

Stronger Together



Integrative Oncology: Treatment Approaches for Stress in Cancer Patients and Survivors

Ashwin Mehta MD MPH
Medical Director
Division of Integrative Medicine
Physician Wellness

Frontiers in Integrative Oncology

Objectives:

- Share usage data regarding Integrative Medicine in oncology populations
- Describe the role of Integrative Medicine to address stress during cancer care and survivorship
- Present the challenges regarding Integrative Medicine in the context of cancer care

Prevalence of CAM

- Many Americans, nearly 40 percent, use health care approaches developed outside of mainstream Western, or conventional, medicine for specific conditions or overall well-being.

Integrative Medicine

- **According to a recent survey by the American Hospital Association and the Samueli Institute, a nonprofit research group focusing on complementary medicine, 42 percent of the 714 hospitals that responded offered at least one such therapy in 2010, a significant jump over just five years earlier, when 27 percent of hospitals offered such treatments.**

Integrative Medicine Vs. CAM

- “Complementary and alternative medicine (CAM),”
“complementary medicine,” “alternative medicine,”
- *“Integrative Medicine”*
- We have all seen these terms on the Internet and in marketing,
but what do they really mean?

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, nonpharmacologic 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](#)

Complementary and Alternative Medicine Use in Minority and Medically Underserved Oncology Patients: Assessment and Implications.

Jones D¹, Cohen L¹, Rieber AG¹, Urbauer D¹, Fellman B¹, Fisch MJ², Nazario A¹.



RESULTS:

- Patients (n = 165) reported a high awareness and use of CAM therapies. CAM use was highest for prayer (85%), relaxation (54%), special diet (29%), meditation (19%), and massage (18%).
- Patients' interest in using CAM was high for nearly all therapies.
- Lack of adequate knowledge and cost of use were reported as deterrents to use.

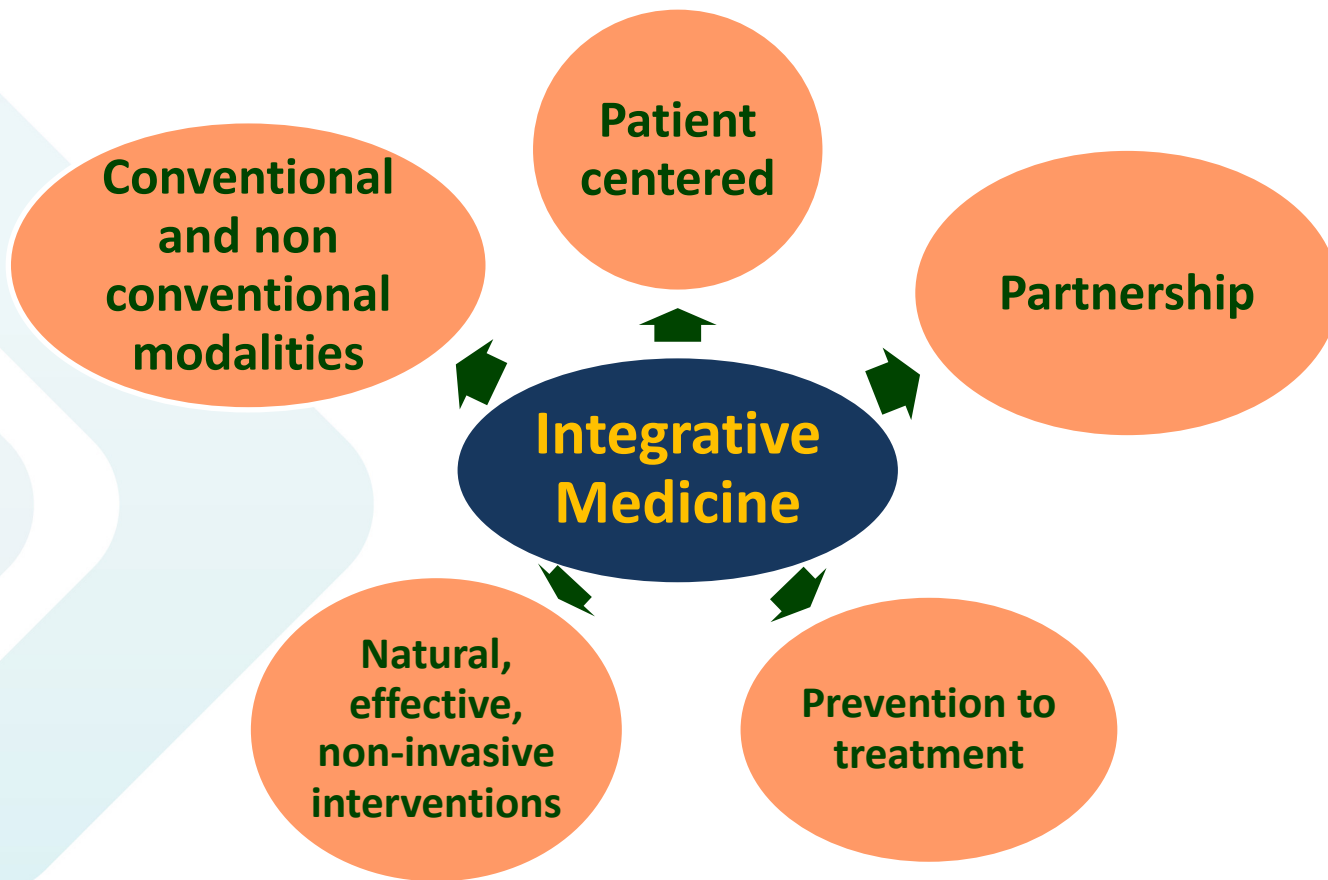
Original Investigation | Medical Education

