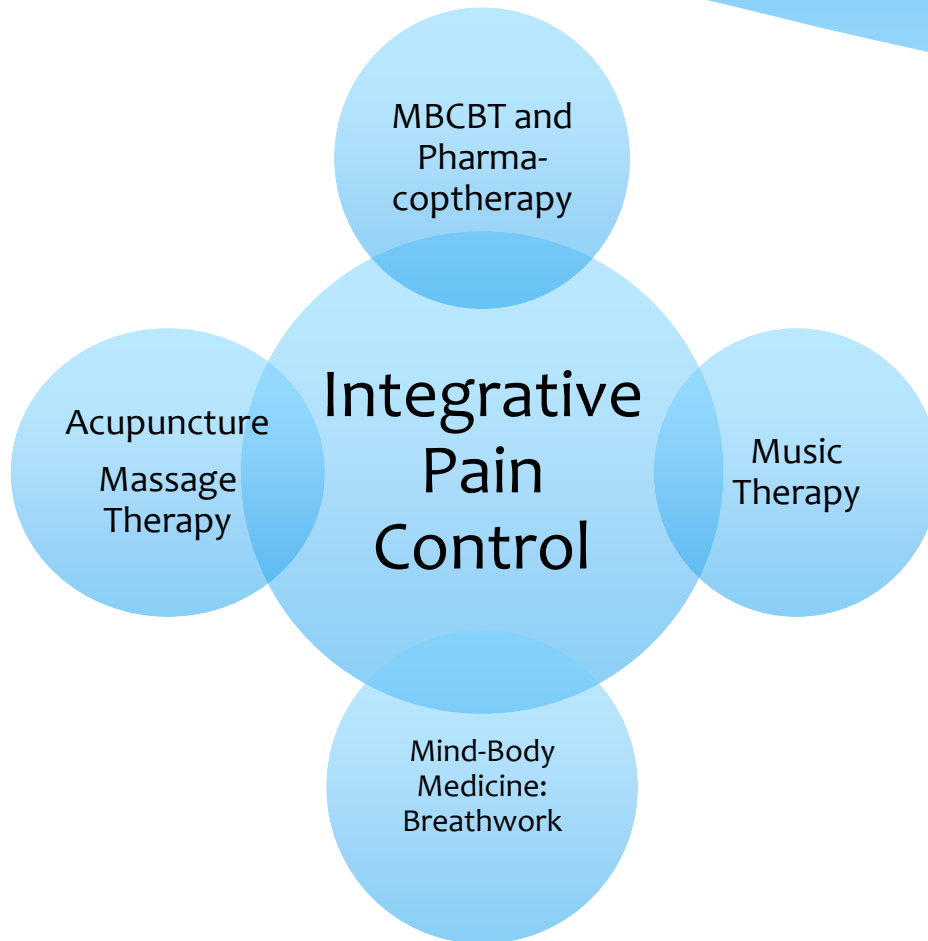


Pain Management: Energy Medicine

- * Reiki's goal is to balance the bioenergy fields on a deep vibrational level. Goals are to restore balance, resiliency and promote healing. Focused intention to heal on the part of the practitioner.
- * Reiki Therapy may reduce anxiety and pain (45)
- * Recent meta-analysis showed inconclusive results.



Integrative-Palliative Pain Management



Depression/Anxiety Management

Mind: Cognitive-based Behavioral Therapy with/out a supplement, botanical or pharmaceutical (consider use of antidepressant or anxiolytic for moderate to severe depression/anxiety)

Mind Body Medicine:
(Breathwork, Guided Imagery, Hypnosis); Mindfulness-based Stress Reduction (MBSR)



Depression/Anxiety Management

Body: Avoid caffeine/alcohol; start enjoyable and tolerable physical activity; fresh greens when not contraindicated, Massage; Acupuncture; Aromatherapy (Often used with massage)... esp. Lavender oil aromatherapy alone decreased anxiety in 2 studies (9, 10)

Supplements: Omega 3 FA (supplement, fish or flaxseed oil), Vit B6, Folic Acid (400mcg), 5-Hydroxytryptophan (150 to 300mg); Magnesium (citrate, oxide, malate or glycinate): 150-600 mg qd- titrate to BM comfort (citrate or oxide best for constipation)

