

Lessons about Breast Cancer from Epidemiological Studies for Clinicians

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***North of England 10th Annual Breast Cancer Symposium
Saturday April 28 2018
University of Hull***

Today's Random Medical News

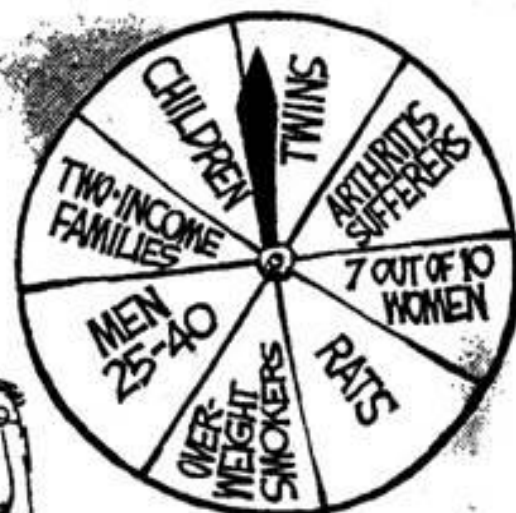
from the New England
Journal of
Panic-Inducing
Gobbledygook



CAN CAUSE



IN



ACCORDING TO A
REPORT RELEASED
TODAY...

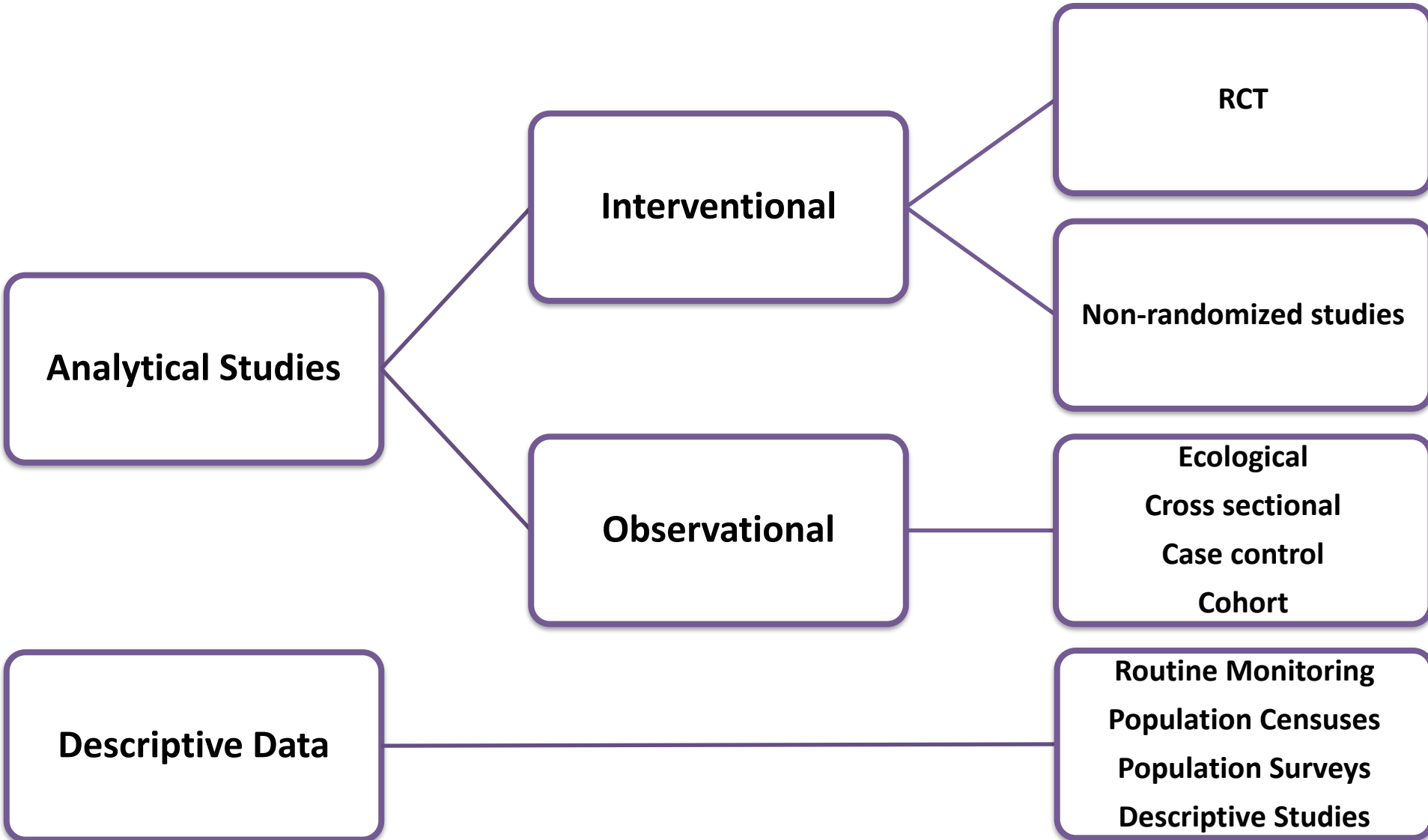
NEWS

Jim Borgman
The Cincinnati Enquirer
King Features Syndicate

Types of Epidemiological Studies



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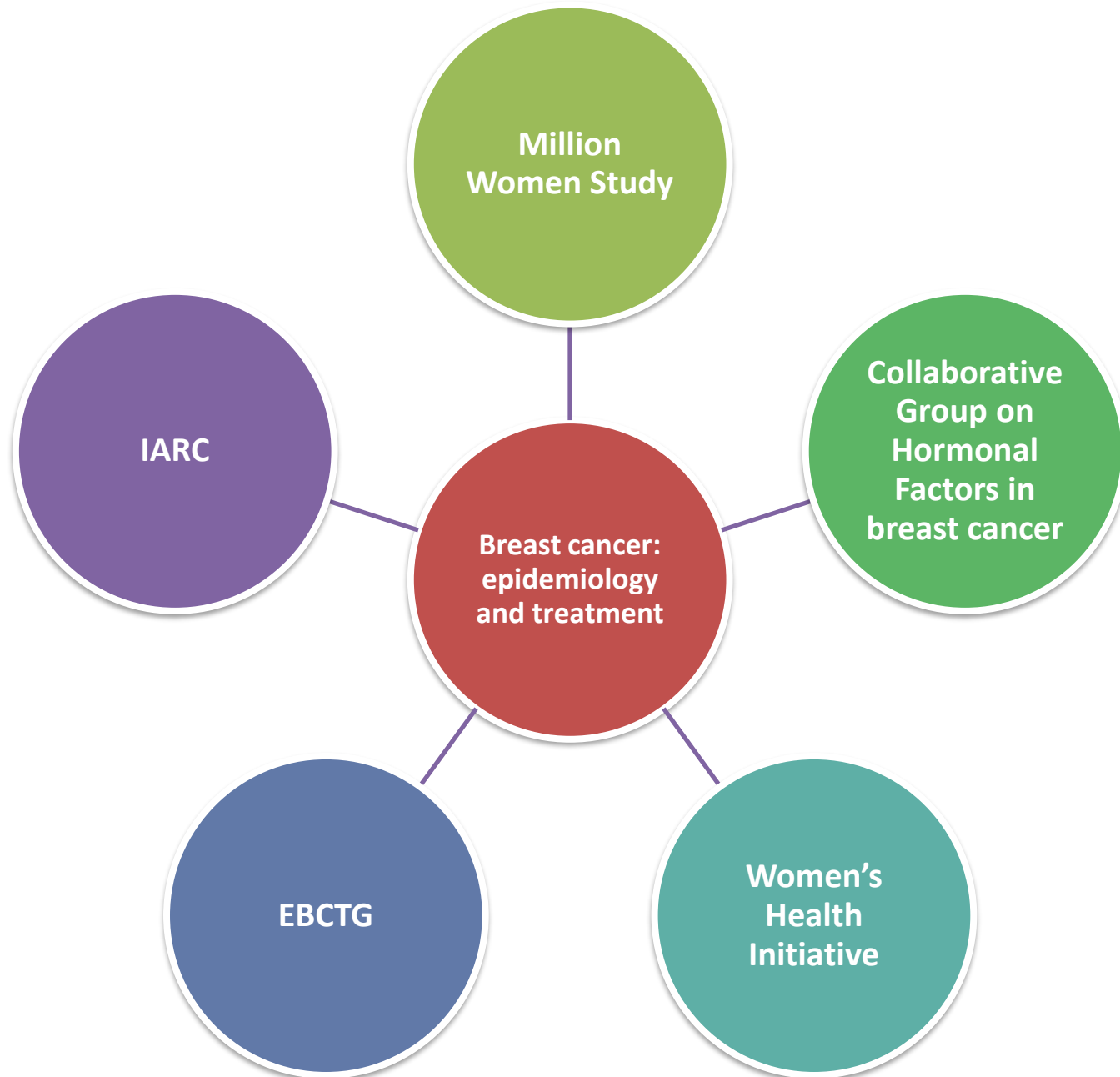
The application of epidemiology