Prevalence of and Factors Associated With Patient Nondisclosure of Medically Relevant Information to Clinicians

Andrea Gurmankin Levy, PhD, MBe; Aaron M. Scherer, PhD; Brian J. Zikmund-Fisher, PhD; Knoll Larkin, MPH; Geoffrey D. Barnes, MD, MSc; Angela Fagerlin, PhD

- **4510 US adults - MTurk and Survey Sampling International**
- **Self-reported non-disclosure within 7 areas of medically relevant information**
- **61.4% - 81.1% reported not disclosing**
- **1) Disagreeing with physicians' recommendation 2) Misunderstanding physicians' instruction**
- **Most common reasons for non-disclosure: Not wanting to be judged, Not wanting to hear how unhealthy their behavior is, Embarrassment, Not wanting the clinician to feel they are difficult**





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

Music Therapy

JNCI Monograph

Clinical Practice Guidelines on the Use of Integrative Therapies as Supportive Care in Patients Treated for Breast Cancer

Stress management, yoga, massage, music therapy and meditation are recommended for stress reduction, anxiety, depression, fatigue, and quality of life (Grade B)

– **Greenlee, et al**

JNCI Monograph

Clinical Practice Guidelines on the Use of Integrative Therapies as Supportive Care in Patients Treated for Breast Cancer

The majority of intervention/modality combinations ($n = 138$) did not have sufficient evidence to form specific recommendations (Grade I)

– Greenlee, et al

JNCI Monograph

Clinical Practice Guidelines on the Use of Integrative Therapies as Supportive Care in Patients Treated for Breast Cancer

Notably, one intervention, acetyl-L-carnitine for the prevention of taxane-induced neuropathy, was identified as likely harmful (Grade H) as it was found to increase neuropathy.

— Greenlee, et al

VOLUME 36 · NUMBER 25 · SEPTEMBER 1, 2018

JOURNAL OF CLINICAL ONCOLOGY

A S C O S P E C I A L A R T I C L E

Integrative Therapies During and After Breast Cancer Treatment: ASCO Endorsement of the SIO Clinical Practice Guideline

Gary H. Lyman, Heather Greenlee, Kari Bohlke, Ting Bao, Angela M. DeMichele, Gary E. Deng, Judith M. Fouladbakhsh, Brigitte Gil, Dawn L. Hershman, Sami Mansfield, Dawn M. Mussallem, Karen M. Mustian, Erin Price, Susan Rafté, and Lorenzo Cohen

Impact of exercise on the immune system and outcomes in hematologic malignancies

- Improvements in fatigue, quality of life, mood and physical function
- Immunomodulatory effects of exercise

Exercise in Cancer Care

Chronic
Exercise
training

Acute, transient
release of IL-6 with
resultant increase in
anti-inflammatory
mediators with each
bout of exercise

Beneficial changes in
body composition
with resultant
changes in
adipokine levels

Decrease in chronic
systemic
inflammation

Less fatigue,
improved sleep
quality, **reduced risk
of cancer recurrence**

AICR Recommendations to Reduce Cancer Risk

- Be as lean as possible without becoming underweight
- Be physically active for at least 30 minutes every day



Low-fat dietary pattern and long-term breast cancer incidence and mortality: The Women's Health Initiative randomized clinical trial.

