



EUROPEAN SOCIETY OF
LIFESTYLE MEDICINE
Research, Prevention & Treatment of Chronic Diseases

A Global Perspective

Chronic Diseases Diet, Physical Activity & Lifestyle

Michael Sagner, MD

International Conference on Role of Diet, Physical Activity & Lifestyle in
Promoting Health

20. November 2015 - Colombo, Sri Lanka

Lifestyle-related Chronic Diseases

An economic Burden for all Nations



World Health Organization (WHO):

‘...Insufficient Progress (in the fight against chronic diseases) has been made..’
Obesity levels across the globe have not decreased.

World Health Organization (WHO):

The worldwide increase of noncommunicable diseases is a slow-motion disaster, as most of these diseases develop over time. But unhealthy lifestyles that fuel these diseases are spreading with a stunning speed and sweep.

United Nations (UN):

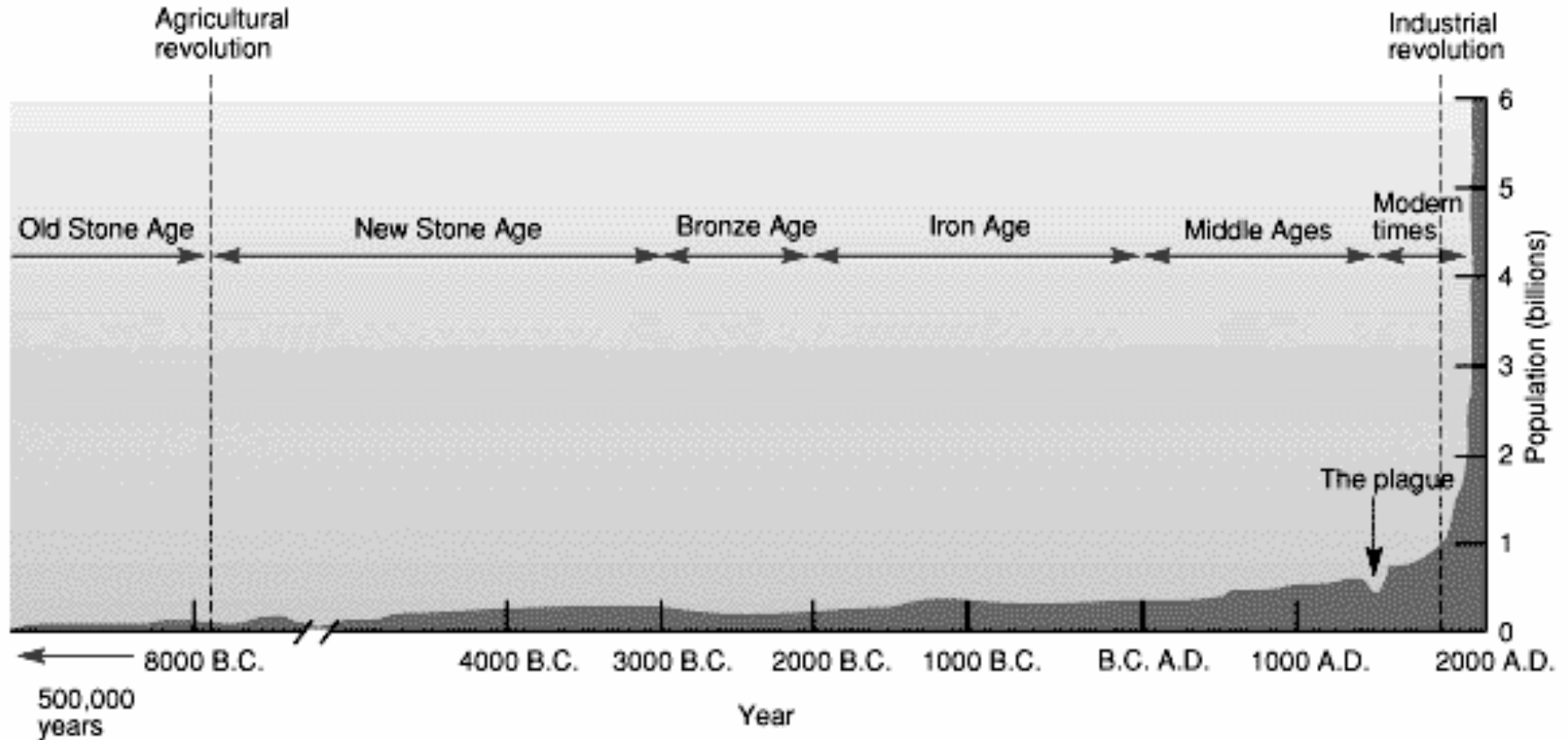
Urgency is needed to scale up action to prevent and control NCDs, taking into account that 300 million lives have been lost to NCDs in recent years.

World Economic Forum (WEF):

Non-communicable diseases have been established as a clear threat not only to human health, but also to development and economic growth.

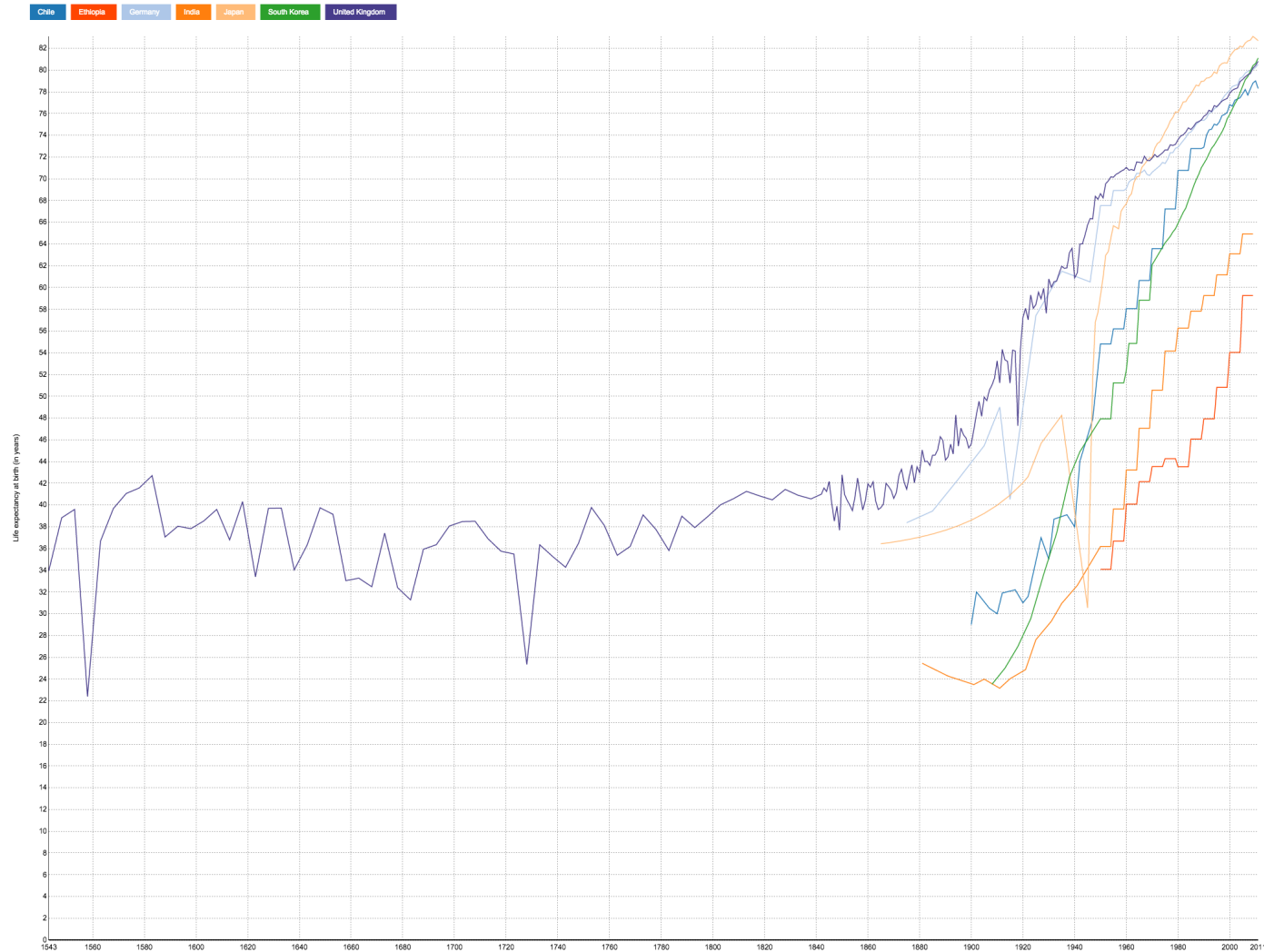
World Population Levels

Human population increases



Life Expectancy

At birth for both genders, by country

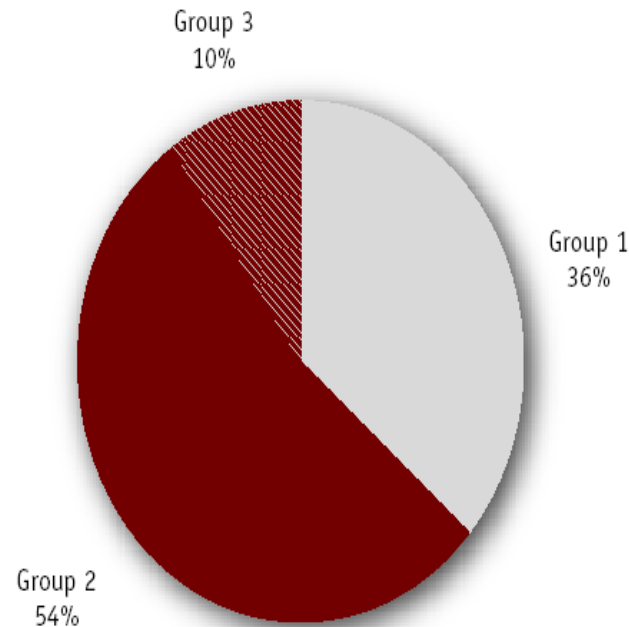


Lifestyle-related Chronic Diseases

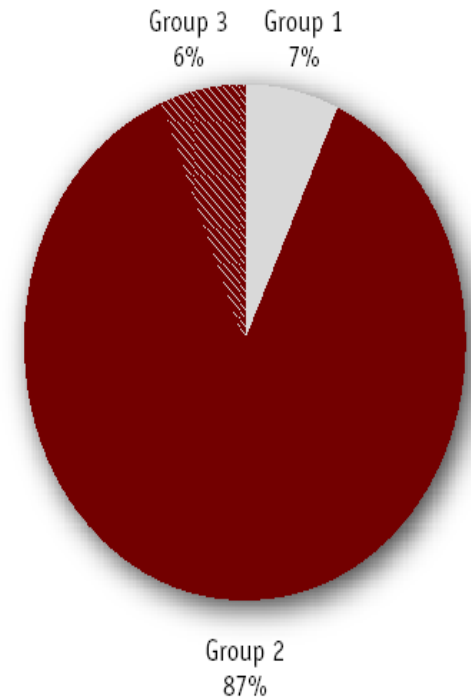
Burden of Disease 2001



- Group 1** ≠ Communicable, maternal, and perinatal conditions and nutritional disorders
- Group 2** ≠ Non-communicable diseases
- Group 3** ≠ Injuries



