

# **Tendencias mundiales en la incidencia y mortalidad del cáncer de mama**

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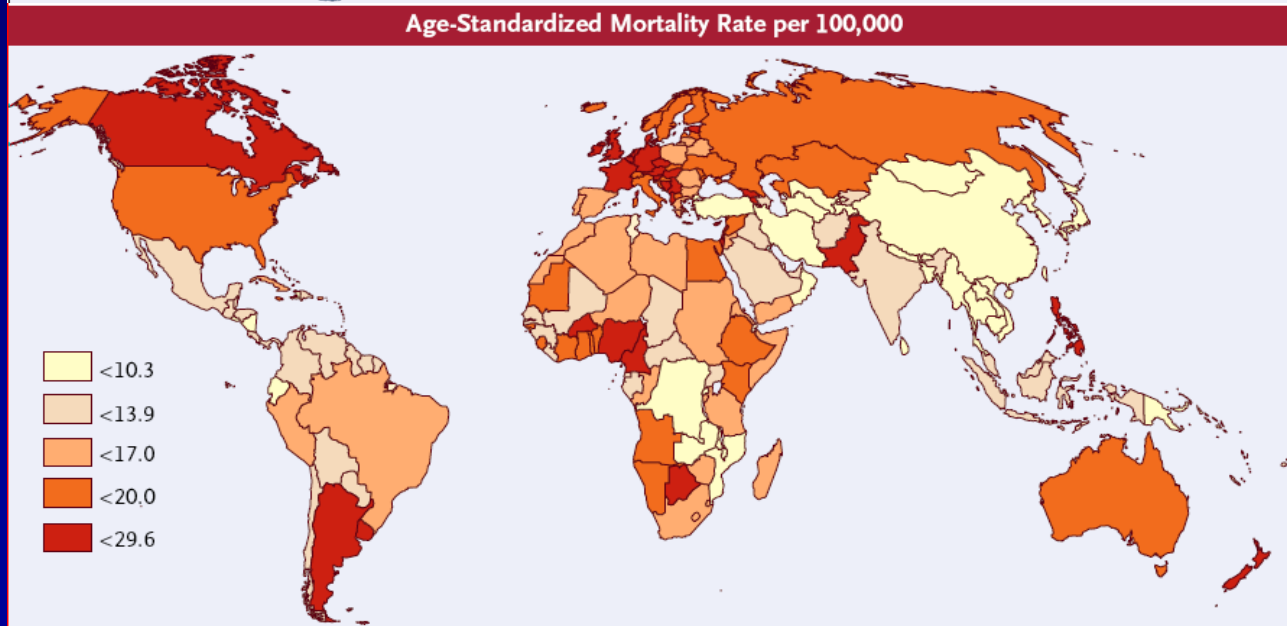
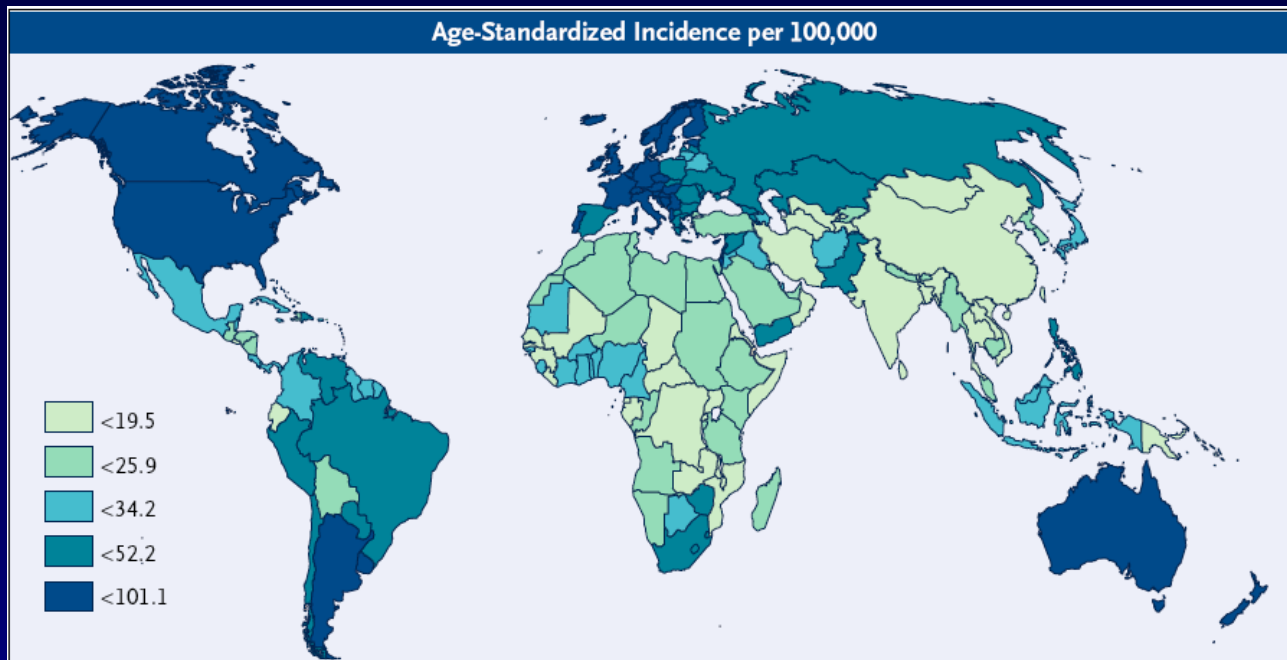
Aunque la prevalencia del cáncer de mama es mayor en países ricos, los riesgos de contraer o morir por cáncer de mama están aumentando en todo el mundo

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1.2 millones de nuevos casos en el mundo, cada año:

