

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

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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 D<sup>1</sup>, Cohen L<sup>1</sup>, Rieber AG<sup>1</sup>, Urbauer D<sup>1</sup>, Fellman B<sup>1</sup>, Fisch MJ<sup>2</sup>, Nazario A<sup>1</sup>.



## 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

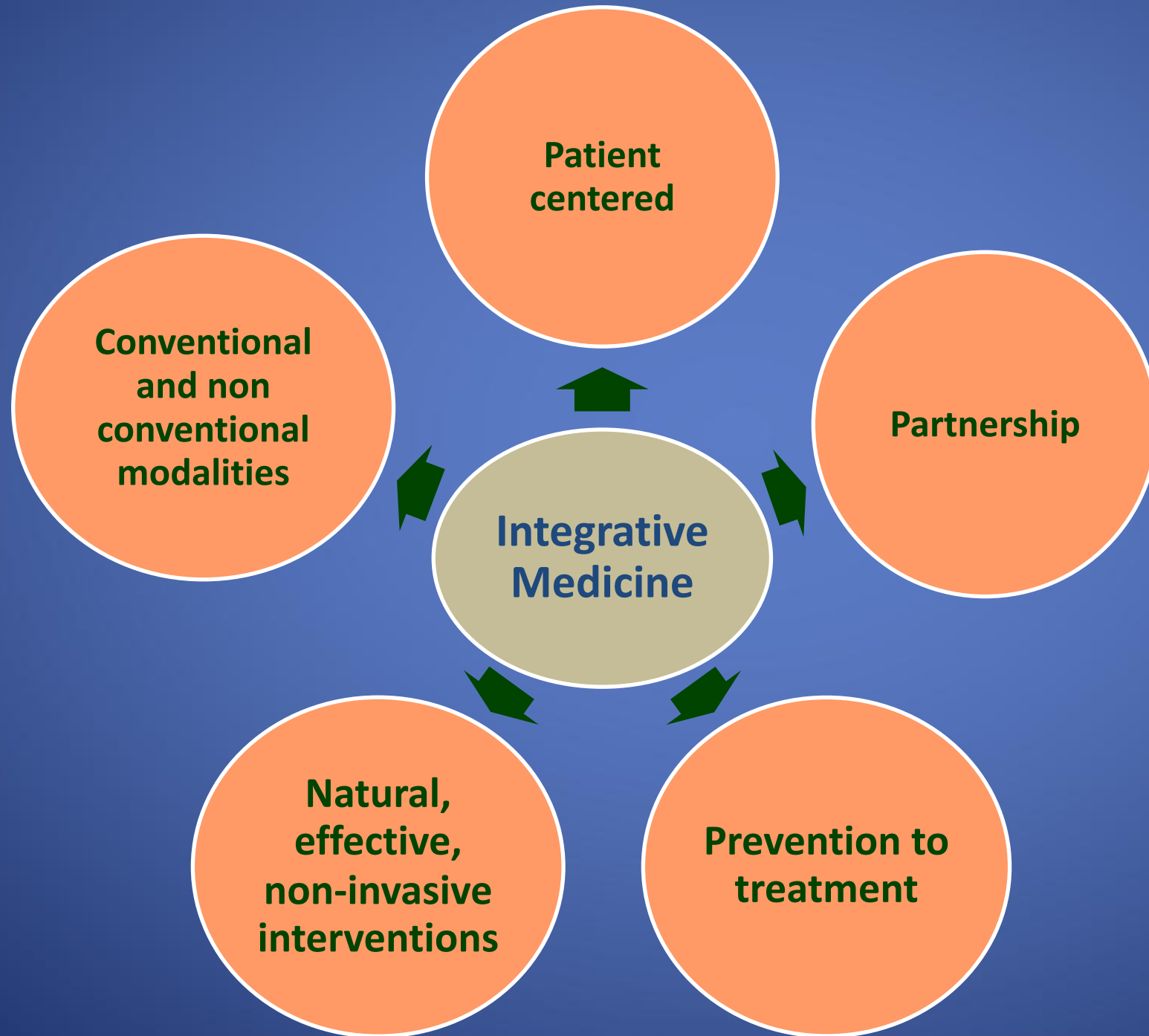


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# Integrative Medicine



# 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

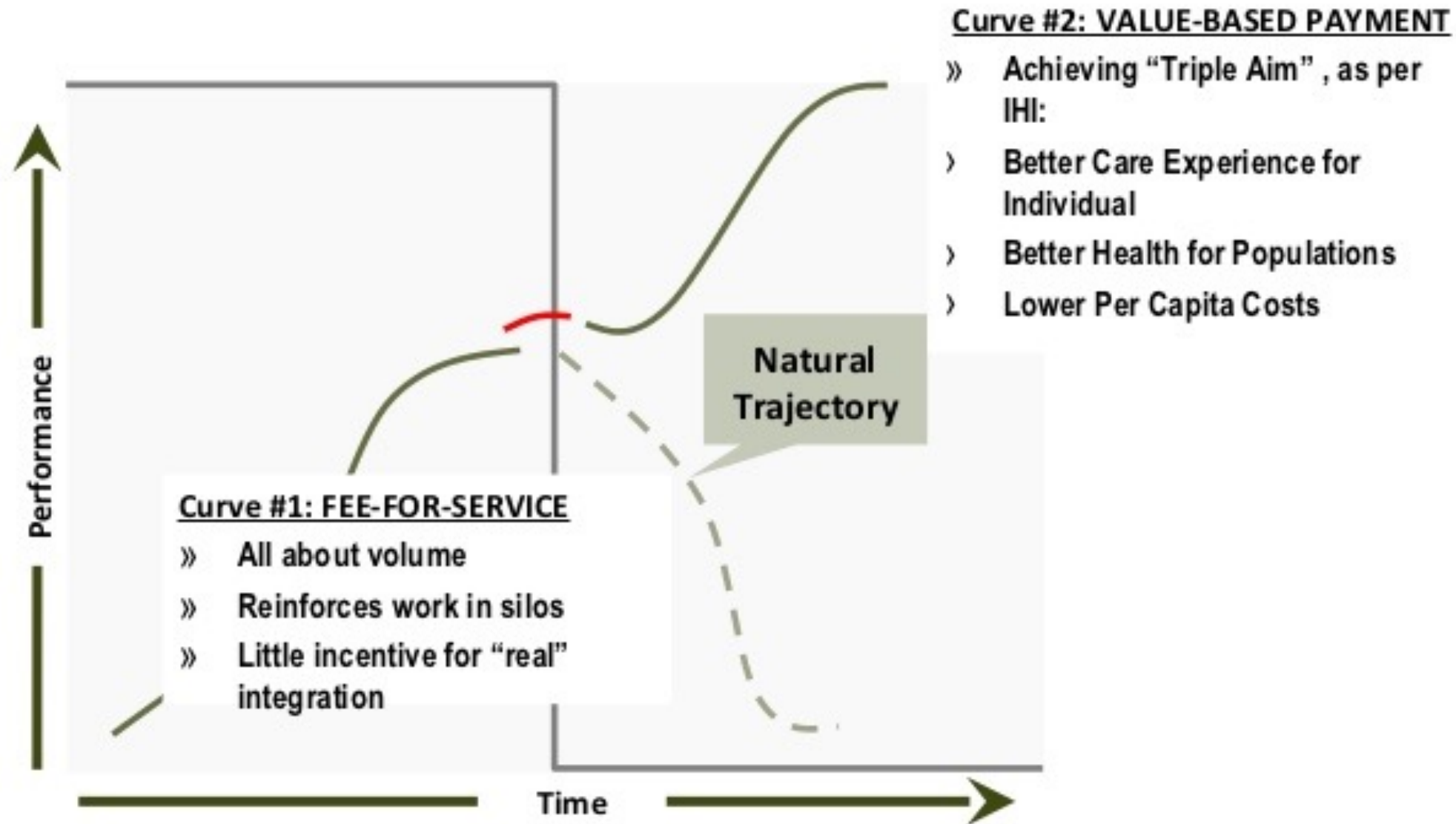


# Huang Di “The Yellow Emperor”



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

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



Courtesy of Navigant Source: Institute for Health Improvement, Ian Morrison and NCI analysis .

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

Nechuta S<sup>1</sup>, Chen WY<sup>2,3</sup>, Cai H<sup>1</sup>, Poole EM<sup>2</sup>, Kwan ML<sup>4</sup>, Flatt SW<sup>5</sup>, Patterson RE<sup>5</sup>, Pierce JP<sup>5</sup>, Caan BJ<sup>4</sup>, Ou Shu X<sup>1</sup>.

