

Living the Anticancer Life

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Director, Integrative Medicine Program



THE UNIVERSITY OF TEXAS

MD Anderson ~~Cancer~~ Center

Making Cancer History®

All of us have cancer cells in our bodies.
But not all of us will develop cancer.

Anti cancer

A NEW WAY
OF LIFE



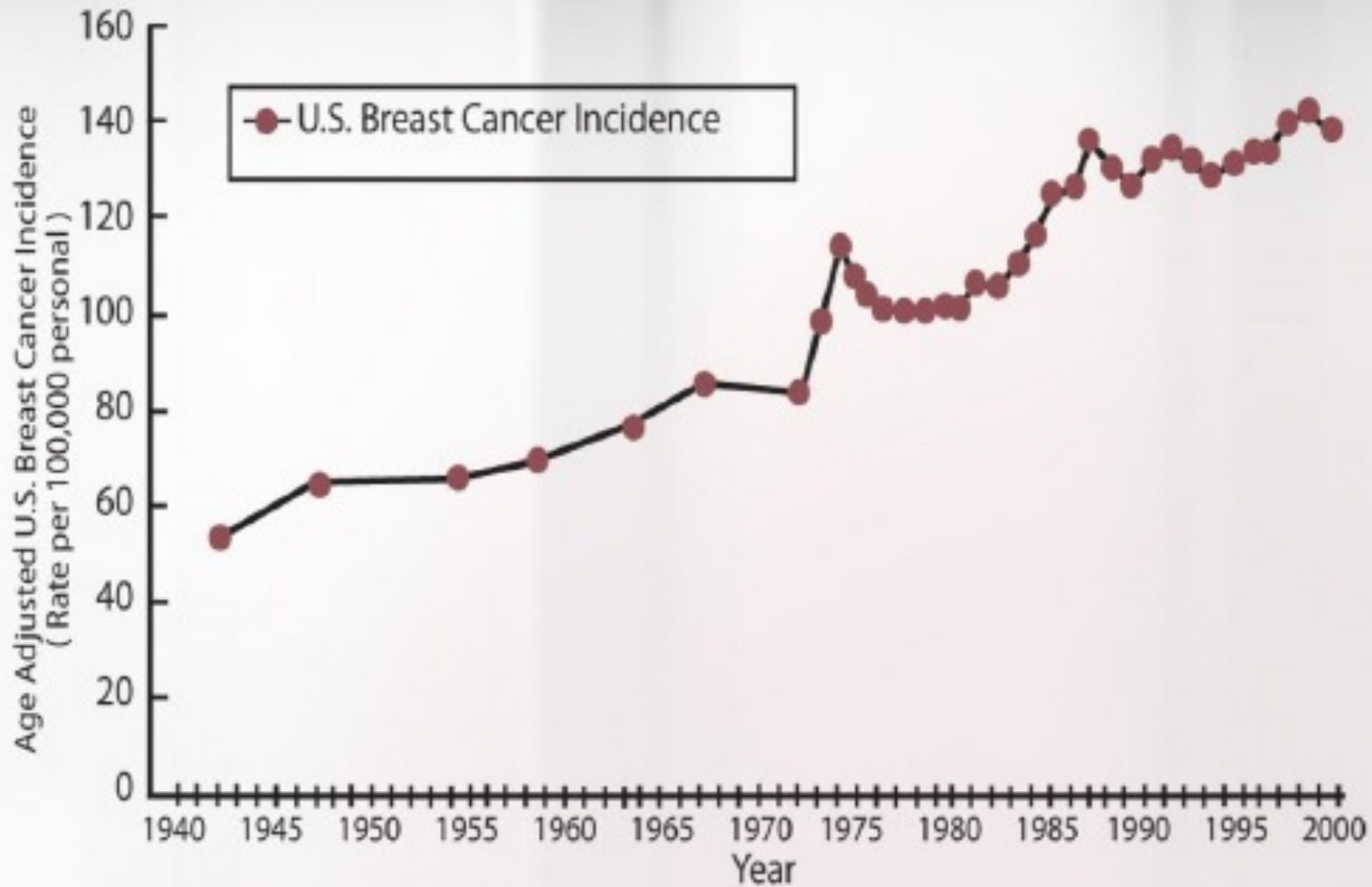
DAVID SERVAN-SCHREIBER, MD, PhD

INTERNATIONAL BESTSELLER

A Lesson

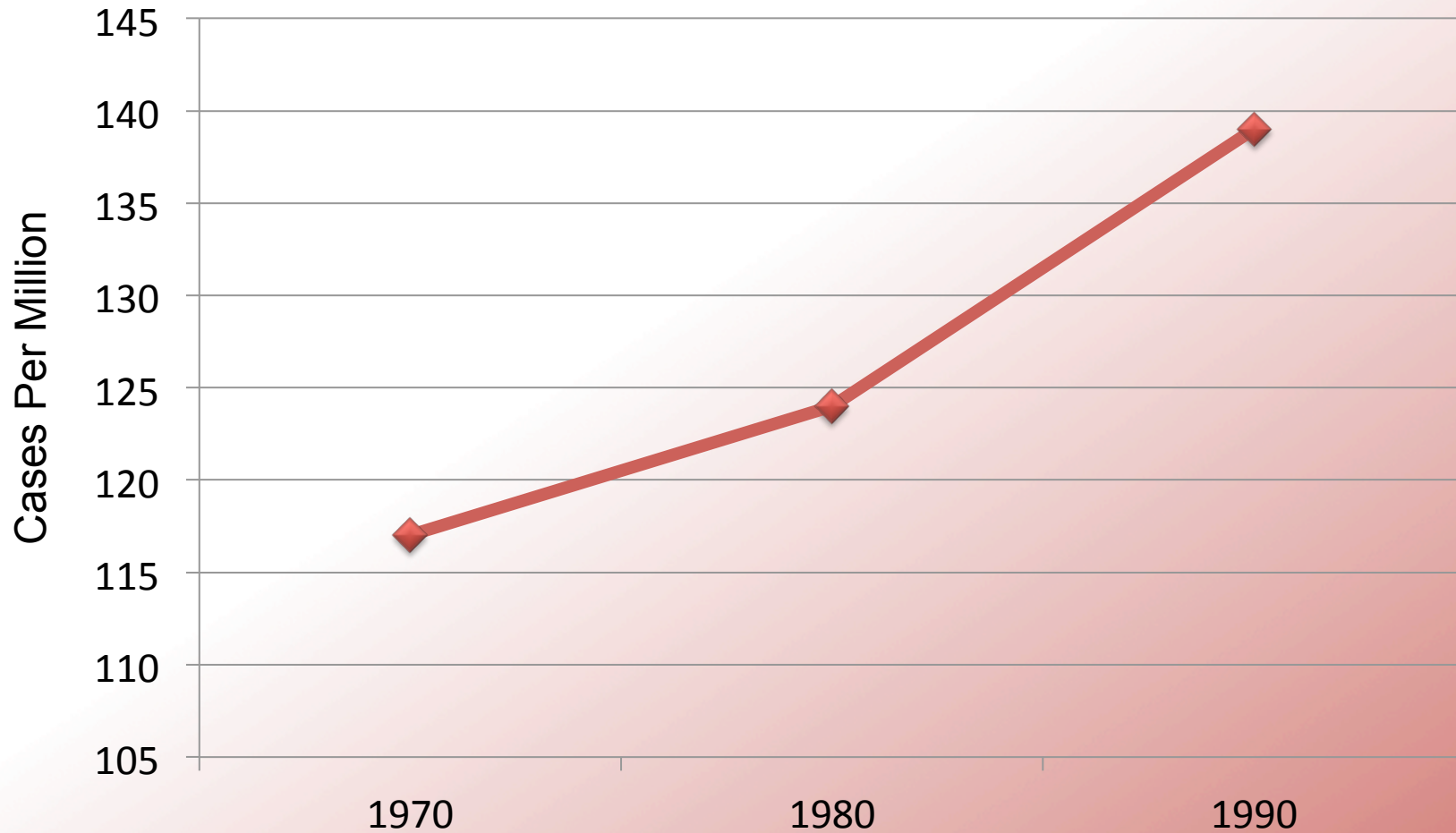
- **We all carry cancer cells**
- **We are all exposed to cancer promoting factors**
- **One in two men and one and three women will get cancer**
- **25% will die of cancer**

Epidemic 1 - Evolution



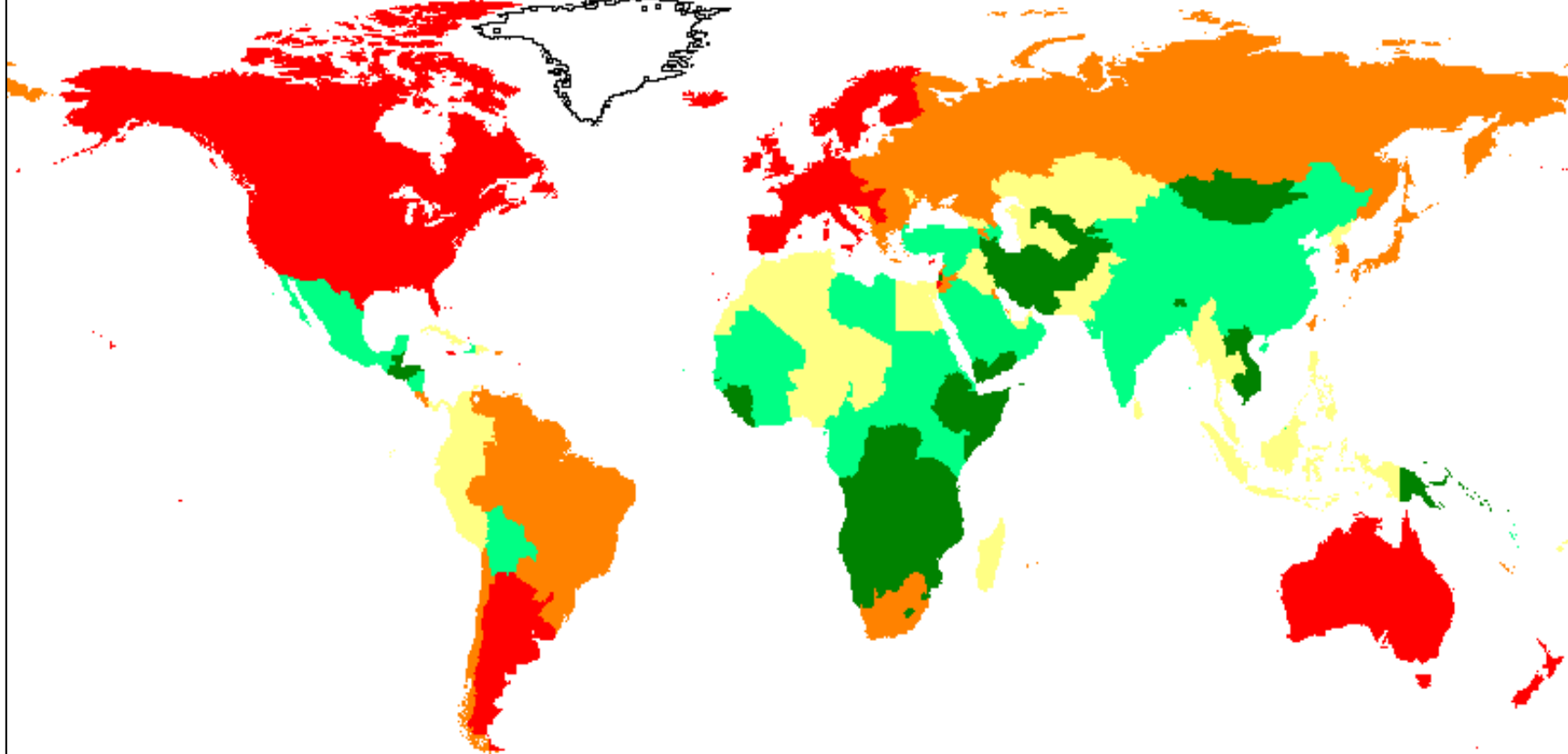
SEER, 2003 NCI

Childhood Cancers



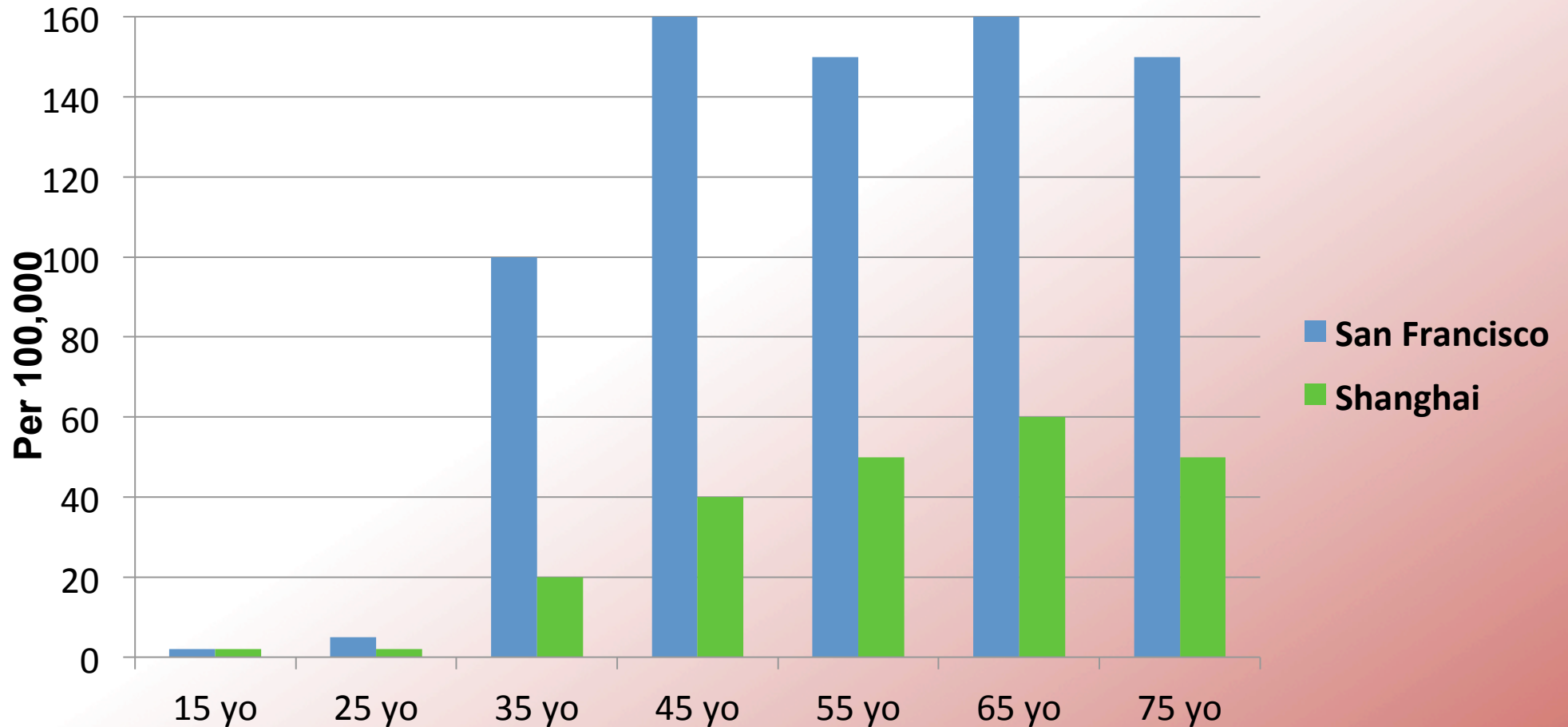
Epidemic 2 - Distribution

Breast: Age adjusted incidence per 100,000



■ < 21.3 ■ < 28.6 ■ < 38.7 ■ < 56.5 ■ < 109.2

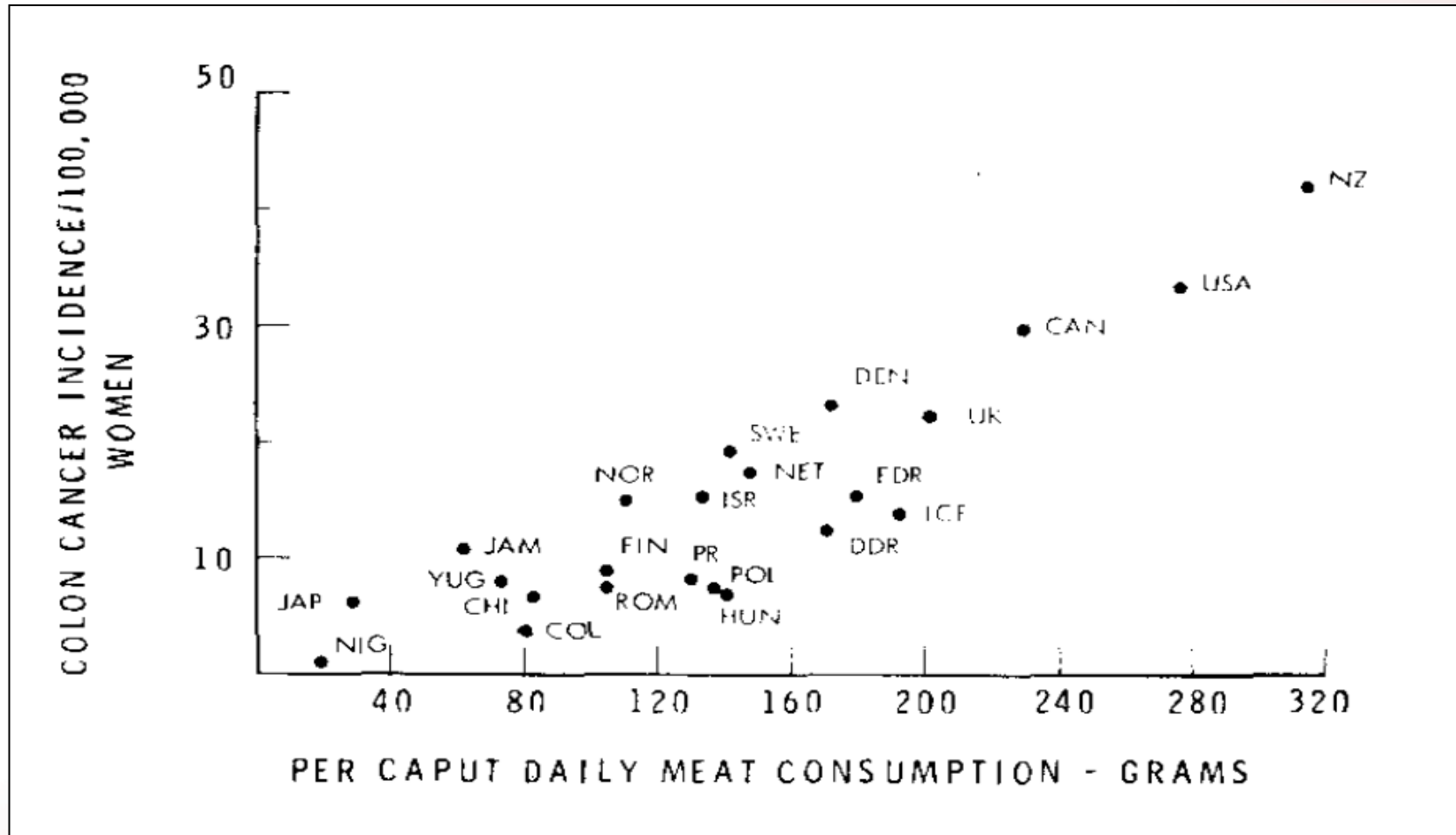
Key Difference = Lifestyle



Cancer Prevention and Control

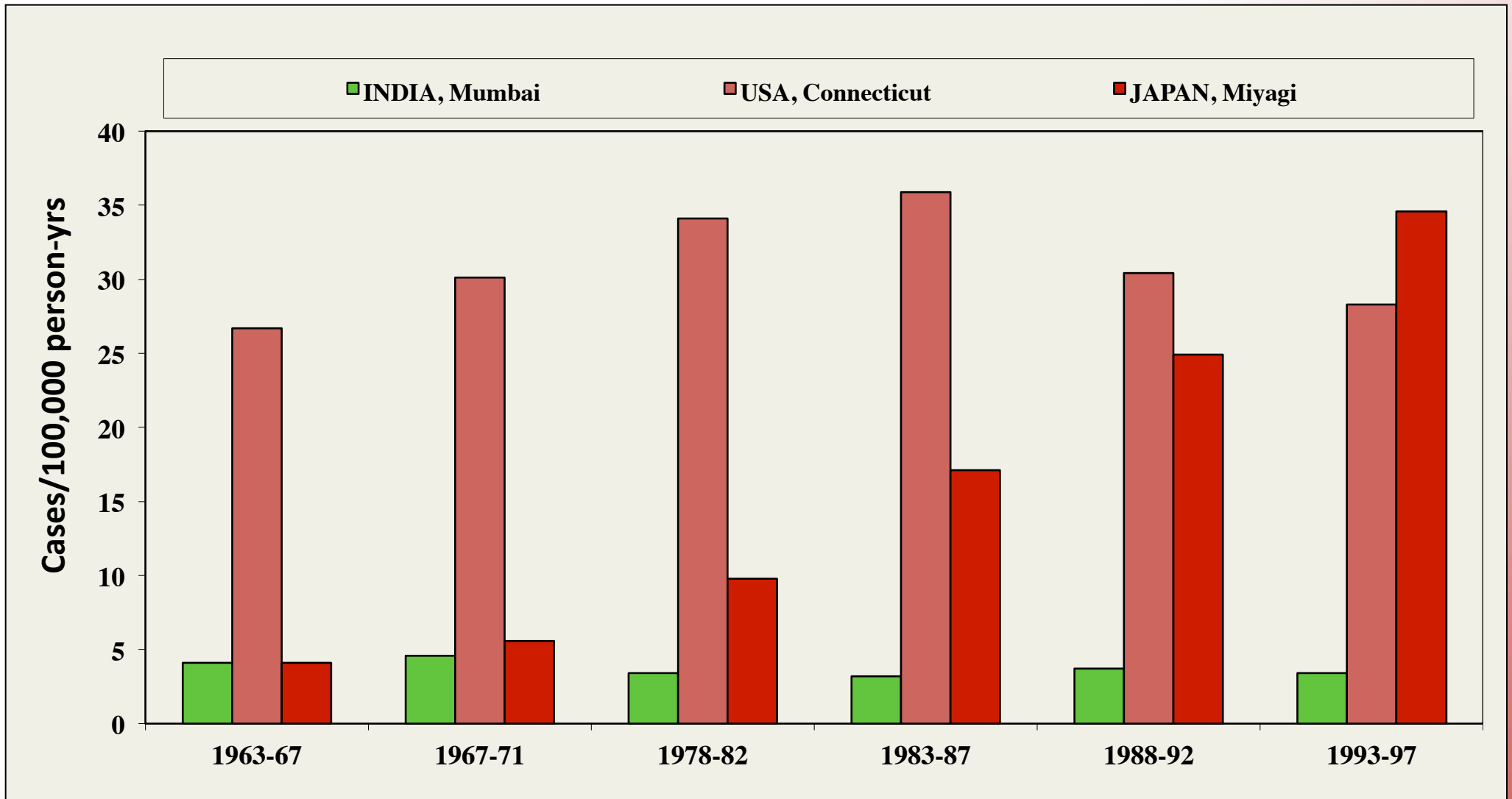
- **Nutrition**
- **Sedentary behavior**
- **Obesity**
- **Stress and social support**

