

Chronic & Age-Related Diseases



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"The rise of chronic noncommunicable diseases presents an enormous challenge.

For some countries, it is no exaggeration to describe the situation as an impending disaster; a disaster for health, for society, and most of all for national economies."

~Dr. Margaret Chan, WHO Director-General

What are *chronic diseases*

- Diseases that aren't infectious.
- Also called *non-communicable diseases* (NCDs)
- These diseases are typically of long duration & slow progression.
- Almost half of all Americans have a chronic condition.
- Chronic diseases are the leading cause of mortality in the world.

Deaths by cause in the world

Noncommunicable diseases:

Cardiovascular disease
30.2%

Cancer
15.7%

Diabetes
1.9%

Other chronic diseases
15.7%

Infectious diseases:

HIV/AIDS 4.9%

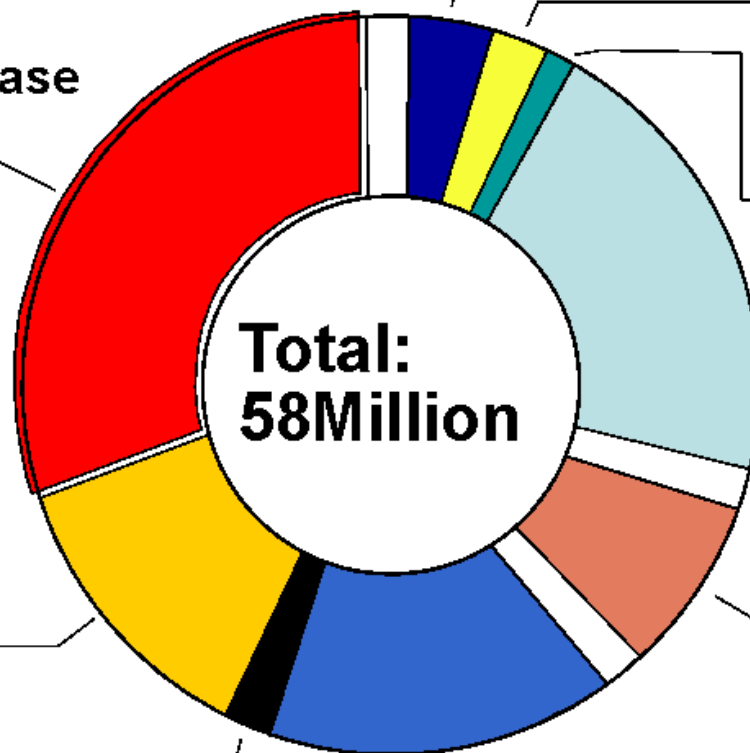
Tuberculosis 2.4%

Malaria 1.5%

**Other
Infectious
Diseases**
20.9%

Injuries 9.3%

**Total:
58Million**



(WHO, 2004)