45% en países de bajo/mediano ingreso

55% de las muertes en países de bajo/mediano ingreso

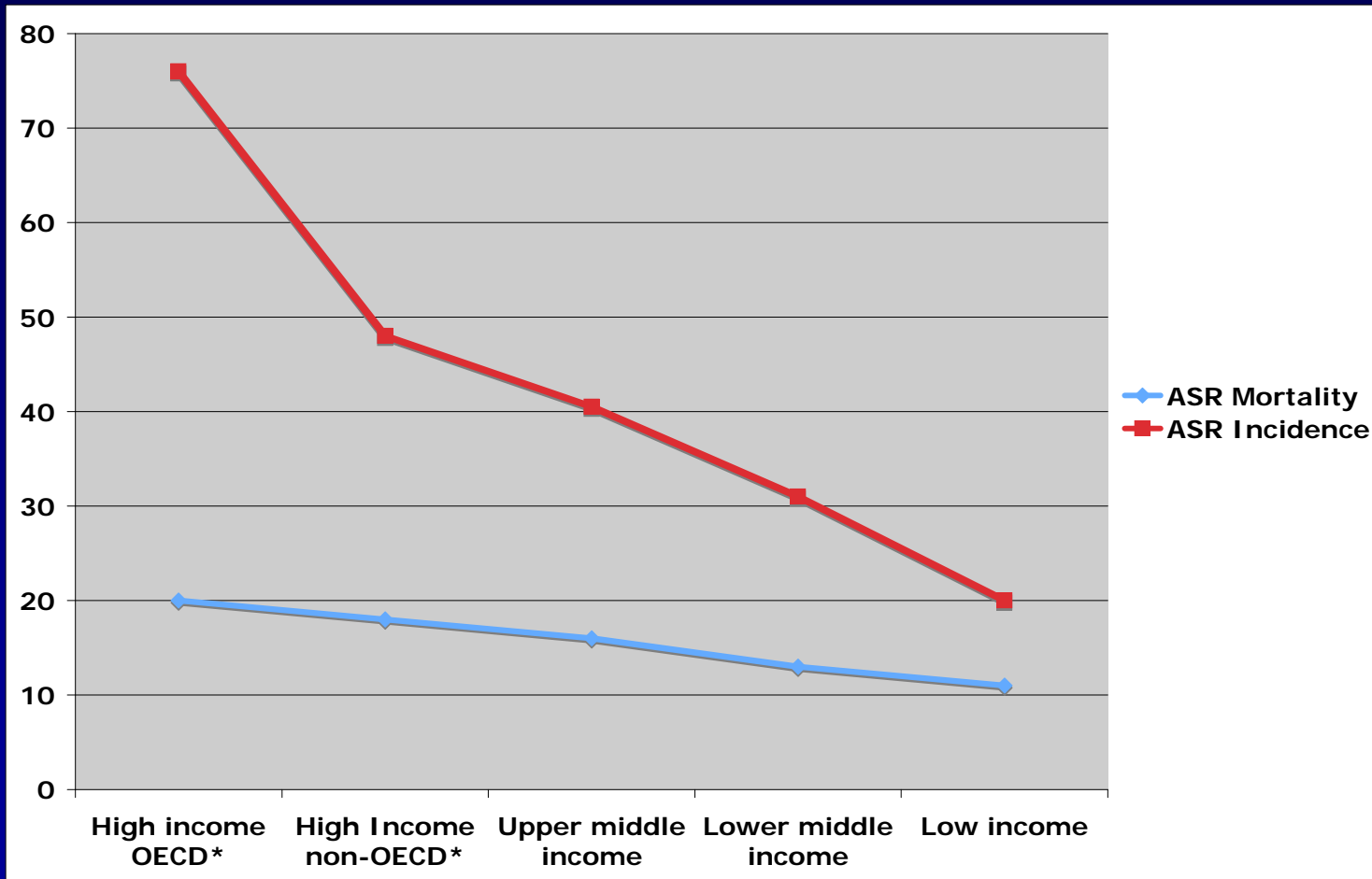


*GLOBOCAN 2002, International Agency for Research on Cancer (IARC)*

# Incidencia mundial del cáncer de mama estandarizado por edad, la mortalidad, razones de mortalidad-incidencia (1993-2001)

	<u>Incidencia</u>		<u>Mortalidad</u>		<u>RM:RI</u>
	<u>Núm.</u>	<u>Tasa</u>	<u>Núm.</u>	<u>Tasa</u>	
<b>MUNDO</b>	1,152,161	37.5	411,093	13.2	0.35
Más desarrollados	636,128	67.8	189,765	18.1	0.27
Menos desarrollados	514,946	23.8	221,028	10.4	0.44
<b>CONTINENTE</b>					
Norteamérica	229,631	99.4	48,239	19.2	<b>0.19</b>
Oceanía	13,507	84.6	3,338	19.4	0.23
Europa	360,746	62.3	129,010	19.7	0.32
Centro/Sudamérica	90,147	41.0	30,361	14.0	<b>0.34</b>
Asia	385,853	22.1	152,967	8.8	0.40
Africa	65,197	23.4	44,399	16.2	<b>0.69</b>

# Nivel de ingreso del país e incidencia/mortalidad por cáncer de mama



# La incidencia del cáncer de mama ha incrementado en prácticamente todas las regiones desde 1973, *IARC*

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- Japón, Singapur, y Corea, Africa → doble
- Registros urbanos de China → 20-30% incremento
- Áreas urbanas en India → 20-30% incremento
- Colombia → 20-30% incremento

¿Por qué las tasas de  
incidencia de cáncer de mama  
se están incrementando en el  
mundo?

# ¿Cuáles son las razones por las que la incidencia está aumentando?

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## Factores de riesgo conocidos

- Aumento en la edad
- Baja paridad
- Embarazos primerizos a una edad avanzada
- Edad temprana de menarquía
- Disminución de lactancia

