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ALDO MORO

HYGIENE COURSE

**Scuola
di
Medicina**

Non Communicable Diseases



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Non Communicable Disease

DEFINITION



Non-Communicable Disease (NCD)

Also known as chronic diseases they are not passed from person to person.

They are of long duration and generally slow progression.



Characteristics

- Non-contagious origin (non-communicable)
- Do not result from an (acute) infectious process
- Long latency period
- Insidious onset
- Prolonged course of illness
- Functional impairment or disability
- Premature morbidity, dysfunction, and reduced quality of life
- Incurability
- Complex etiology (causes)
- Multiple risk factors



Non-Communicable Disease (NCD)

In some definitions, NCDs also include:

- Chronic mental illnesses
- Injuries, which have an acute onset, but may be followed by prolonged convalescence and impaired function



Types of NCDs

- Cardiovascular diseases (Coronary heart disease, Stroke)
- Cancer
- Chronic lung diseases
- Diabetes
- Chronic neurologic disorders (Alzheimer's, dementias)
- Arthritis/Musculoskeletal diseases



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Non Communicable Disease

BURDEN OF DISEASE



10 facts on NonCommunicable Diseases

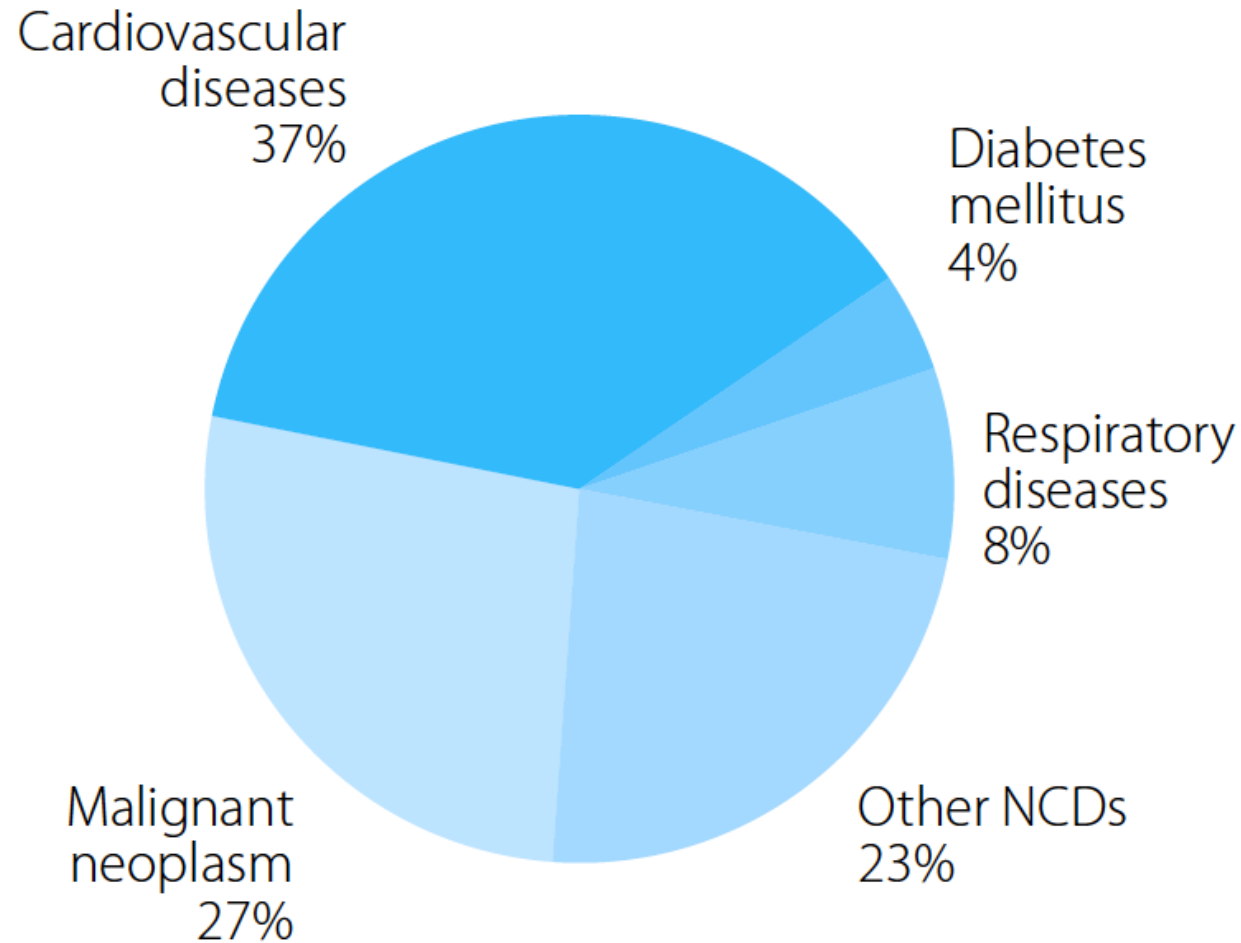
1. NCDs account for 63% of all deaths.

Noncommunicable diseases (NCDs), primarily cardiovascular diseases, cancers, chronic respiratory diseases and diabetes, are responsible for 63% of all deaths worldwide (36 million out of 57 million global deaths).

2. 80% of NCDs deaths occur in low- and middle-income countries.
3. More than 9 million of all deaths attributed to NCDs occur before the age of 60.
4. Around the world, NCDs affect women and men almost equally.



Proportion of global deaths under the age 70 years, by cause of death (comparable estimates, 2012)

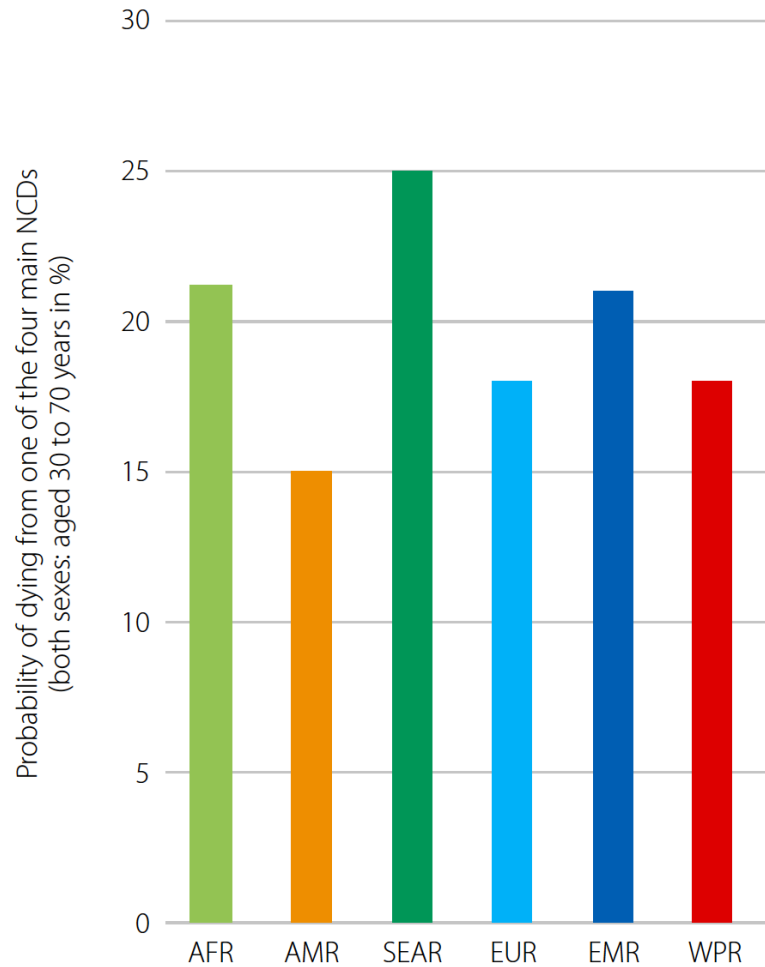




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Probability of dying from one of the four main NonCommunicable diseases between the ages of 30 and 70 years, by WHO region (comparable estimates, 2012)



AFR=African Region, AMR=Region of the Americas,
SEAR =South-East Asia Region, EUR=European Region,
EMR=Eastern Mediterranean Region, WPR=Western
Pacific Region



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A closer look to data...