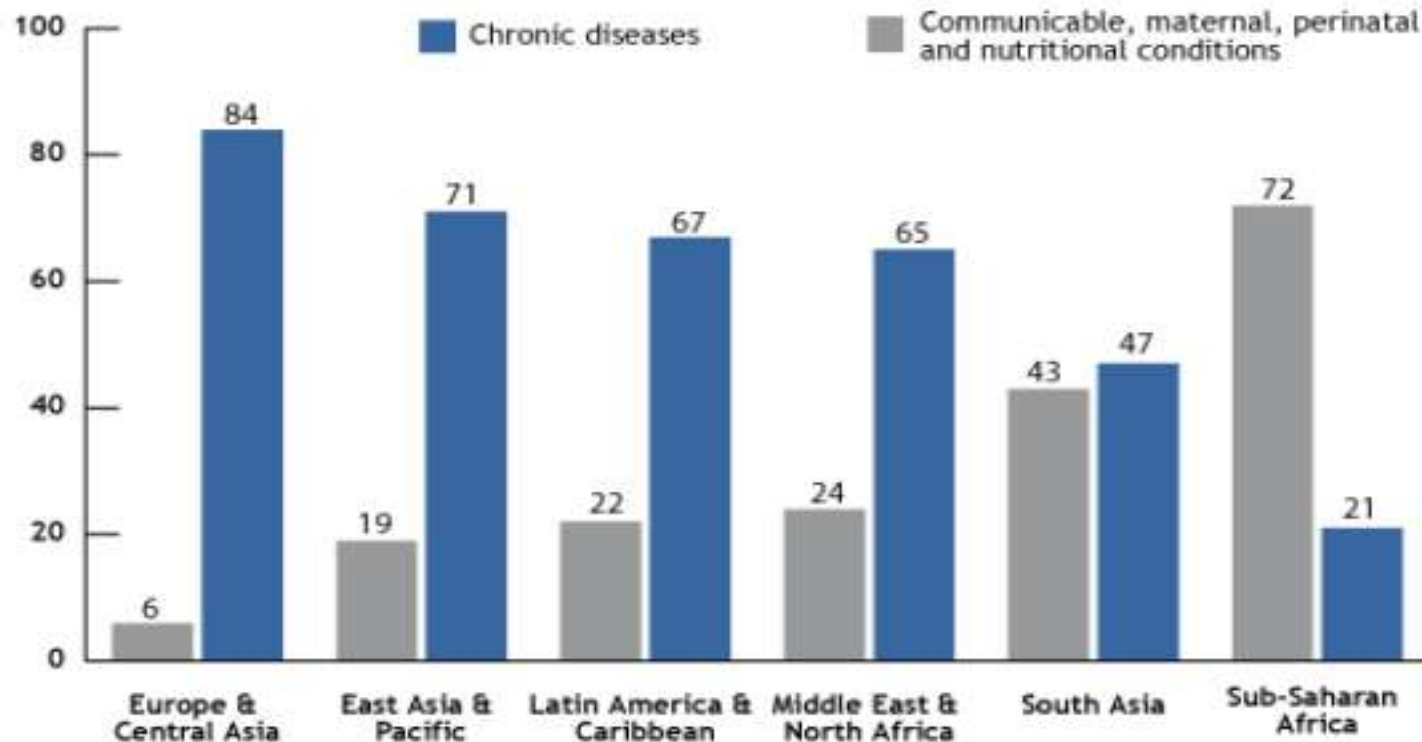


**World Health
Organization**

The only continent where infectious diseases outnumber chronic diseases:

■ Sub-Saharan Africa

Worldwide Share of Deaths, by Cause



Source: Colin D. Mathers et al., "The Global Burden of Disease in 2002: Data Sources, Methods, and Results," *GPE Discussion Paper 54* (Geneva: World Health Organization, 2003), available at www.who.int/evidence.



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1. What is another name for *chronic diseases*?
1. How would you define *chronic disease*?
1. Approximately how many people in the U.S. have a chronic condition?
1. What is the only continent in the world where infectious diseases outnumber chronic conditions?

Why is there a shift from infectious diseases?

- Sanitation & better living conditions
- Better health practices & improved medical care
- Worldwide health education

What are some common causes for the increase of chronic diseases?

1. People living longer
2. Poor eating habits (fast foods, not enough fruit & vegetables)
3. Lack of physical activity
4. Rise in obesity
5. Tobacco use (rising consumption in developing countries)

Common causes for increase of chronic diseases cont.

6. Excessive alcohol consumption
7. Pollution
8. Globalization

World's elderly population



- More prone to chronic disease
- About 80% have one or more chronic diseases
- 25% are limited in their ability to perform activities of daily living



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5. Name one reason for the shift from infectious diseases to chronic diseases.
6. Which of the following is not a cause of chronic disease? ↓
 - a. rise in obesity
 - b. increased travel around the world
 - c. don't eat enough vegetables & fruit .
7. What % of world's elderly have one or more chronic diseases?

