

# European Code Against Cancer

12 WAYS TO REDUCE YOUR CANCER RISK

## Priorities of prevention intervention: the Prevention Lab in Piemonte

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# The Prevention Lab...

- was established in January 2016, among the governance actions of the Regional Plan for Prevention of Piemonte (PRPP).

## in 2018...

- The Ministry of Health financed the project «Priorities in prevention intervention to reduce the burden of chronic non-communicable diseases”, till March 2020.
- **Partners:** Piemonte (CPO as coordinator)
  - Lazio
  - Sicily
  - Tuscany

# Aims...

Develop/test methodology to identify health priorities and cost-effective prevention interventions, supporting Regions and Health Italian Ministry for future prevention plans.

# Activities...

- Stakeholder engagement
- Analysis of disability burden (DALYs) and risk factors by region
- Context analysis to identify resources and skills
- Review of cost-effective prevention interventions
- Realize a tool to evaluate the cost-opportunity and the (Return of Investment) of scenarios of prevention intervention
- Elaboration of a priority setting methodology.

# Piedmont experience (2016/2017)

# Piedmont experience (2016/2017)

- We built a **multidisciplinary group**, (involving several experts), for both analysis of the main public health problems and the definition of priorities.

# Think-tank...

epidemiology

sociology

health economy

cardiology

public health

nutrition

oncology

psychiatry

communication

pediatrics

sports medicine






# Activities

Identify **priorities** in prevention interventions based on:

- **burden of disease,**
- **main risk factors,**
- **effectiveness** of prevention intervention,
- and their **cost-benefit** ratio.

# Burden of disease and risk factors

## Global Burden of Disease project by Institute for Health Metrics and Evaluation



The screenshot shows a web browser window with the URL [www.healthdata.org/gbd](http://www.healthdata.org/gbd). The page features the IHME logo (Institute for Health Metrics and Evaluation) and a navigation menu with links for Home, Results, News & Events, Projects (highlighted), Get Involved, and About. The main heading is "Global Burden of Disease (GBD)". On the left, there is a sidebar menu with links for GBD Home, About GBD, Data, Data Visualizations, Publications, Videos, News & Events, and Training. Below the sidebar, there is a "SIGN UP FOR IHME NEWS" section with an email address input field and a "Subscribe" button. The main content area includes a photograph of a man and a woman in a rural setting, with the man pointing at a laptop. Below the photo is a "Call for collaborators" section, which begins with the text: "The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) is the largest and most comprehensive effort to date to measure epidemiological levels and trends worldwide. With more than 1,000 GBD collaborators from 108 countries participating in the most recent update, we are always working to expand the collaborative".

Source: <http://www.healthdata.org/gbd>

# DALY

I DALY (Disability Adjusted Life Years) sono un indicatore dell'impatto globale di uno o più fattori di rischio.

Vengono espressi come gli anni cumulativi di vita persi a causa di morbosità, mortalità e disabilità.

$$= \text{YLD} + \text{YLL}$$

Anni vissuti con malattia o disabilità      Anni di vita persi



Vita "sana"