Cardiovascular Disease

Group of disorders of the heart and blood vessels

Coronary heart disease

Disease of the blood vessels supplying the heart muscle

Cerebrovascular disease (Stroke)

Disease of the blood vessels supplying the brain

Peripheral arterial disease

Disease of blood vessels supplying the arms and legs

Congenital heart disease

Malformations of heart structure existing at birth



Global Burden of Cardiovascular Disease

- CVDs are the #1 cause of death globally.
- An estimated 17.3 million people died from CVDs in 2008. (30% of all global deaths)
 - 7.3 million were due to coronary heart disease
 - 6.2 million were due to stroke
- Over 80% CVD deaths occur in low- and middle- income countries.
- By 2030, almost 25 million people will die from CVDs.



Diabetes

- Diabetes is a disorder of metabolism— the way the body uses digested food for growth and energy.
- There are 4 types: Type 1, Type 2, Gestational, and Pre-Diabetes (Impaired Glucose Tolerance).
- Type 2 is caused by modifiable risk factors and is the most common worldwide.
 - >90% of all adult diabetes cases are Type 2



Diabetes

- 347 million people worldwide have diabetes.
- In 2004, an estimated 3.4 million people died from consequences of high blood sugar.
- More than 80% of diabetes deaths occur in low- and middle-income countries.
- WHO projects that diabetes deaths will increase by two thirds between 2008 and 2030.
- Healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use can prevent or delay the onset of type 2 diabetes.



Cancer

- Generic term for a large group of diseases that can affect any part of the body.
- “Rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs.” (WHO, 2012)
- Benign tumors
- Malignant tumors



Global Burden of Cancer

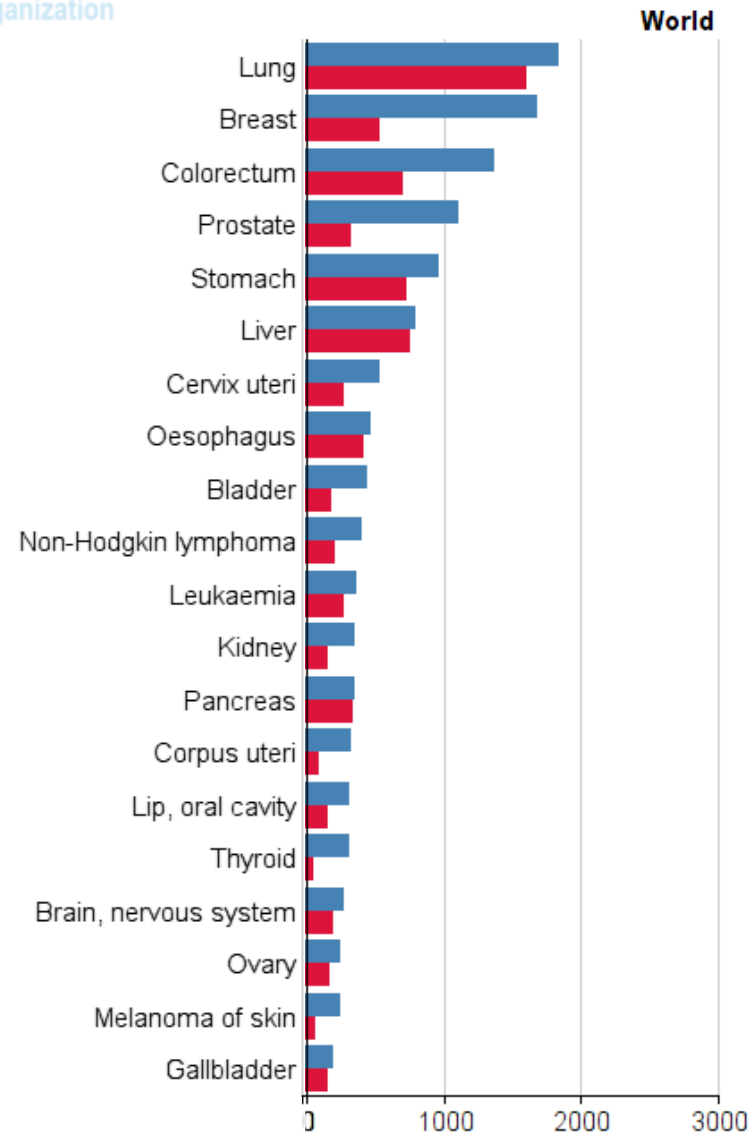
- 7.6 million people died from cancer in 2008
- 70% of all cancer deaths occur in low- and middle-income countries
- Deaths from cancer are estimated to reach 13.1 million by 2030
- About 30% of cancers are attributable to behavior risk factors



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International Agency for Research



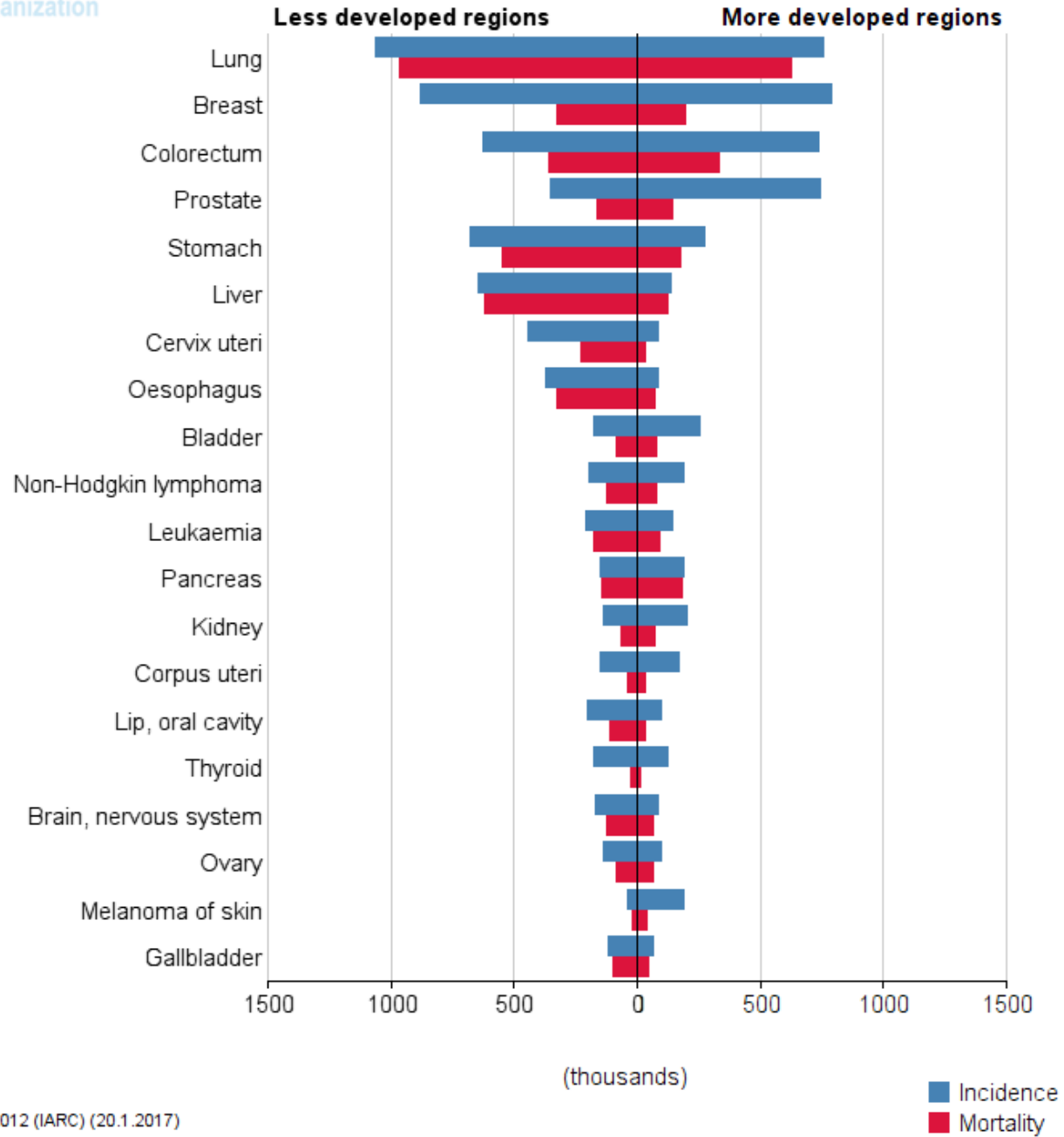
GLOBOCAN 2012 (IARC) (20.1.2017)

■ Incidence
■ Mortality



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GLOBOCAN 2012 (IARC) (20.1.2017)



Global Burden of Chronic Respiratory Disease

- A leading cause of death
- High under-diagnoses rates
- 90% of deaths occur in low-income countries



COPD

Chronic obstructive pulmonary disease

- COPD – term used for lung diseases that prevent proper lung airflow
- Chronic bronchitis, emphysema
- More than just “smoker’s cough”



COPD: Burden

- Accurate epidemiologic data on COPD prevalence, morbidity, and mortality are difficult and expensive to collect.
- 65 million people worldwide have moderate to severe COPD.
- More than 3 million people died of COPD in 2005 (3% of all deaths globally).
- Almost 90% of COPD deaths occur in low- and middle-income countries.



