

Convegno: Il governo dei costi in sanità

I determinanti di salute tra priorità sanitarie e vincoli economici.

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CPO Piemonte e AOU S.Giovanni Battista

Torino

Torino 24 maggio 2012

Determinanti di salute

fumo

alcool

alimentazione

esercizio fisico

.....

Il 60 % dei decessi nel mondo è attribuibile alle malattie cardiovascolari, al cancro, al diabete , ai disordini respiratori

Chronic Diseases: Chronic Diseases and Development 3



Tackling of unhealthy diets, physical inactivity, and obesity: health effects and cost-effectiveness

Michele Cecchini, Franco Sassi, Jeremy A Lauer, Yong Y Lee, Veronica Guajardo-Barron, Daniel Chisholm

The obesity epidemic is spreading to low-income and middle-income countries as a result of new dietary habits and sedentary ways of life, fuelling chronic diseases and premature mortality. In this report we present an assessment of public health strategies designed to tackle behavioural risk factors for chronic diseases that are closely linked with obesity, including aspects of diet and physical inactivity, in Brazil, China, India, Mexico, Russia, and South Africa. England was included for comparative purposes. Several population-based prevention policies can be expected to generate substantial health gains while entirely or largely paying for themselves through future reductions of health-care expenditures. These strategies include health information and communication strategies that improve population awareness about the benefits of healthy eating and physical activity; fiscal measures that increase the price of unhealthy food content or reduce the cost of healthy foods rich in fibre; and regulatory

Lancet 2010; 376: 1775-84

Published Online

November 11, 2010

DOI:10.1016/S0140-6736(10)61514-0

See [Comment](#) *Lancet* 2010; 376: 1619-21

See [Online/Comment](#)

DOI:10.1016/S0140-6736(10)61856-9, and

16.

The fraction of cancer attributable to lifestyle and environmental factors in the UK in 2010

Summary and conclusions



DM Parlin^{1,2}, L Boyd² and LC Walker²

¹Centre for Cancer Prevention, Wolfson Institute of Preventive Medicine, Queen Mary University of London, Charterhouse Square, London EC1M 6BQ, UK;

²Cancer Research UK, Angel Building, 407 St John Street, London EC1Y 4AD, UK

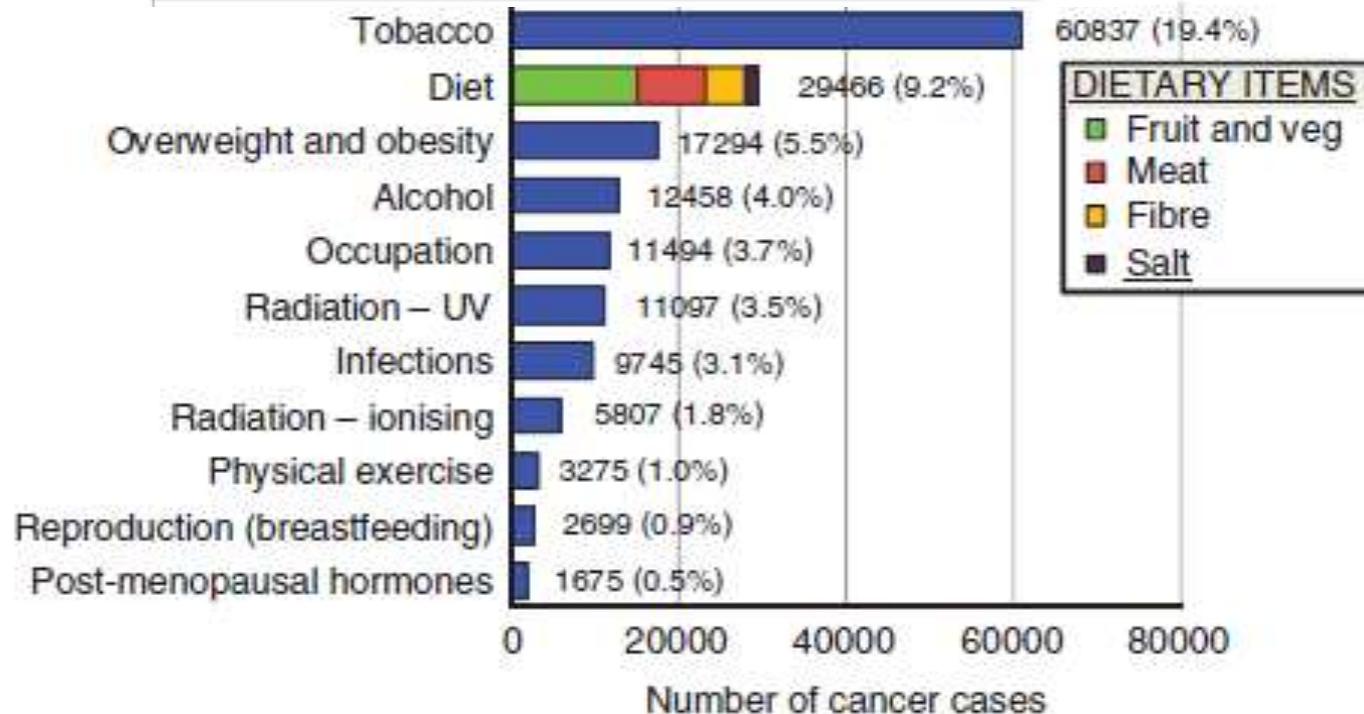


Figure 1 Number and percentage of cancer cases in the UK attributable to different exposures.

World
Cancer
Research Fund



American
Institute for
Cancer Research



**Food, Nutrition,
Physical Activity,
and the Prevention
of Cancer:**
a Global Perspective

FOOD, NUTRITION, PHYSICAL ACTIVITY, AND CANCERS OF THE COLON AND THE RECTUM

In the judgement of the Panel, the factors listed below modify the risk of cancers of the colon and the rectum. Judgements are graded according to the strength of the evidence.

	DECREASES RISK	INCREASES RISK
Convincing	<p>Physical activity^{1 2}</p>	<p>Red meat^{3 4}</p> <p>Processed meat^{4 5}</p> <p>Alcoholic drinks (men)⁶</p> <p>Body fatness</p> <p>Abdominal fatness</p> <p>Adult attained height⁷</p>
Probable	<p>Foods containing dietary fibre⁸</p> <p>Garlic⁹</p> <p>Milk^{10 11}</p> <p>Calcium¹²</p>	<p>Alcoholic drinks (women)⁶</p>
Limited — suggestive	<p>Non-starchy vegetables⁹</p> <p>Fruits⁹</p> <p>Foods containing folate⁸</p> <p>Foods containing selenium⁸</p> <p>Fish</p> <p>Foods containing vitamin D^{8 13}</p> <p>Selenium¹⁴</p>	<p>Foods containing iron^{4 8}</p> <p>Cheese¹⁰</p> <p>Foods containing animal fats⁸</p> <p>Foods containing sugars¹⁵</p>
Limited — no conclusion	<p>Cereals (grains) and their products; potatoes; poultry; shellfish and other seafood; other dairy products; total fat; fatty acid composition; cholesterol; sugar (sucrose); coffee; tea; caffeine; total carbohydrate; starch; vitamin A; retinol; vitamin C; vitamin E; multivitamins; non-dairy sources of calcium; methionine; beta-carotene; alpha-carotene; lycopene; meal frequency; energy intake</p>	
Substantial effect on risk unlikely	<p>None identified</p>	

Dieta 'occidentale' e malattie 'occidentali'