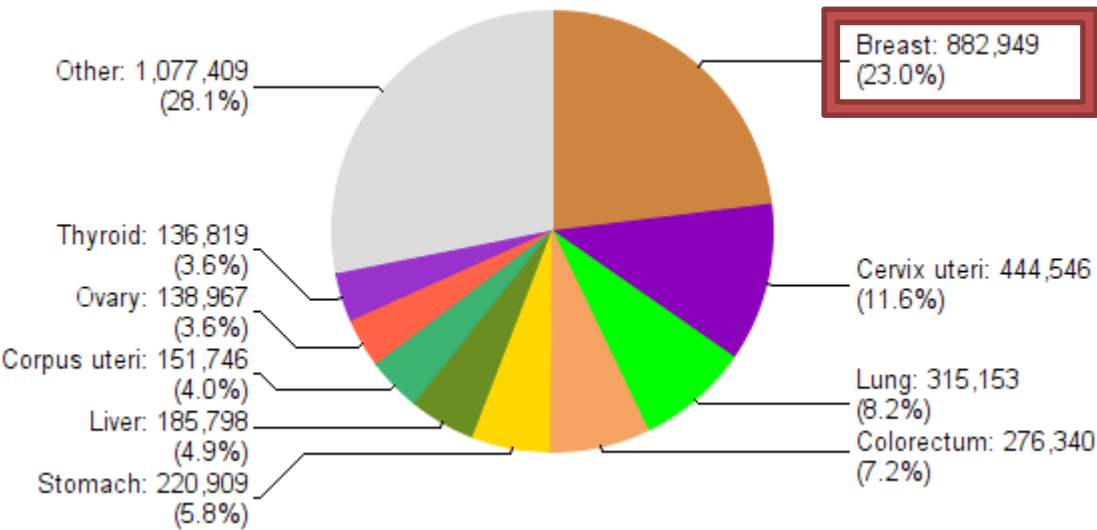
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Sources of evidence