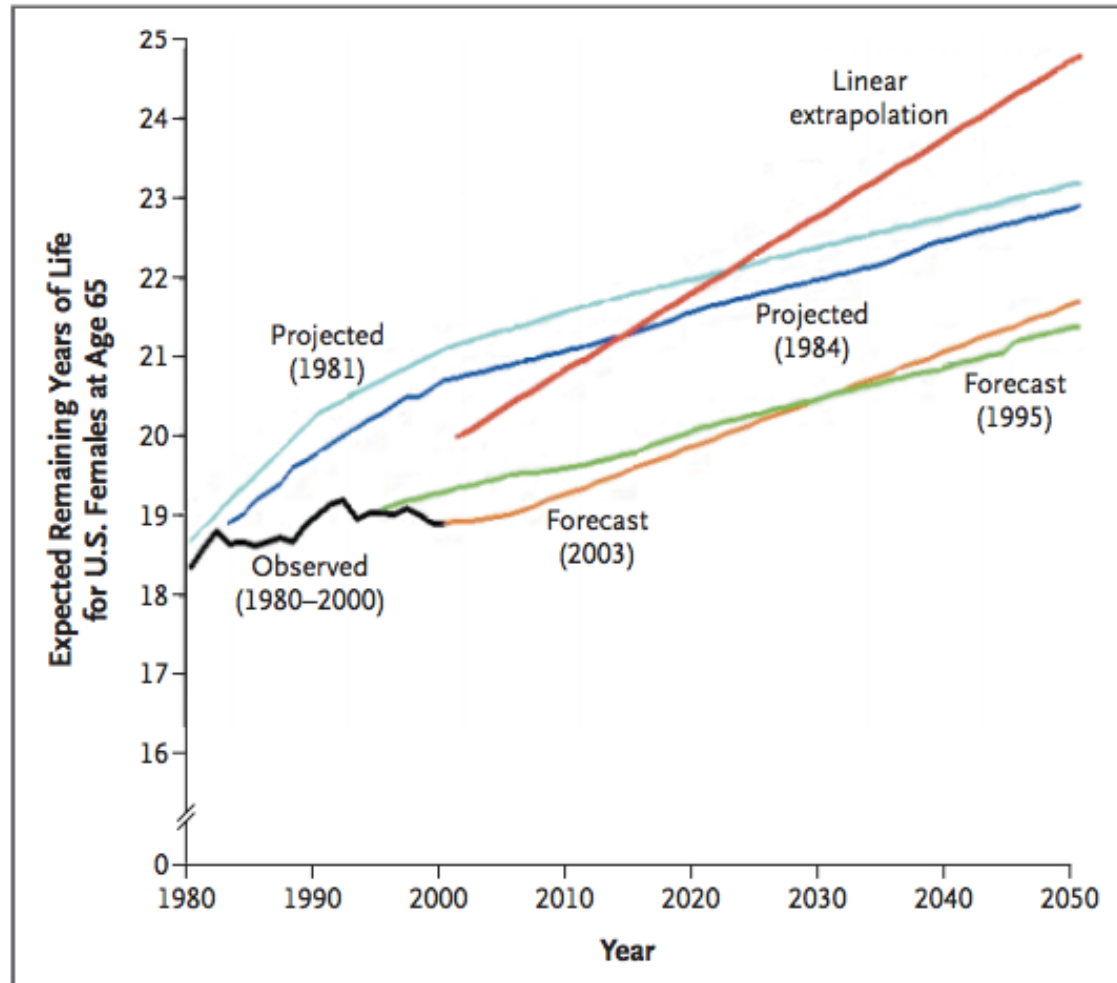
AVERAGE LOW- AND MIDDLE-INCOME COUNTRIES



HIGH-INCOME COUNTRIES

Lifestyle-related Chronic Diseases

Longer lives but more disease burden

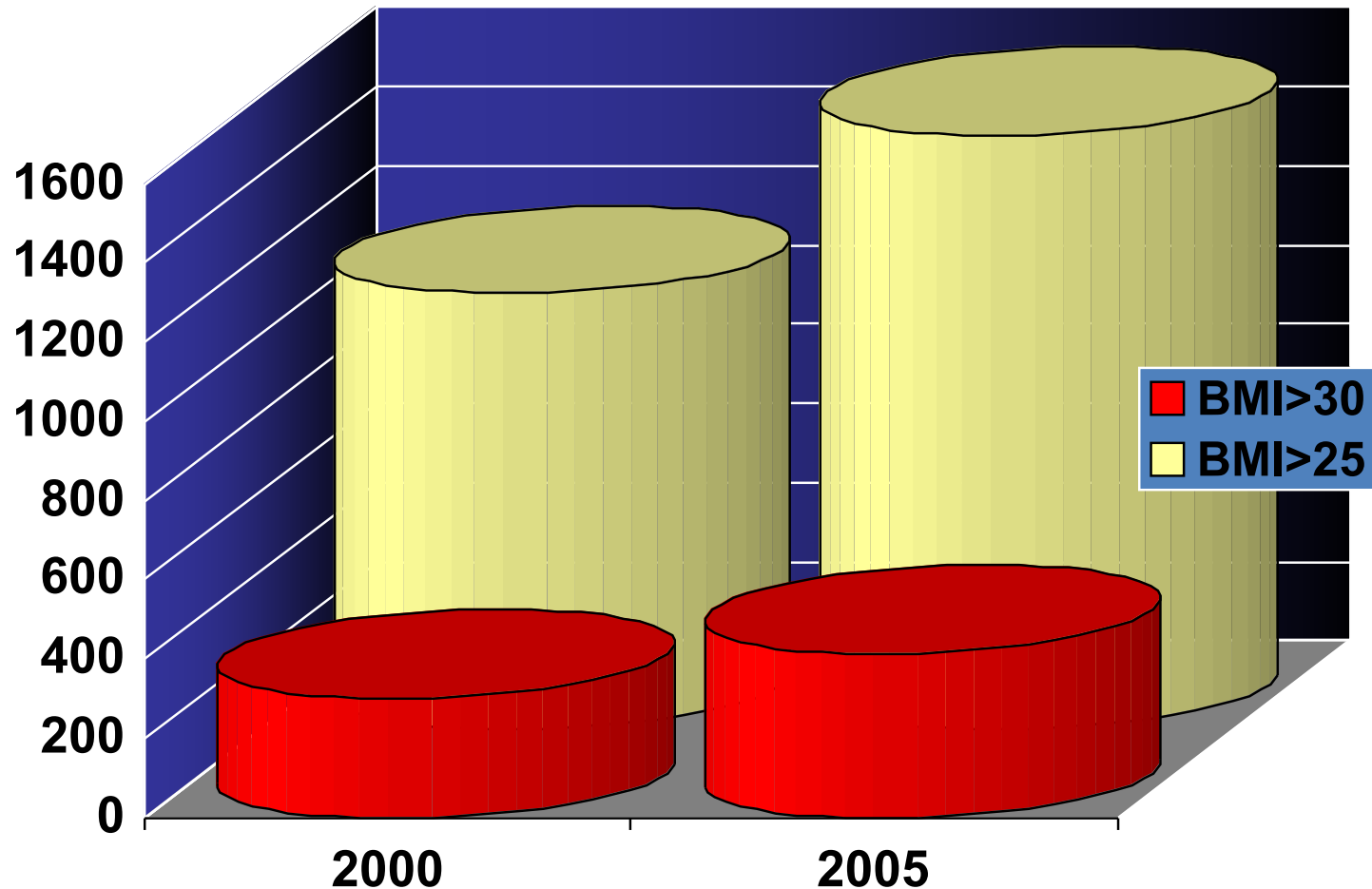


For people who survive to age 50, for every added year they get, only seven months are healthy.

Potential decline in life expectancy for future generations?

