

The Future of Cancer Prevention



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Patient, Advocate, Journalist

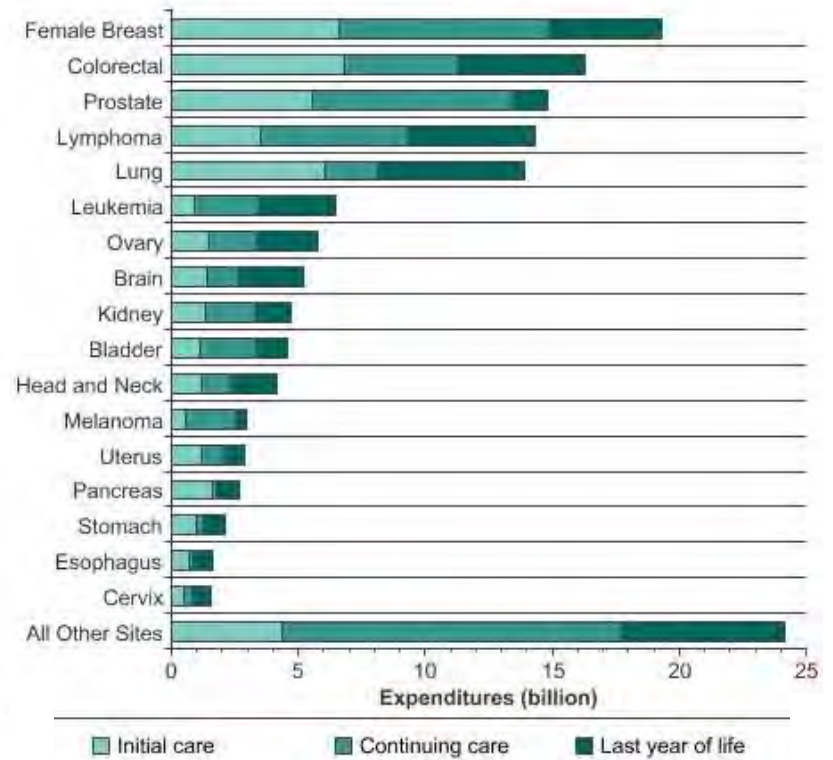
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Why Prevent Cancer?



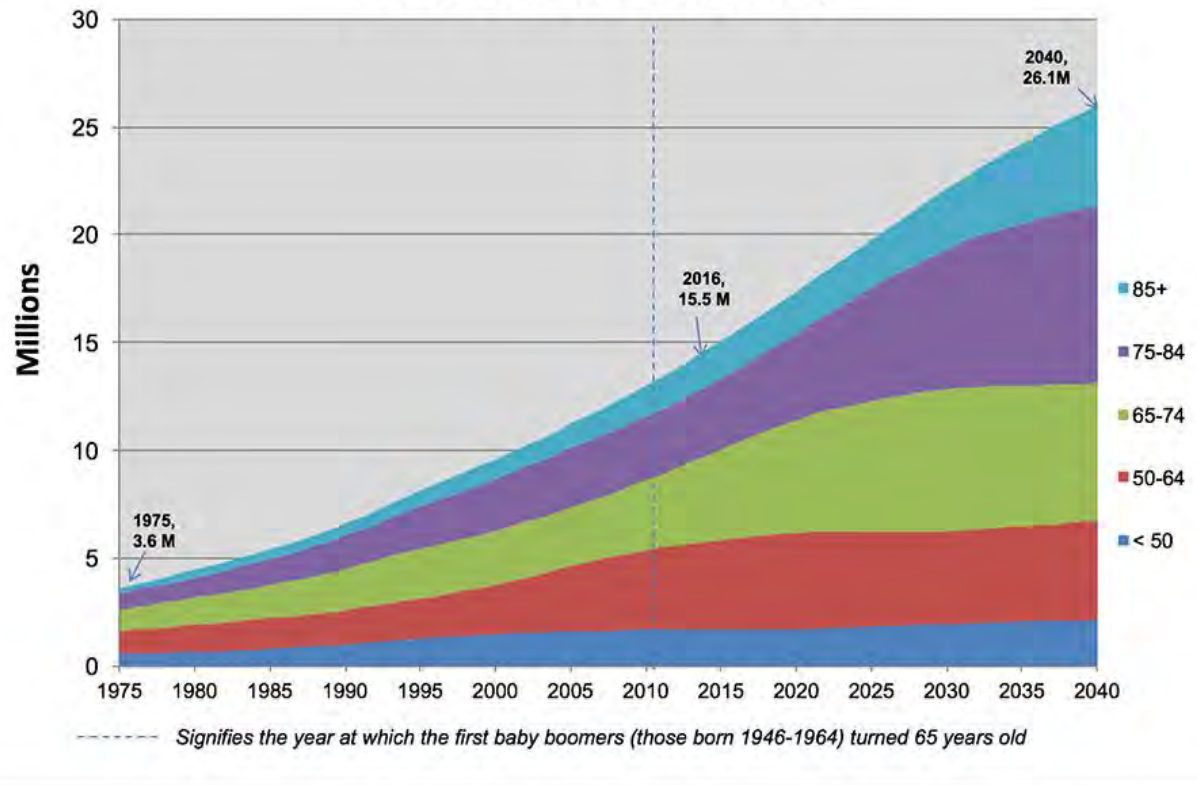
Estimates of national expenditures for cancer care in 2017
(in billions of dollars) by cancer site and phase of care



