

Integrative Oncology: Evidence-Based Supportive Care for Patients during Treatment and Survivorship

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Integrative Oncology: Evidence-Based Supportive Care for Patients during Treatment and Survivorship (No Disclosures)

- Objectives:
 - Define Integrative Medicine
 - Describe the role of Integrative Medicine in cancer care and survivorship
 - Present the evidence for nutrition, physical activity, quality sleep, acupuncture and mindfulness recommendations for cancer patients

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.

Andrews, Michelle; *Hospitals Offering Complementary Medical Therapies*. Kaiser Health News, Nov 15 2011.

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 botanicals. [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 to clinician to feel they are difficult

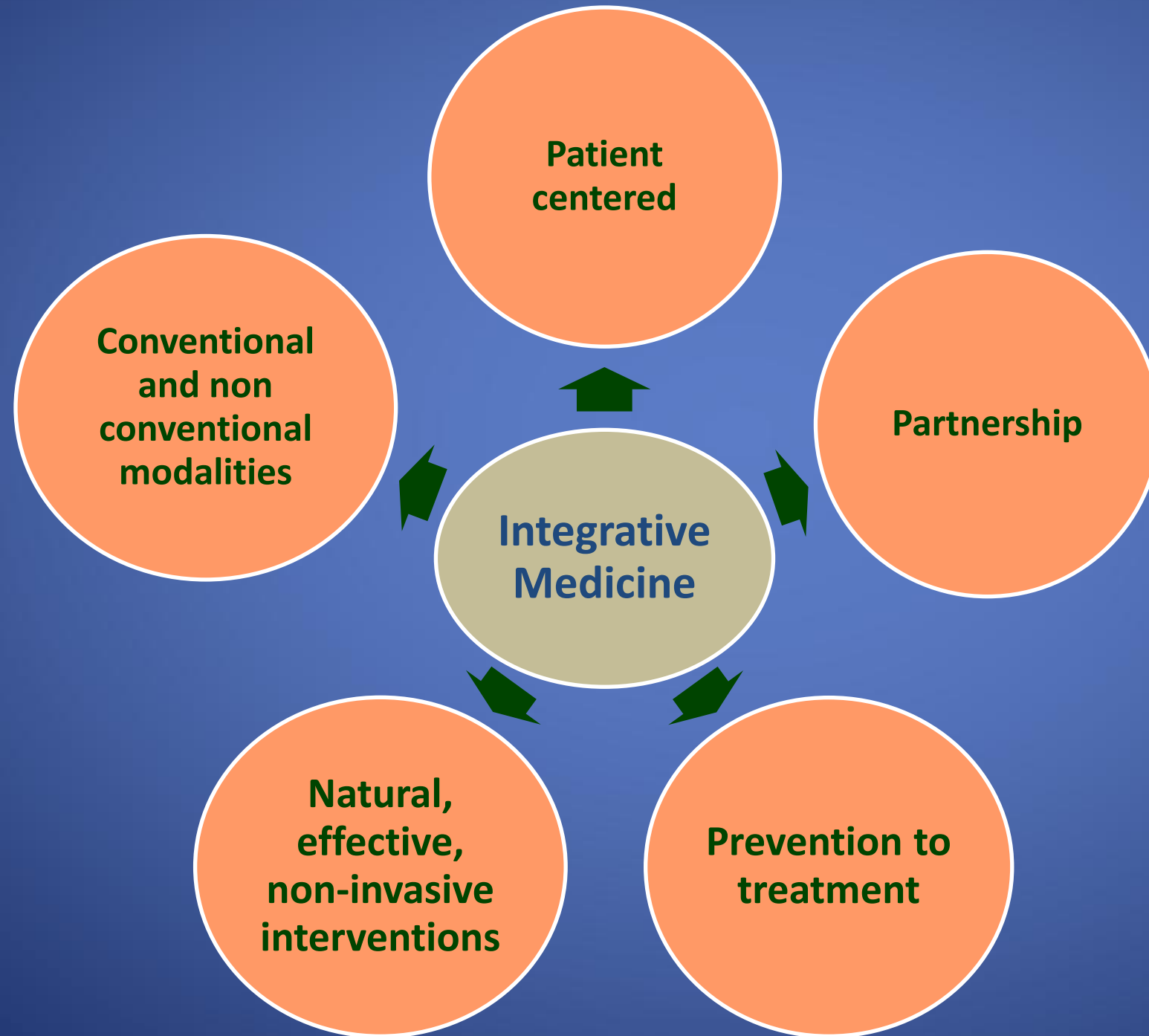


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Medical Degree 

Integrative Medicine



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

A pooled analysis of post-diagnosis lifestyle factors in association with late estrogen-receptor-positive breast cancer prognosis.