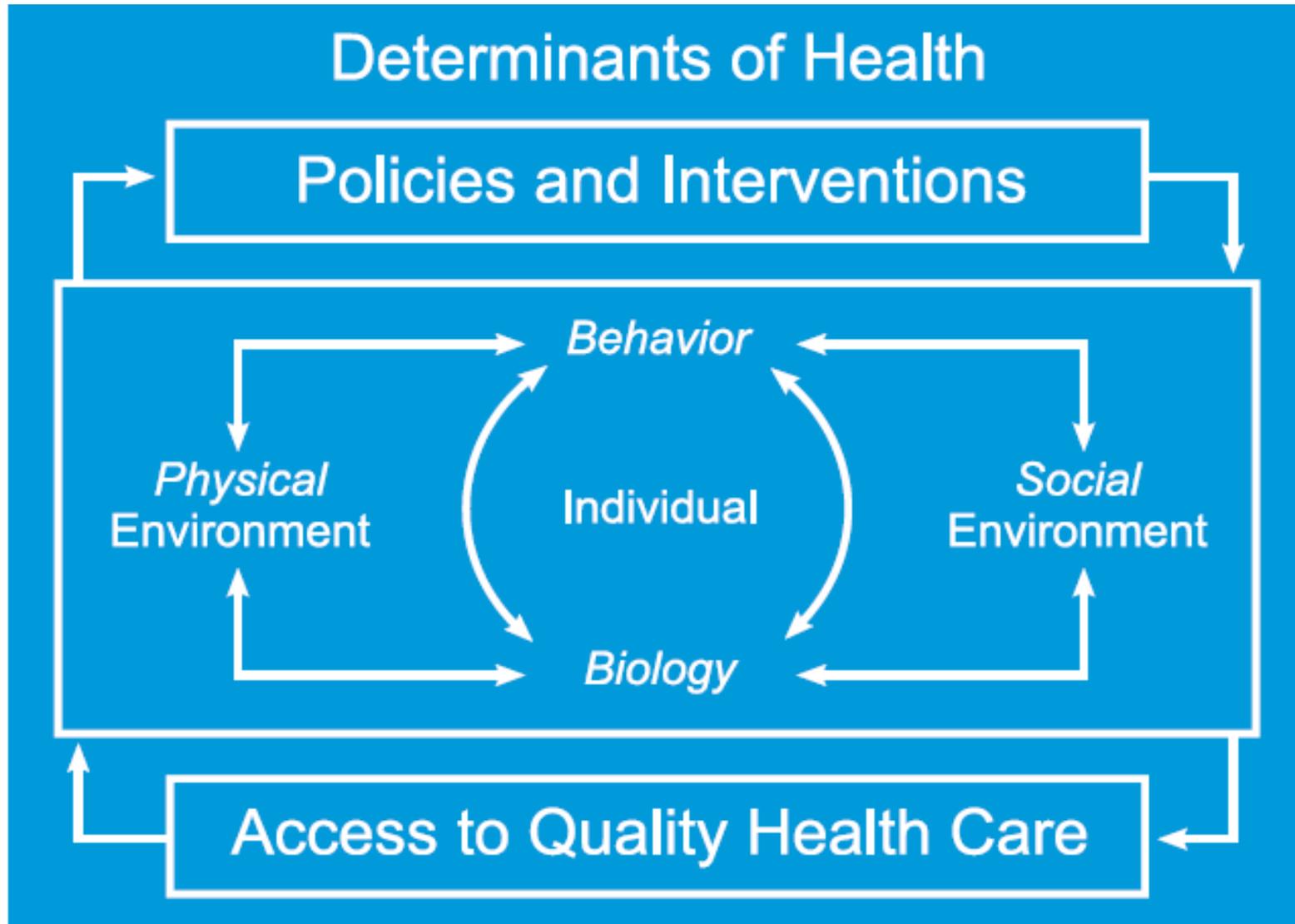
- Tumori
- Malattie cardiovascolari
- Diabete
- Obesità, Iperensione, Dislipidemie
- Demenze senili
- Osteoporosi
- Gotta, Cataratta, Artriti, Iperplasia prostatica, Asma, Malattie autoimmuni, intestinali croniche

Sintesi degli effetti dell'attività fisica sullo stato di salute

protezione verso:

- le patologie cardiovascolari
- le dislipidemie e l'obesità
- l'ipertensione
- la comparsa del diabete e...
nei diabetici, verso le complicanze del diabete
- l'osteoporosi
- il decadimento mentale e la depressione
- alcuni tumori (carcinoma del colon, mammella)
- la disabilità
- la disfunzione erettile

I determinanti della salute



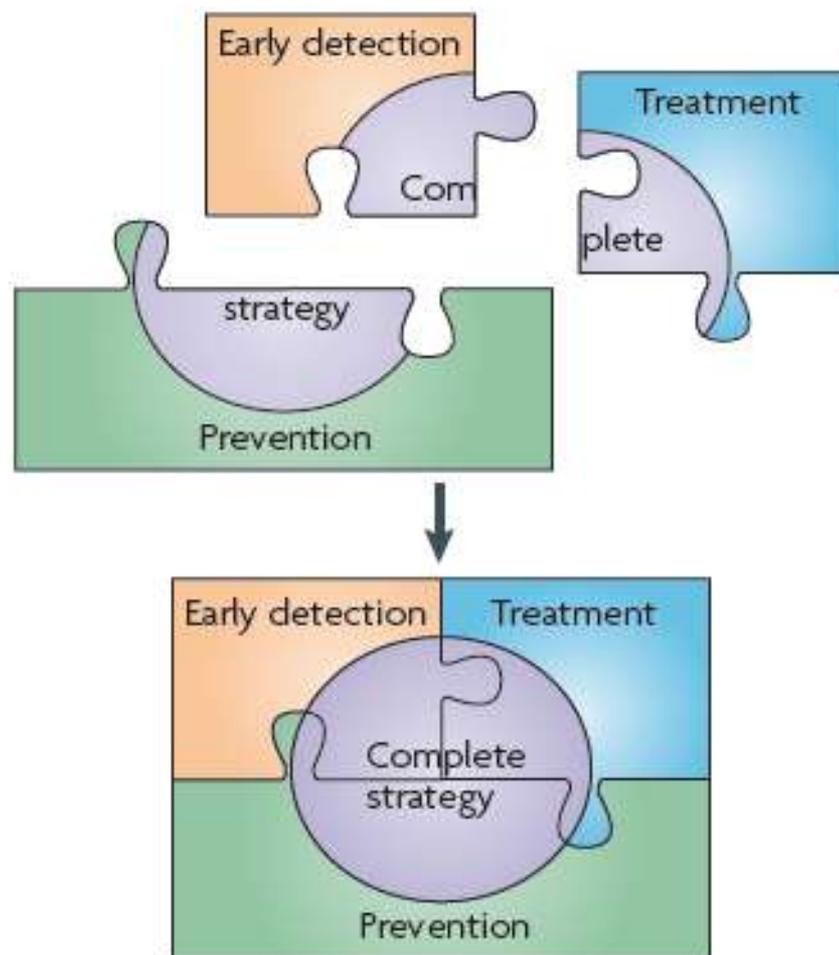


Figure 3 | **Complete strategy for eliminating cancer.** The complete strategy for the elimination of cancer requires early detection, treatment and prevention.

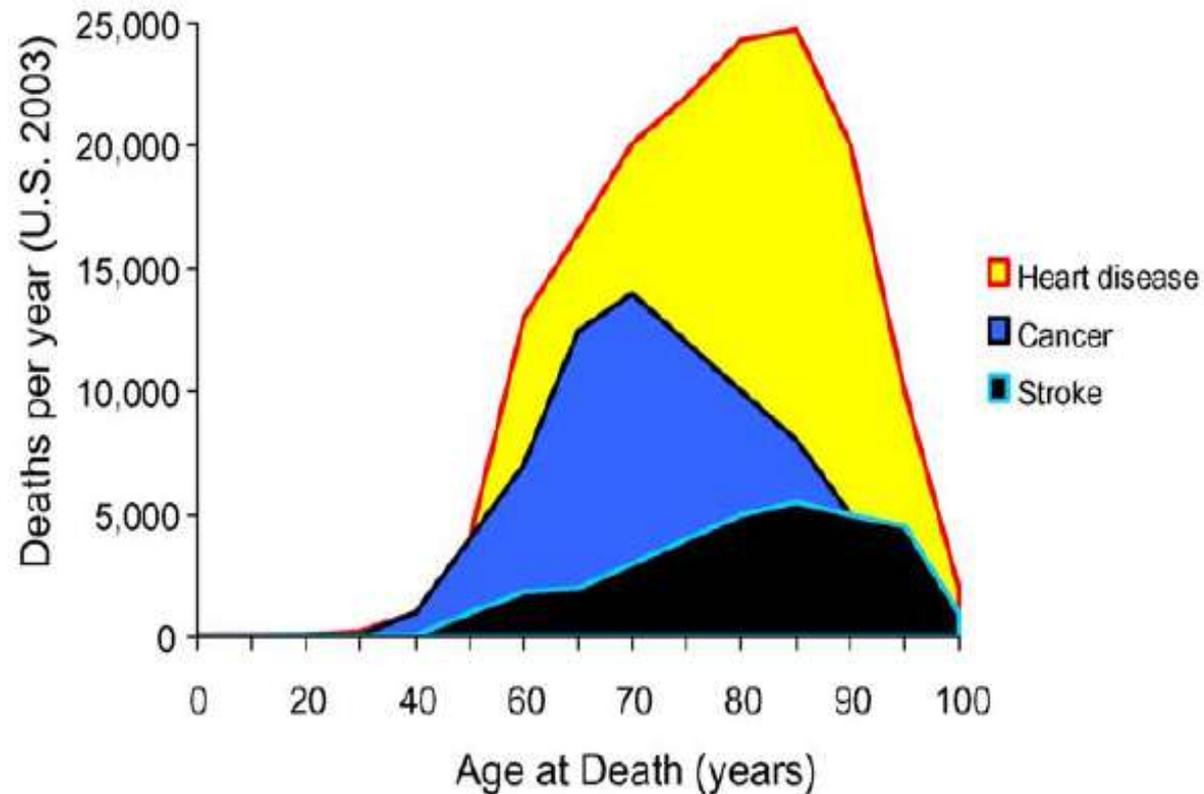


Fig. 1. Age is the greatest risk factor for developing degenerative diseases. The number of deaths from the top three causes in the U.S. for 2003 vs. age for the total population (raw data was obtained from CDC, National Vital Statistics Reports, 2006a).