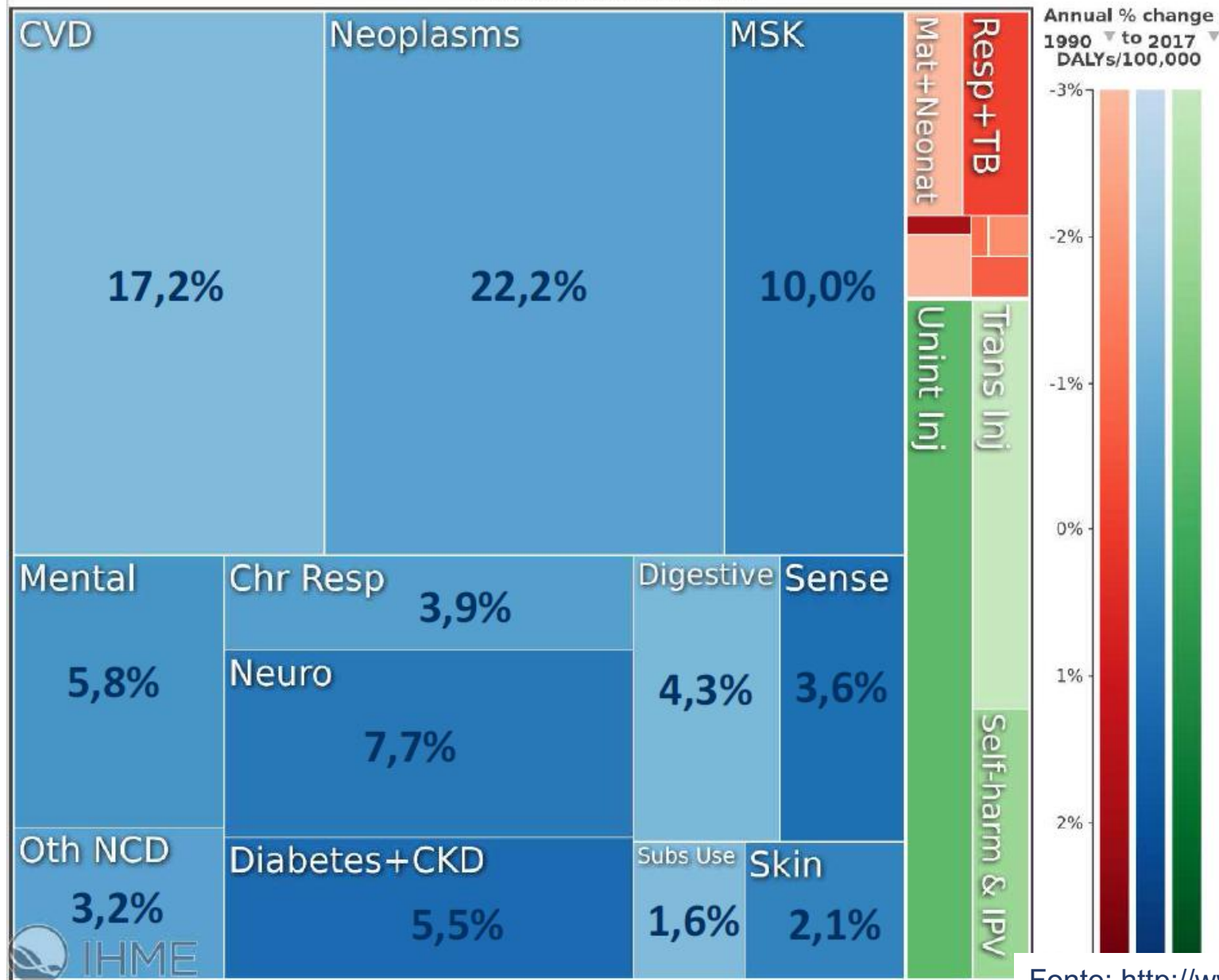
Malattia o Disabilità



Morte precoce

Aspettativa di vita

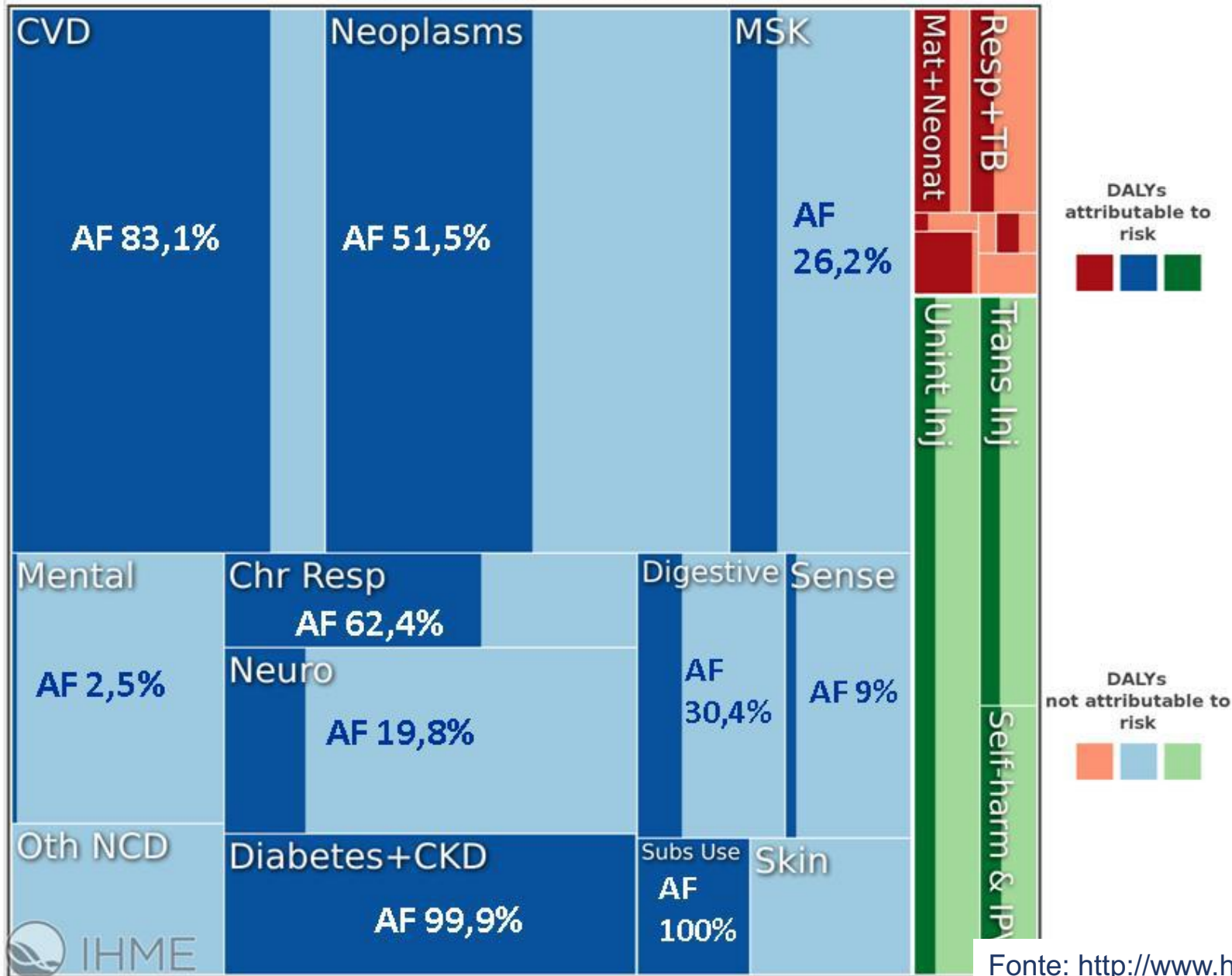
Italy  
Males, All ages, 2017, DALYs



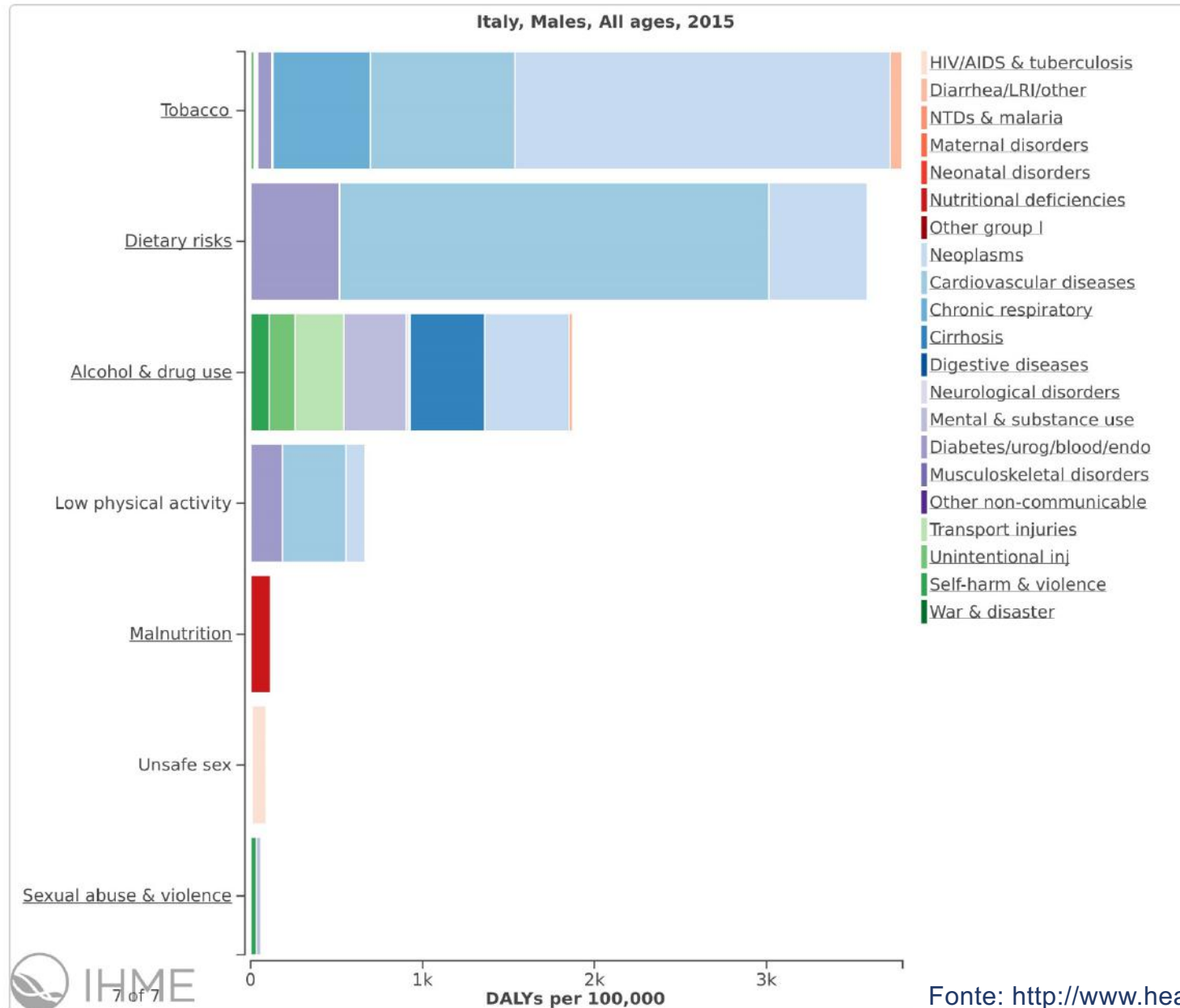
Fonte: <http://www.healthdata.org/gbc>



Italy  
Males, All ages, 2017, DALYs attributable to All risk factors



# Behavioural Risk Factors



## DALYs in Piemonte attributable to main behavioural risk factors

	Tobacco	Physical Inactivity	Diet
<b>Neoplasms</b>	54.968	6.725	20.485
<b>CVD</b>	26.247	21.636	83.091
<b>Respiratory disease</b>	22.476	-	-
<b>Diabetes</b>	1.150	5.531	12.875
<b>Total</b>	<b>104.842</b>	<b>33.891</b>	<b>116.452</b>

**Total  
250.000 DALYs**