Meat Intake and Colon Cancer



Trends in Colon Cancer Rates in Three Areas

age-standardized incidence rates, 1963-1997



McDonald's

McDonald's

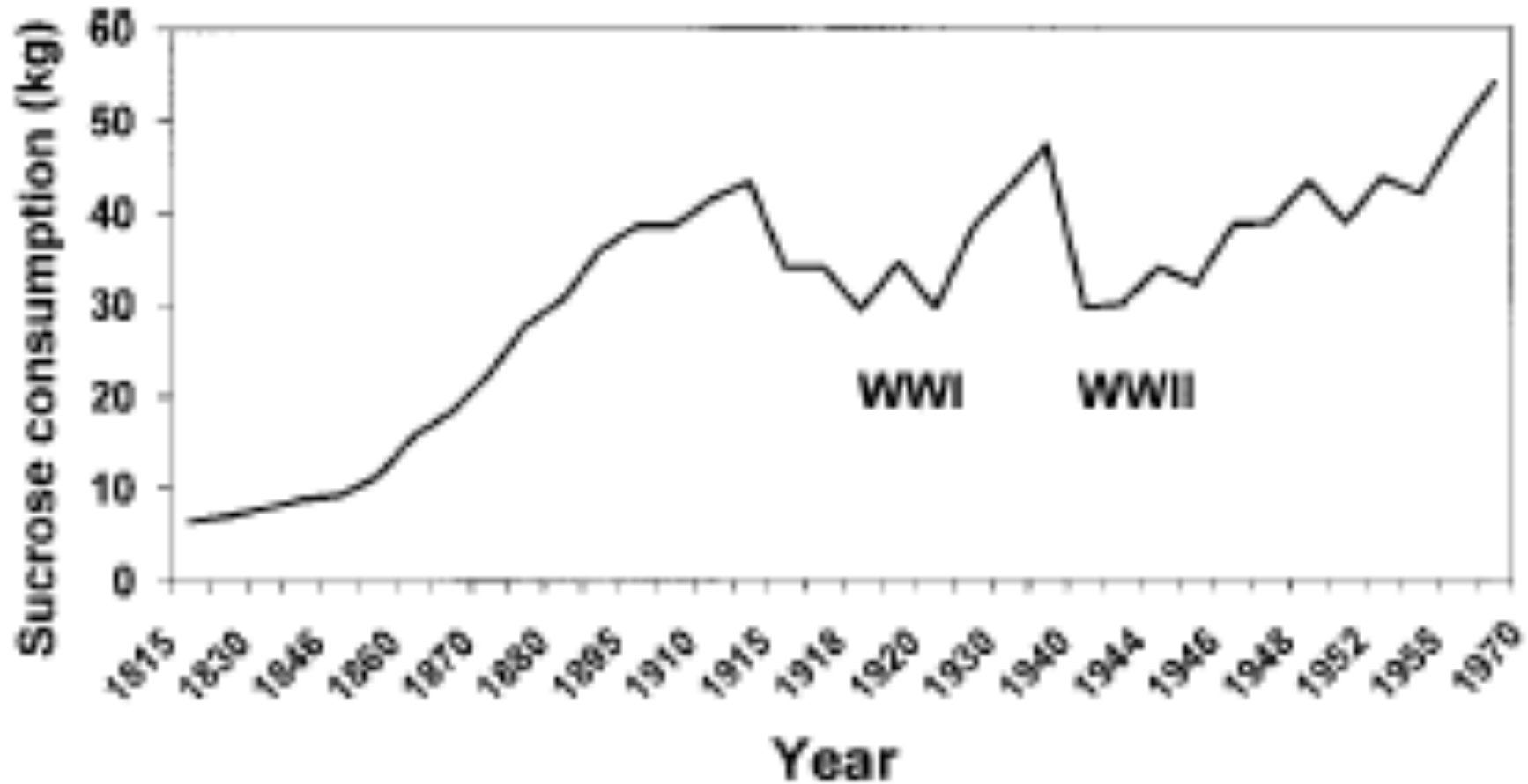
McDonald's

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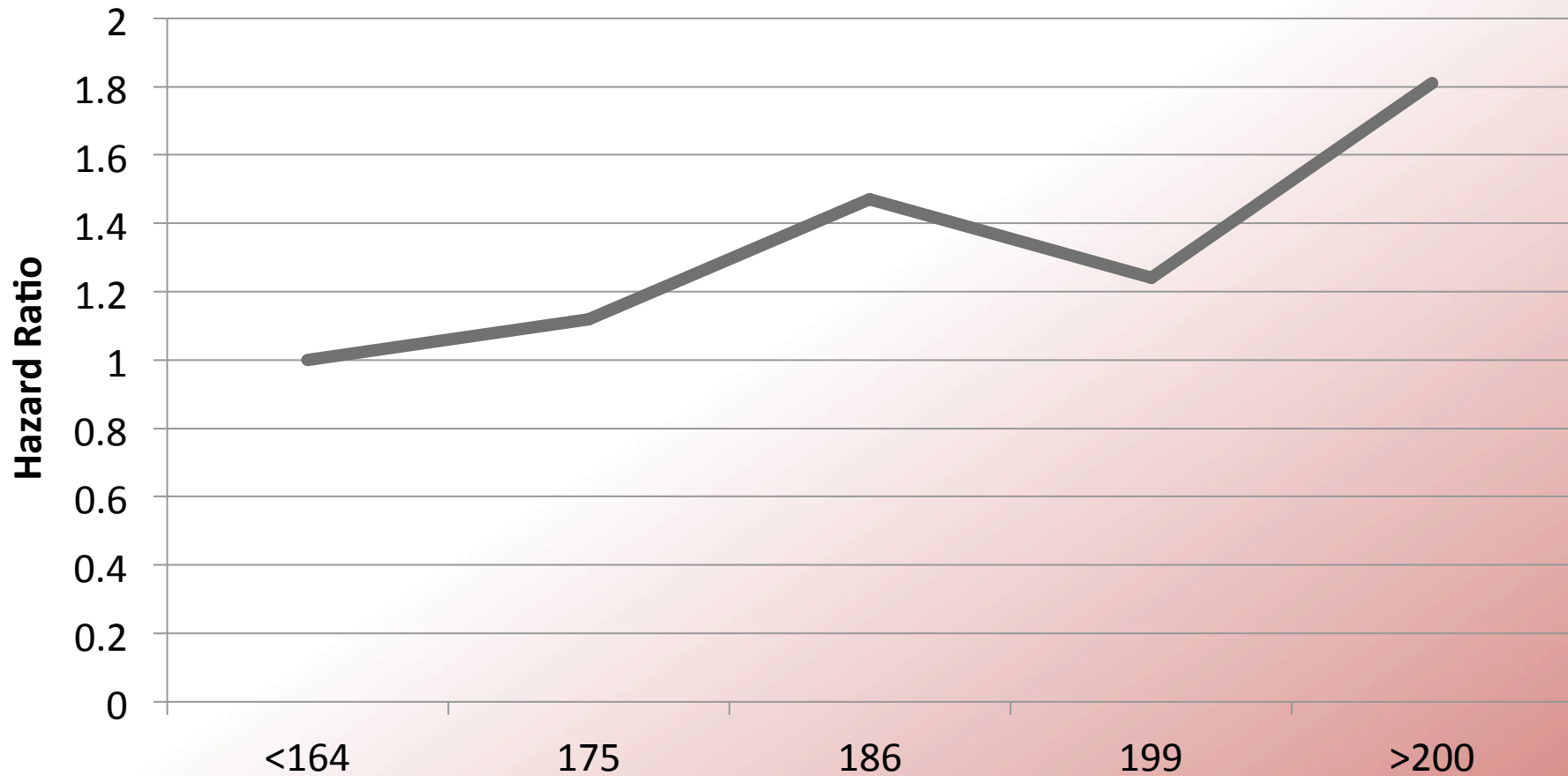
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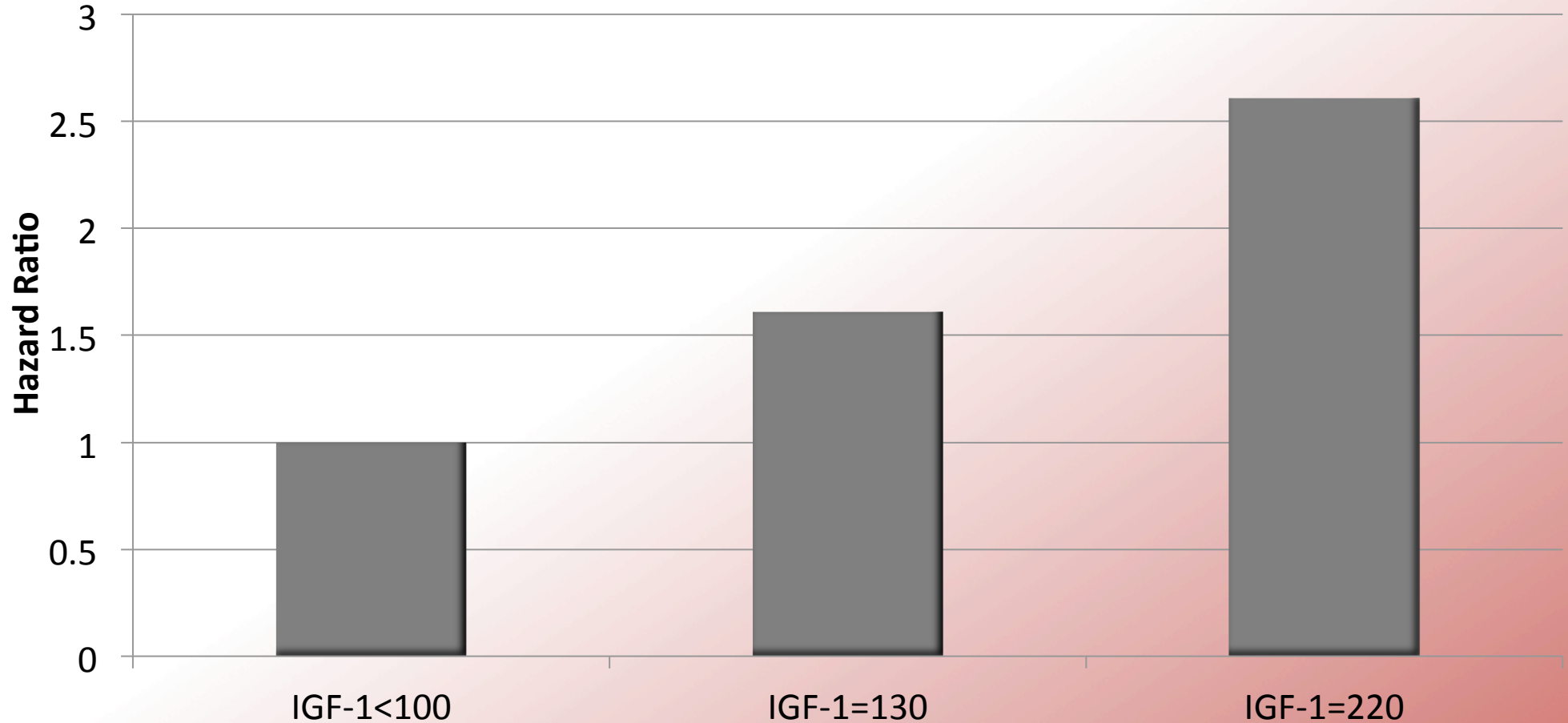
Refined Sugars



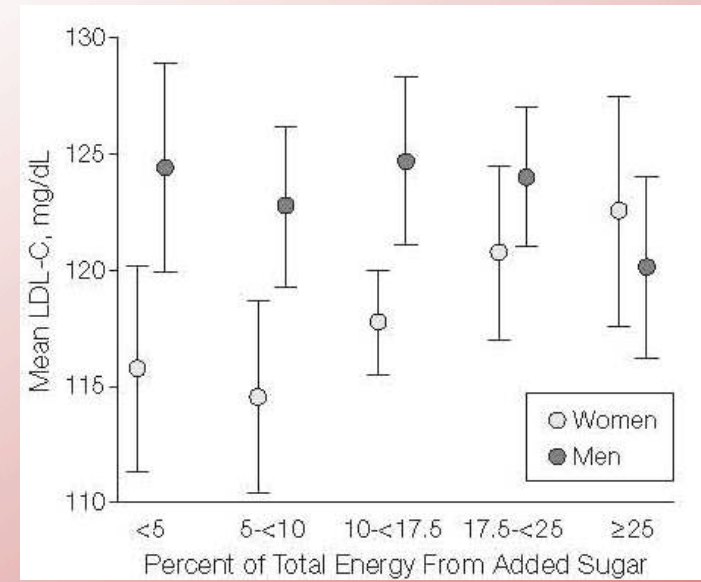
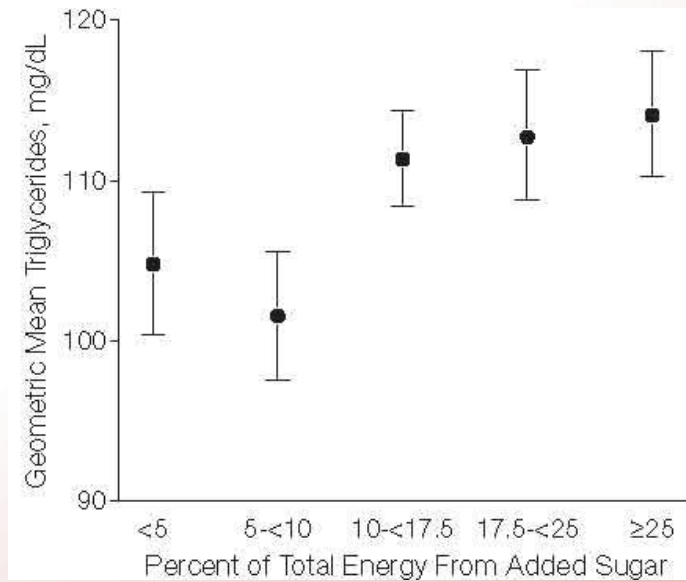
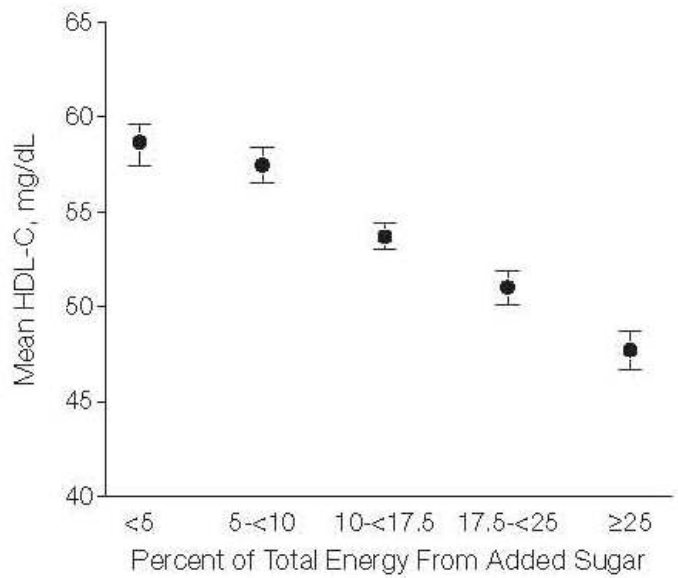
Glycemic Load and ER+/PR- Breast Cancer



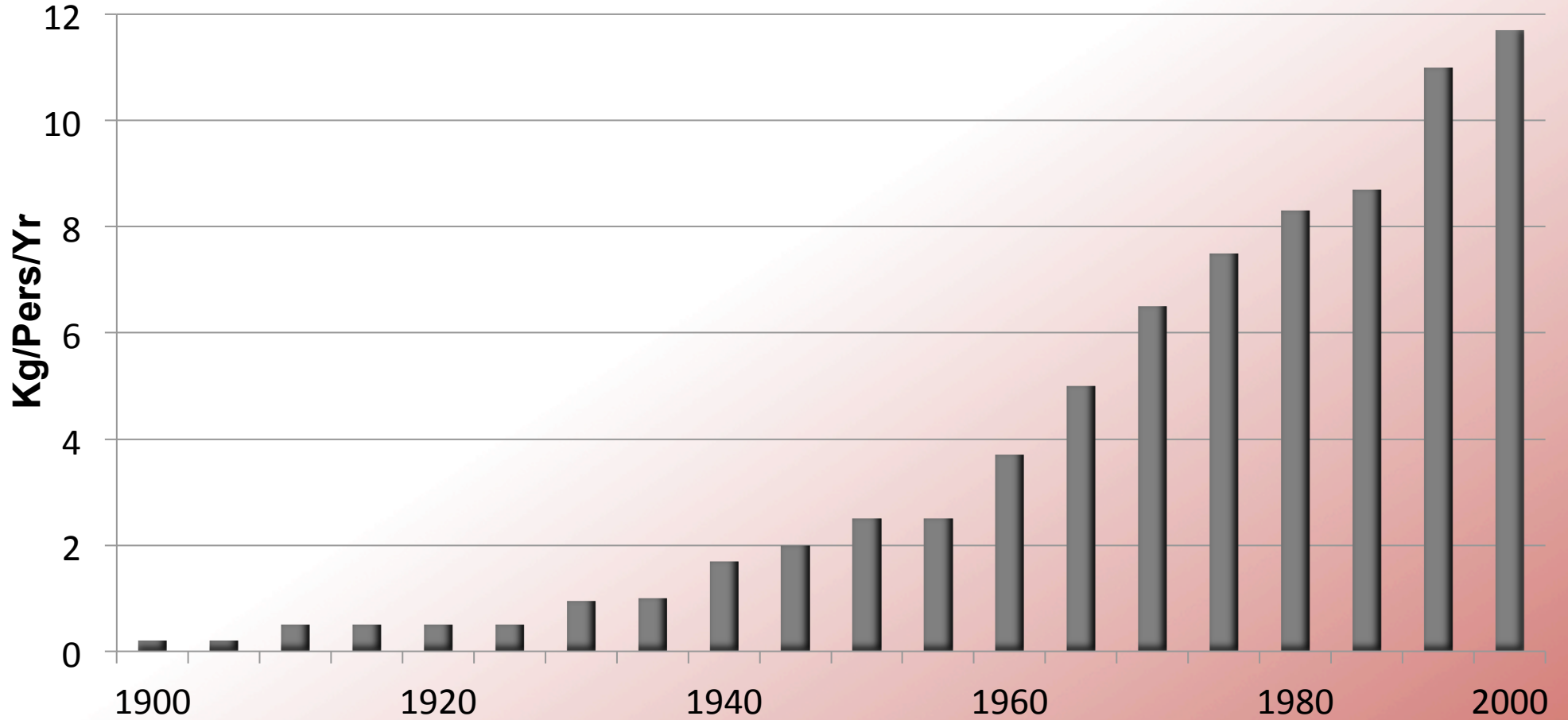
IGF-1 and Cancer Mortality



Caloric Sweetener Consumption

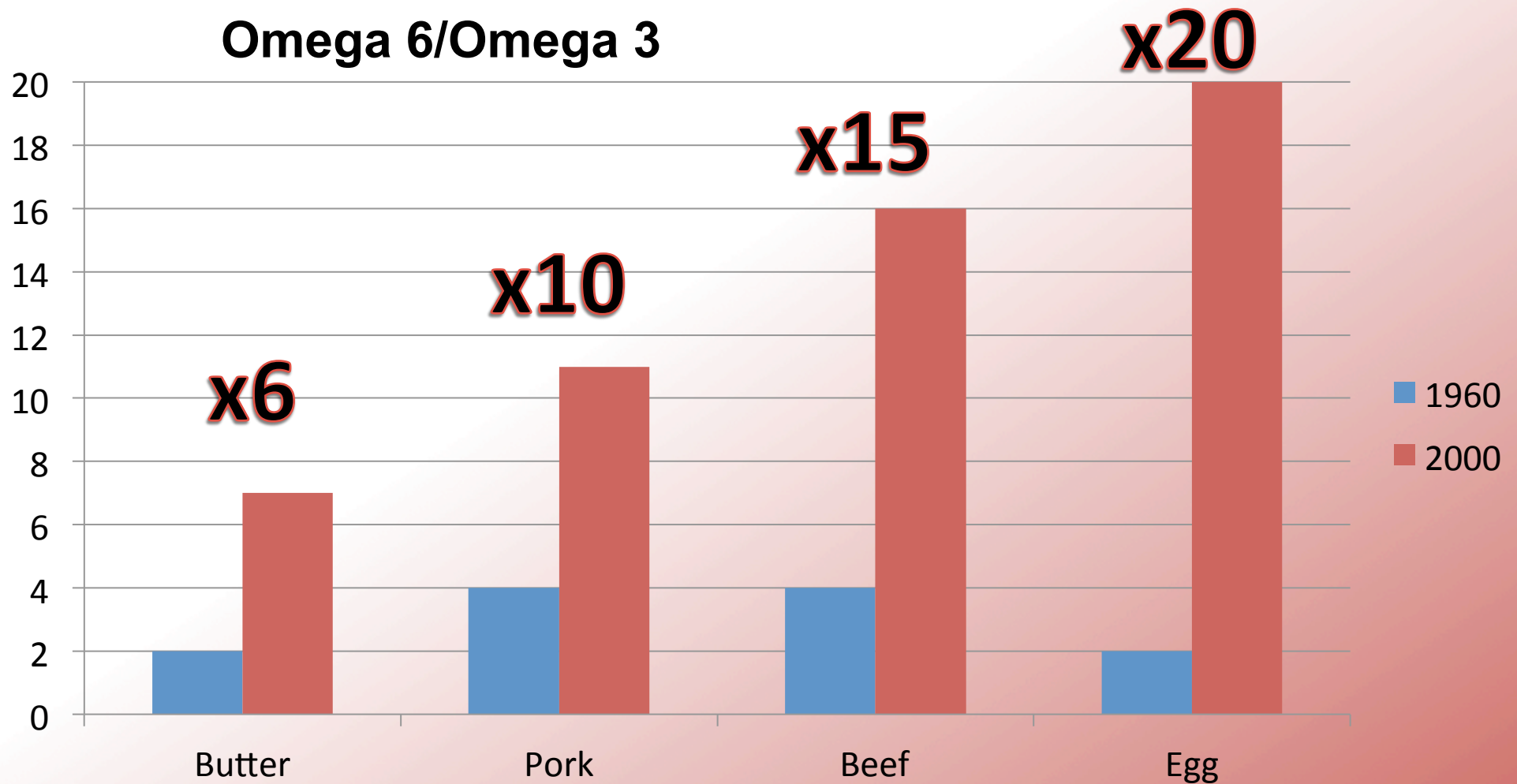


Soy Oil (omega-6)