Chronic Respiratory Diseases: Asthma

- Recurrent attacks of “breathlessness and wheezing” (WHO, 2012)
- A gradient of severity
- Can cause sleepiness, fatigue
- Low fatality rates, but often underdiagnosed
- 235 million people affected



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Non Communicable Disease

PREVENTION



10 facts on NonCommunicable Disease

5. NCDs are largely preventable.

Noncommunicable diseases are preventable through effective interventions that tackle shared risk factors, namely: tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol.

6. NCDs are not only a health problem but a development challenge as well.

Noncommunicable diseases force many people into, or entrench them in poverty due to catastrophic expenditures for treatment. They also have a large impact on undercutting productivity.

7. 1.5 billion adults, 20 and older, were overweight in 2008.

8. Nearly 43 million children under 5 years old were overweight in 2010.

9. Tobacco use kills nearly 6 million people a year.

By 2020, this number will increase to 7.5 million, accounting for 10% of all deaths.

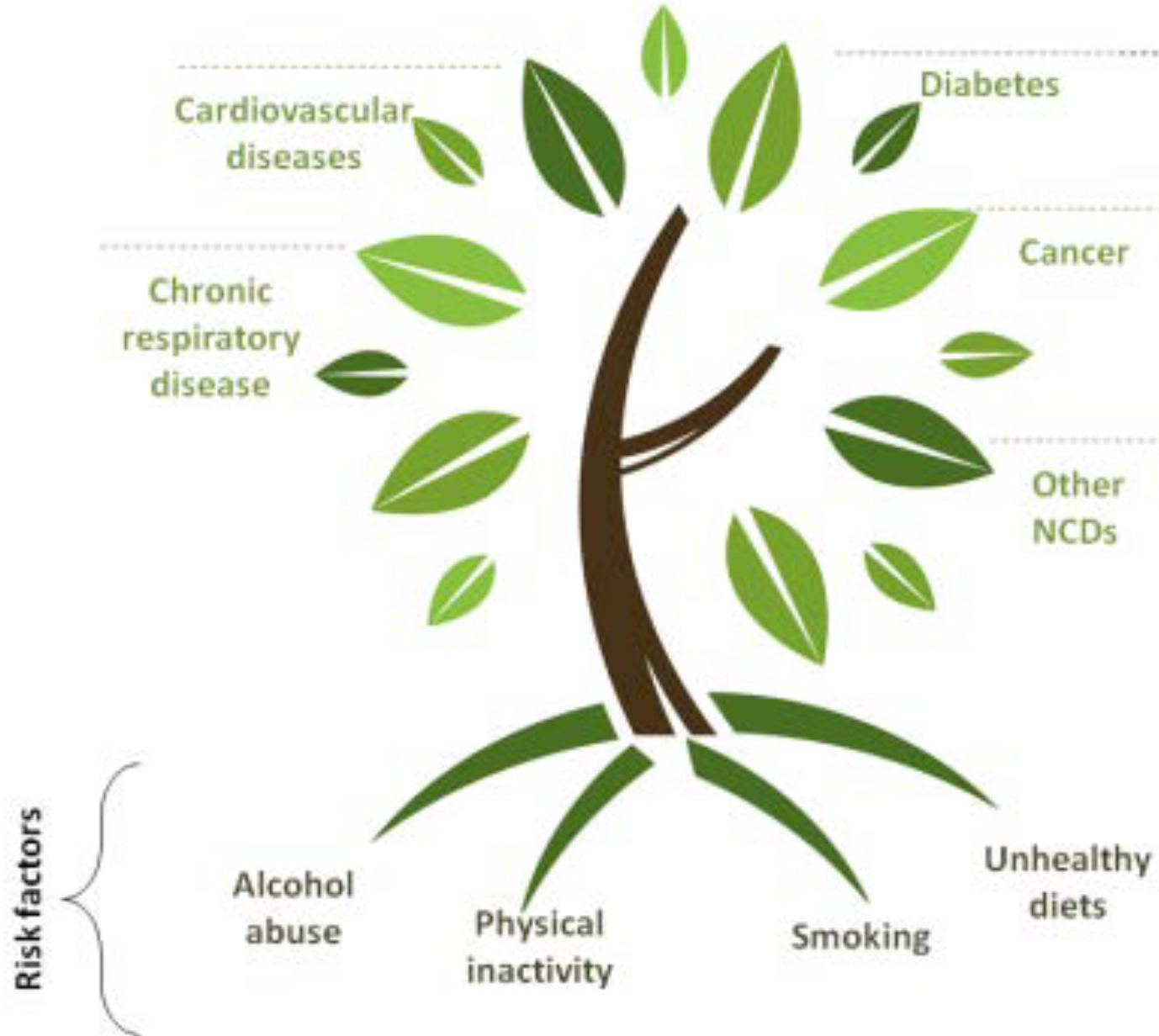
10. Eliminating major risks could prevent most NCDs.

If the major risk factors for noncommunicable diseases were eliminated, at around three-quarters of heart disease, stroke and type 2 diabetes would be prevented; and 40% of cancer would be prevented.



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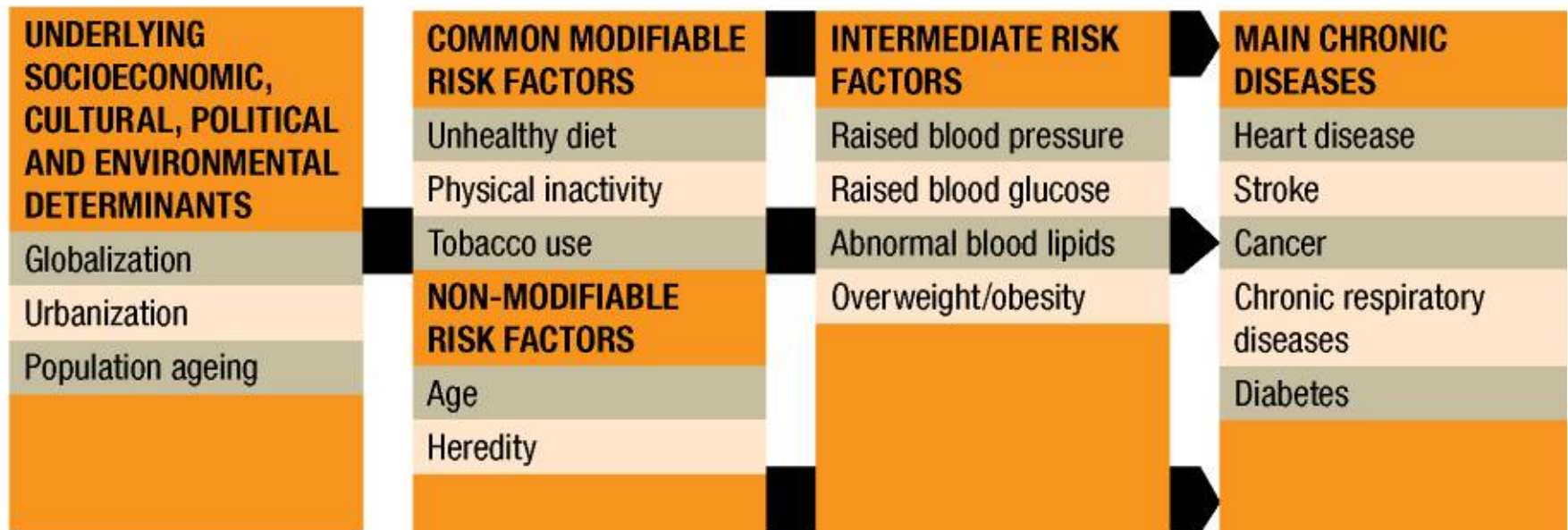


Risk factor

“An aspect of personal behavior or lifestyle, an environmental exposure, or a hereditary characteristic that is associated with an increase in the occurrence of a particular disease, injury, or other health condition.”



