



From Research to Practice:  
Postgraduate Training Course in Chronic Disease  
Geneva 2004

# Primary prevention: Tobacco

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Today, in the world,  
48% of men and 12% of  
women smoke

1.2 billion smokers  
worldwide, 800 million in  
developing countries ... **and**  
**growing**



# Why is tobacco a public health problem?

1. Kills and causes diseases
2. Contributes to poverty
3. Is a growing epidemic
4. Has a negative effect on the environment

# Tobacco Products: Smoking Tobacco

- Cigarettes
  - manufactured
  - hand rolled
  - bidis
  - kreteks
- Pipes
- Cigars



# Tobacco Products: Bidis or Beedis

- Widely used in India
- Now popular among young people in the US
- Marketed as a ‘natural cigarette’
- Shaped like a hand-rolled cigarette
- Available in a variety of scents that hide the harsh taste of tobacco
- Unfiltered and delivers high yields of tar and nicotine



# Tobacco Products: Kreteks (Clove cigarettes)

- **Made in Indonesia**
- **Marketed as a 'luxury for the young and trendy'**
- **Major brands include:**
  - Djarum
  - Gudan Garam
  - Bentoel
  - Sampoerna

# Tobacco Products: Cigars

- Any roll of tobacco wrapped in leaf tobacco or in any substance containing tobacco
- Made of air-cured tobacco
- Delivers more CO per gram of tobacco burned than a regular cigarette
- In the 1990s cigar use became 'fashionable' in many developed countries



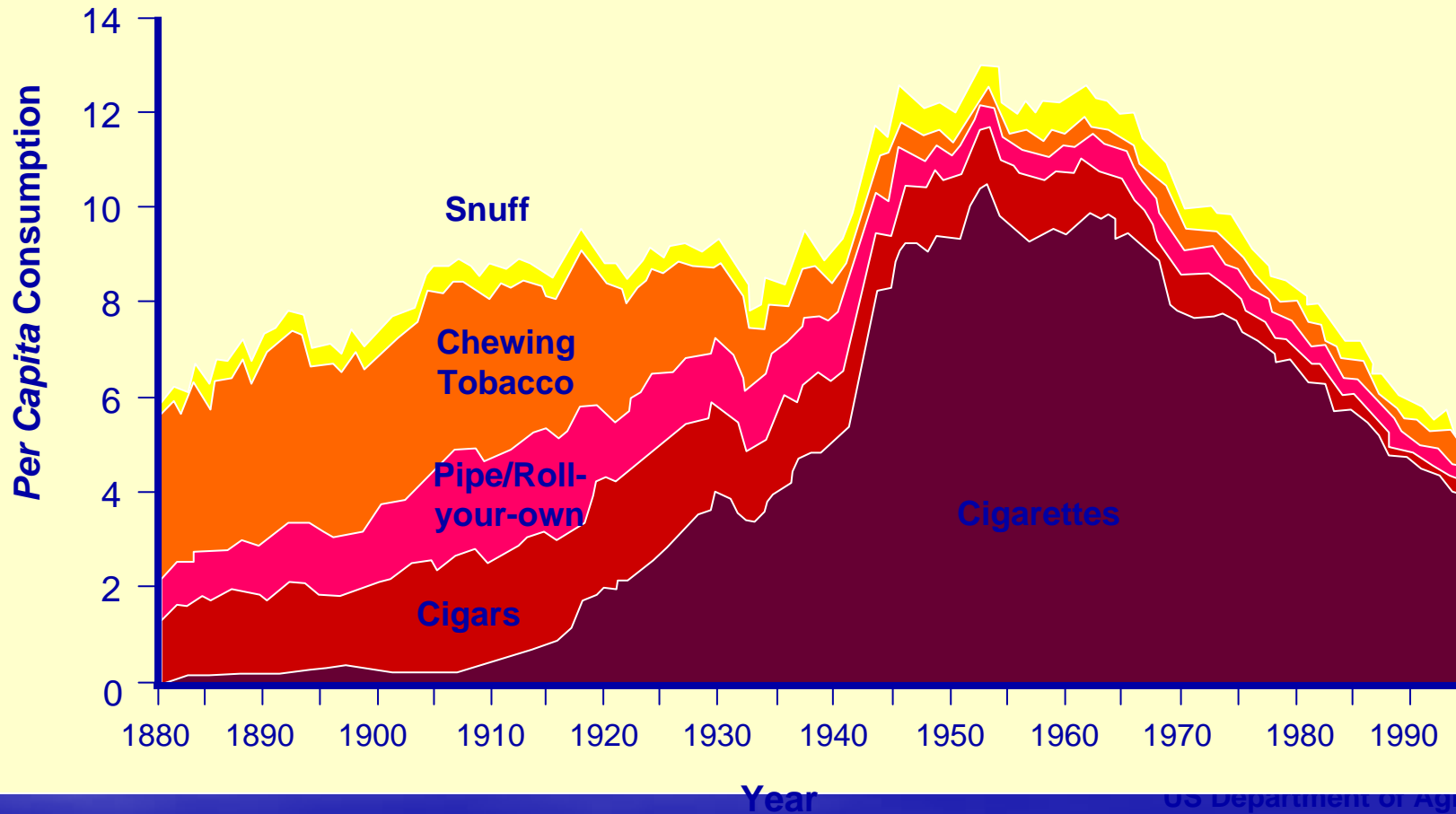
# Tobacco Products: Smokeless tobacco

- Chewing tobacco
  - looseleaf
  - plug
  - twist
- Snuff
  - moist
  - dry



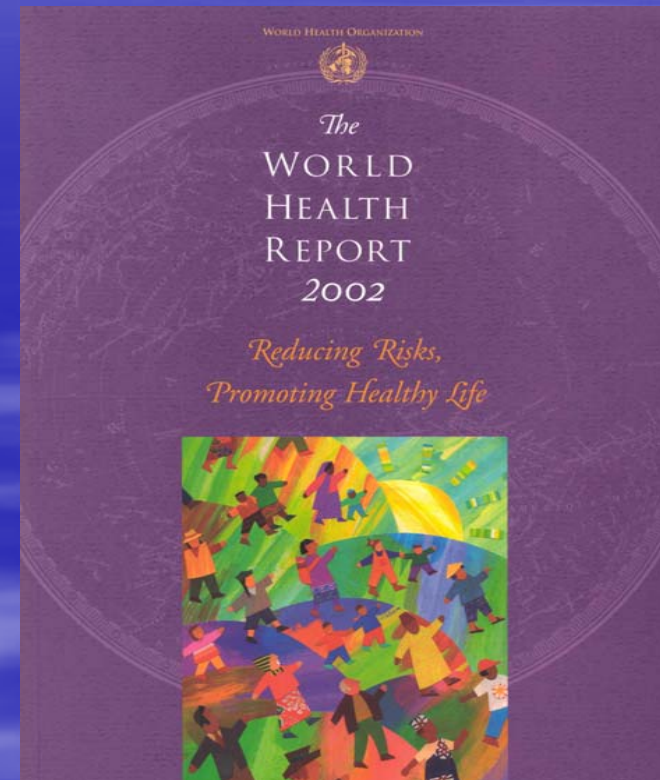


# Per Capita Consumption of Different Forms of Tobacco in the US, 1880–1995



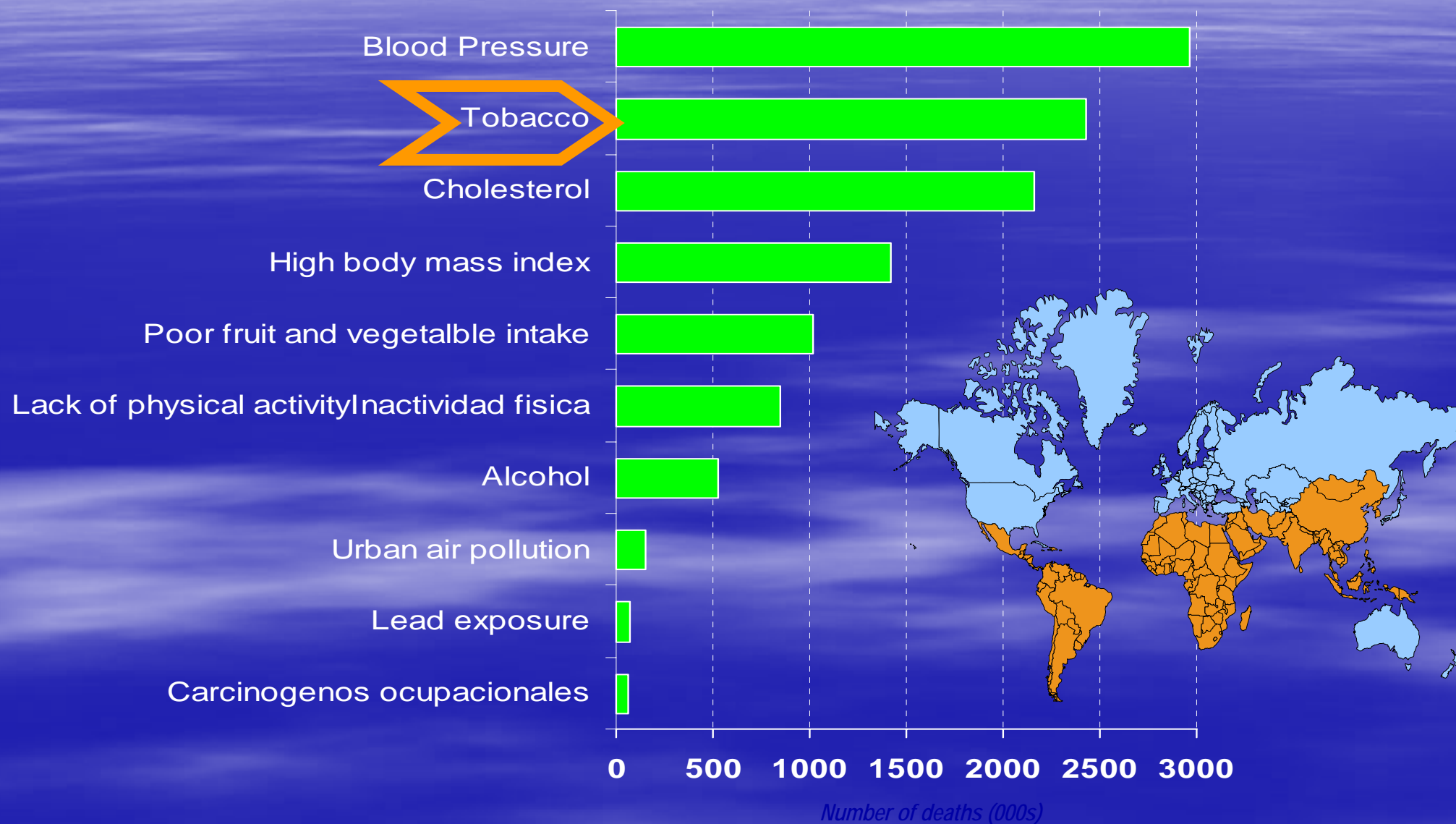
# 1. Kills and causes diseases

It kills one in every 10 adults worldwide. In 2002 approximately 4,83 million people died due to tobacco related diseases. It is estimated that by 2020, tobacco will be responsible for 10 million deaths per year.