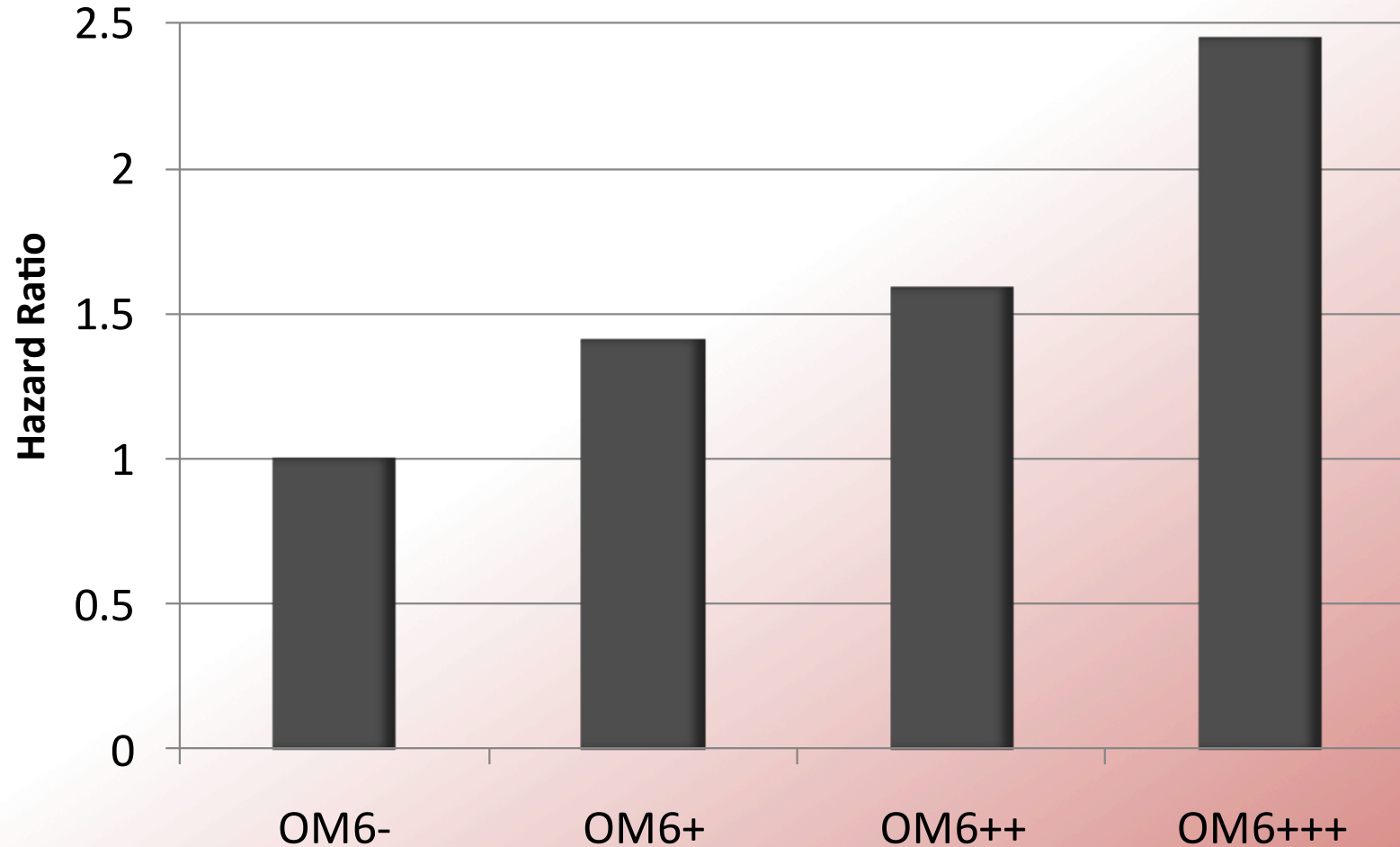


Transformation of Food Chain



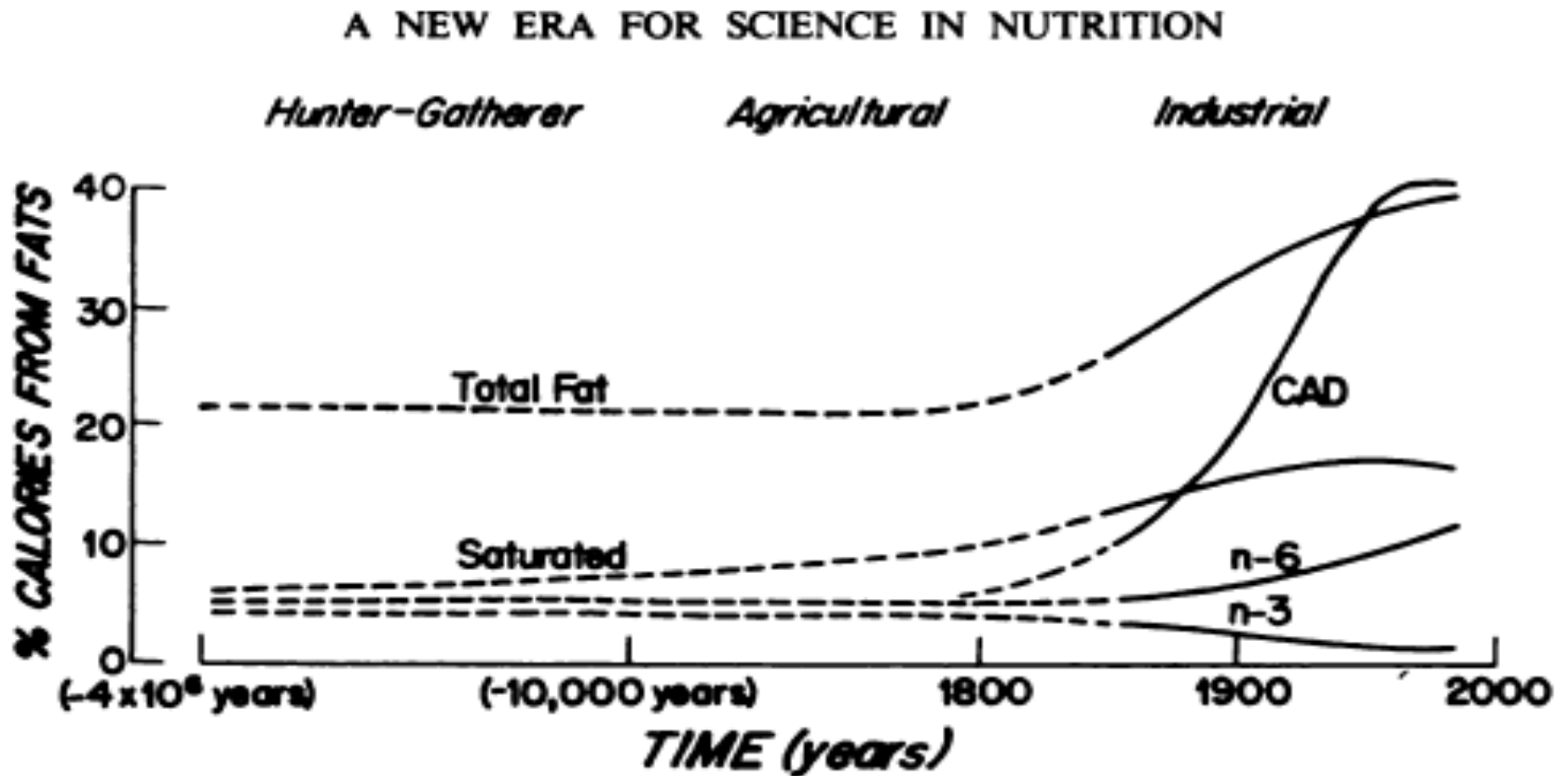
Advanced Breast Cancer

Breast Cancer Risk





Evolution of Diet



The Economist

DECEMBER 13TH-19TH 2003

www.economist.com

Gordon and Prudence: it's so over

PAGES 15 AND 36

Europe's constitutional squabble

PAGES 39 AND 44

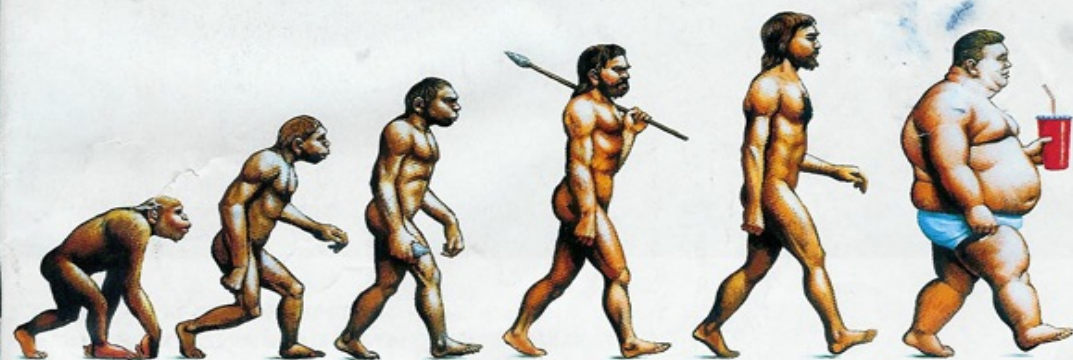
The future of flight

PAGES 91-93

A SURVEY OF FOOD

AFTER PAGE 58

The shape of things to come



£3.00



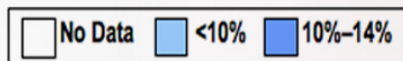
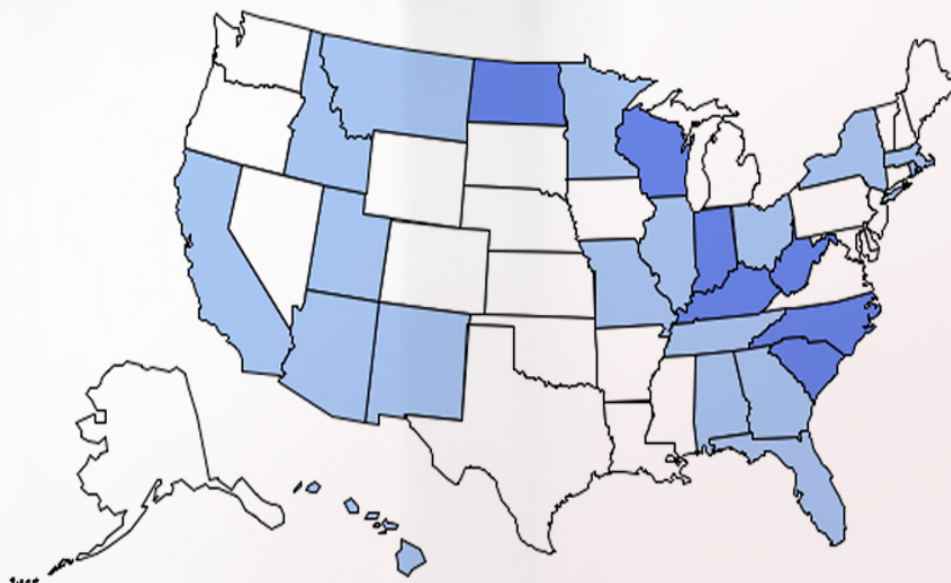
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Obesity Trends* Among U.S. Adults

BRFSS, 1986

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



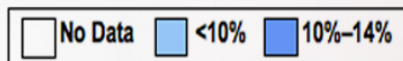
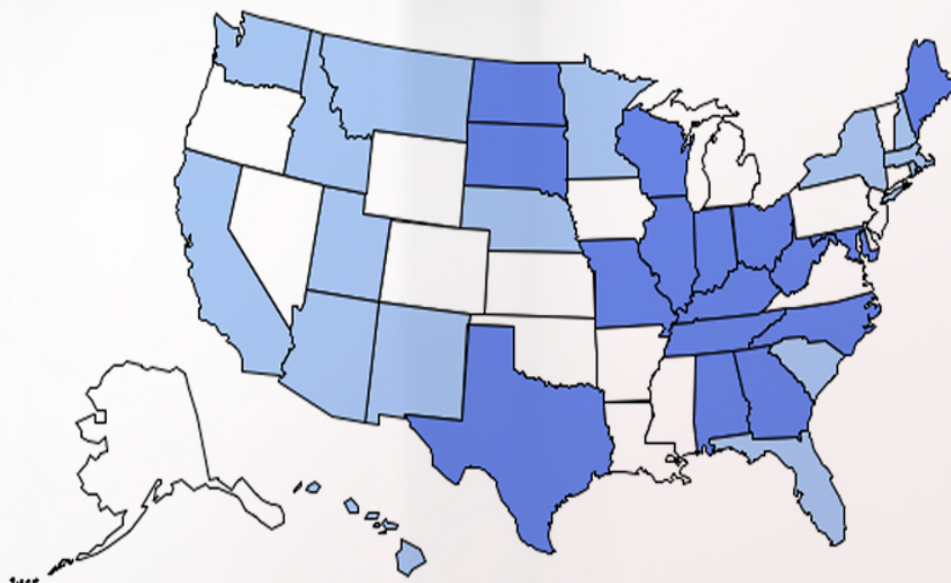
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1987

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



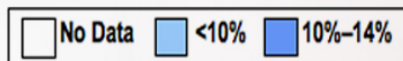
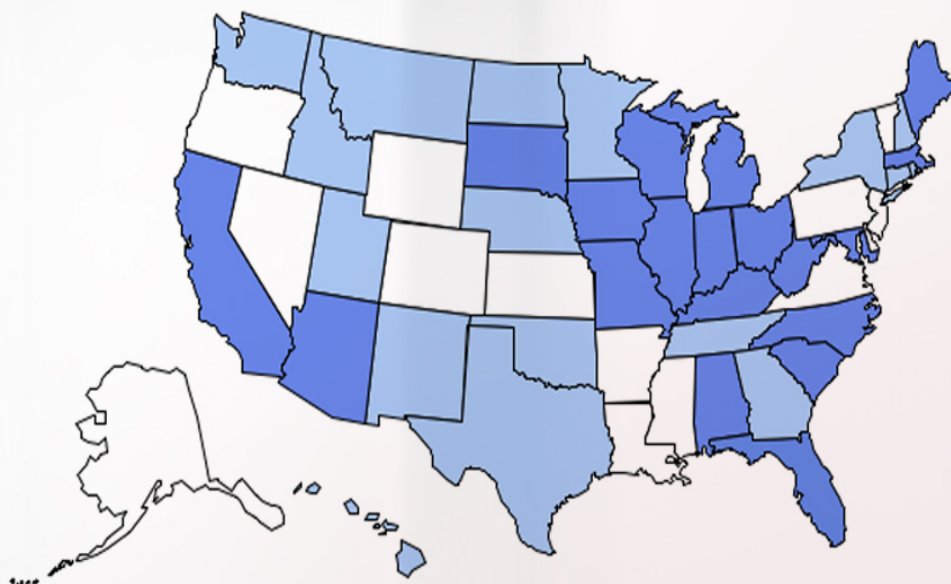
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1988

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



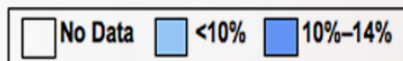
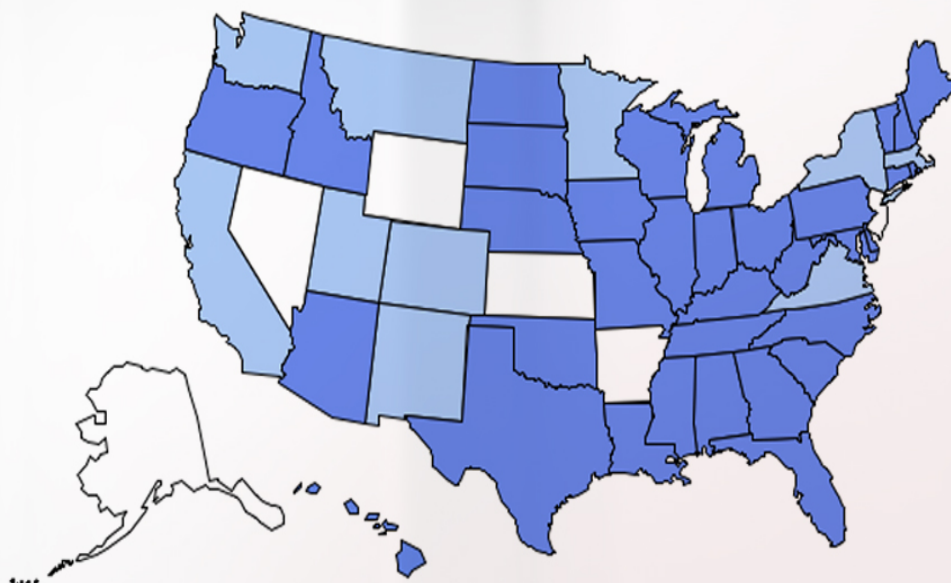
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1990

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



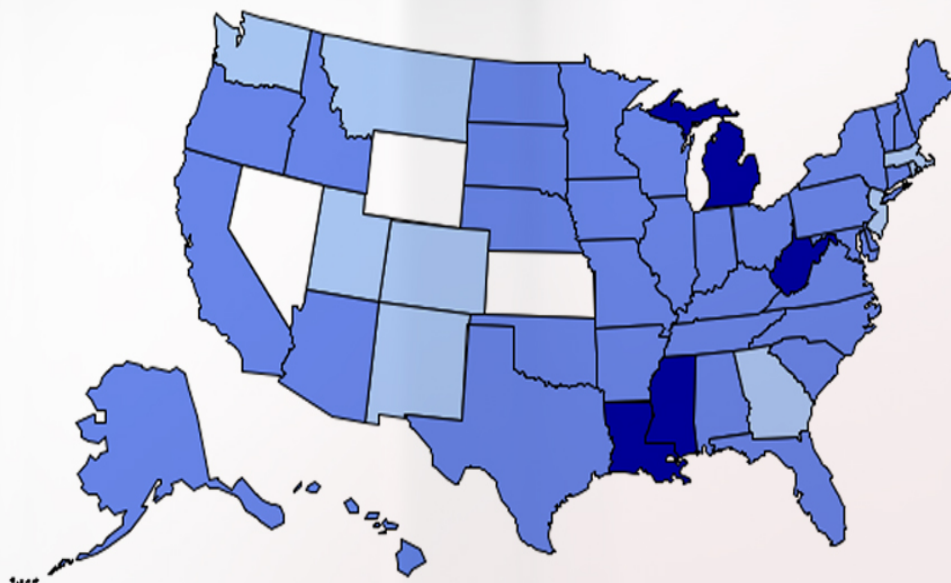
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1991

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

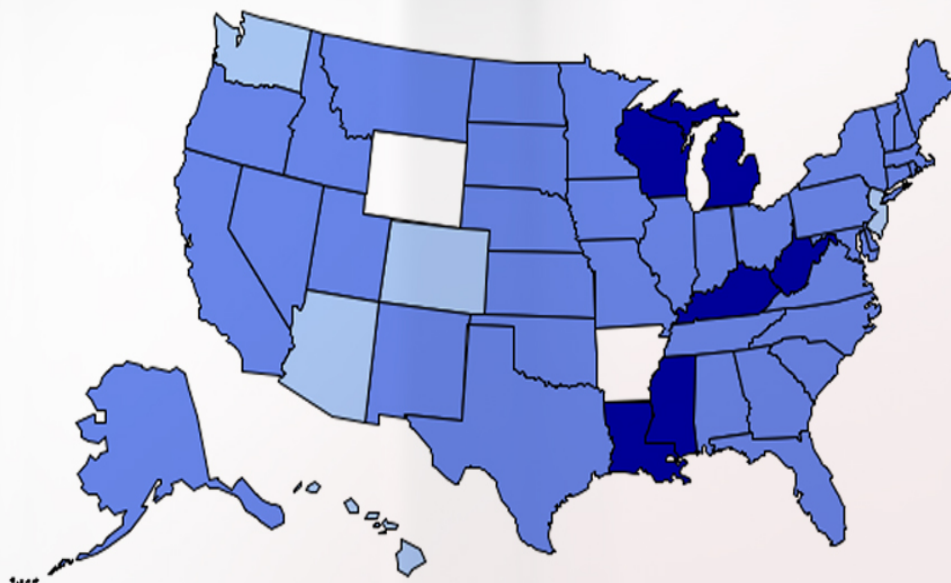


Source: CDC Behavioral Risk Factor Surveillance System.

Obesity Trends* Among U.S. Adults

BRFSS, 1992

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

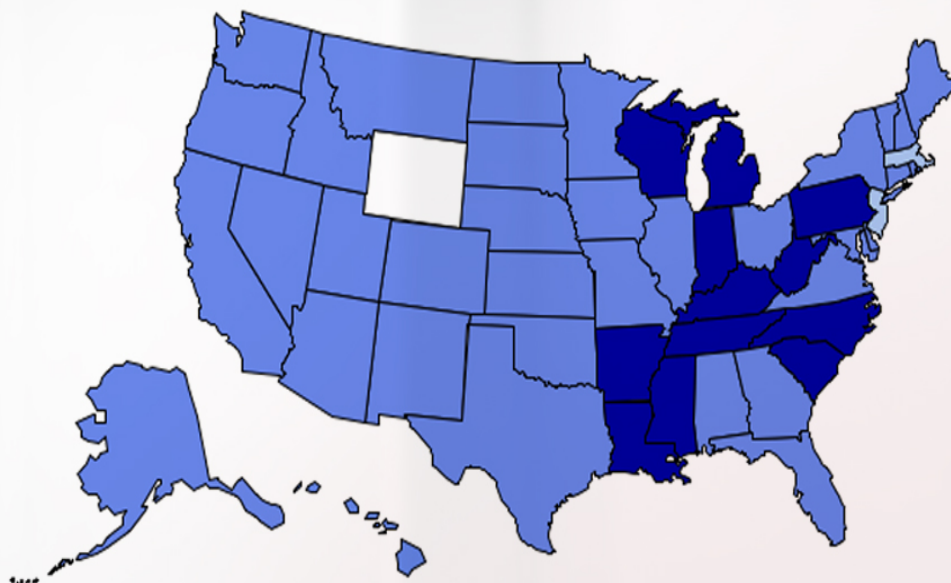


Source: CDC Behavioral Risk Factor Surveillance System.