# Evidence review of prevention intervention

- **NIEBP** Italian Network for Evidence Based Prevention
- **NICE** National Institute for Health and Care Excellence

Estimating Return on Investment  
for interventions and strategies  
to increase physical activity

Technical Report

May 2014

Your sector:  
share our insight

Advisory services and software  
to the Health, Justice, Education  
and Pharmaceutical sectors



Estimating Return on Investment of Tobacco Control:  
NICE Tobacco ROI Tool

Version 3.0

*A tool to estimate the return on investment of local and  
sub-national tobacco control programmes*

## TECHNICAL REPORT

Developed by:

Health Economics Research Group,  
Brunel University, London

In association with:

Lelan Solutions, Bristol

For:

National Institute of Health and Care Excellence (NICE)

June 2014





# Effectiveness and Cost per Unit of intervention

## Tobacco

Intervention	Effectiveness	Cost/unit
S_Brief Advice GP	0,02	18,4
S_Brief Advice (not practitioner)	0,015	9,2
S_Counselling	0,08	184
S_Mono NRT	0,07	92
S_Varenicline	0,12	207
S_Mono NRT+Group Support	0,2	205
S_Self-help book & booklets	0,05	5,6
S_SMS: text messaging	0,09	19
S_Sito Web	0,08	5,8
S_Pro-active phone support	0,08	200
S_Increase Price (+10%)	0,03	0
Regional Plan	0,03	2,65

## Physical activity

PA_GP	0,01	30
PA_Walking groups	0,085	55
PA_web 2.0	0,1	5,8
PA_Cycle paths, cycling policy	0,155	55
Media Campaign	0,025	26