Risk factor





Non-modifiable risk factor

- A risk factor that **cannot** be reduced or controlled by intervention, for example:
 - Age
 - Gender
 - Race
 - Family history (genetics)

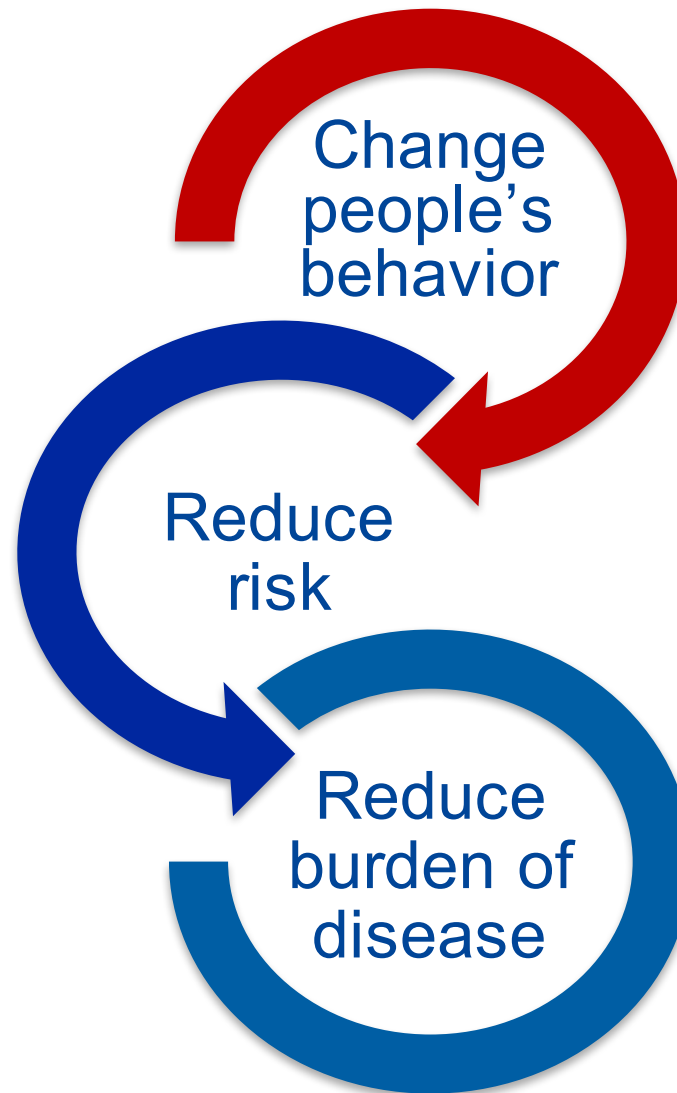


Modifiable risk factor

- A behavioral risk factor that **can** be reduced or controlled by intervention, thereby reducing the probability of disease.
- WHO has prioritized the following four
 - Physical inactivity
 - Tobacco use
 - Alcohol use
 - Unhealthy diets (increased fat and sodium, with low fruit and vegetable intake)



Risk factors surveillance





Tobacco Use

- Tobacco kills up to half of its users.
- Tobacco kills nearly 6 million people each year
- Annual death toll could rise to more than 8 million by 2030
- Nearly 80% of the world's 1 billion smokers live in low- and middle-income countries



Tobacco Use: health effects

Among smokers

- Cancer
- Coronary heart disease
- Diseases of the lungs
- Peripheral vascular disease
- Stroke
- Fetal complications and stillbirth

Second-hand smoke causes

- Heart disease, including heart attack
- Lung cancer



Where are we?



- ✓ **26.6%** of Apulian people are smokers
- ✓ **46.5%** of Apulian HCWs suggest to their patients to stop smoking
- ✓ **96.3%** of people who want stop smoking try with any outer help

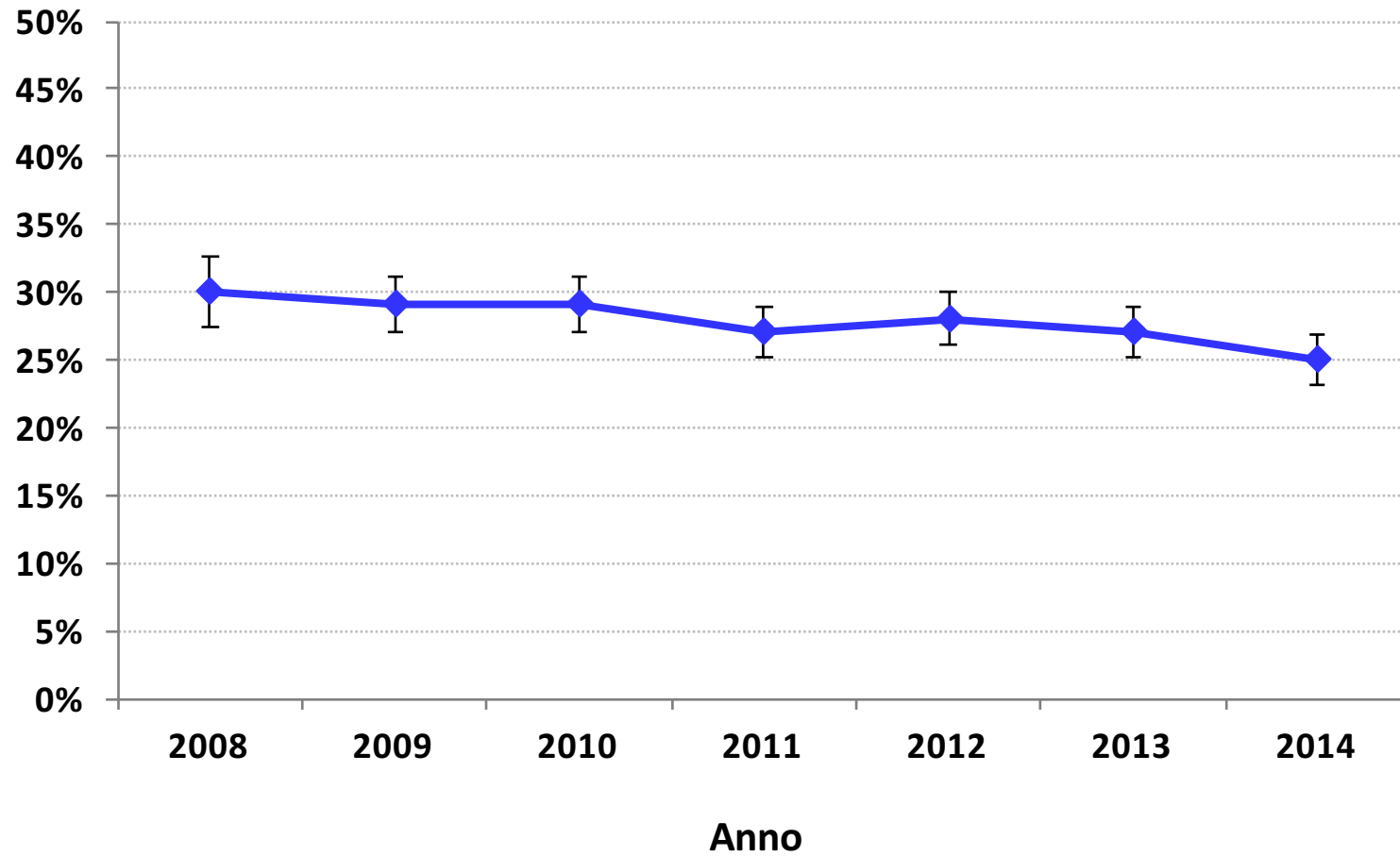


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Proportion of smokers

Annual trend. Apulia, 2008-14





Where are we?

Proportion of smokers, by Region.
Italy, 2008-14.



■	peggiore del valore nazionale
■	simile al valore nazionale
■	migliore del valore nazionale

Smoking determinants

- Age >24 years
- Male gender
- Middle school or higher educational level
- Financial difficulties



Global Changes in Diet

Most countries have increased overall daily consumption of

- Daily calories
- Fat and meats
- Energy dense and nutrient-poor foods such as:
 - Starches
 - Refined sugars
 - Trans-fats



Unhealthy Diet: Health Effects

- Coronary heart disease
- Stroke
- Cancer
- Type 2 diabetes
- Hypertension
- Diseases of the liver and gallbladder
- Obesity



Where are we?