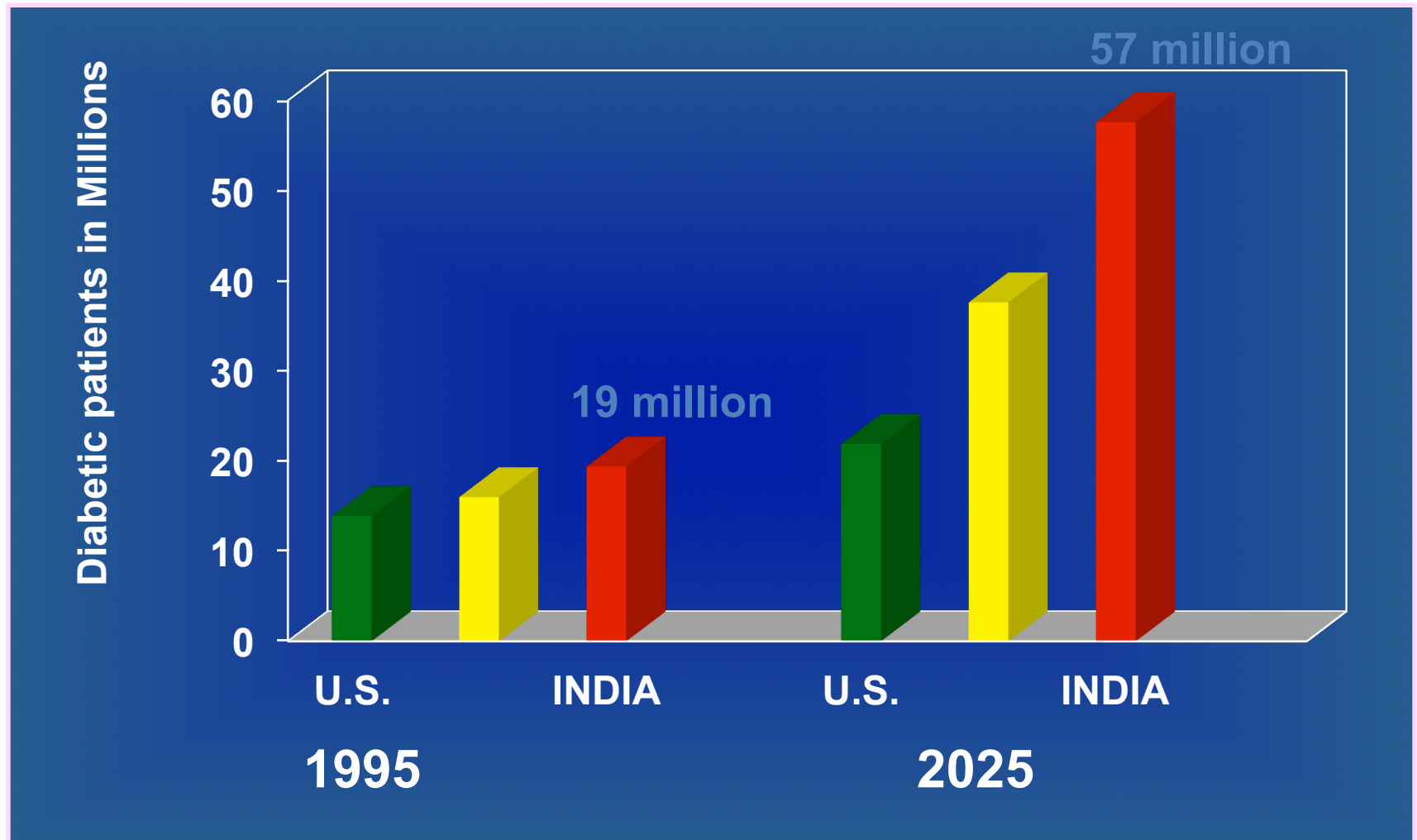
Obesity

A global Epidemic



Type-2-Diabetes

Increasing Dramatically

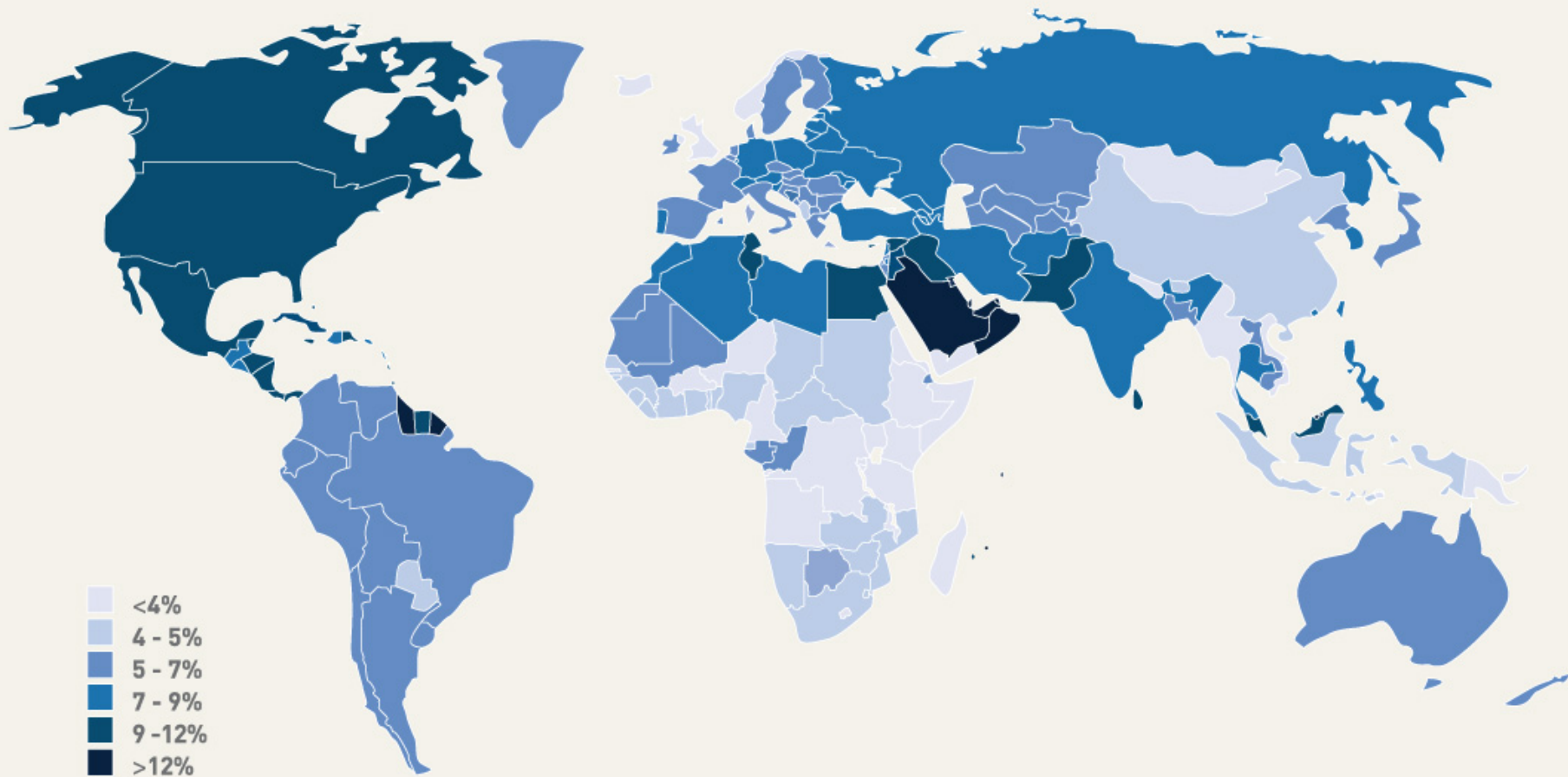


Type-2-Diabetes 2010

A global Lifestyle-related Disease



MAP 2.1 Prevalence* (%) estimates of diabetes (20-79 years), 2010



* comparative prevalence

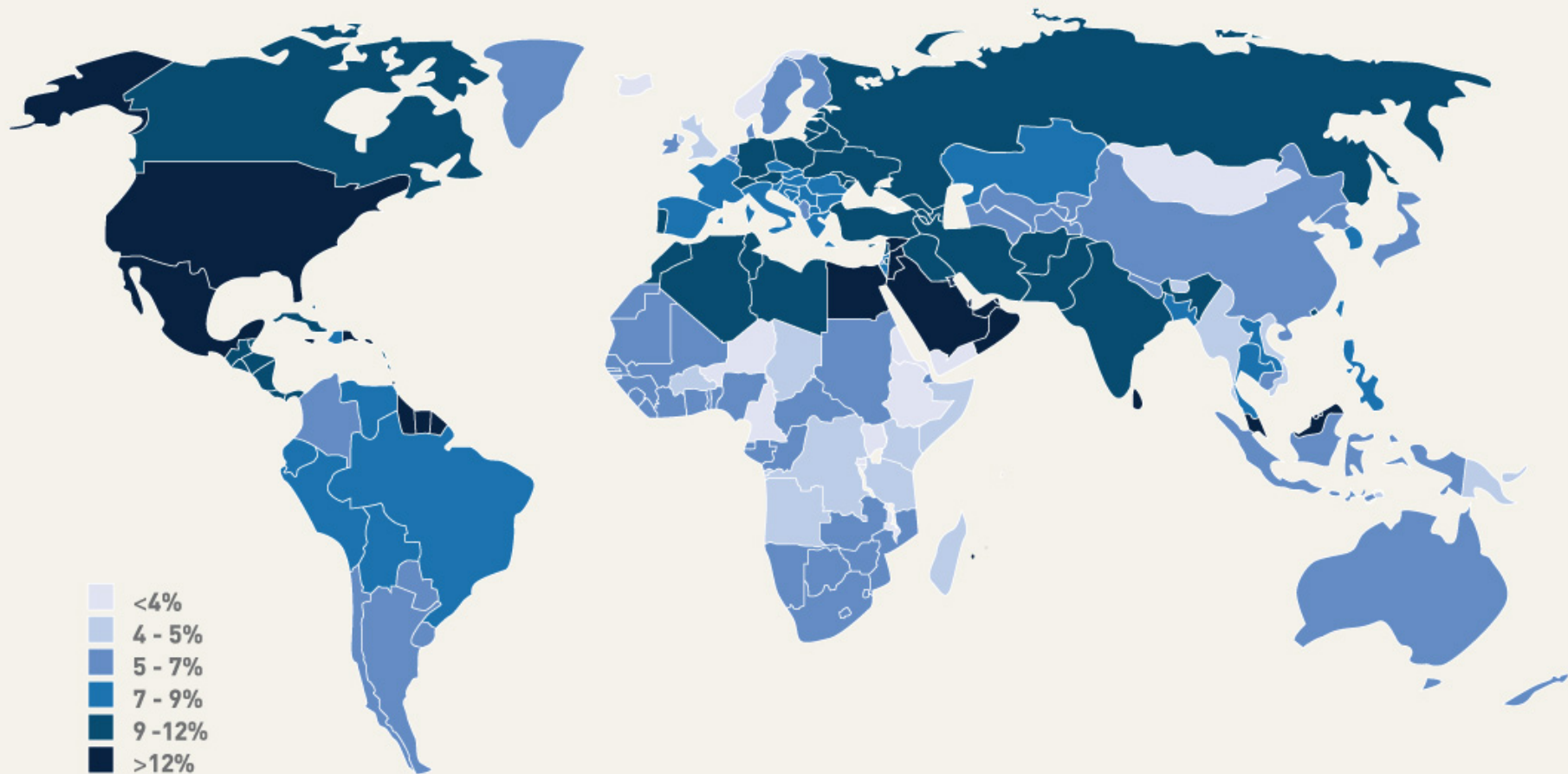
Type-2-Diabetes 2030

A global Lifestyle-related Disease



MAP 2.2

Prevalence* (%) estimates of diabetes (20-79 years), 2030



* comparative prevalence

Uncomfortable Facts

Chronic Lifestyle-related Diseases



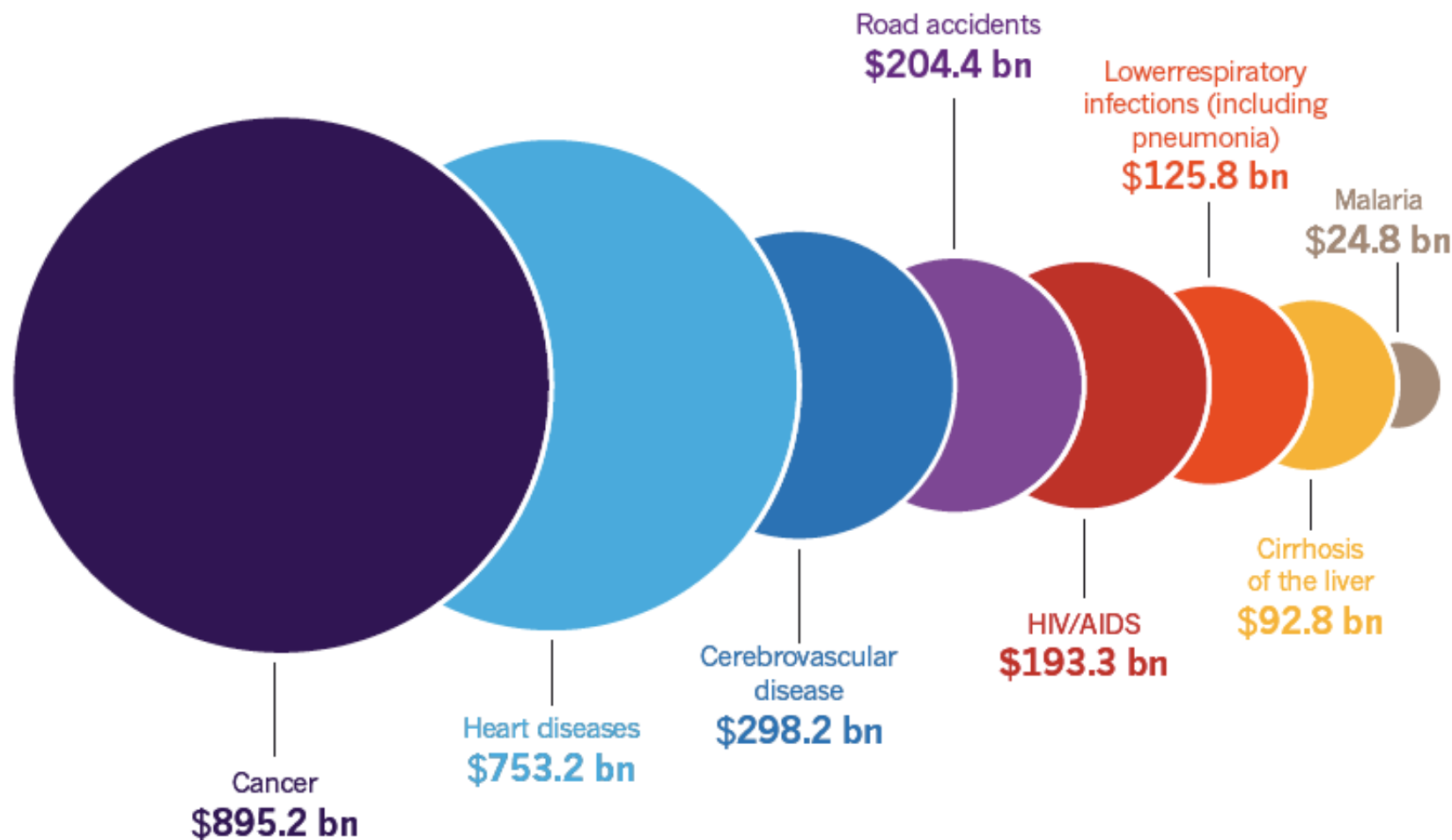
Chronic Diseases are now the leading cause of death and disability on the planet.

- Chronic diseases responsible for 60% of all deaths in 2005.
- Chronic Diseases are killing more people in their prime adult years.
- Surprising fact:
 - TB, HIV, and malaria only account for 10% of the global deaths.

Chronic Diseases kill more people than all infectious diseases combined!