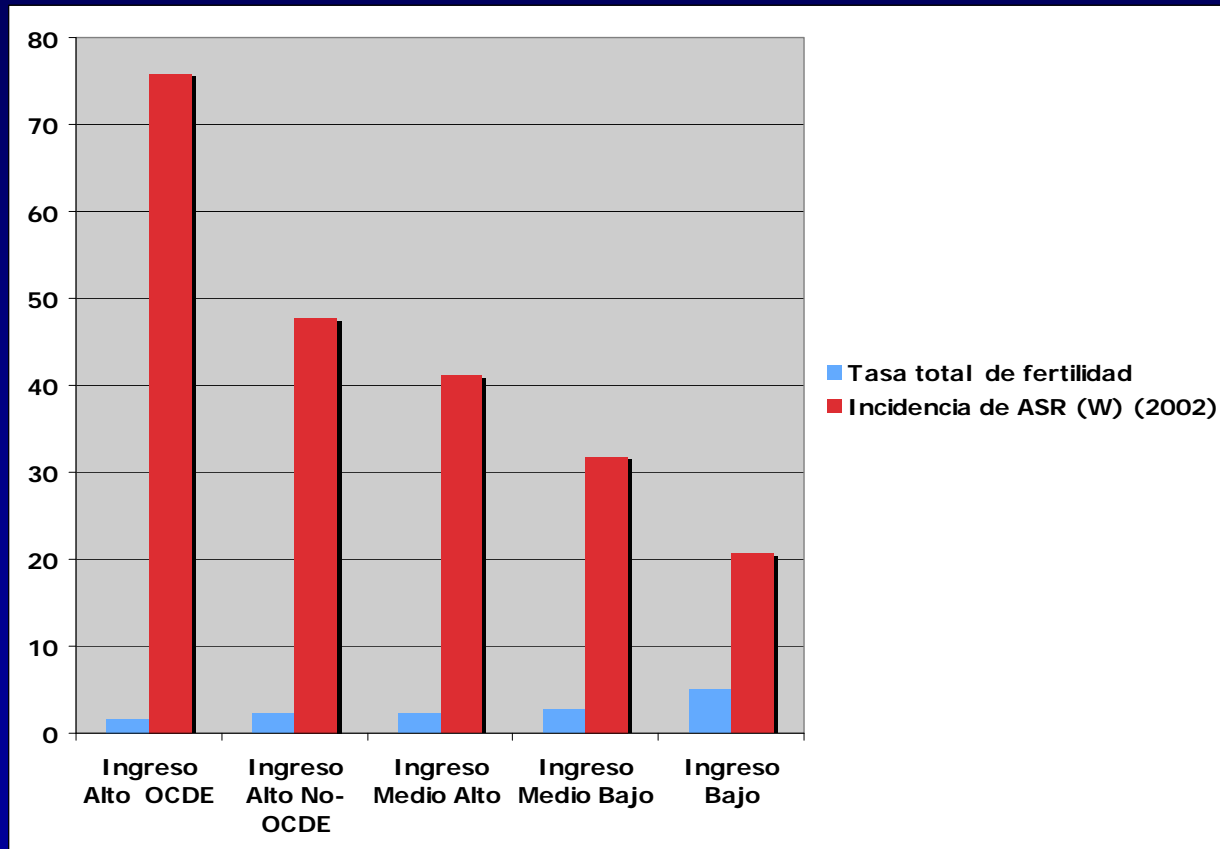
## Probables factores de riesgo

- Falta de ejercicio
- Dieta alta en grasas
- Obesidad
- Consumo de alcohol

## Diferencias en biología humana

- BRCA hereditario
- Fenotipo de tumor agresivo
- Diagnóstico a edad temprana

# Relación tasa de fertilidad e incidencia por ingreso del país



# Migración y cambios en el estilo de vida han resultado en un incremento en la incidencia del cáncer de mama

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1983 – 1997 Incidencia Cáncer de Mama en mujeres de 20 a 54 años

Shangai

27.5\*

EU: SF, LA, HI

53.7\*



Hong Kong

37.7\*

Miyagi

40.9\*



69.0\*

Osaka

28.9\*

\*Edad estandarizada por 100,000 año persona

*Zeigler, JNCI, 1993*

# Mutación del BRCA en países de ingreso bajo/medio

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- En general la incidencia de las mutaciones del BRCA-1 y BRCA-2 es desconocida
- El espectro de mutación del BRCA-1 y BRCA-2 es diferente entre mujeres asiáticas, africanas y blancas.
- Se han encontrado varias mutaciones diversas y únicas entre mujeres africanas y asiáticas.
- Las mujeres africanas y asiáticas tienen una mayor incidencia de mutaciones variantes del BCRA de significancia desconocida

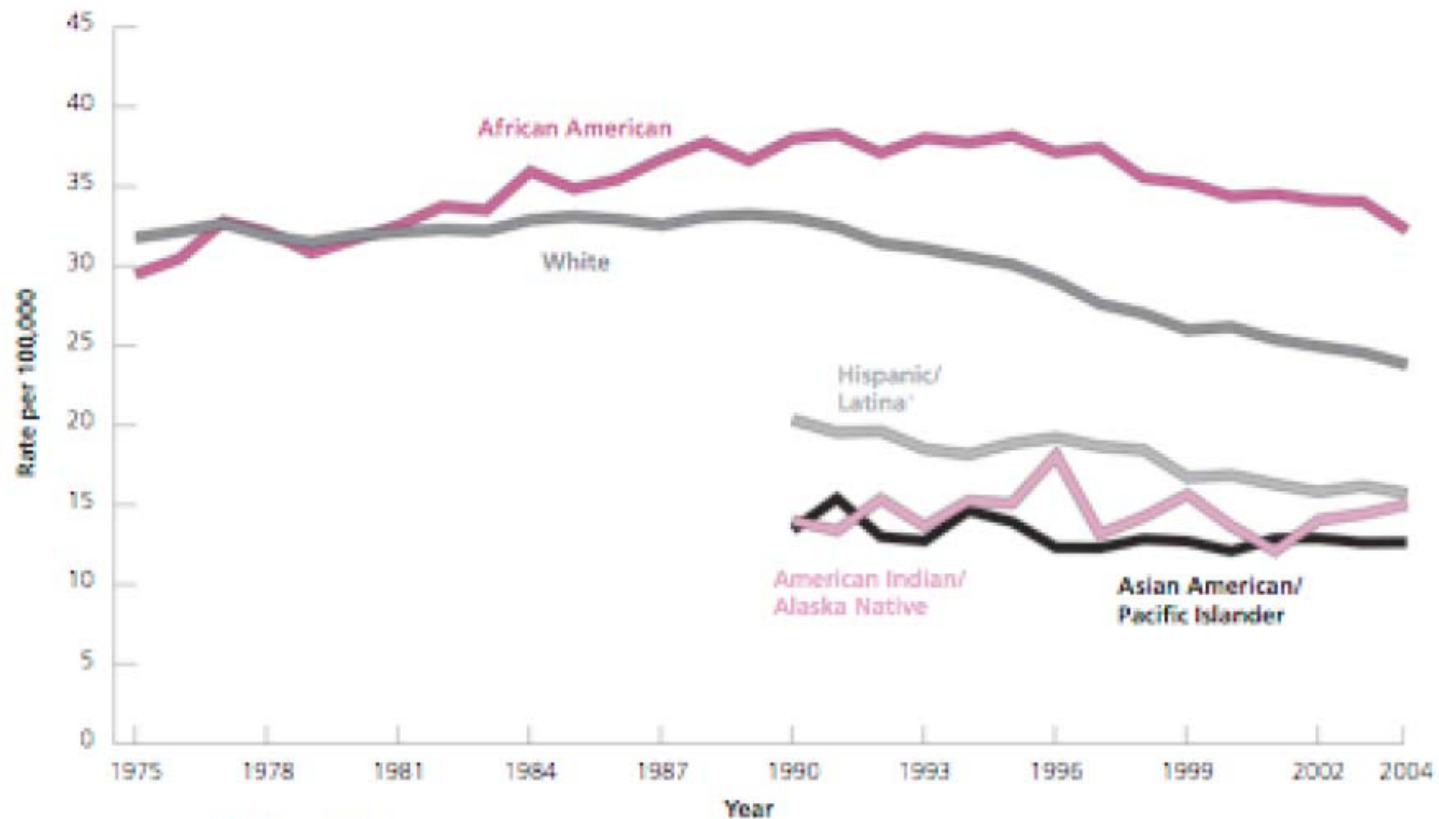
# ¿Qué contribuye a tasas de supervivencia bajas?