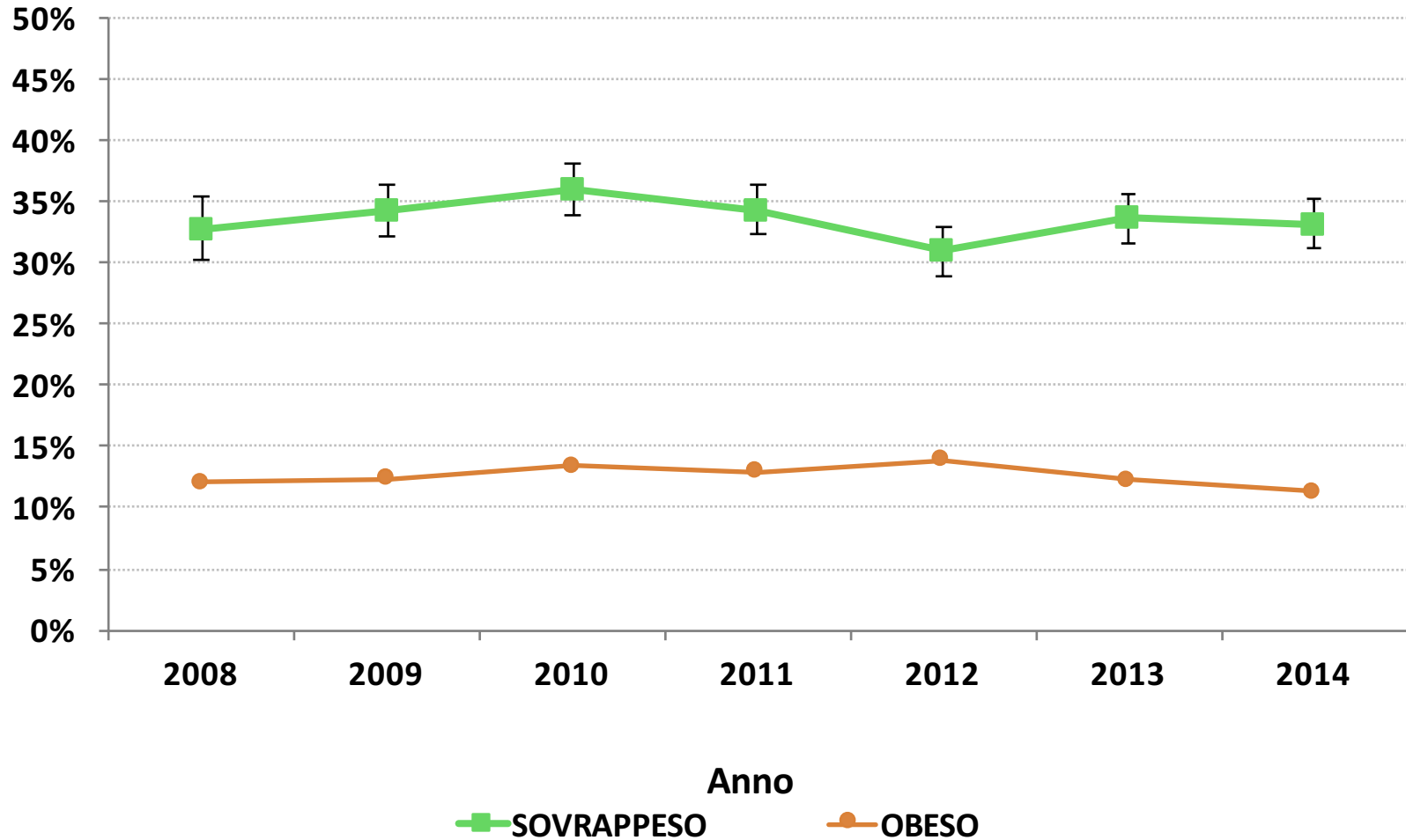


- ✓ Almost **50%** of Apulian people are overweight or obese
- ✓ **46.5%** of Apulian HCWs suggest to their patients to loose weight
- ✓ **60.6%** of overweight people are aware of their nutritional status



Proportion of overweight and obese people

Annual trend. Apulia, 2008-14





Where are we?

Proportion of overweight and obese people, by Region. Italy, 2008-14.



- peggiore del valore nazionale
- simile al valore nazionale
- migliore del valore nazionale

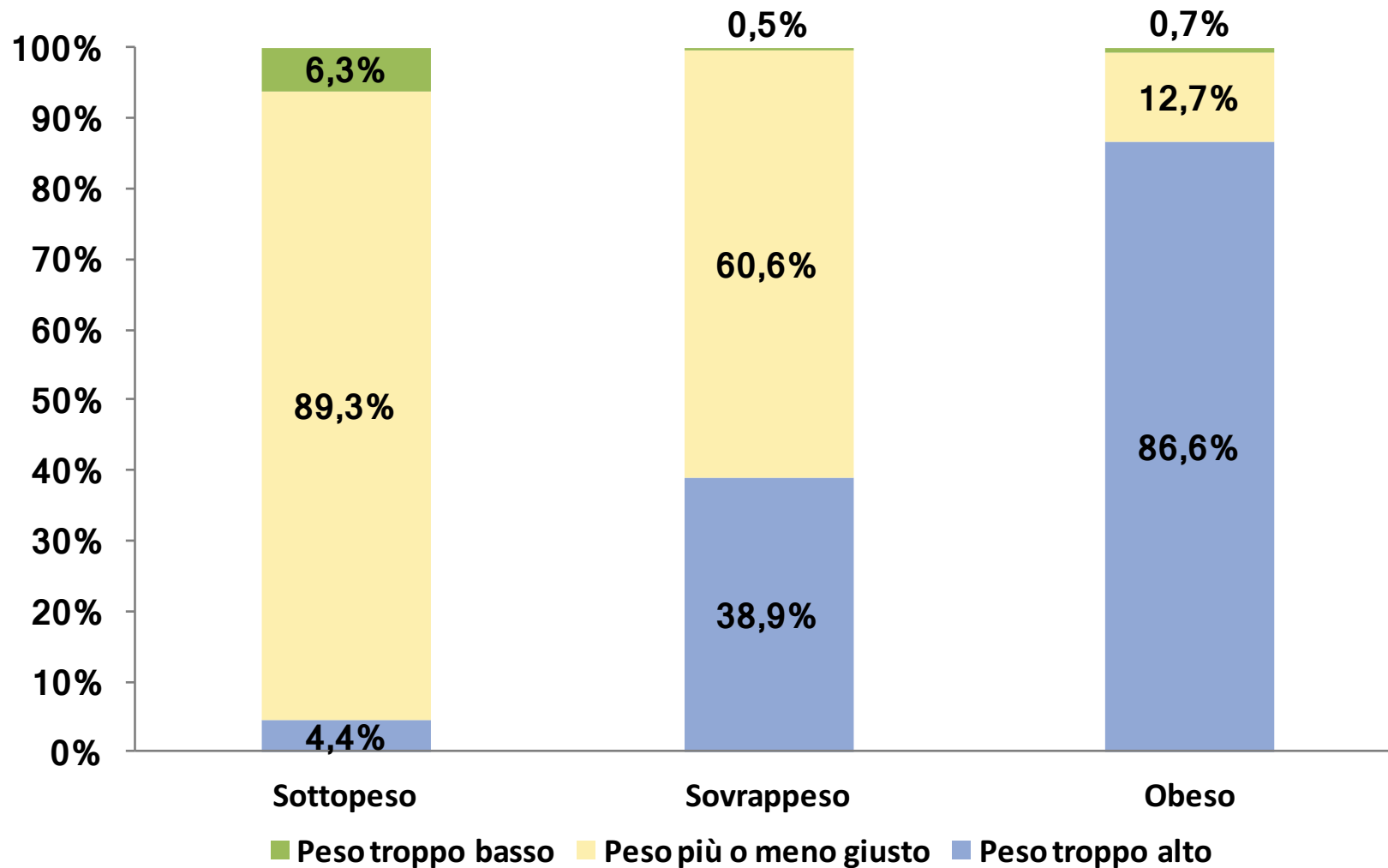
Obesity and overweight determinants:

- Age > 35 years
- Female gender
- Low educational level



Distribution of nutritional status perception by BMI

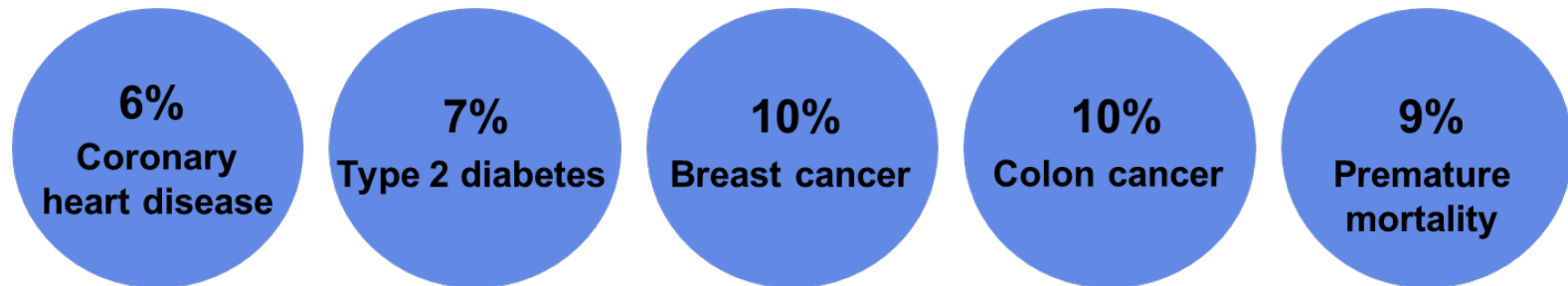
Apulia, 2011-14





Global Changes in Physical Activity

~ 6-10% of major NCDs worldwide is attributable to physical inactivity



Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT; Lancet Physical Activity Series Working Group. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet*. 2012 Jul 21;380(9838):219-29



Physical Activity: Health Effects

Reduces

- High blood pressure
- Adverse lipid profile
- Arthritis pain
- Psychiatric issues

Reduces risk of

- Type 2 diabetes
- Certain cancers
- Heart attacks
- Stroke
- Falls
- Early death



Where are we?



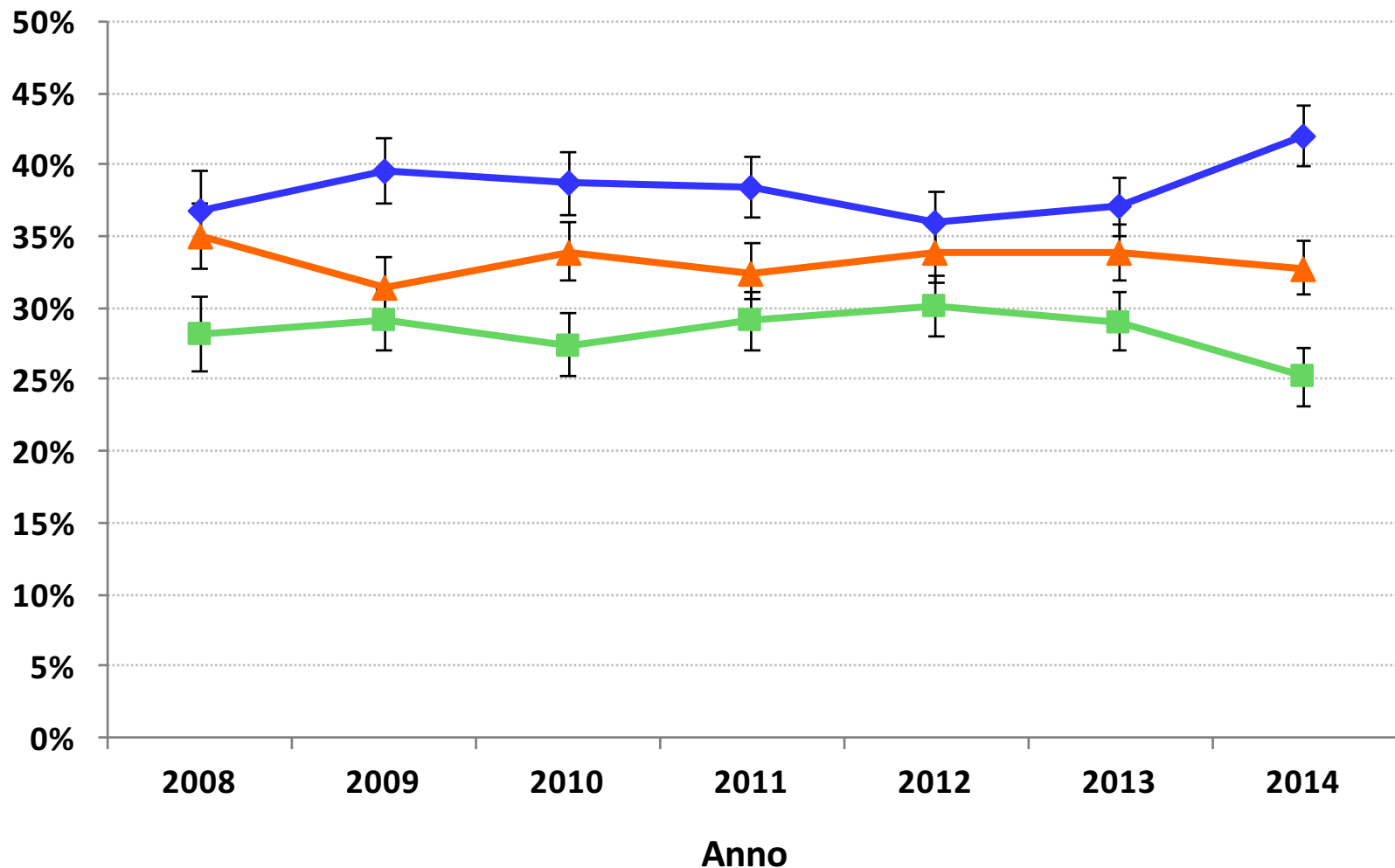
- ✓ **38.4%** of Apulian people are physically inactive
- ✓ Only **26%** of Apulian HCWs suggest to their patients to start doing physical activity
- ✓ **1 of 6** physically inactive people is unaware of his/her own low physical activity level



Distribution of interviewed people by physical activity level

Annual trend. Apulia, 2008-14

◆ SEDENTARI ■ PARZIALMENTE ATTIVI ▲ ATTIVI





Where are we?

Proportion of physically inactive people by Region. Italy, 2011-14



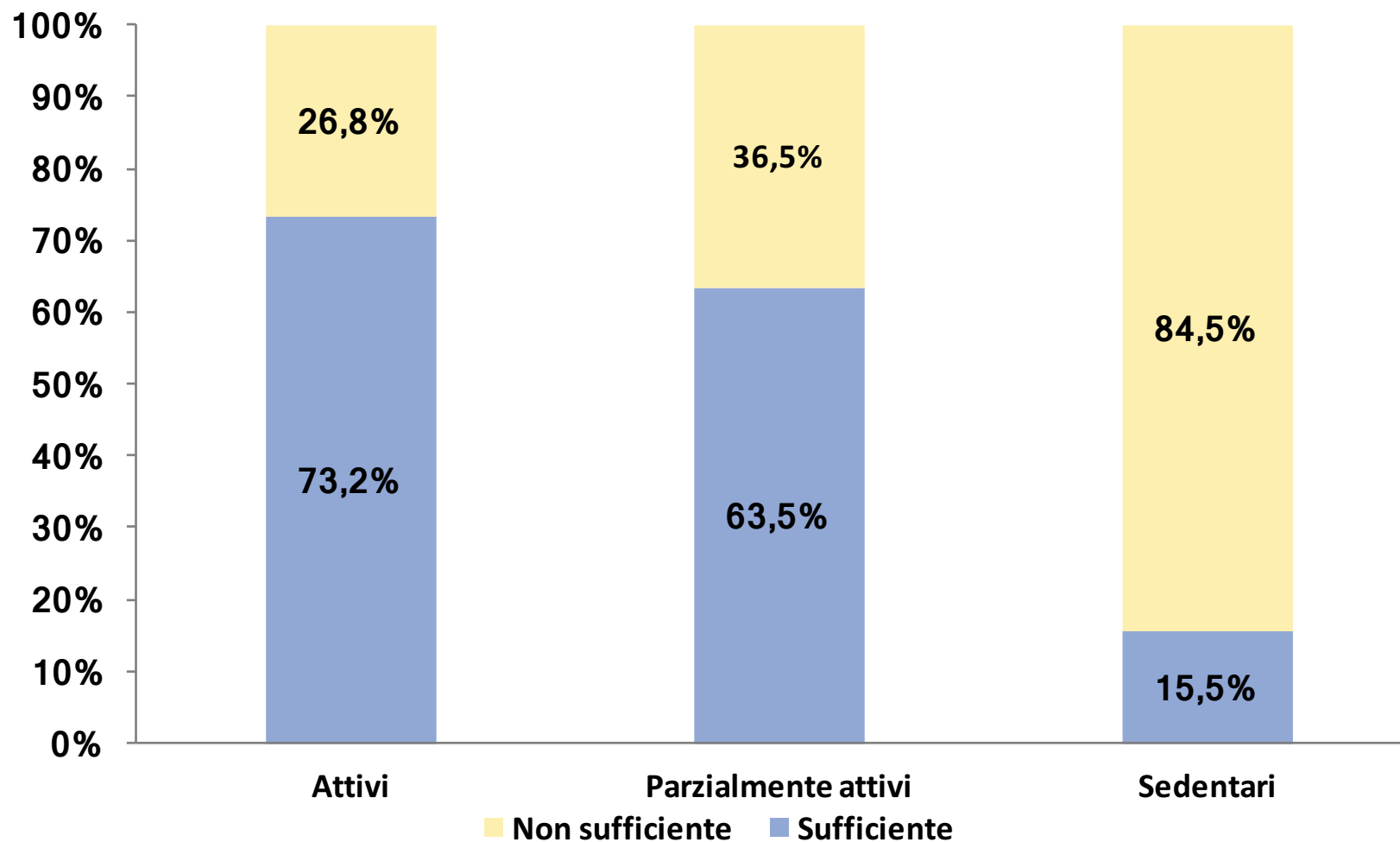
■ peggiore del valore nazionale
■ simile al valore nazionale
■ migliore del valore nazionale