Obesity Trends* Among U.S. Adults

BRFSS, 1993

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



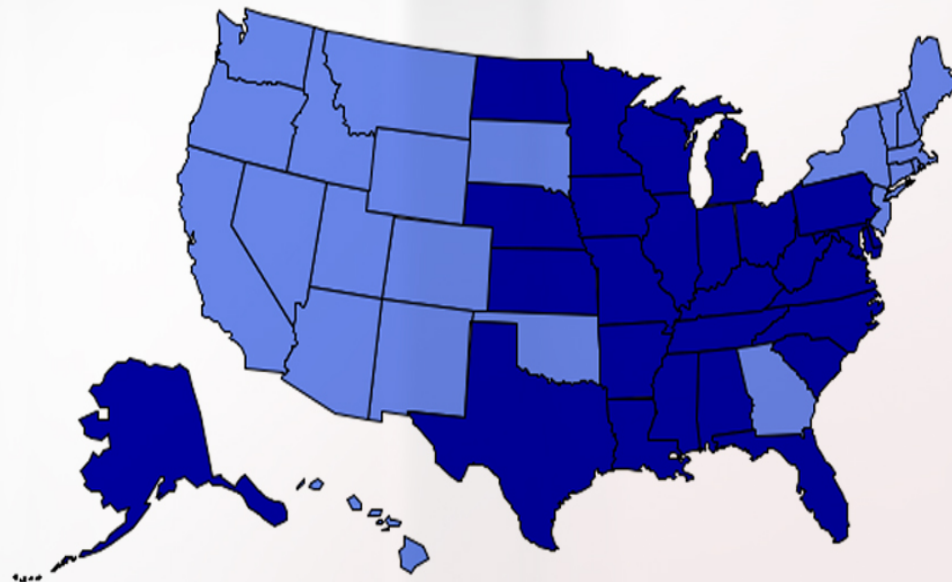
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1995

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



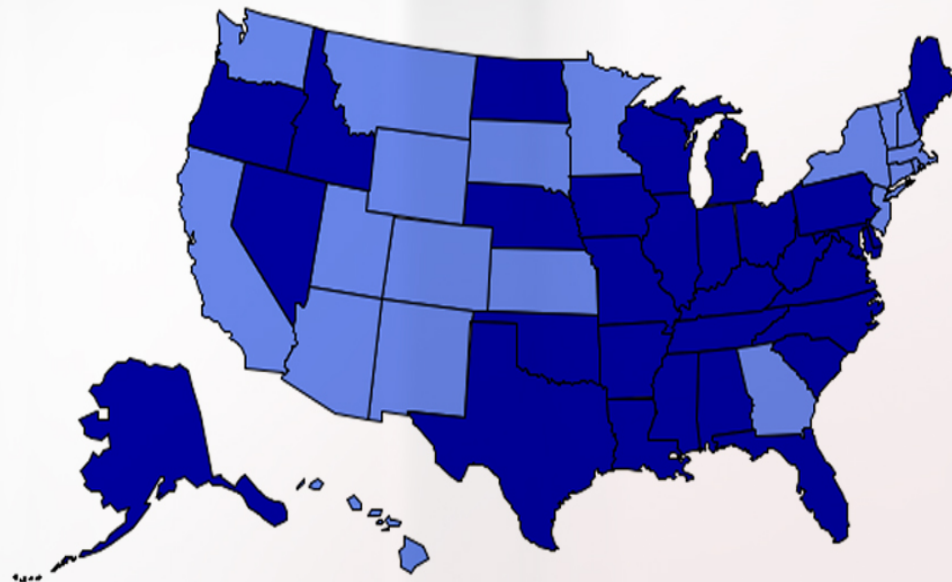
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1996

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



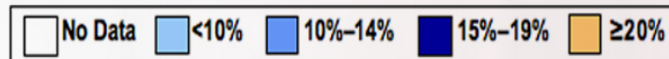
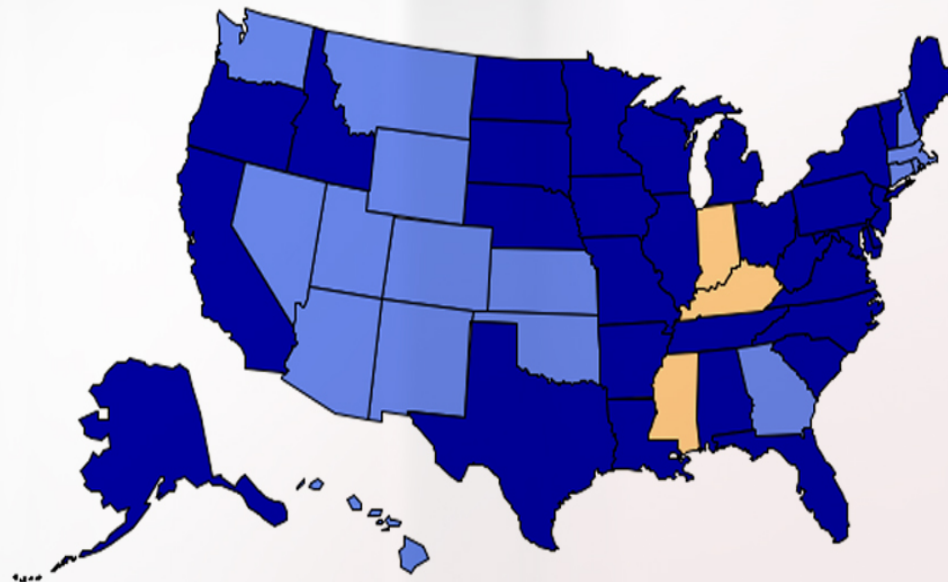
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1997

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



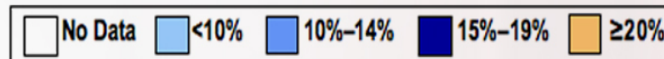
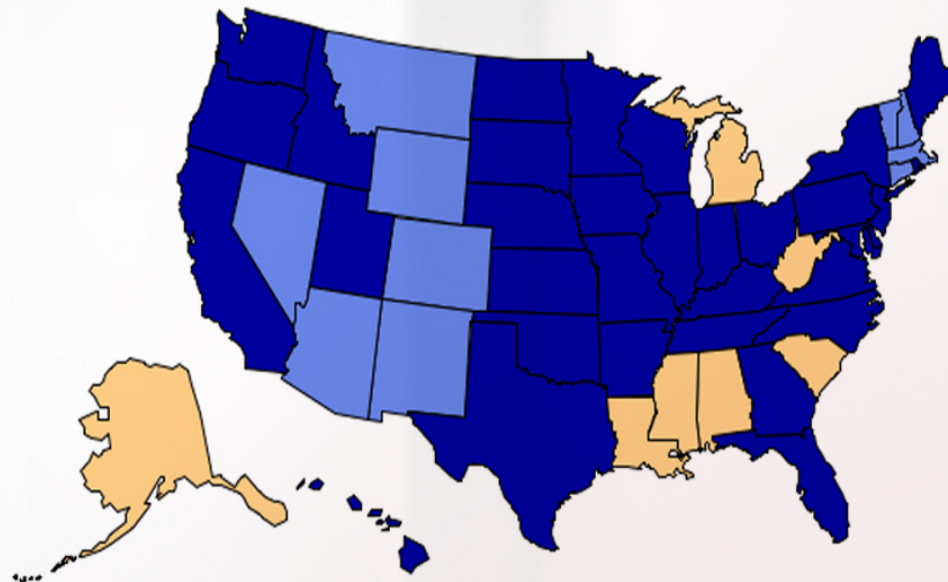
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 1998

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

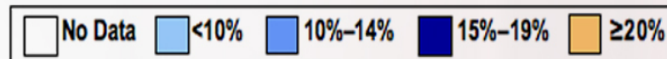
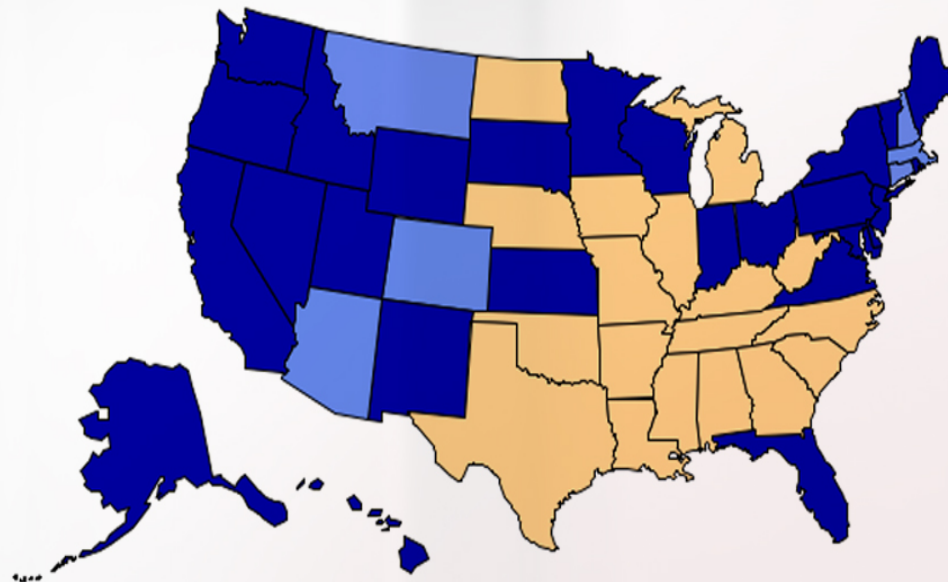


Source: CDC Behavioral Risk Factor Surveillance System.

Obesity Trends* Among U.S. Adults

BRFSS, 1999

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



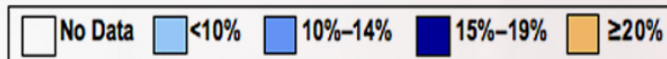
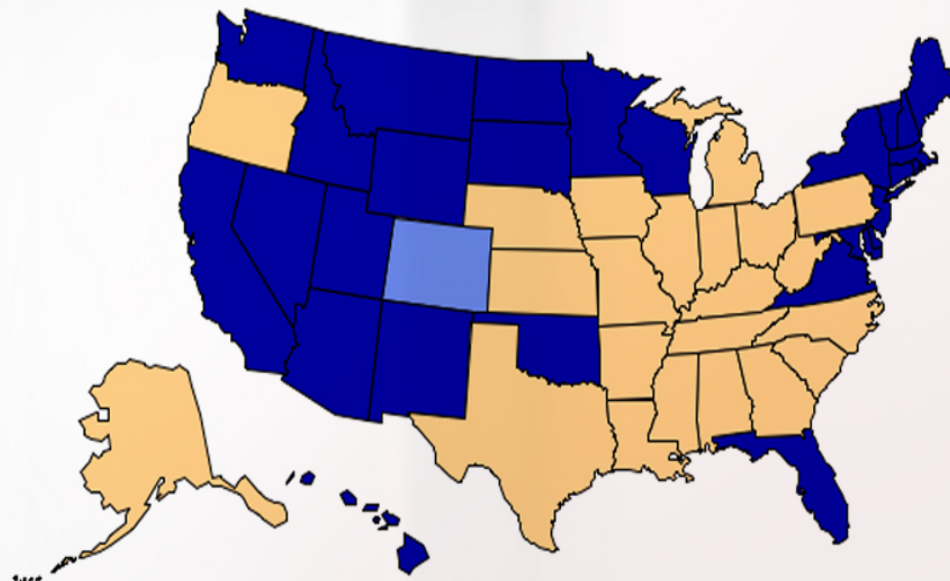
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 2000

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



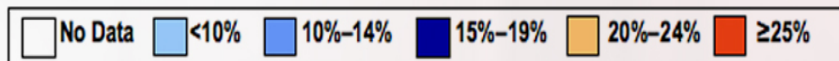
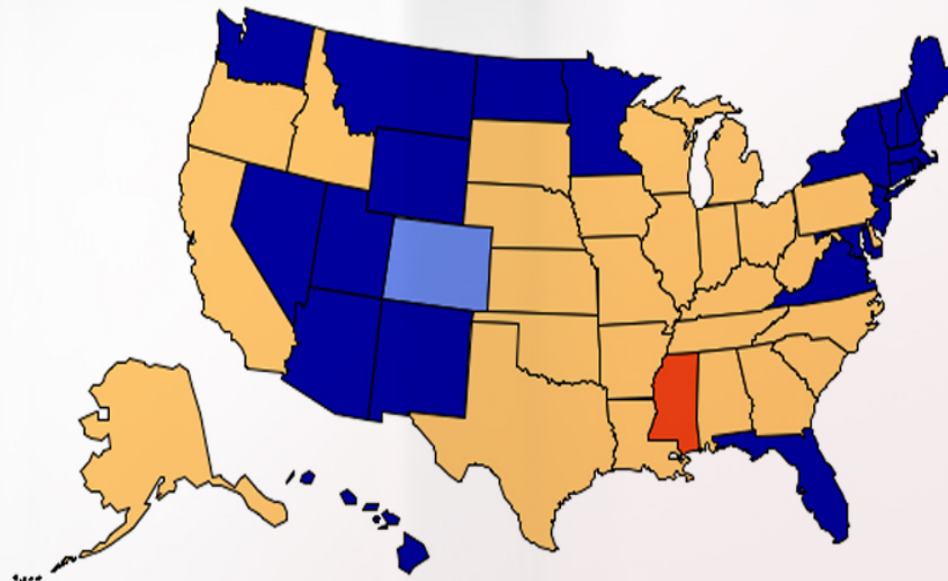
Source: CDC Behavioral Risk Factor Surveillance System.



Obesity Trends* Among U.S. Adults

BRFSS, 2001

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

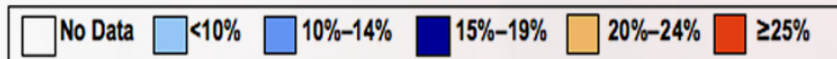
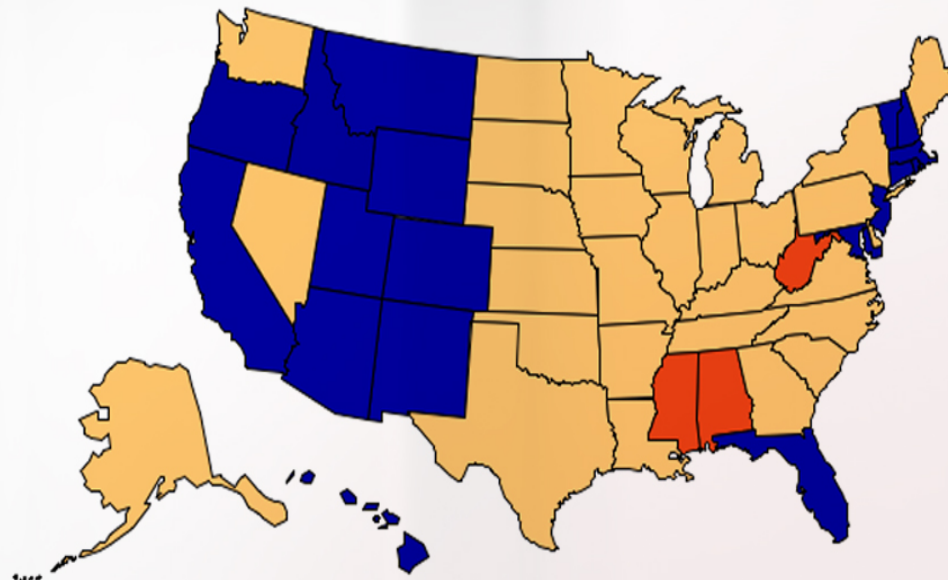


Source: CDC Behavioral Risk Factor Surveillance System.

Obesity Trends* Among U.S. Adults

BRFSS, 2002

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

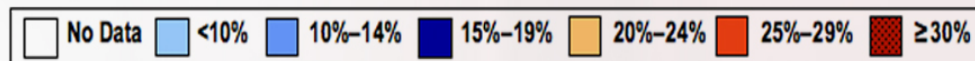
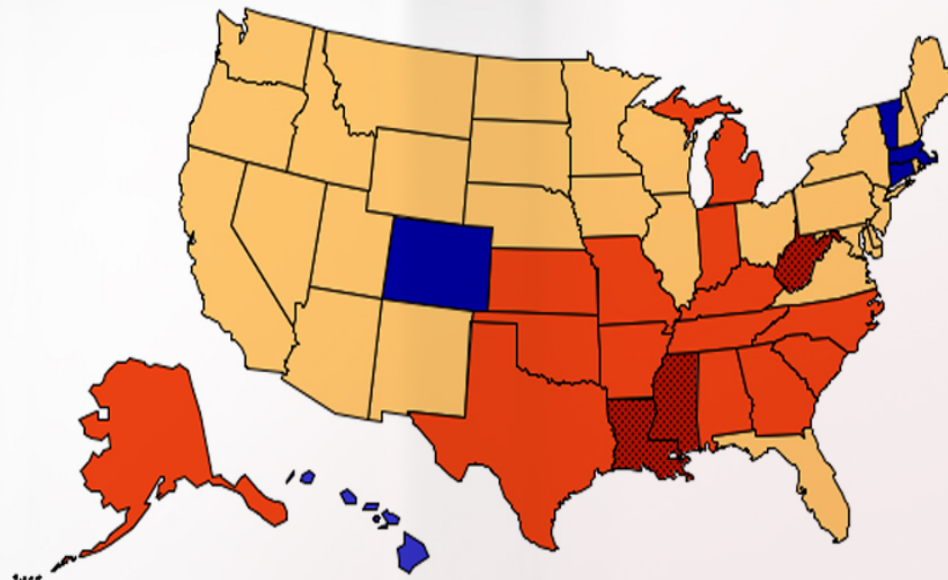


Source: CDC Behavioral Risk Factor Surveillance System.

Obesity Trends* Among U.S. Adults

BRFSS, 2005

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

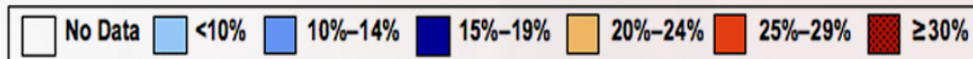
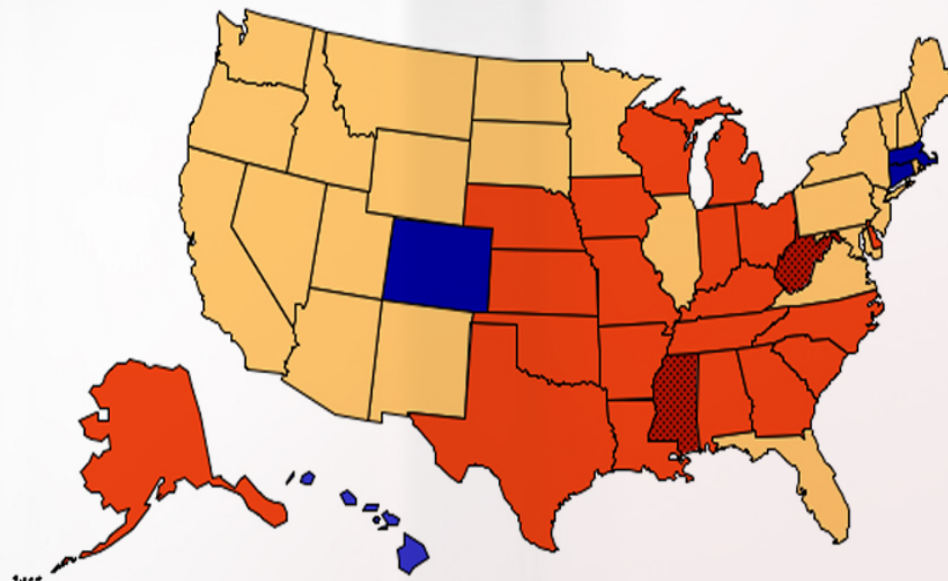


Source: Behavioral Risk Factor Surveillance System, CDC.

Obesity Trends* Among U.S. Adults

BRFSS, 2006

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

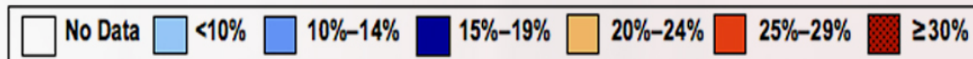
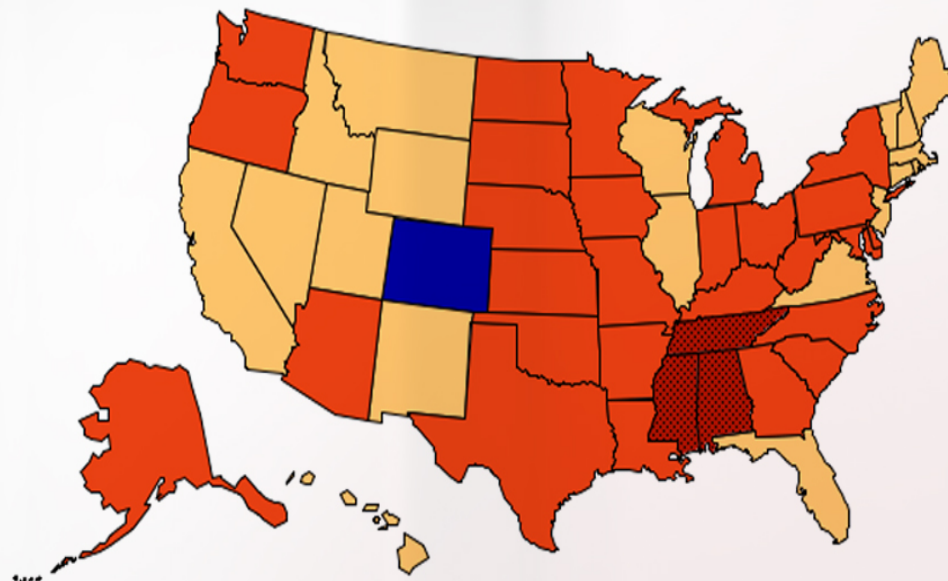


Source: Behavioral Risk Factor Surveillance System, CDC.