## Diet

D_Fruit & veg. consumption	0,075	30
D_Medical Advice	0,14	100

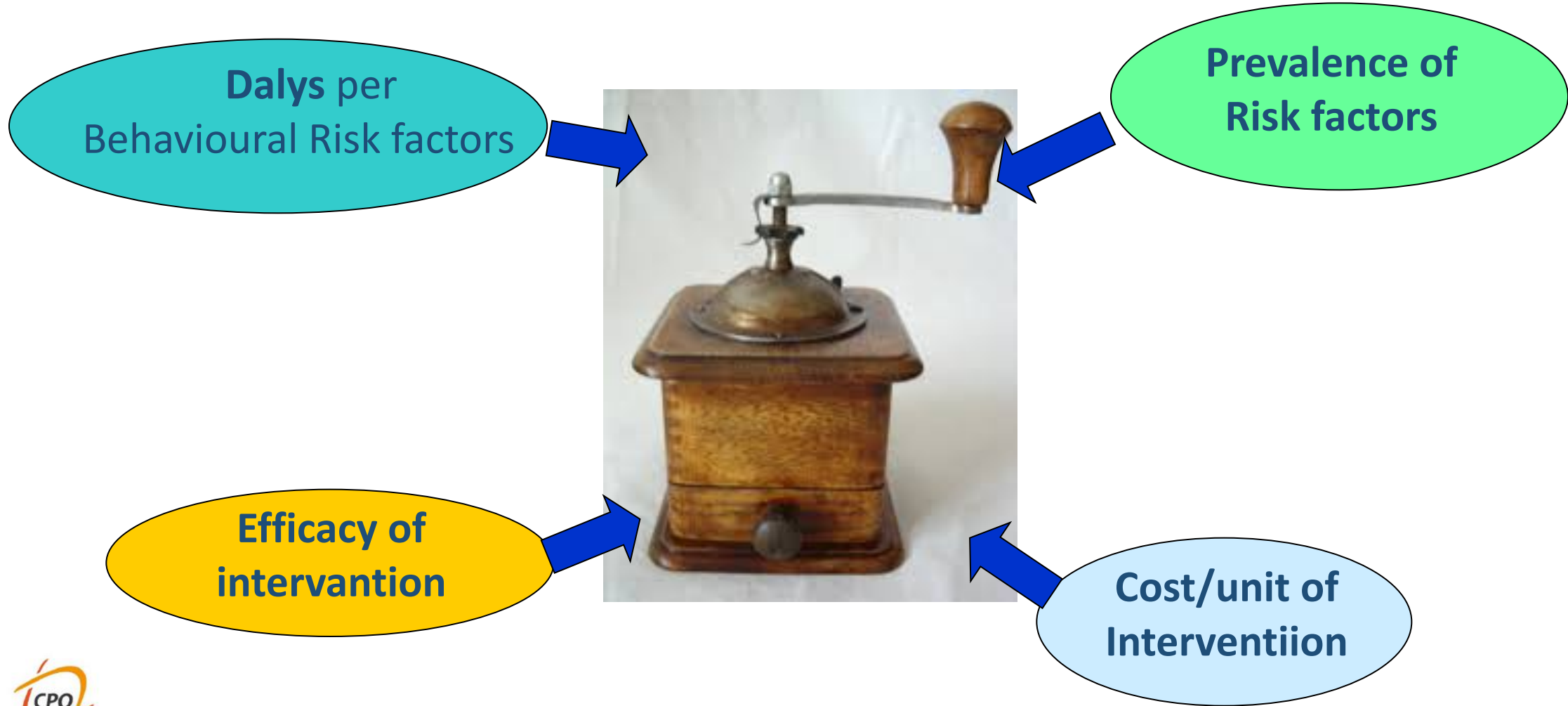


# Prevalence of RF in Piemonte...

- Regional Plan for Prevention of Piemonte
- National and regional surveys (from Italian Institute of Statistics)

# Multi level tool ...

(«grinder» for coffee)



## Example of scenario for tobacco cessation: Brief Advice by GPs

**Target population:** smokers (men and women) >14 year

**Coverage:** ~ **307,500 smokers** estimated in one year (50% of compliance of Piedmont GPs, and 70% of population that attend GP services).

**Efficacy of intervention:** **2%**. (Stead, 2013)

**Cost:** ~**18 euro** per unit of intervention by GP.

For «treating» ~**307,500** smokers the total cost are **7,544,000 euro**.

**Impact:** ~**6,150 quitters** with **1,292 DALYs** avoided.

**Cost/DALY (avoided) = 5,839 euro**

## Example of scenario for tobacco cessation: Brief Advice by Nurse in GP setting

**Target population:** smokers (men and women) >14 year

**Coverage:** ~ **307,500 smokers** estimated in one year (50% of compliance of Piedmont GPs, and 70% of population that attend GP services).