Lifestyle-related Chronic Diseases

An economic Burden for all Nations

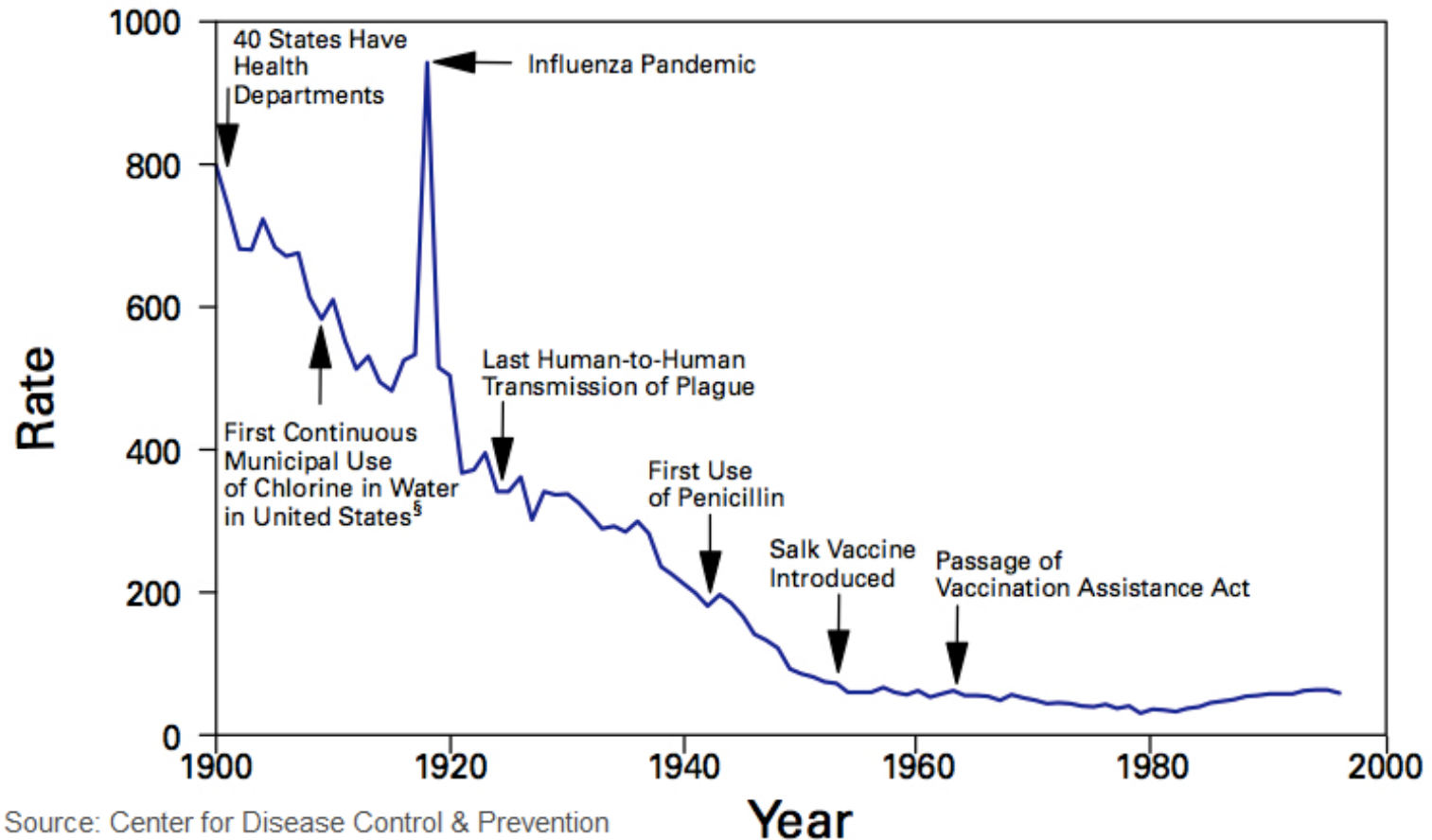


Infectious Diseases

Germ Theory - Monocausal Focus in Health Care

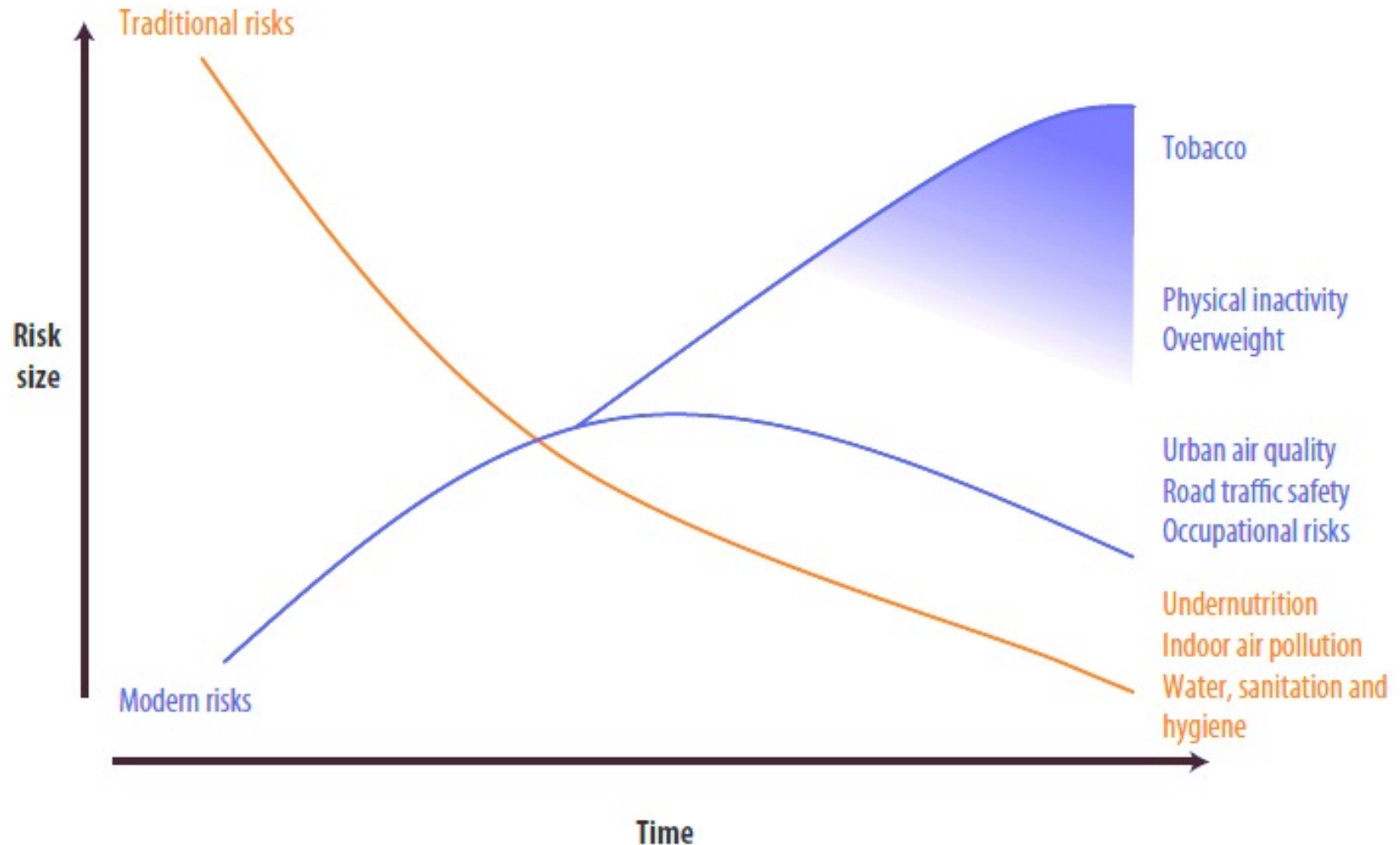


FIGURE 1. Crude death rate* for infectious diseases — United States, 1900–1996†



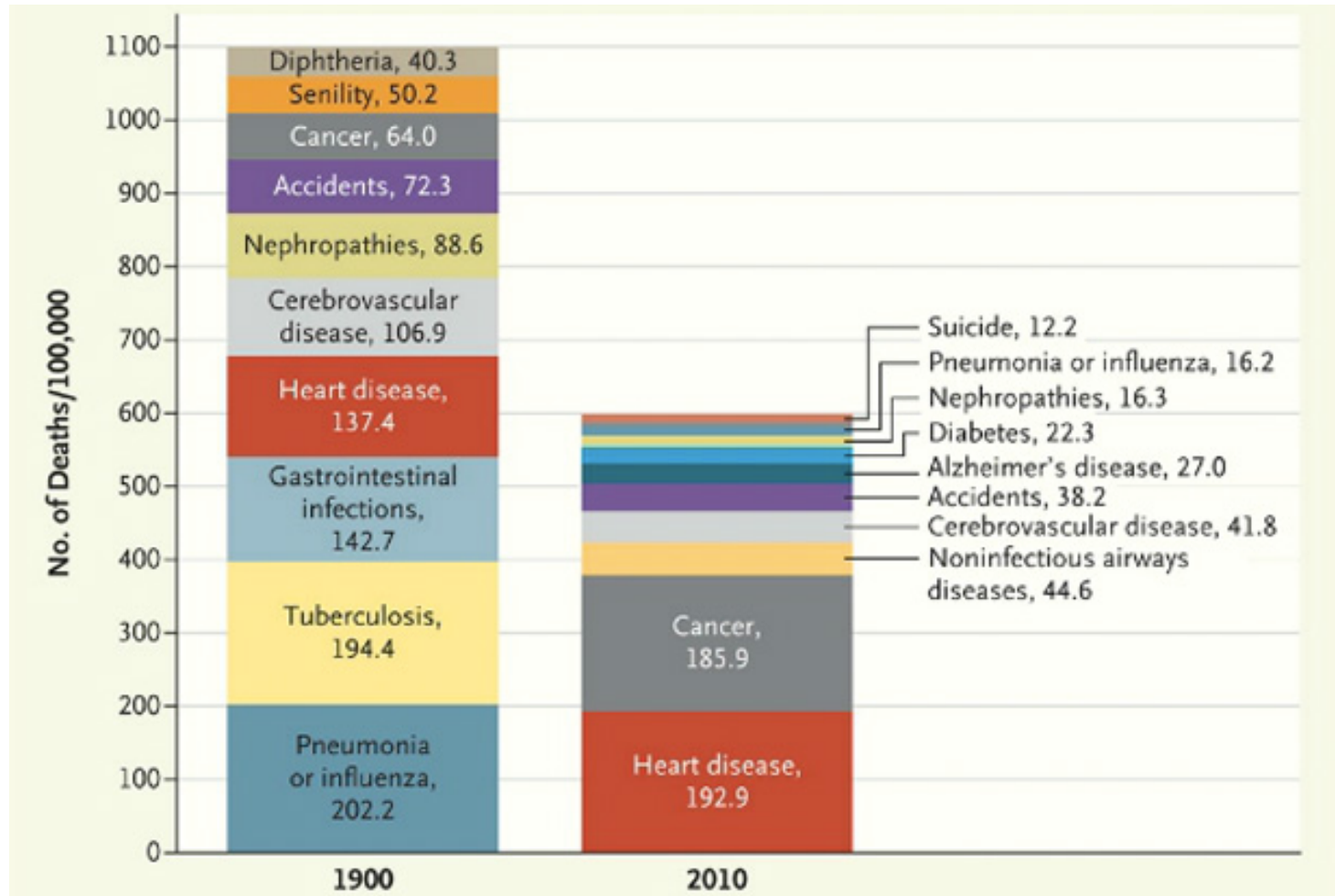
The Risk Transition

Major shift from traditional risks to modern risks



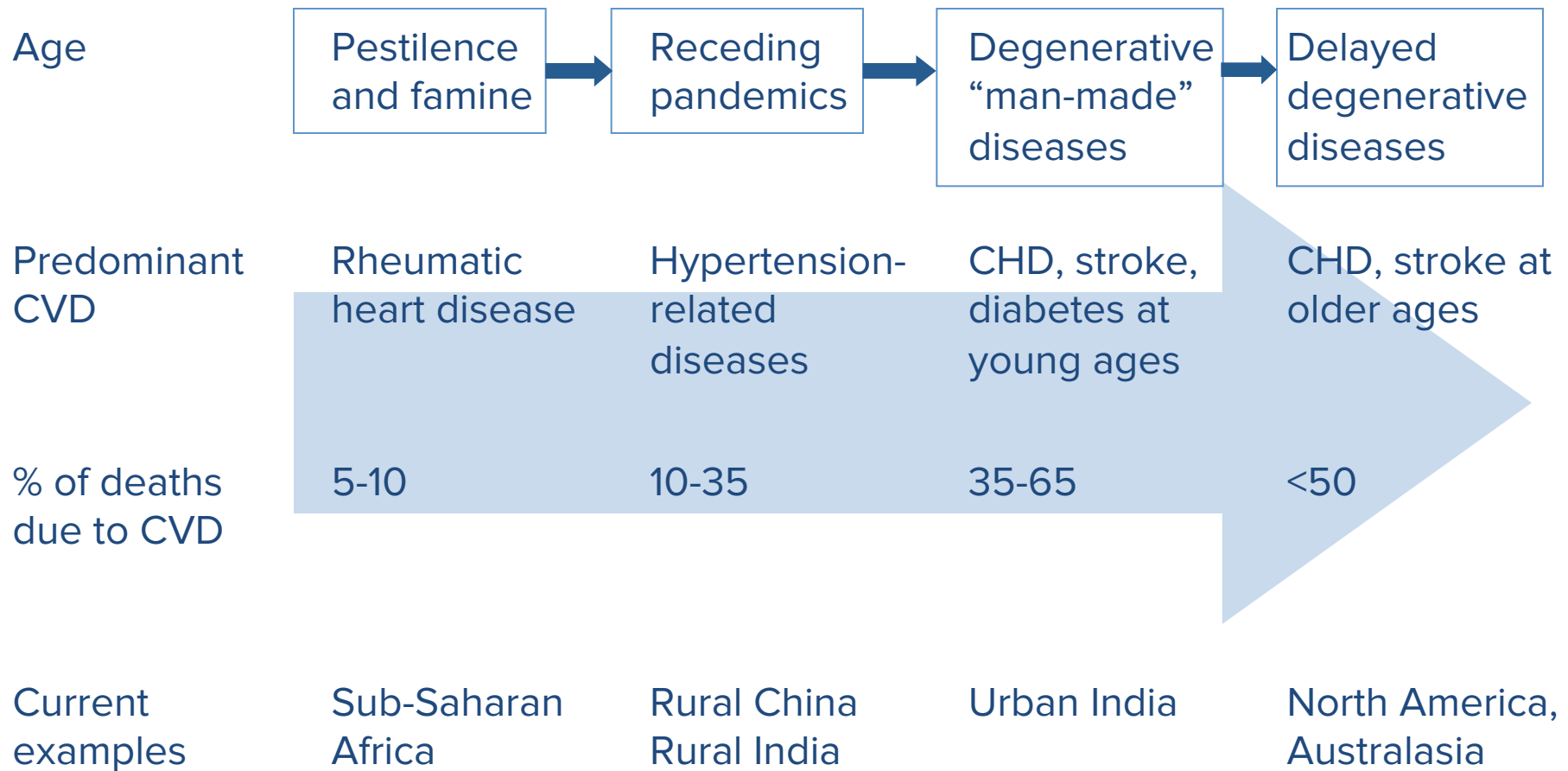
Lifestyle-related Diseases

A unexpected Challenge for Health Care Systems



Epidemiological Transition

From Infections to Lifestyle-related Diseases



Lifestyle-related Chronic Diseases

Actual Causes of Death in the US 200



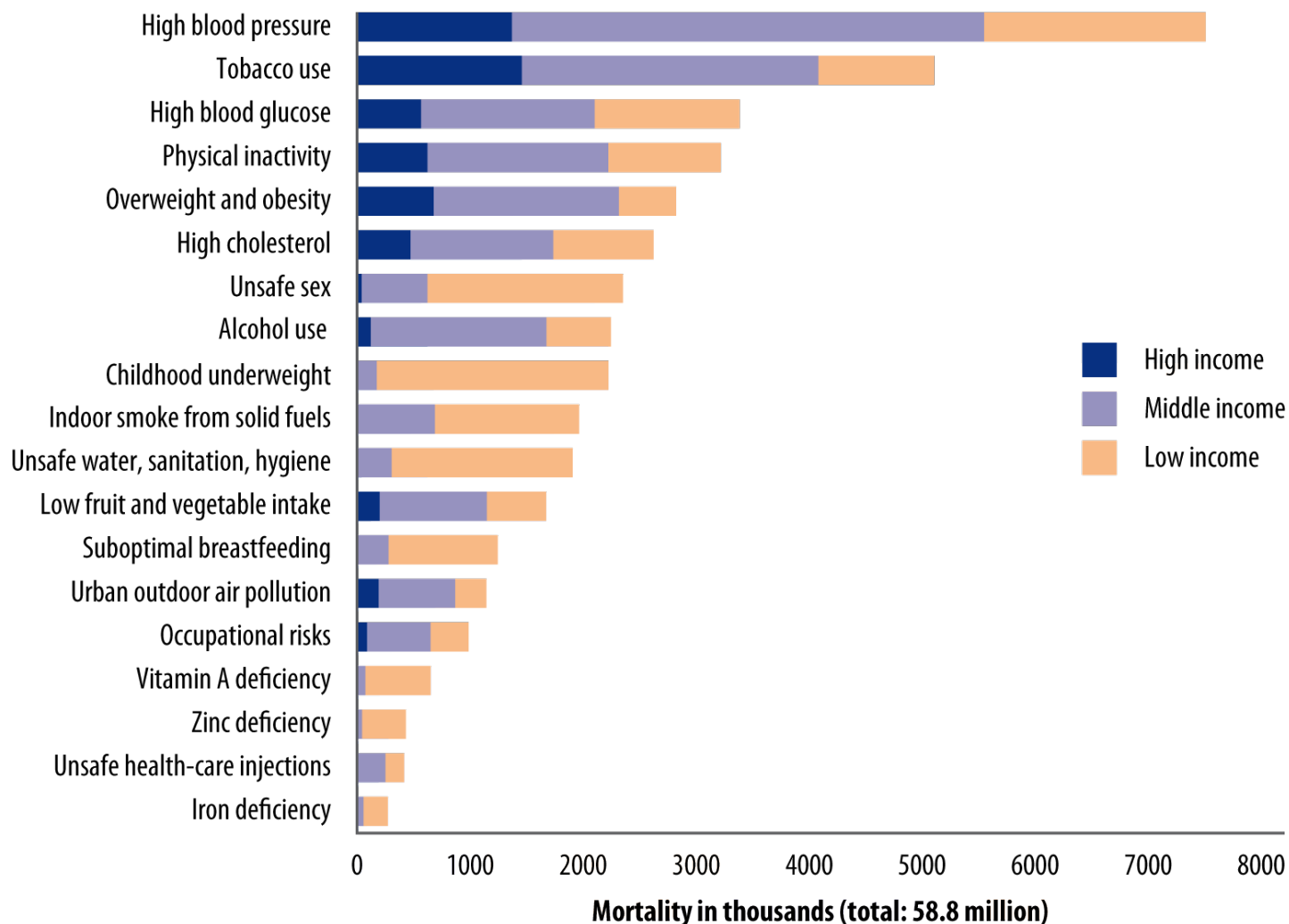
Table 2. Actual Causes of Death in the United States in 1990 and 2000

Actual Cause	No. (%) in 1990*	No. (%) in 2000
Tobacco	400 000 (19)	435 000 (18.1)
Poor diet and physical inactivity	300 000 (14)	400 000 (16.6)
Alcohol consumption	100 000 (5)	85 000 (3.5)
Microbial agents	90 000 (4)	75 000 (3.1)
Toxic agents	60 000 (3)	55 000 (2.3)