- Conclusions: Adoption of a low-fat dietary pattern associated with increased vegetable, fruit, and grain intake, demonstrably achievable by many, significantly reduced the risk of death from breast cancer in postmenopausal women. To our review, these findings provide the first randomized clinical trial evidence that a dietary change can reduce a postmenopausal woman's risk of dying from breast cancer.

Benefits of a Plant-based diet

- **A double-blind, placebo-controlled randomized trial evaluating the effect of a polyphenol-rich whole food supplement on PSA progression in men with prostate cancer.**
 - Thomas R, et al. Prostate Cancer Prostatic Dis. 2014 Jun;17(2):180-6. doi: 10.1038/pcan.2014.6. Epub 2014 Mar 11.

Eat More

- Pomegranate - fruit
- Green Tea - leaf
- Broccoli - flower
- Turmeric - root

Nutritional Risk Reduction Strategies

- Cruciferous vegetables – Indole 3 Carbinol
- Asian Mushrooms - AHCC
- Turmeric and ginger - Curcuminoids
- Green tea - EGCG
- Vitamin D



The Microbiota of Breast Tissue and Its Association with Breast Cancer

Camilla Urbaniak,^{a,b} Gregory B. Gloor,^c Muriel Brackstone,^d Leslie Scott,^d Mark Tangney,^e Gregor Reid^{a,b}

Lawson Health Research Institute, London, Ontario, Canada^a; Department of Microbiology and Immunology, Western University, London, Ontario, Canada^b; Department of Biochemistry, Western University, London, Ontario, Canada^c; London Regional Cancer Program, London, Ontario, Canada^d; Cork Cancer Research Centre, University College Cork, Cork, Ireland^e

A diverse population of bacteria can be found within breast tissue, and this diversity is present irrespective of a history of lactation.

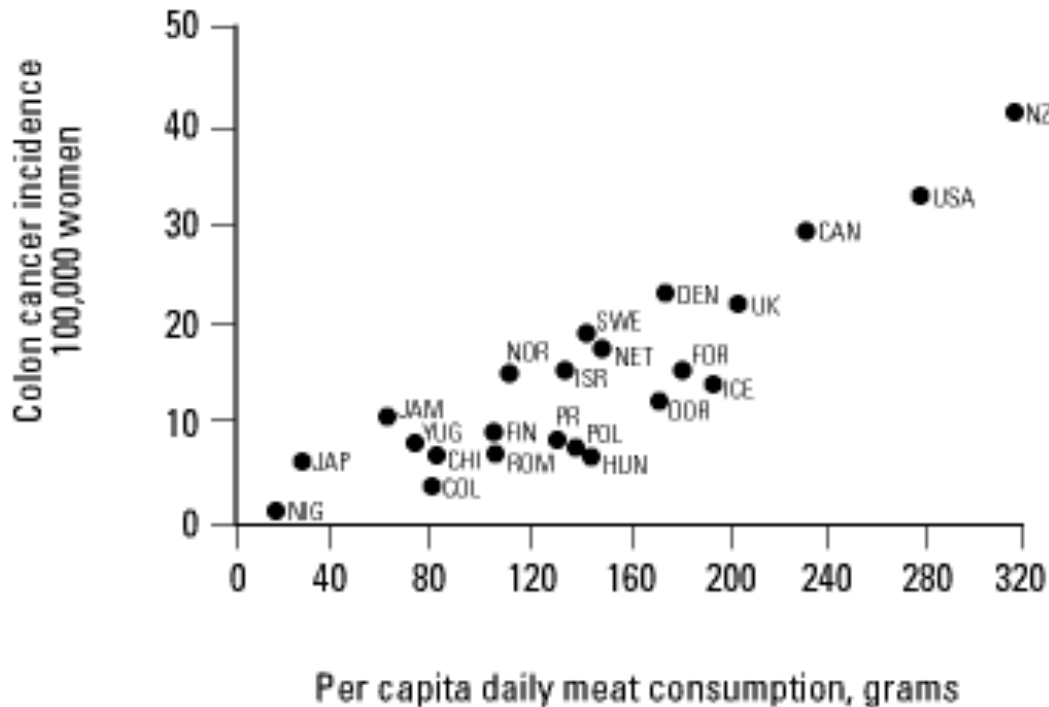
In a study of 81 women in Canada and Ireland, the most abundant phylum in the healthy breast microbiome was Proteobacteria.