Obesity Trends* Among U.S. Adults

BRFSS, 2007

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



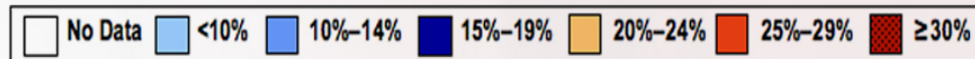
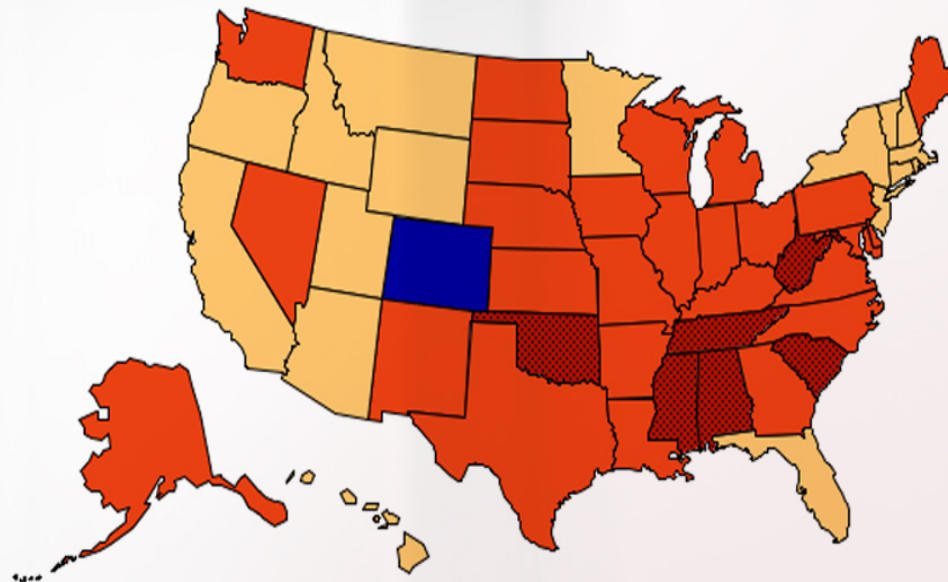
Source: Behavioral Risk Factor Surveillance System, CDC.



Obesity Trends* Among U.S. Adults

BRFSS, 2008

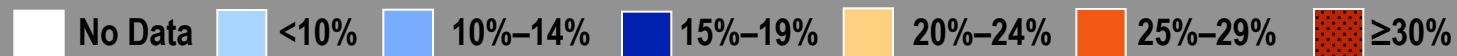
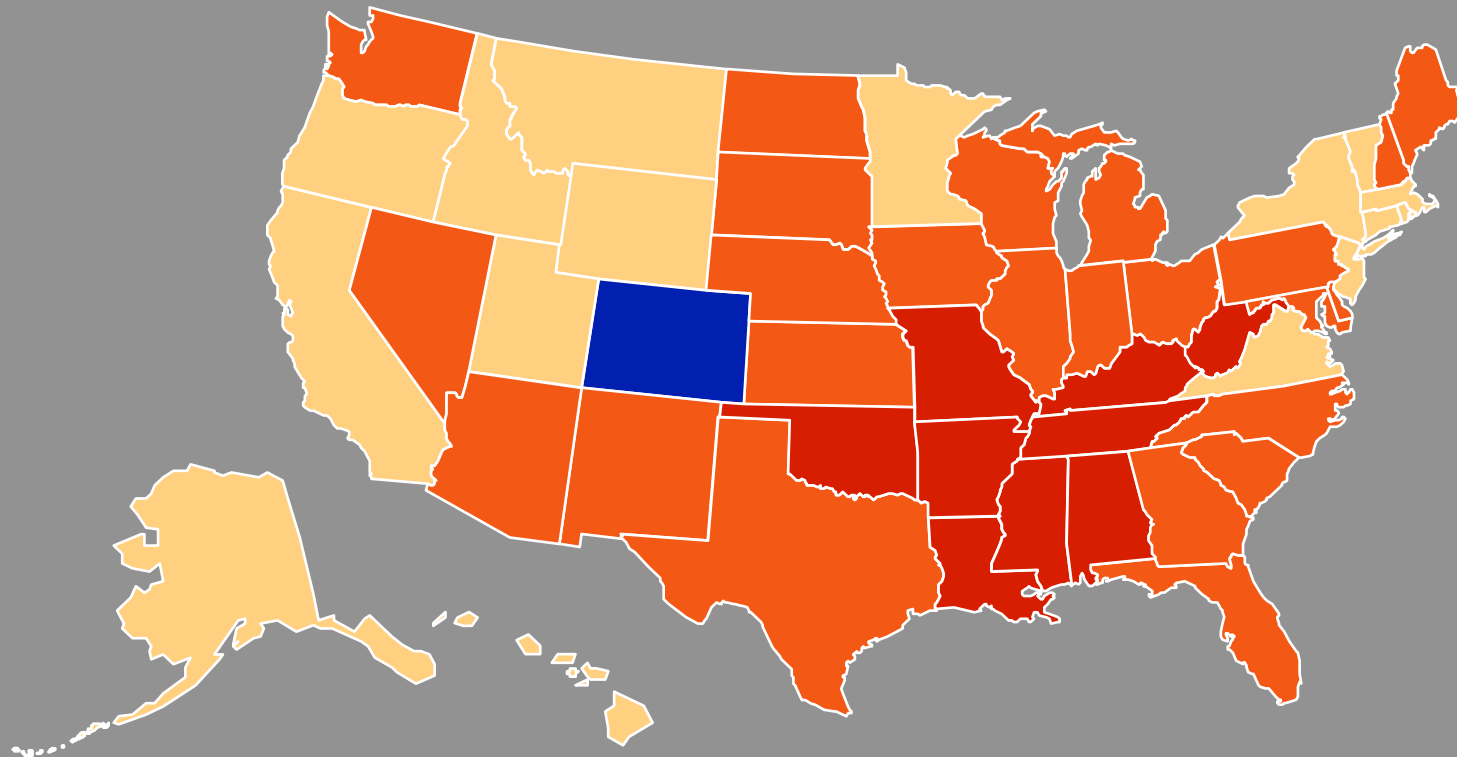
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.

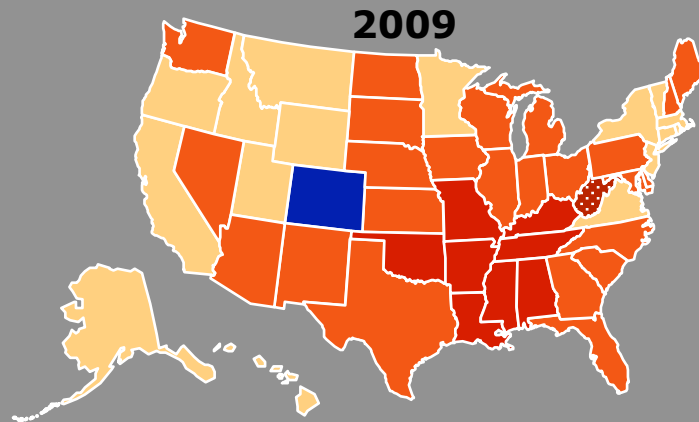
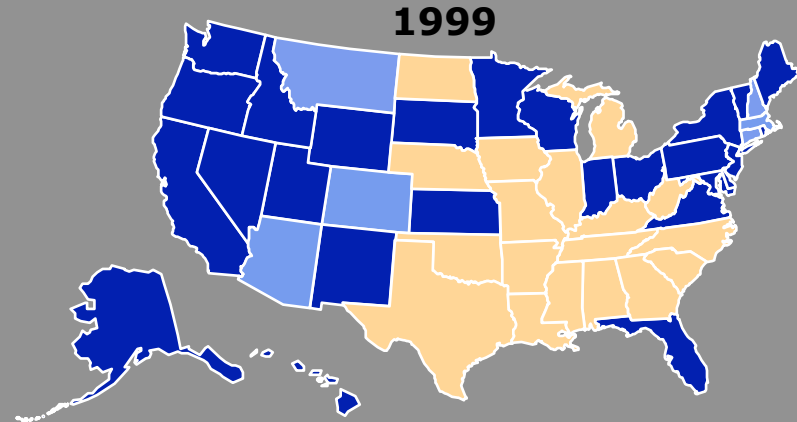
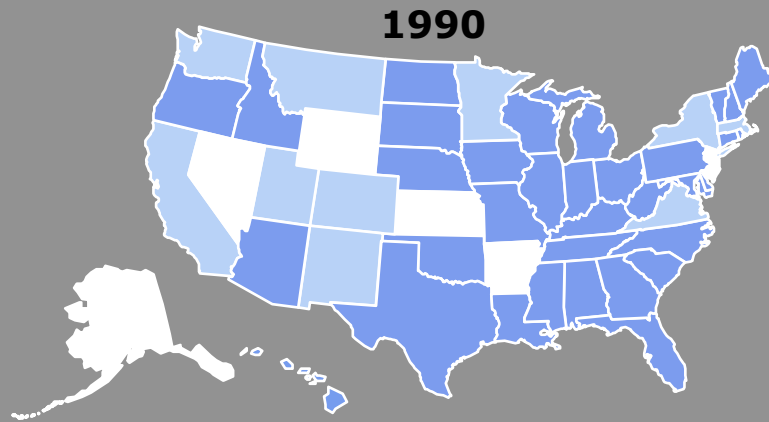
Obesity Trends* Among U.S. Adults BRFSS, 2009

(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)

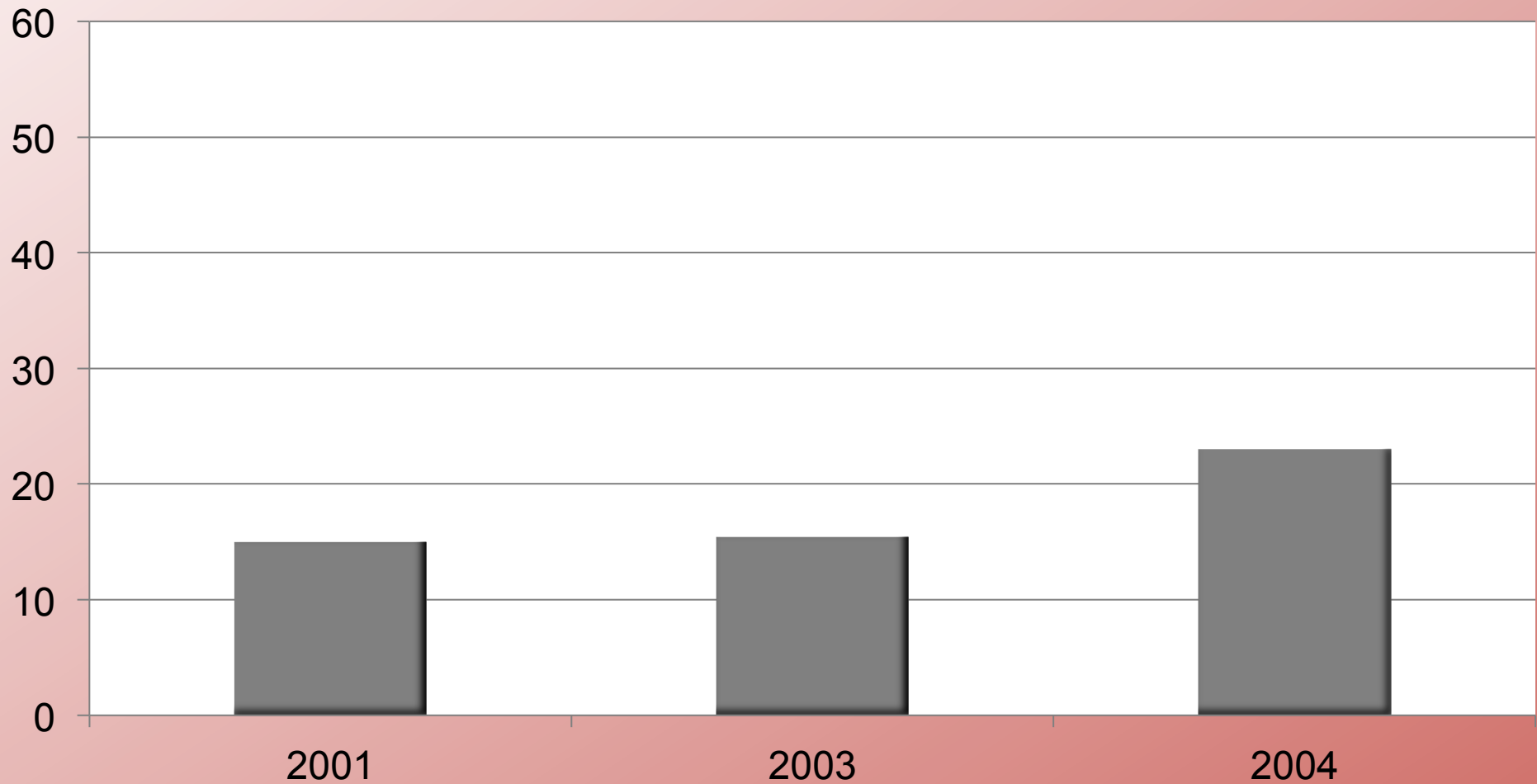


Obesity Trends* Among U.S. Adults BRFSS, 1990, 1999, 2009

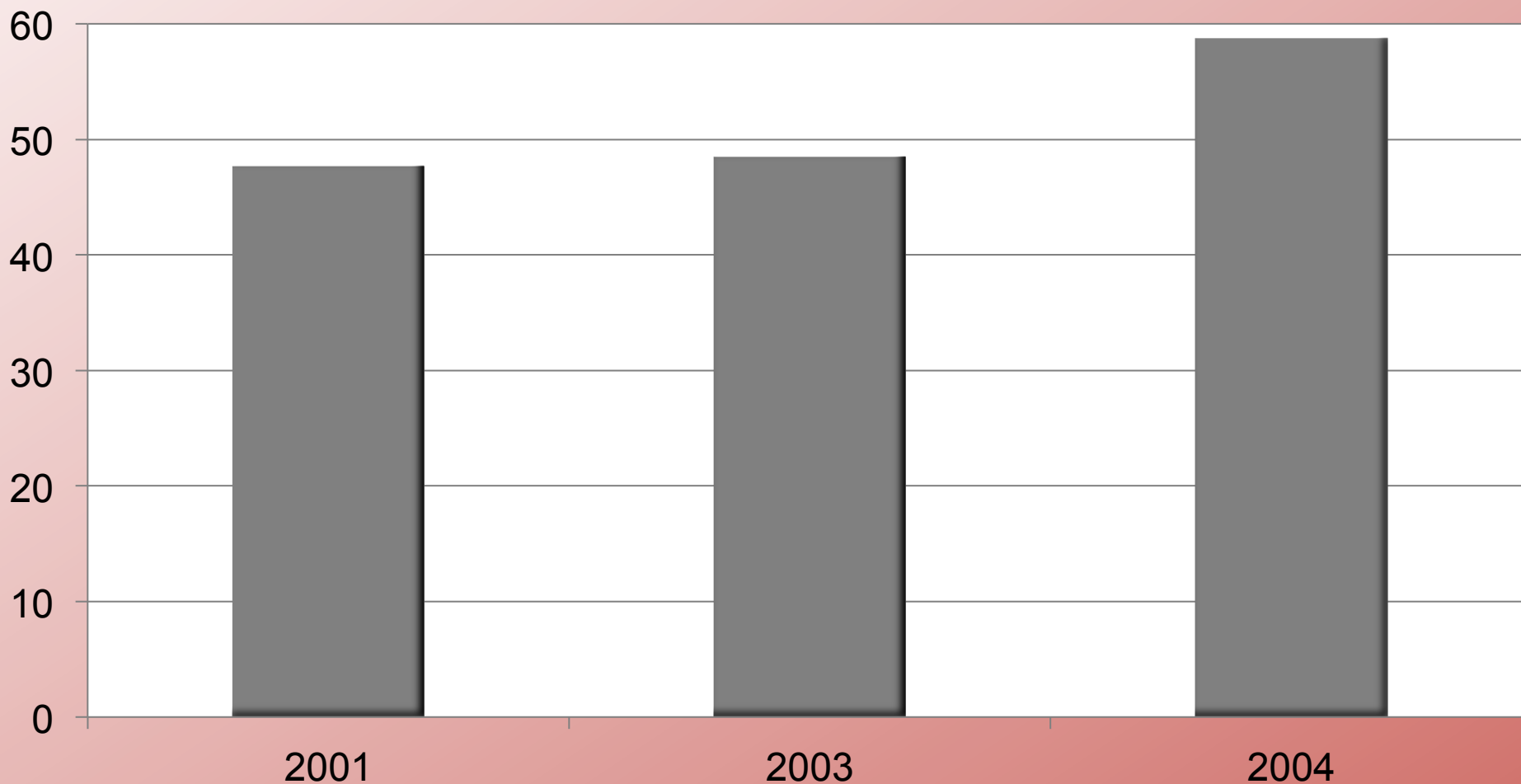
(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



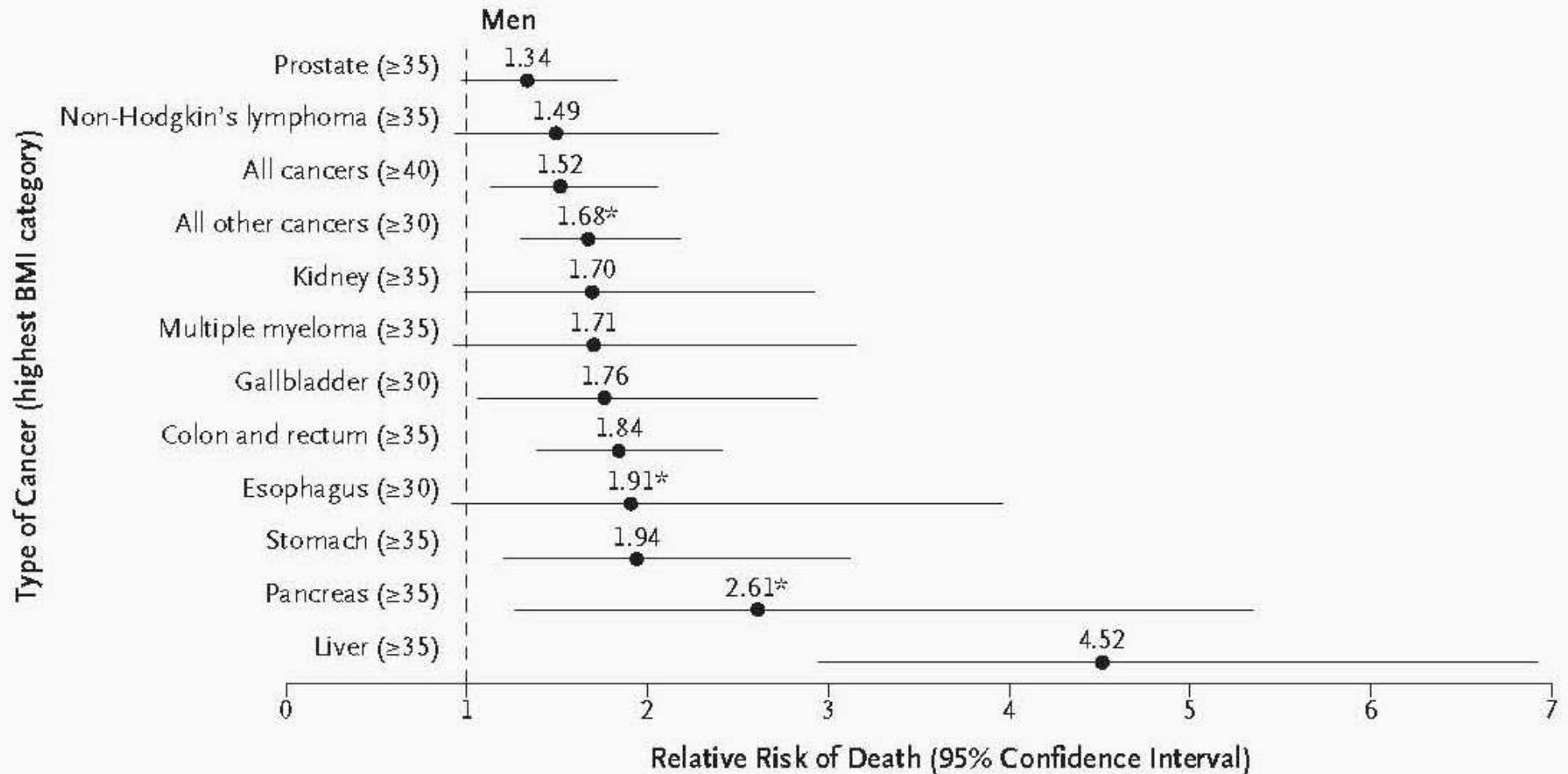
Prevalence of Obesity Among Canadian Adults (%)



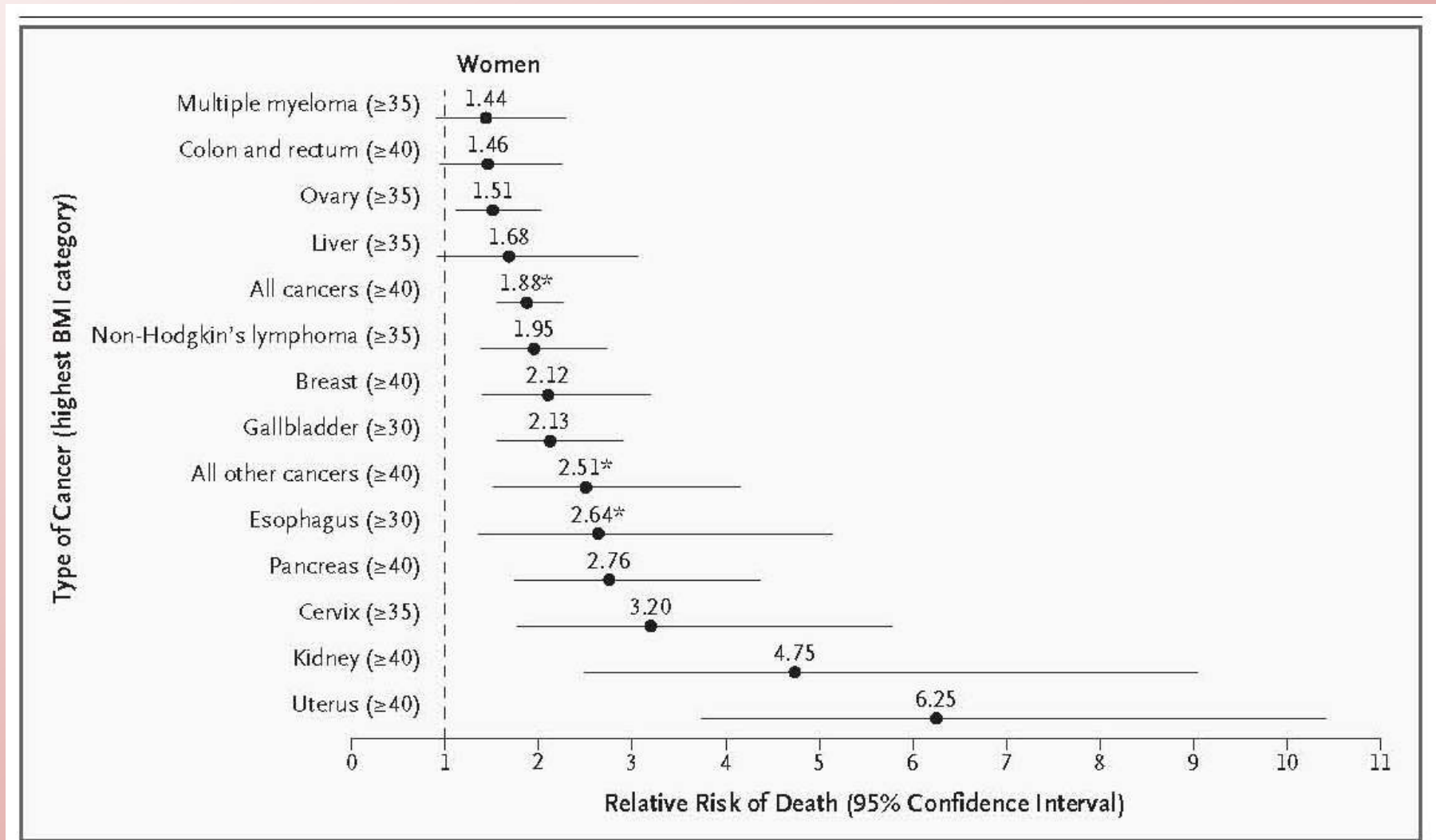
Prevalence of Overweight and Obesity Among Canadian Adults (%)