Motor vehicle	25 000 (1)	43 000 (1.8)
Firearms	35 000 (2)	29 000 (1.2)
Sexual behavior	30 000 (1)	20 000 (0.8)
Illicit drug use	20 000 (<1)	17 000 (0.7)
Total	1 060 000 (50)	1 159 000 (48.2)

*Data are from McGinnis and Foegen.¹ The percentages are for all deaths.

Deaths attributed to risk factors

By country income level, 2004

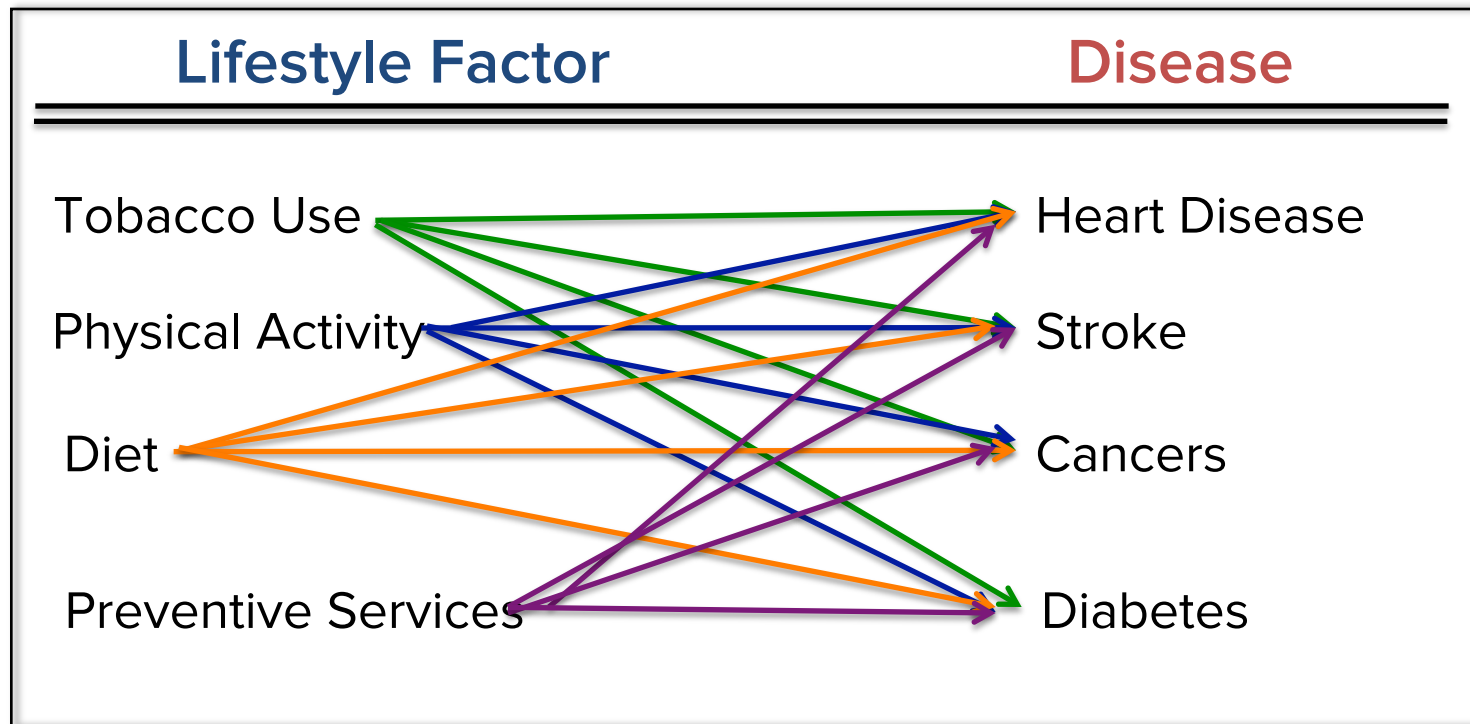


Lifestyle Determinants

Chronic Lifestyle-related Diseases



Virtually **ALL** of the top 10 leading causes of death in US adults are moderately to **STRONGLY** influenced by lifestyle patterns and behavioral factors.



**Lifestyle factors are the main contributor to
chronic diseases**

Lifestyle Risk Factors Spreading across the Globe



Lifestyle Transition

Nutrition and Physical Inactivity

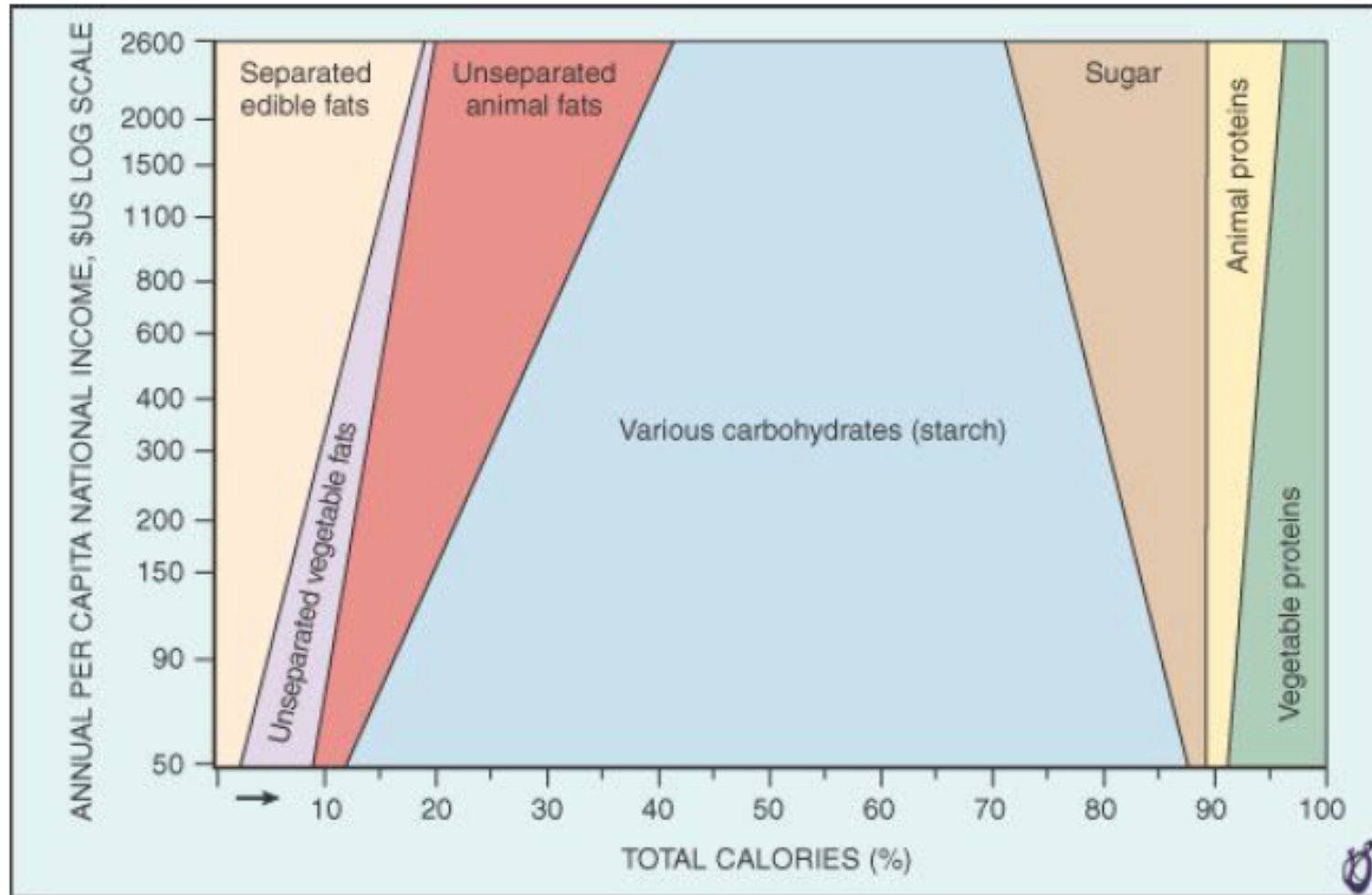


The modern world: Increased caloric consumption in a milieu of reduced energy expenditure

- Sedentary lifestyle
- Motorized transport, Labor-saving devices
- Reduced leisure time physical activity
- Changed nutrition patterns
- Role of chronic stress (?)