The most common NCDs:

1. Cardiovascular disease

1. Lung Disease

1. Diabetes

1. Cancer

1. Cardiovascular disease

- Primarily myocardial infarction & stroke
- Also heart valve disease & congenital heart anomalies
- Past 2 decades cardiovascular disease *decreased* in high-income countries; but *increased* in low- & middle-income countries largely due to lifestyle choices →

Cardiovascular Disease cont.

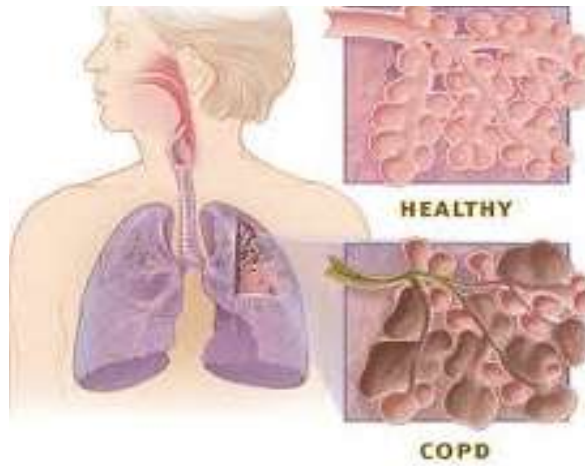
- Poor diet, lack exercise, smoking, excessive alcohol



- High-income countries have more medical interventions available.

2. Lung disease

- Chronic obstructive pulmonary disease (COPD):



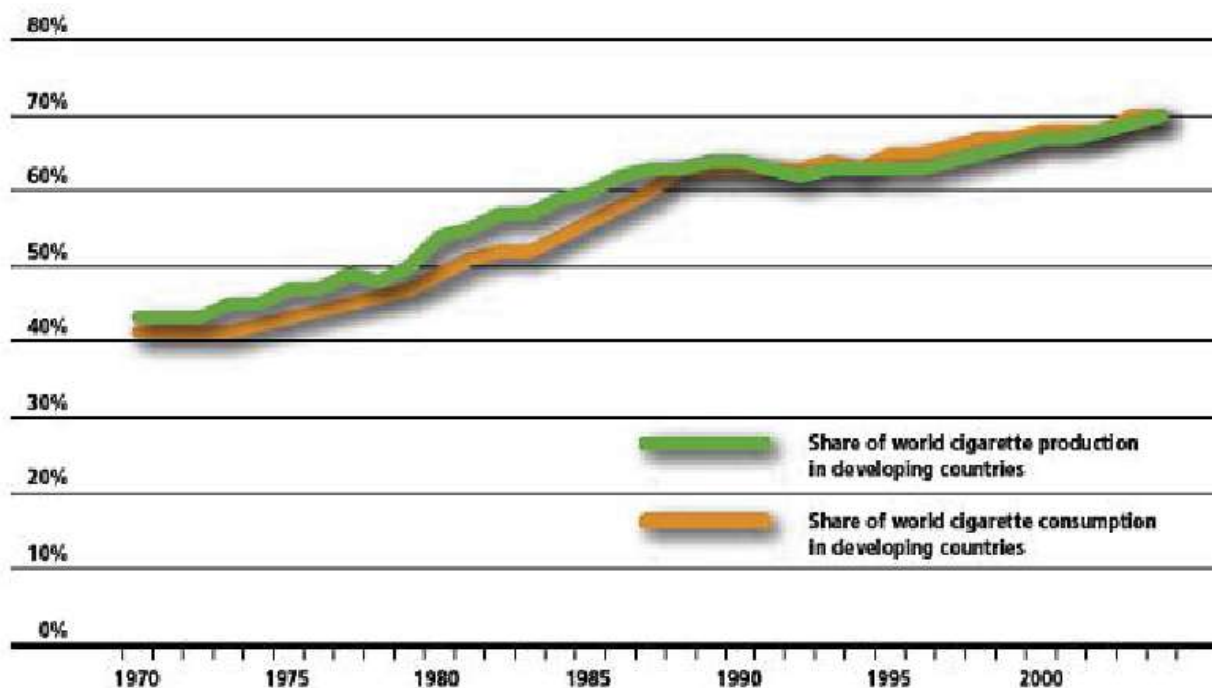
- Chronic asthma, chronic bronchitis, emphysema
- Incidence of these diseases is increasing throughout world
- Smoking & air pollution are major causes