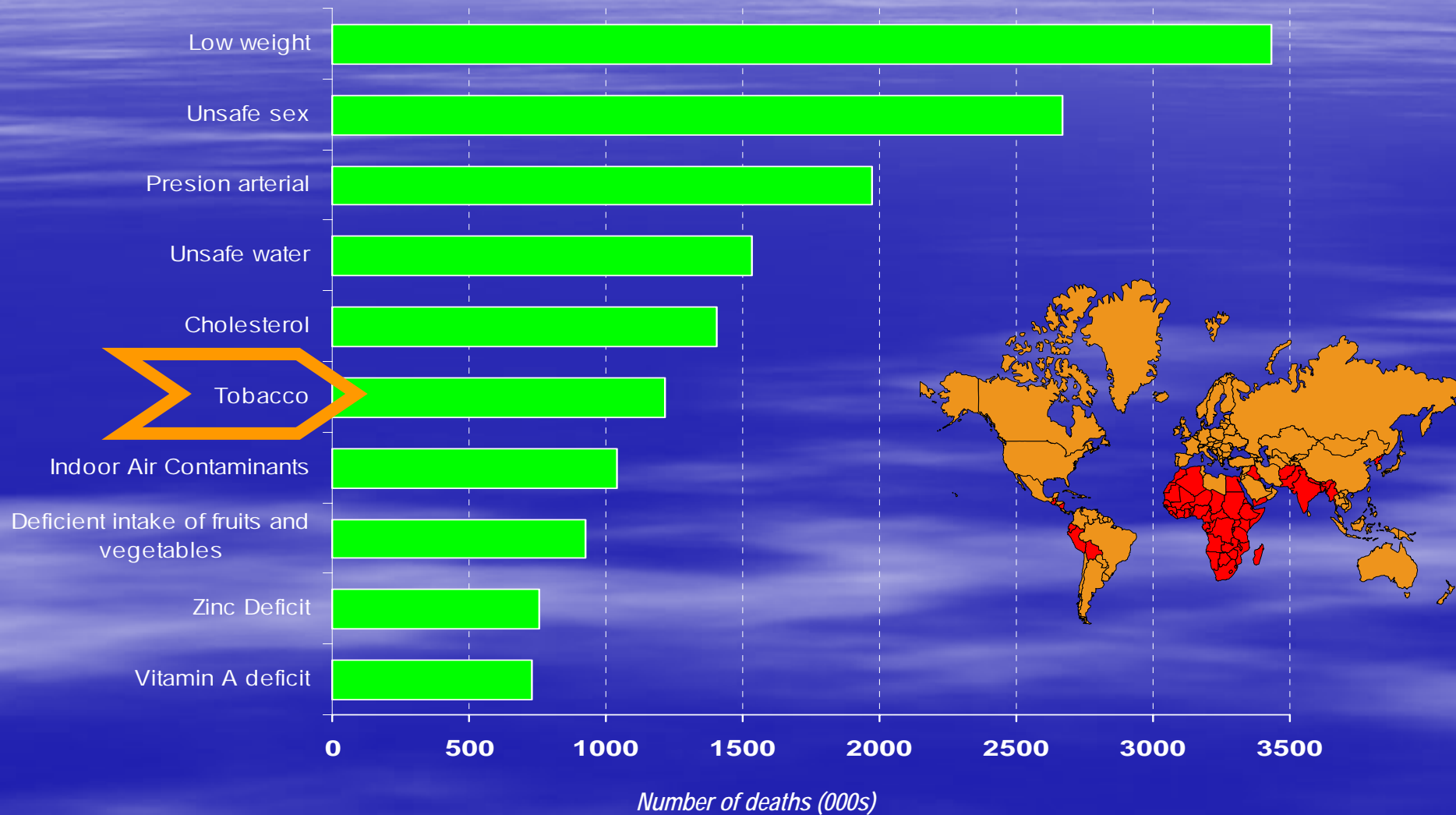
# Deaths in 2000 attributable to selected risk factors 2000

## Developed Countries - World Health Report 2002



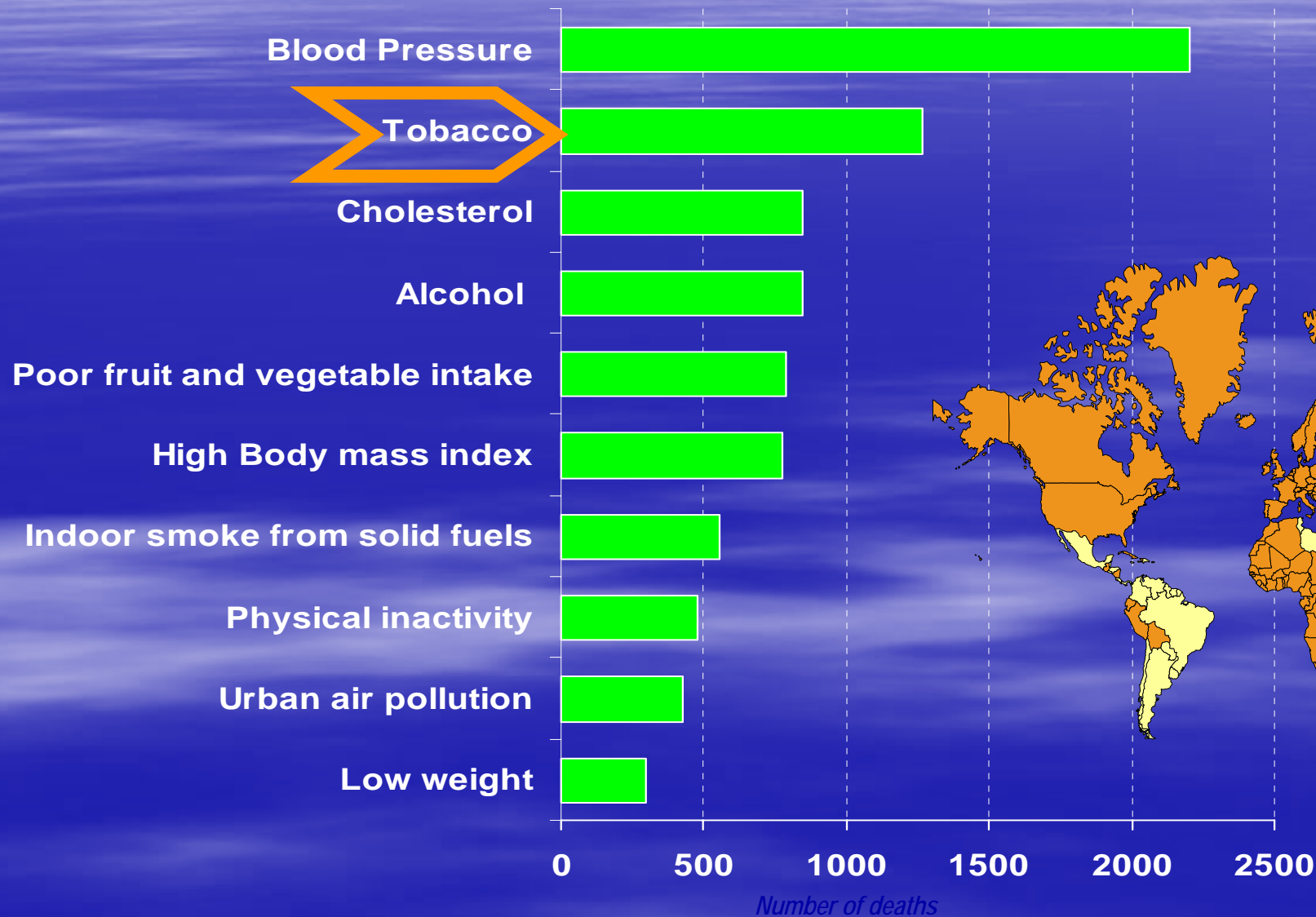
# Deaths in 2000 attributable to selected risk factors 2000

## High mortality developing countries - World Health Report 2002



# Deaths in 2000 attributable to selected risk factors 2000

## Low mortality developing countries - World Health Report 2002

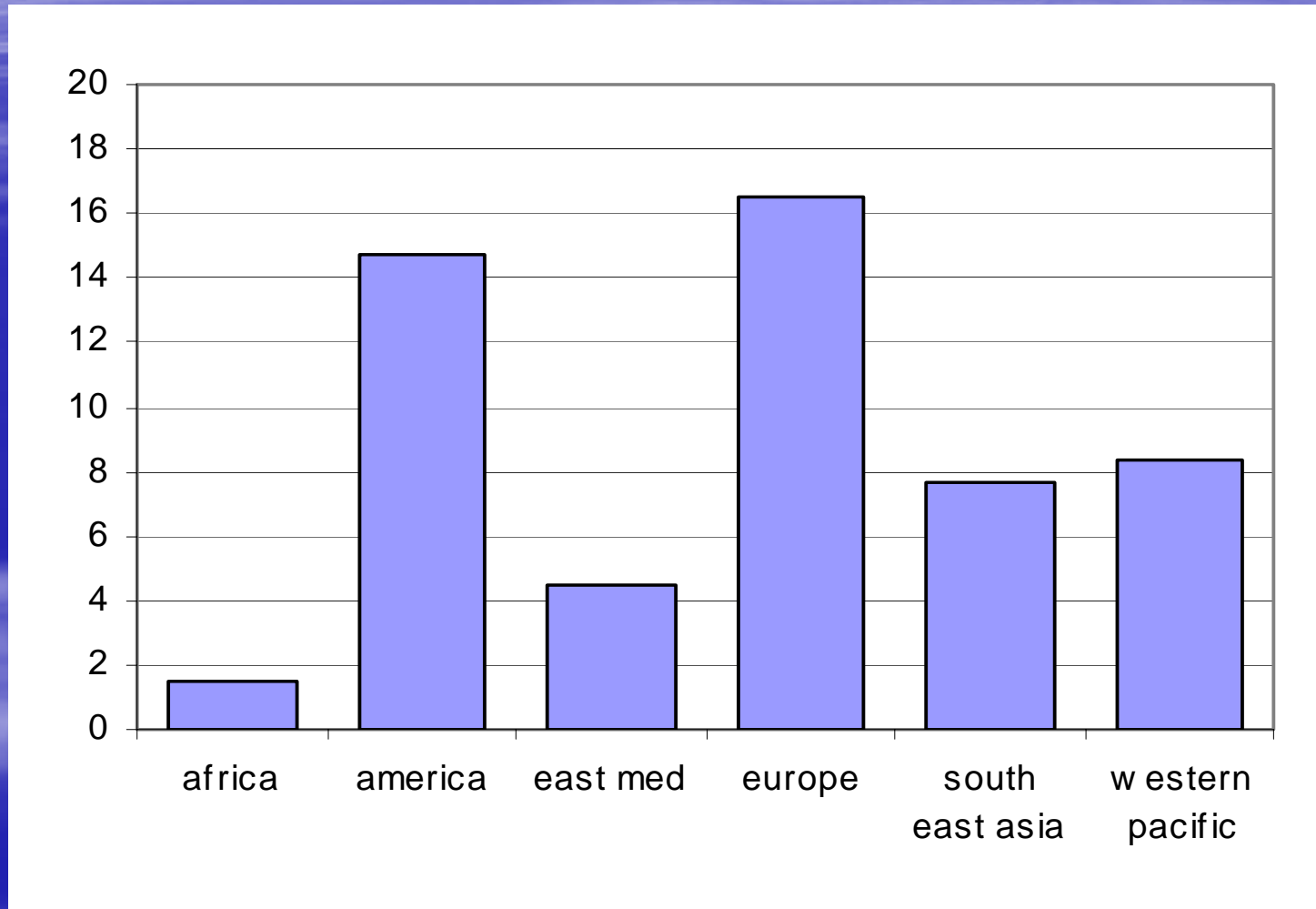


It is estimated that 70% of deaths in 2020 due to tobacco will be in people from developing countries.



# 1. Kills and causes diseases

## Percentage of total number of deaths attributable to TOBACCO use by WHO Regions, 2000



# 1. Kills and causes diseases

Diseases:

**Drug dependency- causes addiction**

**Cancer**

Oral, pharynx, larynx, esophagus, lung, kidney, ureter and bladder

**Other chronic diseases**

- Stroke
- Coronary heart disease
- Aortic aneurysm
- Atherosclerotic peripheral vascular disease
- Chronic obstructive pulmonary disease (COPD)





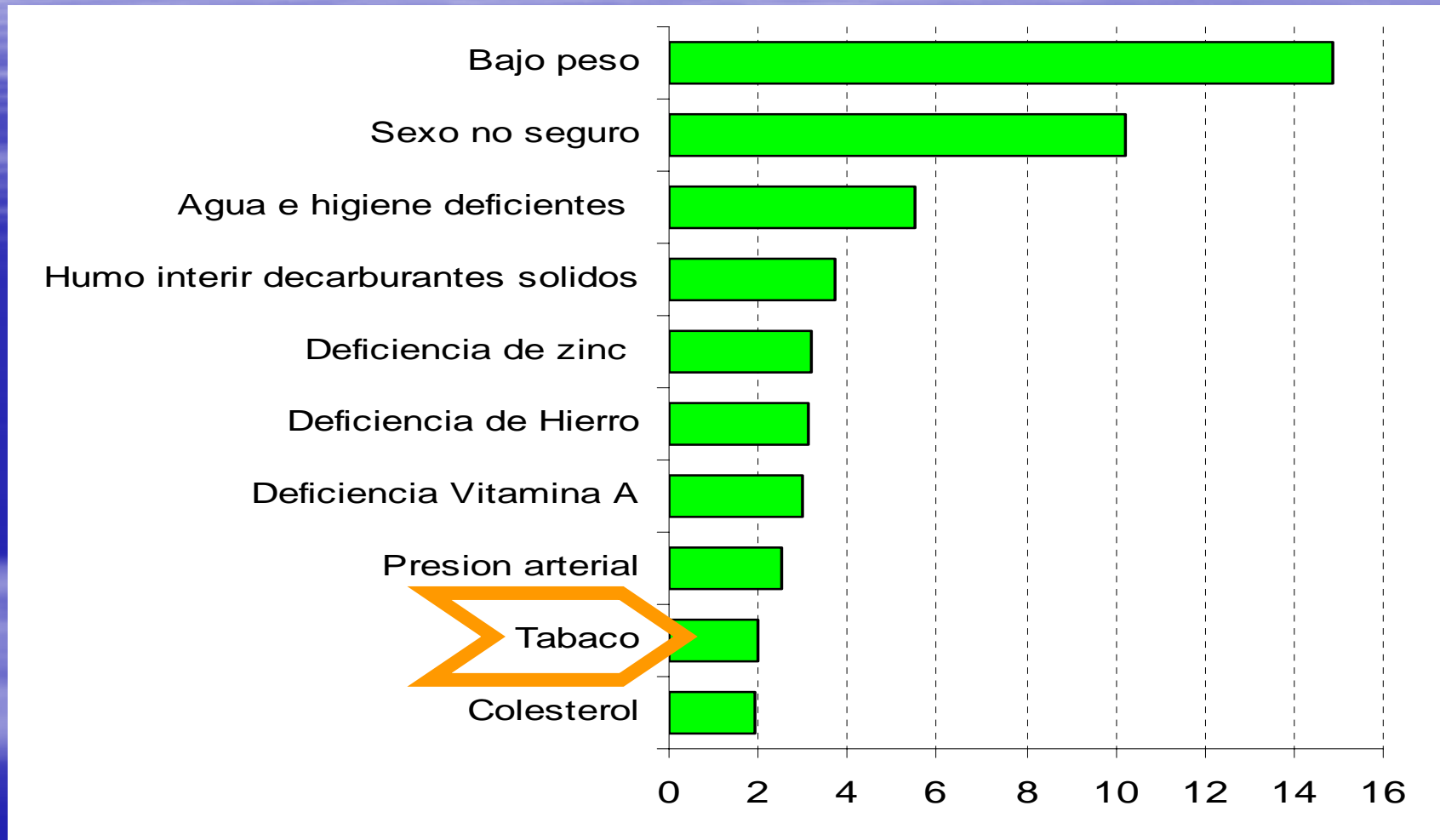
# Every day about 100,000 young people around the world become addicted to tobacco

In high-income countries, 15,000 youth become addicted to tobacco every day.