### **⊖ Author information**

<sup>1</sup>Division of Epidemiology, Department of Medicine, Vanderbilt Epidemiology Center, and Vanderbilt-Ingram Cancer Center, Vanderbilt School of Medicine, Nashville, TN.

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

<sup>3</sup>Department of Medical Oncology, Dana Farber Cancer Institute, Boston, MA.

<sup>4</sup>Division of Research, Kaiser Permanente Northern California, Oakland, CA.

<sup>5</sup>Cancer 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.2000.1405, available online at <http://www.idealibrary.com> on 

Review

## **Anxiety in cancer patients**

**DPH Stark<sup>1</sup> and A House<sup>2</sup>**

<sup>1</sup>ICRF Department of Medical Oncology, St James's University Hospital, Beckett Street, Leeds LS9 7TF; <sup>2</sup>Academic 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. Fouladbakhsh, Brigitte Gil, Dawn L. Hershman, Sami Mansfield, Dawn M. Mussallem, Karen M. Mustian, Erin Price, Susan Rafté, 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



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DOI: 10.1089/acm.2019.0281

JACM

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

Paul Lavadera,<sup>1</sup> Emma M. Millon, MS,<sup>2</sup> and Tracey J. Shors, PhD<sup>2</sup>

# 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





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# The Microbiota of Breast Tissue and Its Association with Breast Cancer

Camilla Urbaniak,<sup>a,b</sup> Gregory B. Gloor,<sup>c</sup> Muriel Brackstone,<sup>d</sup> Leslie Scott,<sup>d</sup> Mark Tangney,<sup>e</sup> Gregor Reid<sup>a,b</sup>

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

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

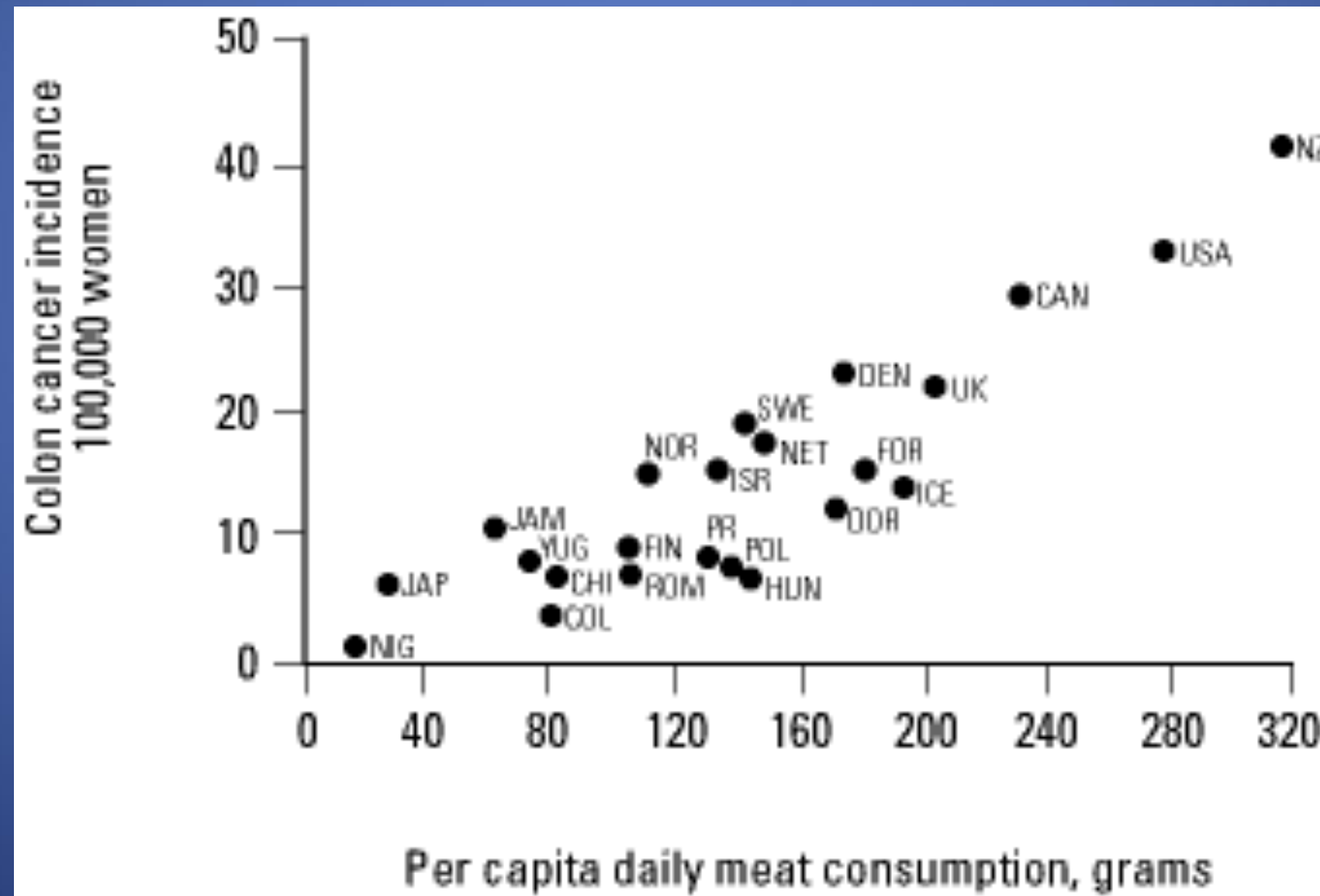
In a study of 81 women in Canada and Ireland, the most abundant phylum in the healthy breast microbiome was Proteobacteria.