QUALI OBIETTIVI?

1. VIVERE PIU' A LUNGO?
2. VIVERE PIU' SANI?
3. VIVERE PIU' A LUNGO E PIU' SANI?

SOSTENIBILITA' DEL CONTESTO

Il paradigma sulla Compressione della Morbidità fu presentato come ipotesi nel 1980, sulla base del fatto che la maggior parte delle malattie erano croniche e che insorgevano in età avanzata.

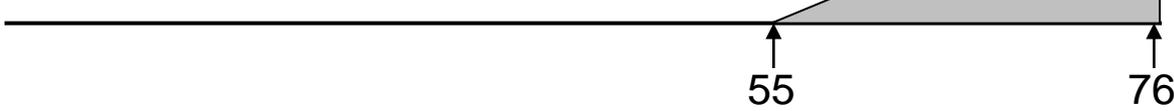
Il paradigma postula che l'insorgenza delle malattie nell'arco di vita può essere ridotta se si riesce a posporre l'inizio delle malattie croniche e se l'entità di tale slittamento può essere superiore all'aumento della speranza di vita.

morbidity

decease

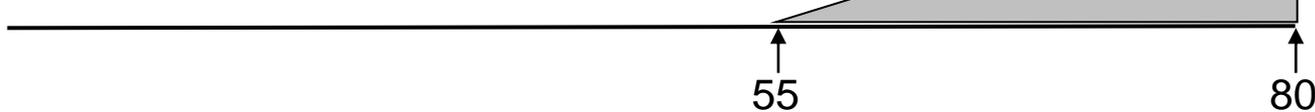


Morbidity actual



Situazione attuale

Extension of life



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

Shift to the right



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

Compression of morbidity



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

Fries JF. Am J Prev Med 2005;29(5S1)

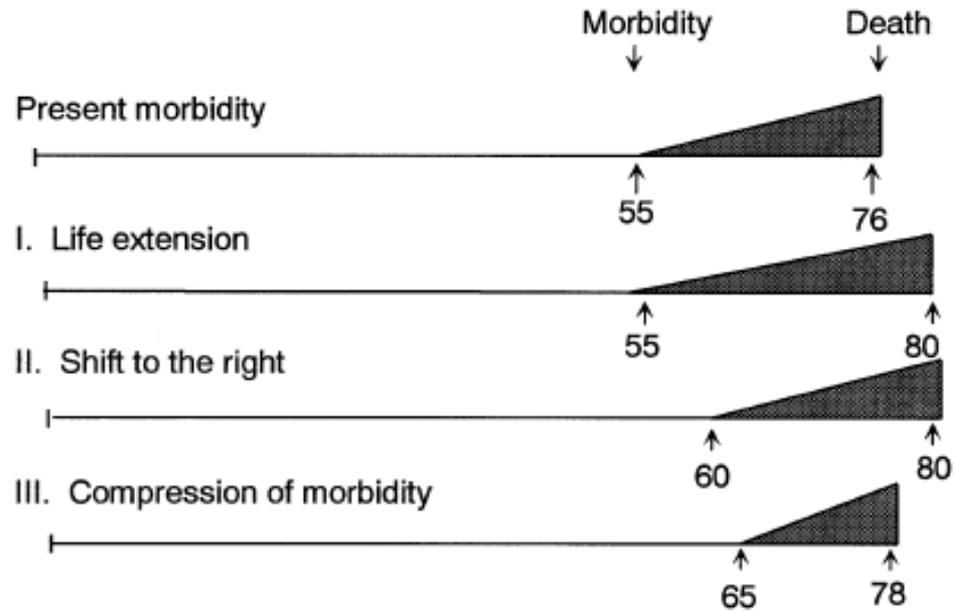


Figure 1. Possible scenarios for future morbidity and longevity. Present lifetime morbidity, portrayed as the shaded area, contrasted with three possible future scenarios. See text for discussion.

AGING, HEALTH RISKS, AND CUMULATIVE DISABILITY

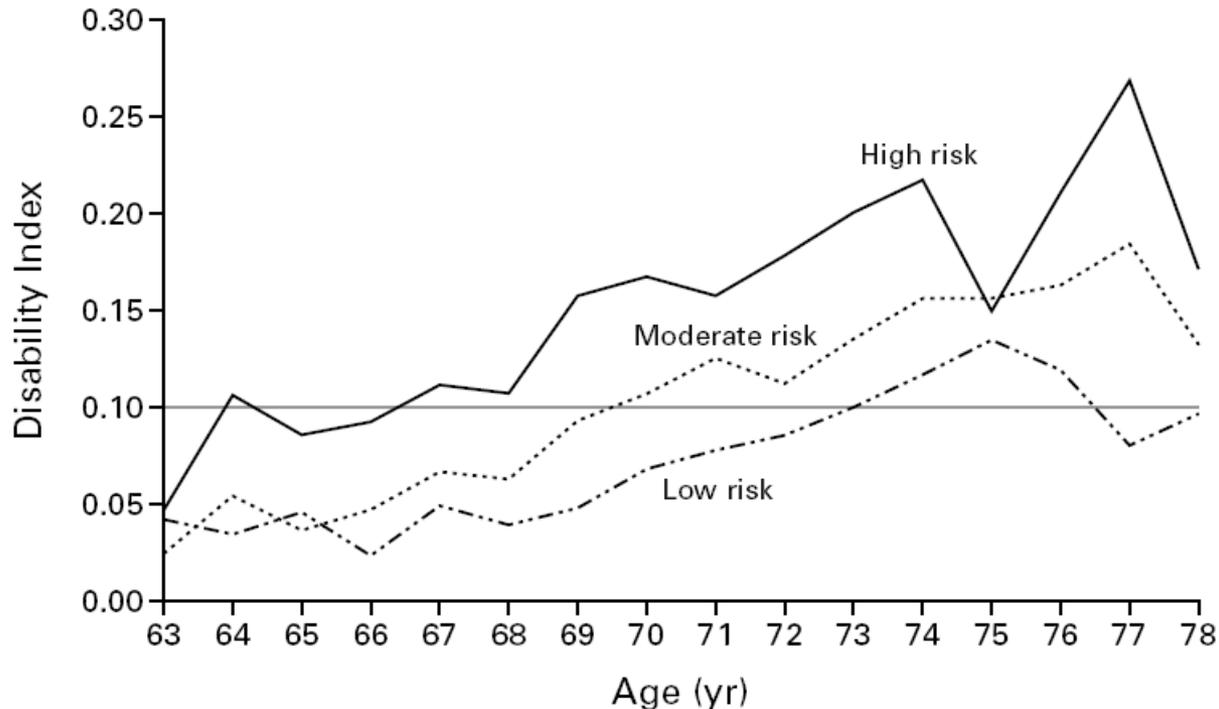


Figure 2. Disability Index According to Age at the Time of the Last Survey and Health Risk in 1986. Average disability increased with age in all three risk groups, but the progression to a given level of disability was postponed by approximately seven years in the low-risk group as compared with the high-risk group. The horizontal line indicates a disability index of 0.1, which corresponds to minimal disability.