Botanicals: Kava: avoid in liver dz, Valerian: takes 2 weeks to assess effectiveness, Lemon Balm



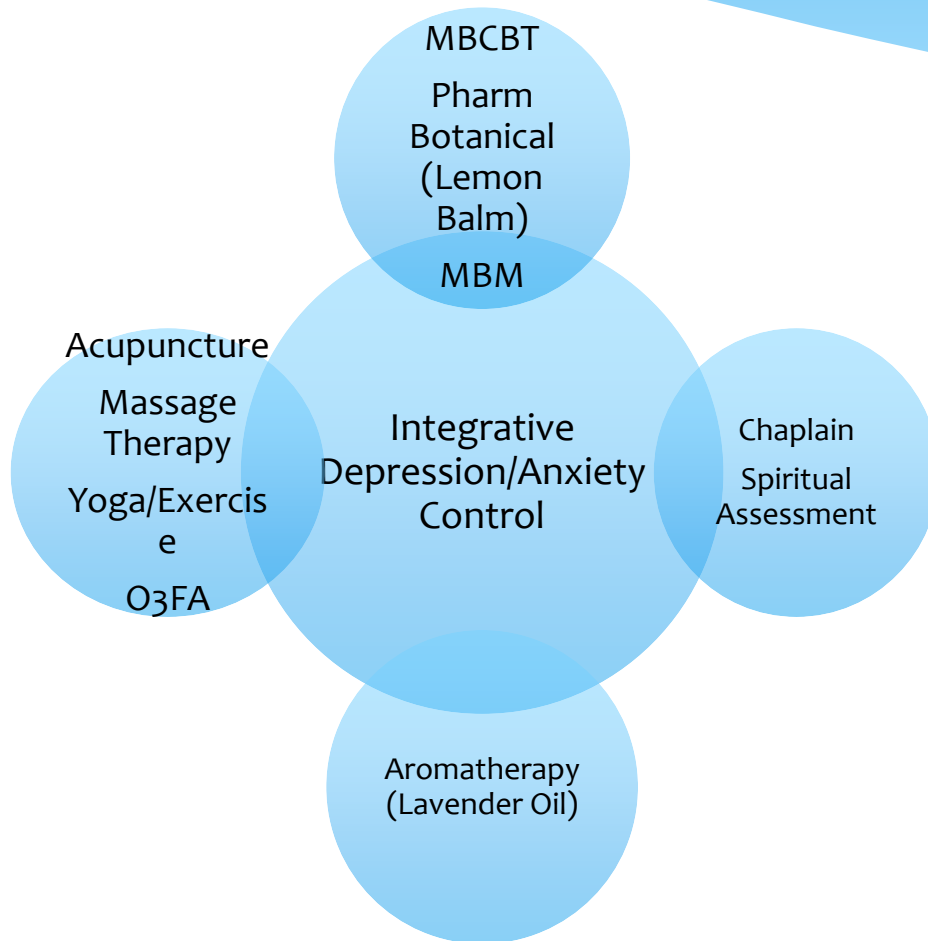
Depression/Anxiety Management

Spirit: Chaplain; practicing rituals, ceremonies to alleviate spiritual distress; use of SPIRIT or FICA tool; prayer; “What brings you joy, purpose and meaning?”

TABLE 1 **The FICA tool for spiritual assessment^{13,14}**

1. Faith and belief	Do you have spiritual beliefs that help you cope with stress?
2. Importance	What role do your beliefs have in regaining health?
3. Community	Are you part of a religious or spiritual community? If so, is this of support to you and how?
4. Address in care	How would you like me as your health care professional to address these issues in care?

Integrative-Palliative Depression/Anxiety Management



Nausea/Vomiting Management

Mind: Music Therapy (Harp therapy)- 25 to 90 minutes treatment periods

Music Thanatology= combo of music therapy with spirituality. Goal is to achieve peaceful & conscious death. Music is synchronized to the RR and HR to produce entrainment to a relaxed/sleep state.

In one study of Harp therapy, nausea was reduced in 92% of the patients.