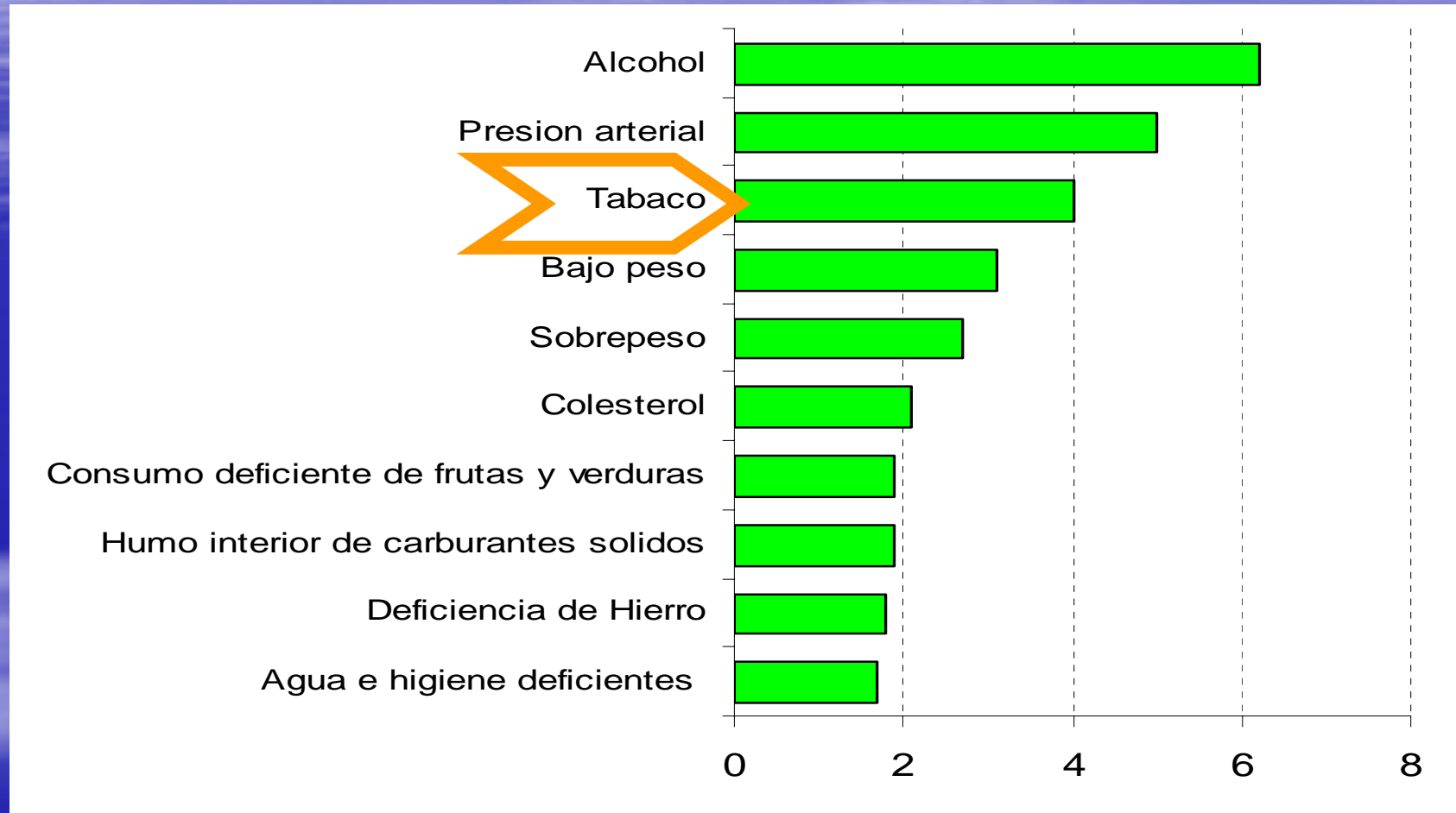


In middle- and low-income countries: 84,000 youth become addicted to tobacco every day.

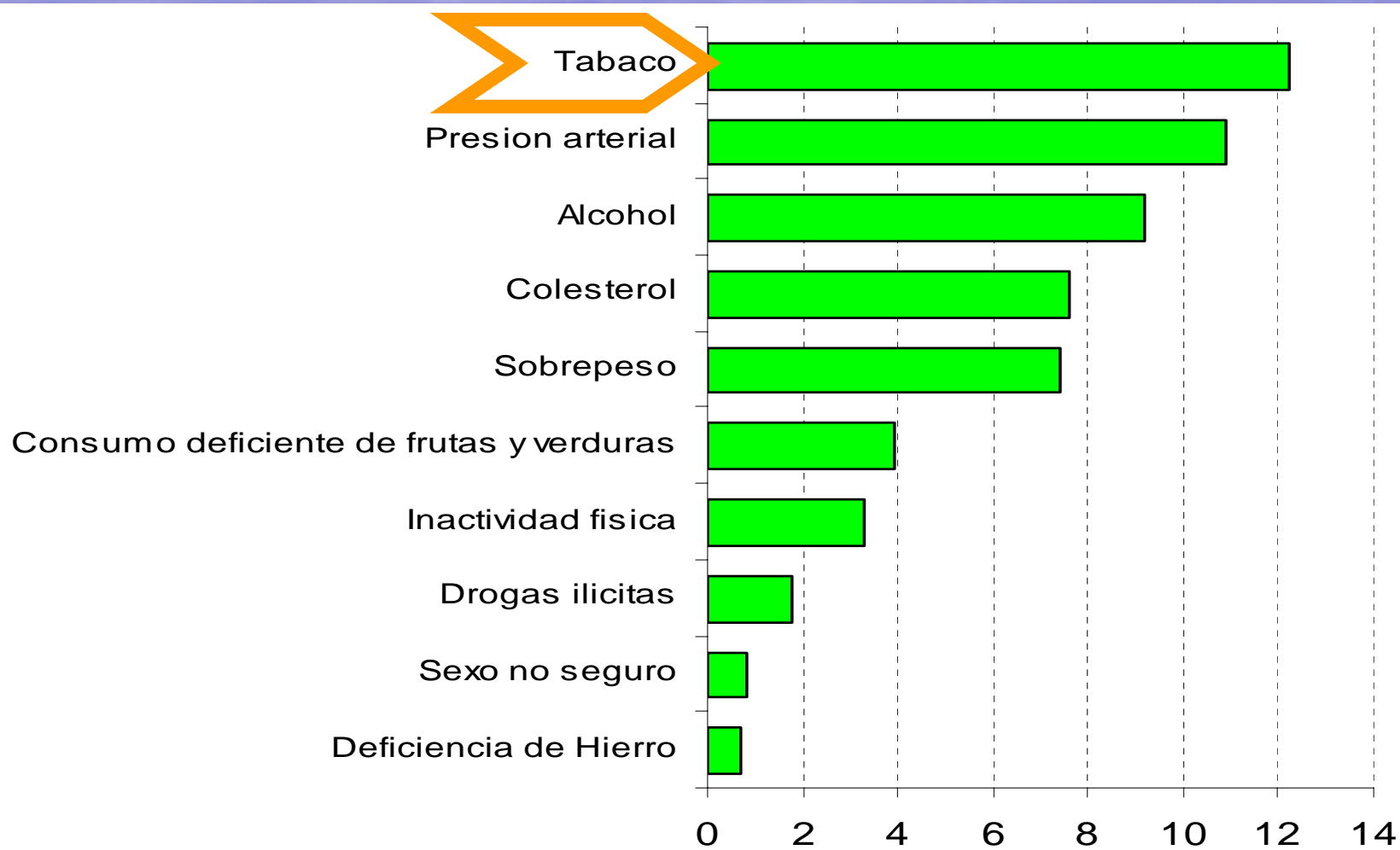
# Risk factors as % of DALYs in high mortality developing countries



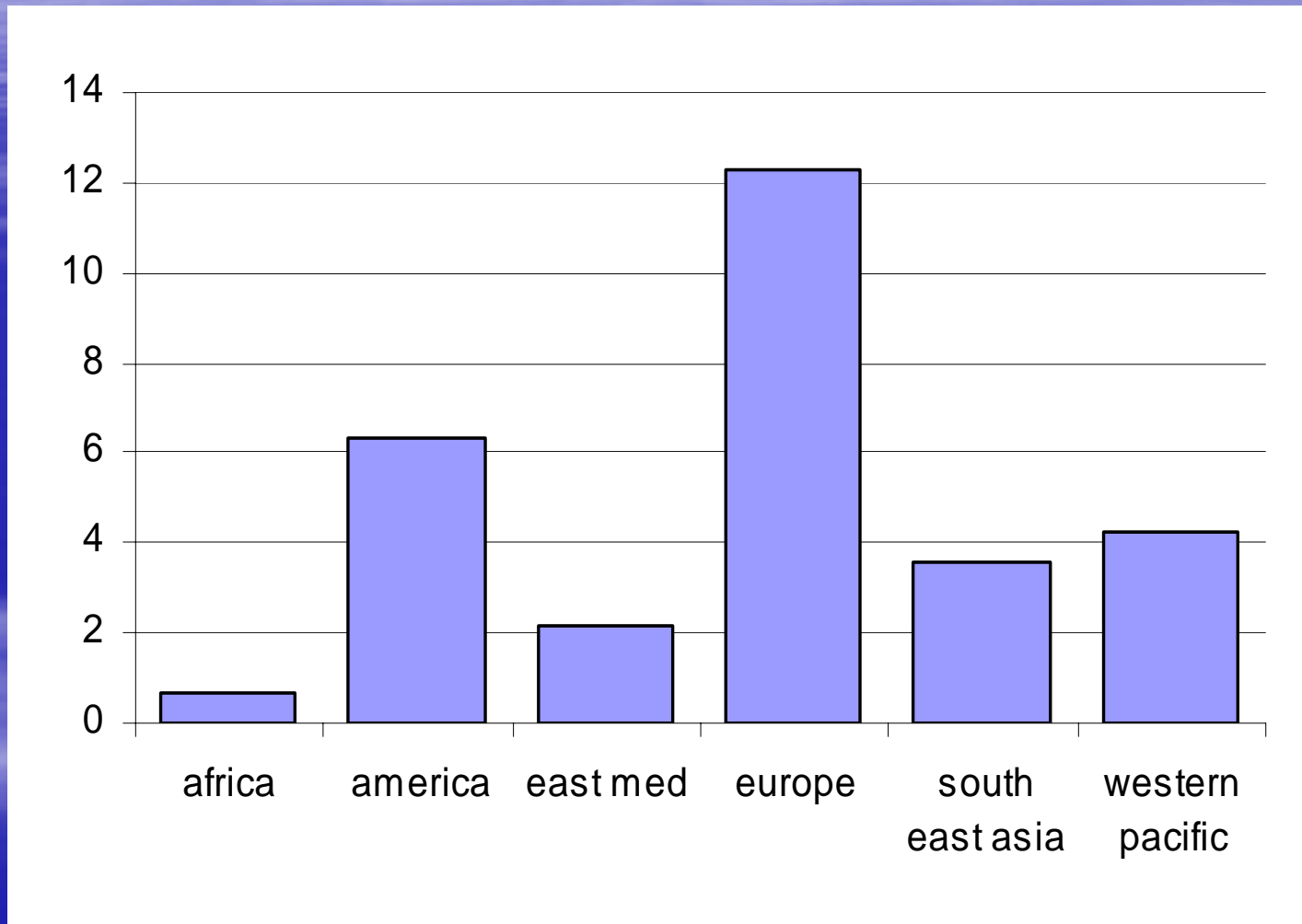
# Risk factors as % of DALYs in low mortality developing countries