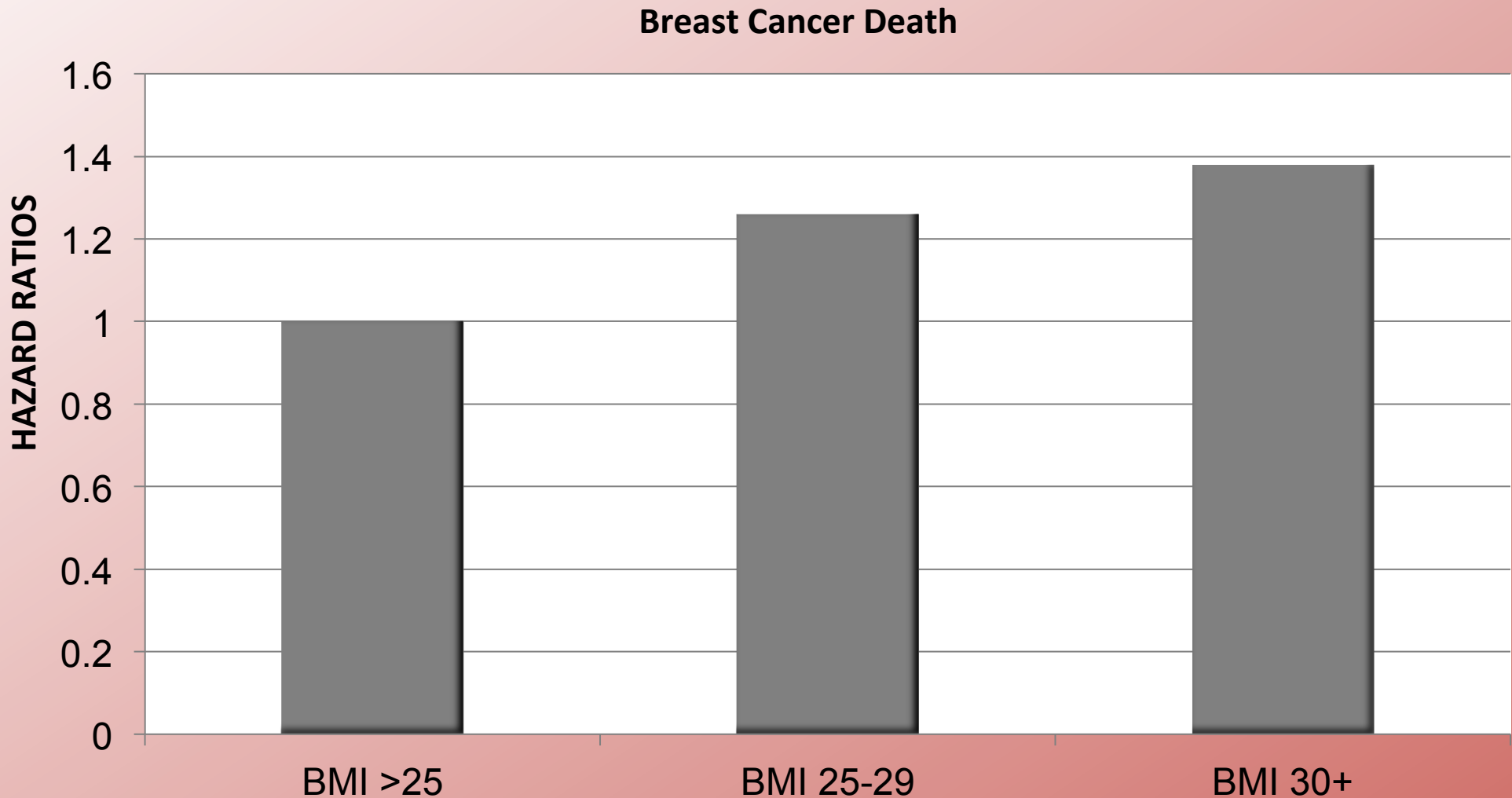
Obesity and Mortality from Cancer



Obesity and Mortality from Cancer

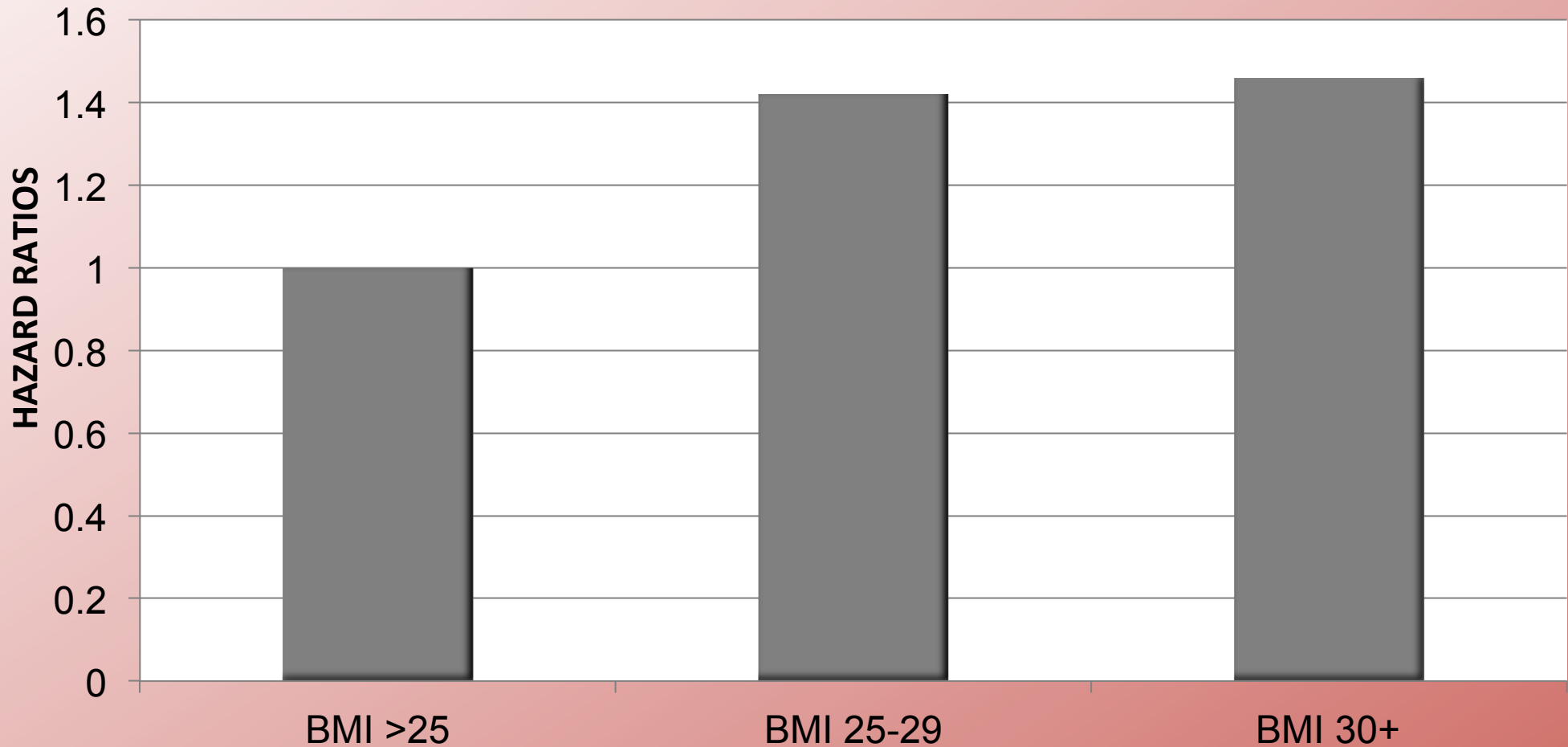


Obesity and Breast Cancer



Obesity and Breast Cancer

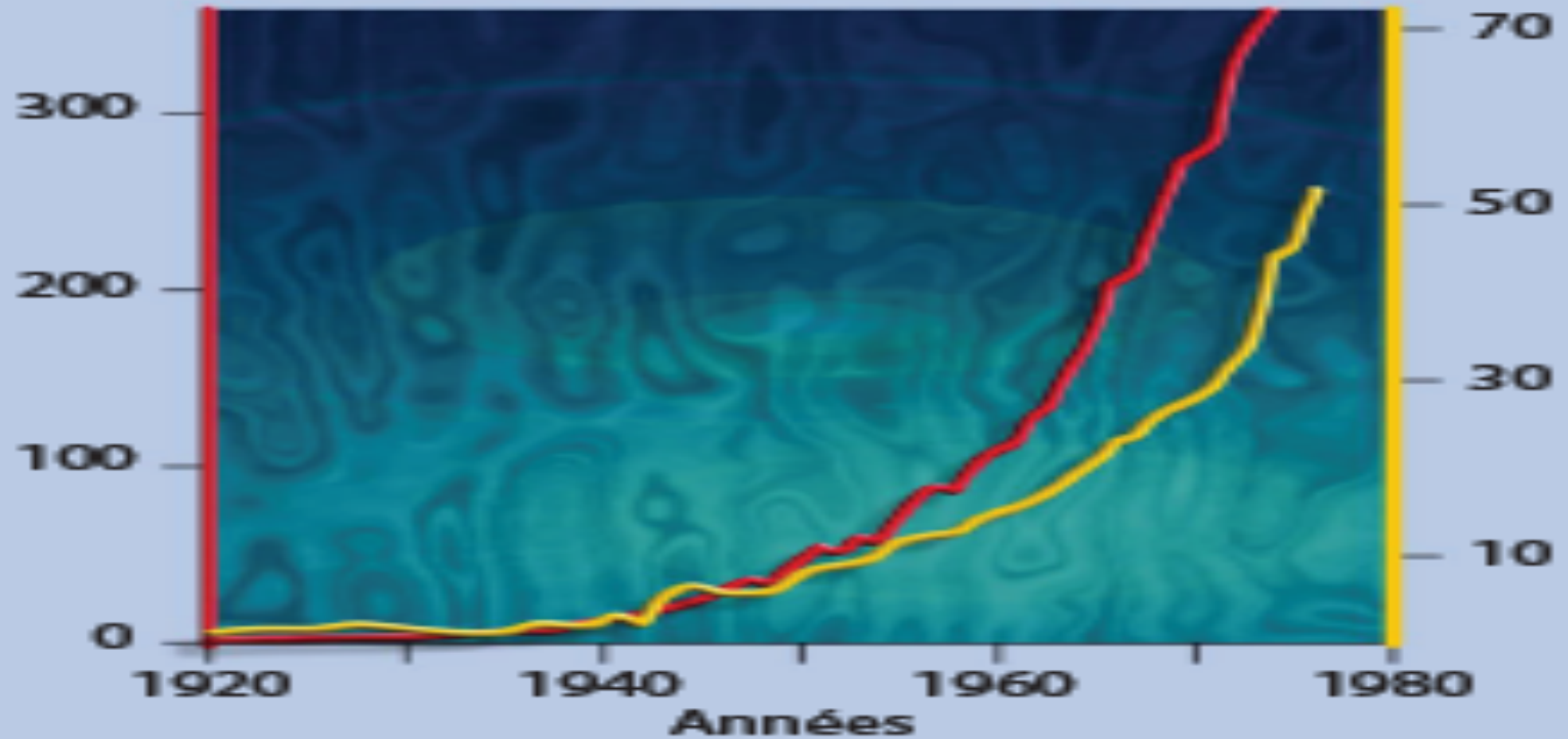
Locoregional Recurrence



Chemical Contamination

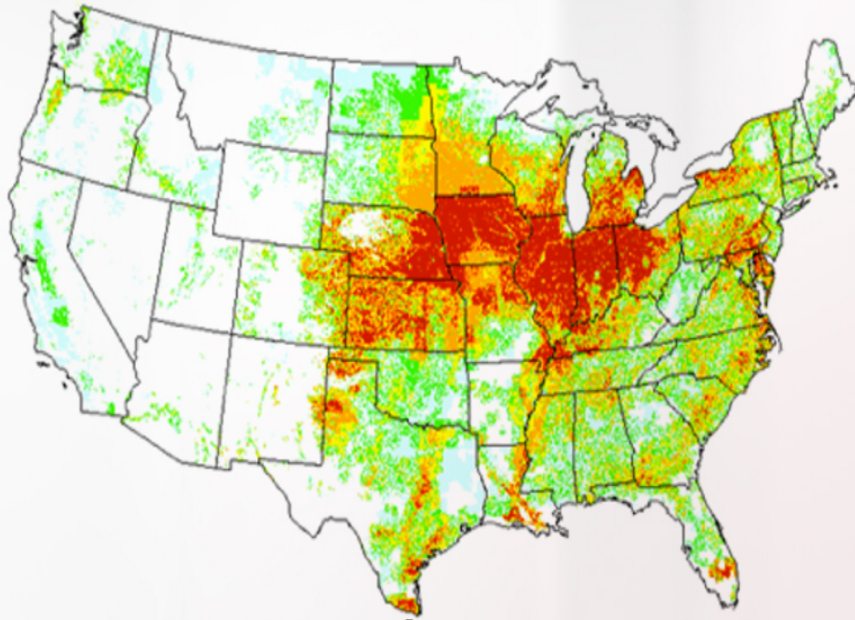
Synthetic organic chemicals

All chemical and allied products



Pesticides

ATRAZINE- herbicide
1997 estimated annual agricultural use

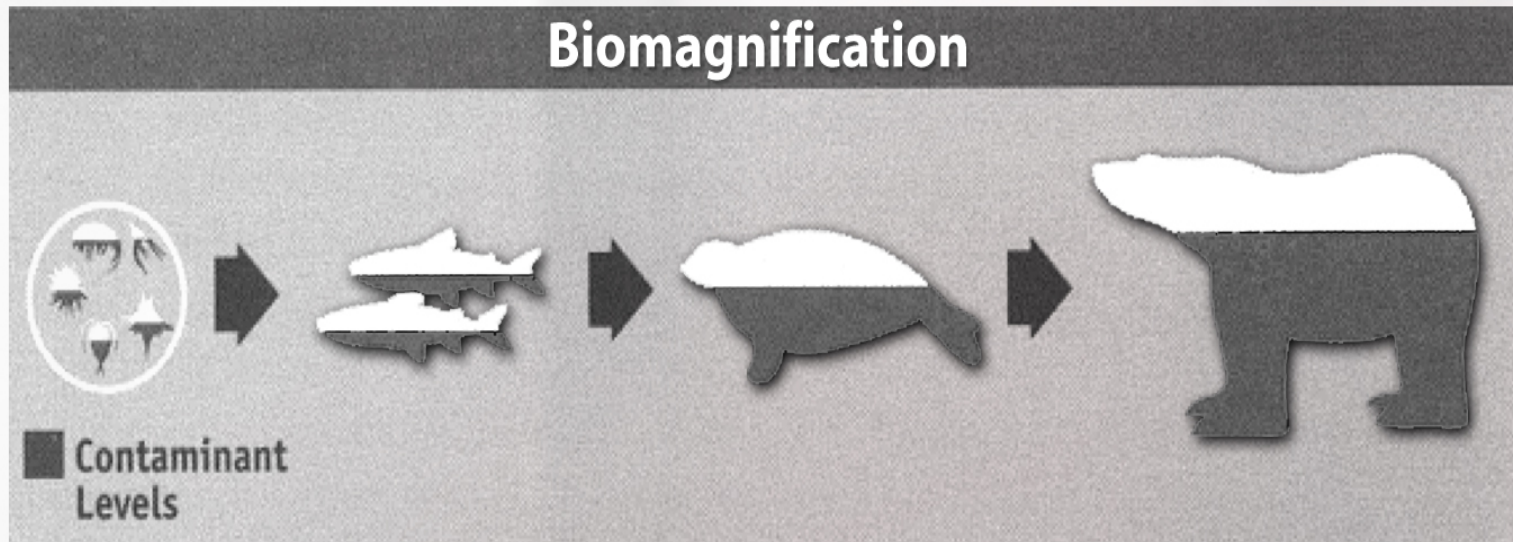


Average annual use of
active ingredient

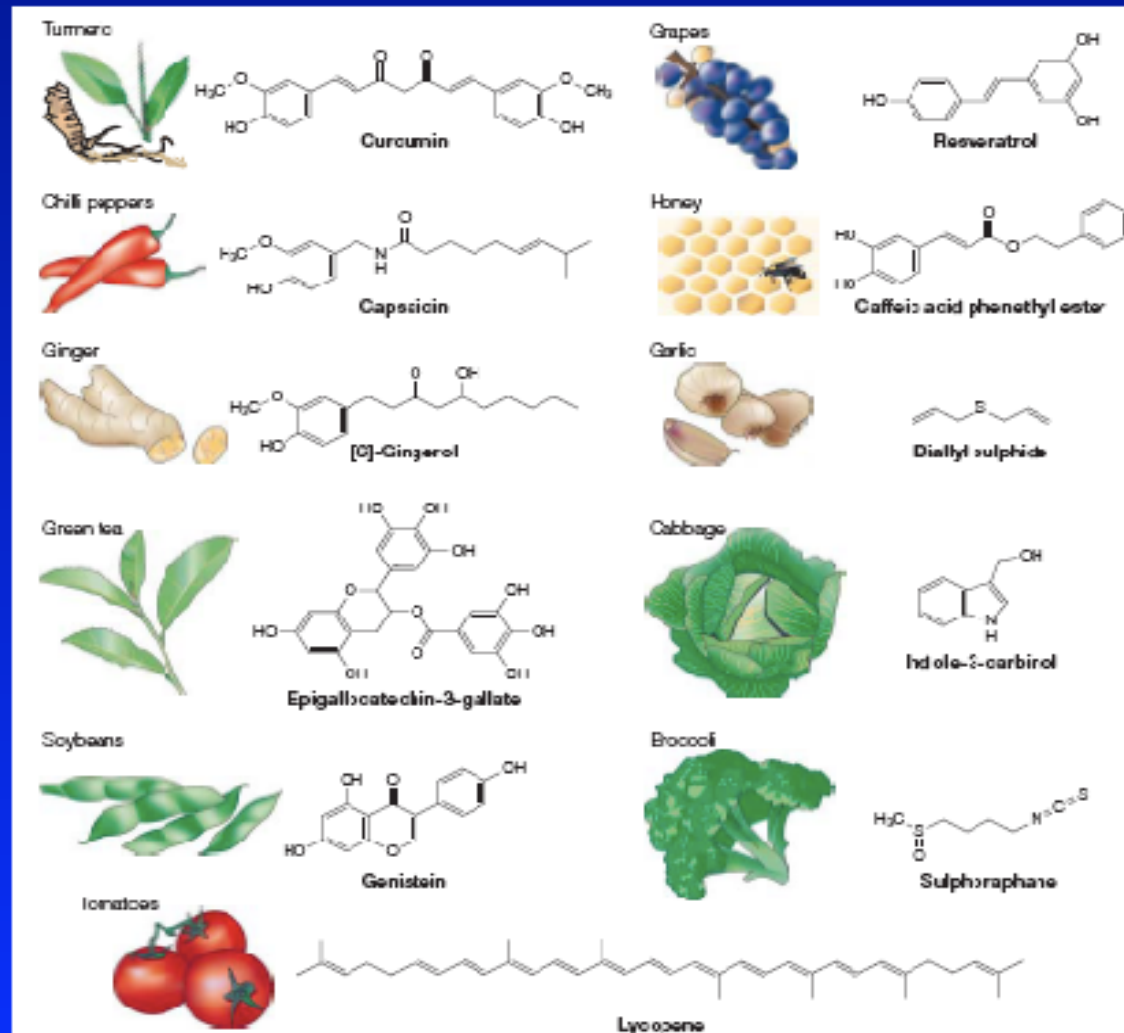
- **Atrazine changes sex of frogs in our rivers**
- **Exposed farm workers have higher cancer risks**
- **Their children too**