- Diagnósticos de etapas avanzadas
- Disparidades en los tratamientos
- Características biológicas de los tumores

# Sociedad Americana del Cáncer: tasas de mortalidad de cáncer de mama por raza/etnicidad

Figure 6. Trends in Female Breast Cancer Death Rates\* by Race and Ethnicity, US, 1975-2004



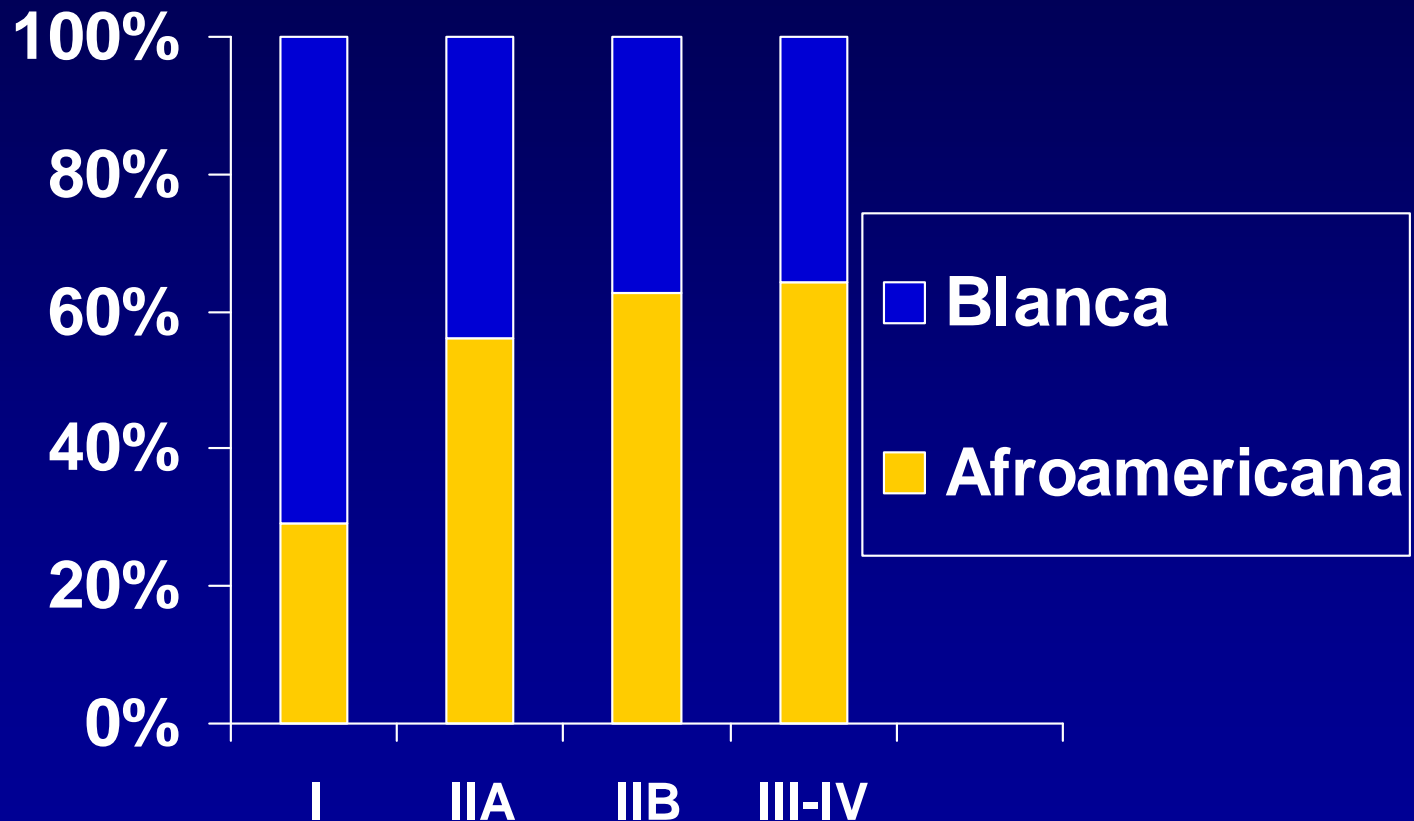
\*Rates are age-adjusted to the 2000 US standard population.

†Information is included for all states except Connecticut, Louisiana, Maine, Maryland, Minnesota, New Hampshire, New York, North Dakota, Oklahoma, Virginia, and Vermont.

Data source: National Center for Health Statistics, Centers for Disease Control and Prevention, 2007.

American Cancer Society, Surveillance Research, 2007

# Estadío del cáncer de mama en mujeres jóvenes de Atlanta por raza, 1990-1992



*Porter, et al. Cancer 2004*

# Mujeres de África Subsahariana: alta mortalidad

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- La etapa tardía se presenta
  - 70-90% se presenta en la etapa III-IV
  - 50% se presentan nodos en racimos linfáticos axilares
  - Diámetro principal del tumor

# Retos

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- Estrategias efectivas para revertir la tendencia creciente de la mortalidad
- Reducción del estadio de cáncer de mama debido a la detección temprana
- ¿Cómo hacer la inversión económica requerida para llevar a cabo programas de tamizaje?