Frailty, Heart Disease, and Stroke

The Compression of Morbidity Paradigm

James F. Fries, MD

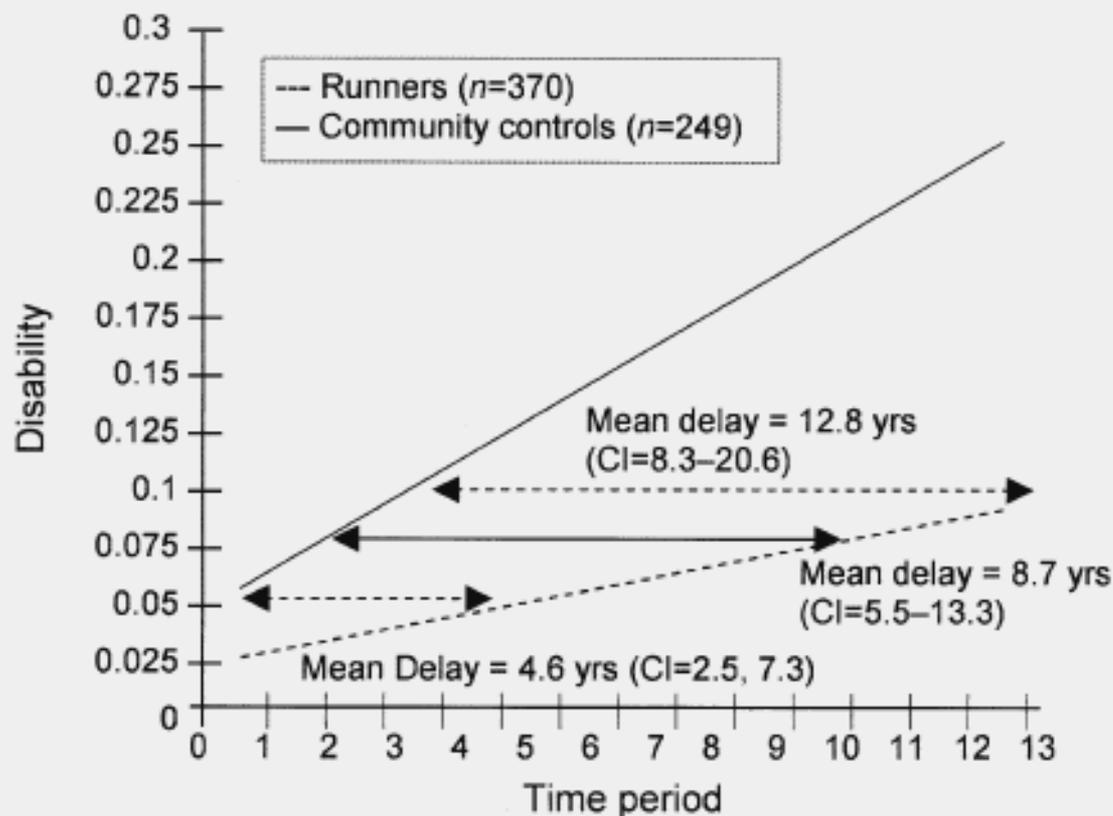
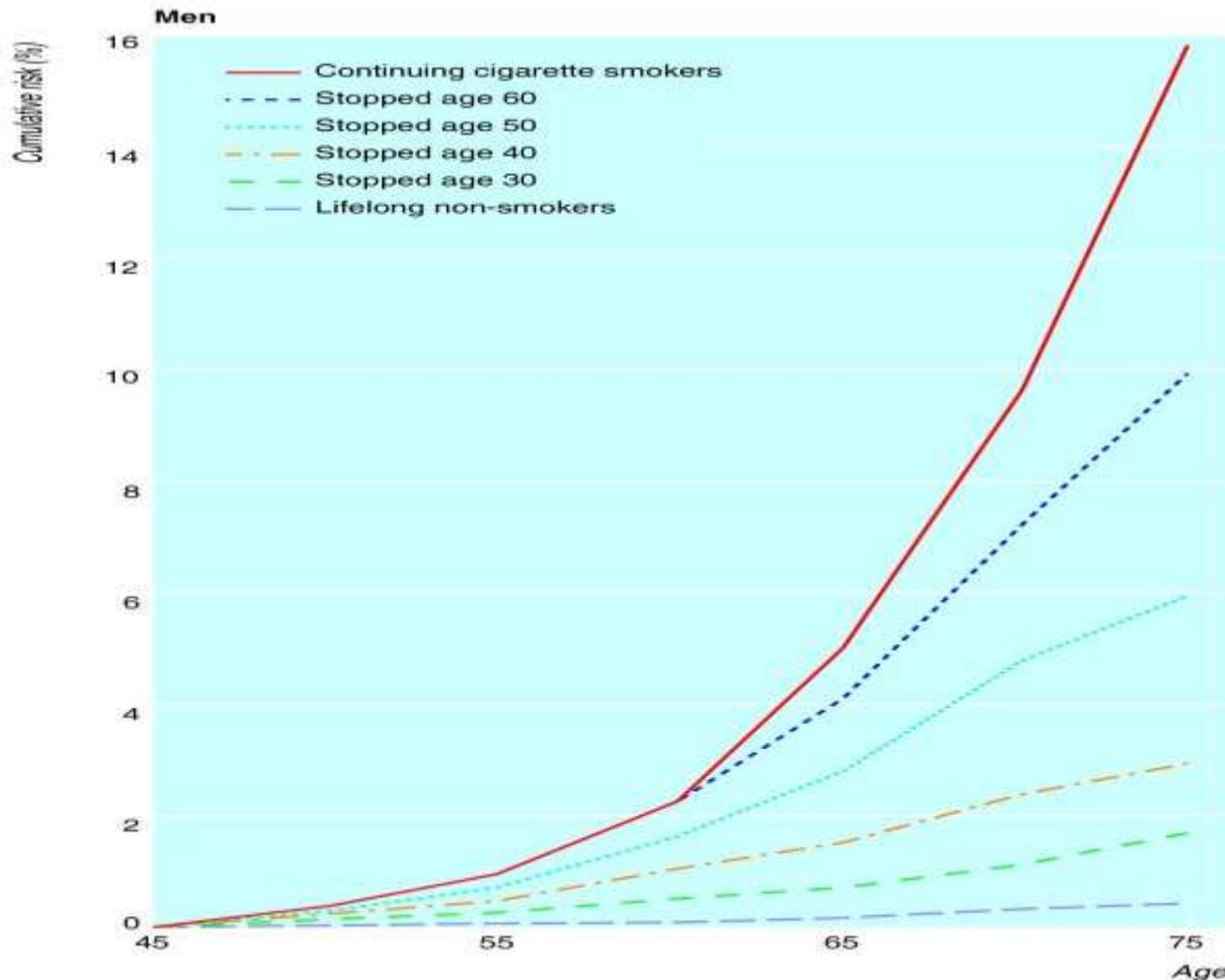


Figure 3. Regression of disability on time period (based on bootstrap). Development of disability over a 13-year period from an average age of 58 in Runner's Club and community control groups, with linear regression lines adjusted for covariates, documenting postponement of disability in the Fitness Club group compared with controls, with differences increasing over time.



**Smoking, smoking cessation, and lung cancer in the UK since 1950:
combination of national statistics with two case-control studies**

Peto R., Deo H., Silcocks P., Withley E., Doll R.

BMJ 2000; 321:323-329 (5 August)

Sostenibilità economica?

Chronic Diseases: Chronic Diseases and Development 3



Tackling of unhealthy diets, physical inactivity, and obesity: health effects and cost-effectiveness

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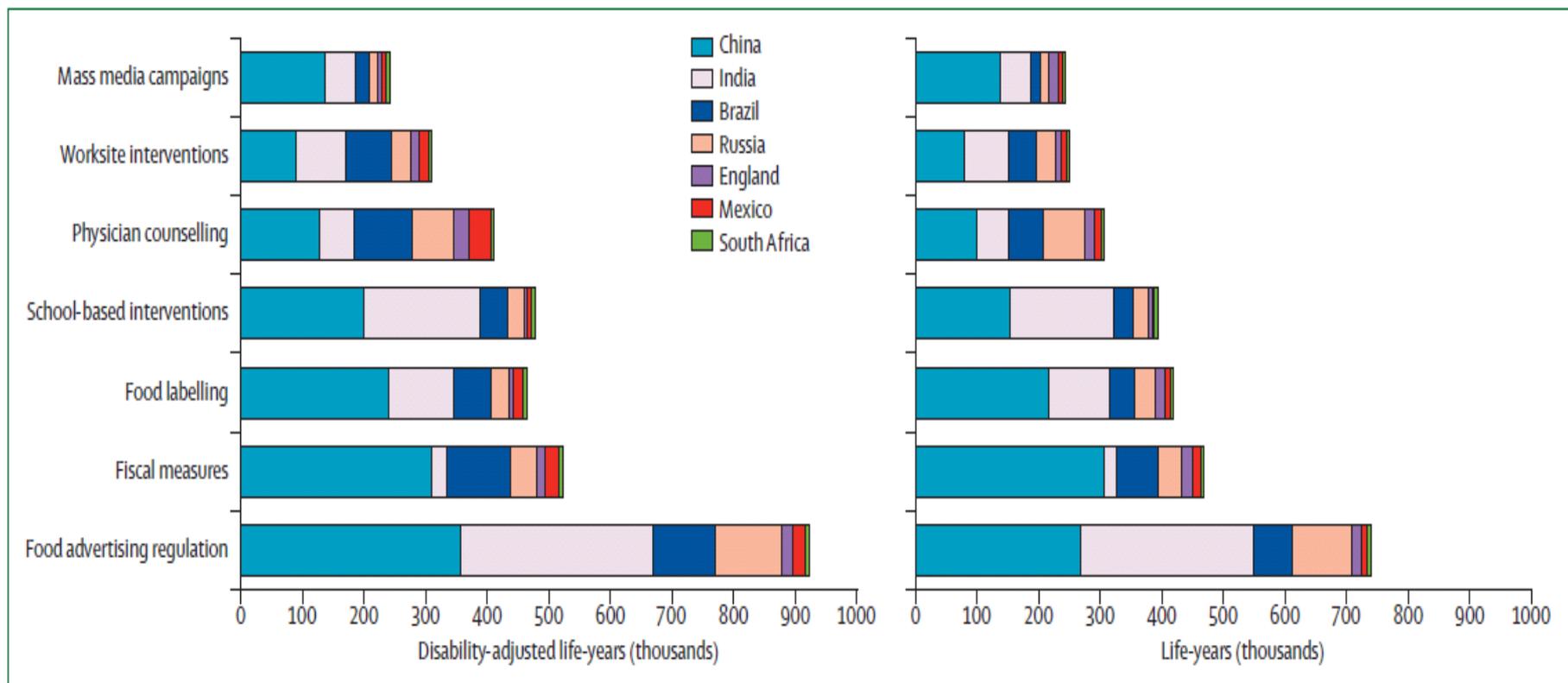
DOI:10.1016/S0140-6736(10)61856-9, and
DOI:10.1016/S0140-6736(10)61891-0

