

# XIX Convegno Nazionale Tabagismo e Servizio Sanitario Nazionale

## Tabacco - una minaccia per lo sviluppo

Contributi dei relatori



ISTITUTO PER LO STUDIO  
E LA PREVENZIONE ONCOLOGICA

# IMPATTO DELLE MALATTIE ASSOCIATE ALL'ESPOSIZIONE A FUMO PASSIVO IN ITALIA

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# SCHEMA PRESENTAZIONE

- **Patologie causalmente associate a fumo passivo**
- Stime di morti attribuibili a fumo passivo

# HEALTH EFFECTS ASSOCIATED WITH EXPOSURE TO SHS

WHO grouped the SHS-related diseases as a summary of conclusions of recent reviews:

1. **sufficient evidence**: broad consensus on a causal relationship, extensively studied in many populations using a variety of valid study methods, positive findings reported quite consistently, plausible mechanisms
2. **less convincing but still strongly suggestive evidence**: includes outcomes that have been studied less extensively
3. diseases with **limited or inconclusive evidence** of causality

WHO recommended to estimate the burden for diseases with **sufficient evidence** of causality and with **sufficient information**

## WHO classification – adults non smokers

Disease	Level of causality	Disease	Level of causality
<b><i>Reproductive effects</i></b>		<b>Lung cancer</b>	<b>1</b>
Female fertility	3	Breast cancer	2
Other F. repr. toxicity	3	Nasal sinus cavity	2
Male repr. toxicity	3	Nasopharyngeal	3
<b><i>Respiratory effects</i></b>		Cervical	3
<b>Asthma induction</b>	<b>1</b>	Ur. tract/bladder	3
Asthma Exacerbation	2	Stomach	3
<b>COPD</b>	<b>1</b>	Brain	3
Acute effects	1	Leukaemia	3
Wheeze	2	Lymphoma	3
Phlegm	2	<b><i>Cardiovascular dis</i></b>	
Dyspnoea	2	<b>IHD</b>	<b>1</b>
Pulmonary function	3	<b>Stroke</b>	<b>1</b>
<b><i>Cancer</i></b>			
All cancer	3		

## WHO classification – children

Disease	Level of causality
<i>Developmental effects</i>	
<b>Low birth weight</b>	<b>1</b>
Preterm delivery	2
<b>SIDS</b>	<b>1</b>
Spontaneous abortion/ perinatal death	3
Congenital malformation	3
Neuropsychological development	3
Physical development	3
<i>Respiratory effects</i>	
<b>Lower respiratory infection</b>	<b>1</b>
Decreased pulmonary function	1
Wheeze	1
Cough	1
<b>Acute otitis media</b>	<b>1</b>
<b>Asthma onset</b>	<b>1</b>
<i>Childhood cancers</i>	3

# Selected diseases for TackSHS

- lung cancer (LC)
- ischemic heart disease (IHD)
- asthma §
- stroke
- COPD

} **Adults**

- low birth weight (LBW) §
- sudden infant death syndrome (SIDS) §
- lower respiratory tract infection (LRI)
- otitis media (OM)
- asthma §

} **Children**

- § not sufficient information

# POPULATION ATTRIBUTABLE FRACTION (PAF) AND THE ATTRIBUTABLE BURDENS (AB) **IN** **CHILDREN**

The PAF is the reduction in the population disease/mortality that would occur if exposure to SHS was reduced to 0:

$$PAF_{SHS} (\%) = \frac{p_{SHS} RR_{SHS} - p_{SHS} RR_0}{p_{SHS} RR_{SHS} + p_0 RR_0} = \frac{p_{SHS} (RR_{SHS} - 1)}{p_{SHS} (RR_{SHS} - 1) + 1}$$