# El éxito requiere

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- Voluntad política
- Evidencia confiable e investigación
- Concientización y participación de la comunidad pública y médica
- Asociación entre los activistas comunitarios, el gobierno, las asociaciones no gubernamentales y de biotecnología

A wide-angle landscape photograph of a mountain range. The background features several jagged, snow-capped mountain peaks under a clear blue sky. The middle ground shows rolling hills and valleys with patches of snow and small pools of water. The foreground is a flat, grassy area with scattered rocks and more snow patches. The word "Gracias" is overlaid in a large, dark blue, sans-serif font in the center of the image.

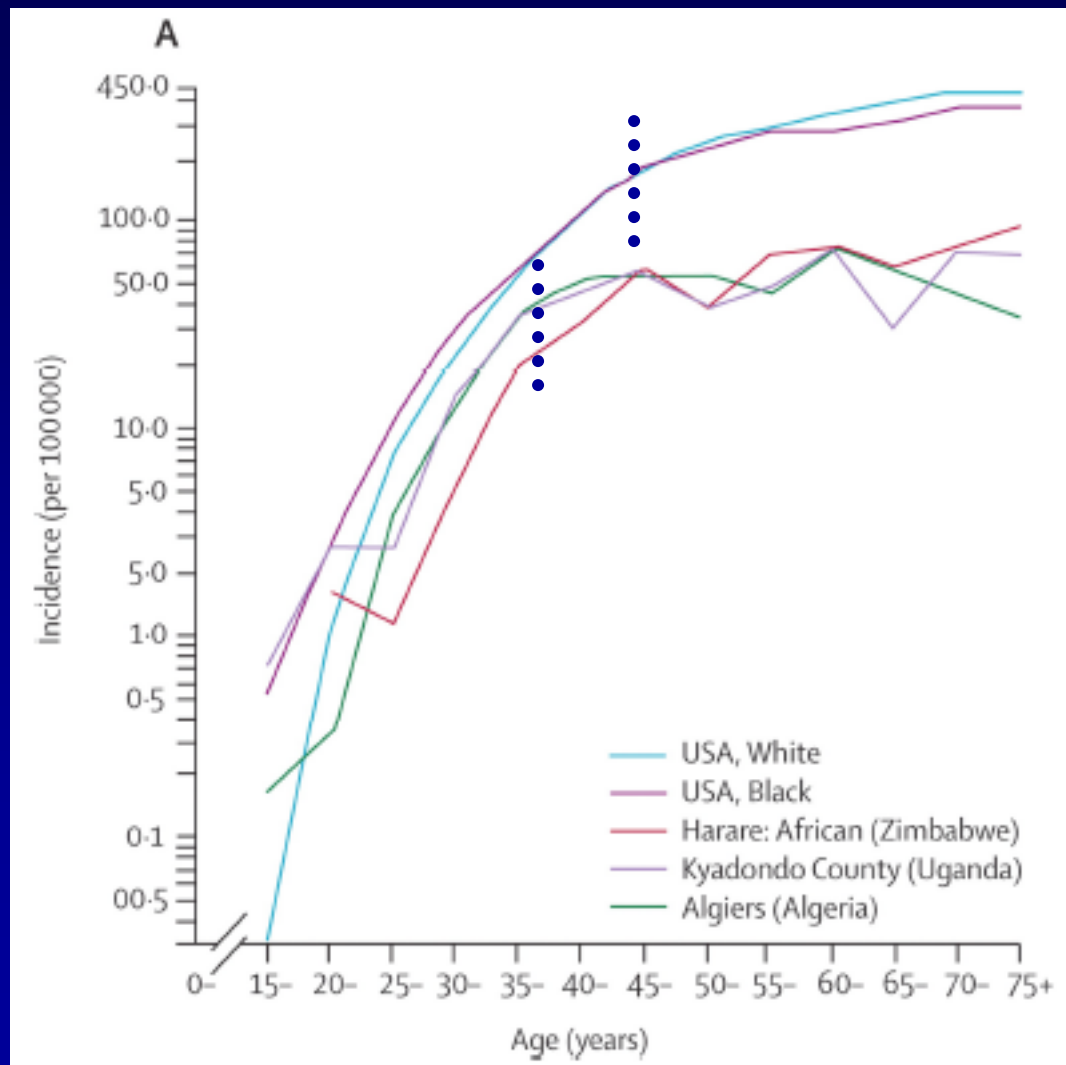
Gracias

# African American women more likely than whites to have:

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- young onset breast cancer
- High grade tumors
- Proliferative tumors
- ER- tumors
- triple negative tumors

Peak of breast cancer incidence occurs at a lower age for African women than US women