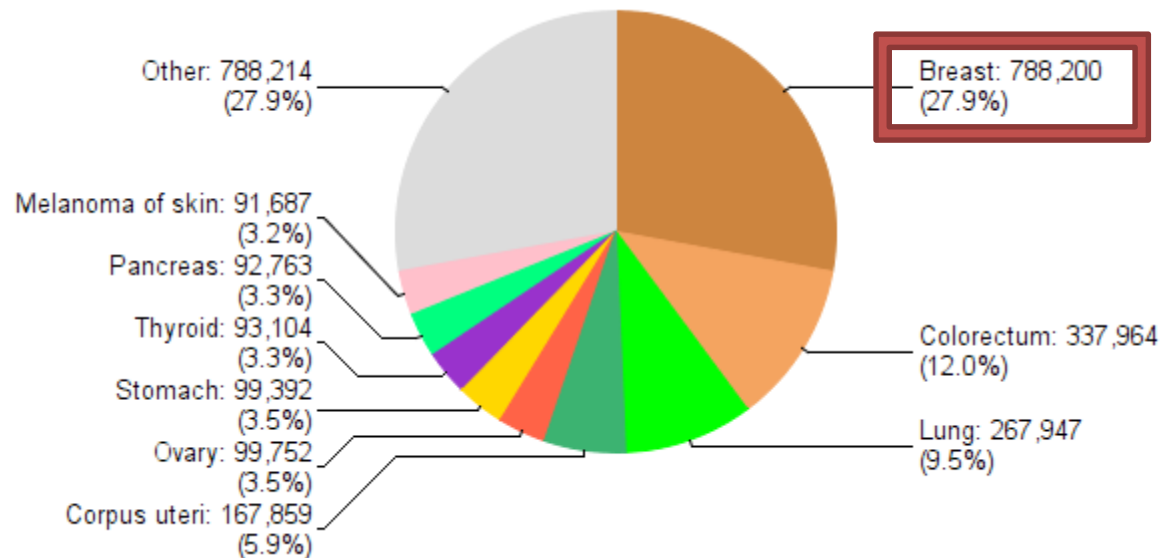


Global incidence of cancer in women



Less Developed
2.8 billion women
3.8 million cancers

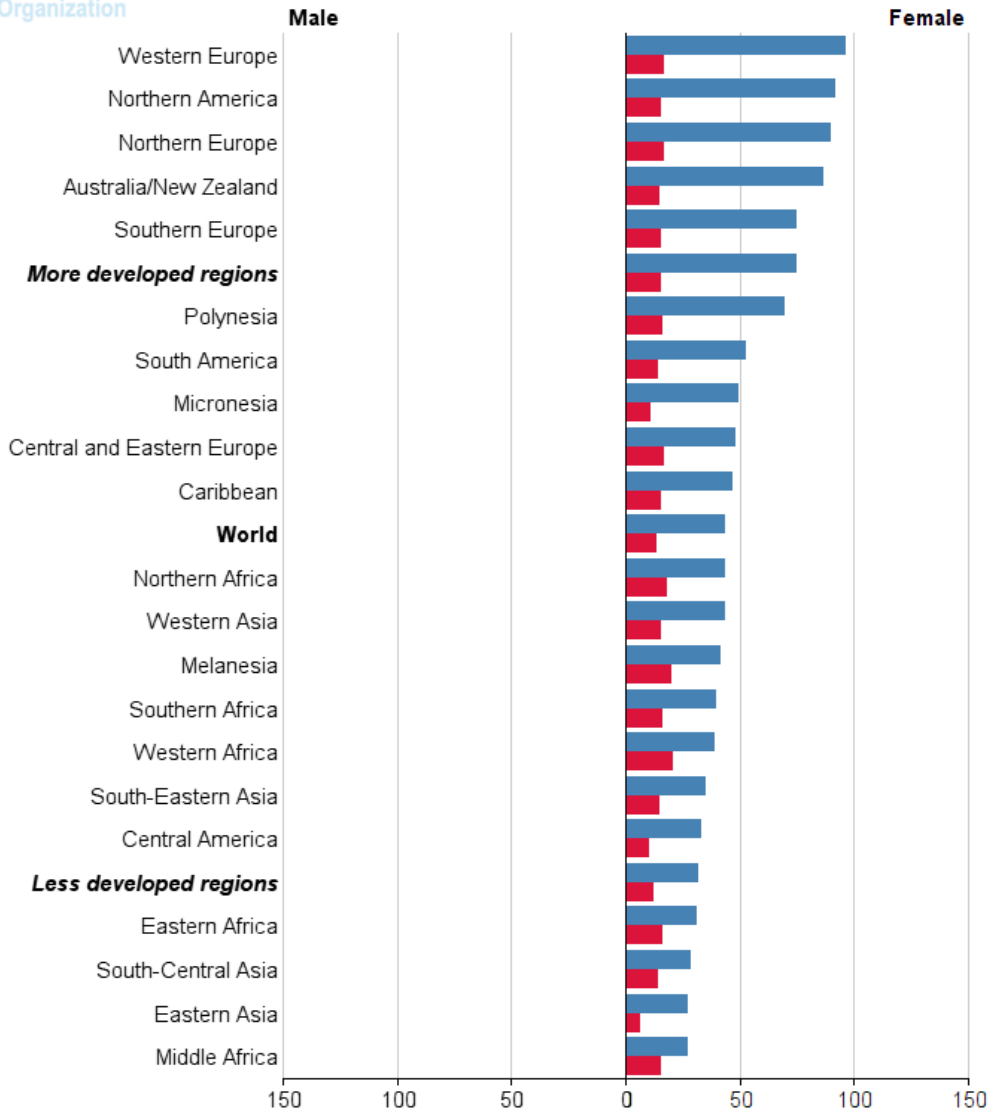
More Developed
638 million women
2.8 million cancers



Breast Cancer Global Incidence and Mortality

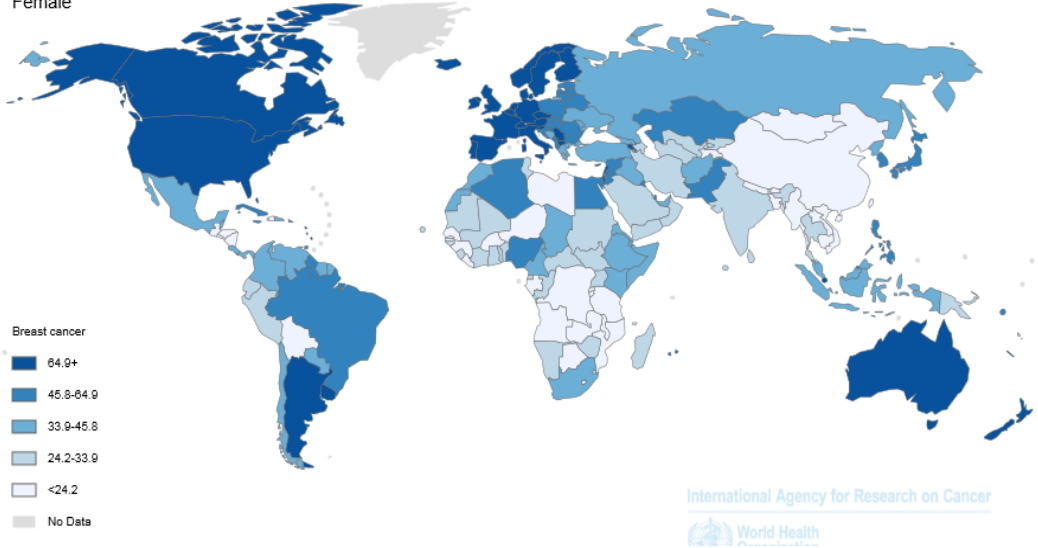
International Agency for Research on Cancer

Breast
ASR (W) per 100,000, all ages



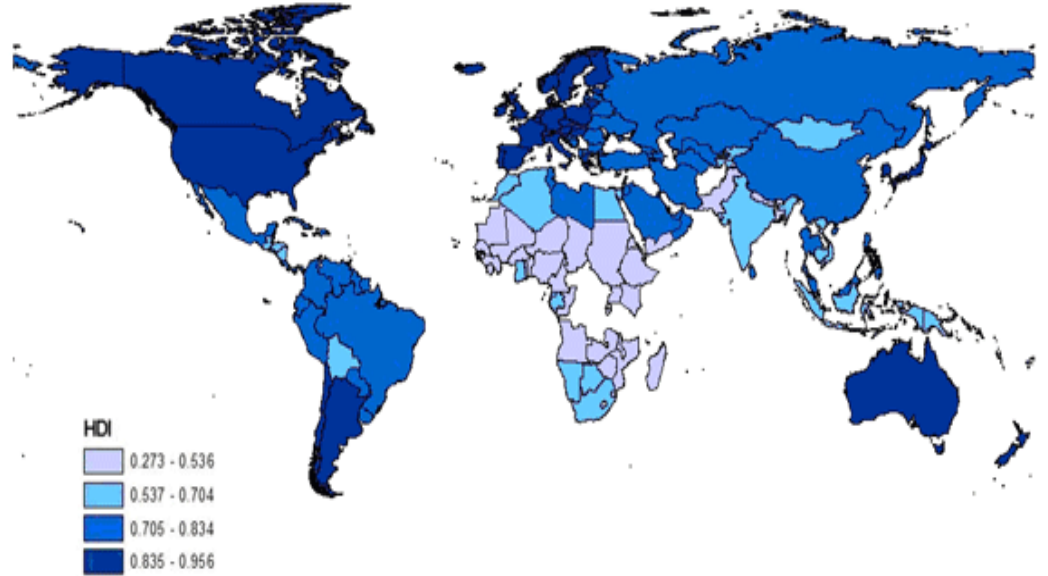
Breast Cancer Global Incidence and HDI

Incidence ASR
Female



Breast cancer incidence

Human Development Index



Heterogeneity in Breast Cancer Incidence Rates

Key observations:

1) Rising global incidence

- 2000: ~ 1 million new cases
- 2012: 1.67 million new cases
- 2035: ~2.6 million new cases
- Increase will largely be in the developing world

2) Four-five fold variation in incidence between low and high income countries

- Global ASR is around 39
- High income ASR >100
- Low income ASR <20

3) Heterogeneity in rates within a country

- e.g urban versus rural India

This heterogeneity can be largely explained by three broad factors:

Age

Reproductive patterns

'Nutritional' factors

As countries become richer two things happen;
people live longer and they have fewer children

Breast Cancer Risk Factors

Why is there such geographic variation in incidence rates?

Why is global incidence increasing?