Physical inactivity determinants:

- Age > 35 years
- Female gender
- Lower educational level
- Financial difficulties



Physical activity level perception Apulia, 2011-14





Global Alcohol Consumption

- 11.5% of all global drinkers are episodic, heavy users.
- 2.5 million people die from alcohol consumption per year
- The majority of adults consume at low-risk levels
- Estimated worldwide consumption of alcohol has remained relatively stable



Harmful Use of Alcohol

Excessive drinking, per day

- Heavy drinking – on average



- Binge drinking – single occasion





Harmful Use of Alcohol: Effects

Immediate effects

- Diminished brain function
- Loss of body heat
- Fetal damage
- Risk for unintentional injuries
- Risk for violence
- Coma and death

Long-term effects

- Liver diseases
- Cancers
- Hypertension
- Gastrointestinal disorders
- Neurological issues
- Psychiatric issues



Where are we?



- ✓ **47.6%** of Apulian people drink alcohol
- ✓ **11.3%** of Apulian people have a at-risk drinking pattern
- ✓ Only **7.5%** of people with hazardous alcohol consumption was suggested to reduce alcohol consumption by a HCWs

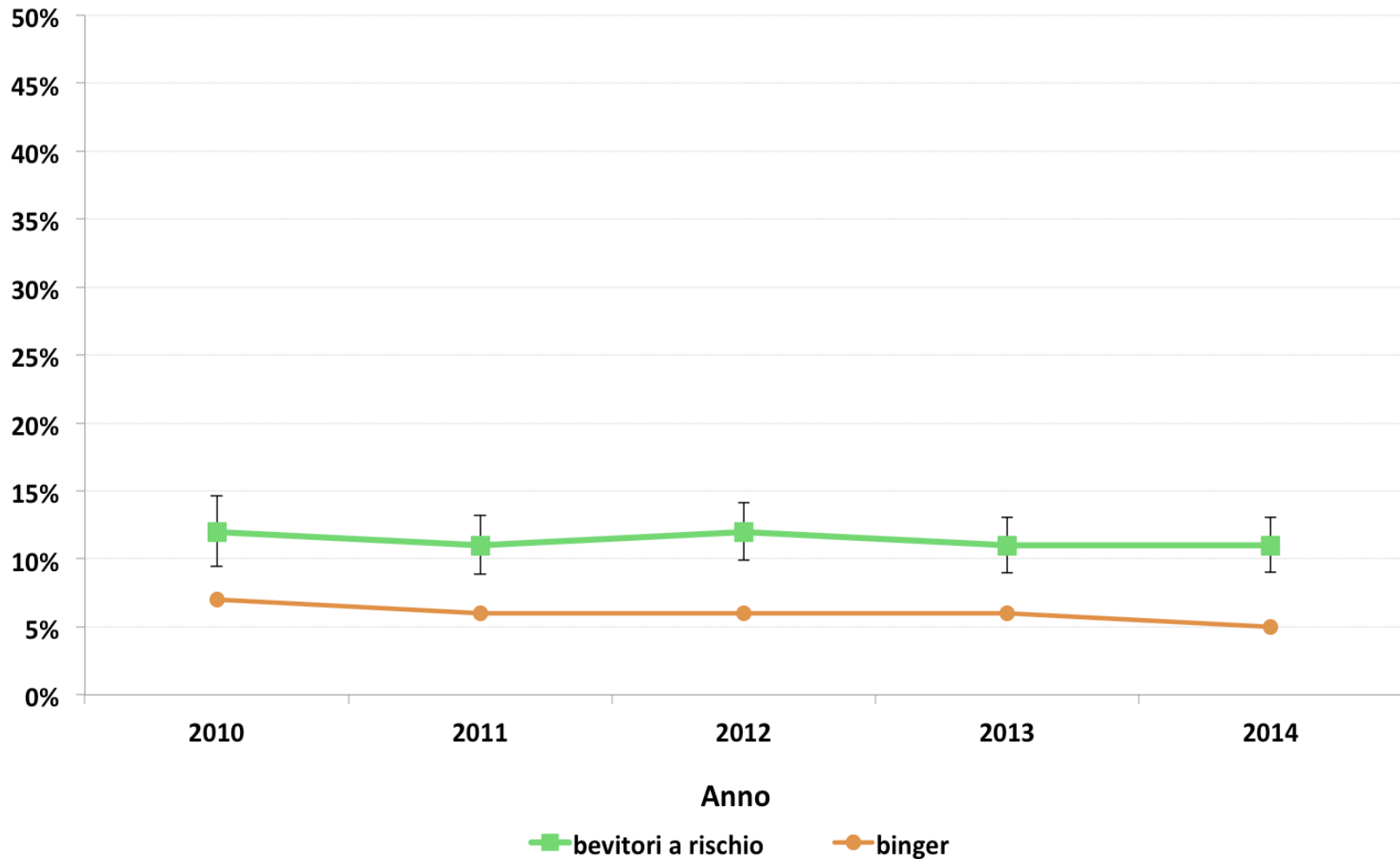


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Proportion of at-risk drinkers and binge drinkers

Annual trend. Apulia, 2008-14





Where are we?

Hazardous alcohol consumption, by Region. Italy, 2011-14



- peggiore del valore nazionale
- simile al valore nazionale
- migliore del valore nazionale

Binge drinking by Region. Italy, 2011-14



- peggiore del valore nazionale
- simile al valore nazionale
- migliore del valore nazionale



Metabolic Risk Factors

- Raised Blood Pressure (Hypertension)
- Raised Cholesterol
- Raised Blood Glucose
- Overweight and Obesity



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Non Communicable Disease

MANAGEMENT



Management of NCDs

- Includes the detection, screening and treatment of NCDs as well as palliative care.
- Such interventions are essential for achieving the global target of a 25% relative reduction in the risk of premature mortality from NCDs.
- Integration into primary health is essential to prevent a majority of premature deaths and disability



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Non Communicable Disease

MONITORING AND SURVEILLANCE



Monitoring and surveillance

- Fundamental tools for public health
- Good quality health information is essential for planning and implementing health policy in all countries
- Provide health information in a timely manner so that countries have the information that they need to fight epidemics now or plan for the future.