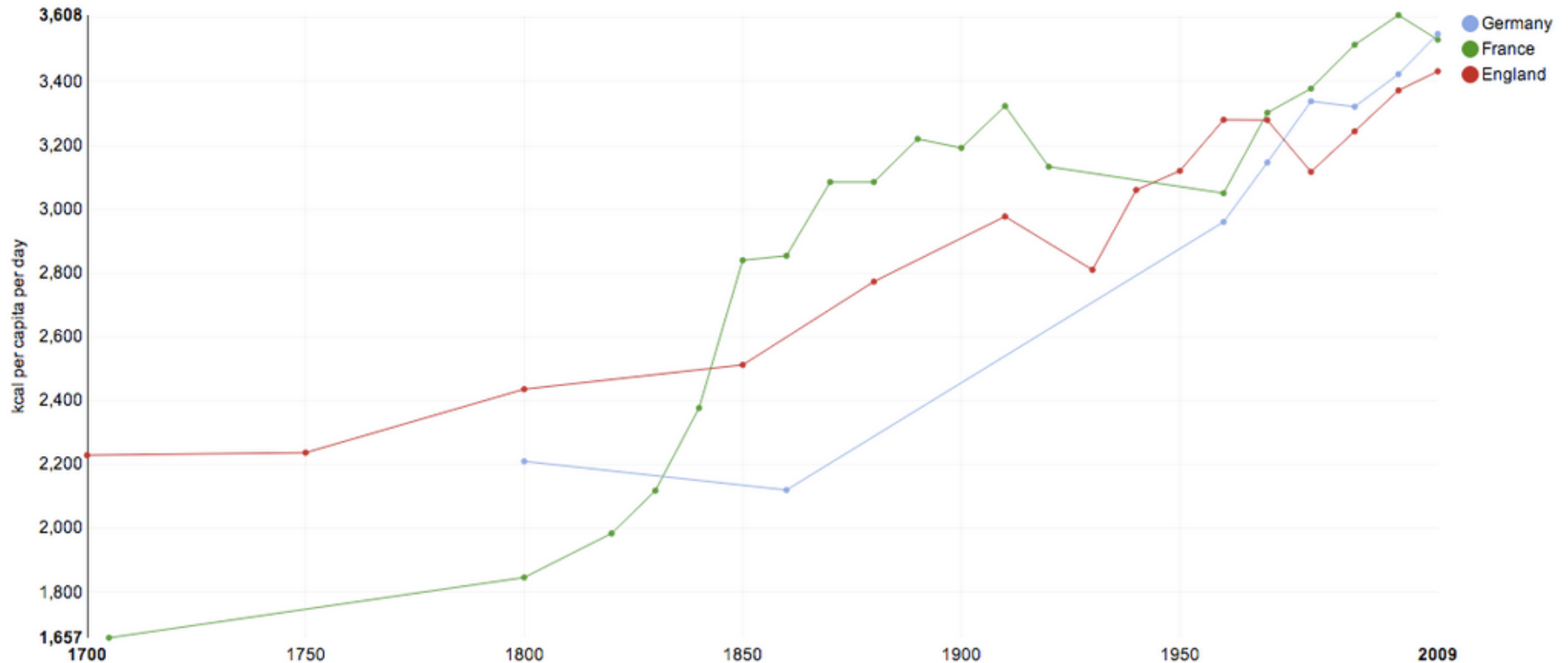
Lifestyle Transition

Nutrition and Physical Inactivity



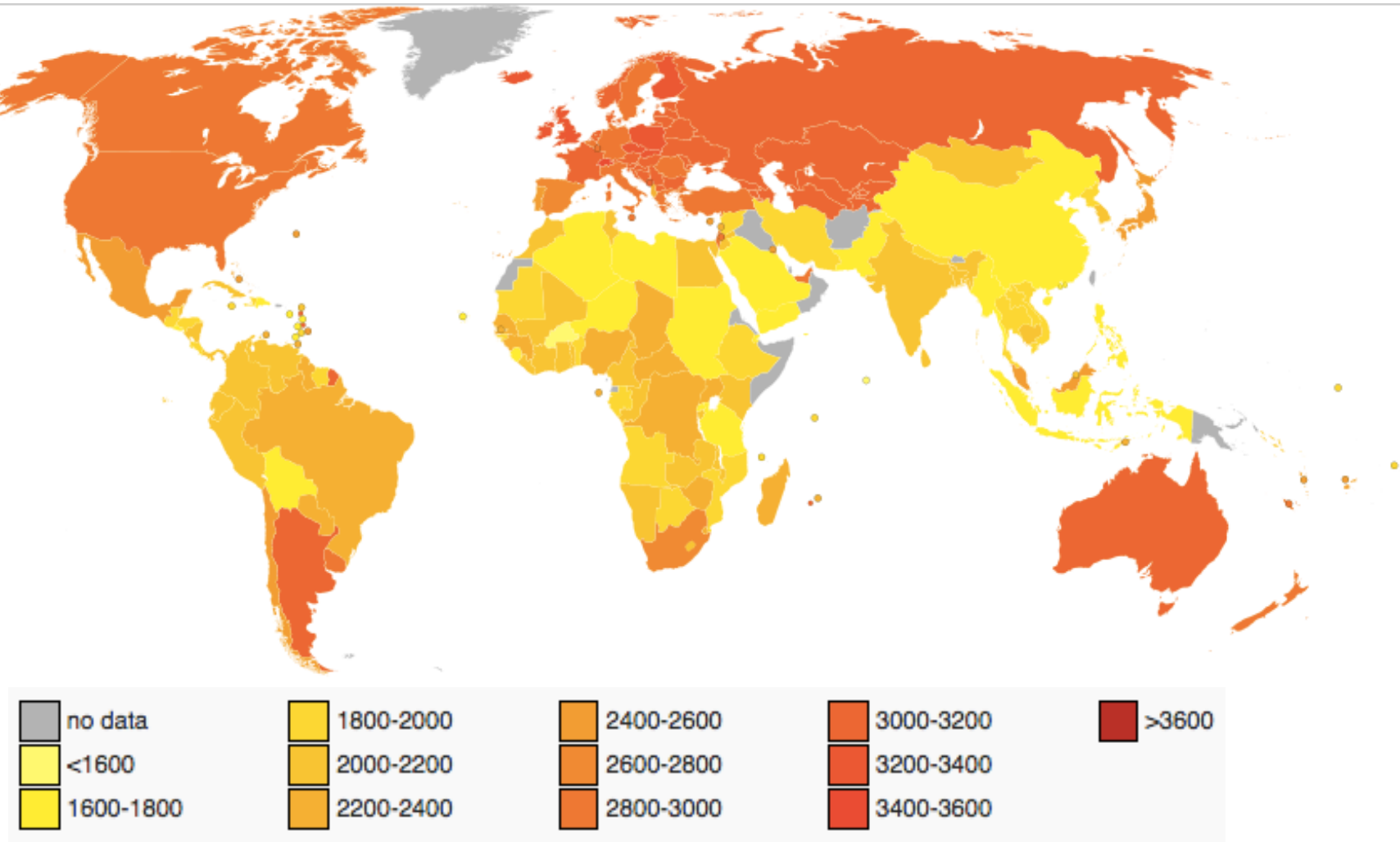
Daily Caloric Intake

Per Capita in European Countries and the US



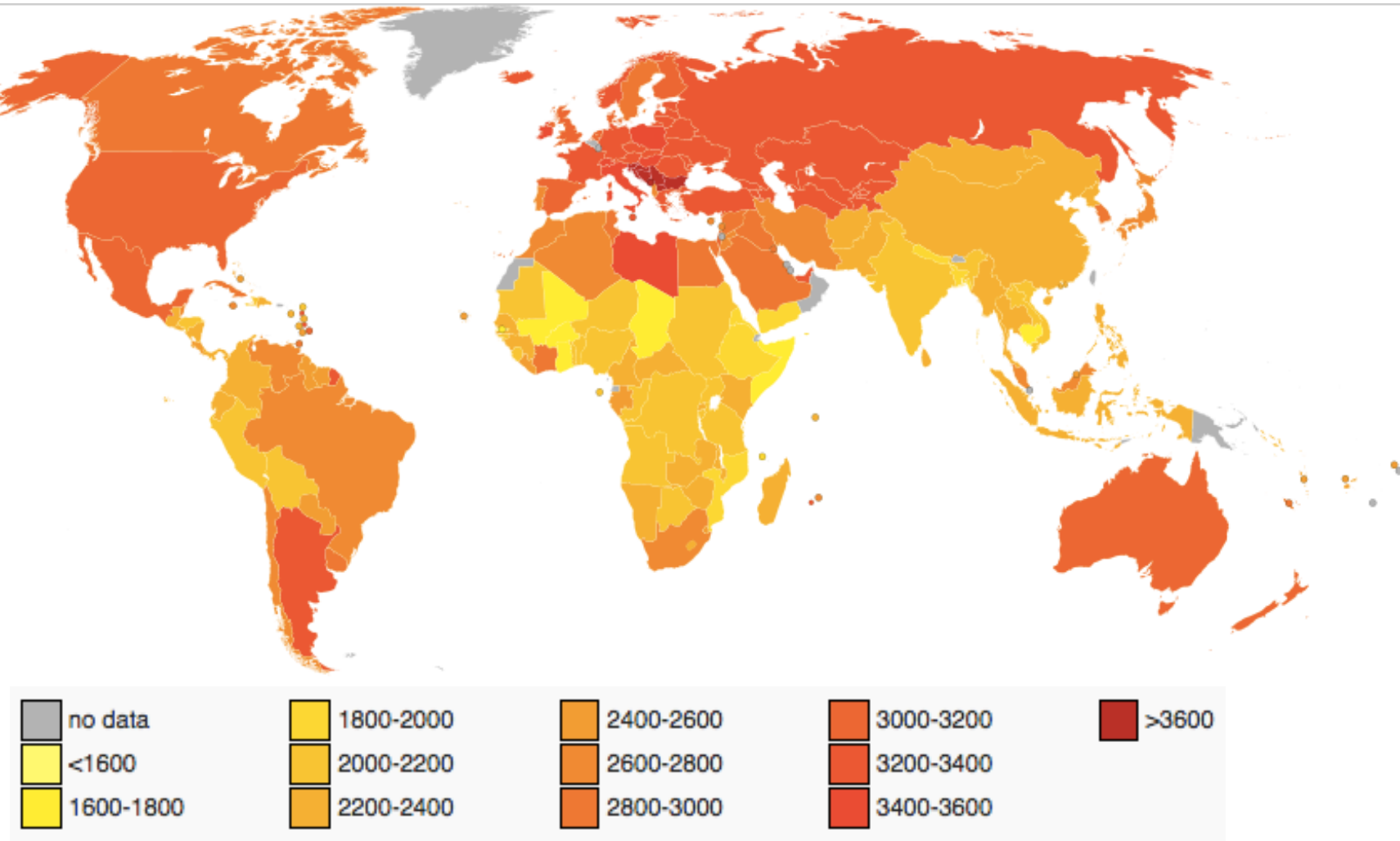
Diet and Nutrition

Dietary Energy Availability 1961 (kcal/person/day)



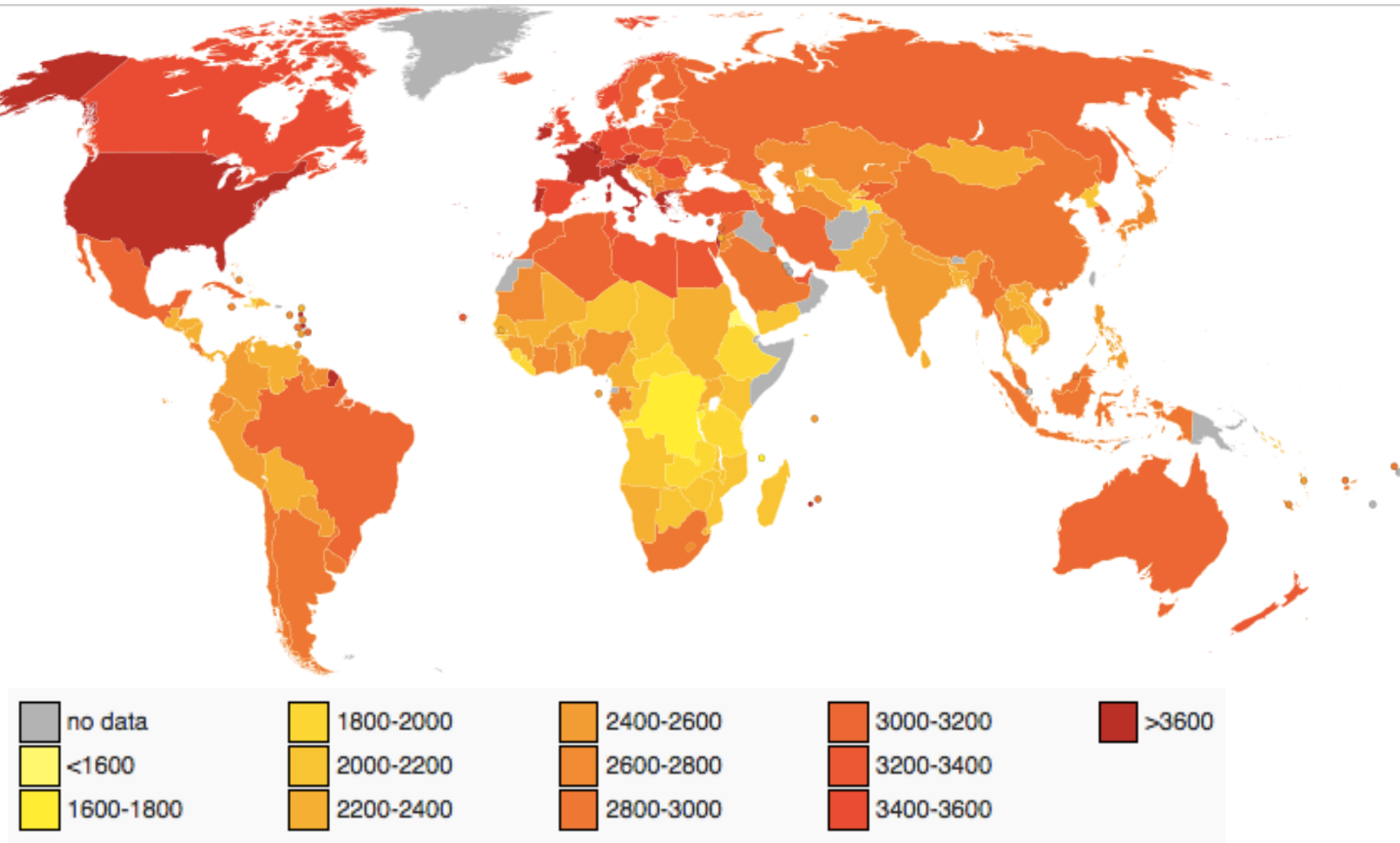
Diet and Nutrition

Dietary Energy Availability 1979-81 (kcal/person/day)



