

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

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Physician Wellness
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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.

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

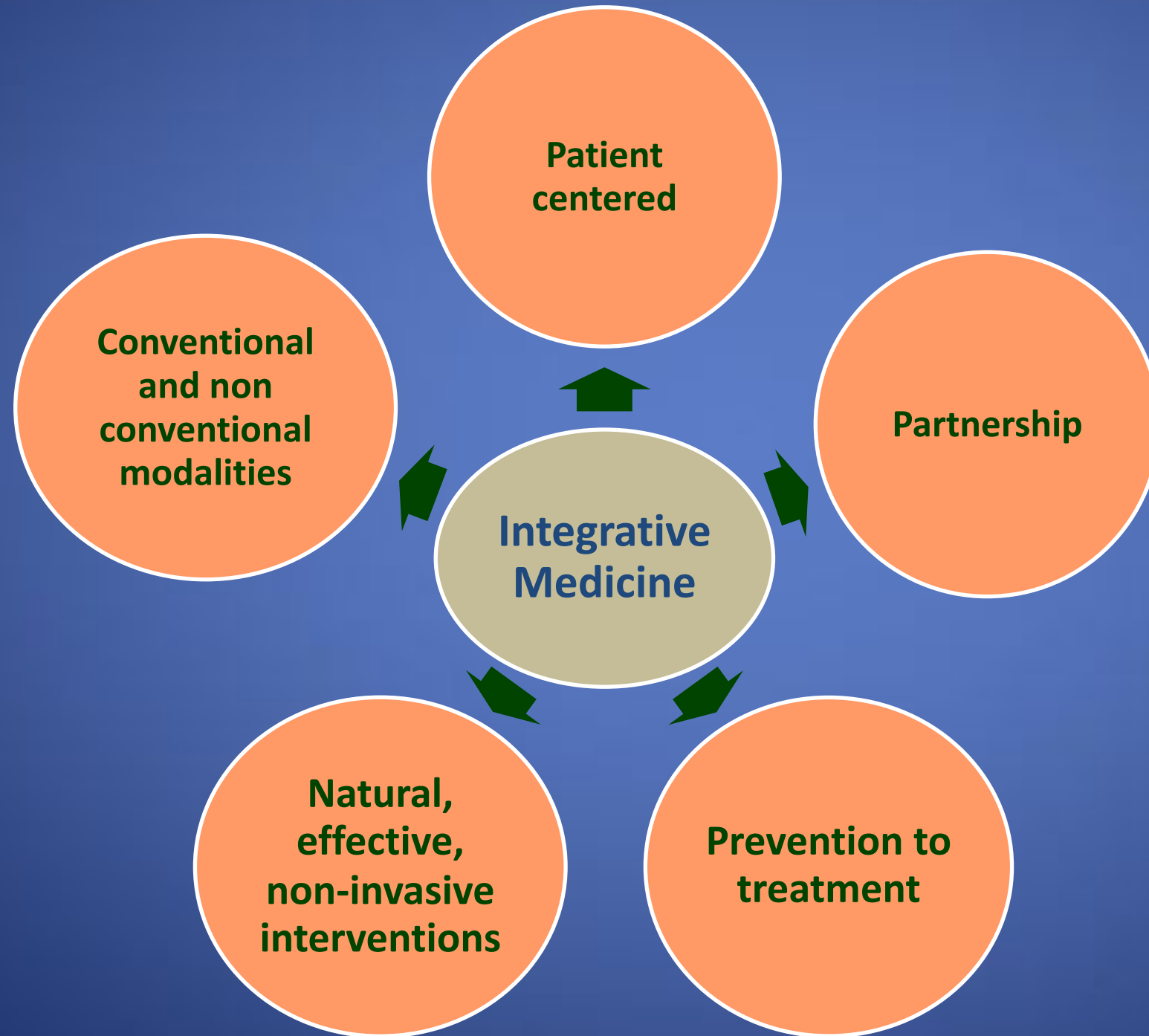


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Integrative Medicine



Integrative Medicine

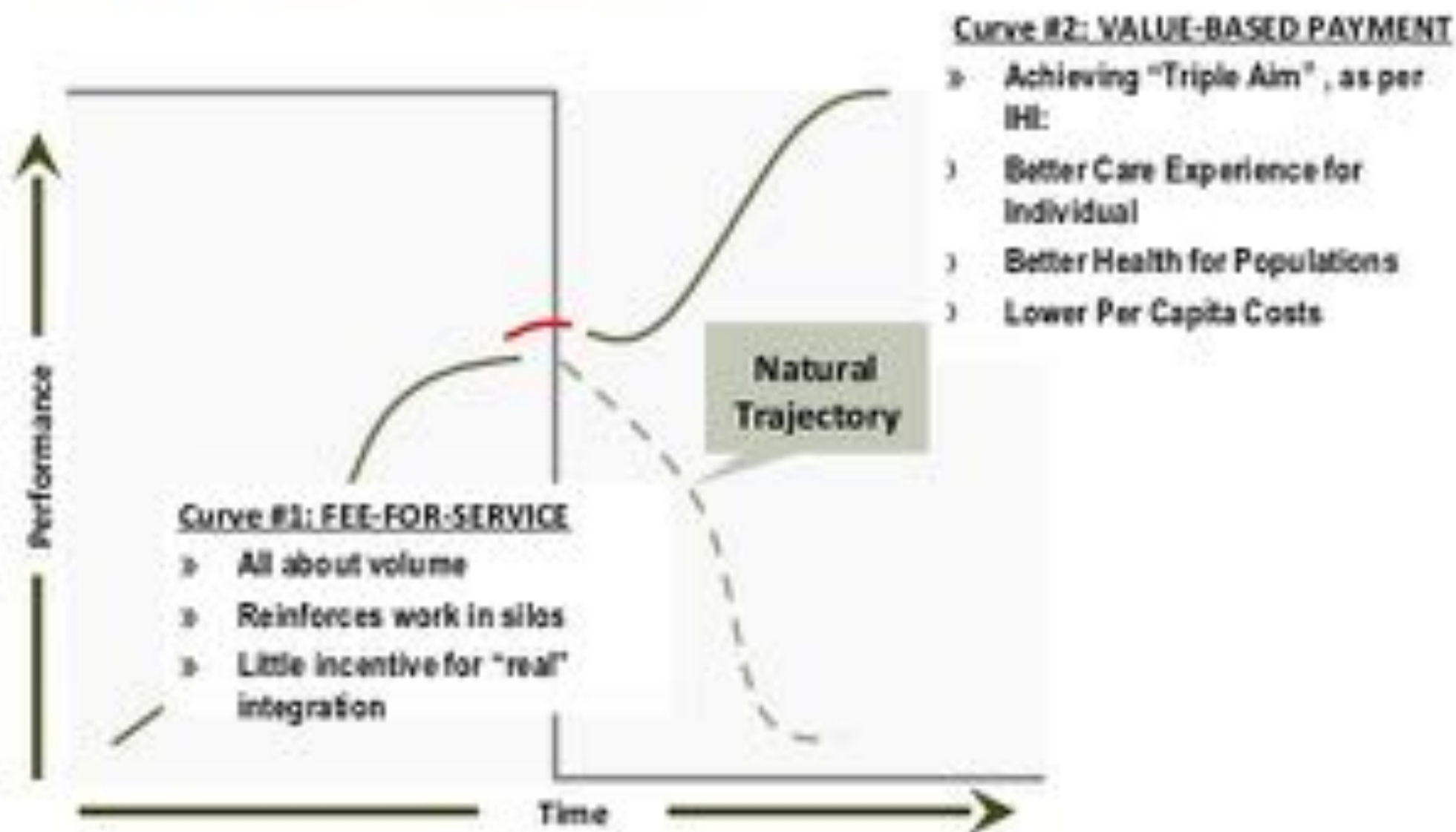
- Engages mind, body, spirit and community
- Encourages providers to model healthy lifestyles for their patients
 - Focuses attention on lifestyle choices for prevention & maintenance of health
 - Maintains that healing is always possible even when cure is not

Huang Di “The Yellow Emperor”



The Canon of Chinese Medicine 2,600 B.C.

Health Delivery Systems All Confront The Need To *Jump To The Second Curve*



Courtesy of Radigan - Source: Institute for Health Improvement, see Marston and NO analysis.

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, Qu Shu X¹.

⊖ Author information

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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.