Nausea/Vomiting Management

Body: Pharmaceuticals:
prochlorperazine, haloperidol, 5-HT
antagonists (ondansetron); use
laxatives if nausea due to constipation,
use promethazine if N due to infection;
use metoclopramide if N due to
dysmotility; Acupuncture

Botanicals: Ginger 500 to 1000 mg
ginger root extract (boiled to make tea)
or eat 1tsp of crystallized ginger;
Cannabinoid (dronabinol- 10mg 4x/day)



Integrative-Palliative Nausea-Vomiting Management

Pharma
Ginger Tea
Cannabinoid

Integrative
N/V
Control

Acupuncture

Music Therapy



Dyspnea Management

Mind: moderate evidence for breathing training/ Breathing Exercises

Little to no evidence for psychological interventions, acupuncture or music therapy



Dyspnea Management

Body: Oxygen therapy; Morphine; Scopolamine, glycopyrrolate to dry oral secretions; if anxiety present, use of anxiolytics can help; strong evidence for Neuroelectrical muscle stim and chest wall vibration; relieve thirst with small sips and swabbing to keep the mouth moist

Use of fans to keep room well-ventilated and cool, ambient temp



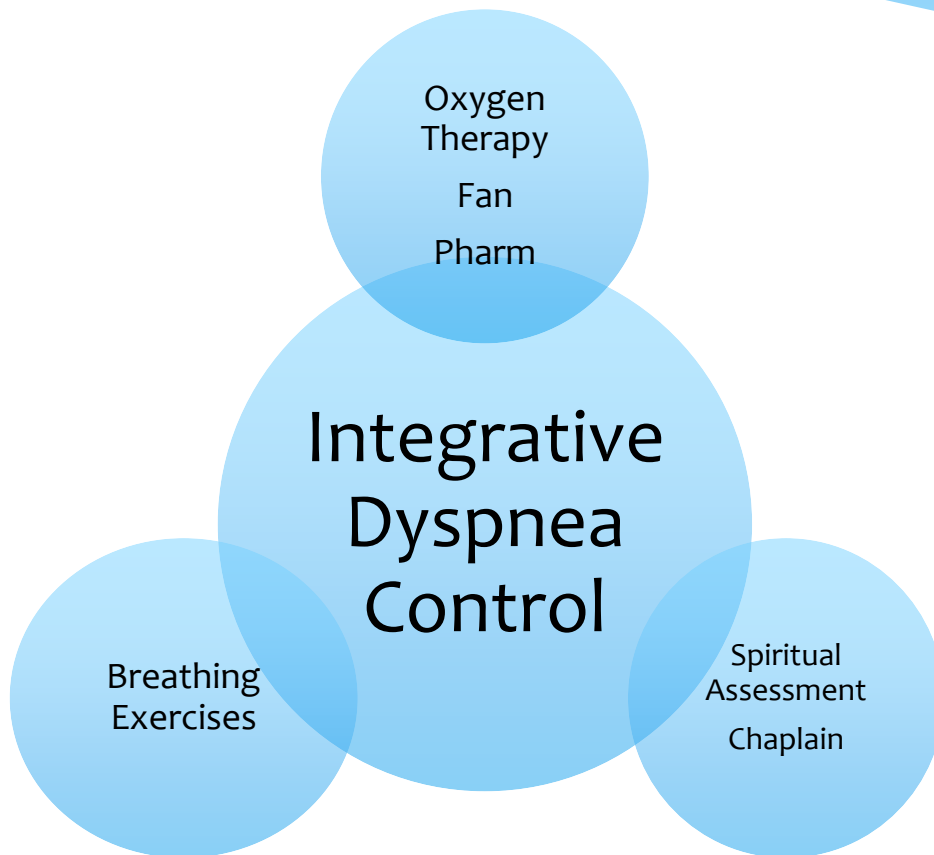
Dyspnea Management

Spirit: Chaplain; practicing rituals, ceremonies to alleviate spiritual distress; use of SPIRIT or FICA tool; prayer; “What brings you joy, purpose and meaning?”

TABLE 1 **The FICA tool for spiritual assessment^{13,14}**

1. Faith and belief	Do you have spiritual beliefs that help you cope with stress?
2. Importance	What role do your beliefs have in regaining health?
3. Community	Are you part of a religious or spiritual community? If so, is this of support to you and how?
4. Address in care	How would you like me as your health care professional to address these issues in care?