# Risk factors as % of DALYs in developed countries



# Percentage of total number of DALYs attributable to TOBACCO use by WHO Regions, 2000



Source: WHR, 2002

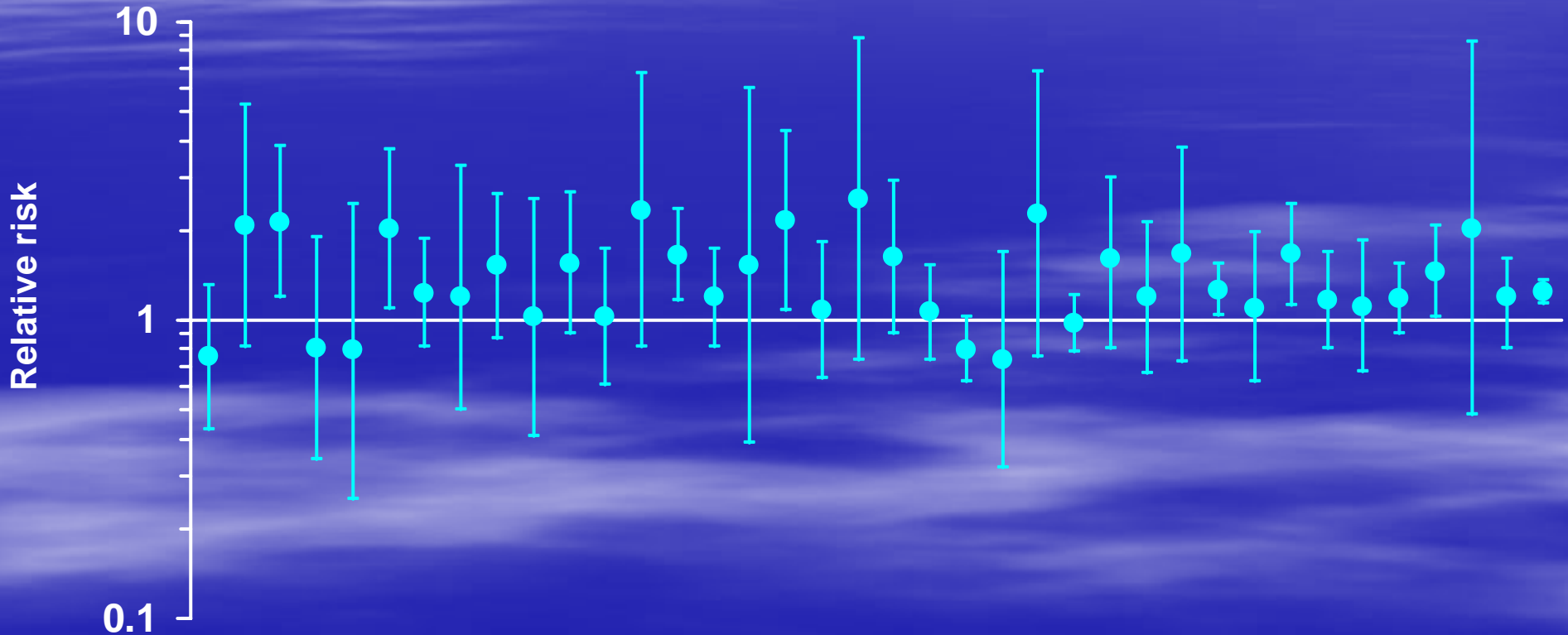
# 1. Kills and causes diseases

## Passive Smokers

- Passive smoker is the person exposed to second hand tobacco smoke.
- There is scientific evidence of a 30% increased risk of suffering lung cancer (20% in women and 30% in men) in people living or working with smokers.
- There is a 25 to 35% increased risk of suffering an acute coronary heart disease and an increased risk of presenting chronic respiratory conditions

# Spousal smoking and lung cancer: women (combined)

RR (95% CI) in lifelong nonsmokers – smoking vs nonsmoking spouse



# ETS and Coronary Heart Disease: meta-analysis

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<u>Exposure</u>	<u>Pooled RR*</u>	<u>(95% CI)</u>
ETS (smoking spouse)	1.3	(1.2–1.4)
Active smoking:		
1 cig/day	1.4	(1.2–1.6)
20 cig/day	1.8	(1.3–2.4)

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\* risk estimates apply to an average age at death of 65 years



# Health effects of SHTS exposure in children

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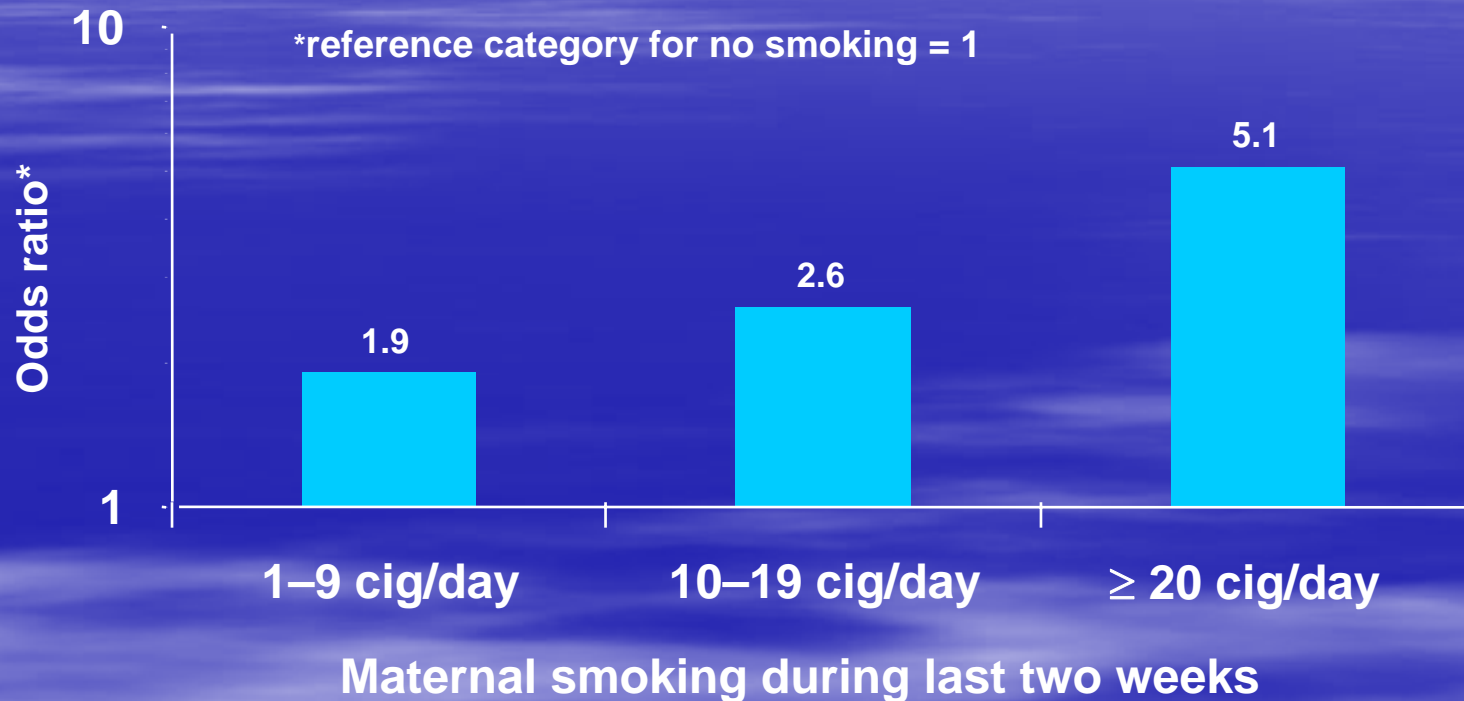
- ◆ **Sudden Infant Death Syndrome (SIDS)**
- ◆ **Acute respiratory illnesses**
- ◆ **Chronic respiratory symptoms**
- ◆ **Asthma and exacerbation of asthma symptoms**
- ◆ **Chronic middle ear disease**



WHO estimates that nearly 700 million, or almost half of the world's children, breathe air polluted by tobacco smoke, particularly at home.

# Maternal smoking and SIDS: New Zealand case-control study

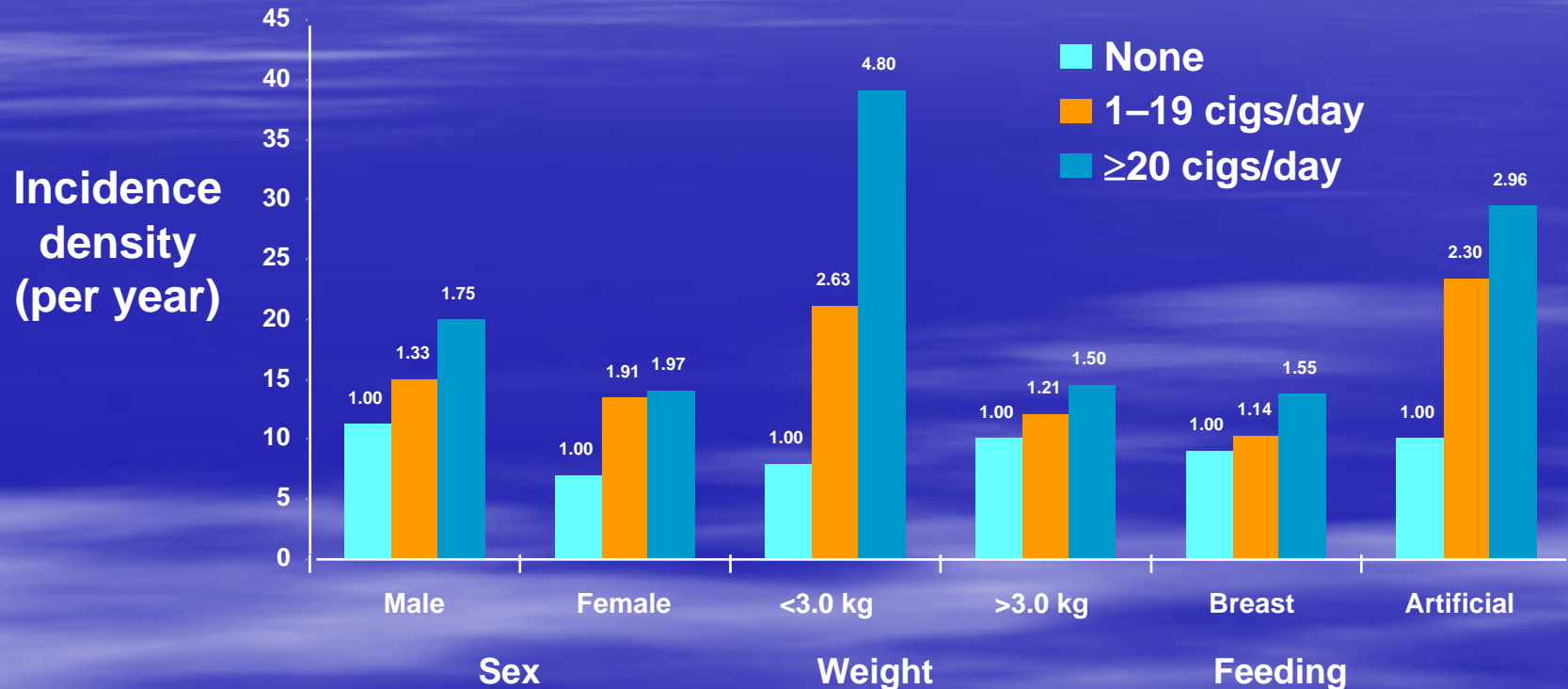
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Dose-response relationship:  
Increasing maternal smoking leads to increasing  
frequency of SIDS

# ETS and ARI: Shanghai cohort study

## Hospitalization for respiratory illnesses vs family cigarette consumption



- Index of exposure = paternal and other family members smoking
- Significant dose-response relationship between passive smoke exposure and hospitalizations for respiratory illness

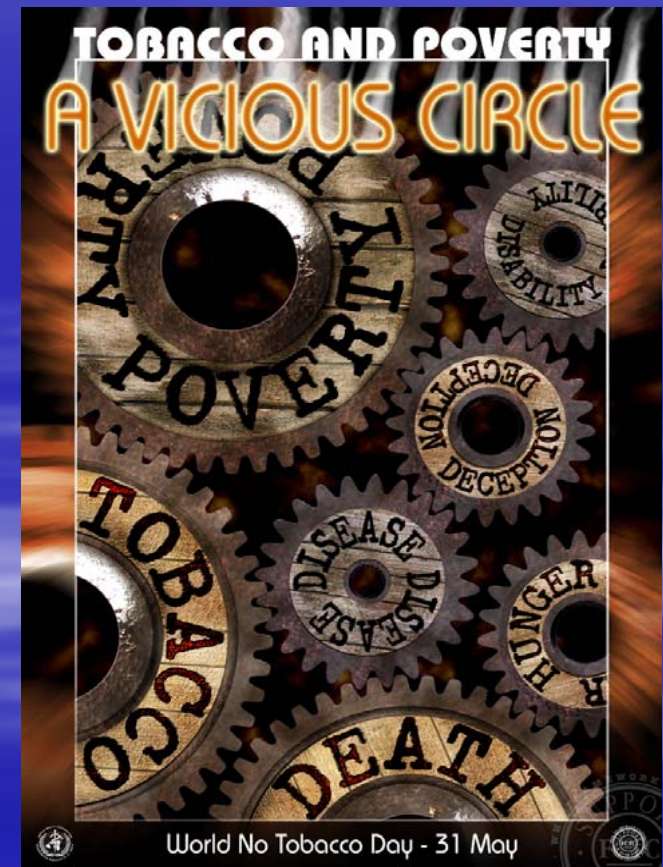
# Why is tobacco a public health problem?