This is the third in a [Series](#) of five papers about chronic diseases

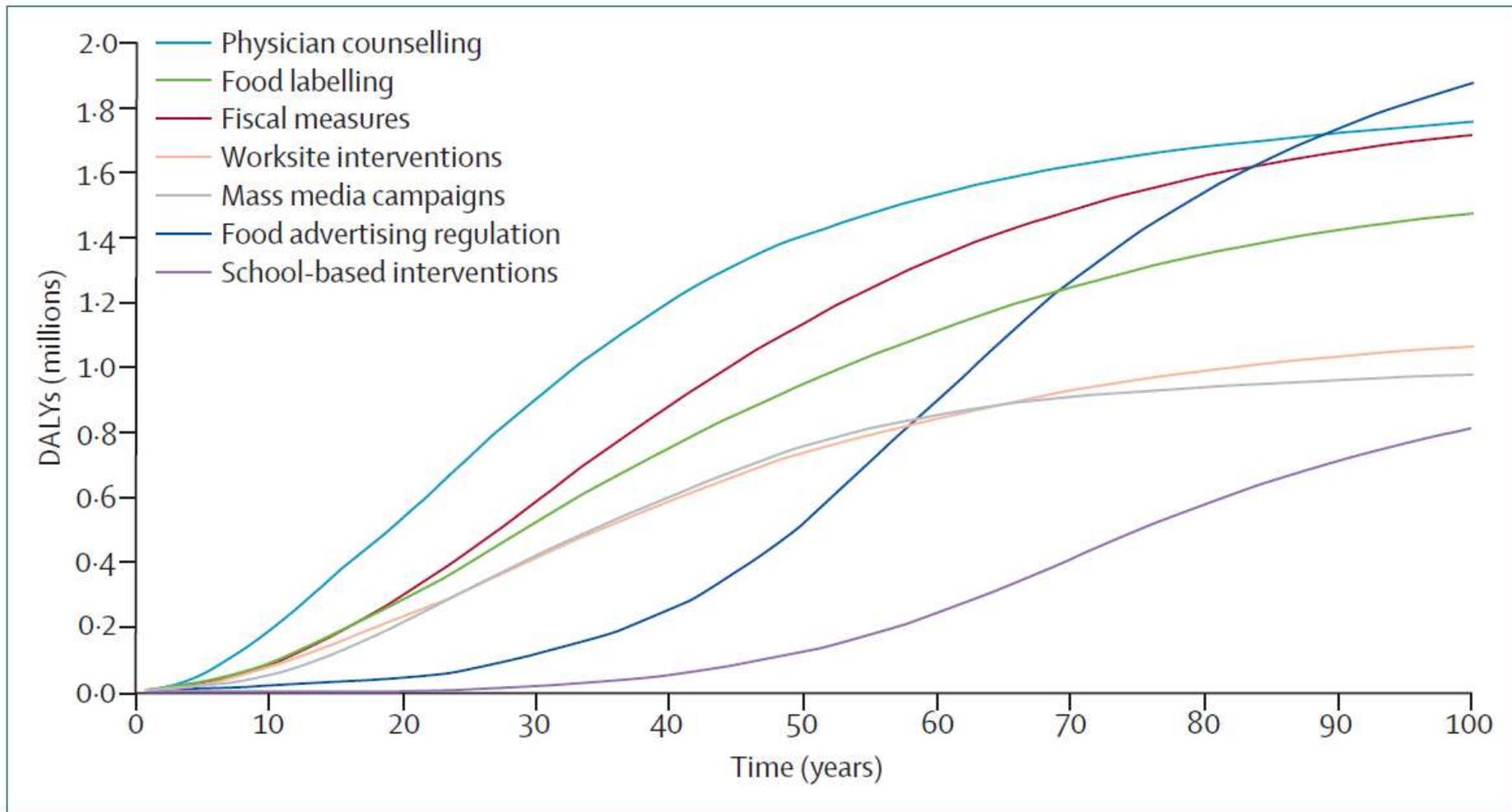
Estimated yearly cost per head (in US\$) of a chronic disease prevention package by intervention and country

	Brazil	China	India	Mexico	Russia	South Africa
Tobacco use—excise tax increase, information and labelling, smoking restrictions, and advertising bans ¹²	0.25	0.14	0.16	0.54	0.49	0.60
Harmful alcohol use—excise tax increase, advertising bans, and restricted access ²⁵	0.15	0.07	0.05	0.24	0.52	0.29
Unhealthy diet and physical inactivity—mass media campaigns, food taxes and subsidies, nutritional information/labelling, and marketing restrictions (this analysis)	0.48	0.43	0.35	0.79	1.18	0.99
High blood pressure and cholesterol						
Reduced dietary salt (mass media campaigns, regulation of food industry) ¹²	0.12	0.05	0.06	0.22	0.16	0.15
Combination drug therapy for high-risk individuals ¹³	1.89	1.02	0.90	2.74	1.73	1.85
Total cost per head of intervention set (excluding any cost synergies or future treatment cost savings)	2.89	1.72	1.52	4.53	4.08	3.88

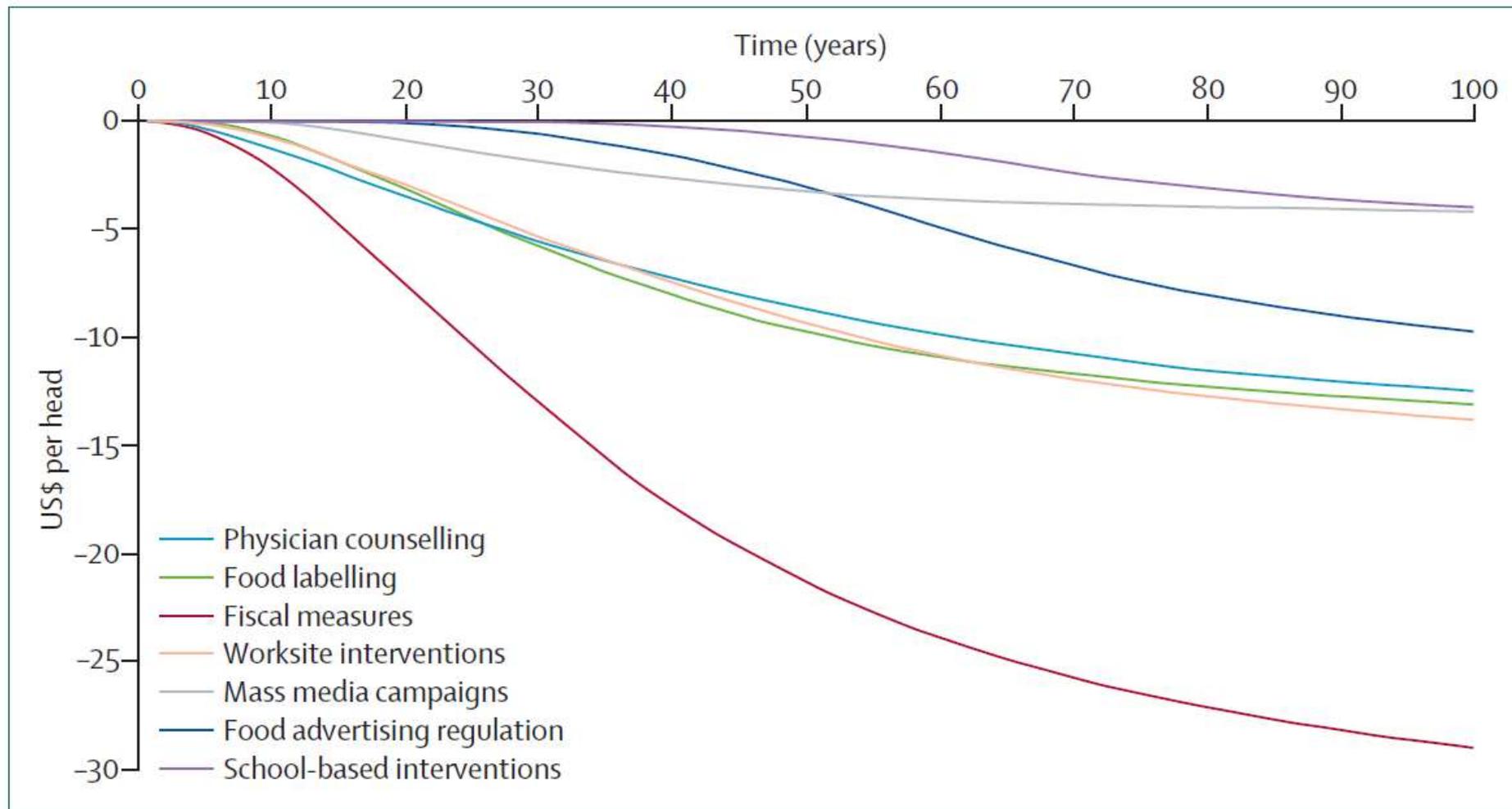
Health outcomes at the population level (average effect per year)