Integrative-Palliative Dyspnea Management



Insomnia Management

Mind: Cognitive-based Behavioral Therapy with/out a supplement, botanical or pharmaceutical (consider use of antidepressant or anxiolytic for moderate to severe depression/anxiety)

Mind Body Medicine:
(Breathwork: 4-7-8, Guided Imagery, Hypnosis) encouraging daily relaxation technique



Insomnia Management

Body: Manage caffeine/alcohol; treat pain; start enjoyable and tolerable physical activity); create a stress-free bedroom sanctuary; expose body to morning sunlight and simulate dusk by dimming lights and removing noise; scheduling sleep

Botanicals:

Valerian: 300 to 900mg standardized extract of 0.8% valerenic acid or 2 to 3gm of dried root steeped for 10minutes taken ½ hour to 2 hours before bedtime (takes 2-4 weeks to assess effectiveness); Melatonin; Lemon Balm



Integrative-Palliative Insomnia Management

MBCBT
Pharm
Valerian
Melatonin
MBM:
breathwork

Integrative
Insomnia
Control

Manage
Caffeine
Treat Pain

Create
Bedroom
Sanctuary



Common Drug-Herb and Disease Herb Interactions

- * Black Cohosh- Liver toxicity (esp with acetaminophen, lipid lowering agents)
- * CoQ10- Lowers activity of blood thinners so increased risk of clotting
- * Cranberry- Increases blood thinner activity>>>increased bleeding/bruising
- * Echinacea- stimulates immune system so can exacerbate asthma and eczema; revs up CYP450 so decreasing effectiveness of meds
- * Evening Primrose (contains gammalinoleic acid) which increases blood thinning; can also increase risk of seizures

Common Drug-Herb and Disease Herb Interactions

- * Valerian- has over 500 drug interactions, be especially careful with sedatives
- * St. John's Wort- DO NOT COMBINE with the following: SSRIs, TCAs, MAO Inhibitors, nefazodone, triptans for migraine, dextromethorphan, warfarin, birth control pills, certain HIV medications
- * Saw Palmetto- DO NOT COMBINE with Finasteride; slows blood clotting so can lead to bleeding
- * Melatonin- Avoid combining with other hypnotics; may increase blood sugar so interferes with hypoglycemics; interferes with blood clotting
- * Kava-DO NOT COMBINE with buprenorphine (can cause resp failure and coma); may lead to liver toxicity or failure, avoid with any meds that can also cause liver tox.

Common Drug-Herb and Disease Herb Interactions

- * Ginseng- can interfere with blood thinners and increase clotting; can also have anti-clotting effects
- * Ginger-inhibits thromboxane synthetase so can cause prolonged bleeding times

Search:

 [Advanced Search](#)**NATURAL MEDICINES**
COMPREHENSIVE DATABASE

Unbiased, Scientific Clinical Information on Complementary, Alternative, and Integrative Therapies

[Home](#)[Search](#) ▶[Browse](#) ▶[Continuing Education](#) ▶[Clinical Mgmt. Series](#)[About the Database](#)[Evidence-Based](#)[NMBER™](#)[Read Reviews](#)[See a Sample](#)[Full Product List](#)[Mobile Version](#) ▶[Email Us](#)[Tell Jeff a Topic Idea](#)[Positions Open](#)[Our Team](#)[Newsroom](#)

You may be interested in some of our other websites:



Search Natural Medicines Comprehensive Database

- **Search** - enter any natural product name, disease or condition, or drug name...gives you objective product information, Effectiveness Ratings, or potential interactions with drugs, etc.
- **Natural Product Effectiveness Checker** - tells you the level of effectiveness for natural products used for various medical conditions.
- **Natural Product / Drug Interaction Checker** - tells you potential interactions between any natural product and any drug. Automatically checks for interactions with EACH INGREDIENT of each product.
- **Nutrient Depletion Checker** - Identifies potential nutrient depletion issues caused by medications and provides a rating of the clinical significance.
- **Disease / Medical Conditions Search** - shows you medical conditions, and allows you to see which natural products might be effective.
- **Search Colleagues Interact** - shows you questions, answers, and comments posted by other health professionals.
- **Advanced Search** - helps you find specific information or keywords anywhere in the *Database*.



We'd love to know what you think about *Natural Medicines Comprehensive Database*.