Biomagnification

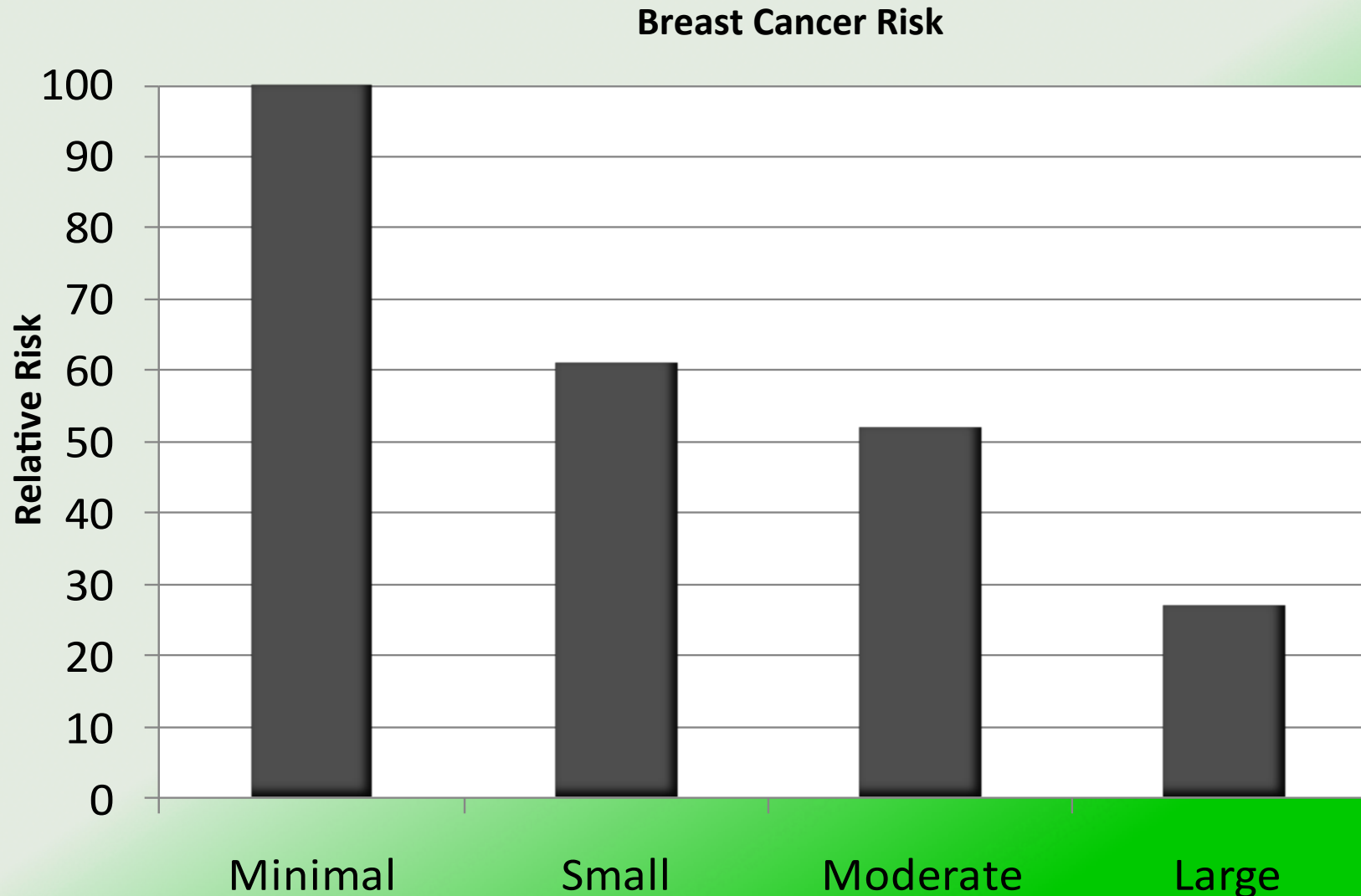


Anticancer Phytochemicals

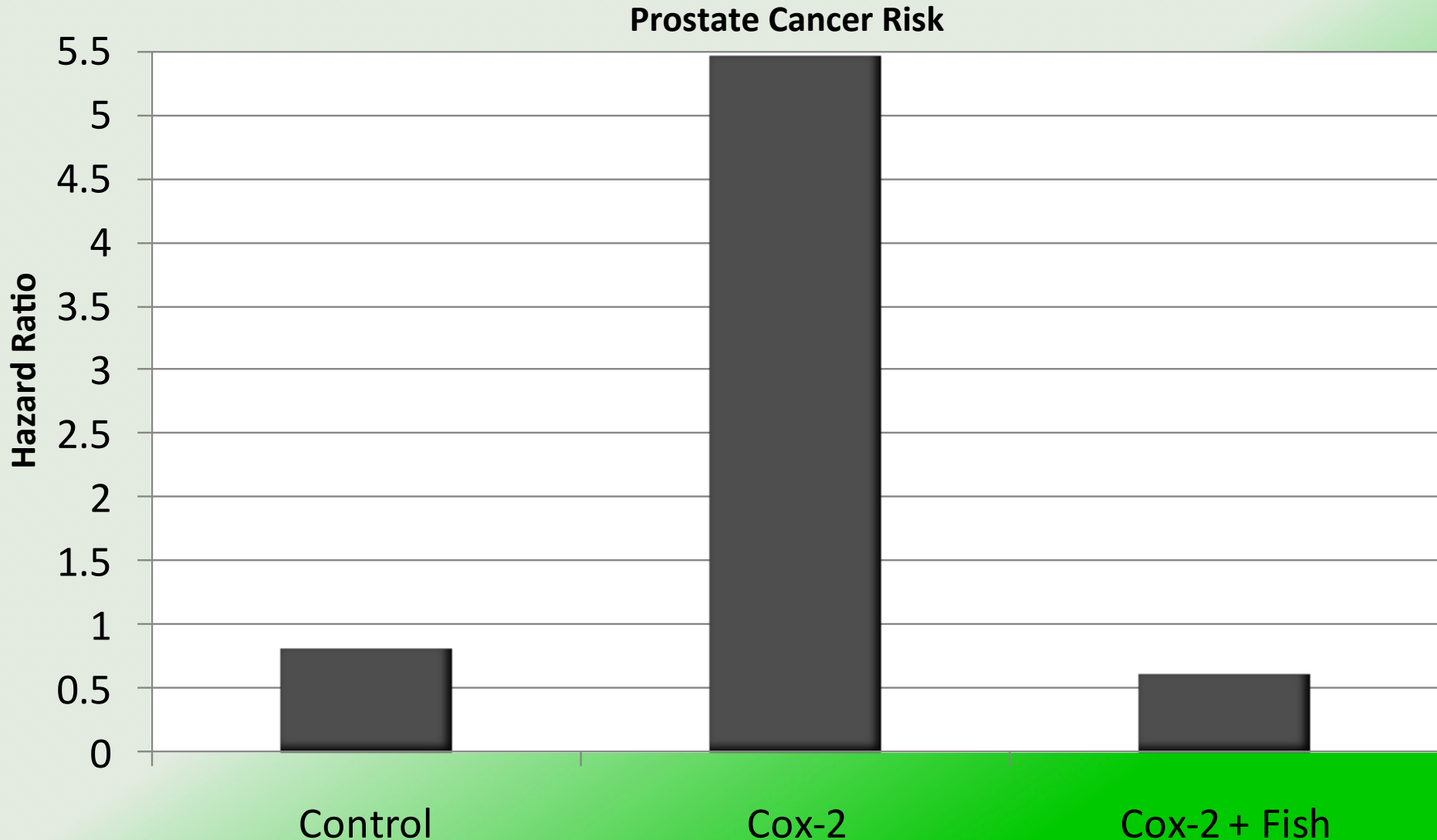


Surh, 2003 *Nature*

BRCA-1 and Variety of Vegetables



Prostate Cancer and Fish



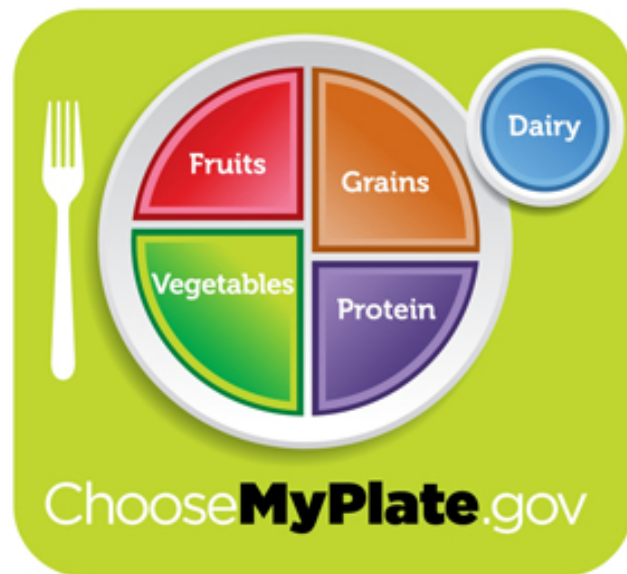


Search website

Go

Subjects

- The Basics
 - Food Groups
 - Tips & Resources
 - Print Materials
 - Interactive Tools
- Specific Audiences
 - General Population
 - Pregnant & Breastfeeding
 - Preschoolers
 - Kids
 - Weight Loss
- Multimedia
- For Professionals
- Partnering Program
- Related Links
- Questions?



Balancing Calories

- Enjoy your food, but eat less.
- Avoid oversized portions.

Foods to Increase

- Make half your plate fruits and vegetables.
- Make at least half your grains whole grains.
- Switch to fat-free or low-fat (1%) milk.

I Want To...

- MyPlate on Food Labels
- MyPlate Graphics Standards
- Look up a food
- Learn about food groups
- Get a personalized Plan
- Learn healthy eating tips
- Get weight loss information
- Plan a healthy menu
- Analyze my diet
- Get MyPlate updates
- Ask a question

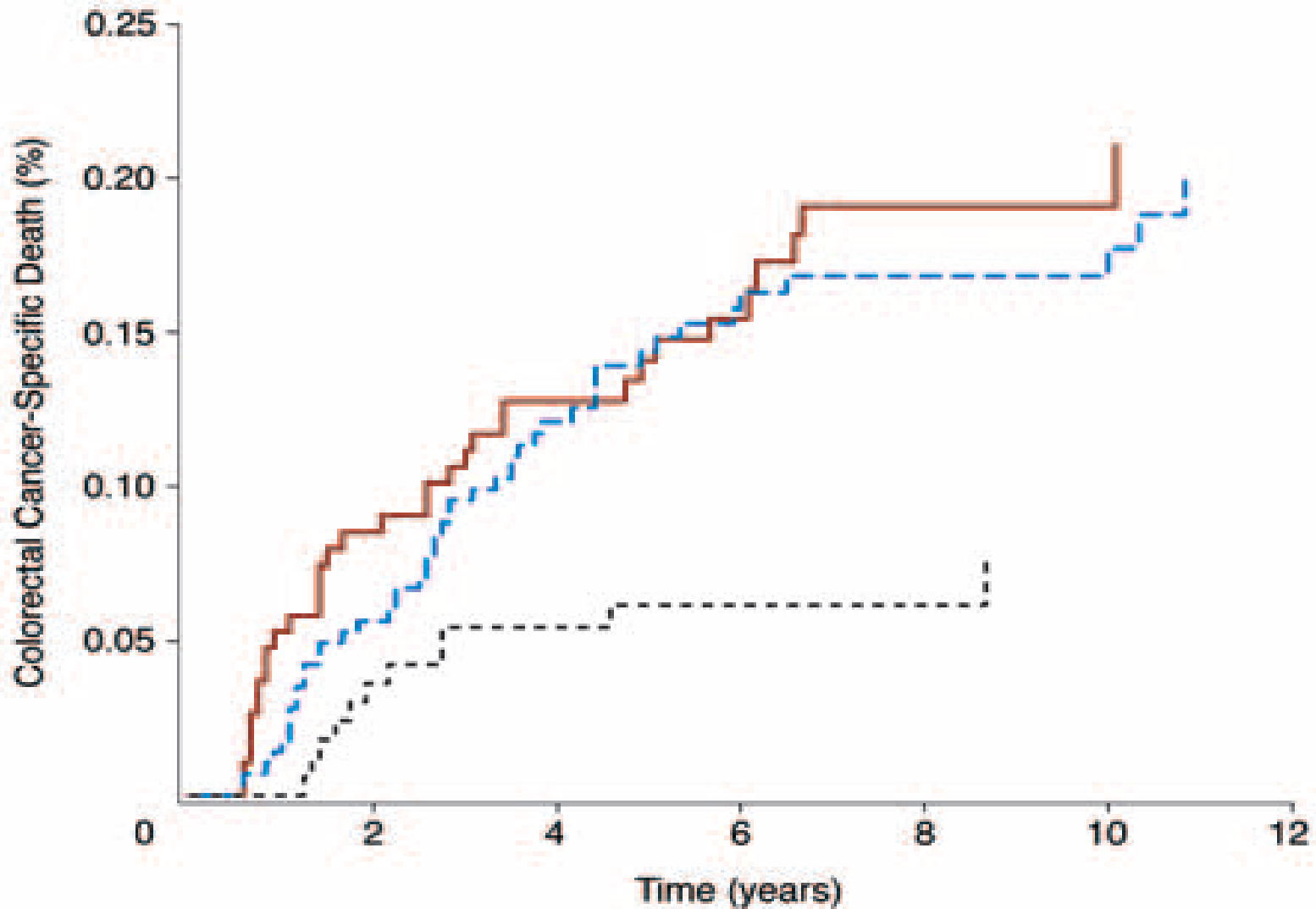
Tip of the Day

Add vegetarian meat substitutes to soups and stews to boost protein without adding saturated fat or cholesterol. These include tempeh (cultured soybeans with a chewy texture), tofu, or wheat gluten (seitan).

[Click here for more tips](#)

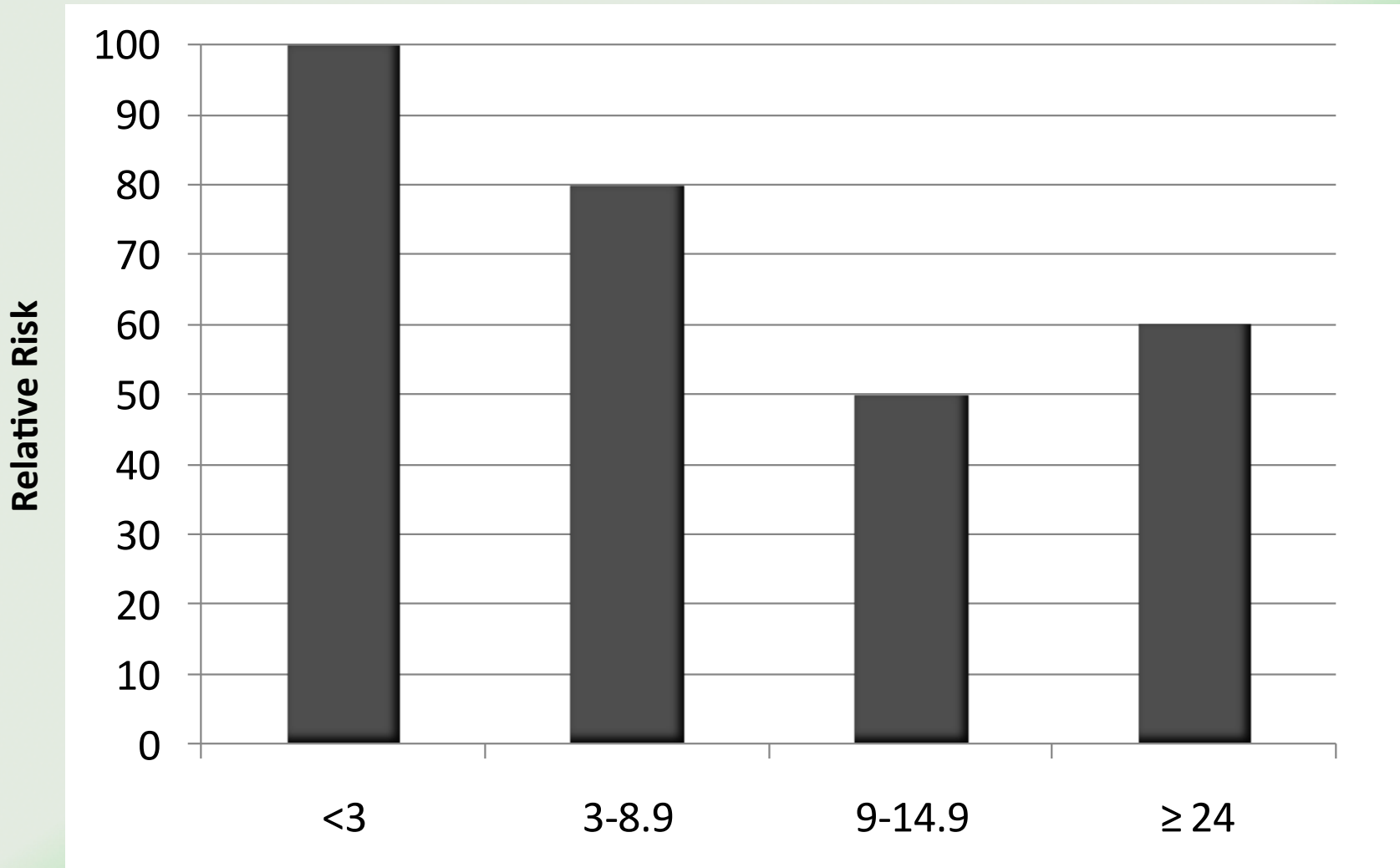
Get MyPlate

Physical Activity



No. at risk:	2 Years	5 Years	10 Years
— < 3 MET-hours/week	172	128	41
- - - 3-18 MET-hours/week	267	188	93
... > 18 MET-hours/week	159	130	46