# Asia: Trends in Breast Cancer Incidence

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Japan: 1963-1997

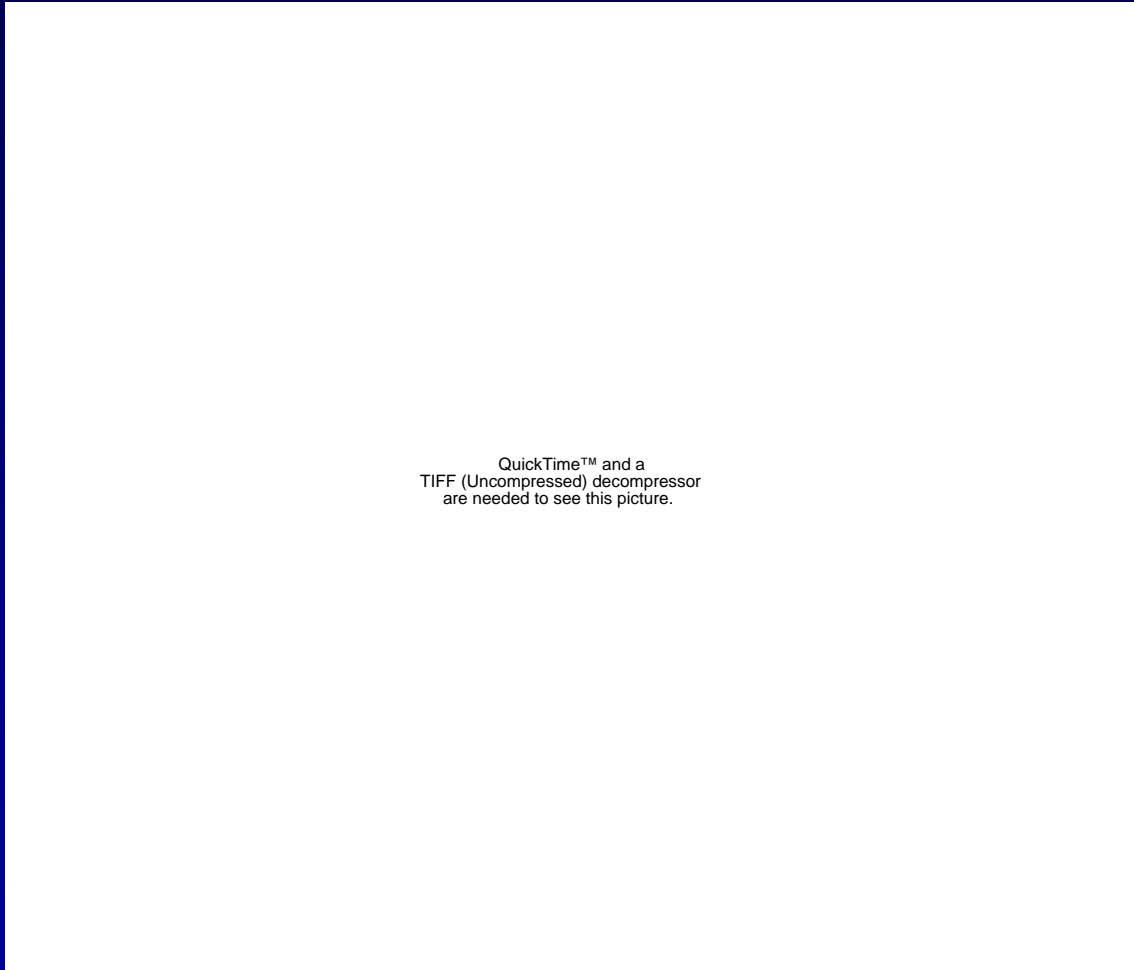
India: 1978-1997

QuickTime™ and a  
TIFF (Uncompressed) decompressor  
are needed to see this picture.

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# Increased incidence has been most dramatic in urban regions

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Shanghai

Qidong county

# Sub-Saharan African Women: low incidence

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- Reproductive protection
  - Late menarche, early menopause
  - 5-9 live births per woman
  - Median age at first pregnancy=19
  - 96% breast feed average of 16 months

# In affluent Western countries

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- women have relatively high social status
- delay childbearing
- have relatively few children
- low rates of breast-feeding
- commonly use hormone-replacement therapy

# Migration studies indicate breast cancer risk in Asians rises to approach Western levels over several generations

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Breast Cancer Incidence: 1983-1997 women aged 20-54

Community	Incidence rate*
<b>SF, LA, HI</b>	
Whites	91.8
Chinese	53.7
Japanese	69.0
<b>China: Shanghai</b>	27.5
<b>Hong Kong</b>	37.7
<b>Japan: Miyagi</b>	40.9
<b>Japan: Osaka</b>	28.9

\*Age standardized per 100,000 person years

*Zeigler, JNCI, 1993*

# 'Meat/sweet' diet in Shanghai

## ~1500 cases and controls

*Cui, et al., CEBP, 2007*

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- Diet patterns
  - Tofu, cauliflower, beans, bean sprouts green leafy vegetables
  - Shrimp, chicken, beef, pork, candy, desserts
- Meat/sweet associated with increased risk in post menopausal women [OR 1.3 (1.0-1.7);  $p=0.3$ ]

# Global disparities in mortality similar to racial and economic disparities in EEUU

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- marginal health care access
- low awareness of breast cancer risk
- cultural barriers to care
- ? genetic and biologic differences that might affect disease outcomes in lower-income countries

# Comparison of 5-year survival (%) for breast cancer in African and African American women: 1993-1997

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	Harare, Zimbabwe	Kampala, Uganda	USA AA; SEER
5-year survival	37.9	45.4	70.1

What can be done to address  
the rising incidence and  
mortality of breast cancer  
world wide?

# Successful strategies in predominantly white, affluent populations

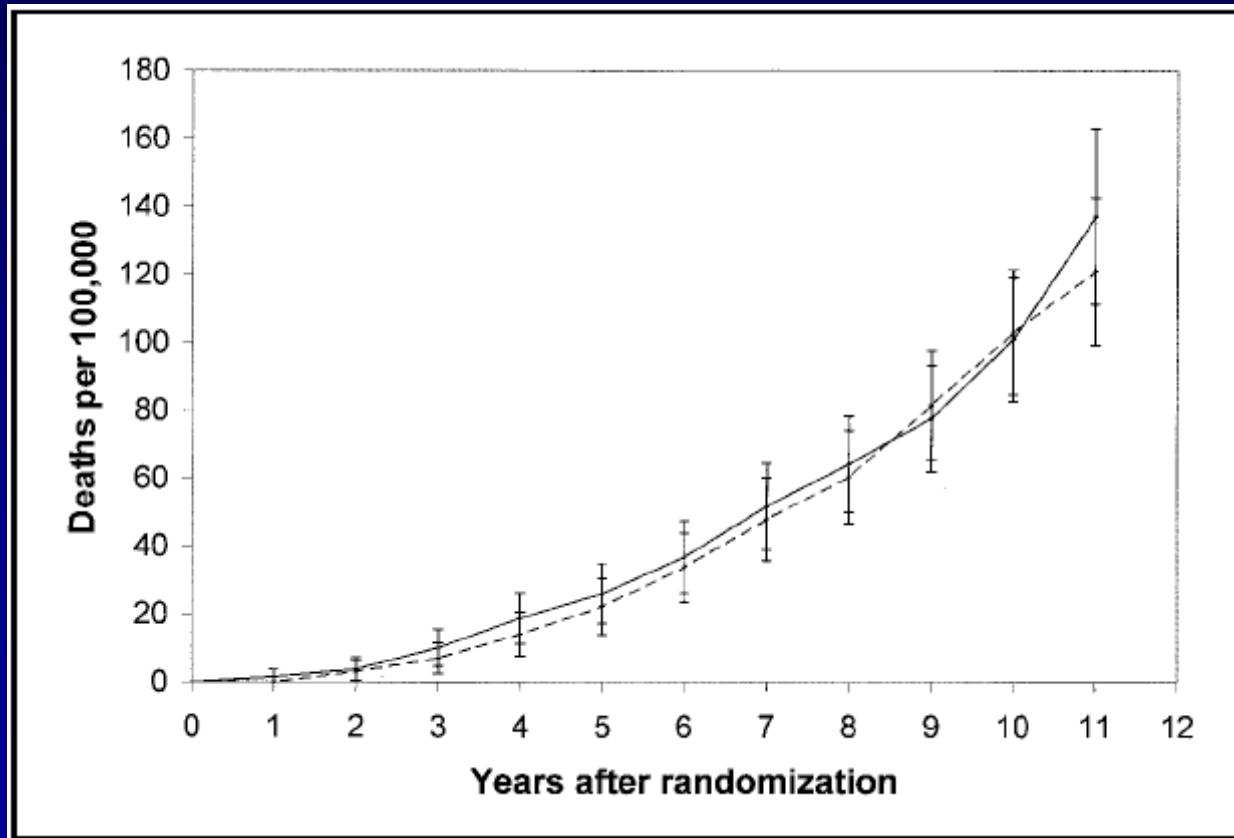
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- early detection through screening
- targeted hormonal therapy
- anti-*HER2* therapy
- improvements in chemotherapy