[Submit Feedback](#)

Clinical Management Series

- New Featured: Obesity**
- [ADHD](#)
 - [Aging Skin](#)
 - [Allergic Rhinitis](#)
 - [Alternative Systems of Medicine](#)
 - [Alzheimer's Disease](#)
 - [Anxiety](#)
 - [Asthma](#)
 - [BPH](#)
 - [Breast Cancer](#)
 - [Chronic Fatigue Syndrome](#)
 - [Colds and Flu](#)
 - [Colon Cancer](#)
 - [Depression](#)
 - [Diabetes](#)
 - [Drug-Induced Nutrient Depletion](#)
 - [Drug Supplement Interaction](#)
 - [Eye Disorders](#)
 - [Fibromyalgia](#)
 - [Headache](#)
 - [Heart Failure](#)
 - [HIV/AIDS](#)
 - [Hyperlipidemia](#)
 - [Hypertension](#)
 - [IBD](#)
 - [IBS](#)

CE

- Accredited CE and CME for physicians, pharmacists, NPs, PAs, and RDs.
- FREE** Online CE for you as a subscriber
- [Select a Course/Take a Quiz](#)
 - [View your history & credits](#)
 - [Print Statements](#)

NMBER

- [Get evidence-based ratings on brand name natural products](#)

Colleagues Interact

- [Read Messages](#)
- [Start a Discussion](#)

Manage My Account

- [View My Account](#)
- [eUPDATE](#)

Charts

- [Nutrient Depletion](#)
- [Caffeine Content of Energy Drinks](#)

How do I know it's a high quality product?

* <https://www.consumerlab.com>



Guided Imagery Resource

Health videos and podcasts

Live healthy

Health videos and podcasts

Browse our library

- [Videos](#)
- [Podcasts](#)



Podcasts Relax and listen

Your mind and body are connected. Guided imagery programs engage your mind, body, and spirit to help you:

- reduce stress
- focus on healthy changes
- promote healing

[Health Journeys](#) produces our gentle, but powerful, guided imagery programs. Kaiser Permanente doesn't provide transcripts for these programs because the reading voice — its softness and pace — is key to their success.

Are you signed on? If you're listening to a long podcast on the website, you'll be automatically signed off after 20 minutes for your security.



Printer friendly

Step toward a healthier you

[» Walking app](#)

Set goals, see results

Want to eat healthier? Lose weight? Sleep better? [Try our free online programs.](#)

Live well for less

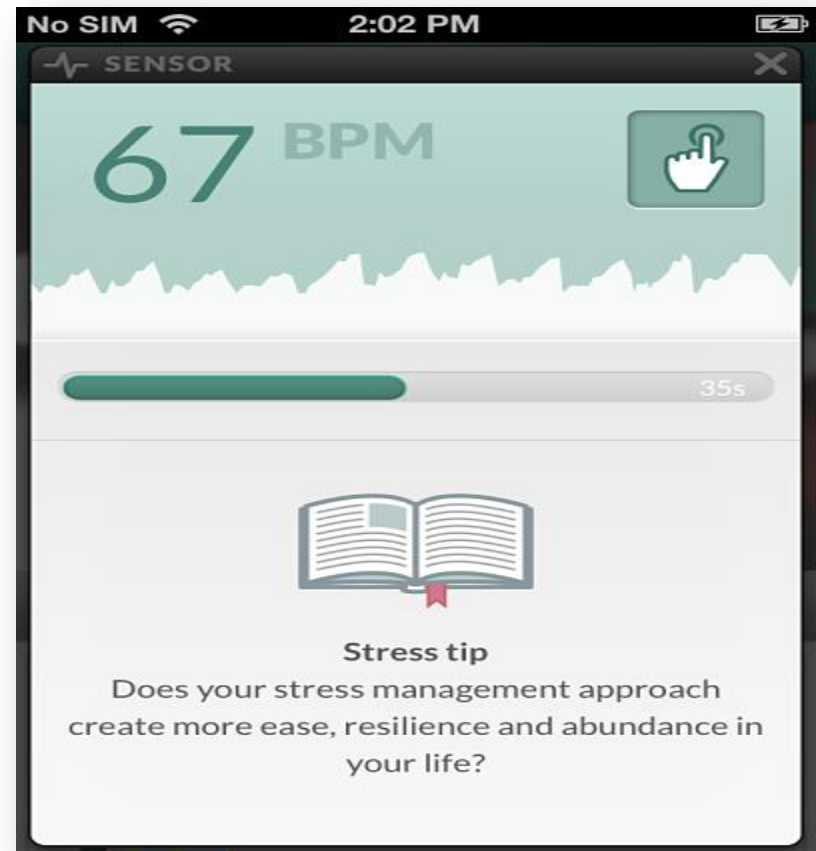
[» Get reduced rates on fitness clubs and services.](#)