Cumulative disability-adjusted life-years (DALYs) gained over time



Cumulative effect on health expenditure over time (US\$ per head) in Brazil



Screening

**ONCE-ONLY SIGMOIDOSCOPY SCREENING IN COLORECTAL
CANCER SCREENING:
FOLLOW UP FINDINGS
OF THE ITALIAN RANDOMIZED CONTROLLED TRIAL SCORE**

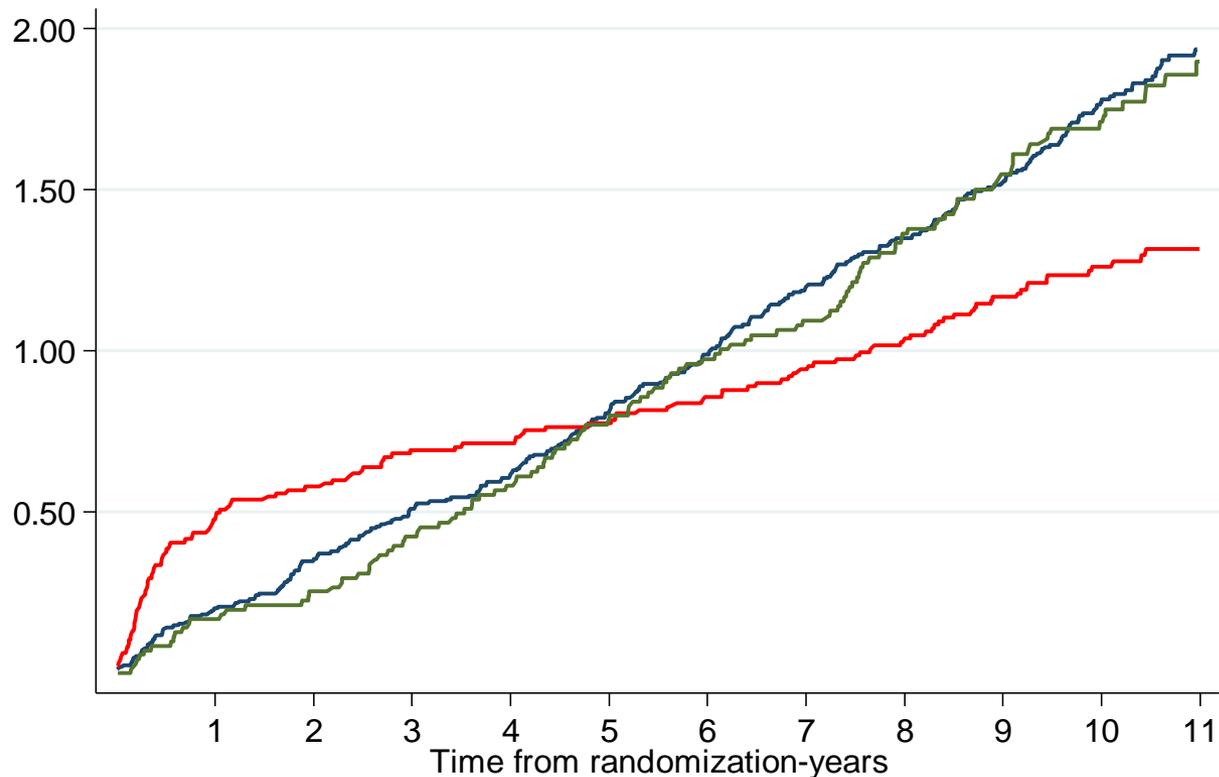
JNCI 2011 Sep 7;103(17):1310-22.

Nereo Segnan, Paola Armaroli, Luigina Bonelli, Mauro Risio, Stefania Sciallero, Marco Zappa, Bruno Andreoni, Arrigo Arrigoni, Luigi Bisanti, Claudia Casella, Cristiano Crosta, Fabio Falcini, Franco Ferrero, Adriano Giacomini, Orietta Giuliani, Alessandra Santarelli, Carmen Beatriz Visioli, Roberto Zanetti, Wendy S Atkin, Carlo Senore; SCORE working group collaborators

Per protocol analysis-Colorectal cancer

INCIDENCE, ALL SITES

Nelson Aalen Cumulative Hazard (%) by time from randomization



RR (95%CI) =
0.69 (0.56-0.86)

Control Screened Not screened

Cumulative Events by years from randomization						
	≤2	≤4	≤6	≤8	≤10	>10
Control	60	104	165	223	286	306
Not Screened	18	41	68	94	116	125
Screened	57	70	84	101	121	126

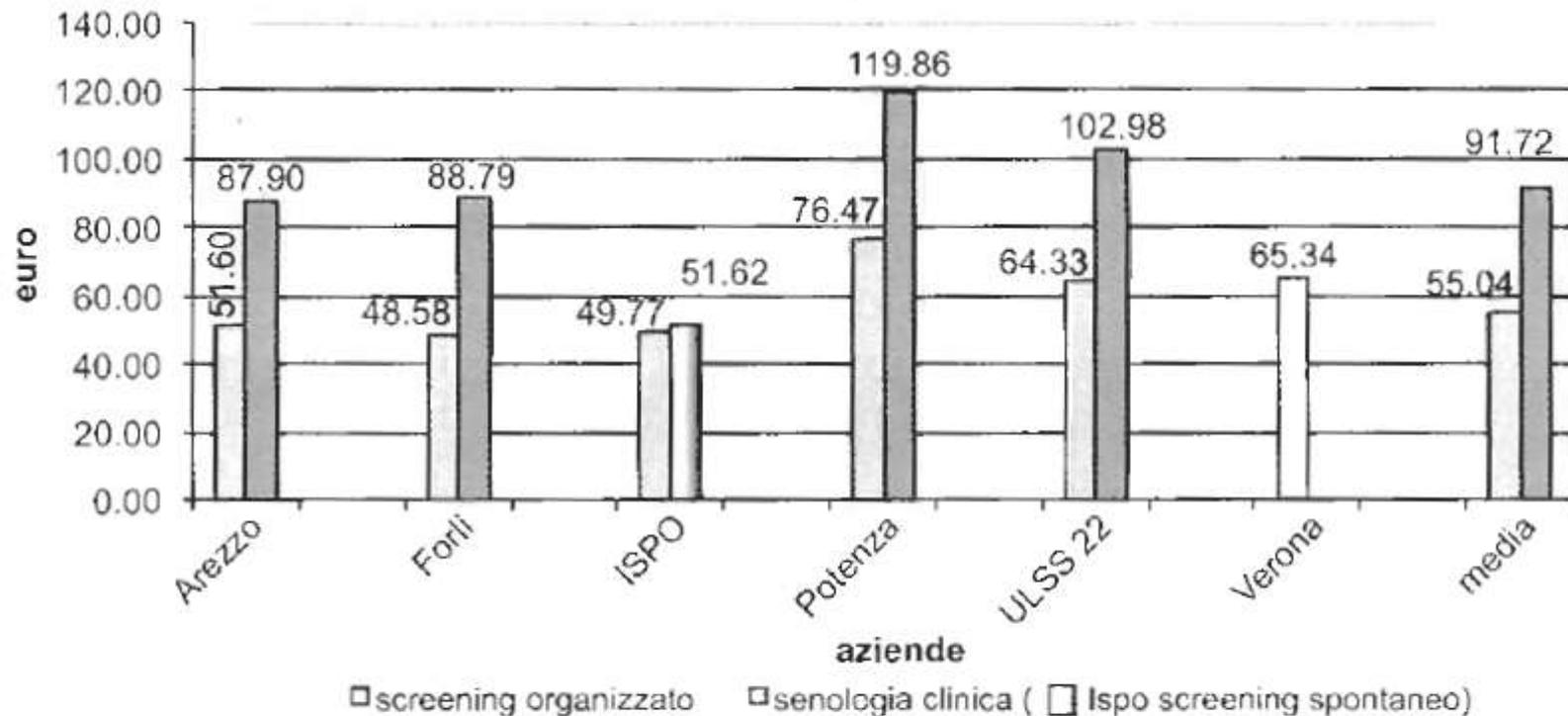
Appropriatezza ed efficienza

Percorso di screening organizzato

Azienda	I livello	II livello	Totale	Numero medio
Arezzo	28,30	4,24	51,60	13.131
Forlì	28,56	13,35	48,58	7.019
Ispo, FI	31,48	6,04	50,73	38.359
Potenza	49,54	8,23	76,47	3.477
Bussolengo	40,90	7,40	64,33	7.552
Verona	31,89	10,54	65,34	14.374