Tobacco: Rising consumption in developing countries

A SHIFTING EPIDEMIC

THE TOBACCO INDUSTRY REACHES NEW MARKETS IN DEVELOPING COUNTRIES

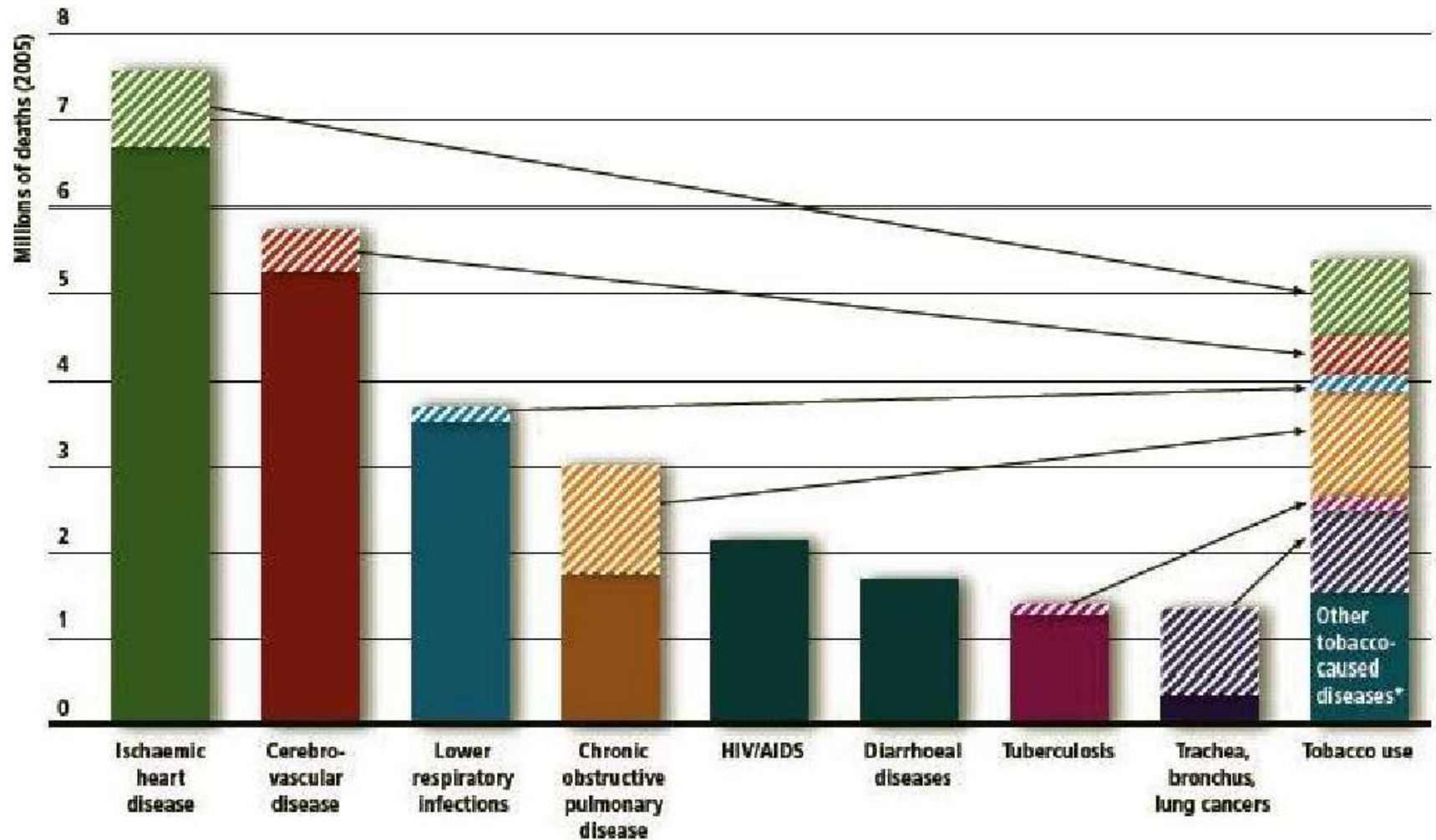
Share of cigarette production and consumption in developing countries