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,<sup>1,2</sup> Christine Miaskowski, PhD,<sup>3</sup> Donald Abrams, MD,<sup>1,2</sup> Michael Acree, PhD,<sup>1</sup>  
Bruce Cooper, PhD,<sup>3</sup> Steffanie Goodman, MPH,<sup>1</sup> and Frederick M. Hecht, MD<sup>1,2</sup>

Pranayam Baba Ramdev. Quick 10min. English



# Kapalbhati Pranayam

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Scroll for details  
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**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

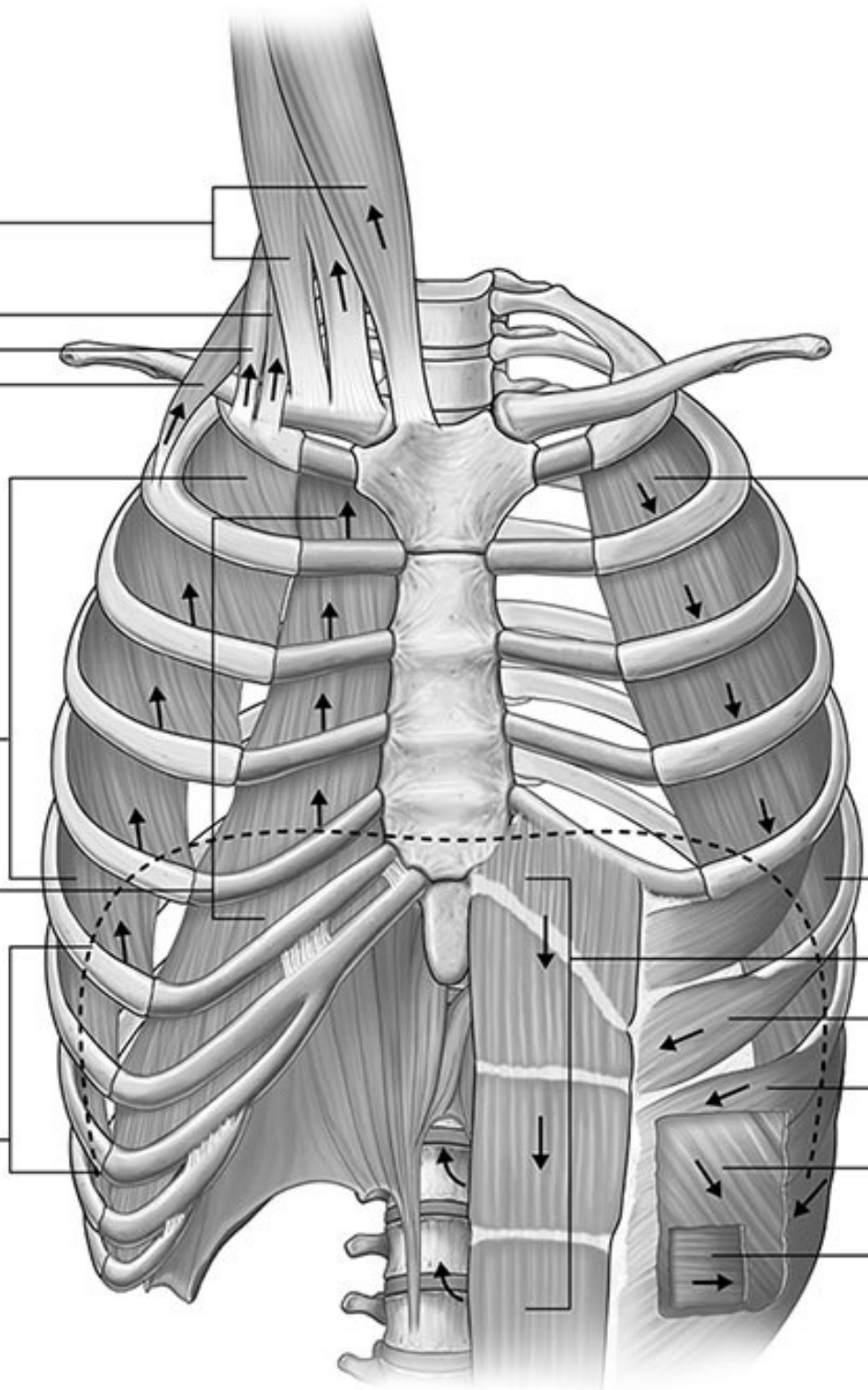
Abdominals  
(depress lower ribs,  
compress  
abdominal contents,  
pushing up diaphragm)