Women with breast cancer have a higher abundance of Enterobacteriaceae, Staphylococcus, and Bacillus when compared to women without breast cancer.

- Lactobacillus acidophilus, a familiar probiotic found in yogurt and kimchi, can reach the mammary gland and has a number of anti-cancer effects.
- Lactobacillus and Lactococcus spp. are more common in healthy breast tissues than in cancerous tissues, and may have a role in breast cancer prevention.
- For example, Lactobacillus helps to upregulate the immune system and decreases the abundance of C-reactive protein and IL-6, which are pro-inflammatory factors.

AICR Recommendations to Reduce Cancer Risk

Limit consumption of red
meats (beef, pork and
lamb) and avoid
processed meats



Prolonged Nightly Fasting and Breast Cancer Prognosis.

[Marinac CR](#)¹, [Nelson SH](#)², [Breen CJ](#)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, nonpharmacologic strategy for reducing the risk of breast cancer recurrence. Improvements in **glucoregulation** and sleep may be mechanisms linking nightly fasting with breast cancer prognosis.

[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.

[Janelins MC¹](#), [Peppone LJ²](#), [Heckler CE²](#), [Kesler SR³](#), [Sprod LK⁴](#), [Atkins J⁵](#), [Melnik M⁶](#), [Kamen C²](#), [Giguere J⁷](#), [Messino MJ⁵](#), [Mohile SG²](#), [Mustian KM²](#).

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

- Individualized, Single Session Yoga Therapy to Reduce Physical and Emotional Symptoms in Hospitalized Hematological Cancer Patients

» Mascaro, J. Et al. Integrative Cancer Therapies, December 2019

Yoga Breathing for Cancer Related Fatigue



THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE
Volume 18, Number 5, 2012, pp. 473–479
© Mary Ann Liebert, Inc.
DOI: 10.1089/acm.2011.0555

Yoga Breathing for Cancer Chemotherapy–Associated Symptoms and Quality of Life: Results of a Pilot Randomized Controlled Trial

Anand Dhruva, MD,^{1,2} Christine Miasowski, PhD,³ Donald Abrams, MD,^{1,2} Michael Acree, PhD,¹
Bruce Cooper, PhD,³ Steffanie Goodman, MPH,¹ and Frederick M. Hecht, MD^{1,2}

Pranayam Baba Ramdev. Quick 10min. English



▶ ⏪ 🔊 0:14 / 9:59

Scroll for details

CC ⚙️ 🔍

Muscles of inspiration

Accessory

Sternocleidomastoid
(elevates sternum)

Scalenes

Anterior
Middle
Posterior
(elevate and fix upper ribs)

Principal

External intercostals
(elevate ribs, increasing width of thoracic cavity)

Interchondrial part of internal intercostals
(also elevates ribs)

Diaphragm
(dome descends, increasing vertical dimension of thoracic cavity; also elevates lower ribs)

Muscles of expiration

Quiet breathing

Expiration results from passive recoil of lungs and rib cage

Active breathing

Internal intercostals, except interchondrial part

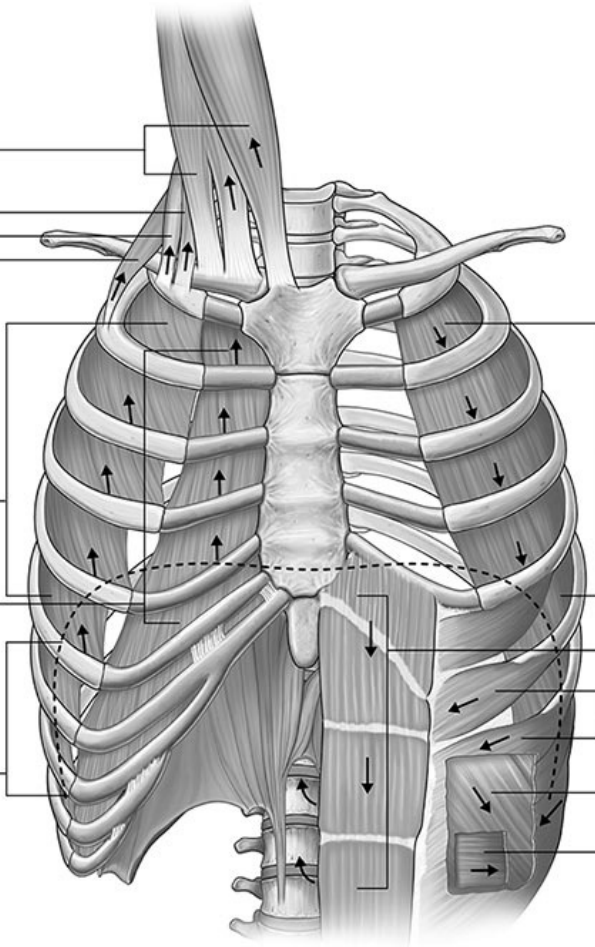
Abdominals
(depress lower ribs, compress abdominal contents, pushing up diaphragm)