Need to understand risk factors

REPRODUCTIVE

- * Parity
- * Breast feeding
- * Age at menarche
- Age at menopause
- * Exogenous hormones

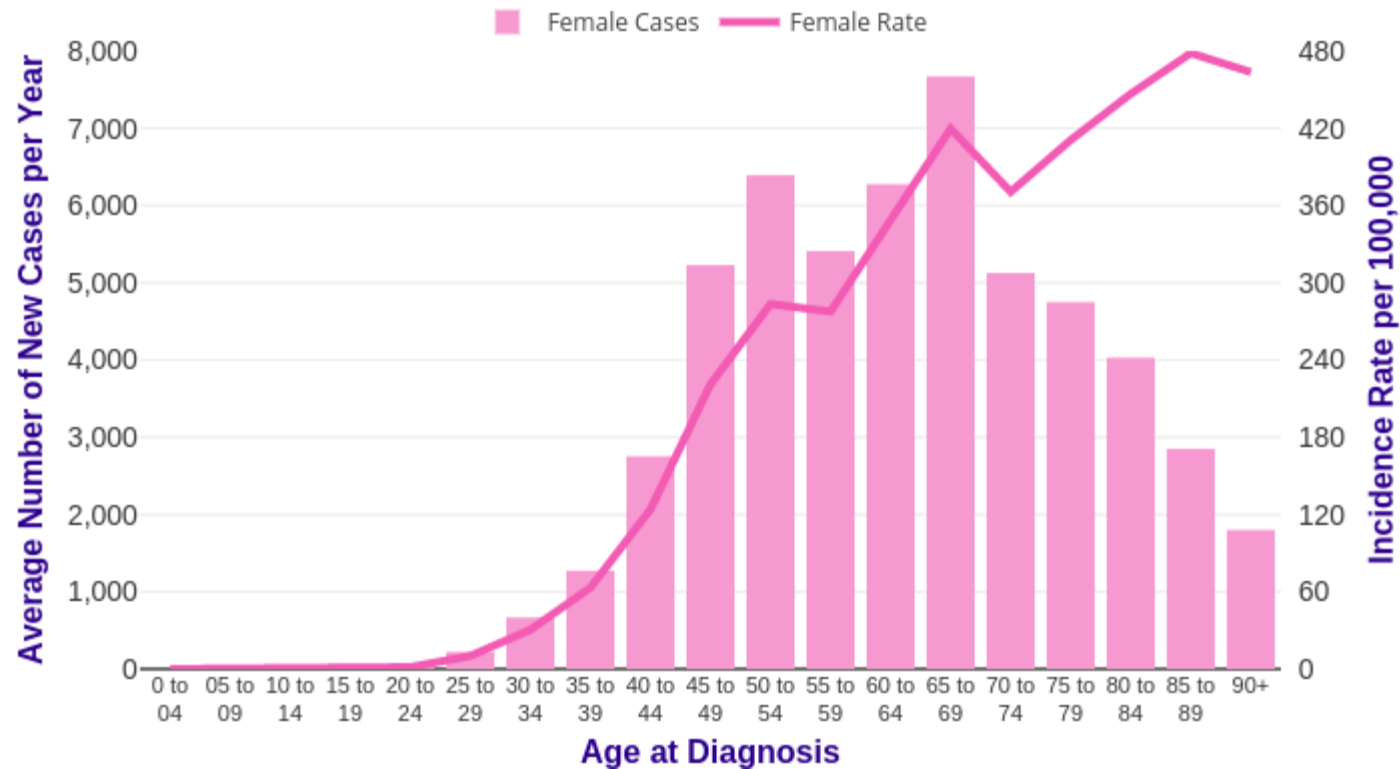
NON-REPRODUCTIVE

- * Age
- * Obesity
- * Alcohol +/- diet
- Family history
- Other

Sources:

Collaborative group on hormonal factors in breast cancer
Million Women Study
Women's Health Initiative

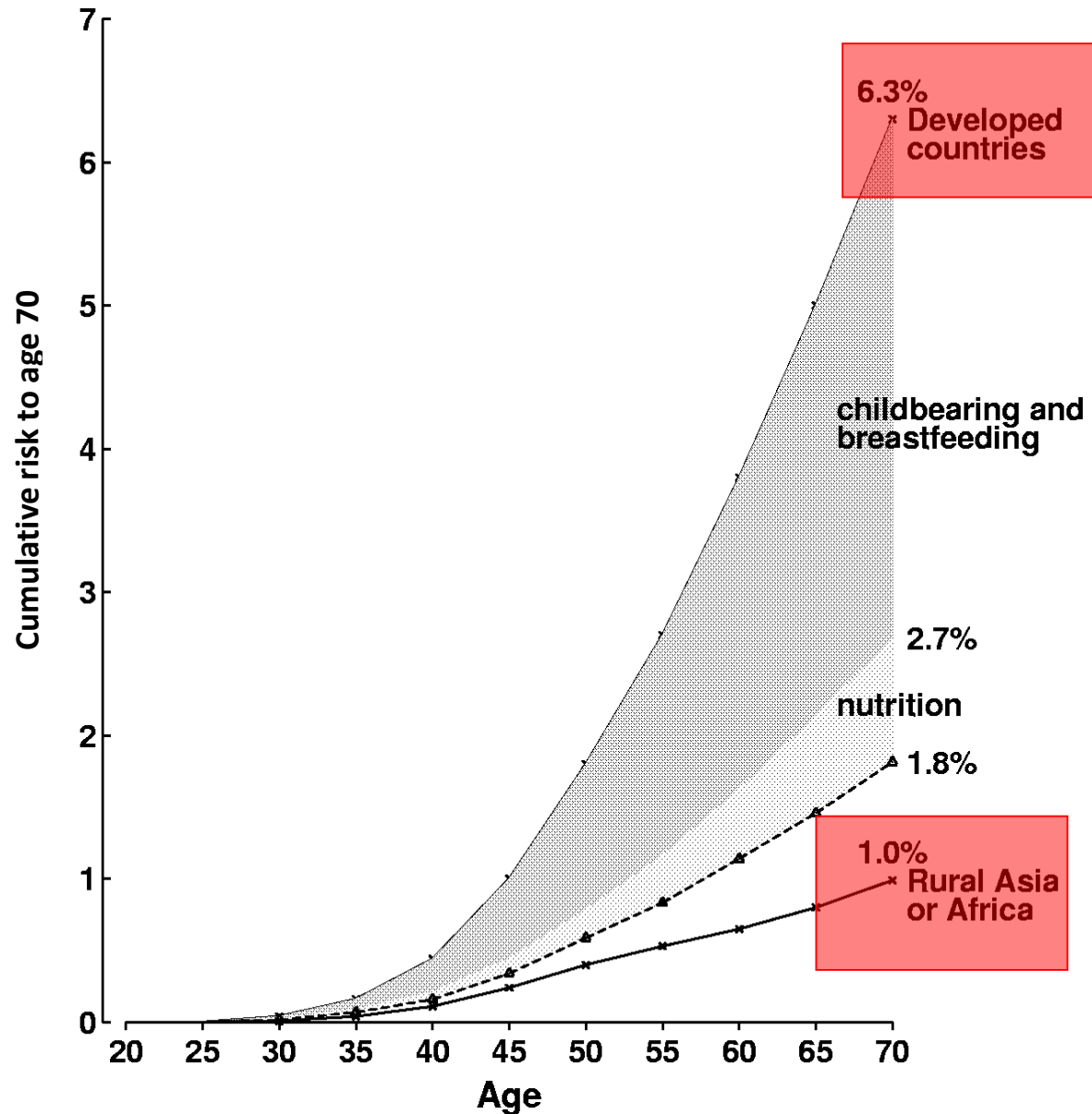
Age and breast cancer risk UK



Breast Cancer (C50), Average Number of New Cases per Year and Age-Specific Incidence Rates per 100,000 Population, Females, UK, 2013-2015

- One third of breast cancer occurs in women over the age of 70
- 80% occurs in women over the age of 50