Tabella modificata da: Mantellini P., Lippi G. **I costi dello screening**. ISPO 2011

Confronto tra screening spontaneo e organizzato



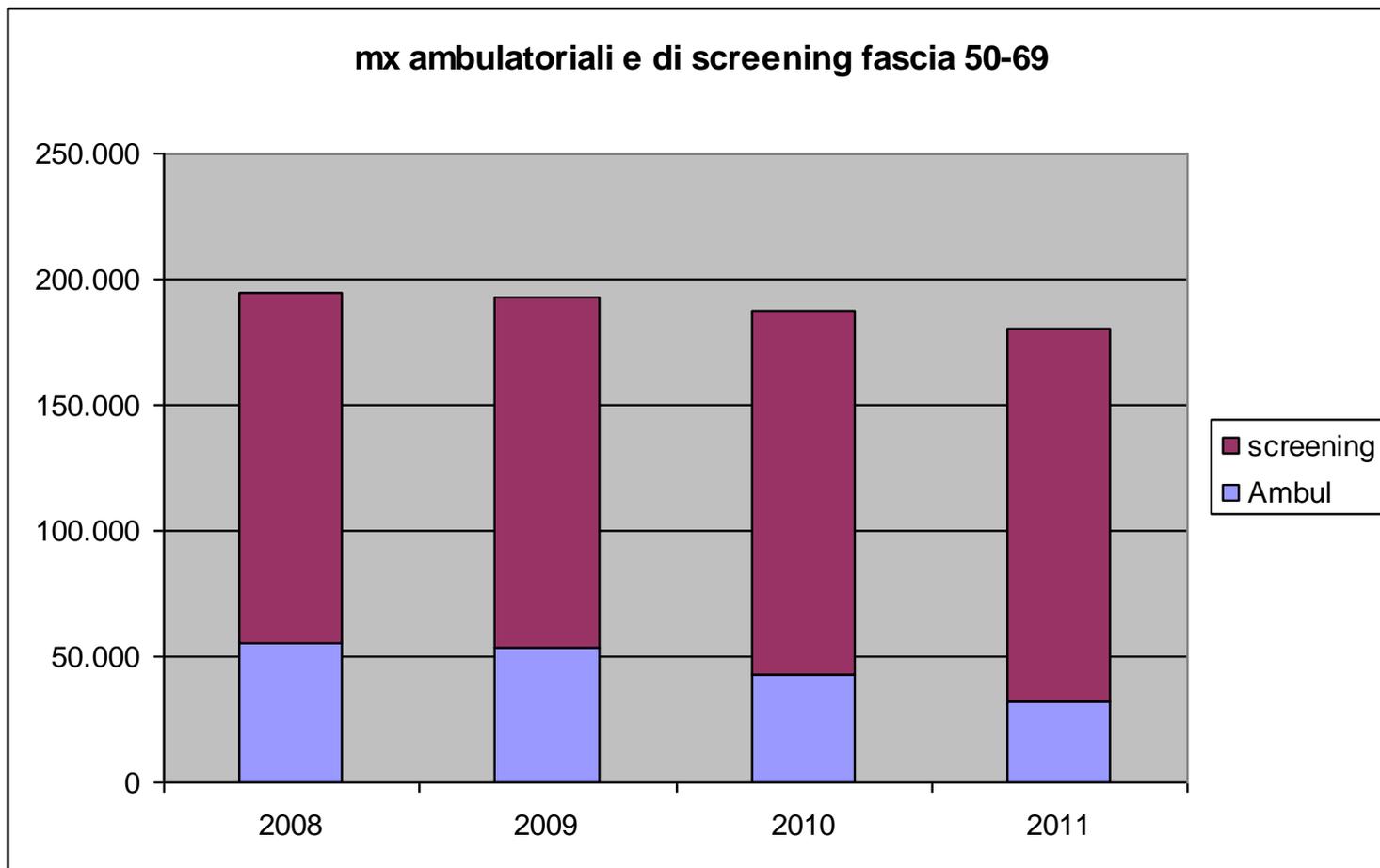
Costi di percorso nelle aziende partecipanti. Confronto tra screening organizzato, senologia clinica e screening spontaneo (Ispo, Firenze). Nel biennio considerato sono state registrate 83.911 donne rispondenti allo screening organizzato e 31.754 primi accessi alla senologia clinica e allo screening spontaneo.

Tabella 3. Riconversione nello screening organizzato

	fascia d'età	mx totali	al netto delle "non di prevenzione" (assumendo circa - 30%)	Riduzione del 50% (v. nota sulla riga)	Spesa screening (C)
baseline donne screenate 2010 Nota: previste ca. 175000 screenate nel 2010	in età 45-74	174701			€ 8.875.000,00
MAMMOGRAFIA BILATERALE (2 proiezioni)	in età 45-49	20540	14378		€ 730.000,00
	in età 50-69	42727	29908		€ 1.519.000,00
	in età 70-74	12064	8444		€ 429.000,00
ECOGRAFIA DELLA MAMMELLA Bilaterale	in età 45-49	12655	8858	4429	€ 225.000,00
	in età 50-69	21072	14750	7375	€ 375.000,00
	in età 70-74	3839	2687	1343,5	€ 68.000,00
MAMMOGRAFIA ED ECOGRAFIA BILATERALE	in età 45-49	6523	4566		€ 232.000,00
	in età 50-69	13109	9176		€ 466.000,00
	in età 70-74	2322	1625		€ 83.000,00
					€ 4.127.000,00

€ 4.127.000,00

Riconversione Regione Piemonte – screening mammografico



	Ambul	screening	totali	% screening
2008	55.545	139.432	194.977	71,51%
2009	53.171	139.628	192.799	72,42%
2010	42.727	144.849	187.576	77,22%
2011	31.839	148.524	180.363	82,35%

NUOVE TECNOLOGIE

Rapporto HTA su test HPV come test primario di screening del carcinoma della cervice uterina

Gruppo di lavoro

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Annibale Biggeri, Università di Firenze

Massimo Confortini, ISPO Firenze

Paolo Giorgi Rossi, ASP Lazio

Carlo Naldoni, Regione Emilia Romagna

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Mario Sideri, IEO Milano

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Claudio Angeloni, GISCi – Gruppo Italiano Screening del Cervicocarcinoma

Anna Sapino, SIAPEC – Società Italiana Anatomia Patologica e Citopatologia diagnostica

Patrizia Maioli, SICi – Società Italiana di Citologia

Bruno Ghiringhello, SICPCV – Società Italiana di Colposcopia e Patologia Cervico-Vaginale

Vicki Rabino, SICPCV – Società Italiana di Colposcopia e Patologia Cervico-Vaginale

Raffaella Ribaldone, SIGO – Società Italiana di Ginecologia e Ostetricia

Antonio Frega, AGUI – Associazione Ginecologi Universitari Italiani

Luisa Barzon, SIV – Società Italiana di Virologia

Ettore Capoluongo, SIBIOC – Società Italiana di Biochimica Molecolare Clinica

Davide Perego, Centro studi Assobiomedica

Franco Napoletano, Federazione Europea delle Associazioni di Volontariato Ospedaliero e Socio-sanitario

Carlo Sotis, Cattedra di Diritto Penale, Università di Macerata

Costi stimati (trattamento incluso)

	Screening con HPV ogni 5 anni	Screening citologico ogni 3 anni
Costo di un round di screening	€ 47.5 (primo round con HPV) € 39,6 (round successivi)	€ 38,4
Costo dello screening 34-64 aa	€ 337.9	€ 442.6