[Cancer Trends Progress Report](#), NCI, U.S. NIH 2018

Burden of Cancer Is Huge (and growing)

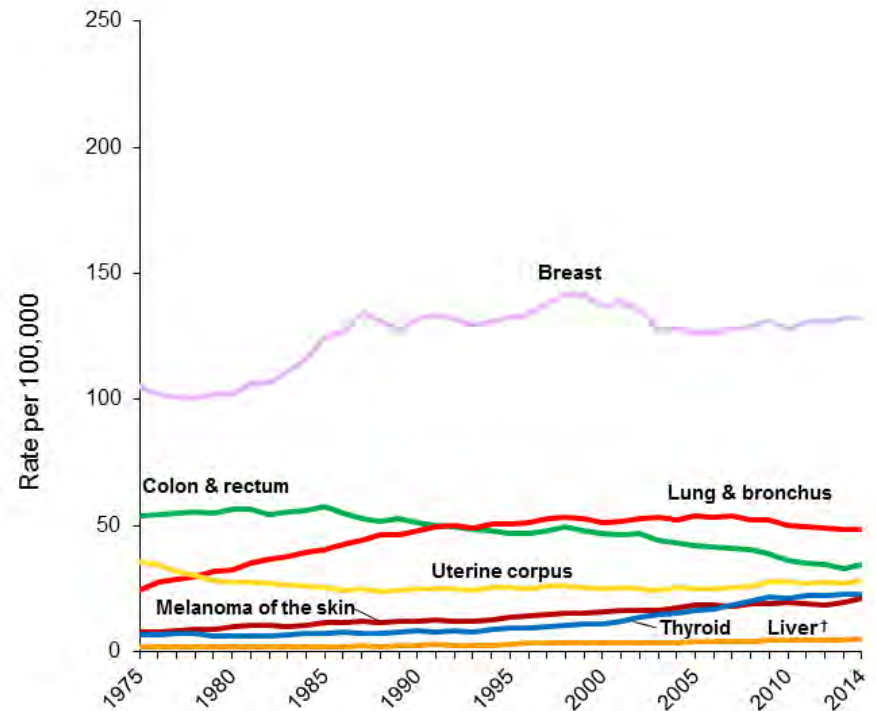
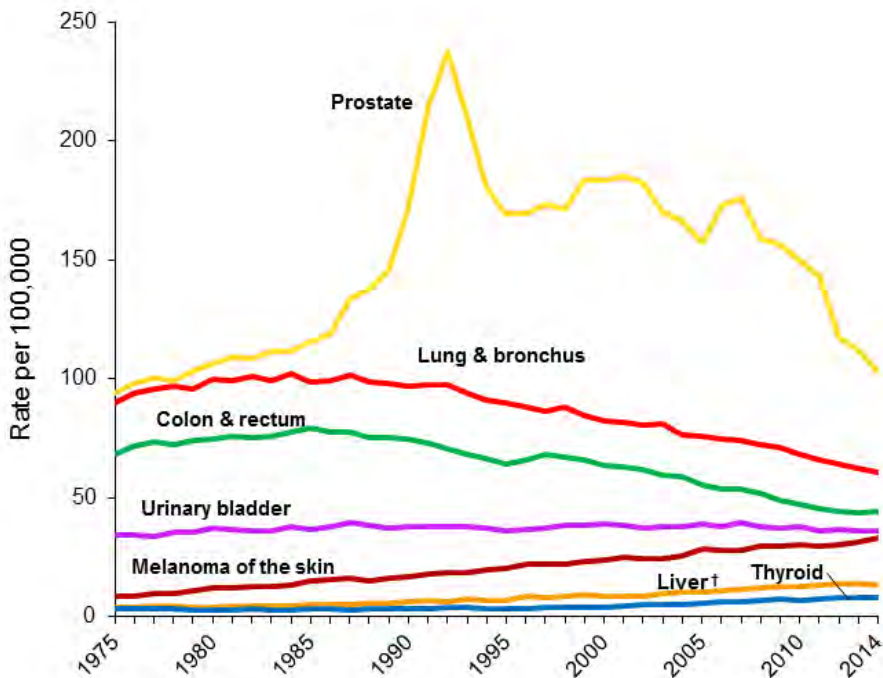
Figure 1: Estimated cancer prevalence by age in the US population from 1975 (216 M) to 2040 (380 M)