Health conditions and concerns

Allergies	Listen	Download
Cancer: Coping	Listen	Download
Cancer: Chemotherapy	Listen	Download
Cancer: Radiation therapy	Listen	Download
Fibromyalgia and fatigue	Listen	Download
Headaches	Listen	Download
Healthy heart	Listen	Download
Immune system health	Listen	Download
Menopause	Listen	Download
Pain	Listen	Download
Pregnancy and childbirth	Listen	Download
Surgery	Listen	Download

Free & Low Cost Mindfulness Resources

- * GPS for the Soul
- * Smiling Mind
- * “Mindfulness for Beginners” by Jon Kabat-Zinn
- * Kaiser Permanente Guided Imagery webpage



Breathwork Exercise Resource: 4-7-8 Breath

- * Steps: Exhale, inhale to a count of 4, hold for 7 and exhale for count of 8
- * 3 to 4 cycles 2x/day
- * Powerful anxiolytic
- * Increases parasympathetic tone



In Summary

- * Integrative Medicine and Palliative Care share fundamental goals: to improve quality of life and relieve suffering by attending to the whole person (mind, body and spirit). IM can further augment palliation by the incorporation of complementary modalities.
- * There is robust and growing high quality evidence that will help guide IM-Palliative Care Plans.
 - * Integrative approaches can be helpful when treating pain, nausea/vomiting, insomnia, depression and anxiety.
- * Being aware of common Drug-Herb and Herb-Disease Interactions will keep your patients safe of unnecessary suffering

Thank You and Questions



References

1. Koenig H.G.: *Chronic Pain: Biomedical and Spiritual Approaches*. Binghamton, NY, Haworth Pastoral Press, 2003
2. Larson SL, Clark MR, Eaton WW. [Depressive disorder as a long-term antecedent risk factor for incident back pain: a 13-year follow-up study from the Baltimore Epidemiological Catchment Area sample](#). *Psychol Med* 34(2):211-9 Feb, 2004
3. Furlan A.D., Imamura M., Dryden T.: [Massage for low-back pain](#). *Cochrane Database Syst Rev*. 2008; 4:CD001929. doi:10.1002/14651858.CD001929.pub2
4. Cepeda M.S., Carr D.B., Lau J.: [Music for pain relief](#). *Cochrane Database Syst Rev*. 2006.CD004843. doi:10.1002/14651858.CD004843.pub2
5. Zimbardo P., Gerrig R.: *Psychology and Life*. New York, Harper Collins, 1996
6. "The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review." Hofmann SG, Sawyer AT, Witt AA, Oh D. [The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review](#). *J Consult Clin Psychol*. 78(2):169-83. Apr, 2010
7. Wolsko P.M., Eisenberg D.M., Davis R.B.: [Use of mind-body medical therapies: results of a national survey](#). *J Gen Intern Med*. 2004; 19:43-50.
8. Gruzelier J.H.: [A review of the impact of hypnosis, relaxation, guided imagery and differences on aspects of immunity and health](#). *Stress*. 2002; 5:147-163.