Nechuta S¹, Chen WY^{2,3}, Cai H¹, Poole EM², Kwan ML⁴, Flatt SW⁵, Patterson RE⁵, Pierce JP⁵, Caan BJ⁴, Ou Shu X¹.

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²Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

³Department of Medical Oncology, Dana Farber Cancer Institute, Boston, MA.

⁴Division of Research, Kaiser Permanente Northern California, Oakland, CA.

⁵Cancer Prevention Program, Moores UCSD Cancer Center, University of California, San Diego, CA.

Associations of **lifestyle factors** with late recurrence and all-cause mortality among 6,295 5-year ER+ Stage I-III breast cancer survivors

Weight gain (>10%), BMI >35, Alcohol intake, Physical activity (<17.4 MET – hr/week), Smoking

Modifiable lifestyle factors were associated with late outcomes among long-term ER+ breast cancer survivors.

Int J Cancer. 2016 May 1;138(9):2088-97. doi: 10.1002/ijc.29940. Epub 2015 Dec 9.

Prolonged Nightly Fasting and Breast Cancer Prognosis.

Marinac CR¹, Nelson SH², Breen CI³, Hartman SJ⁴, Natarajan L⁴, Pierce JP⁴, Flatt SW³, Sears DD⁵, Patterson RE⁴.

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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.

Janelains 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

Acupuncture As an Integrative Approach for the Treatment of Hot Flashes in Women With Breast Cancer: A Prospective Multicenter Randomized Controlled Trial (AcCliMaT).

Lesi G¹, Razzini G², Musti MA¹, Stivanello E¹, Petrucci C¹, Benedetti B¹, Rondini E¹, Ligabue MB¹, Scaltriti L¹, Botti A¹, Artioli F¹, Mancuso P¹, Cardini F¹, Pandolfi P¹.

- 190 women with breast cancer randomly assigned and stratified for hormonal therapy
- 12 – week enhanced self care (informational booklet) vs. self care with 10 traditional acupuncture sessions
- Primary outcome: hot flash score (freq X severity)

J Clin Oncol. 2016 May 20;34(15):1795-802. doi: 10.1200/JCO.2015.63.2893. Epub 2016 Mar 28.

- Acupuncture plus enhanced self-care was associated with a significantly lower hot flash score than enhanced self-care at the end of treatment ($P < .001$) and at 3- and 6-month post-treatment follow-up visits ($P = .0028$ and $.001$, respectively).
- Acupuncture was also associated with fewer climacteric symptoms and higher quality of life in the vasomotor, physical, and psychosocial dimensions ($P < .05$).

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 Rafte, and Lorenzo Cohen

JNCI Monograph Sept 2018

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

Meditation, yoga, and relaxation with imagery are recommended for routine use for common conditions, including anxiety and mood disorders (Grade A)

– Greenlee, et al

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)

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

Exercise in Cancer Care

Effects of a Physical Activity Behavior Change Intervention on Inflammation and Related Health Outcomes in Breast Cancer Survivors: Pilot Randomized Trial

Rogers LQ, Fogleman A, Trammell R, Hopkins-Price P, Vicari S, Rao K, Edson B, Verhulst S, Courneya KS, Hoelzer K.

Southern Illinois University (SIU) School of Medicine, Springfield, IL, USA.

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 breast cancer
recurrence**

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

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.

Nutritional Risk Reduction Strategies

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

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



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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.