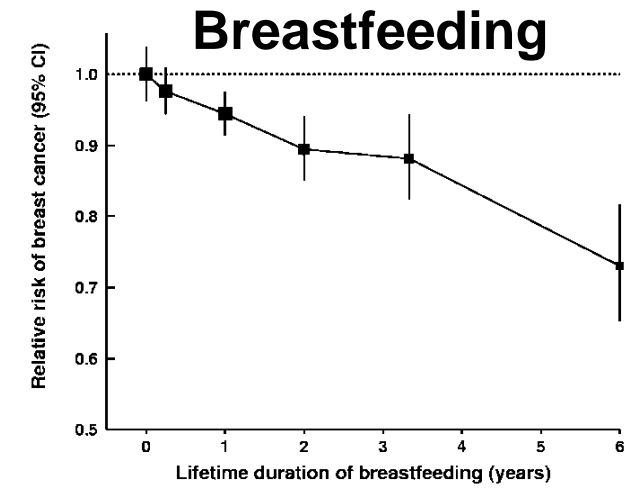
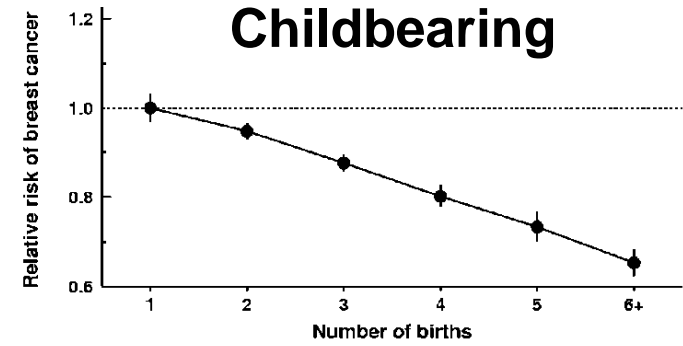
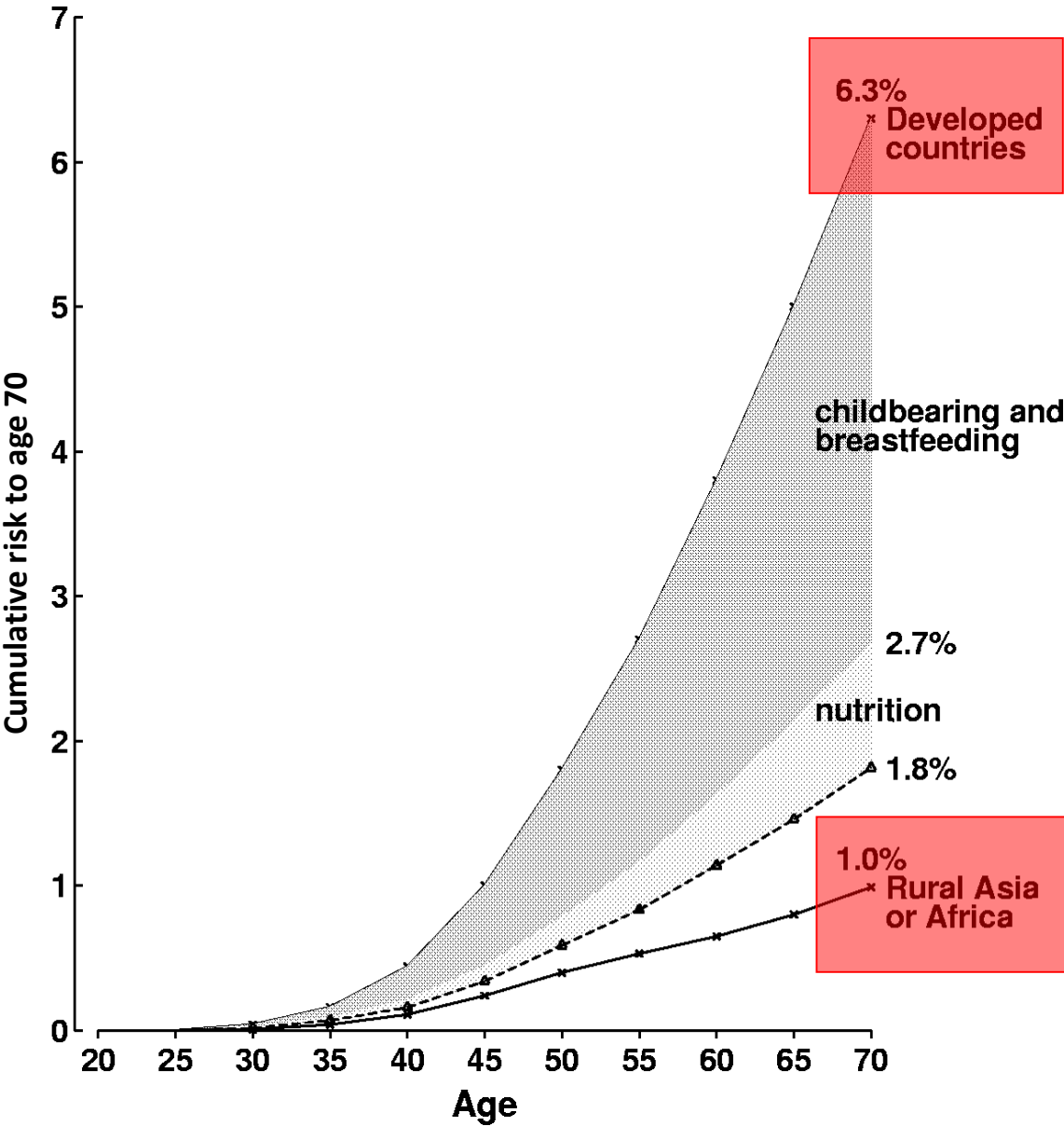
Age and breast cancer risk