References

9. Diego M.A., Jones N.A., Field T.: [Aromatherapy positively affects mood, EEG patterns of alertness and math computations](#). *Int J Neurosci*. 1998; 96:217-224.
- Anandarajah G., Hight E.: [Spirituality and medical practice: using the HOPE questions as a practical tool for spiritual assessment](#). *Am Fam Physician*. 2001; 63:81-89
10. Dunn C., Sleep J., Collett D.: [Sensing an improvement: an experimental study to evaluate the use of aromatherapy, massage, and periods of rest in an intensive care unit](#). *J Adv Nurs*. 1995; 21:34-40.
- Puchalski C.M., Romer A.L.: [Taking a spiritual history allows clinicians to understand patients more fully](#). *J Palliat Med*. 2000; 3:129-137.
11. Maugans T.A.: [The SPIRITual history](#). *Arch Fam Med*. 1996; 5:11-16.
12. Okon T.Z.: [Spiritual, religious, and existential aspects of palliative care](#). *J Palliat Med*. 2005; 8:392-414.
13. Chochinov H.M.: [Dignity-conserving care—a new model for palliative care: helping the patient feel valued](#). *JAMA*. 2002; 287:2253-2260.
14. "Consensus recommendations for the management of constipation in patients with advanced, progressive illness." Librach SL, Bouvette M, De Angelis C, Farley J, Oneschuk D, Pereira JL, Syme A, . [Consensus recommendations for the management of constipation in patients with advanced, progressive illness](#). *Journal of pain and symptom management* 40(5):761-73 Nov, 2010
15. "Acupressure bands are effective in reducing radiation therapy-related nausea." Roscoe JA, Bushunow P, Jean-Pierre P, Heckler CE, Purnell JQ, Peppone LJ, Chen Y, Ling MN, Morrow GR. [Acupressure bands are effective in reducing radiation therapy-related nausea](#). *Journal of pain and symptom management* 38(3):381-9 Sep, 2009
16. Marcus J., Elkins G., Mott F.: [A model of hypnotic intervention for palliative care](#). *Adv Mind Body Med*. 2003; 19:24-27.

References

17. "Acupuncture for nausea and vomiting: an update of clinical and experimental studies." Streitberger K, Ezzo J, Schneider A. [Acupuncture for nausea and vomiting: an update of clinical and experimental studies](#). *Autonomic neuroscience : basic & clinical* 129(1-2):107-17 Oct, 2006
18. Demmer C., Sauer J.: [Assessing complementary therapy services in a hospice program](#). *Am J Hosp Palliat Care*. 2002; 19:306-314.
19. Sirios F.M.: [Motivations for consulting complementary and alternative medicine practitioners: a comparison of consumers from 1997-8 and 2005](#). *BMC Complement Altern Med*. 2008; 8:1-10.
20. Slavich, George M., and Michael R. Irwin. "From stress to inflammation and major depressive disorder: A social signal transduction theory of depression." *Psychological bulletin* 140.3 (2014): 774.
21. Chrousos, George P., and Tomoshige Kino. "Glucocorticoid signaling in the cell." *Annals of the New York Academy of Sciences* 1179.1 (2009): 153-166.
22. Powell, Daniel JH, et al. "Unstimulated cortisol secretory activity in everyday life and its relationship with fatigue and chronic fatigue syndrome: A systematic review and subset meta-analysis." *Psychoneuroendocrinology* 38.11 (2013): 2405-2422.

References

20. Slavich, George M., and Michael R. Irwin. "From stress to inflammation and major depressive disorder: A social signal transduction theory of depression." *Psychological bulletin* 140.3 (2014): 774.
21. Chrousos, George P., and Tomoshige Kino. "Glucocorticoid signaling in the cell." *Annals of the New York Academy of Sciences* 1179.1 (2009): 153-166.
22. Powell, Daniel JH, et al. "Unstimulated cortisol secretory activity in everyday life and its relationship with fatigue and chronic fatigue syndrome: A systematic review and subset meta-analysis." *Psychoneuroendocrinology* 38.11 (2013): 2405-2422.
23. Tsigos, Constantine, and George P. Chrousos. "Hypothalamic–pituitary–adrenal axis, neuroendocrine factors and stress." *Journal of psychosomatic research* 53.4 (2002): 865-871.
24. Shalev, Idan, et al. "Stress and telomere biology: a lifespan perspective." *Psychoneuroendocrinology* 38.9 (2013): 1835-1842.
25. Hou, Ni, et al. "A novel chronic stress-induced shift in the Th1 to Th2 response promotes colon cancer growth." *Biochemical and biophysical research communications* 439.4 (2013): 471-476.