- Coaching
- Multidisciplinary team
- Lifestyle changes

British Journal of Cancer (2000) 83(10), 1261–1267

© 2000 Cancer Research Campaign

doi: 10.1054/bjoc.2000.1406, available online at <http://www.idaallibrary.com> on 

Review

Anxiety in cancer patients

DPH Stark¹ and A House²

¹CRF Department of Medical Oncology, St James's University Hospital, Beckett Street, Leeds LS9 7TF; ²Academic Unit of Psychiatry and Behavioural Sciences, 15 Hyde Terrace, Leeds LS2 9LT, UK

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. Fouladshah, 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

MAP Train My Brain: Meditation Combined with Aerobic Exercise Reduces Stress and Rumination While Enhancing Quality of Life in Medical Students

Paul Lavadera,¹ Emma M. Millon, MS,² and Tracey J. Shors, PhD²

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

Fight-or-Flight (Sympathetic)

- Resting heart rate increases.
- Heart rate variability decreases.
- Respiration speeds up.
- Blood flow increases to muscles and lungs
- Blood flow decreases to deprioritized areas.
- Stress hormone levels rise.

Rest-and-Digest (Parasympathetic)

- Resting heart rate decreases.
- Heart rate variability increases.
- Respiration slows.
- Blood flow increases to reprioritized digestive system.
- Organs resume their day-to-day functions.
- Stress hormone levels fall.

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



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.

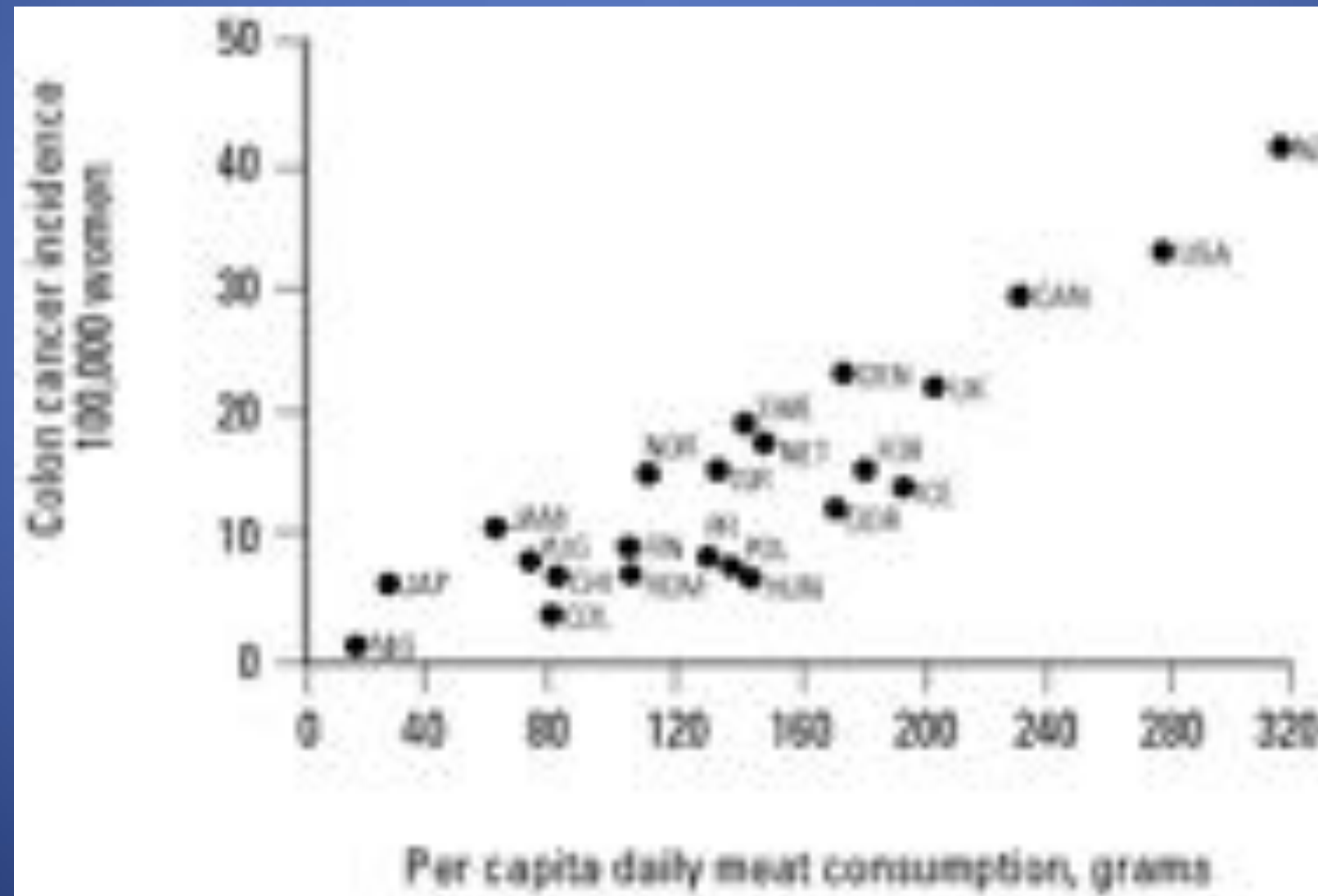
In a study of 81 women in Canada and Ireland, the most abundant phylum in the healthy breast microbiome was Proteobacteria.