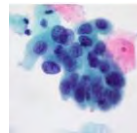
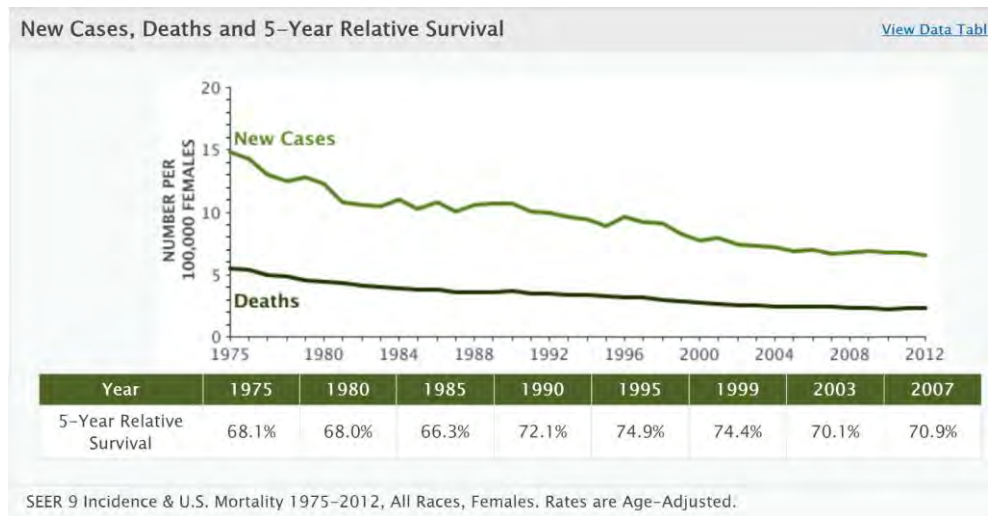
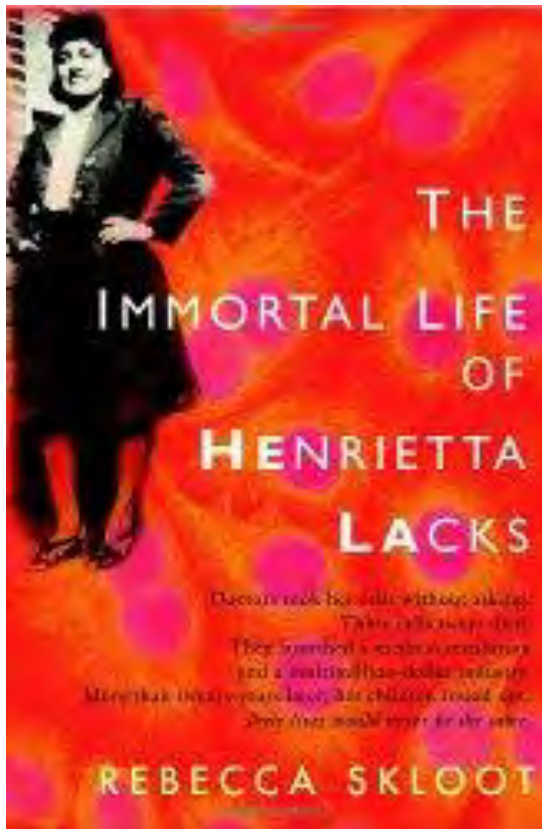
Trends in Cancer Incidence Since 1975:

U.S. Men, 1975 - 2014

U.S. Women, 1975 - 2014



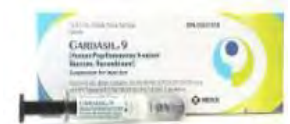
Cervical Cancer: A Prevention Success Story



Pap smear

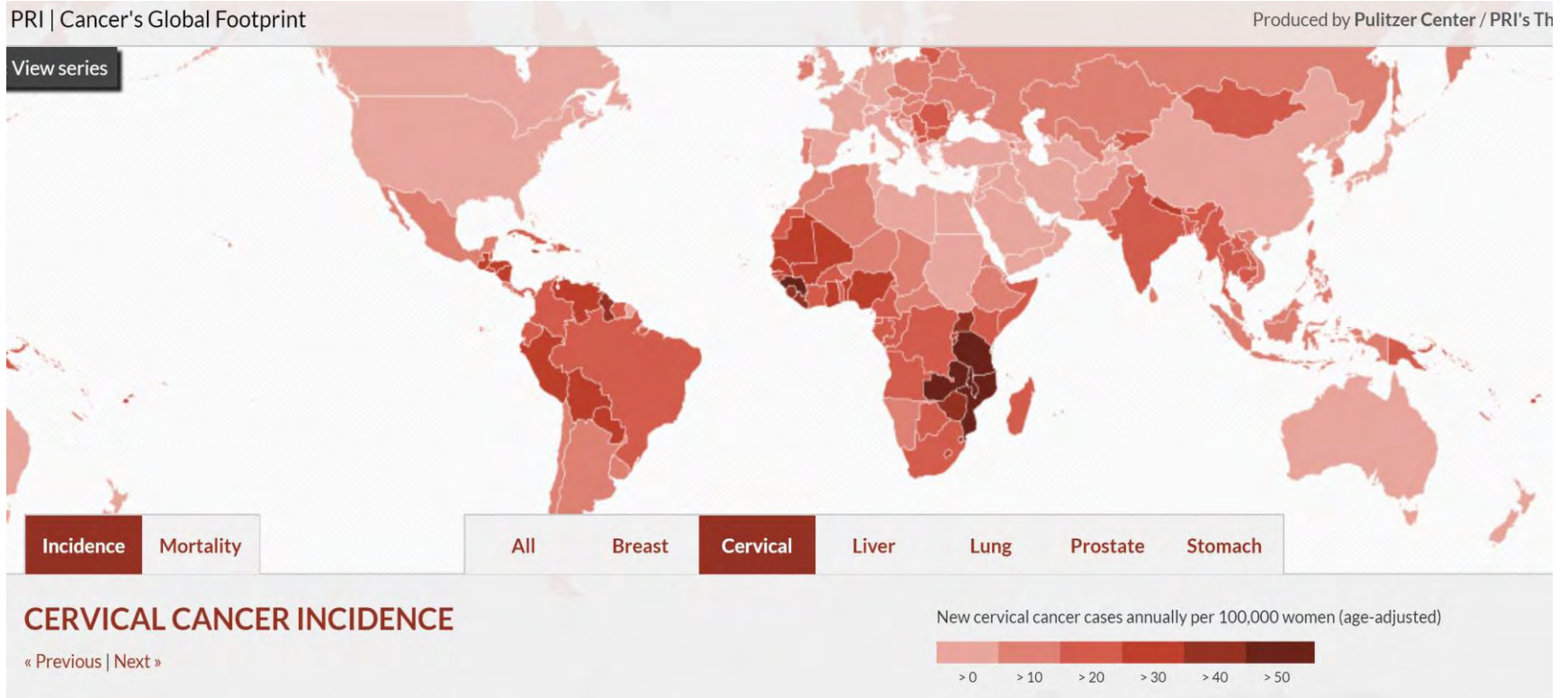


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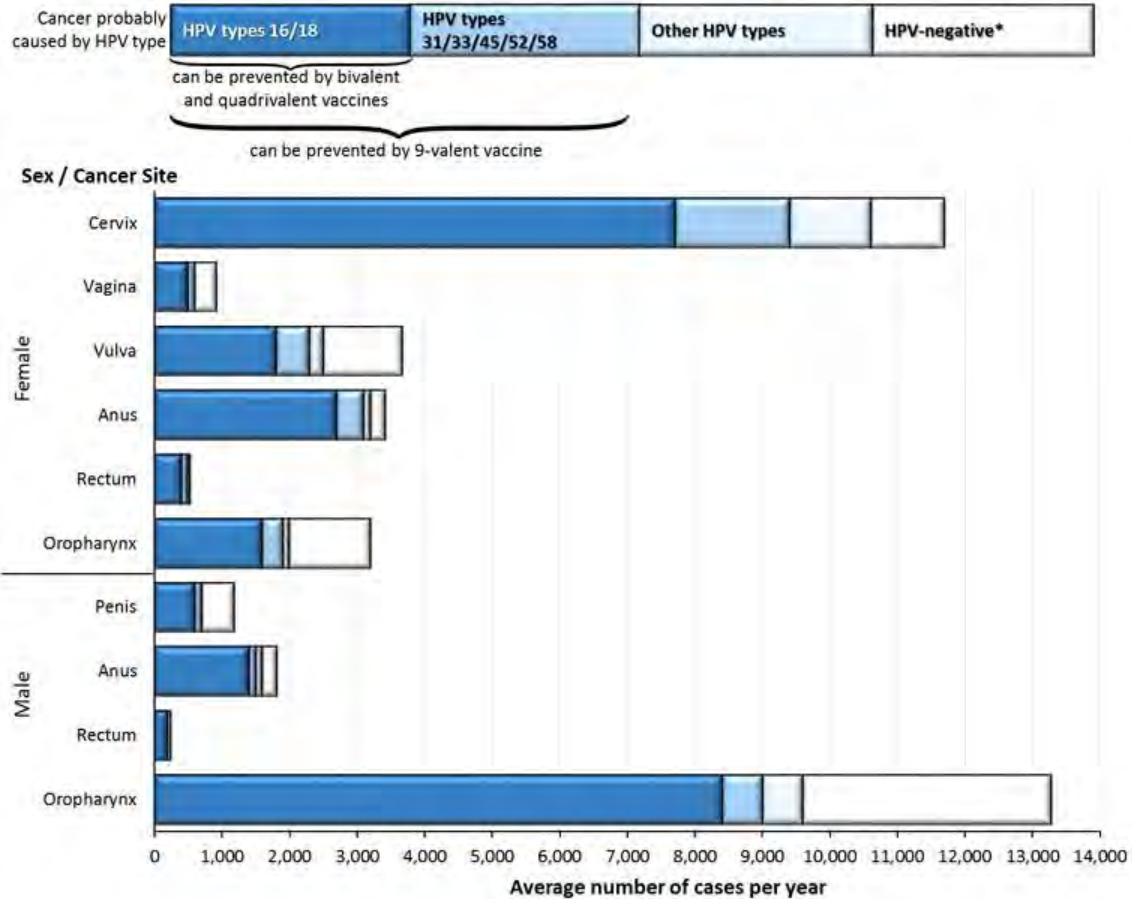
HPV vaccine