Rectus abdominis

External oblique

Internal oblique

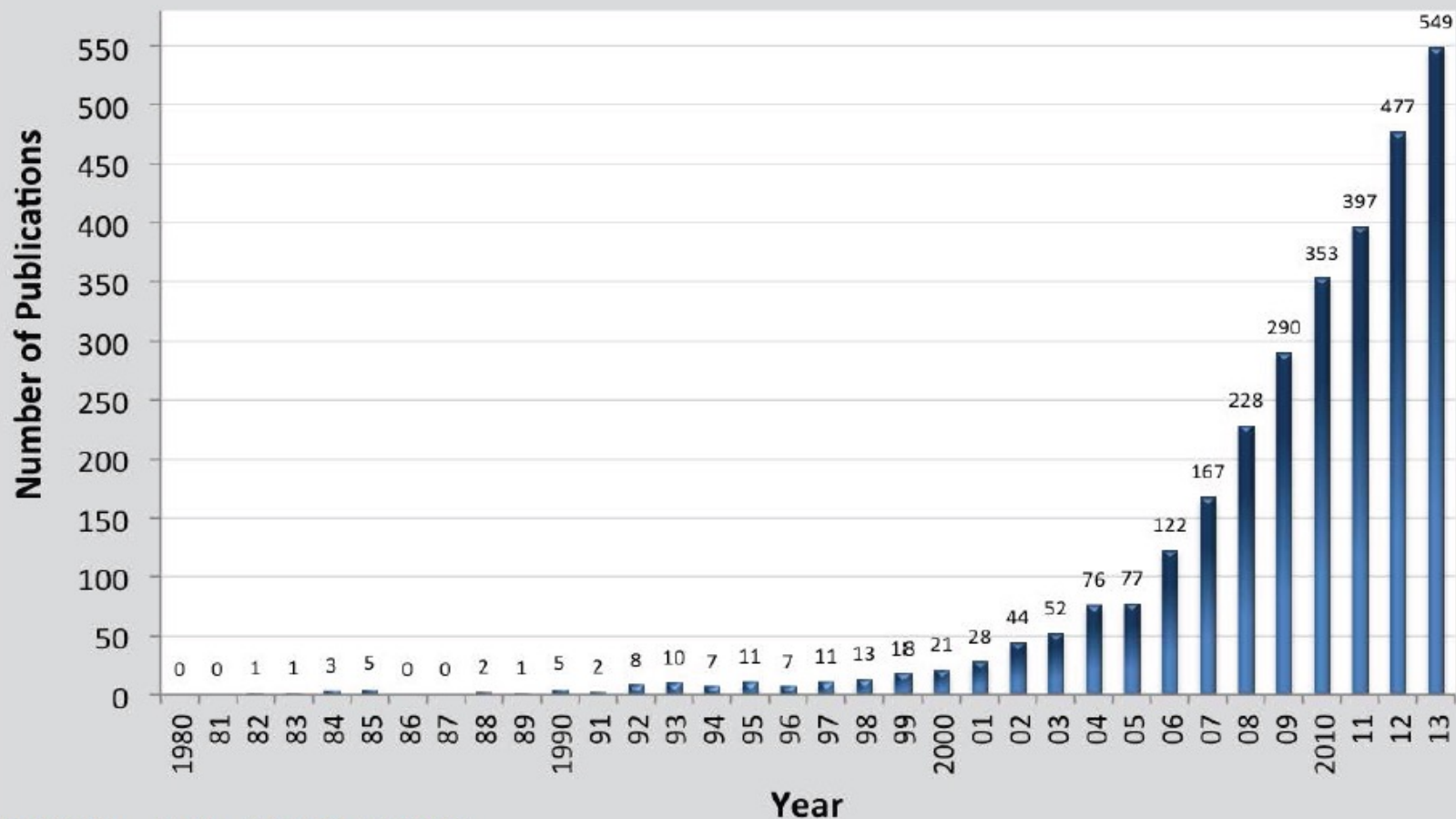
Transversus abdominis



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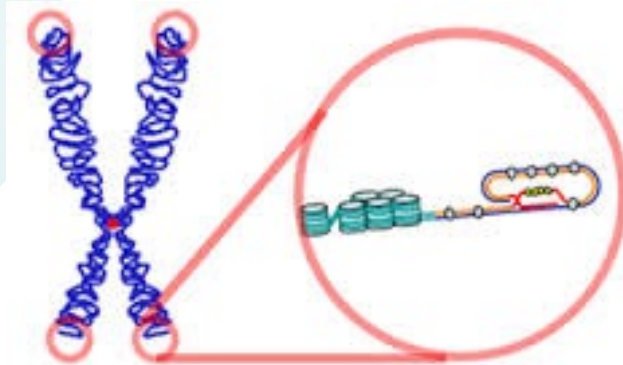
MINDFULNESS RESEARCH PUBLICATIONS BY YEAR, 1980 - 2013



Source: D.S. Black (2014)

Mindfulness and Telomeres

- Influence of Mindfulness-Based Stress Reduction (MBSR) on Telomerase Activity in Women With Breast Cancer (BC).




Lengacher CA, et al. Biol Res Nurs, Jan 2014.

Mindfulness and Telomeres

- Randomized, controlled trial
- 142 breast cancer patients (stage 0-III) after primary treatment – 6 weekly 2 hr sessions
 - Education related to mindfulness
 - Collective practice of meditation
 - Addressing barriers to regular practice
 - Body scan, yoga, walking meditation
- **Increased telomerase activity in meditation group**



Cannabis Use Among Patients at a Comprehensive Cancer Center in a State With Legalized Medicinal and Recreational Use

Steven A. Pergam, MD, MPH ^{1,2,3,4}; Maresa C. Woodfield, BS¹; Christine M. Lee, PhD^{5,6}; Guang-Shing Cheng, MD^{2,3}; Kelsey K. Baker, MS²; Sara R. Marquis, MPH¹; and Jesse R. Fann, MD, MPH^{2,5}

Cannabis use widespread among all subgroups (age, sex, cancer diagnosis)

26% of active users believed their cannabis use was helping to treat their cancer

Both physical (pain) and neuropsychiatric symptoms (anxiety, depression, sleep)

Cannabis-based medicinal products

NICE guideline

Published: 11 November 2019

www.nice.org.uk/guidance/ng144

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The
Oncologist[®]

Cannabis Impacts Tumor Response Rate to Nivolumab in Patients with Advanced Malignancies

TAREK TAHA,^a DAVID MEIRI,^{b,c} SAMIRA TALHAMY,^c MIRA WOLLNER,^a AVIVIT PEER,^a GIL BAR-SELA^{b,c}