1. Kills and causes diseases
2. Contributes to poverty
3. Is a growing epidemic
4. Has a negative effect on the environment

## 2. Contributes to poverty

### Tobacco and Poverty: A vicious circle

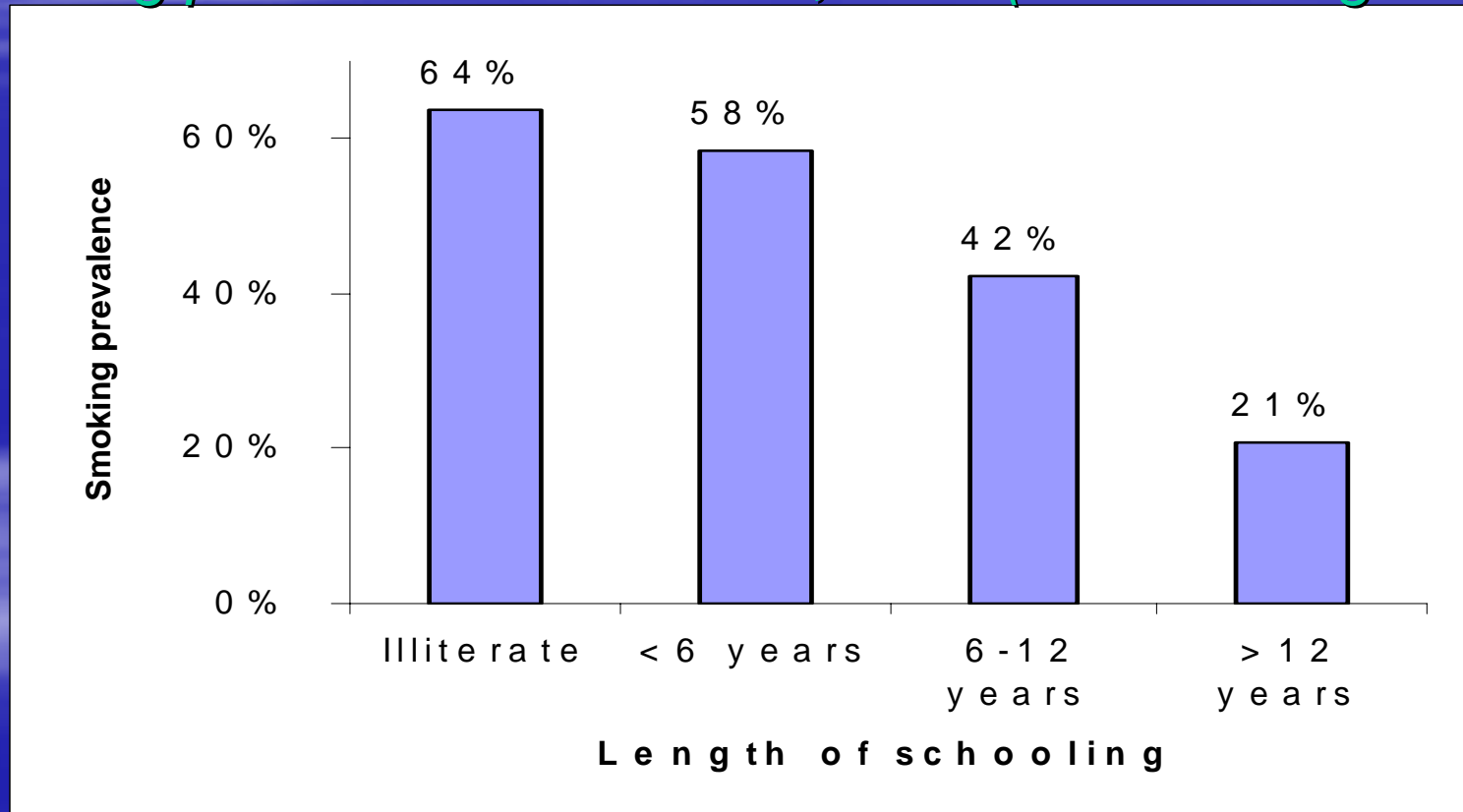
- The poor are the ones who smoke the most
- Tobacco worsens poverty among its users: money spent on tobacco



## 2. Contributes to poverty

The poor are the ones who smoke the most

*Smoking prevalence in Chennai, India (bidis and cigarettes)*



*Source: Gajalakshmi, Jha et al 1997*

## 2. Contributes to poverty

### At individual level

- Expenditure on tobacco can be a high percentage of household income
- Loss of family income due to ill health and premature death
- Health care expenses



Eggs? Where will the money come from to buy them?"

--Dhaka rickshaw puller who could feed each of his three children an egg a day if he bought eggs instead of tobacco

## 2. Contributes to poverty

Tobacco use is increasing among those least able to afford it

In Bangladesh, the poorest citizens are twice as likely to smoke as the wealthiest citizens. (D. Efroymson et al, 2001) The price of 20 imported cigarettes could buy: 6 kg of rice in Bangladesh

Low income households with at least one smoker in Bulgaria spent 10.4% of their total income on tobacco products in 1995 (Sayginsoy Ö *et al*, 2000).

In China, smokers in 2716 households surveyed in the Minhang district reported spending 17% of household income on cigarettes (Gong LY *et al*. 2000)





## 2. Contributes to poverty

At the national level,

- huge economic losses due to high health care costs
- lost productivity due to tobacco-related illnesses and premature deaths.
- Since most countries are net importers of tobacco leaf and tobacco products, they lose millions of dollars a year in precious foreign exchange.

In short, tobacco's contributions to the economy are outweighed by its costs to households, to public health, to the environment and to national economies.

## 2. Contributes to poverty

Tobacco farmers make minimal profits, compared to the industry.

Tobacco farming is labour intensive and requires costly inputs such as fertilizers and pesticides. In Brazil, officials were predicting that, in 1998, 35% of tobacco growers would finish the harvest owing more money to the tobacco companies than they earned. (Campaign for Tobacco Free Kids)



# Child labour is linked to tobacco production

In Brazil, 520,000 children under 18 years of age work on tobacco farms, 32% of them are younger than 14.



Children are directly exposed to a cocktail of highly toxic agro-chemicals. In addition, children who pick tobacco can end up with a type of nicotine poisoning caused by absorption of nicotine through the skin.

# Why is tobacco a public health problem?

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# Tobacco epidemic

Tobacco has been used for centuries in many societies

Tobacco industrialisation



Economic interests



Marketing strategies



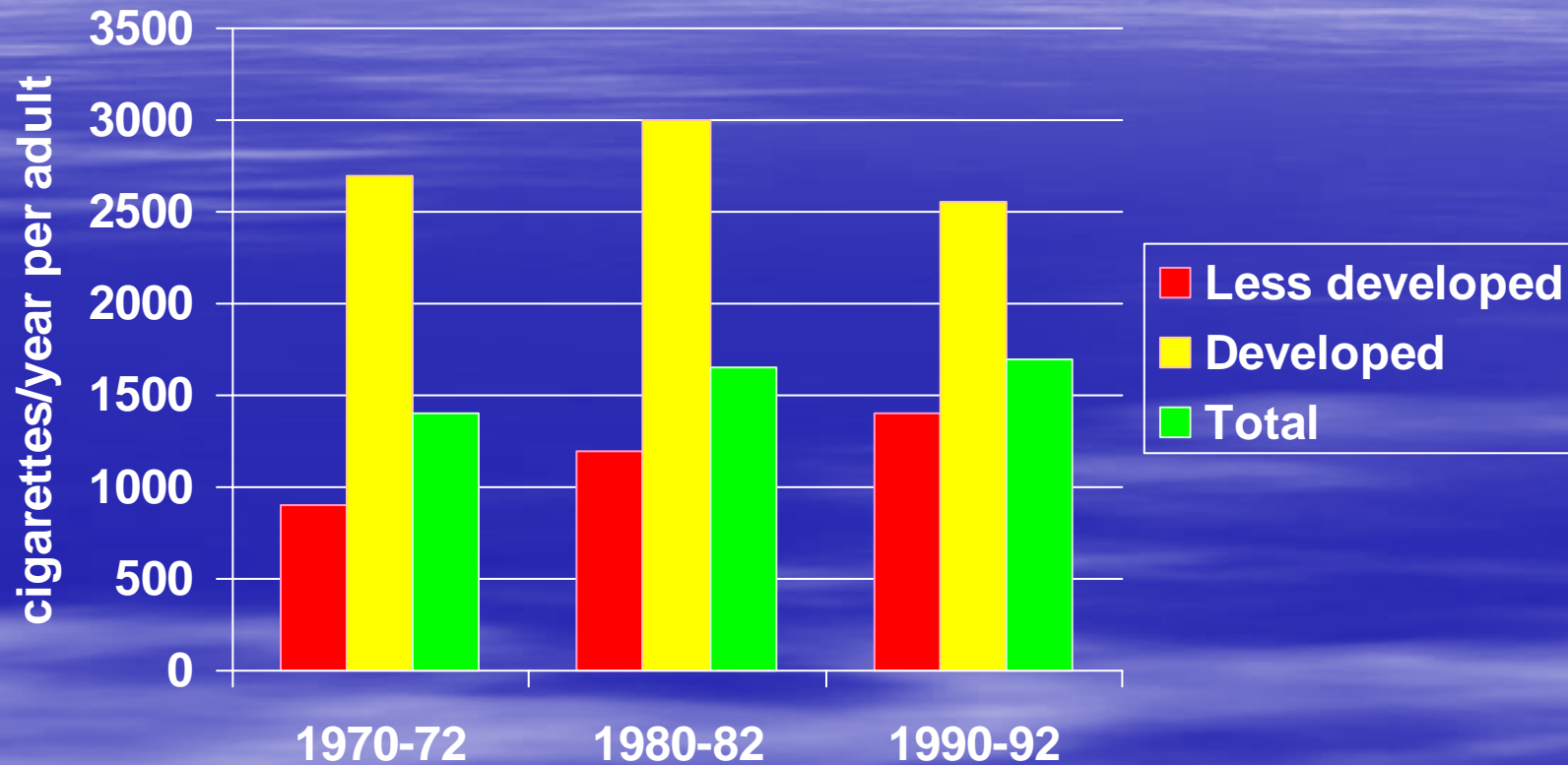
Increase in prevalence



Tobacco epidemic

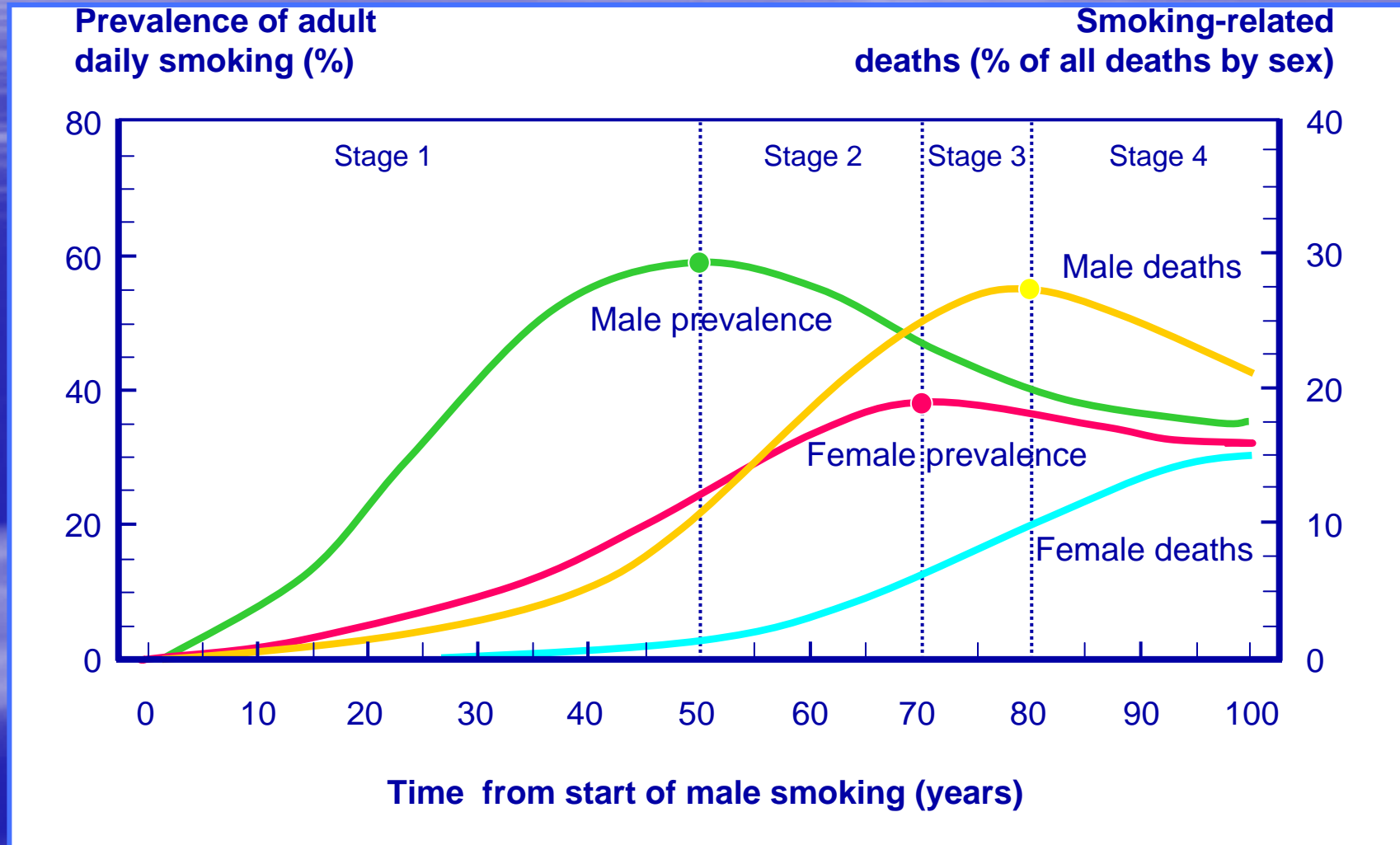
### 3. Is a growing epidemic

## Adult per capita tobacco consumption patterns



Tobacco consumption is growing world wide because of increasing consumption in developing countries