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 Miskowski, 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
(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

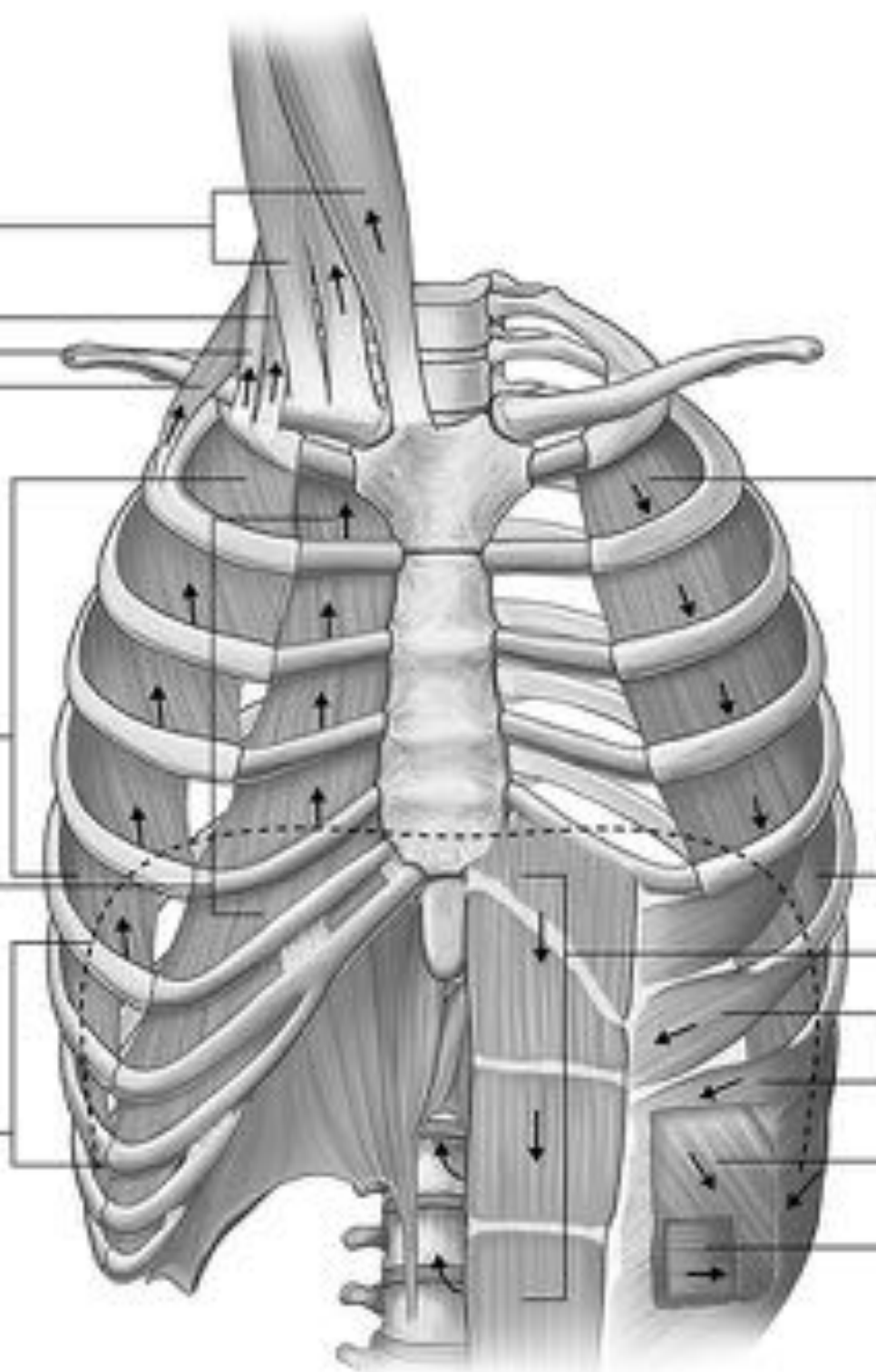
Abdominals
(depress lower ribs, compress abdominal contents, pushing up diaphragm)