**Efficacy of intervention:** **1,5%**. (Stead, 2013)

**Cost:** ~**9 euro** per unit of intervention by Nurse.

For treating ~**307,500** smokers the total cost are **3,772,000 euro**.

**Impact:** ~ **4,613 quitters** with **969 DALYs Avoided**.

**Cost/DALY (avoided) = 3,737 euro**

# Tobacco cessation interventions

<b>Intervention</b>	<b>Coverage (population)</b>	<b>Avoided DALYs</b>	<b>Total Cost</b>	<b>Cost per avoided DALY</b>
Brief Advice GP	307.500	<b>1.292</b>	<b>7.544.000</b>	<b>5.839</b>
Brief Advice (not practitioner)	307.500	<b>969</b>	<b>3.772.000</b>	<b>3.893</b>
Counselling	30.750	<b>517</b>	<b>5.658.000</b>	<b>10.948</b>
Mono NRT	18.450	<b>271</b>	<b>1.697.400</b>	<b>6.256</b>
Varenicline	12.300	<b>129</b>	<b>3.394.800</b>	<b>26.275</b>
Mono NRT+Group Support	18.450	<b>775</b>	<b>5.043.000</b>	<b>6.505</b>
Self-help book & booklets	574.000	<b>4.522</b>	<b>3.214.400</b>	<b>711</b>
SMS: text messaging	295.200	<b>4.186</b>	<b>5.608.800</b>	<b>1.340</b>
Web site	574.000	<b>7.235</b>	<b>1.148.000</b>	<b>159</b>
Pro-active phone support	49.200	<b>620</b>	<b>9.840.000</b>	<b>15.866</b>
Increase Price (+10%)	820.000	<b>3.876</b>	<b>0</b>	<b>CS</b>
Regional Plan	820.000	<b>3.876</b>	<b>2.173.000</b>	<b>561</b>

# Economic value of the DALY...

- the threshold value used in economy:  
**1 DALY = 1/3 GDP per capita.**
- In Italy **1 DALY = 10.000 euro.**

# Economic value of the DALY...

- the financing of the Italian health fund in 2016, was **111 billion** euro\*
- the total burden for all diseases was around **16 milion DALY\*\***
- the cost per DALY it's about **6.900** euro (cost for health system).

\*. "Rapporto sulla sostenibilità del Servizio Sanitario Nazionale 2016-2025" - Presentato a Roma il 7 giugno 2016 Sala degli Atti parlamentari della Biblioteca "Giovanni Spadolini" Senato della Repubblica – Rapporto GIMBE 2016

\*\* . Institute for Health Metrics and Evaluation (IHME). GBD Compare. Seattle, WA: IHME, University of Washington, 2015. Available from <http://vizhub.healthdata.org/gbd-compare>.





## Scenario (plan) for smoking cessation in italian population

Intervention	Target population	Cost	DALYs avoided	Cost per DALY avoided
Brief Advice	2,268,375	41,738,100	9,478	4,404
Web site	8,468,600	49,117,880	106,15	463
Quit-line	725,88	145,176,000	9,099	15,956
Total	11,462,855	236,031,980	124,726	1,892

# Dreaming a possible world...

- Finally, to simulate a **hypothetical financial coverage** for this scenario in Italy, we decided to propose a **10% increase in tobacco prices**
- this imply a **further reduction in DALYs of 3%** (around 60 thousand, to be added to the estimated 124 thousand in the scenario)

# Dreaming a possible world...

- **increases prices = increases taxes**
- for Italian coffers **between 500 - 800 million euros in one year.**

partially or completely **invested to cover the costs of the prevention scenario** described above or of another one that consider also **pilot studies for Lung Cancer Screening?**

# Limits

- It is a "theoretical" exercise
- Some assumptions are still "rough", so are needed corrections and insights

# Strengths

- There are some documented example of tools with different levels of complexity
- Use of Cost-Benefit analysis in prevention program supporting the priorities choices and the resource allocation in prevention

Thank you  
for attention!