References

26. Kim, Sang Hwan, et al. "PTSD-symptom reduction with mindfulness-based stretching and deep breathing exercise: randomized controlled clinical trial of efficacy." *The Journal of Clinical Endocrinology & Metabolism* 98.7 (2013): 2984-2992.
27. Brown, Richard P., and Patricia L. Gerbarg. "Yoga breathing, meditation, and longevity." *Annals of the New York Academy of Sciences* 1172.1 (2009): 54-62.
28. Chiesa, Alberto, and Alessandro Serretti. "Mindfulness-based stress reduction for stress management in healthy people: a review and meta-analysis." *The journal of alternative and complementary medicine* 15.5 (2009): 593-600.
29. Chiesa, Alberto, and Alessandro Serretti. "A systematic review of neurobiological and clinical features of mindfulness meditations." *Psychological medicine* 40.08 (2010): 1239-1252.
30. Kemper, Kathi J., and Michael Khirallah. "Acute Effects of Online Mind–Body Skills Training on Resilience, Mindfulness, and Empathy." *Journal of evidence-based complementary & alternative medicine* (2015): 2156587215575816.
31. Hare, Brendan D., et al. "Exercise-associated changes in the corticosterone response to acute restraint stress: evidence for increased adrenal sensitivity and reduced corticosterone response duration." *Neuropsychopharmacology* 39.5 (2014): 1262-1269.

References

32. Martín-Asuero, Andrés, and Gloria García-Banda. "The mindfulness-based stress reduction program (MBSR) reduces stress-related psychological distress in healthcare professionals." *The Spanish journal of psychology* 13.02 (2010): 897-905.
33. Hare, Brendan D., et al. "Exercise-associated changes in the corticosterone response to acute restraint stress: evidence for increased adrenal sensitivity and reduced corticosterone response duration." *Neuropsychopharmacology* 39.5 (2014): 1262-1269.
34. Salmon, Peter. "Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory." *Clinical psychology review* 21.1 (2001): 33-61.
35. Du, Jing, et al. "The Role of Nutrients in Protecting Mitochondrial Function and Neurotransmitter Signaling: Implications for the Treatment of Depression, PTSD, and Suicidal Behaviors." *Critical reviews in food science and nutrition* just-accepted (2014): 00-00.
36. Rubin, David C., Adriel Boals, and Rick H. Hoyle. "Narrative centrality and negative affectivity: Independent and interactive contributors to stress reactions." *Journal of Experimental Psychology: General* 143.3 (2014): 1159.
37. Chida, Yoichi, and Mark Hamer. "Chronic psychosocial factors and acute physiological responses to laboratory-induced stress in healthy populations: a quantitative review of 30 years of investigations." *Psychological bulletin* 134.6 (2008): 829.

References

38. Lecic-Tosevski, D., O. Vukovic, and J. Stepanovic. "Stress and personality." *Psychiatrike* 22.4 (2011): 290-297.
39. Bibbey, Adam, et al. "Personality and physiological reactions to acute psychological stress." *International journal of psychophysiology* 90.1 (2013): 28-36.
40. Hayward, R. David, et al. "Association of five-factor model personality domains and facets with presence, onset, and treatment outcomes of major depression in older adults." *The American Journal of Geriatric Psychiatry* 21.1 (2013): 88-96.
41. McCranie, Edward W., and Jeffrey M. Brandsma. "Personality antecedents of burnout among middle-aged physicians." *Behavioral Medicine* 14.1 (1988): 30-36.
42. Tyssen, Reidar, and Per Vaglum. "Mental health problems among young doctors: an updated review of prospective studies." *Harvard review of psychiatry* 10.3 (2002): 154-165.
43. Carmel, Sara, and Seymour M. Glick. "Compassionate-empathic physicians: personality traits and social-organizational factors that enhance or inhibit this behavior pattern." *Social science & medicine* 43.8 (1996): 1253-1261.
44. Ro, Karin E. Isaksson, et al. "A three-year cohort study of the relationships between coping, job stress and burnout after a counselling intervention for help-seeking physicians." *BMC Public Health* 10.1 (2010): 213.
45. [Pain Manag Nurs.](#) 2014 Dec;15(4):897-908. doi: 10.1016/j.pmn.2013.07.008. Epub 2014 Feb 28. Effect of Reiki therapy on pain and anxiety in adults: an in-depth literature review of randomized trials with effect size calculations. [Thrane S¹](#), [Cohen SM²](#).