$$AB = PAF_{SHS} \cdot B$$

$p_{SHS}$  = proportion exposed to SHS

$p_0$  = proportion of non exposed to SHS

$RR_{SHS}$  = RR for outcome in exposed to SHS in comparison to non exposed

$RR_0 = 1$  = RR for outcome in non exposed to SHS

$B$  = total burden in deaths, cases or DALYs



# POPULATION ATTRIBUTABLE FRACTION (PAF) AND THE ATTRIBUTABLE BURDENS (AB) **IN ADULTS**

The large impact of active smoking may mask effects due to SHS: the PAF is applied to the total **burden in non-smokers**:

$$[B - (B \cdot PAF_S)] \cdot (1 - p_S)$$

$$AB_{SHS} = PAF_{SHS} \cdot B_{NS}$$

$PAF_S$  = population attributable fraction for active smoking,  
 $1-p_S$  = prevalence of non-smoking

## RELATIVE RISKS - ADULTS

Disease	Age	RR/OR	Reference
LC	>15 years	1.21 (1.13, 1.30) 1.22 (1.13, 1.33)	US Surgeon General, 2006
IHD	>15 years	1.27 (1.19,1.36)	US Surgeon General, 2006
Asthma onset	>20 years	1.97 (1.19,3.25)	Jaakkola et al. 2003
Stroke	>35 years	1.25 (1.12, 1.38)	Oono et al., 2011
COPD	> 35 years	1.66 (1.38-2.00)	Fisher et al., 2015

## RELATIVE RISKS – CHILDREN

### ALL UPDATED COMPARED TO RRS SUGGESTED BY WHO

Disease	Age	RR/OR	Reference
LBW *	0	1.32 (1.07, 1.63)	Leonardi-Bee et al., 2008
SIDS *	0-1	1.45 (1.07, 1.96)	RCP (2010)
LRI *	<2	1.54 (1.40, 1.69)	Jones et al. (2011)
LRI *	3-6	1.8 (1.13, 1.23)	Jones et al. (2011), Li et al. (1999)
OM *	<4	1.32 (1.20, 1.45)	Jones et al. (2012)
Asthma onset *	< 14	1.32 (1.23,1.42)	Tinuoye et al. (2013)