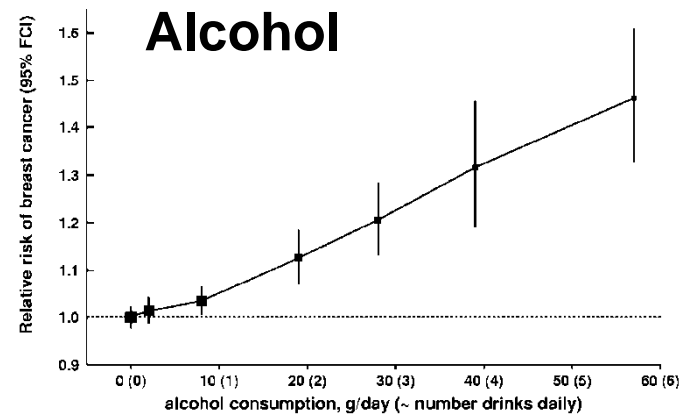
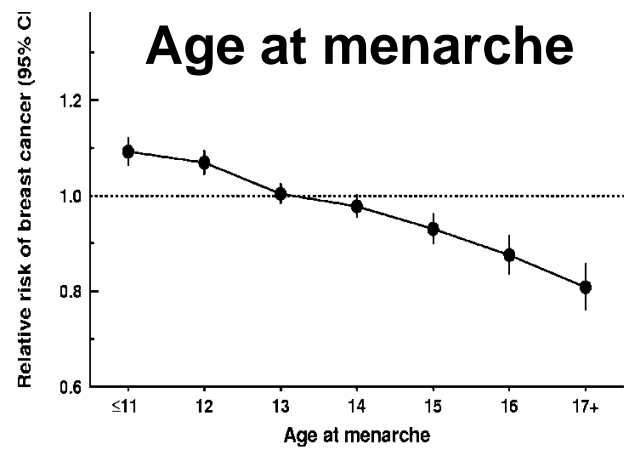
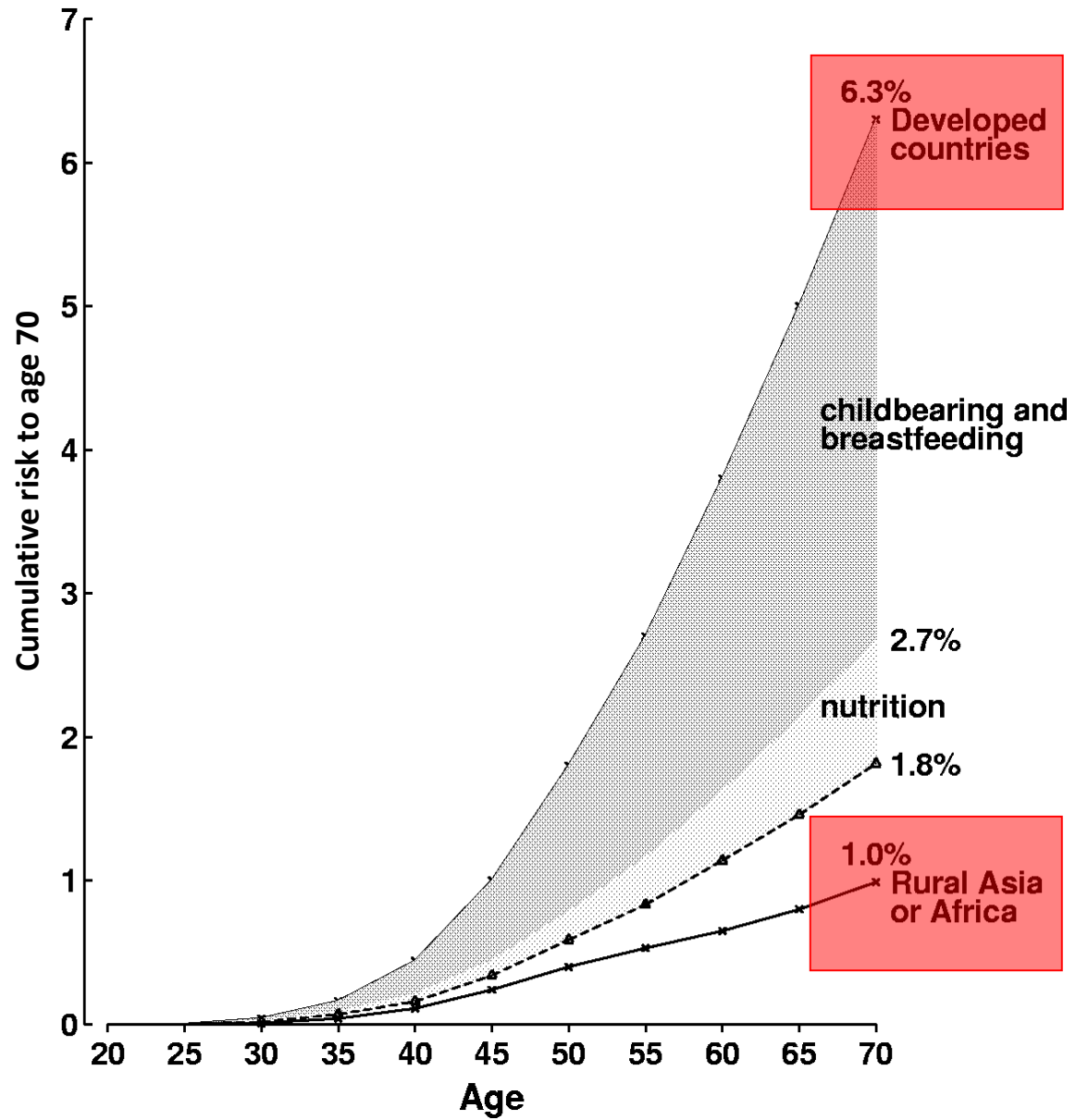
Average life expectancy for women:

- Global: 73 years
- High income: 83 years
- Low income: 63 years
- As life expectancy increases so does cancer burden