World Health
Organization

Tobacco

A risk factor for six of the eight leading causes of death in the world



(WHO, 2008)

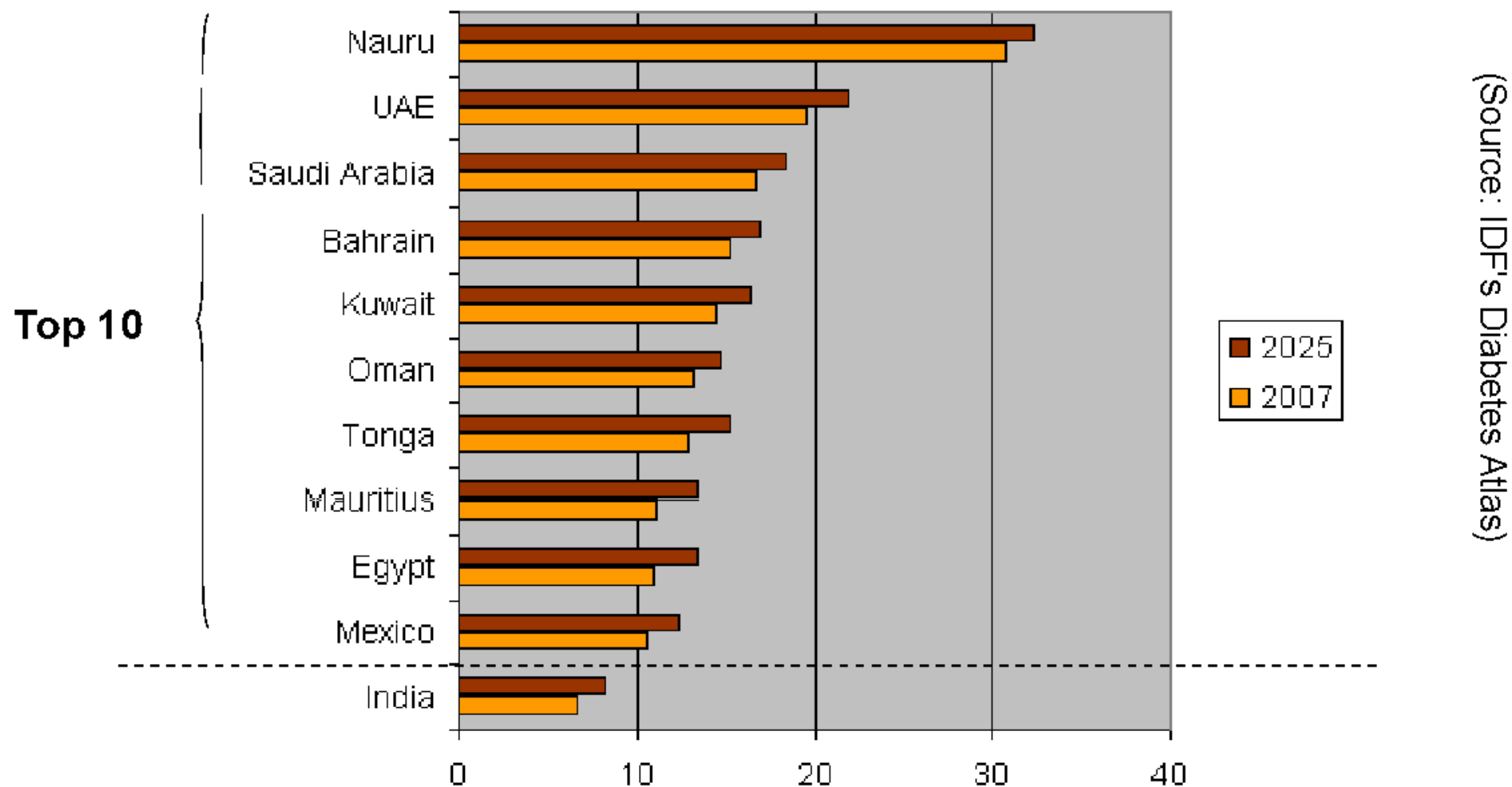
3. Diabetes



- WHO reports: 4.6 million people die each year from diabetes