Cervical Cancer Remains a Common Killer Around the Globe:



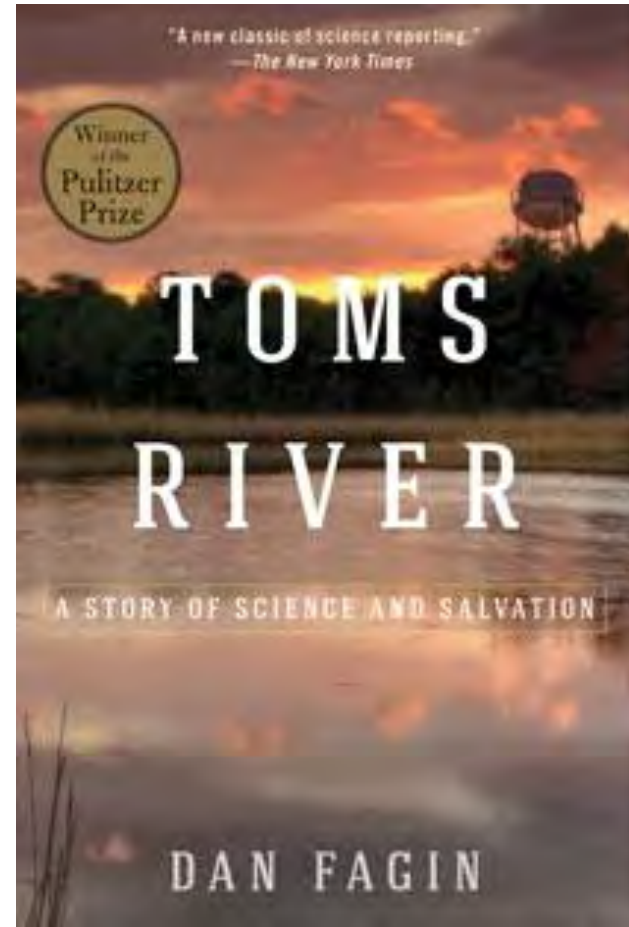
Future prevention:
Screening vs. Immunization against HPV?

HPV Causes Only A Subset of Cancers



What Causes Cancer?

- Smoking
- Pollution
- Carcinogens
- Viruses
- Alcohol
- Obesity
- Genetic changes
- Unknown factors



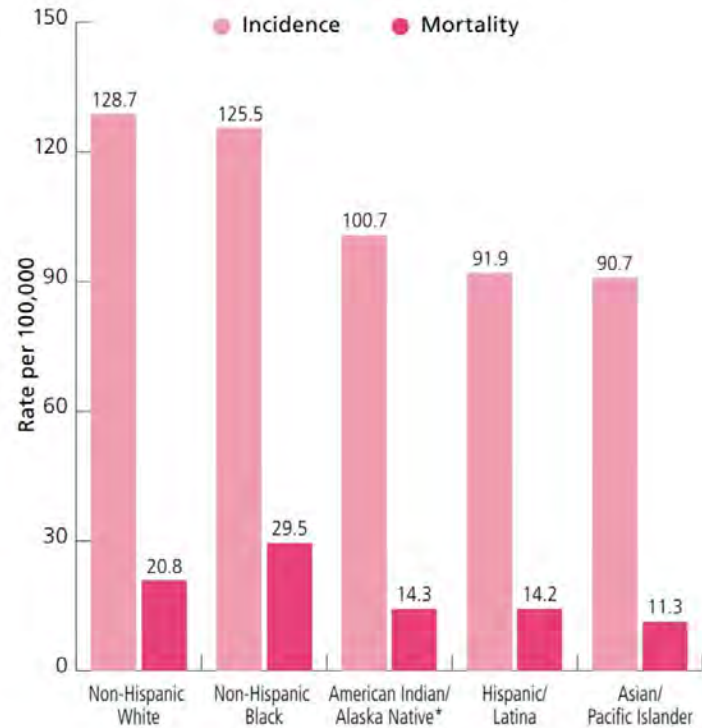
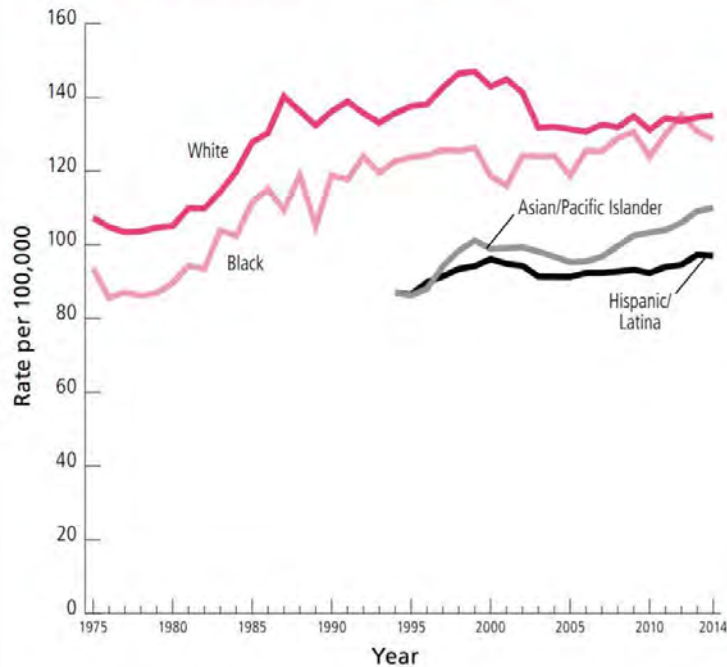