Parity and breastfeeding

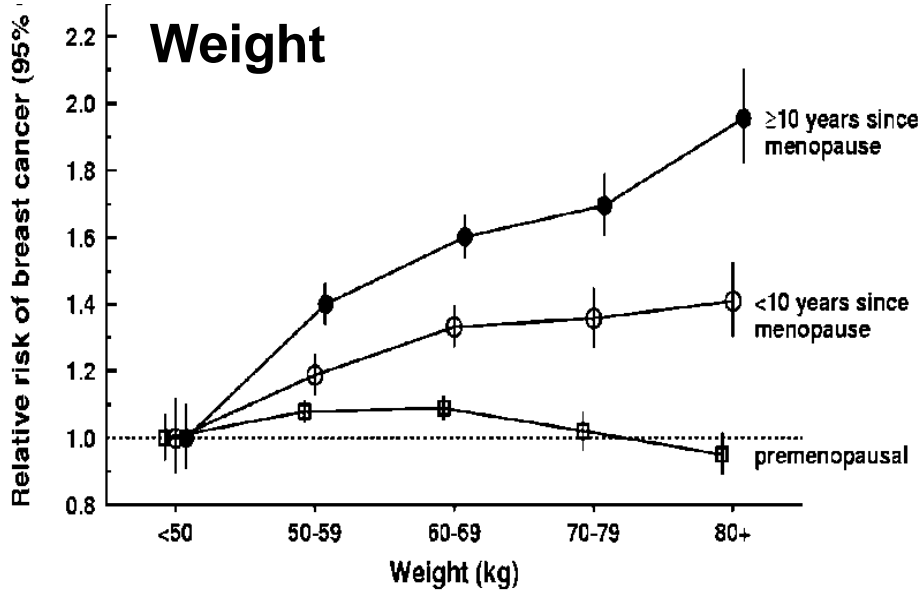
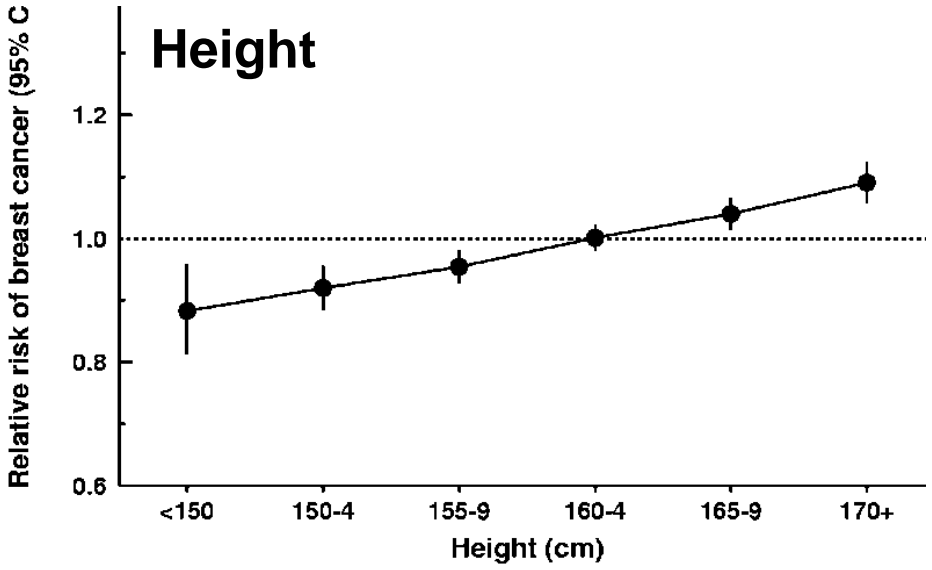
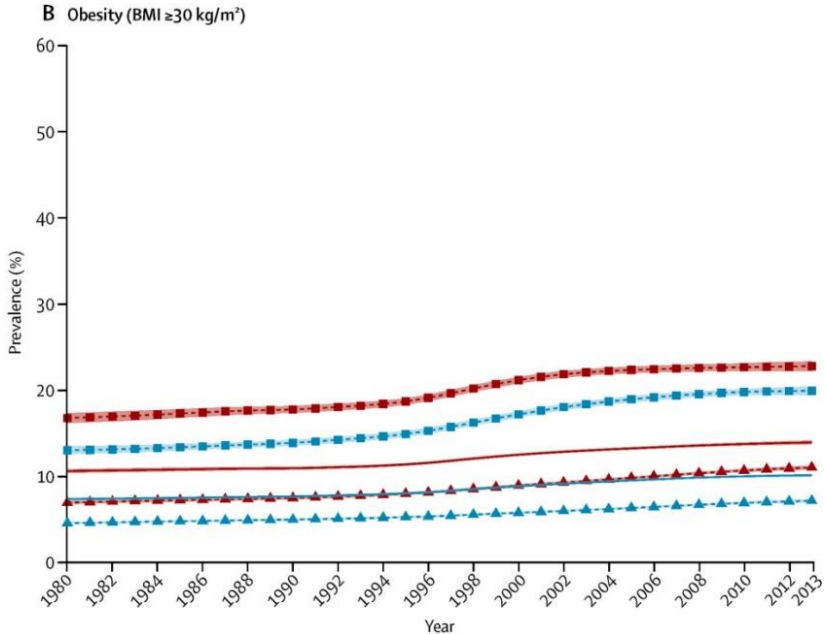
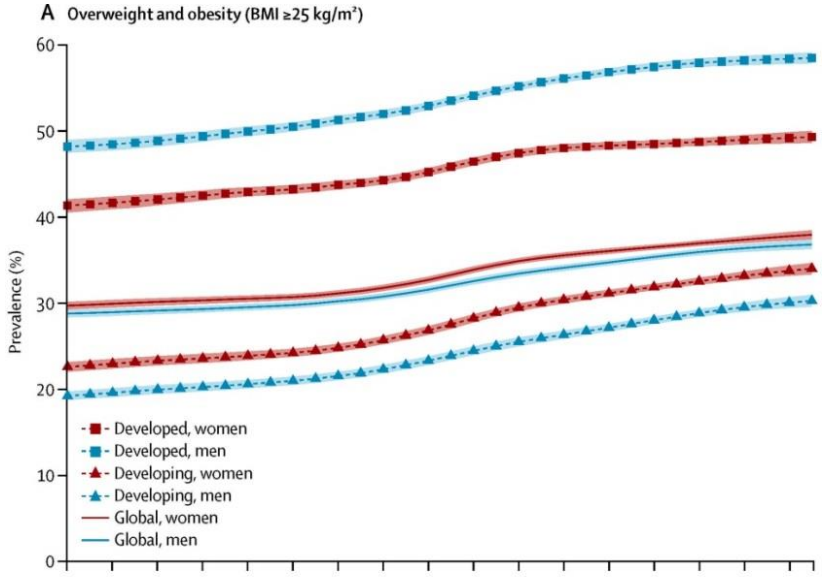