# Breast self exam offered no reduction in 10-year survival in a large study of women in Shanghai

*Thomas, et al., JNCI, 2002*

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Mortality in BSE group (solid) and control group (dotted)

# Breast cancer rates will rise-- how do we make advances?

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- Country/population specific
- Early detection essential--metastatic disease is not treated successfully in ANY country
- Develop guidelines that are evidence-based, economically feasible, and culturally appropriate (BGHI)
- Develop advocacy for breast cancer prevention, detection, treatment and research!

# Advocacy in the EEUU

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- End to secrecy: Betty Ford, wife of President Ford announces her breast cancer to the public in 1974
- Public health advocates promote BSE
- Funds raised-- 'Komen Race for the Cure'
- Political action-legislative, regulatory, funding changes
  - Mammography Quality Standards Act
  - funding for breast cancer at NCI--4x increased funding in the 1990's
- Promoting business, government, scientific communities as partners in advocacy

# Summary

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- Breast cancer is highest in affluent countries, Caucasian women and urban women
- Incidence is rising throughout the world
- High mortality rates burden women in low resource countries
- There is an urgent need find and implement country-specific approaches to the detection and treatment for breast cancer



*The* NEW ENGLAND JOURNAL *of* MEDICINE

Perspective  
JANUARY 17, 2008

**“Westernizing” Women’s Risks? Breast Cancer  
in Lower-Income Countries**

Peggy Porter, M.D.

# Relationship of Health and Demographic Variables and Country Income

	High income: OECD	High income: non-OECD	Upper middle income	Lower middle income	Low income
GDP per capita	31,144.9	19,443.9	11,196.1	5,006.8	1,454.7
Exp on health per capita	2,343.6	931.1	571	265.5	106.9
Exp on health (% of Govt's total)	14.8	9.8	10.4	10.2	9.4
Total Exp on health (% of GDP)	9	5.6	6.2	5.7	5.4
Total fertility rate	1.6	2.3	2.2	2.8	5
Adult literacy 2005	No data	89.1	92.2	86.6	58
% in Urban, 2005	77.3	82.1	68.6	54.5	32.3
Life Expect of females	82	77	73	69	54
ASR(W)Mortality (2002)	19.6	18.7	16.7	14.6	12.6
ASR(W)Incidence (2002)	75.8	47.8	41.2	31.7	20.6

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# Breast Cancer Incidence in Japan: 1963-1997

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# Breast Cancer Incidence in India: 1978-1997

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# Sub-Saharan African Women: low incidence/high mortality

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- Reproductive protection
  - Late menarche, early menopause
  - 5-9 live births per woman
  - Median age at first pregnancy=19
  - 96% breast feed average of 16 months
- Late stage presentation
  - 70-90% present with Stage III-IV
  - 50% present with matted axillary lymph nodes
  - Mean tumor diameter 10 cm

Biological factors might be associated  
with advanced stage at diagnosis

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**Genotype/phenotype of tumor or host**