Rectus abdominis

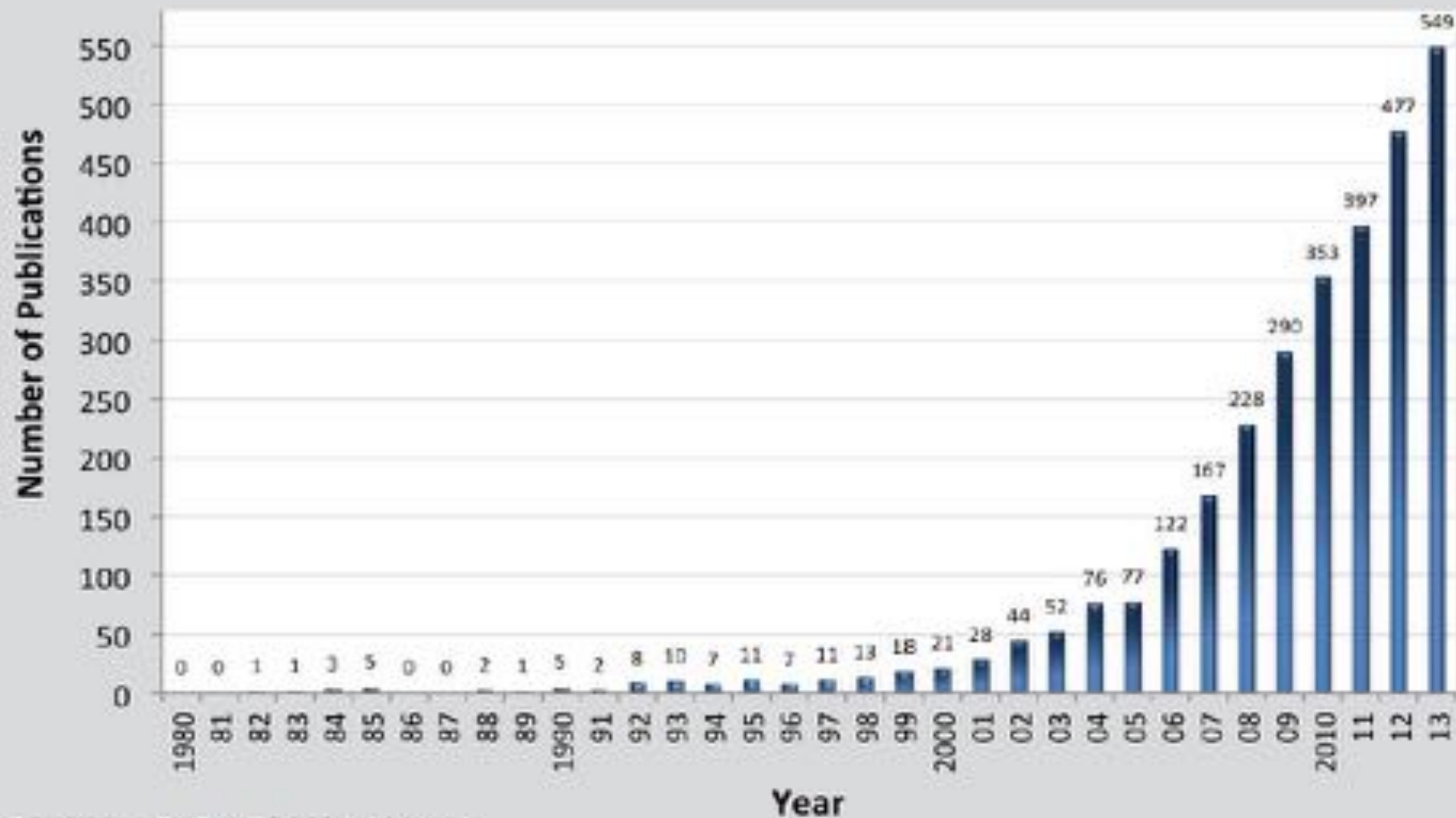
External oblique

Internal oblique

Transversus abdominis



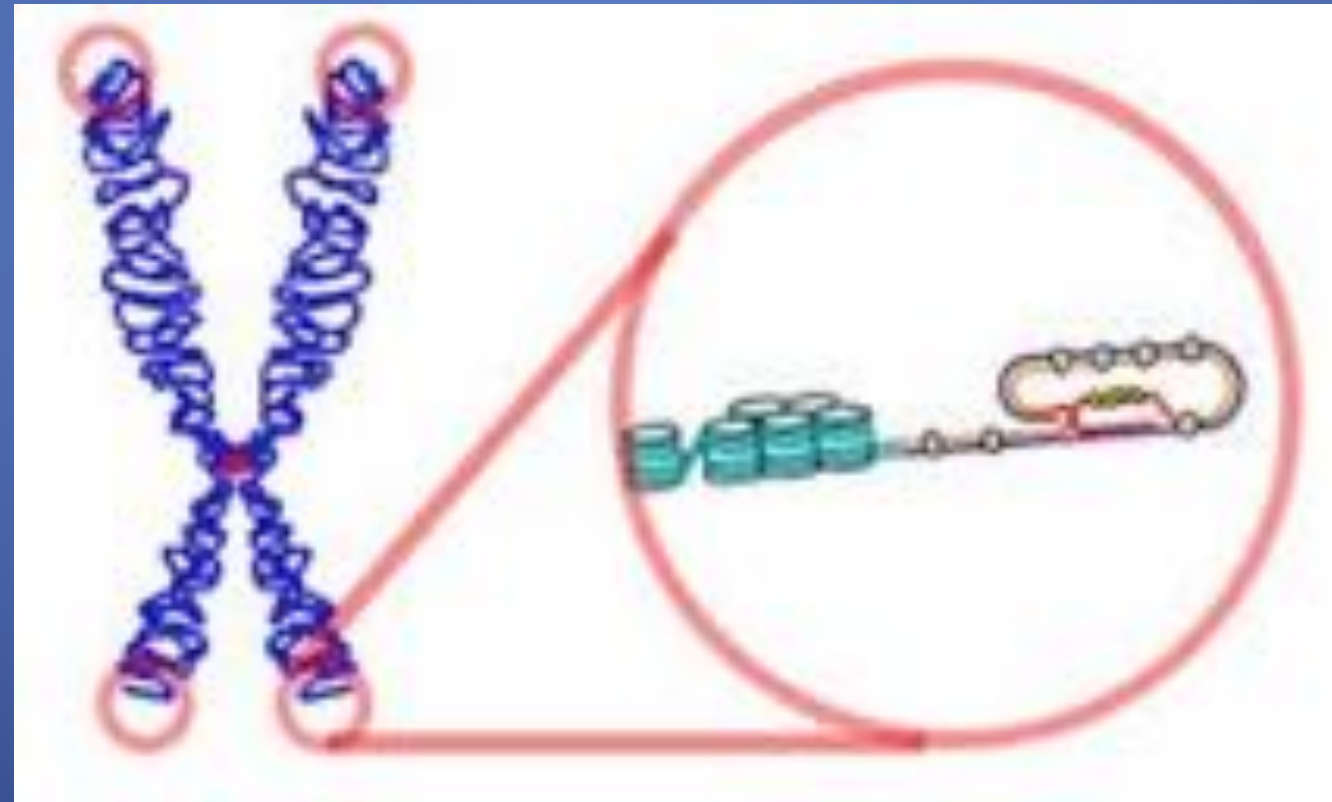
MINDFULNESS RESEARCH PUBLICATIONS BY YEAR, 1980 - 2013



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:

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 - 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