'Nutritional' factors: age at menarche and alcohol



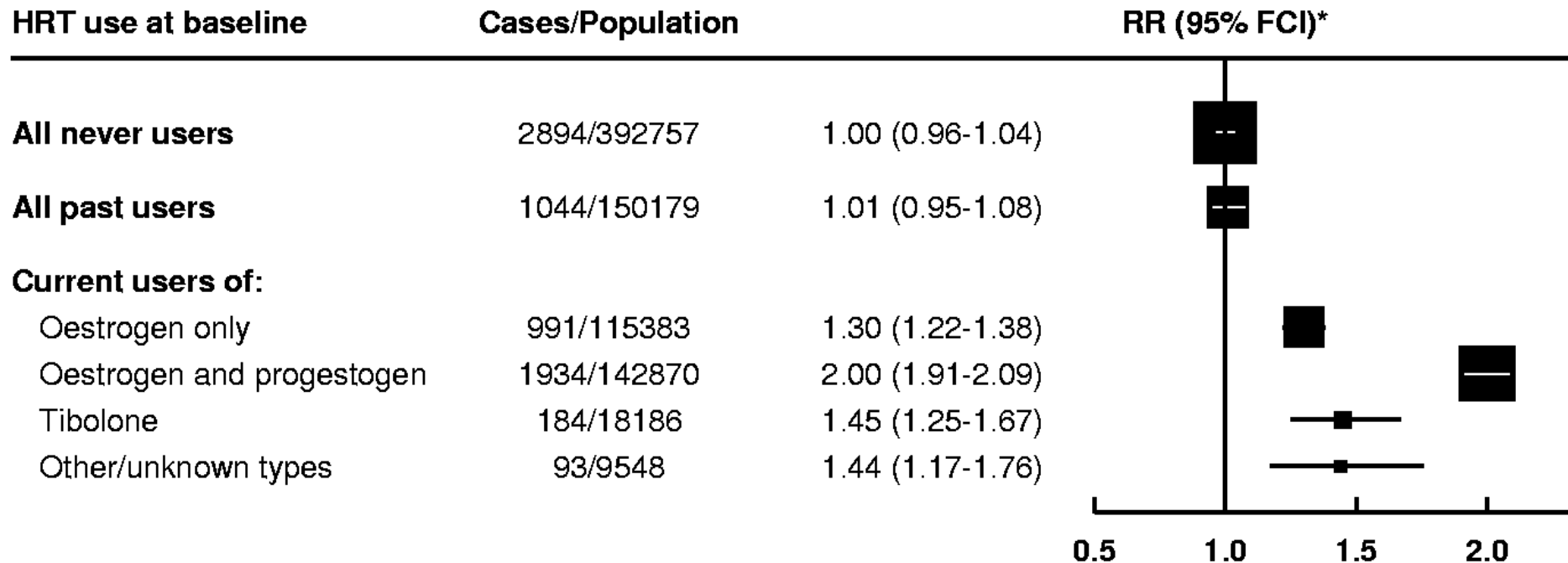
'Nutritional' factors: anthropometry

Global changes in BMI: GBD 2013



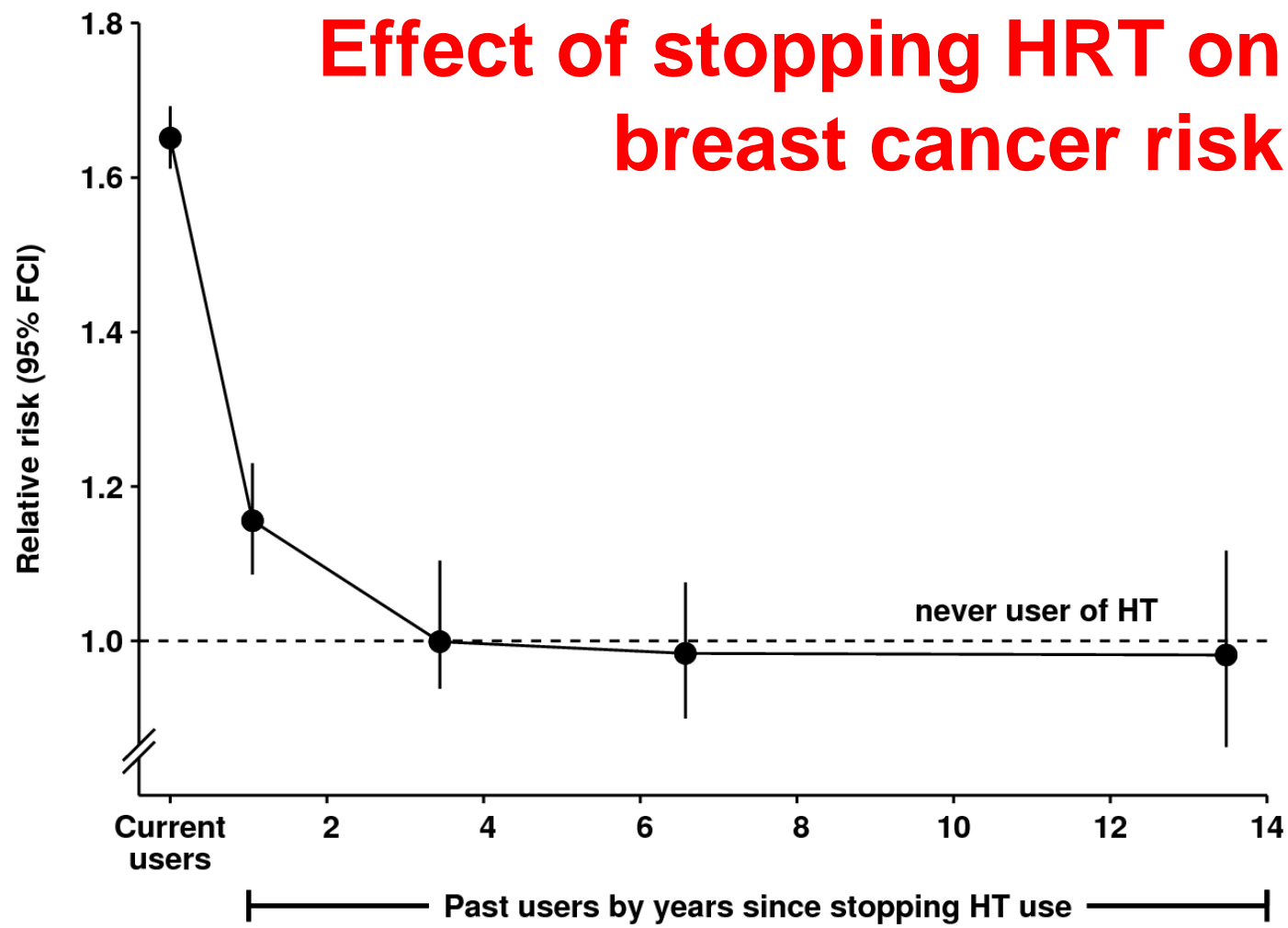
HRT: data from The Million Women Study

HRT and breast cancer incidence

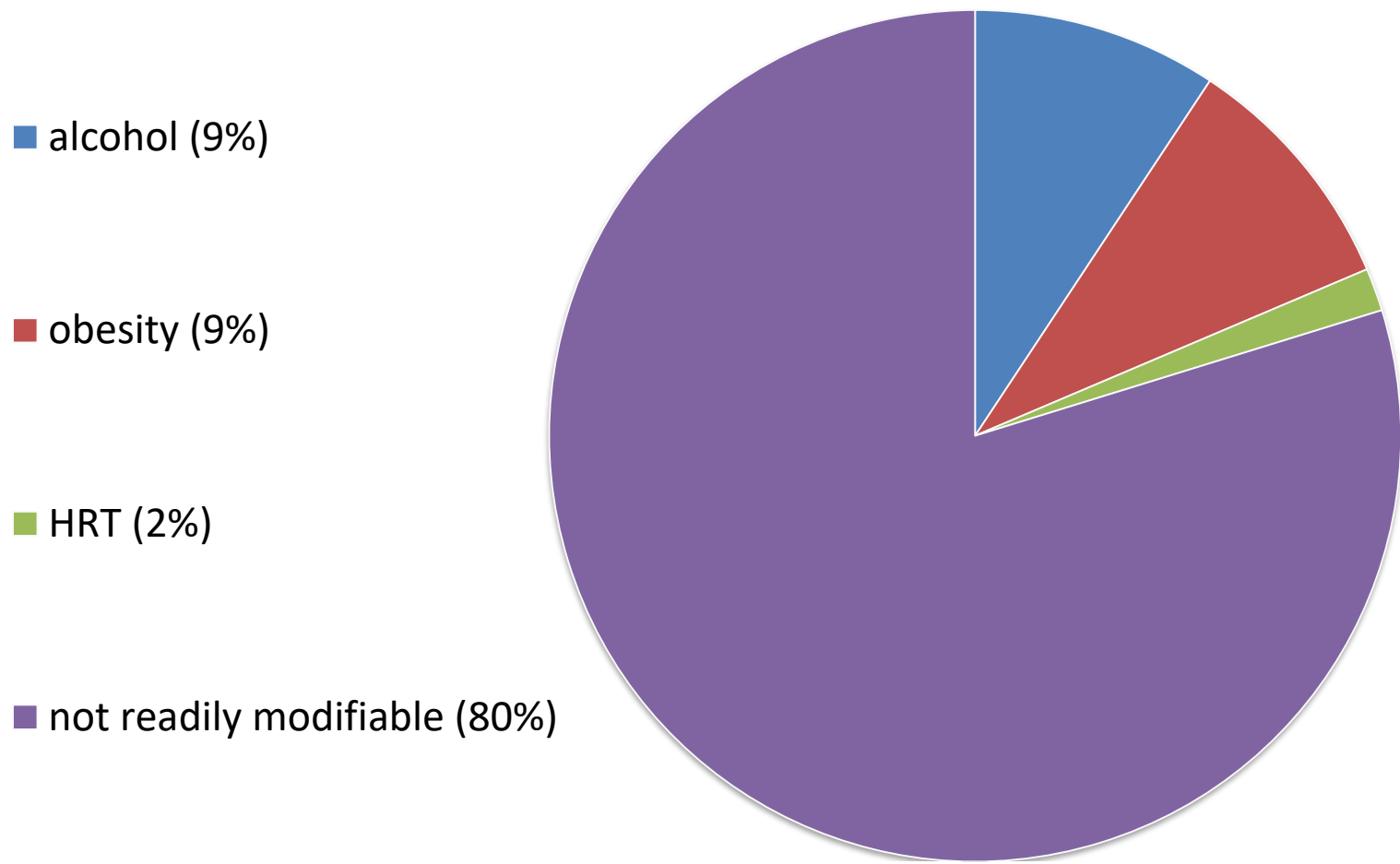


HRT: data from The Million Women Study

Effect of stopping HRT on breast cancer risk



Prevention of breast cancer in Europe: 430,000 new cases every year



Summary

- “Epidemiology” has many applications
- Breast cancer is clearly now a global health concern
- Preventative measures for breast cancer are limited
- Cancer control programmes should focus on early detection and appropriate treatment to improve survival