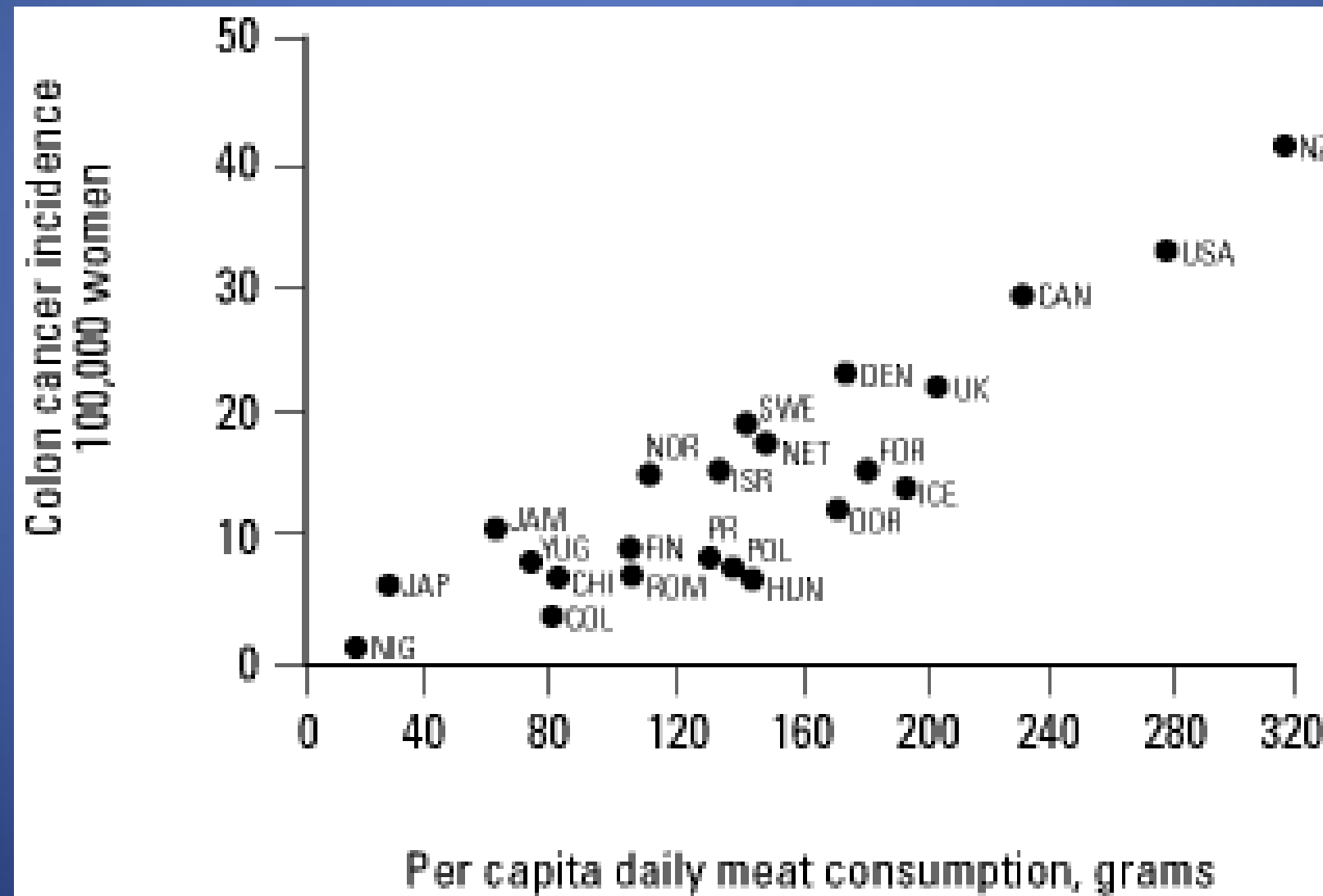
In a study of 81 women in Canada and Ireland, the most abundant phylum in the healthy breast microbiome was Proteobacteria.