Centro di Riferimento per l'Epidemiologia  
e la Prevenzione Oncologica in Piemonte

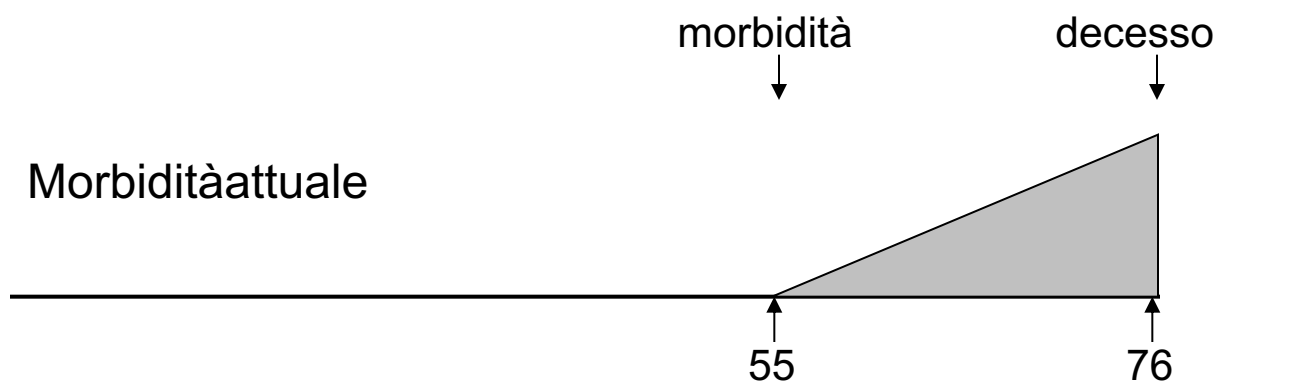


Ministero della Salute

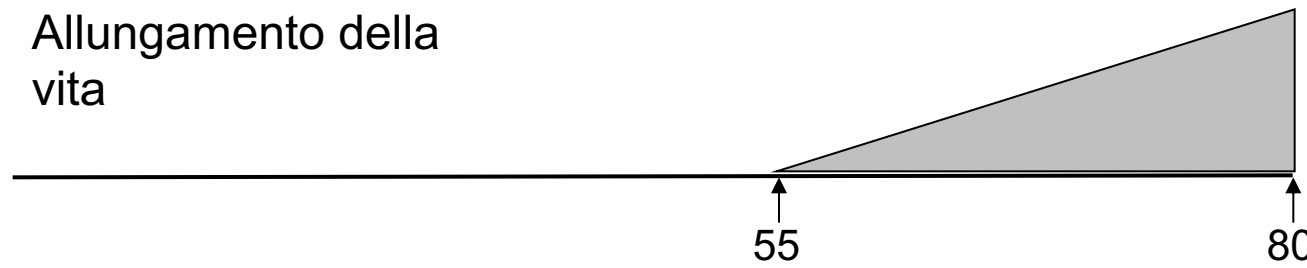


Centro nazionale per la prevenzione  
ed il controllo delle malattie

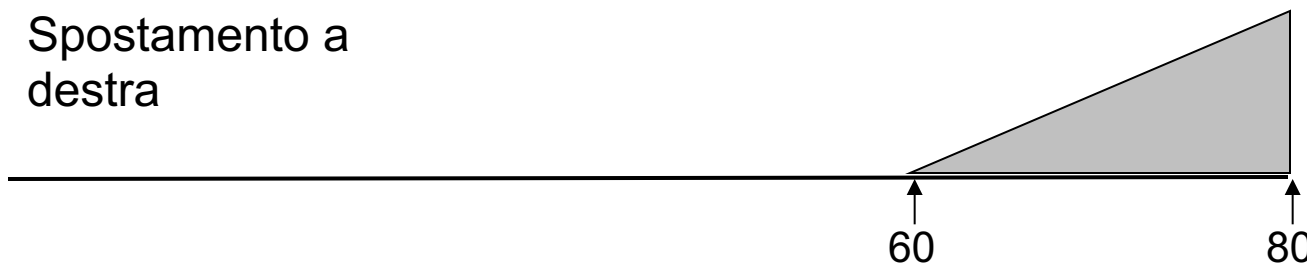




**Situazione attuale**



**La speranza di vita aumenta di 4 anni, ma l'età di insorgenza della malattia rimane costante.**



**La speranza di vita aumenta di 4 anni, e l'età di insorgenza della malattia è posticipata di 5 anni.**



**La speranza di vita aumenta di soli 2 anni, ma l'età di insorgenza della malattia è posticipata di 10 anni.**