What Causes Breast Cancer?

- **Genetics (only 5 – 15%)**
- **Estrogen**
- **Obesity**
- **Alcohol**
- **Lifestyle?**
- **Chemicals**

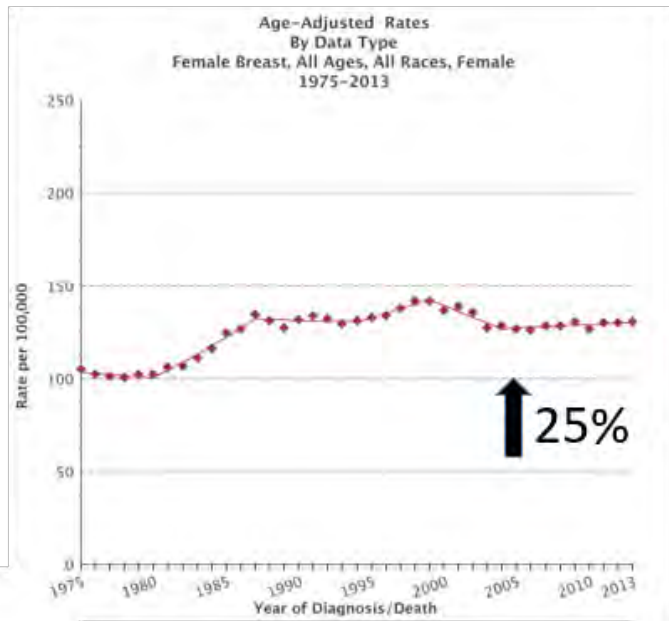
Invasive Breast Cancer Affects All Demographics of American Women

Figure 6a. Trends in Female Breast Cancer Incidence Rates by Race/Ethnicity, 1975-2014, US