- Most cases are related to diabetes 2
- Diabetes 2 is linked to obesity, poor diet, & lack of exercise.

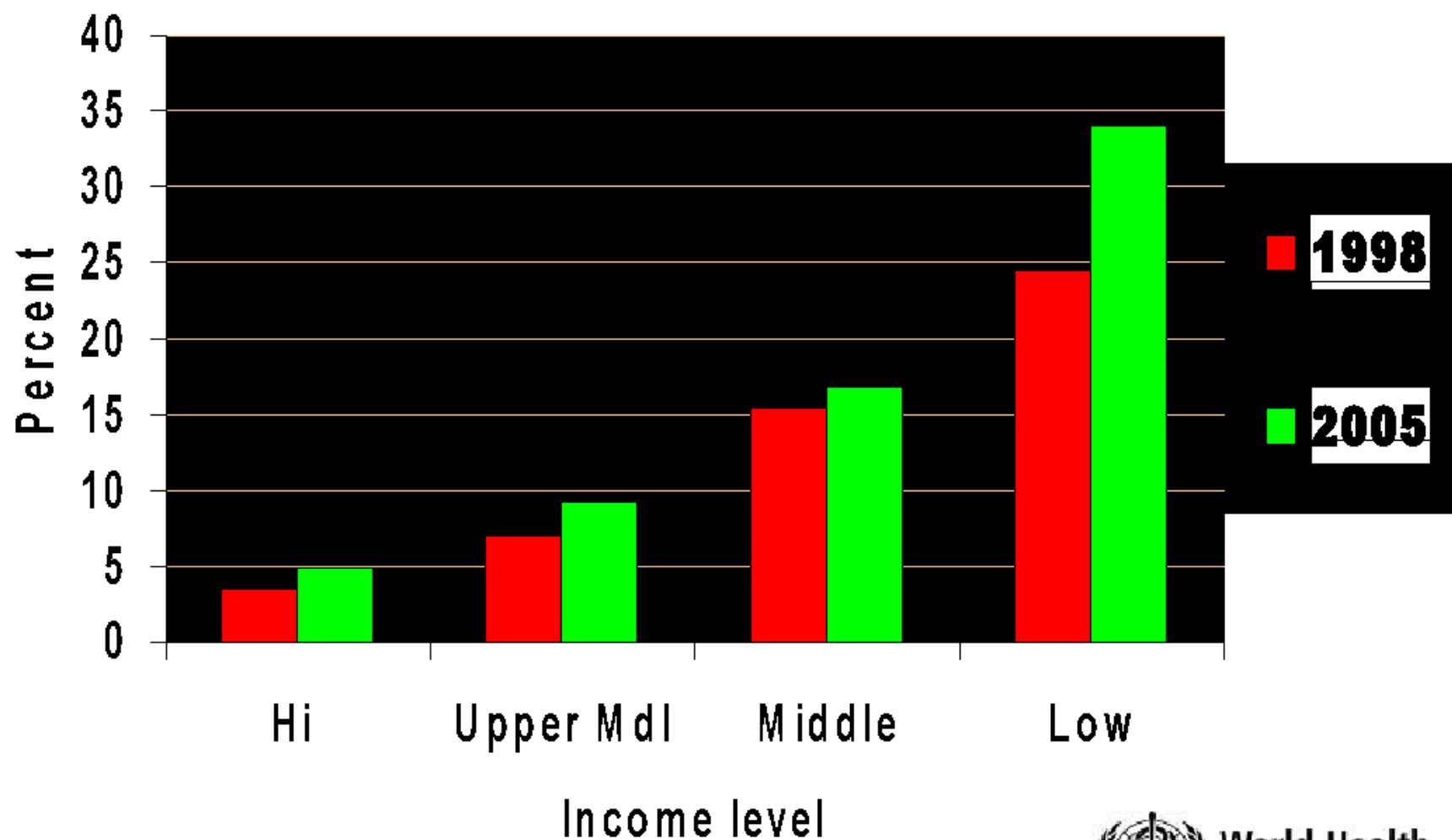
Examples of countries with high prevalence of diabetes