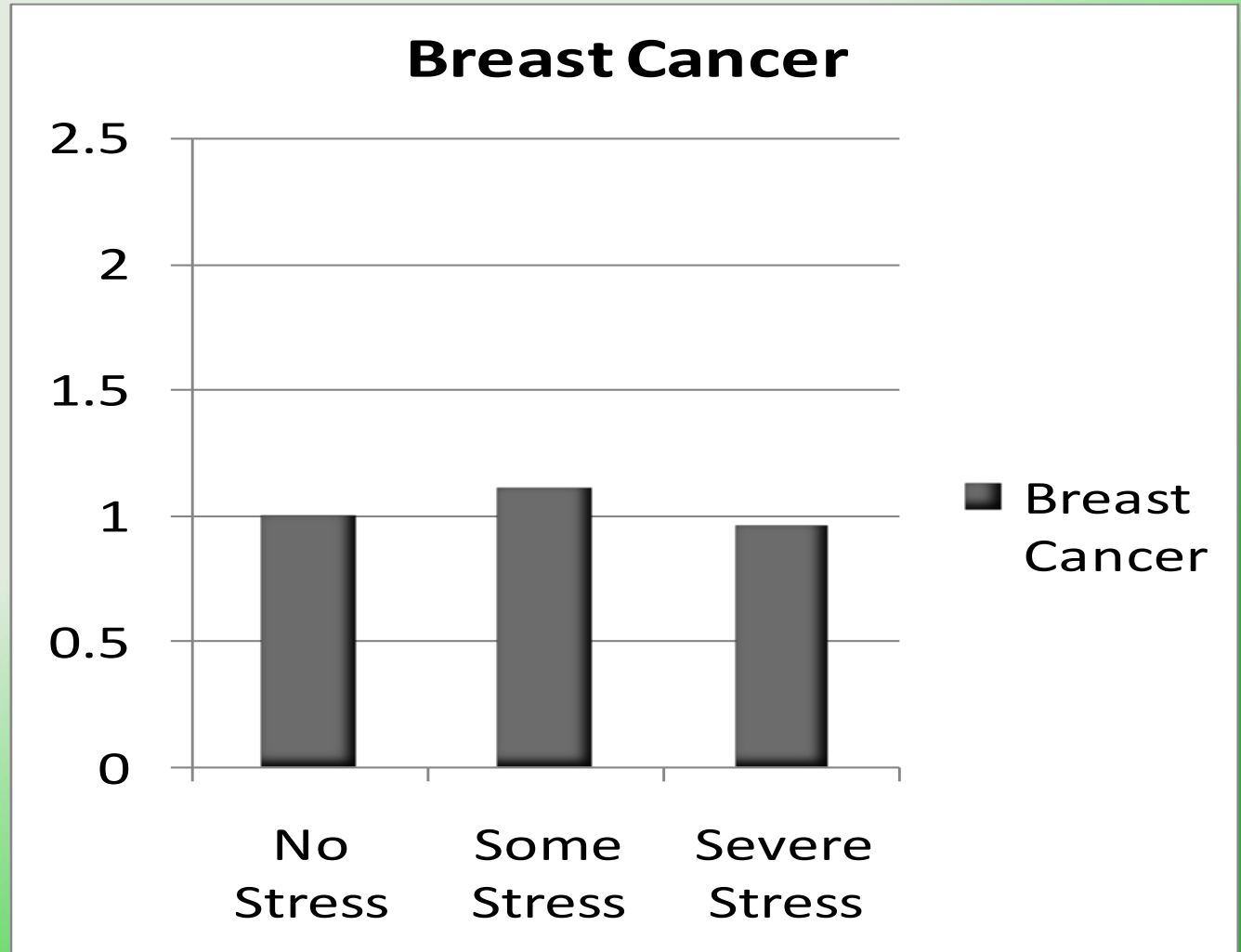
Breast Cancer Deaths



MET – h/wk

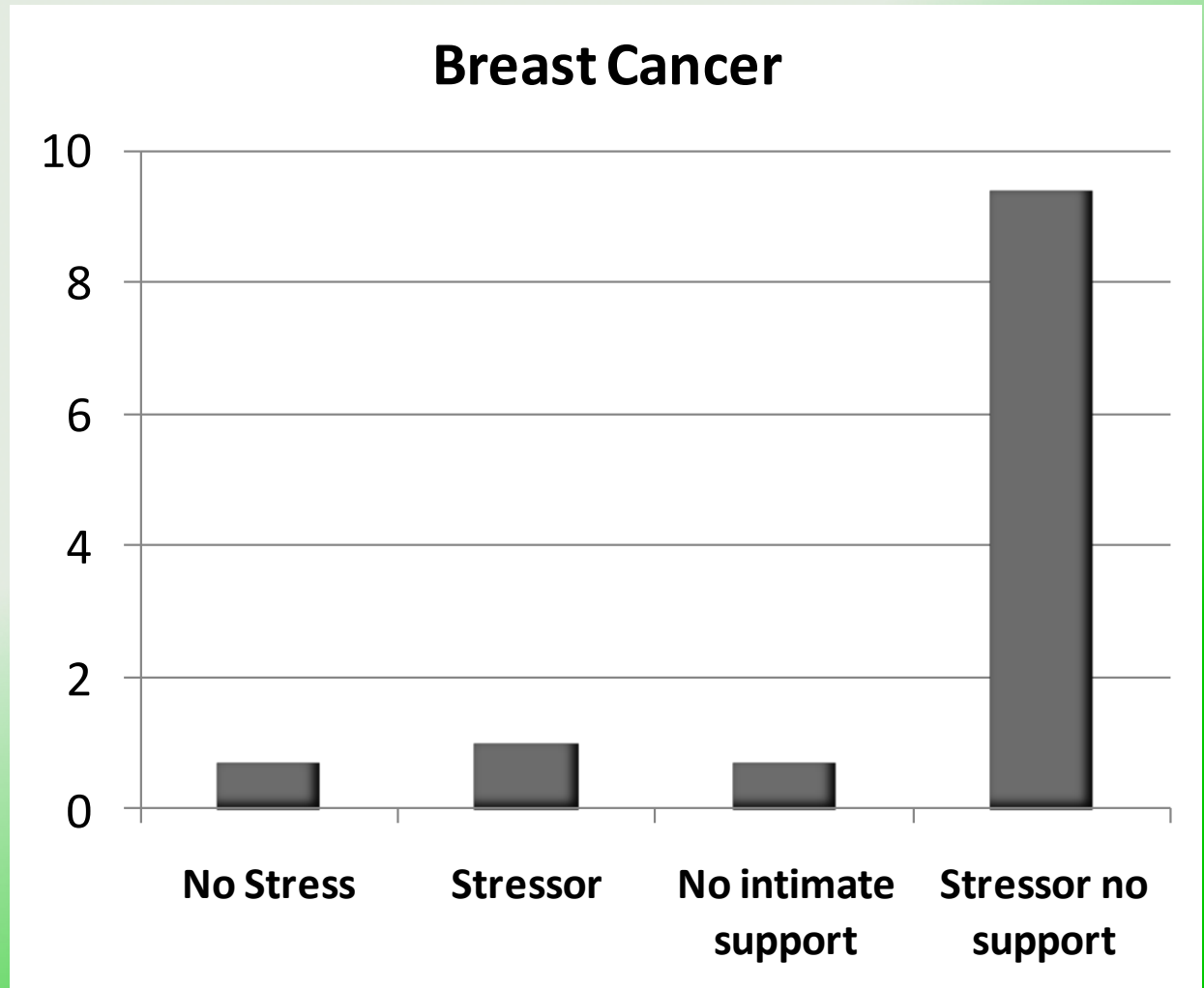
Stress Does Not Cause Cancer

- 10, 519 Finnish Women
- Prospective Study
- Stress of Daily Activities

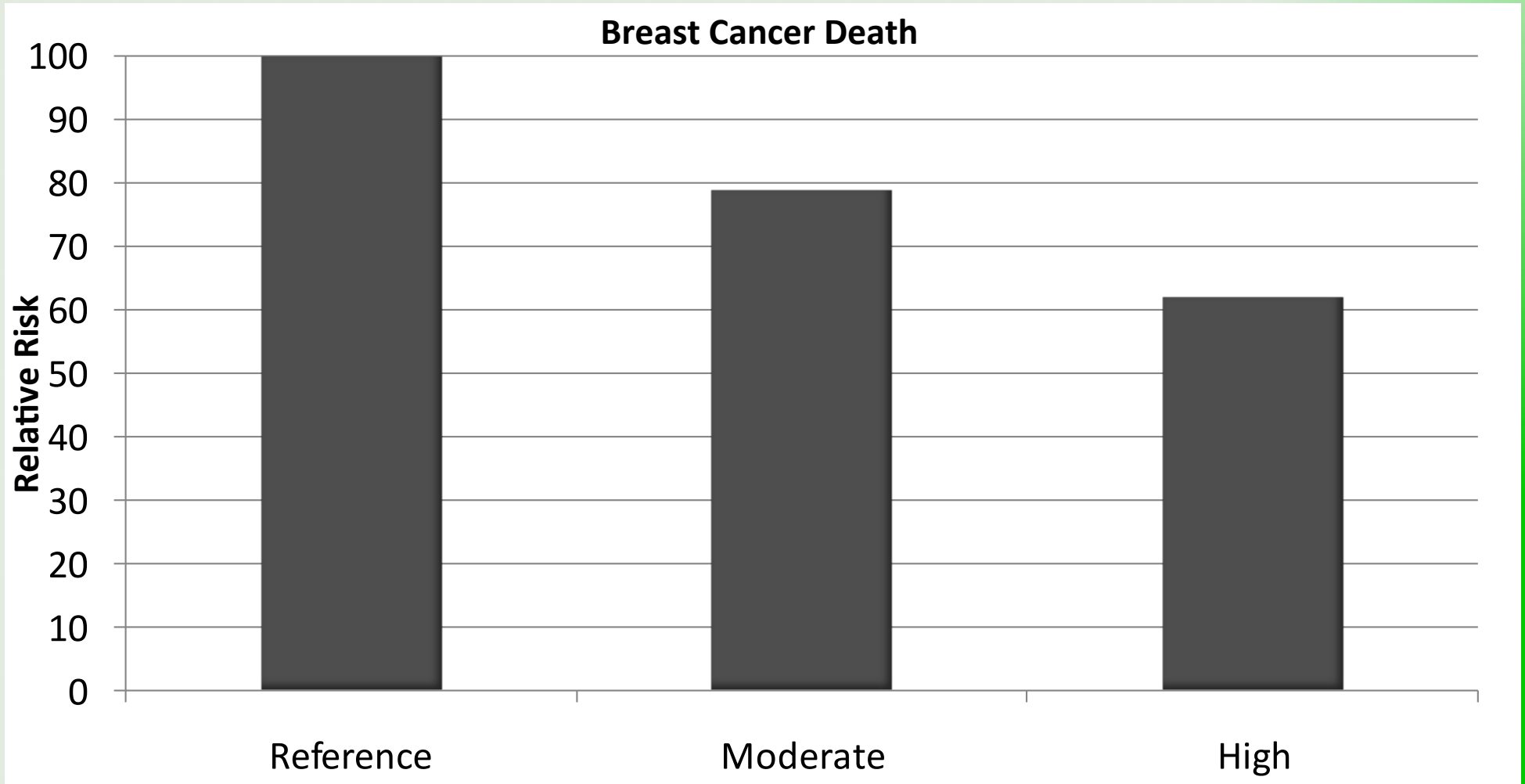


Support vs. Helplessness

- 514 Australian Women
- Prospective Study
- Stressors in 2 Years
- Intimate Support



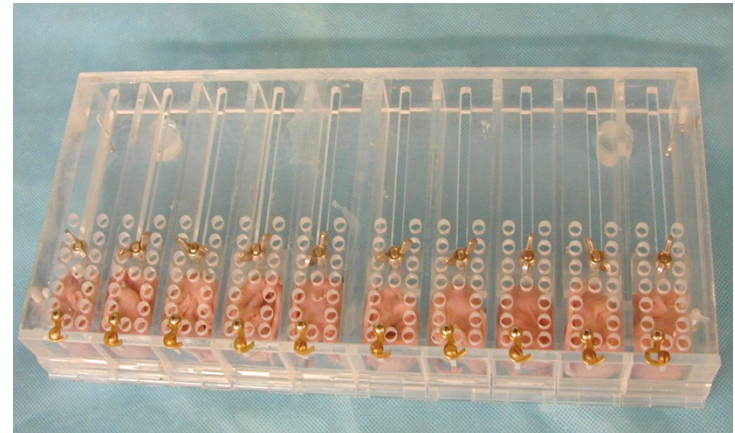
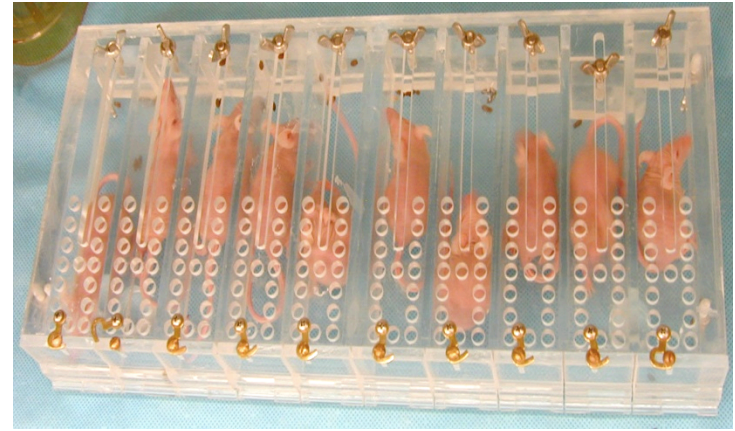
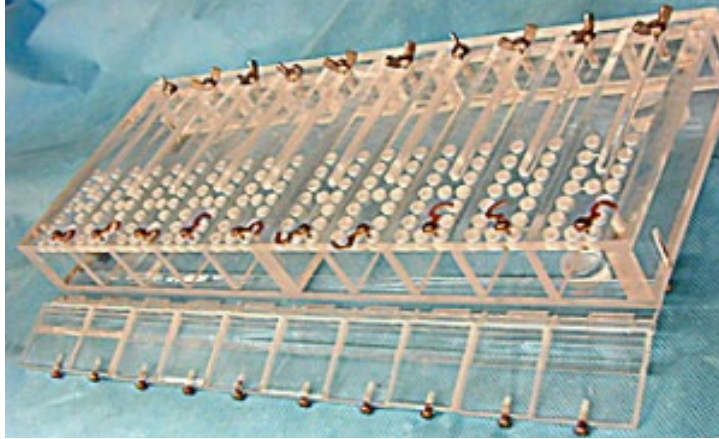
Social Well Being



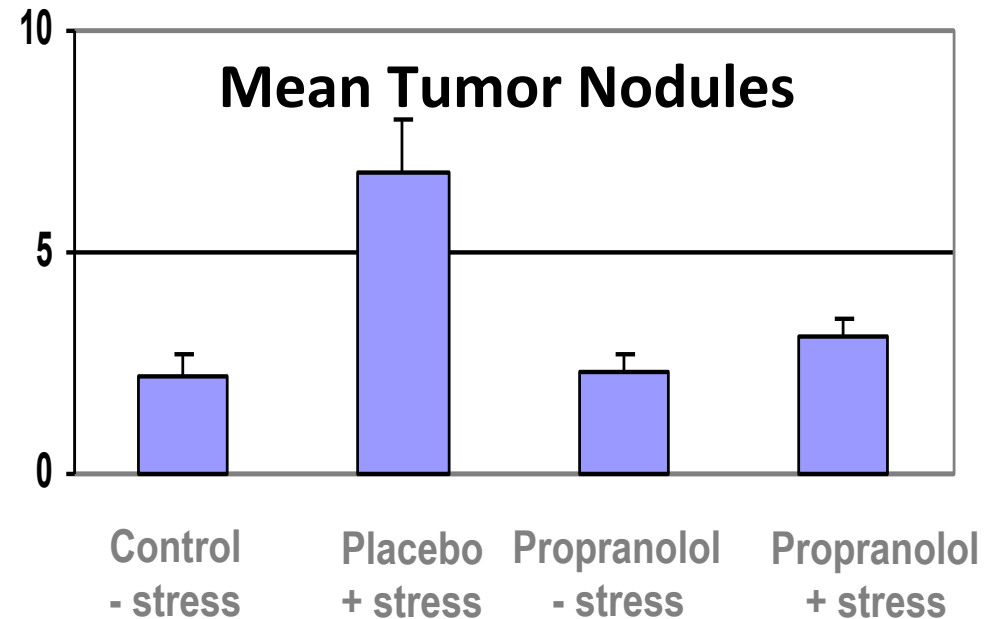
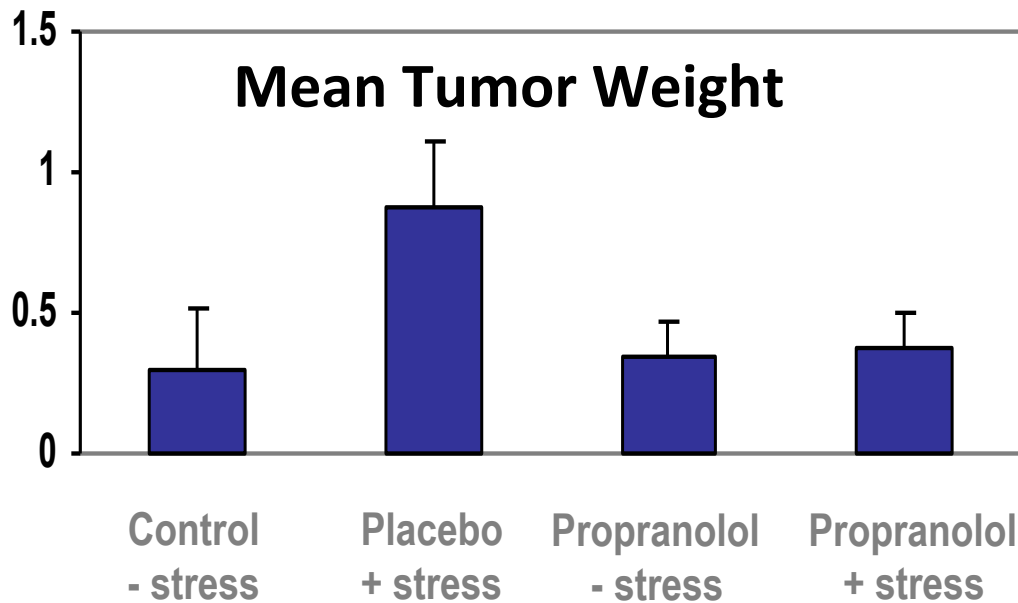
Chronic stress promotes tumor growth and angiogenesis in a mouse model of ovarian carcinoma

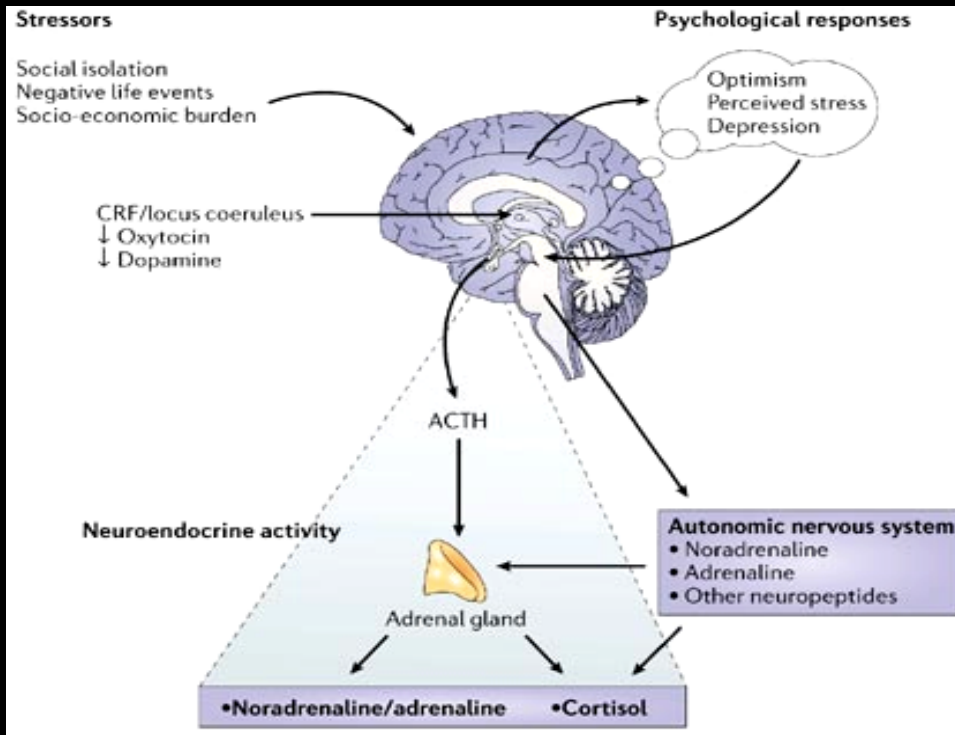
Premal H Thaker^{1,10}, Liz Y Han^{1,10}, Aparna A Kamat^{1,10}, Jesusa M Arevalo², Rie Takahashi², Chunhua Lu¹, Nicholas B Jennings¹, Guillermo Armaiz-Pena¹, James A Bankson³, Murali Ravoori⁴, William M Merritt¹, Yvonne G Lin¹, Lingegowda S Mangala¹, Tae Jin Kim¹, Robert L Coleman¹, Charles N Landen¹, Yang Li¹, Edward Felix⁵, Angela M Sanguino⁶, Robert A Newman⁵, Mary Lloyd⁷, David M Gershenson¹, Vikas Kundra^{4,8}, Gabriel Lopez-Berestein⁶, Susan K Lutgendorf⁹, Steven W Cole² & Anil K Sood^{1,7}

Development of a Model

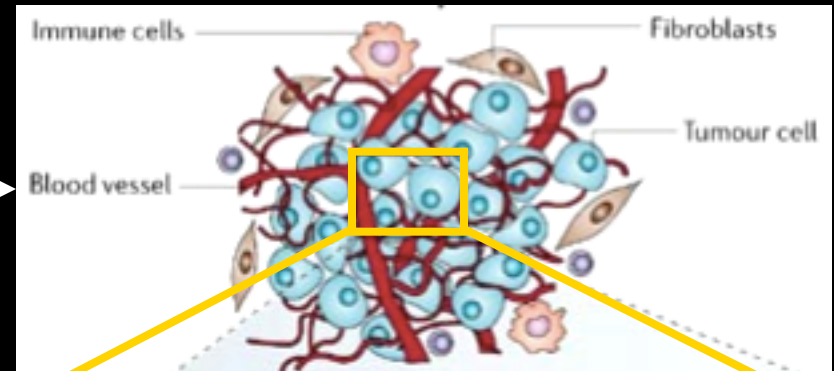


Chronic stress promotes tumor growth and angiogenesis in a mouse model of ovarian carcinoma

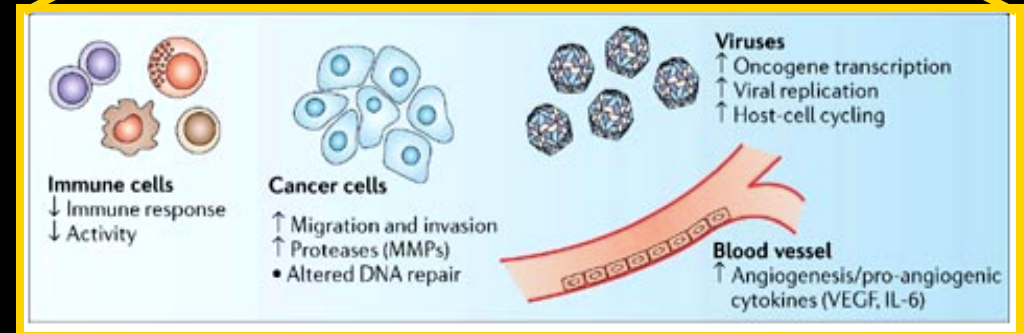




Effects of stress on tumor microenvironment



Antoni, Lutgendorf, Cole, Dhabhar, Sephton, McDonald, Stefanek, Sood, *Nature Reviews Cancer*, 2006



Mind-body Programs

- cognitive behavioral therapy
- individual and group psychotherapy
- relaxation
- guided imagery
- social support
- humor
- biofeedback
- yoga, tai chi, qigong
- meditation
- hypnosis
- emotional expression
- expressive arts

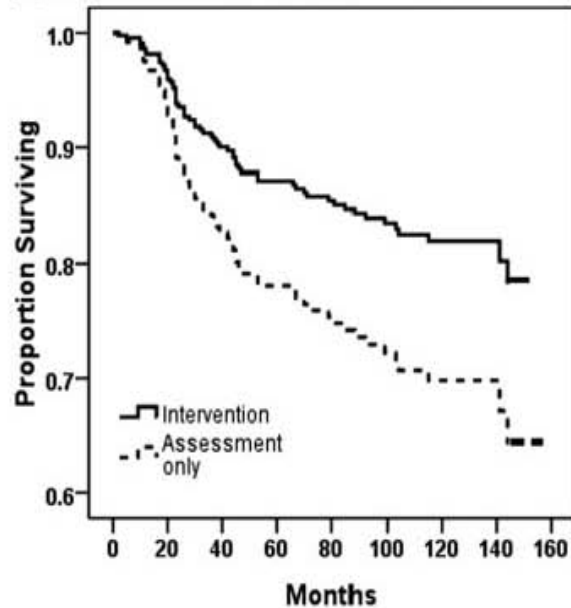


Psychologic Intervention Improves Survival for Breast Cancer Patients

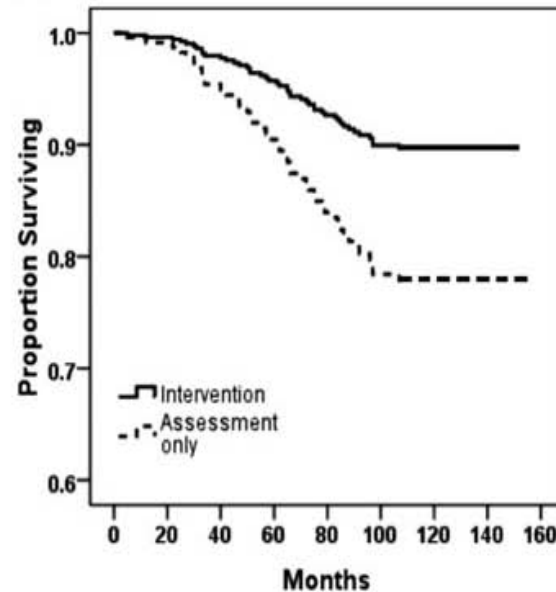
A Randomized Clinical Trial

3456 CANCER December 15, 2008 / Volume 113 / Number 12

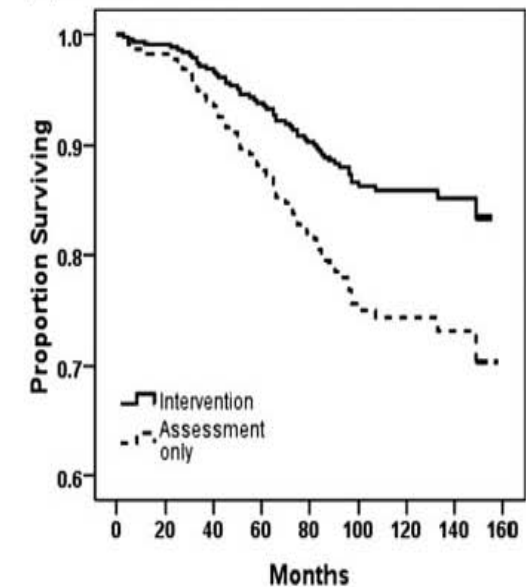
(a) Recurrence free survival



(b) Breast cancer specific survival



(c) Overall survival



Supported by the National Institute of Mental Health (R01MH51487) and the National Cancer Institute (R01CA92704, K05 CA098133, KA24 CA93670, and P01 CA95426), with additional support from the American Cancer Society (PBR-89), the Longaberger Company-American Cancer Society (PBR-89A), the US Army Medical Research Acquisition Activity (DAMD17-94-J-4165, DAMD17-96-1-6294, and DAMD17-97-1-7062), the Ohio State University Comprehensive Cancer Center (P30 CA16058), and the Walther Cancer Institute.

[HR] of 0.55; $P = .034$) and death from breast cancer (HR of 0.44; $P = .016$) compared with patients in the Assessment only arm. Follow-up analyses also demonstrated that Intervention patients had a reduced risk of death from all causes (HR of 0.51; $P = .028$).

CONCLUSIONS. Psychologic interventions as delivered and studied here can improve survival. *Cancer* 2008;113:3450-8. © 2008 American Cancer Society.

KEYWORDS: breast, cancer, recurrence, survival, psychologic, intervention, bio-behavioral.

Cancer Prevention and Control

- **Improve nutrition**
- **Reduce sedentary behaviors**
- **Reduce obesity**
- **Reduce stress and increase social support**

Past Elders

- **Plato: Dialogue between Socrates and Glaucon**
 - **Socrates: Plant-based diet and wine in moderation**
 - **Glaucon: Better to recline on couches...and have the usual dishes and dessert of a modern dinner**

Past Elders

- **Plato: Dialogue between Socrates and Glaucon**
 - **Socrates: Will result in a city that is suffering from inflammation**
 - Will need great quantities of all kinds of cattle...**
 - Will need medical men**
 - Will need more land**

Past Elders

- **Hippocrates:**
 - **Let food be thy medicine and medicine be thy food**

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Making Cancer History[®]