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



Yoga Breathing for Cancer Related Fatigue

THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE

Volume 18, Number 5, 2012, pp. 473–479

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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 Miaskowski, 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



Kapalbhati Pranayam

▶ ⏩ 🔊 0:14 / 9:59

Scroll for details
▼



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
(domes descend,
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 interchordial part

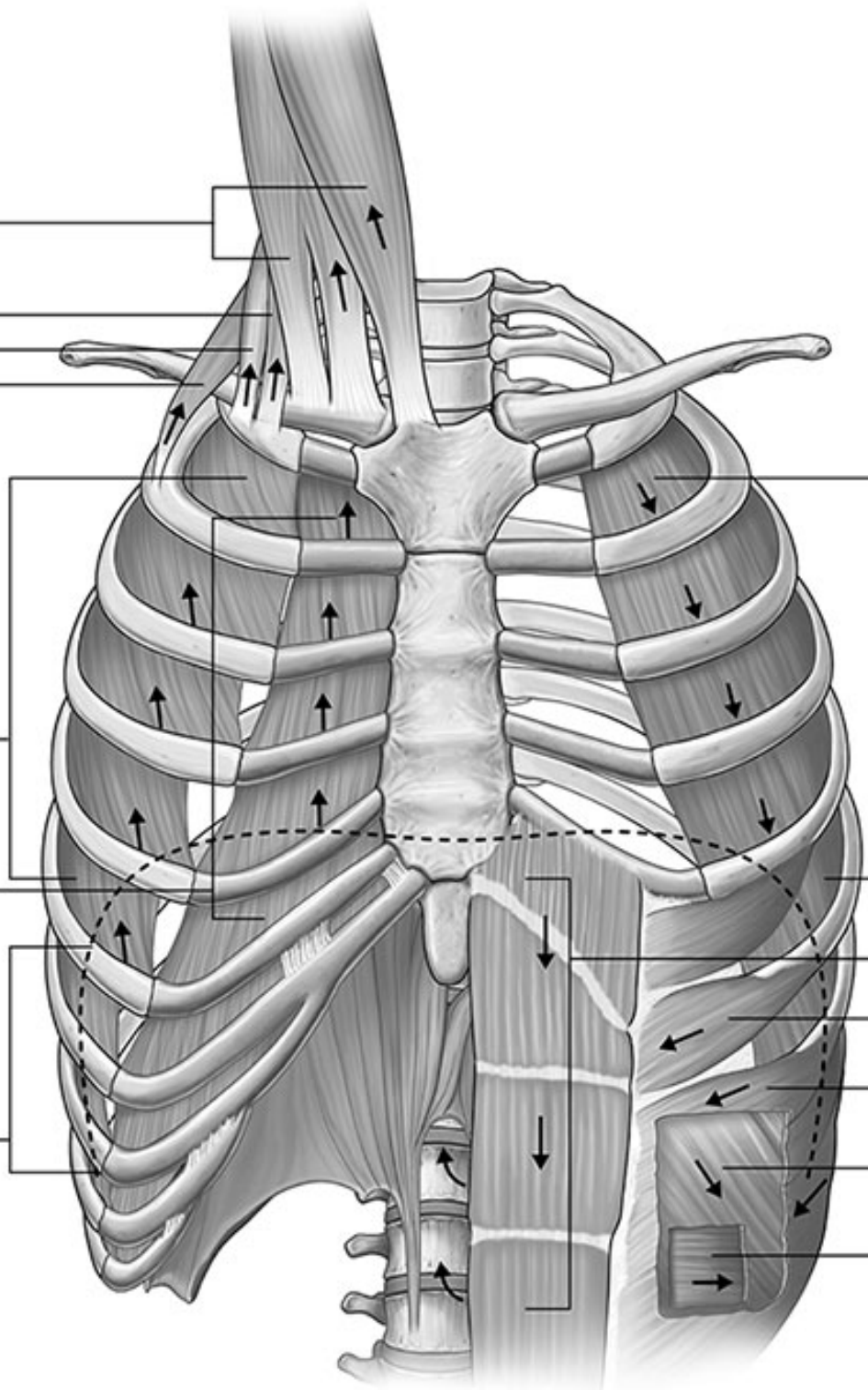
Abdominals
(depress lower ribs,
compress
abdominal contents,
pushing up diaphragm)