**↑ STAGE AT DIAGNOSIS**

# Does the practice of breast self exam reduce mortality from breast cancer?

267,040 women from 519 textile factories  
1989-91

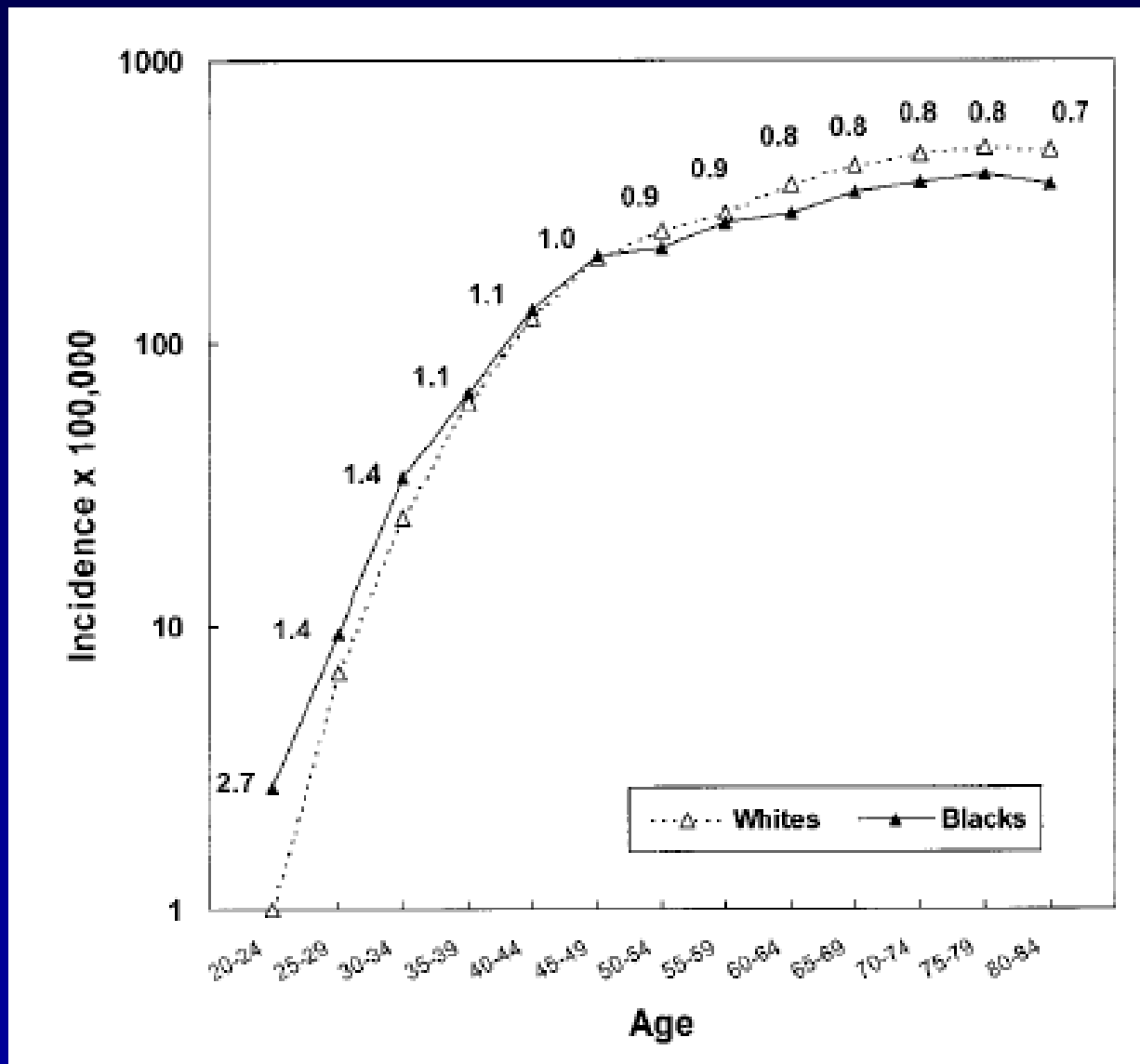
**BSE**  
**133,375**

**Low back care**  
**133,665**

All women followed for development of breast cancer and vital status

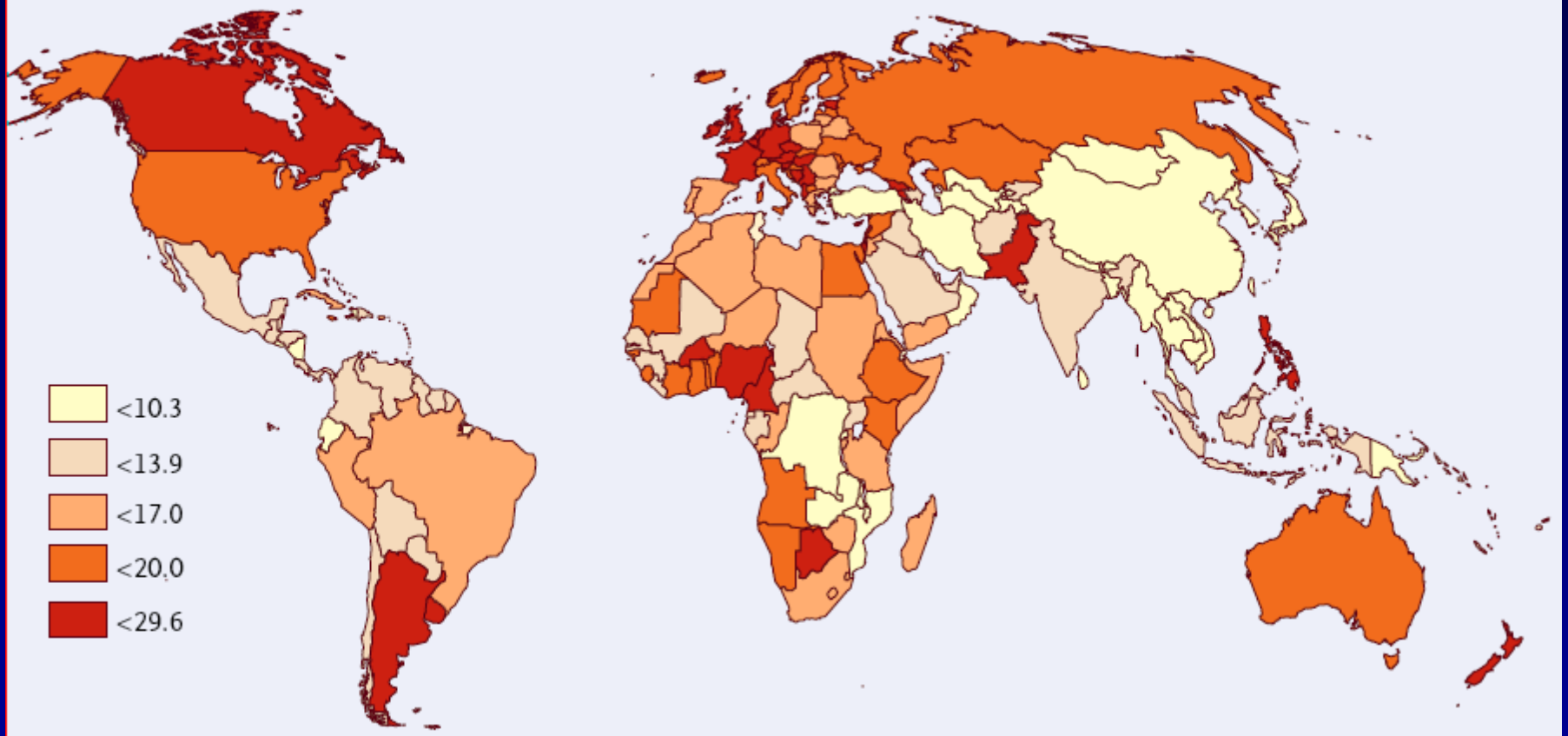


# Age specific breast carcinoma incidence for black and white women, 1990-1994 (SEER)



*Pathak, Cancer  
2000*

Age-Standardized Mortality Rate per 100,000



*GLOBOCAN 2002, International Agency for Research on Cancer (IARC)*

# The greatest obstacle to understanding the global risk of breast cancer is the lack of data

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- Incidence figures are based on data from small geographic areas that are often pooled and extrapolated to large regions.
- Reported rates may reflect only the women who are easiest to reach or who have the highest standard of living.
- Current global figures cannot truly reflect the underlying economic and cultural diversity driving increased incidence and mortality.