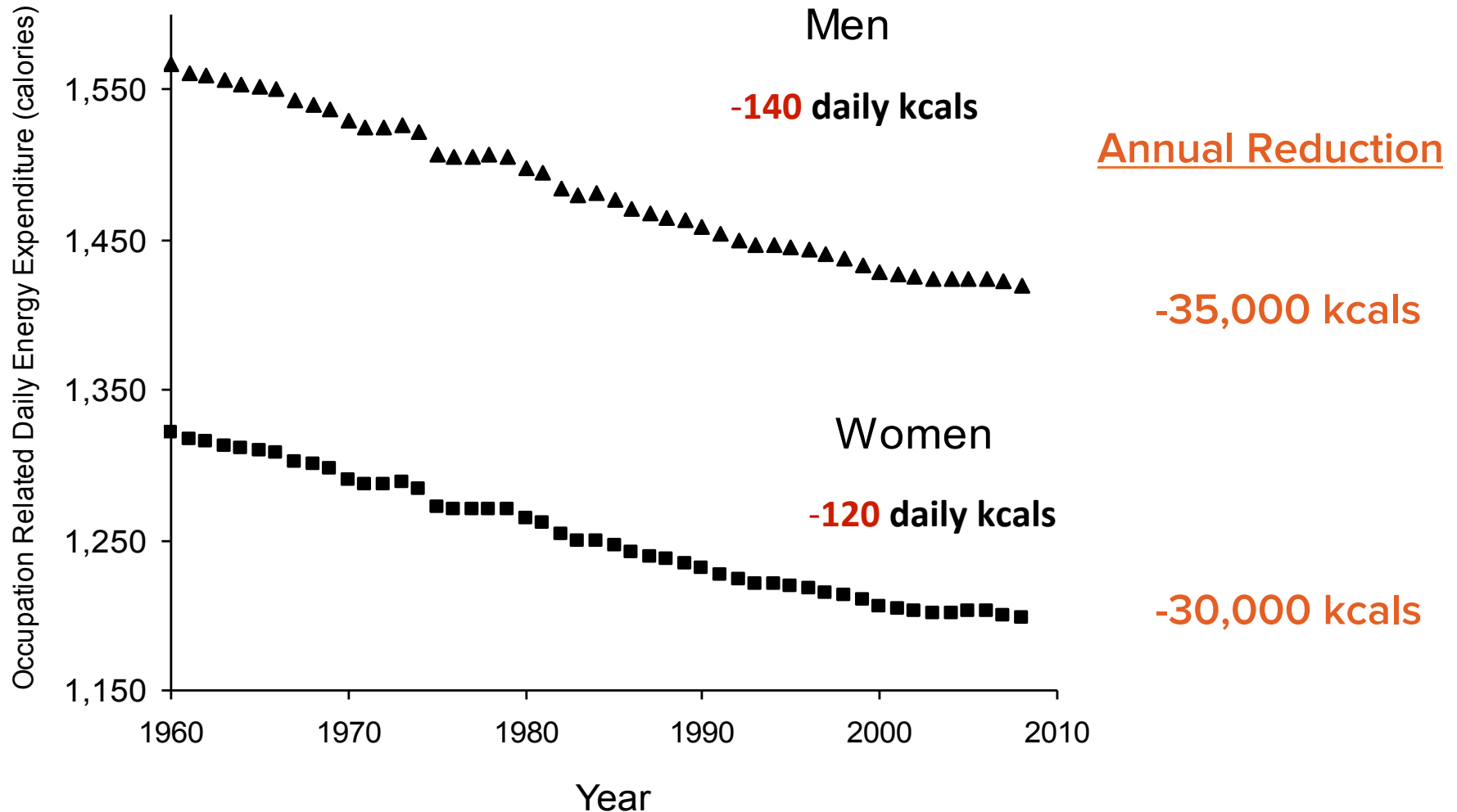
Diet and Nutrition

Dietary Energy Availability 2001-2003 (kcal/person/day)



Daily Occupational Energy Expenditure

Dropping

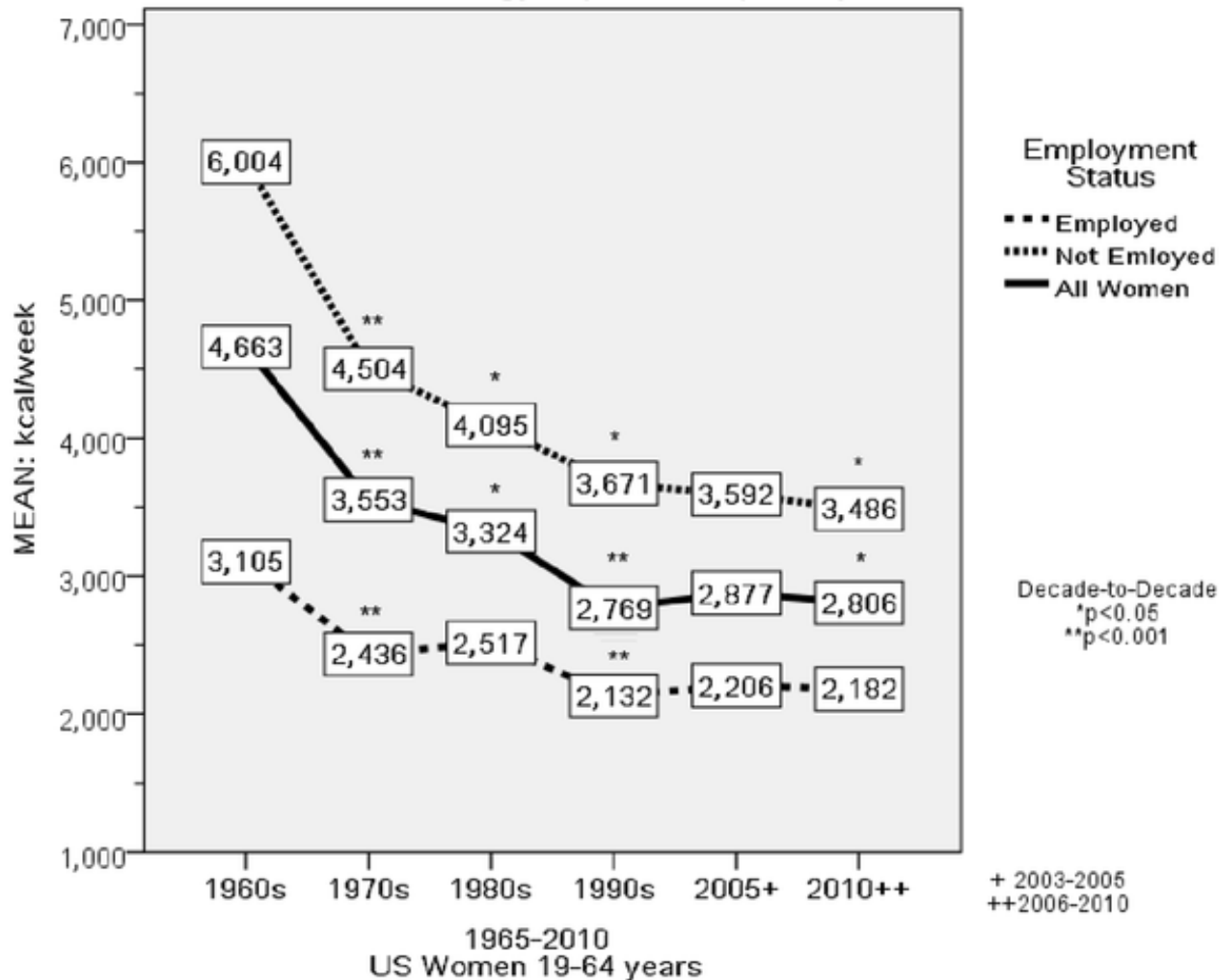


Daily Occupational Energy Expenditure

Dropping



Household Management
Energy Expenditure (HMEE)

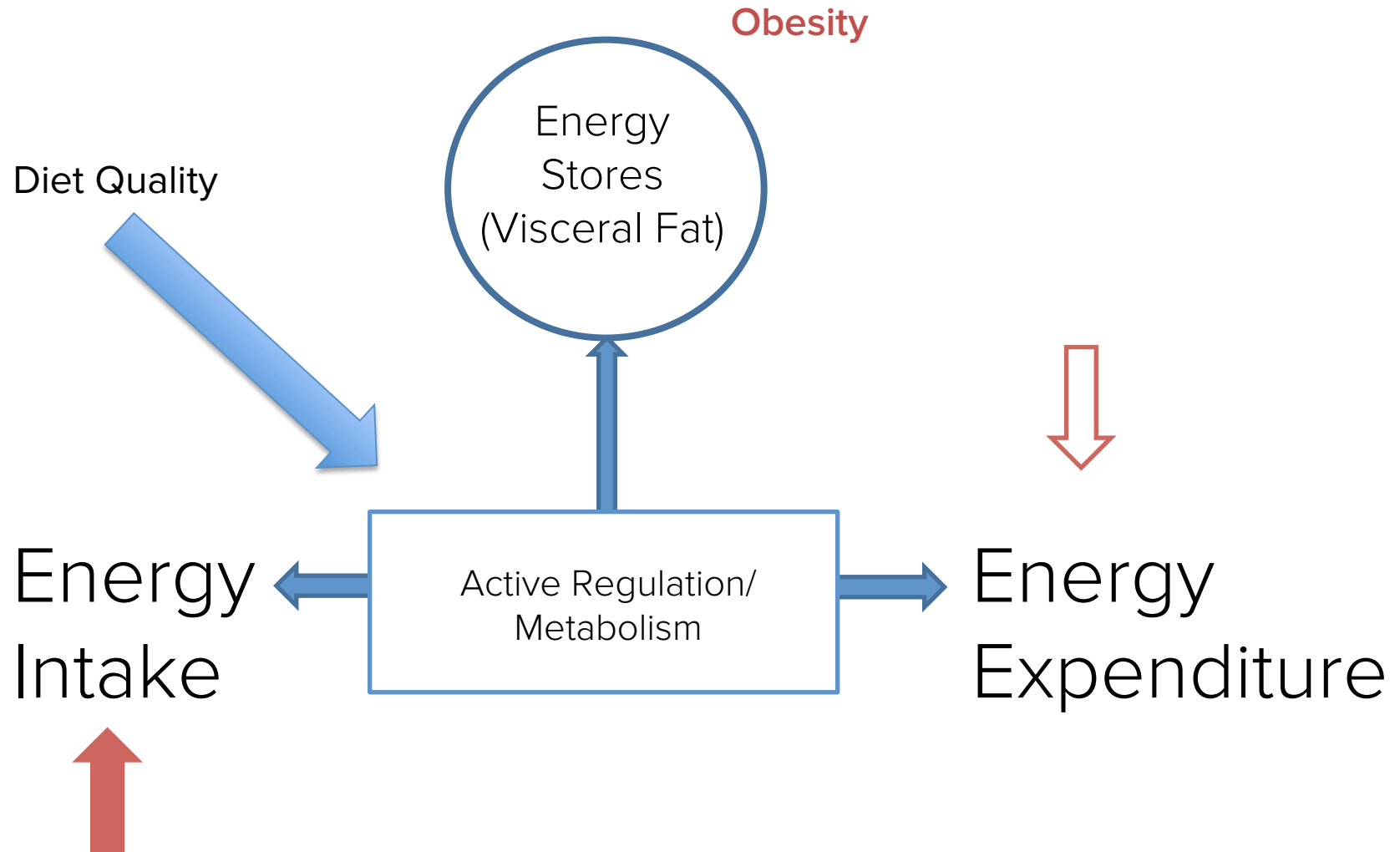


-250 kcals/day of accumulated energy expended on housework.