*\* Updated RRs in comparison to RRs suggested by WHO*

# GBD, 2015 (IHME, Seattle, USA), EU 28

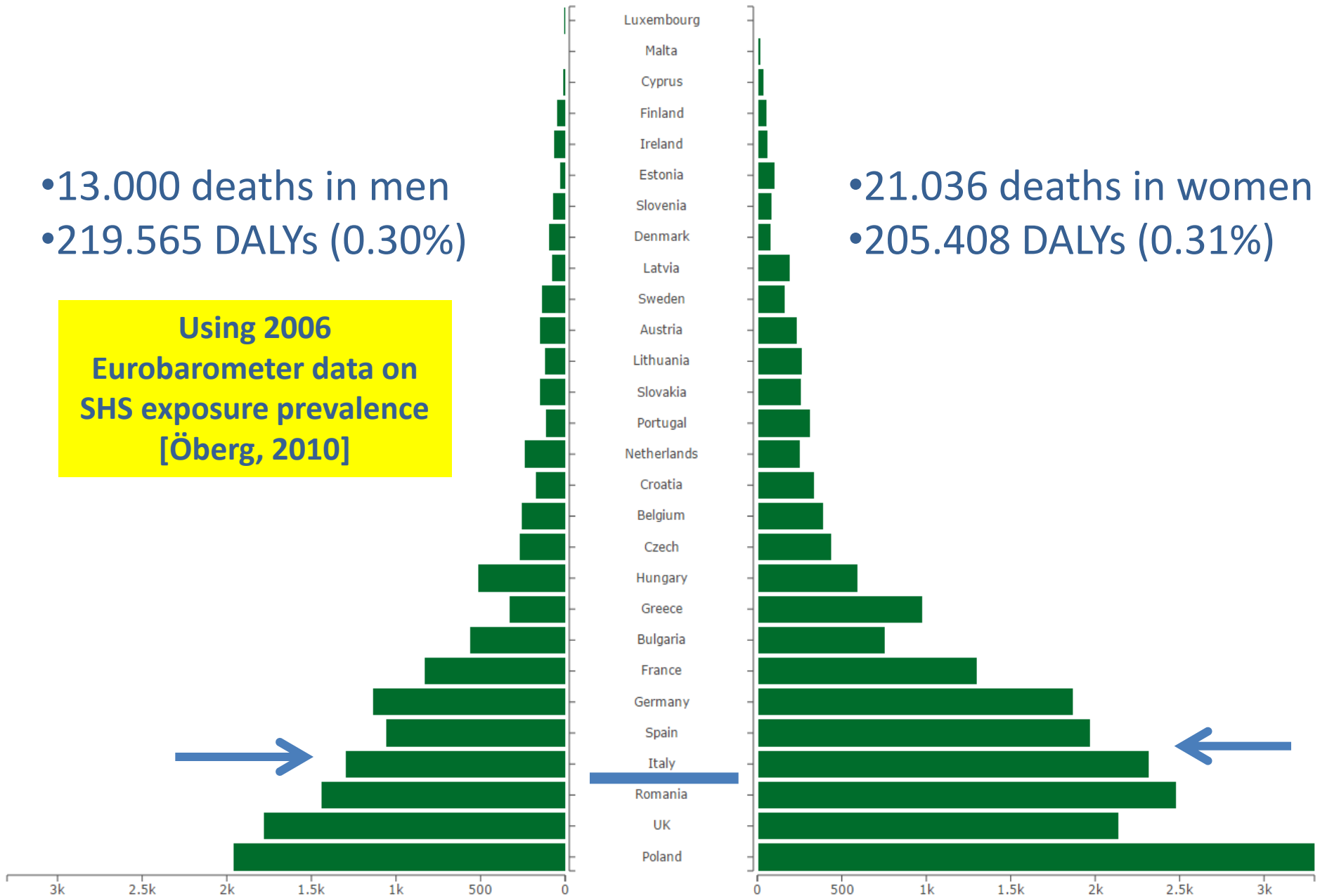
Males, All ages, 2015

Females, All ages, 2015

- 13.000 deaths in men
- 219.565 DALYs (0.30%)

Using 2006  
Eurobarometer data on  
SHS exposure prevalence  
[Öberg, 2010]