Global Estimates 189 m in 2003 and 324 m in 2025

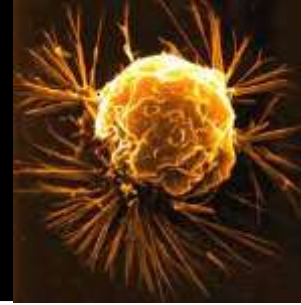


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Proportion of family income devoted to diabetes care in India



4. Cancer (CA)

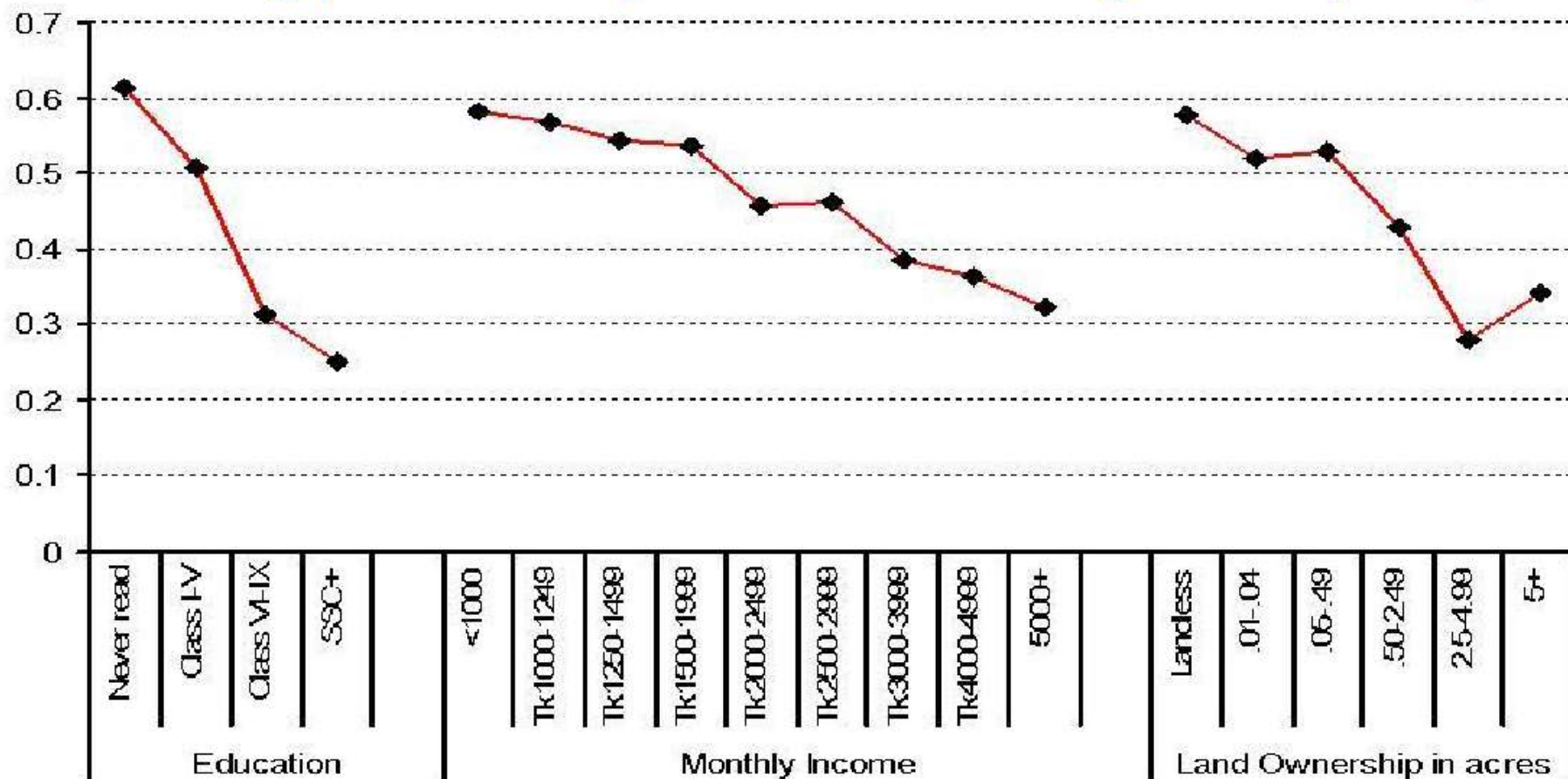


- Number of CA deaths worldwide projected to increase 45% by 2030
- Deadly CAs increasing at high rate: lung, stomach, colon, liver, & breast CA
- Only 30% CA cases linked to behavioral or environmental factors
(tobacco being single largest preventable behavior)

Noncommunicable Diseases

Tobacco: The poor are the ones who smoke the most

Smoking prevalence prevalence in Bangladesh (1995)





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8. In the past 2 decades cardiovascular disease has decreased in: (select any that apply) ↓
- a. low-income countries
 - b. middle-income countries
 - c. high-income countries
 - d. sub-Saharan Africa .
9. Name two lifestyle choices that largely contribute to cardiovascular disease.



CheckPoint cont.

10. What does COPD stand for?
11. What are the 2 major causes of COPD around the world?
12. What type of diabetes is linked to poor diet and obesity? ↓
 - a. Diabetes Type I
 - b. Diabetes Type 2 .
13. Name one of the top 11 countries where there is a high prevalence of diabetes.



CheckPoint cont.

14. Name 2 of the most deadly forms of cancer.
15. What % of cancer cases are linked to behavioral or environmental factors? .

The burden of chronic diseases

1. People with chronic conditions account for 83% of all health care spending in US.