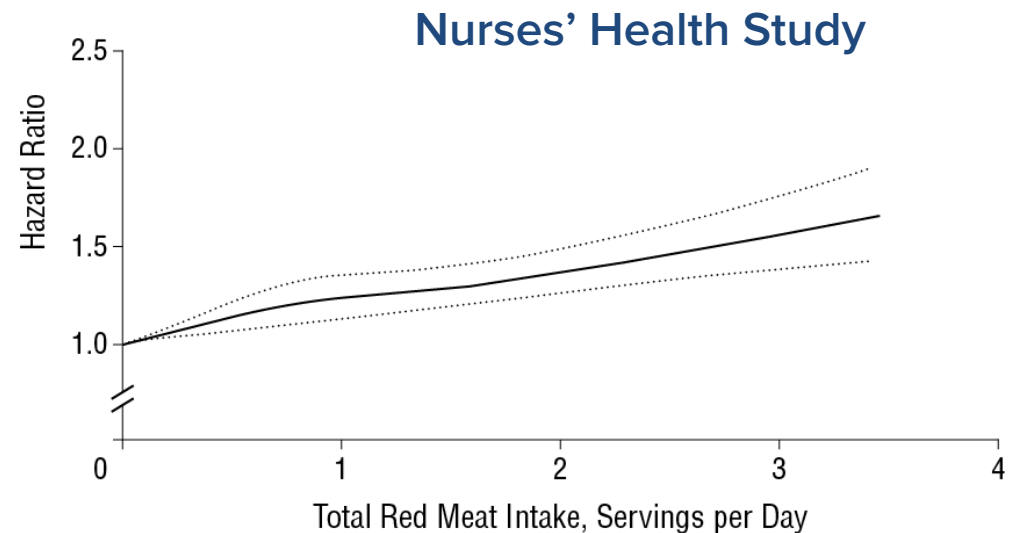
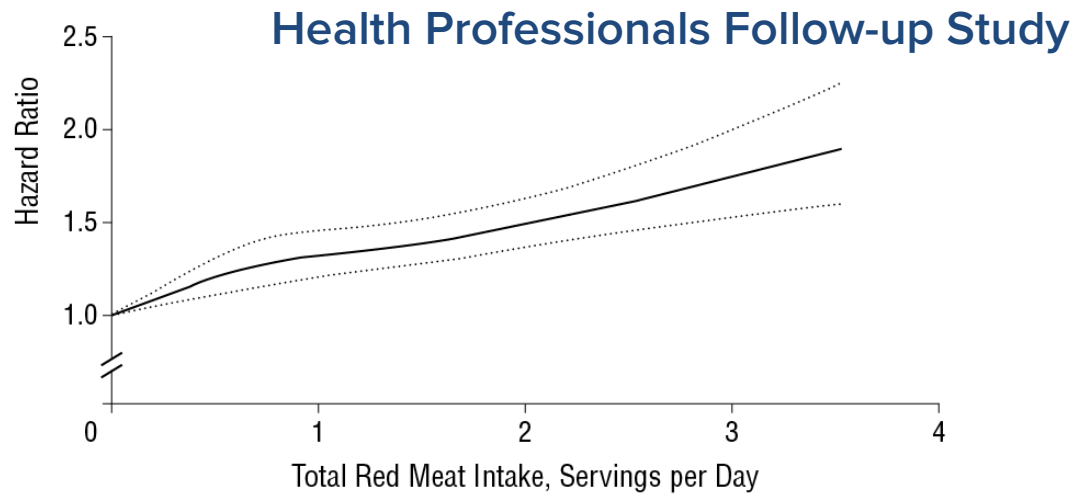
Energy Balance System

Energy In vs. Energy Out



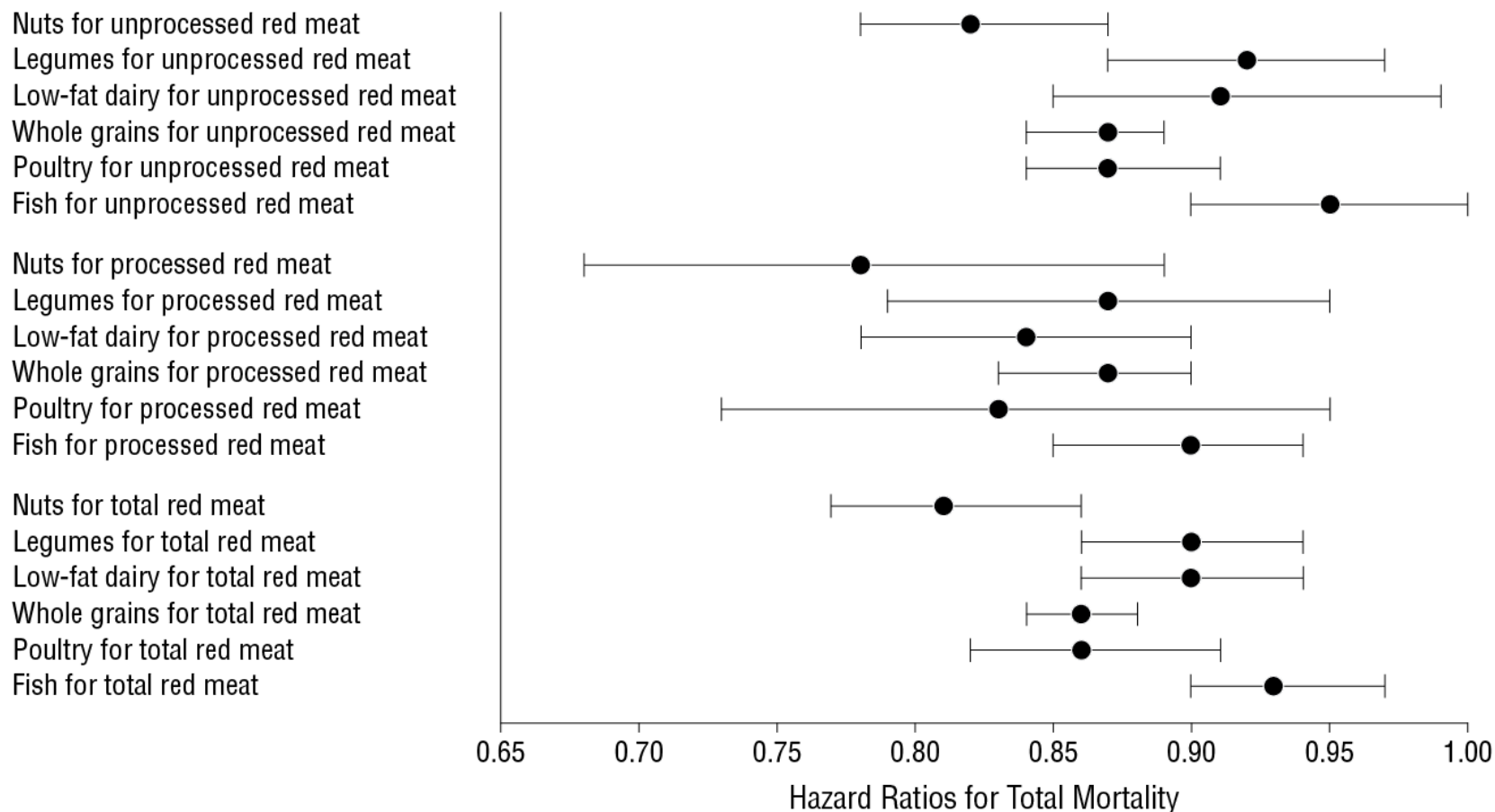
Red Meat Intake and All-Cause Mortality

Dose-response relationship



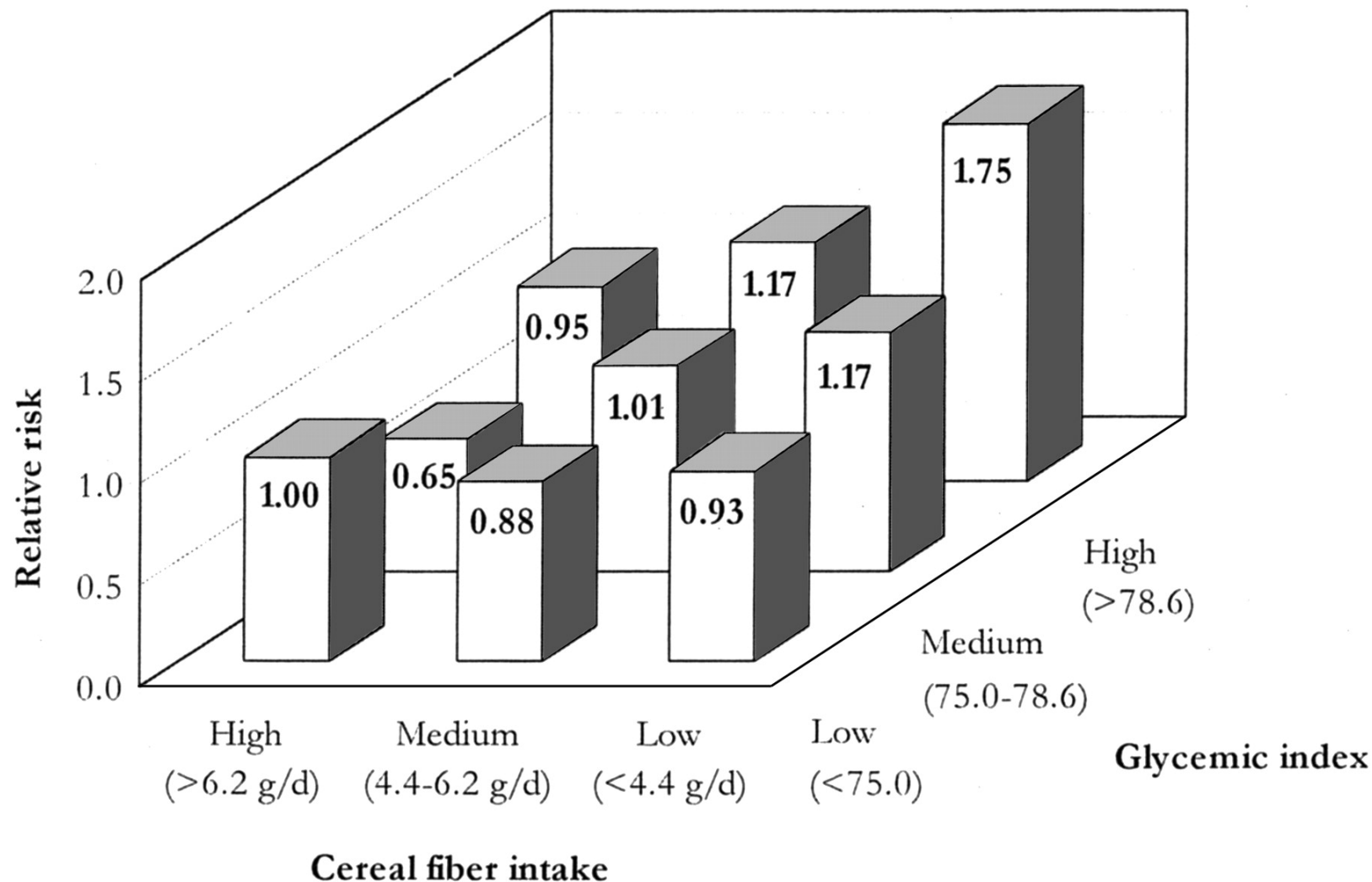
Hazard Ratios: Replacement of Red Meat

Replacement of other food groups for red meat



Relative Risk of Type-2-Diabetes

By different levels of fiber intake and glycemic index



Lifestyle Factors and Health

Complex Interaction of Systems and Factors



The emerging field of Lifestyle Medicine takes the complex interaction of lifestyle factors and different systems (e.g. cellular, social) into account.



Lifestyle-related Diseases

Myths and Misconceptions hindering Progress



- Personal Behaviours vs. Public health problem
- One factor vs. complexity of lifestyle
- Treatment vs. Prevention
- Ageing (natural) population vs. young population
- Modernization (rich) vs. local problem (poor)
- Future vs. present problem



Lifestyle-related Diseases

A complex Challenge

- Few clear policies and strategies
- Disconnect between public health and clinical medicine
- Low commitment to prevention
- Under-estimation of intervention effectiveness
- Commercial pressure
- Severe lack of investment in research

Opportunities

Looking Ahead



- We have to deal forcefully with the underlying issues of chronic diseases.

Work from 'CELL to COMMUNITY'

- Understanding how lifestyle factors influence human health and biology
- Clinical medicine to treat underlying mechanisms
- Public Health to create healthy environments and prevent chronic disease

We need an interdisciplinary, systems-based and holistic approach. We need to address the underlying mechanisms and factors of chronic diseases.

- Private – Public collaborations
- Link state and industry research



EUROPEAN SOCIETY OF **LIFESTYLE MEDICINE**

Research, Prevention & Treatment of Chronic Diseases

Michael Sagner, MD



<https://twitter.com/MichaelSagnerMD>



<https://www.facebook.com/MichaelSagnerMD>

www.eslm.eu