^aDivision of Oncology, Rambam Health Care Campus, Haifa, Israel; ^bLaboratory of Cancer Biology and Cannabinoids Research, Department of Biology, Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel; ^cRappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel

Disclosures of potential conflicts of interest may be found at the end of this article.

Key Words. Cancer • Cannabis • Immunotherapy • Nivolumab • Response rate

Retrospective observational: N = 140 (89 Nivolumab, 51 Nivolumab with cannabis

Advanced melanoma, non-small cell lung cancer, renal clear cell carcinoma

Decreased response rate, no impact on PFS or OS

Clinically Significant Drug-Drug Interaction Between Methadone and Cannabidiol

Kevin Madden, MD, Kimberson Tanco, MD, Eduardo Bruera, MD

Support Care Cancer (2015) 23:819–822
DOI 10.1007/s00520-014-2429-3

ORIGINAL ARTICLE

Inhaled medicinal cannabis and the immunocompromised patient

Rosa Ruchlemer • Michal Amit-Kohn • David Raveh •
Lumír Hanuš

Renal transplantation, leukemia, chemotherapy, AIDS, chronic steroid therapy

Increased risk of aspergillosis

Amotivational Effects of Cannabinoids

- Challenging to use in the context of an integrative approach

Conclusions

- Integrative modalities such as mindfulness, yoga breathing and exercise should be considered as first line treatment for stress and anxiety during cancer care
- Improving sleep quality and fatigue using non-pharmacologic means enhances quality of life and mood during survivorship
- Caution regarding drug-herb interactions and cannabis use to self-medicate for heightened stress and anxiety

Contact information:

- **Integrative Medicine Clinic:**
 - 954-844-9080
 - asmehta@mhs.net