# Dissemination of Smoking Behaviour and its Effects on Mortality: The four stages of the epidemic



**The epidemic is moving from the men in developed countries to women in developed countries and to men and women in developing countries .**





# Tobacco consumption prevalence in different countries of the world

	Men	Women	Total	Year
China	53,4%	4,0%	28.9%	1998
Korea	64,8%	5,5%	35.0%	1996
India	29,4%	2,5%	16.0%	1999
Côte d'Ivoire	42,3%	1,8%	24.4%	1997
Chile	44,1%	33,6%	40,0%	2001
United Kingdom	28,0%	26,0%	27.0%	2001
United States	25,7%	21,0%	23.3%	2000

# Why is tobacco a public health problem?

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## 4. Has a negative effect on the environment

Deforestation is related to tobacco production

In developing countries, wood is often used as fuel to cure tobacco leaves. An estimated 200,000 hectares (or 2,000 square kilometres) of forests and woodlands are removed each year because of tobacco farming. (Geist, 1999)



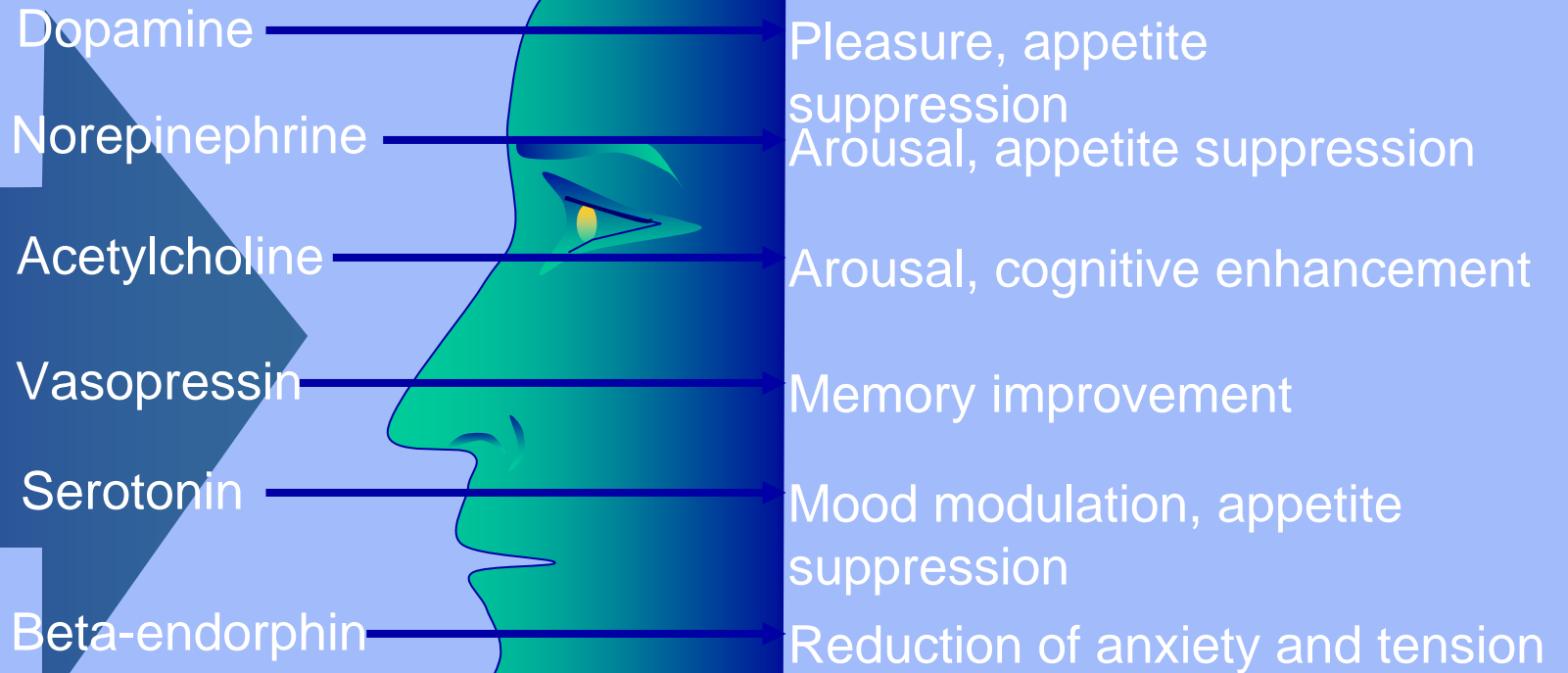
And if we are aware of all this, why do people continue to smoke?

There are two main reasons:

## **1. Tobacco is very addictive**

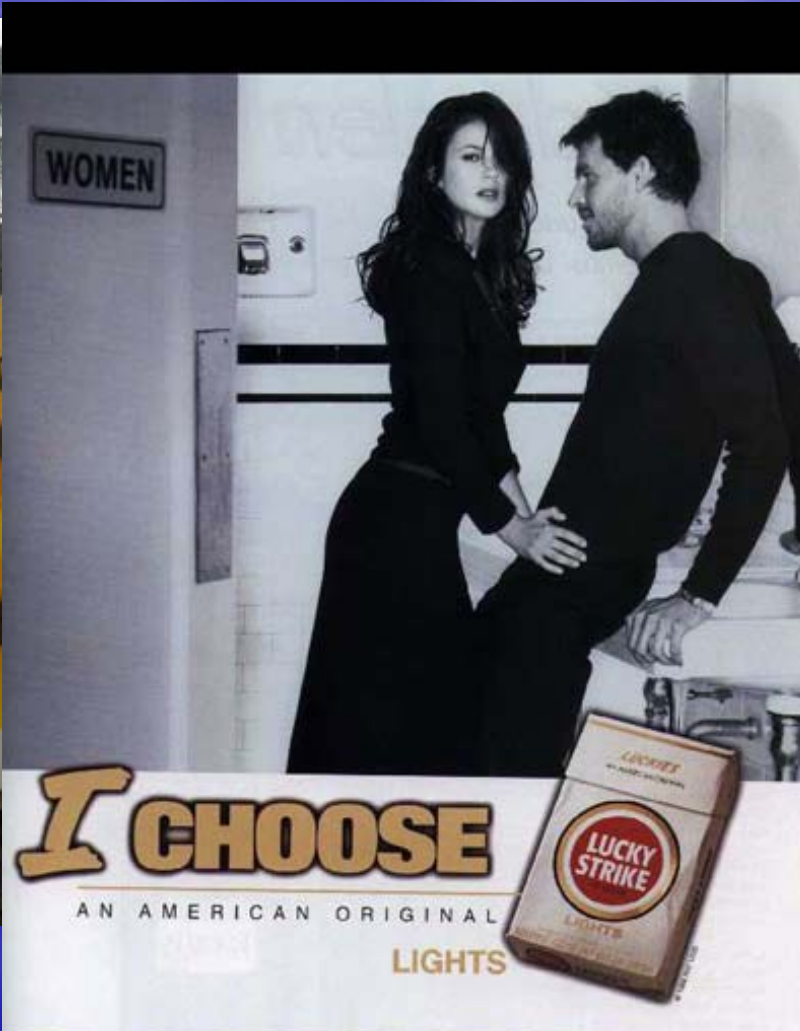
- Nicotine is an addictive substance
- Cigarettes are engineered to make tobacco more addictive

# Nicotine



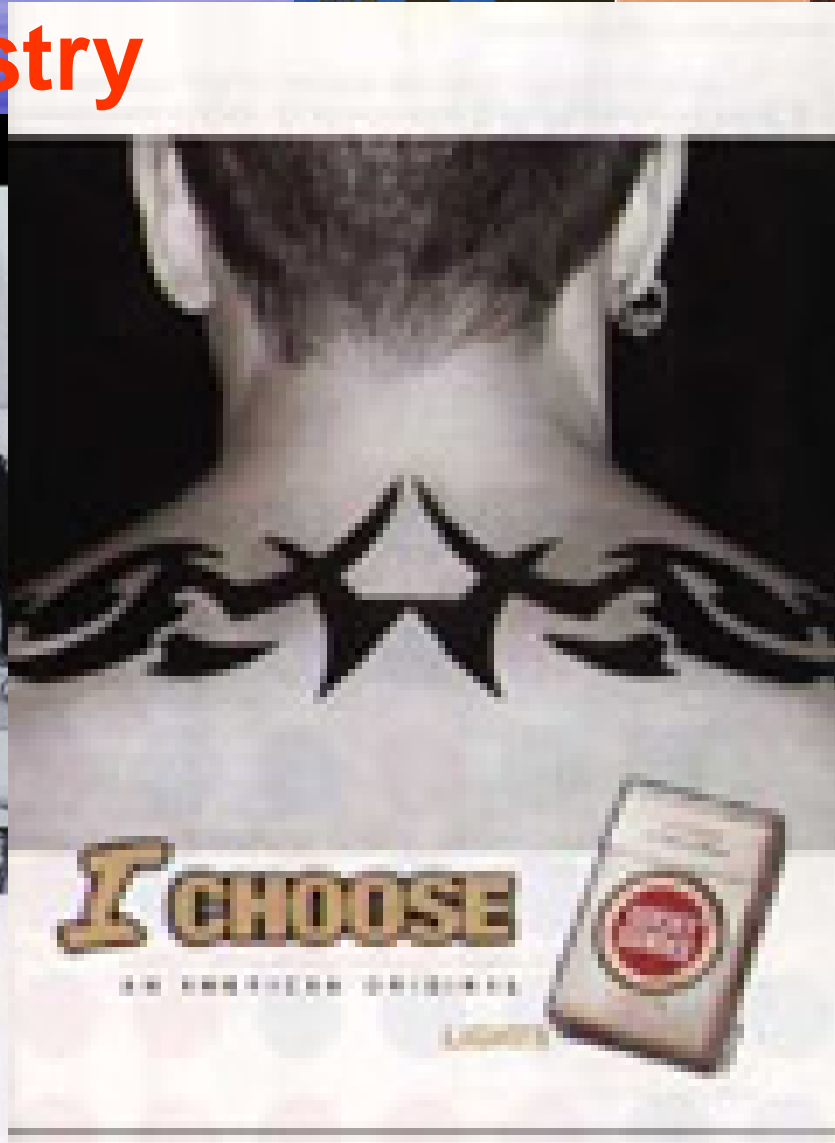
And if we are aware of all this, why do people continue to smoke?

## 2. The tobacco Industry

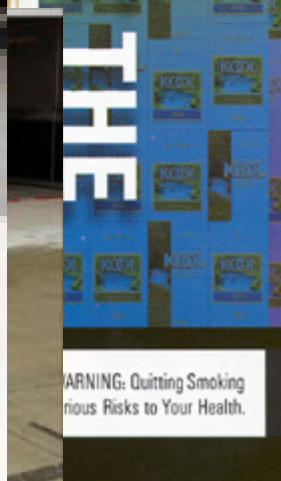
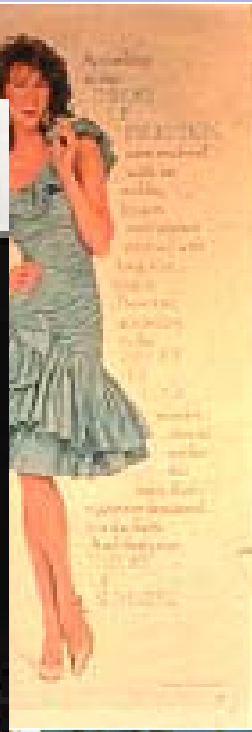


**I CHOOSE**  
AN AMERICAN ORIGINAL  
LIGHTS

LUCKY STRIKE  
LIGHTS



**I CHOOSE**  
AN AMERICAN ORIGINAL  
LIGHTS



**THE**

WARNING: Quitting Smoking  
reduces Serious Risks to Your Health.