Comprise

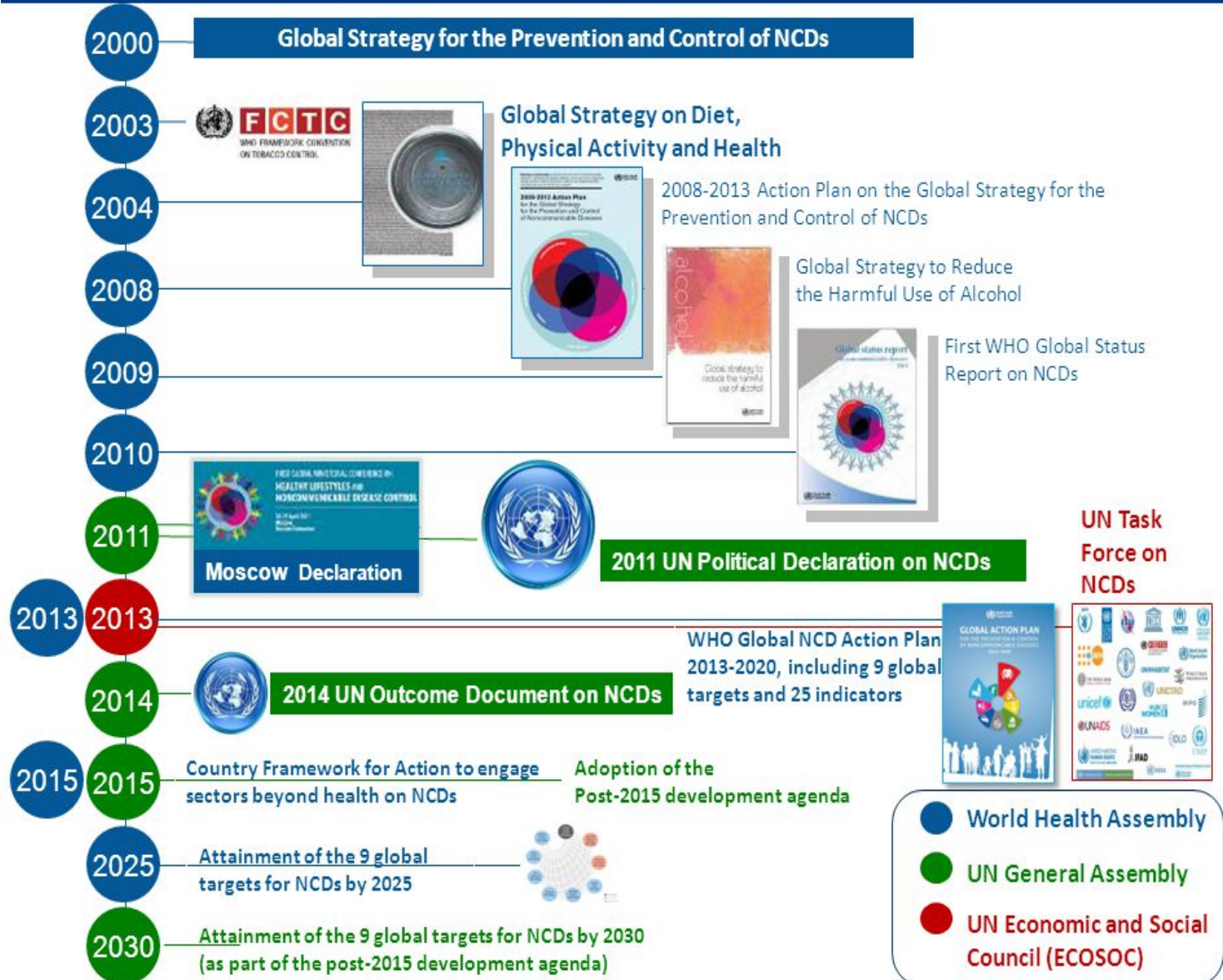
- regular collection of health information in terms of health indicators
- routinely analysis of indicators over time, place and between population groups,
- sharing of available scientific knowledge as well as the regular dissemination of results.

Main indicators

- Mortality and morbidity
- Risk factors
- National systems response
- Health outcomes monitoring



The UN is addressing NCDs as one of the major challenges for development





Global Action Plan objectives

1

To raise the priority accorded to the prevention and control of noncommunicable diseases in global, regional and national agendas and internationally agreed development goals, through strengthened international cooperation and advocacy.

2

To strengthen national capacity, leadership, governance, multisectoral action and partnerships to accelerate country response for the prevention and control of noncommunicable diseases.

3

To reduce modifiable risk factors for noncommunicable diseases and underlying social determinants through creation of health-promoting environments.

4

To strengthen and orient health systems to address the prevention and control of noncommunicable diseases and the underlying social determinants through people-centred primary health care and universal health coverage.

5

To promote and support national capacity for high-quality research and development for the prevention and control of noncommunicable diseases.

6

To monitor the trends and determinants of noncommunicable diseases and evaluate progress in their prevention and control.



Global Action Plan target



A **25%** relative reduction in risk of premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases.



At least **10%** relative reduction in the harmful use of alcohol, as appropriate, within the national context.



A **10%** relative reduction in prevalence of insufficient physical activity.



A **30%** relative reduction in mean population intake of salt/sodium.



A **30%** relative reduction in prevalence of current tobacco use in persons aged 15+ years.



Global Action Plan target



A **25%** relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure, according to national circumstances.



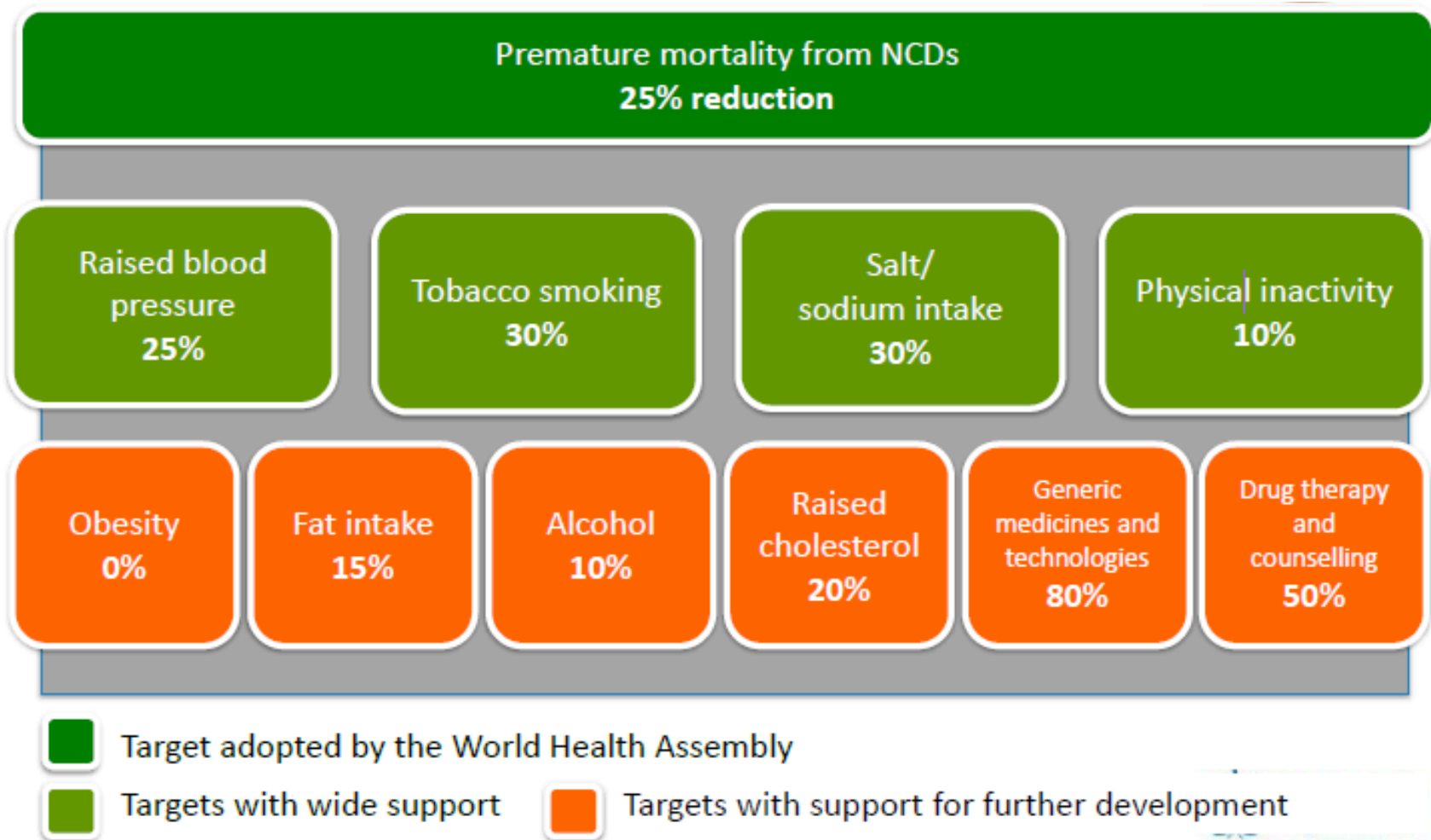
Halt the rise in diabetes and obesity.



At least **50%** of eligible people receive drug therapy and counselling (including glycaemic control) to prevent heart attacks and strokes.



An **80%** availability of the affordable basic technologies and essential medicines, including generics, required to treat major noncommunicable diseases in both public and private facilities.





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Thanks
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