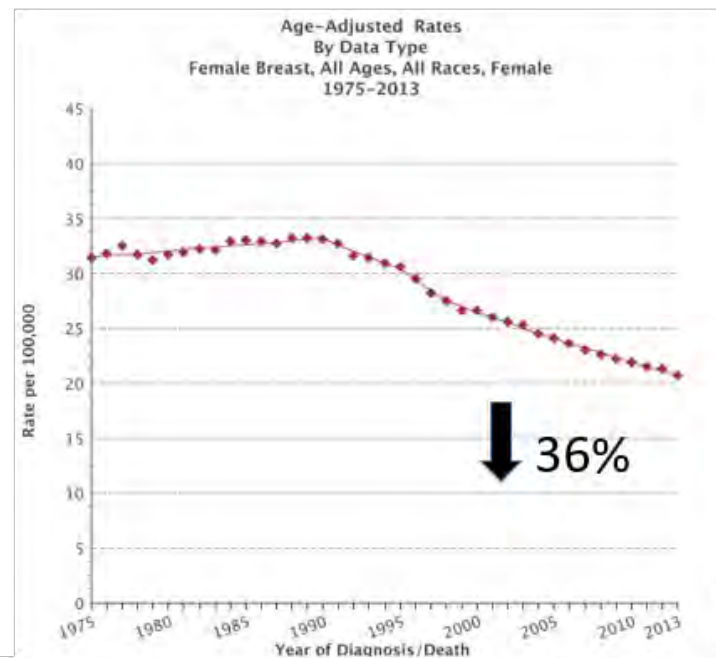


Breast Cancer Incidence and Mortality in U.S. women 1975 – 2013

Invasive tumors* (up):



Deaths* (down):



NCI/SEER population data, *rates are per 100,000 U.S. women

Decline in deaths due to early detection? Better Rx? Both

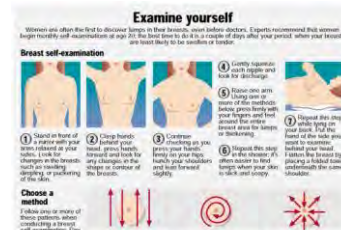
Breast Cancer Screening ≠ Prevention

Screening detects cancer before it causes serious health problems. It is *not* preventive. It is not full-proof.

Methods:

Physical examination

- clinical
- self-exam (out of favor)



Pharmaceutical Manufacturers Association

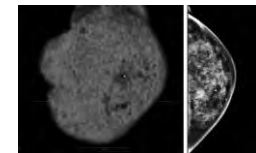


Mammography

- Traditional x-rays (film)
- Digital (2-D)
- Tomosynthesis (3-D)

Supplemental imaging:

- MRI (mainly for high-risk)
- Ultrasound (helpful for evaluating dense breasts)
- Molecular Breast Imaging, MBI (new)



breast sonogram, mammogram
(images, GE Healthcare)

There is ~~no blood test~~ to detect breast cancer.

ASCO Survey Reveals Concerning Trends in Americans' Knowledge About Cancer Risks and Impact of Costs on Compliance

Limited Awareness of Key Cancer Risk Factors

Only **31%**

of Americans recognize **obesity** as a risk factor for cancer — even though it is the second leading preventable cause of the disease.



Most Americans correctly identify **tobacco use**

78%



Few Americans are aware of other lifestyle factors that increase the risk of cancer:

30% identify **alcohol** as a cancer risk factor.



25% identify **lack of exercise** as a cancer risk factor.



and **sun exposure** as major cancer risk factors.

66%



ASCO
AMERICAN SOCIETY OF CLINICAL ONCOLOGY

NATIONAL CANCER OPINION SURVEY KEY FINDINGS

Nationally representative survey

4,016 U.S. adults



4% have or had cancer themselves
32% have an immediate family member who has or had cancer

Modest Steps to Reduce Cancer Risk

Fewer than half of Americans say they are doing the following things to reduce their cancer risk:

48%

Using sunblock



48%

Limiting their exposure to the sun without sunblock



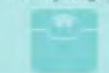
48%

Exercising regularly



41%

Maintaining a healthy weight



38%

Limiting alcohol consumption





How To
Persuade
Individuals
to Adopt
Cancer-
Preventing
Measures?

How To Persuade Individuals to Reduce Their Personal Cancer Risk?



Education, discussion...

Medical interventions

- vaccines (hepatitis, HPV)
- checks for precancerous conditions (PAP or HPV tests, colonoscopy, ?)

Nudges → healthier lifestyle

- ~~smoking~~
- exercise
- moderate diet, alcohol
- weight



How Can Society Lower Cancer Risks?



Incentivize Research into Cancer's Causes
Regulation
Financial support (for medical interventions)
Encouragement



Thank you!

[@ESchattner](https://twitter.com/ESchattner)