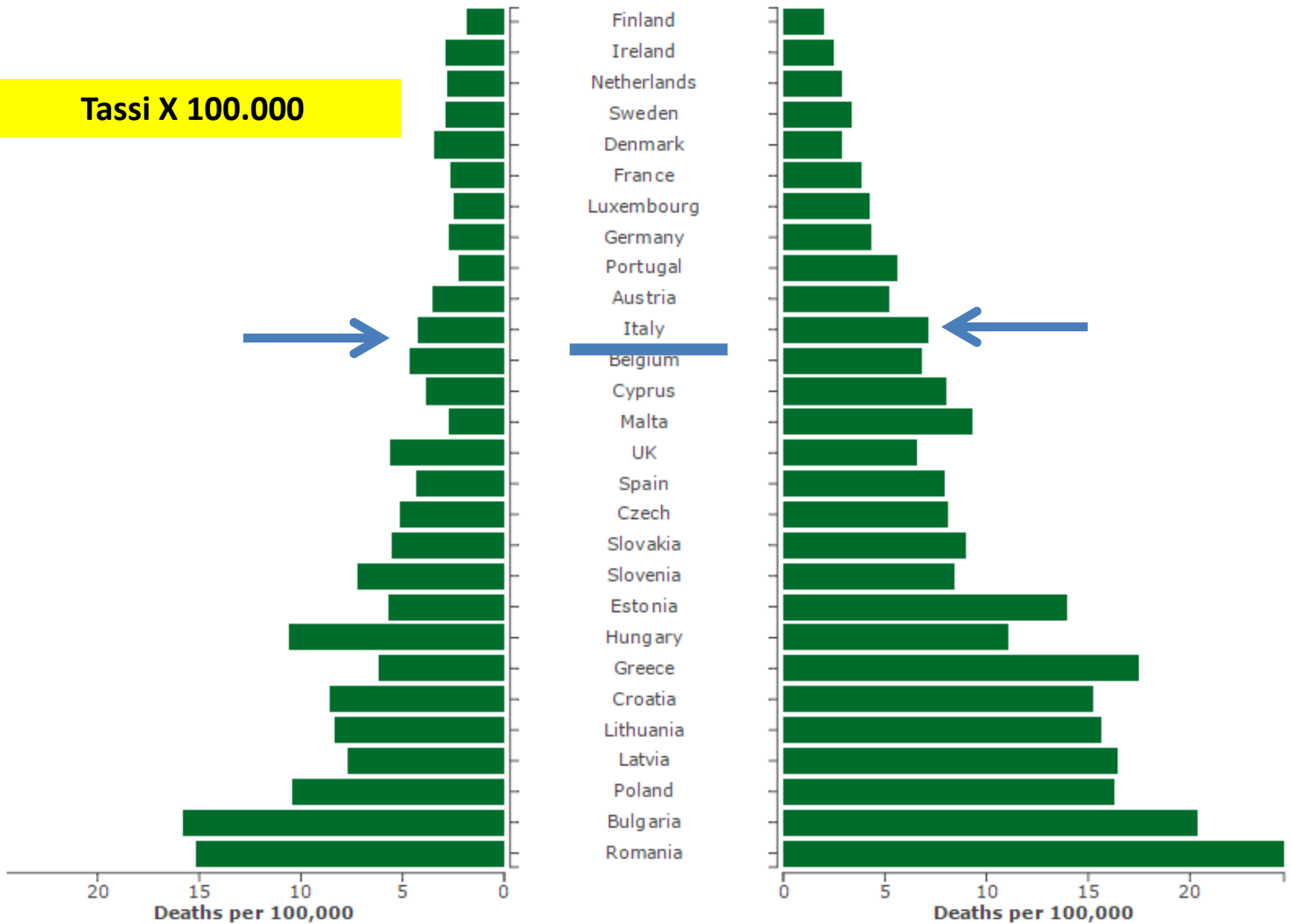
- 21.036 deaths in women
- 205.408 DALYs (0.31%)