# Tobacco dependence as an infectious disease



Tobacco Industry (vector)



Tobacco (infectious agent)



People (hosts)

With all the information that we have today, if a business did not have to be maintained, the tobacco epidemic would soon decline.

# Addressing tobacco control

## Strategies

- Prevent people from taking up tobacco (primary)
- Promote smoking cessation (secondary)
- Protect non smokers from the exposure to tobacco smoke (primary)
- Regulate tobacco products (risk reduction)

## Measures

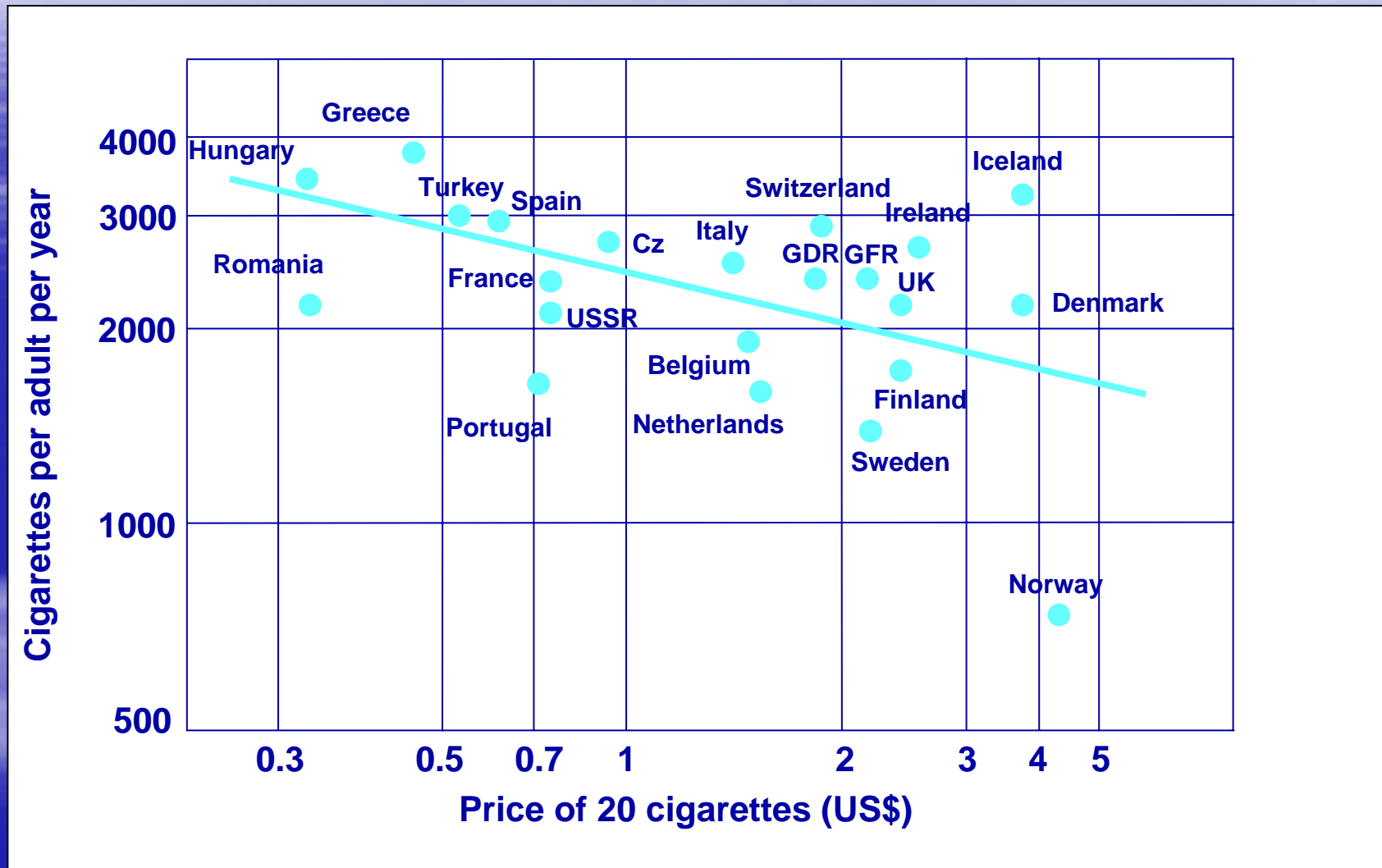
- Reduce demand
- Reduce supply



# Demand side measures

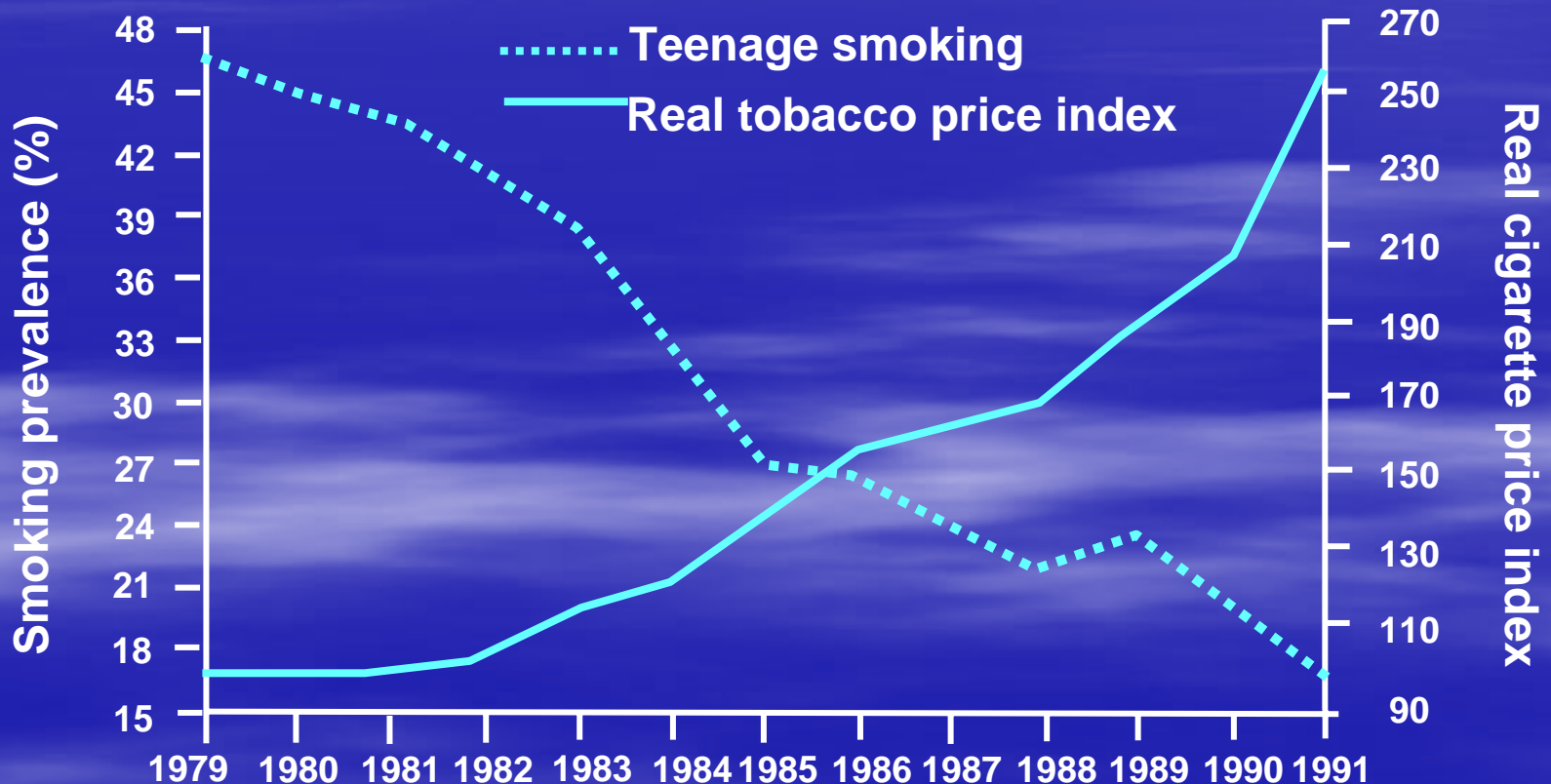
- Price and tax measures
- Comprehensive ban and restriction on tobacco advertising promotion and sponsorship
- Protection from exposure to environmental tobacco smoke
- Education communication, training and public awareness
- Packaging and labelling
- Tobacco dependence cessation measures
- Regulation and disclosure of the contents of tobacco products

# Cigarette Price and Consumption in 22 European Countries



# Impact of Increasing Price on Smoking Among Canadian Teenagers

Real cigarette prices and cigarette smoking prevalence among Canadians aged 15–19 years



# Demand side measures

## Comprehensive ban on advertising and promotion

A comprehensive advertising ban includes direct and indirect advertising and have a complete ban on:

- Advertising in all media
- Advertising in all audiences
- Advertising in all locations
- Sponsorship or promotion for certain audiences
- Sponsorship advertising events
- Brand Stretching



# Demand side measures

## Smoke free environments

1. Improved health of non-smokers and smokers;
2. A reduction in the number cigarettes smoked daily by smokers (often a first step to quitting);
3. Increased public awareness about the seriousness of exposure to second-hand tobacco smoke; and
4. The emergence of societies and environments where non-smoking is viewed as the norm.

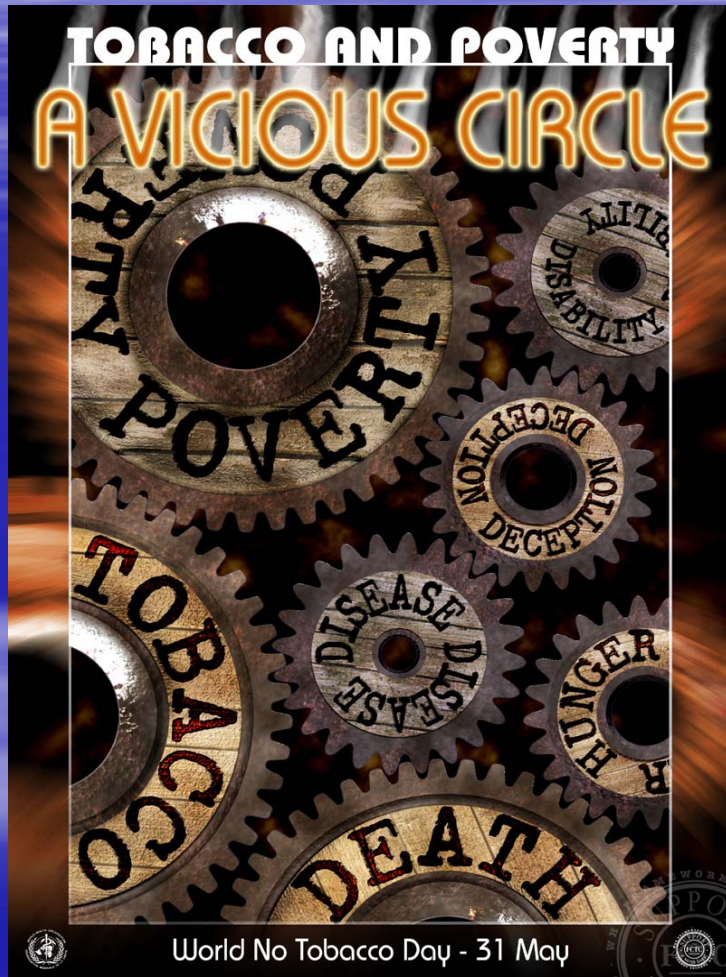
# Smoke free places



- Public places:
  - public transport
  - restaurantes
  - bars
  - cinemas
  - workplaces
- Homes

# Demand side measures

Information about the effects of tobacco



World no tobacco day  
2004



# Campaigns



**WARNING: SMOKING CAUSES IMPOTENCE**



HE HAS HIS  
daddy's eyes  
and his  
momma's lungs.

Secondhand Smoke Kills.