Rectus abdominis

External oblique

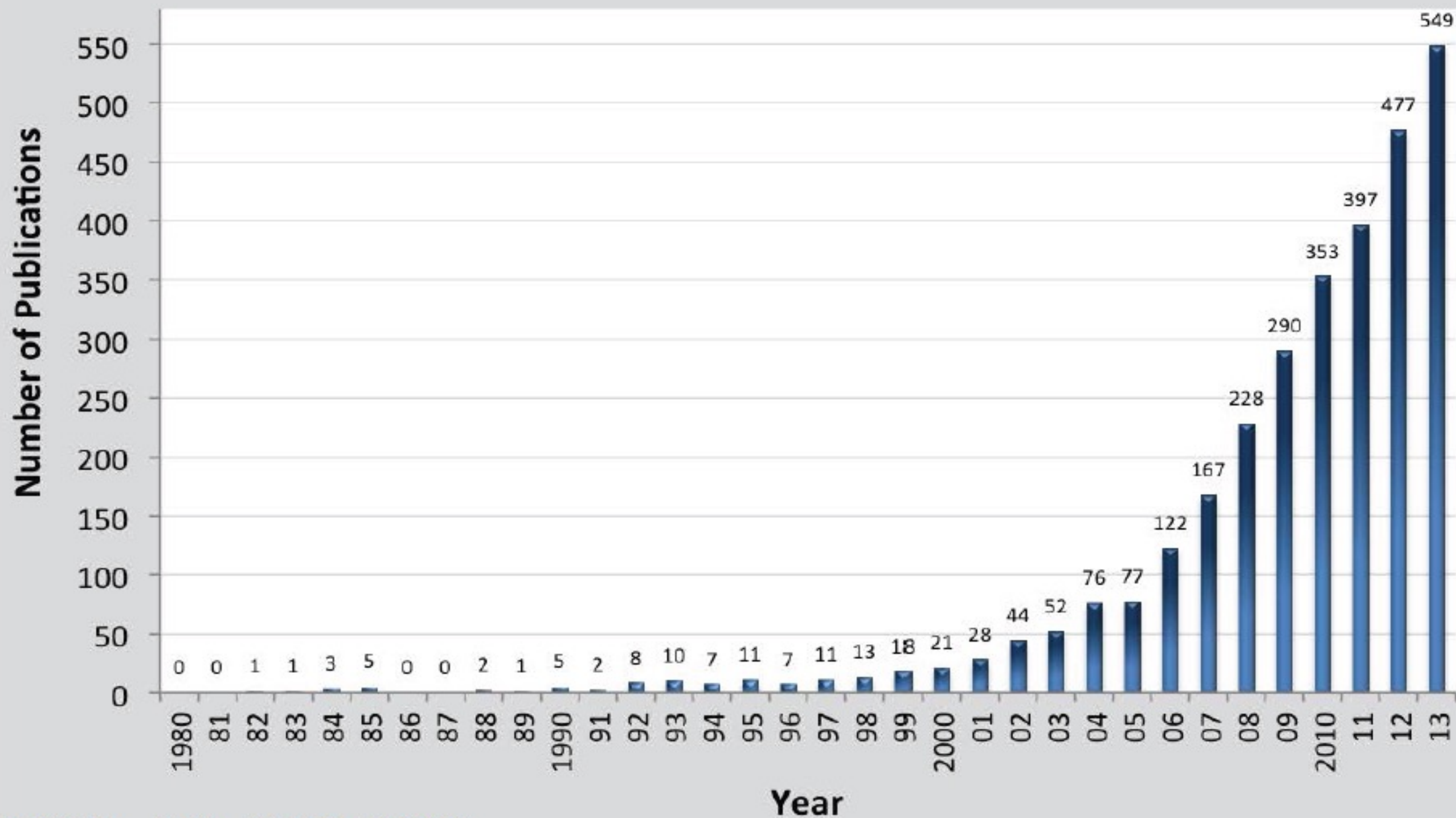
Internal oblique

Transversus abdominis





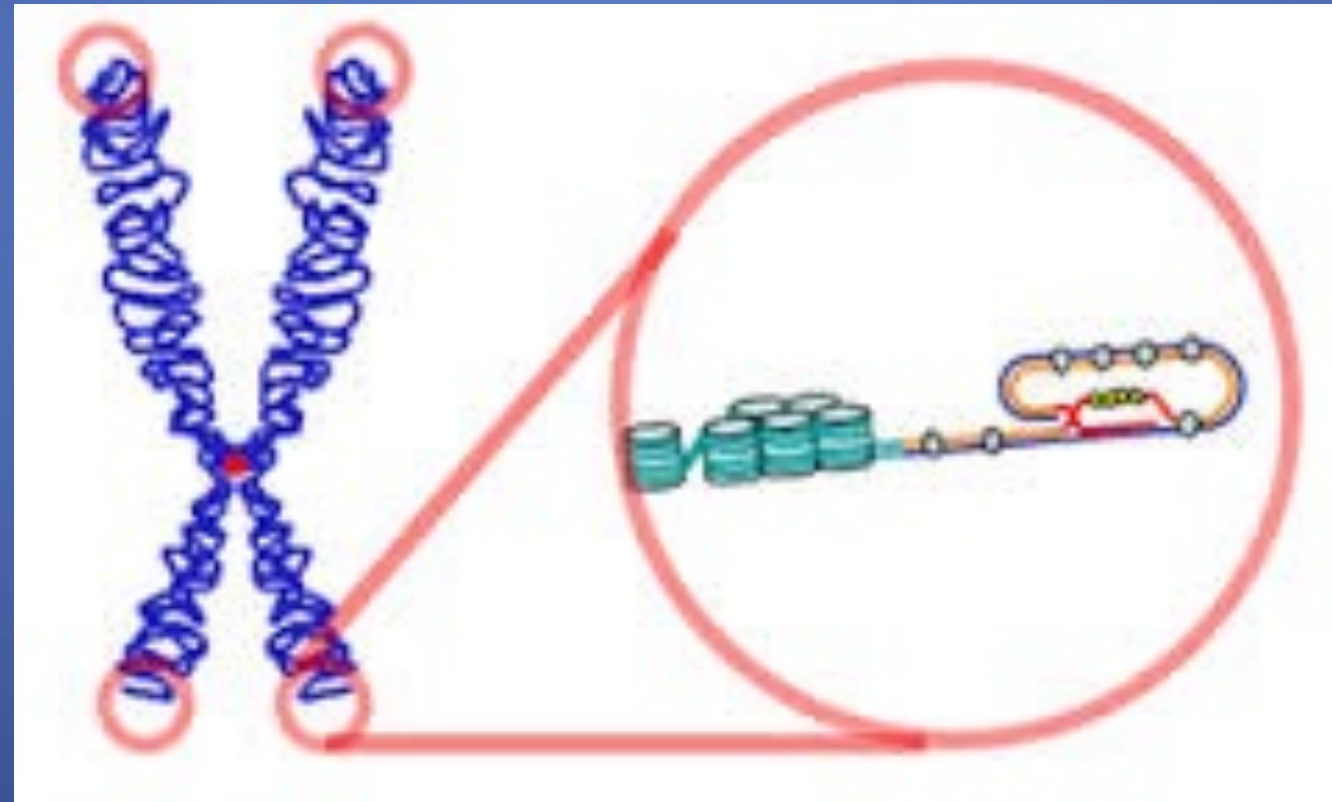
## MINDFULNESS RESEARCH PUBLICATIONS BY YEAR, 1980 - 2013



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:

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- 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