Rectus abdominis

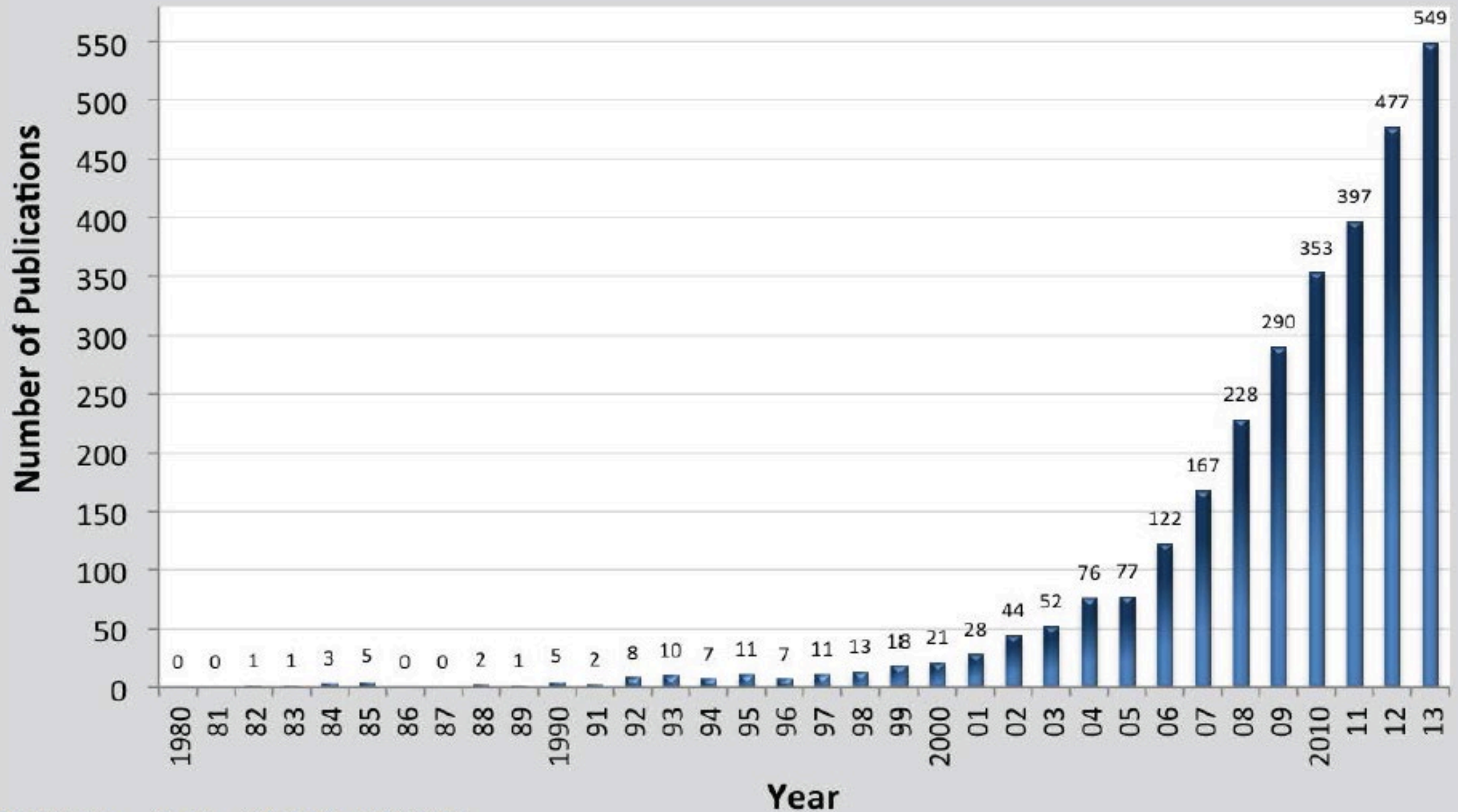
External oblique

Internal oblique

Transversus abdominis



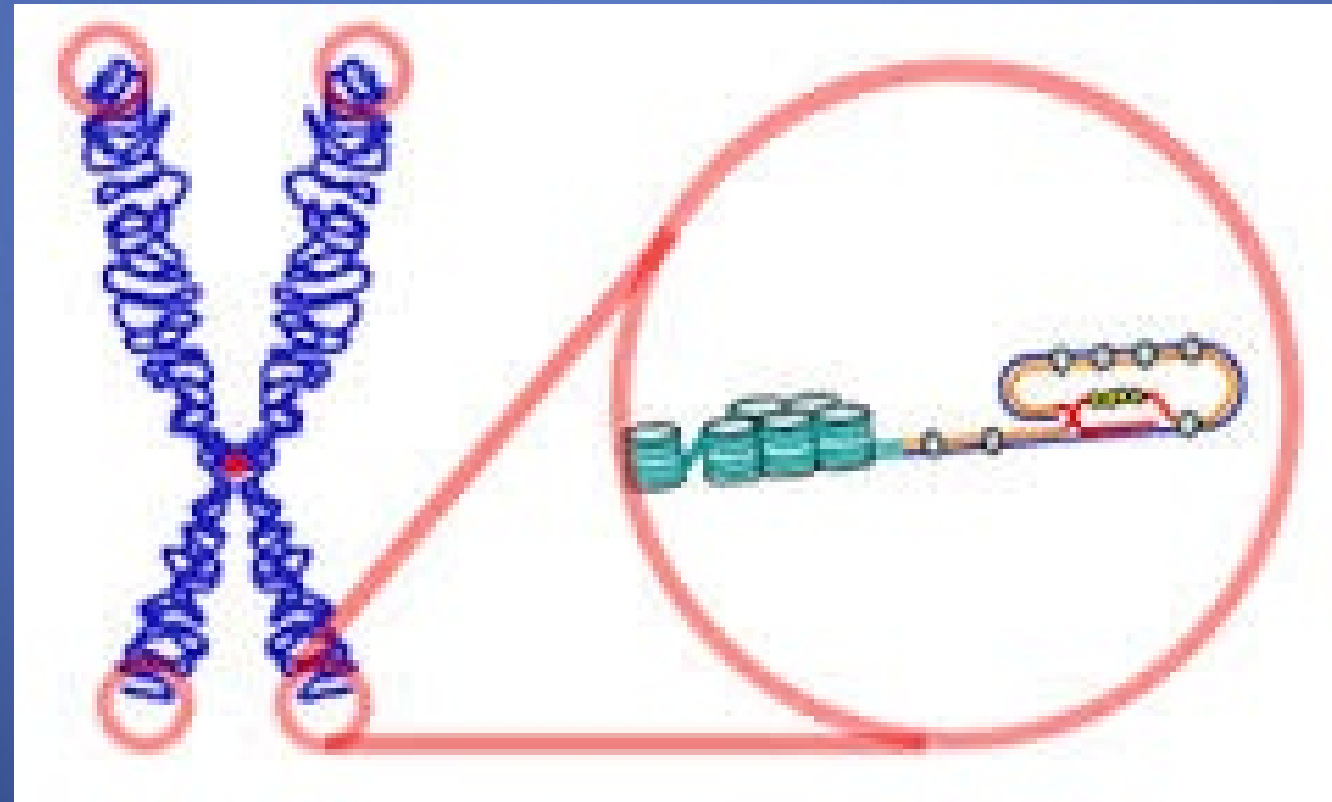
MINDFULNESS RESEARCH PUBLICATIONS BY YEAR, 1980 - 2013



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**

Contact information:

- **Integrative Medicine Clinic:**

– 954-844-9080

Soy Beans

- Numerous nutritional benefits: Isoflavones
 - Daidzein (40%), genistein (50%) and glycetin (10%)
- Essential amino acids
- Fibers
- Poly-unsaturated fatty acids
- Vitamins and minerals

- Isoflavones acts as selective estrogen receptor modifiers
- ? Safety of soy products in ER+ women

LACE Study

- Life After Cancer Epidemiology Study followed 1954 breast CA survivors dx 97-00 for 6.3 yrs
- 282 breast CA recurrences ascertained
- Isoflavone intake assessed
 - Soy intake at levels comparable to those consumed in Asian population
 - May reduce the risk of recurrence in women who have been treated with tamoxifen (In postmenopausal women (HR 0.48, 0.21-0.79, p=0.008))
- Does not appear to negate the effects of tamoxifen
- Further confirmation required before recs issued
 - Guha et al, Breast CA Res and Treat, 2009