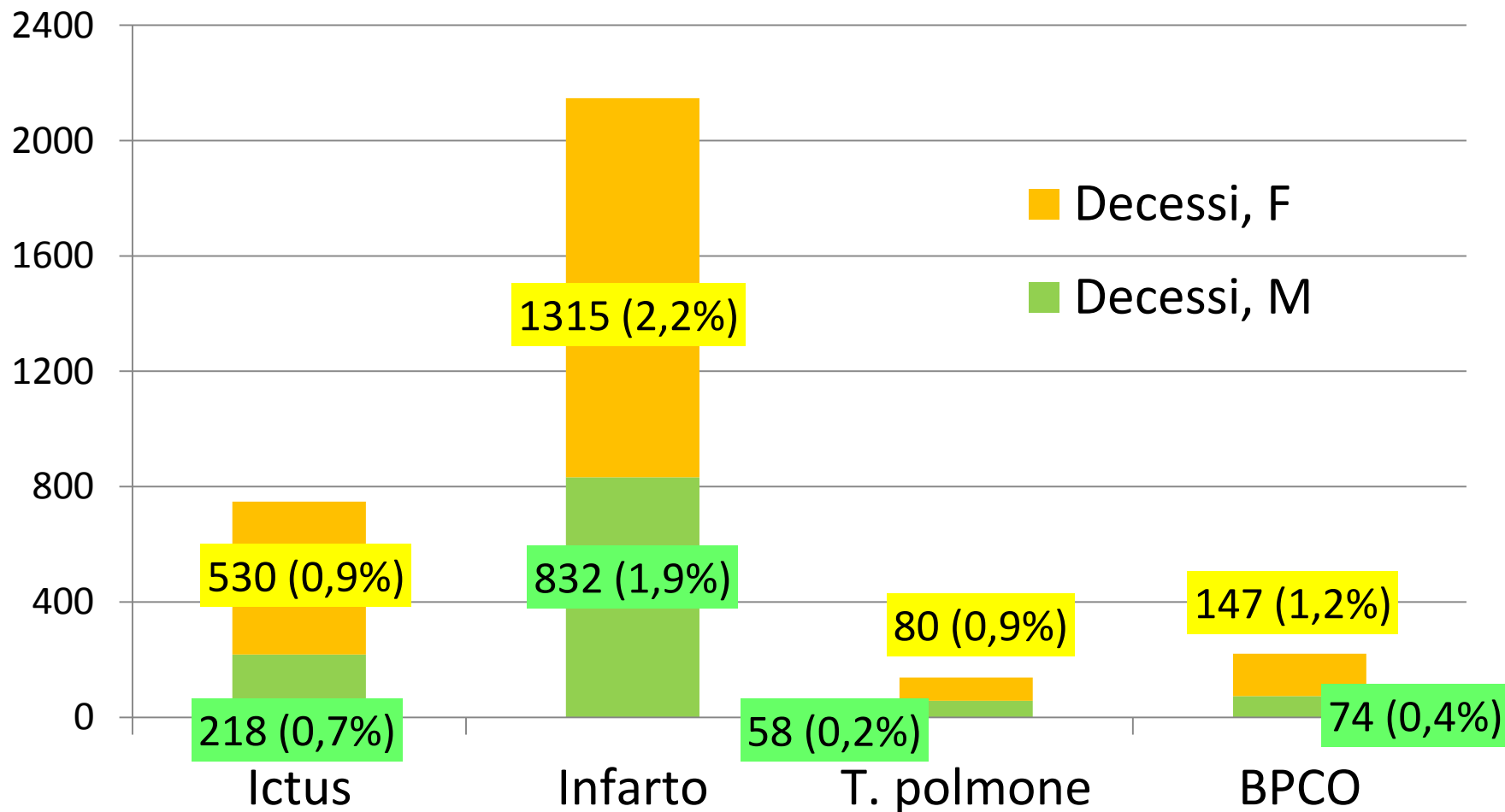
Males, All ages, 2015

Females, All ages, 2015

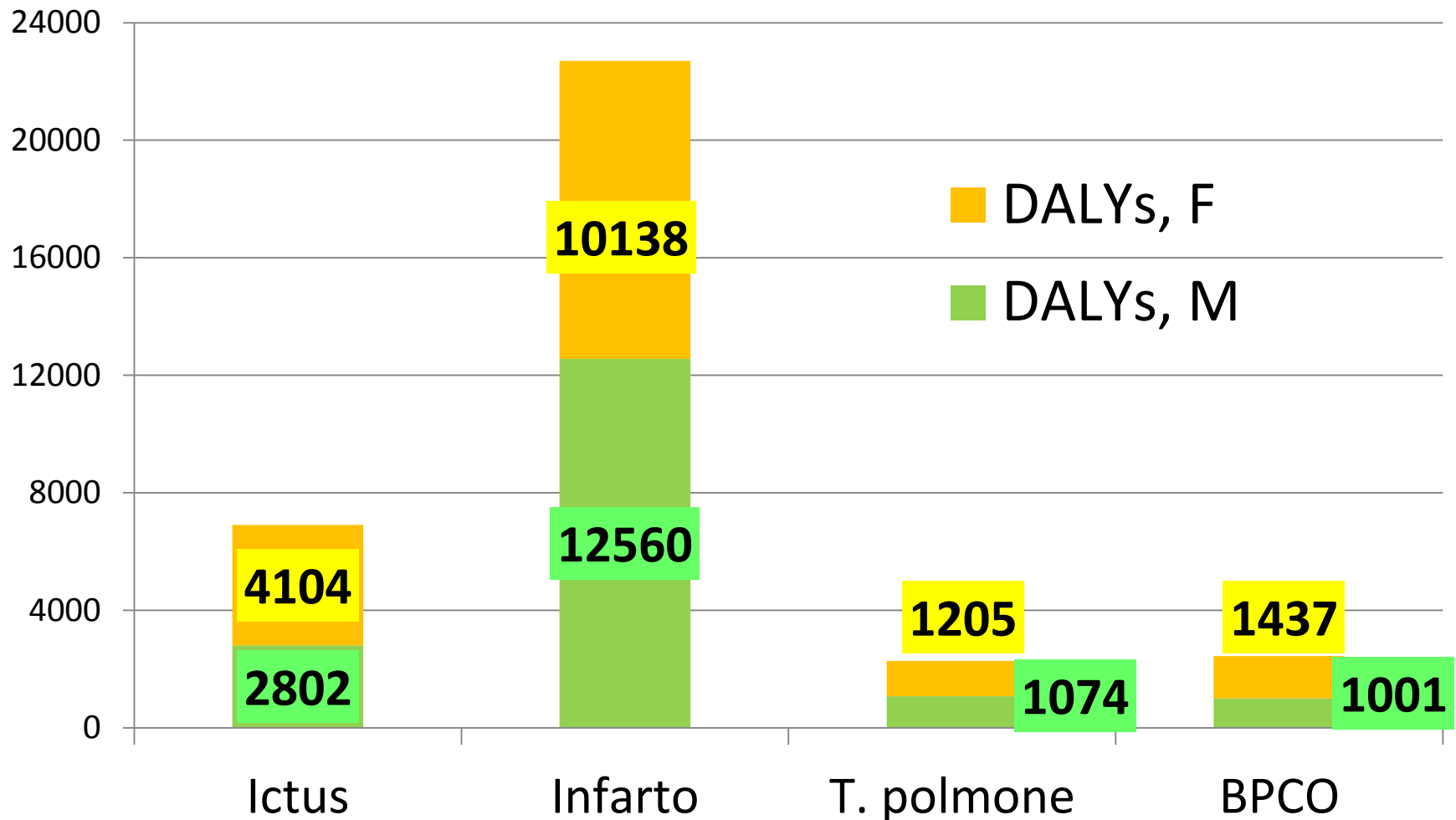
Tassi X 100.000



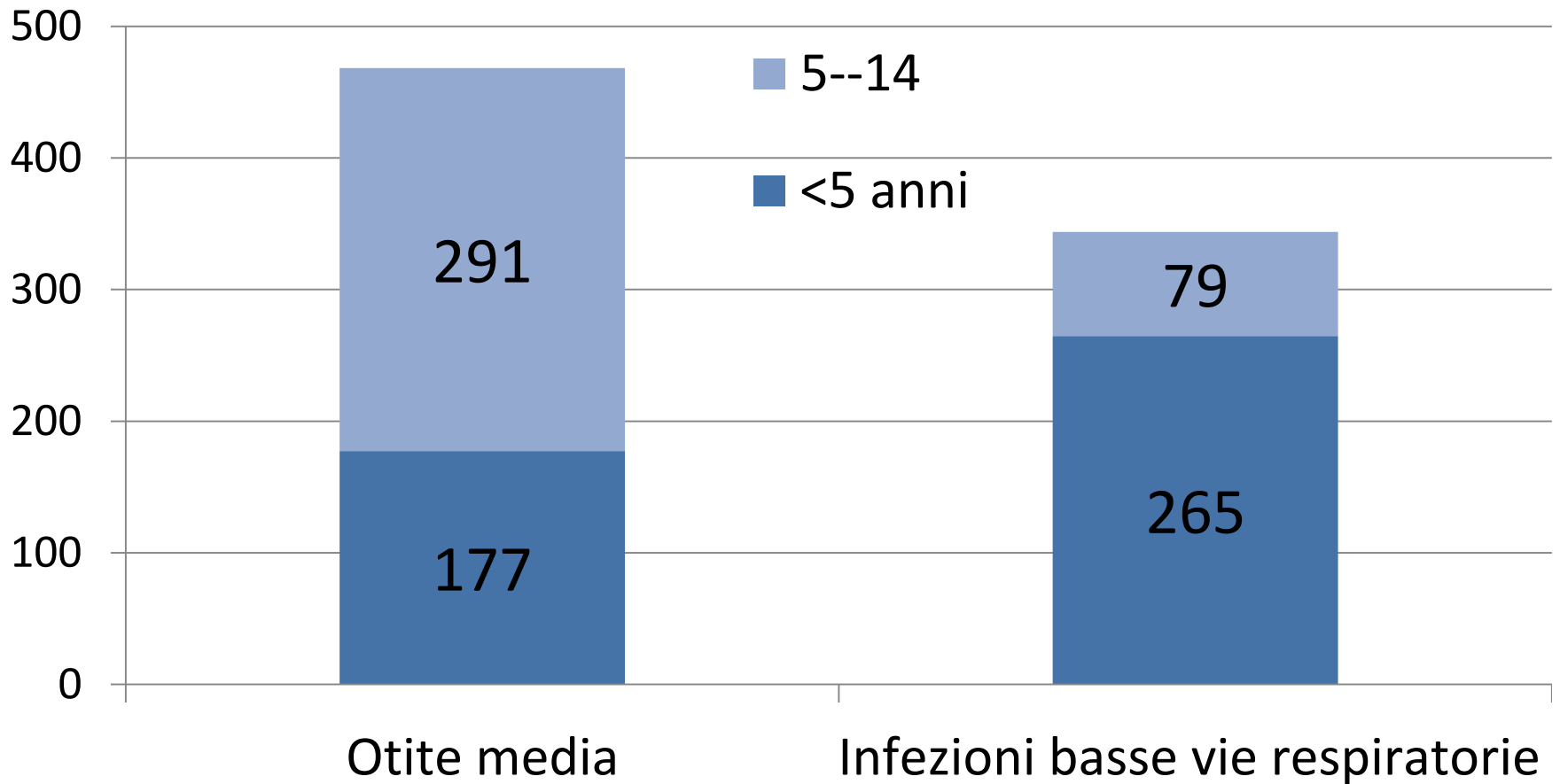
# Decessi attribuibili a exp a fumo passivo, Italia, 2015: 3600 (0,5%)



# DALYs attribuibili a EXP a fumo passivo, Italia, 2015: 38.100 (0,2%)



# DALYs attribuibili a EXP a fumo passivo, Italia, 2015, <14 anni: 812 (circa 1% DALYS <14 anni)







Thank you

# CONCLUSIONS: MORTALITY AND MORBIDITY ATTRIBUTABLE TO SHS IN TACKSHS PROJECT

- CRA approach
- Framework: general population of adults and children from the 28 EU Countries, with ages depending on the diseases under study
- Key data:
  - **Our added value 1: 2017 prevalence of SHS exposure (from TackSHS WP3)**
  - **Our added value 2: updated RRs of illness/death compared to WHO suggested RRs**
  - Deaths or cases for the selected diseases at specific ages in the 28 EU Countries
  - Adults: age and sex-specific prevalence of smokers, non smokers, and former smokers in the 28 EU Countries
  - Adults: RR of illness or death for the selected diseases for current/former smokers in comparison to never-smokers