2. It's projected that by 2020, NCDs will account for almost $\frac{3}{4}$ all deaths worldwide.
3. Globally speaking, 60% of burden of chronic diseases will occur in developing countries.
4. These people are the heaviest users of health care services.
 - fill more prescriptions
 - visit physicians more



Burden of chronic diseases cont.

- likely to be hospitalized more
- have more home health care visits

3. People with chronic illness are more likely to have activity limitations.

- interferes with ability to work and be self sufficient

Impact on socio-economic development

Macro-economic level

| Lost national income from premature deaths due to heart disease, stroke and diabetes | 2005 | 2006-2015 (cumulative) |
|--|---------------------------------|---------------------------------|
| Countries | Lost national income (billions) | Lost national income (billions) |
| Brazil | 3 | 49 |
| China | 18 | 558 |
| India | 9 | 237 |
| Nigeria | 0.4 | 8 |
| Pakistan | 1 | 31 |
| Russian Federation | 11 | 303 |
| Tanzania | 0.1 | 3 |

(WHO Chronic Disease Report, 2005)

WHO: "Heart disease, stroke and diabetes alone are estimated to reduce GDP between 1 to 5% per year in developing countries experiencing rapid economic growth"



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16. Name 2 ways in which people with chronic conditions burden our health care system.

Future cost of chronic diseases

- Proportion of the burden of NCDs is expected to increase 57% by 2020

Educate the world & help reverse chronic diseases.



**Limit alcohol
consumption**