*"Care if I die?"*



# Strong warning labels on all tobacco products

O Ministério da Saúde adverte:  
**FUMAR CAUSA  
CÂNCER DE LARINGE.**



Ministério da Saúde adverte:  
**FUMAR CAUSA  
CÂNCER DE LARINGE.**



**CIGARETTES  
CAUSE MOUTH  
DISEASES**  
Cigarette smoke causes cancer, tooth  
loss and can cause lung disease.  
Health Canada

Cigarettes

**AVERTISSEMENT:  
LA CIGARETTE CAUSE  
DES MALADIES DE LA  
BOUCHE**  
Le fumée de cigarette cause le cancer, la  
perte de dents et peut causer des maladies  
de gorge.  
Santé Canada

Cigarettes



**ควันบุหรี่ จะทำร้ายลูก**



Cigarettes

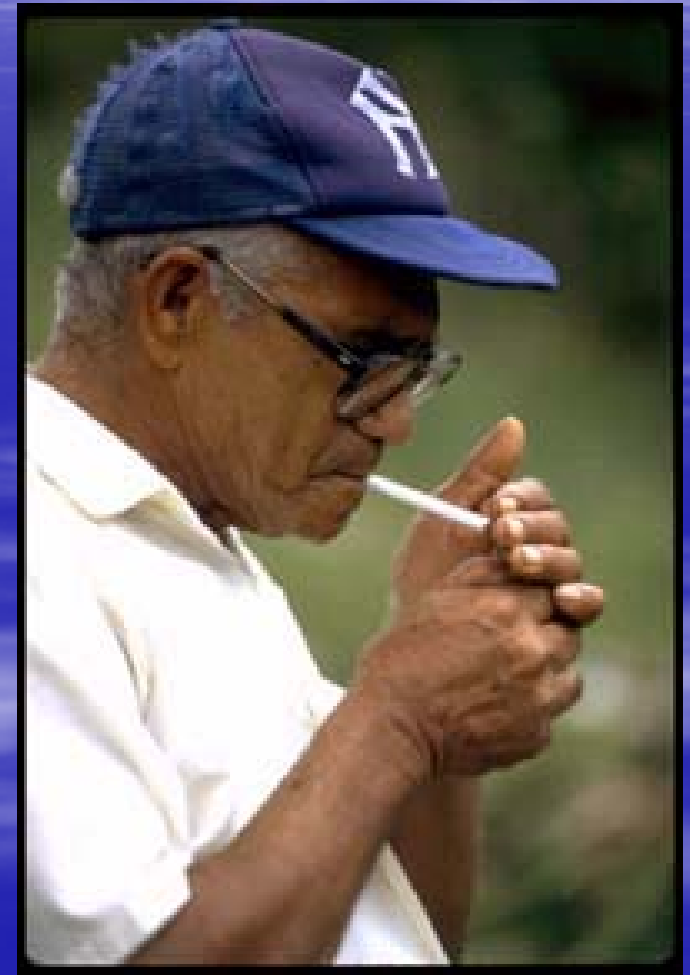
# Health Information reduces the demand for cigarettes

Country	Time	Event	Immediate reduction in cigarette consumption
UK	1962	1 <sup>st</sup> report of the Royal College of Physicians	5%
Switzerland	1966	An anti-smoking campaign	11%
Turkey	1982	Implementation of health warning labels	8%

# Demand side measures

## Treatment of tobacco dependency

- Behavioural
  - Counselling
  - Psychological support
- Pharmacological
  - Nicotine replacement
  - Antidepressants



# NRT and cessation therapies

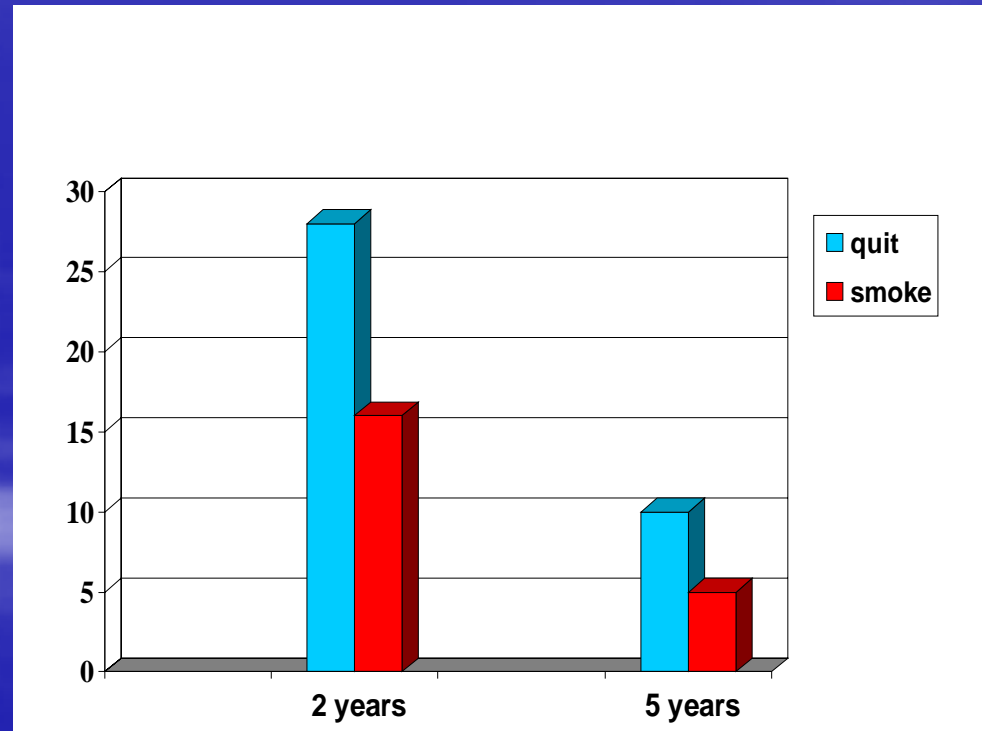
- **NRTs double the effectiveness of cessation efforts and reduce individuals' withdrawal costs**
- **Governments may widen access to NRT and other cessation therapies by:**
  - **Reducing regulation**
  - **Conducting more studies on cost-effectiveness (especially in low/middle income countries)**
  - **Considering NRT subsidies for poorest smokers**

# Increasing access to treatment

Quitting works for lung cancer patients

% survived after diagnosed with lung cancer

Quitting tobacco at any point in life provides both immediate benefits and substantial long-term benefits to health



# Cost effectiveness of demand side measures for all regions including Europe

From most to least cost effective:

1. Taxation
2. Advertising bans
3. Education and Communication
4. Clean indoor air
5. Nicotine replacement treatment

# Supply side measures

- Prohibition
- Youth access restrictions
- Crop substitution
- Trade restrictions

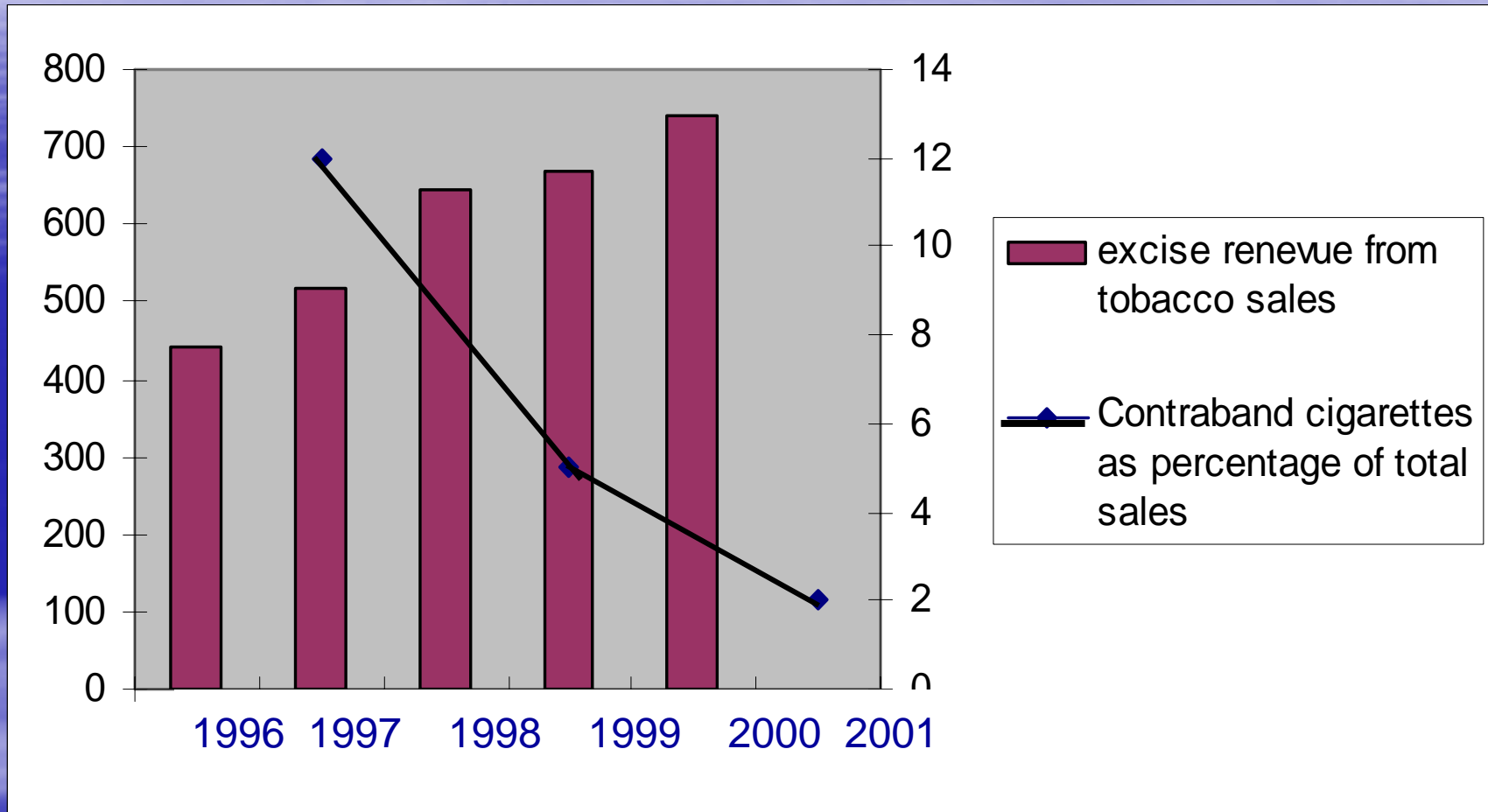
are not validated  
as effective  
measures

- Control Smuggling

is the only exception  
and is the key supply-  
side measure

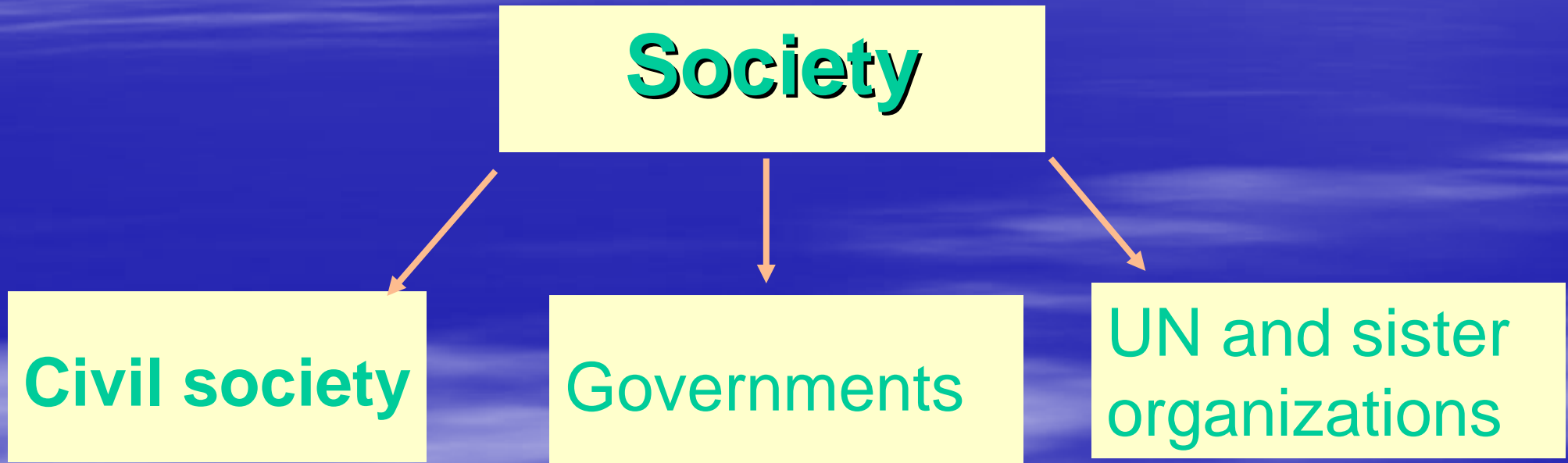


# Smuggling control in Spain



Smuggling was controlled in Spain without reducing the price of tobacco

# Who is responsible for tobacco control?



Ministry of Health

Ministry of Trade

Ministry of Justice

Parliament

**Governmental  
structures**

others

Ministry of Foreign Affairs

Ministry of Education

Customs

**Health professionals**

**Human rights groups**

**Environmental**

**Social justice**

**Consumers groups**

**Civil society**

**Religious groups**

**Gender groups**

**Private companies**

**Tobacco control groups**

**Others**

# Conclusions

- Tobacco consumption is a known risk factor for a number of diseases
- Tobacco dependence itself is a disease
- It is a growing global epidemic
- Tobacco control measures have proven to be effective
- Tobacco Control is a multisectorial and multiprofessional task
- All the society segments should be involved

# Thank you for your attention



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