Con prezzo di € **12.45** (IVA inclusa) per test HPV

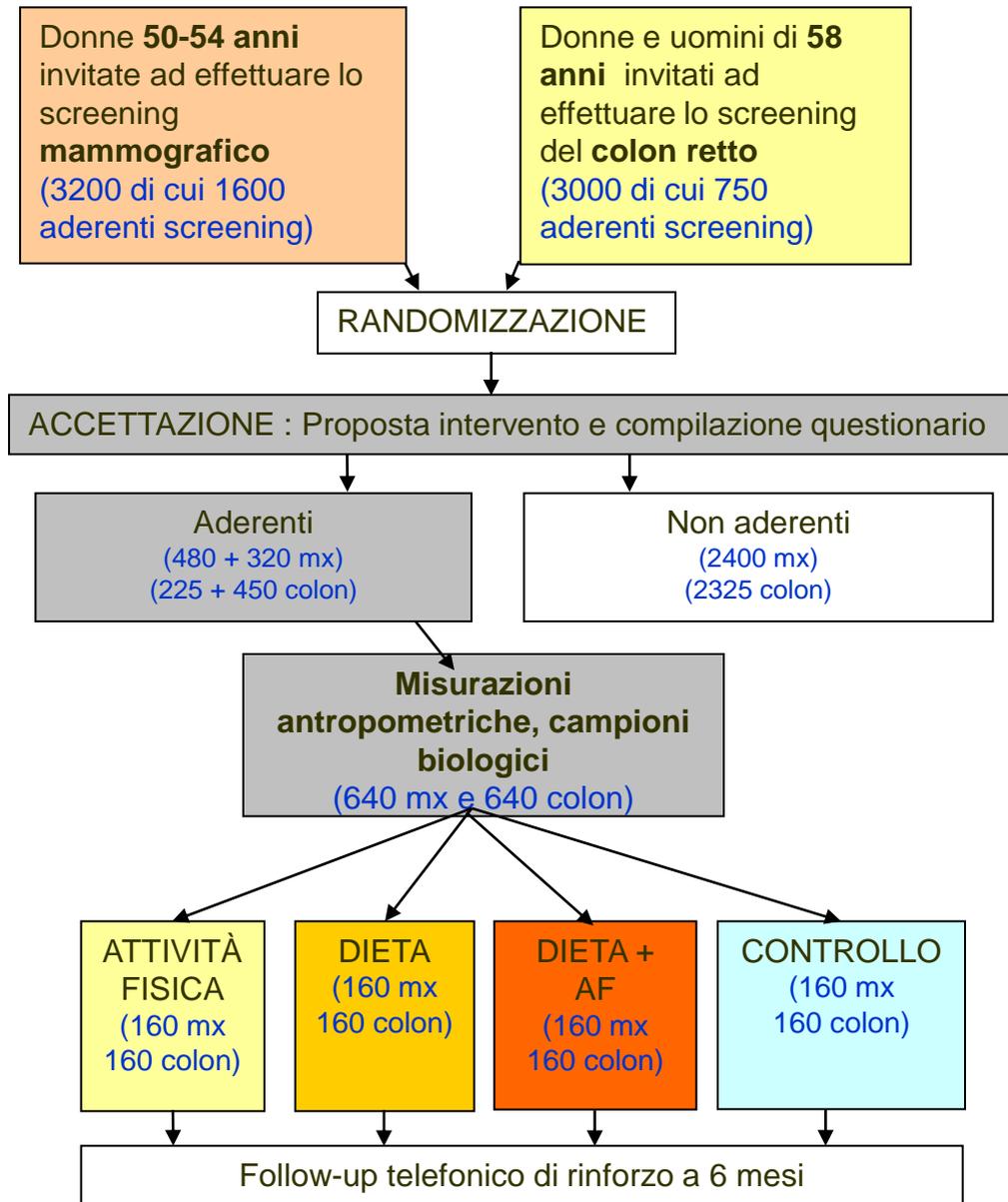
Costi stimati (trattamento incluso)

	Screening con HPV ogni 5 anni	Screening citologico ogni 3 anni
Costo di un round di screening	€ 46.3 (primo round con HPV) € 40.7 (round successivi)	€ 38,4
Costo dello screening 34-64 aa	€ 290.3	€ 442.6

Con prezzo di € **6** (IVA inclusa) per test HPV

Opportunità: stili di vita e programmi di screening del cancro

- **In Piemonte nei programmi di screening:**
 - tra il 50 % e il 65% delle donne tra 50 e 69 accedono al programma di screening mammografico (estensione 76%)
 - tra il 30% e il 50% delle donne tra 25 e 65 anni accedono al programma di screening per il carcinoma del collo dell'utero (estensione 92%)
 - tra il 30 e il 40% degli uomini e delle donne tra 58 e 69 anni accedono al programma di screening per il CCR (estensione 30%)



Follow-up a 1 anno (questionario, misurazioni antropometriche, prelievo)

CONCLUSIONI

- Il paradigma della “Compressione della morbidità” si presenta come un approccio sostenibile per migliorare lo stato di salute della popolazione e per ridurre o non incrementare la spesa sanitaria.
- La appropriatezza e la efficienza della erogazione delle prestazioni, a partire da quelli di prevenzione e diagnosi precoce, contribuiscono a controllare e mantenere la spesa entro limiti prefissati.
- La introduzione di nuove tecnologie e la sostituzione di tecnologie sanitarie obsolete, deve essere fondata su valutazioni di HTA, che sulla base di prove di efficacia comparativa e di costo-efficacia, a parità di risultato, adottati i percorsi diagnostico-terapeutici meno costosi.

CONCLUSIONI

- L'investimento su interventi di prevenzione per evitare/o ridurre l'insorgenza delle malattie e la disabilità, appare non procrastinabile se si vuole mantenere il sistema assistenziale universalistico e l'equità di accesso alle cure
- I vincoli economici sono relativi alla capacità di investimento: nella Regione Piemonte investimenti integrati sugli stili di vita possono essere intorno ai 6 euro anno per abitante (27 milioni di euro) a fronte di un cost saving dello stesso ordine di grandezza nei prossimi dieci anni e verosimilmente superiore negli anni successivi
- Gli interventi di prevenzione individuale e collettiva devono essere integrati e coinvolgere tutti i settori della società e competenze professionali.

COMPRESSIONE
DELLA
MORBIDITA'?

Summary of coverage, main effects, and costs of selected preventive interventions – part 1

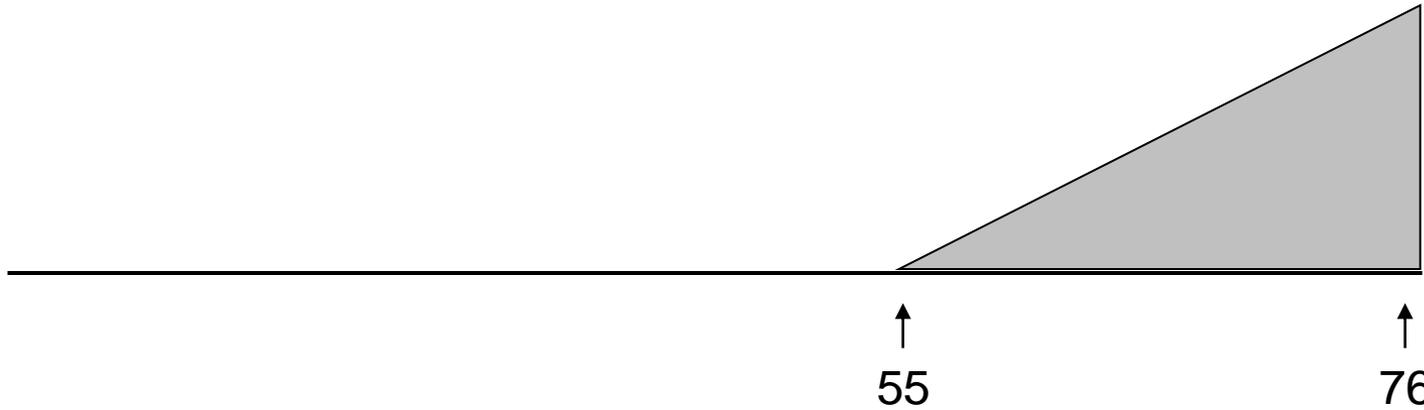
	School-based intervention	Worksite interventions	Mass media campaigns	Fiscal measures	Physician counselling	Food advertising regulation	Food labelling
Target population							
Target group	School children	Large employers	..	..	BMI ≥ 25 kg/m ² or high cholesterol/SBP, diabetes	..	Label users
Target age range (years)	8-9	18-65	≥ 18	≥ 0	22-65	2-18	≥ 0
Target as % of population	1.7-4.2%	3.4-15.7%	61.1-80.4%	100%	1.1-14.7%	19.3-36.5%	100%

Morbidity attuale

morbidity

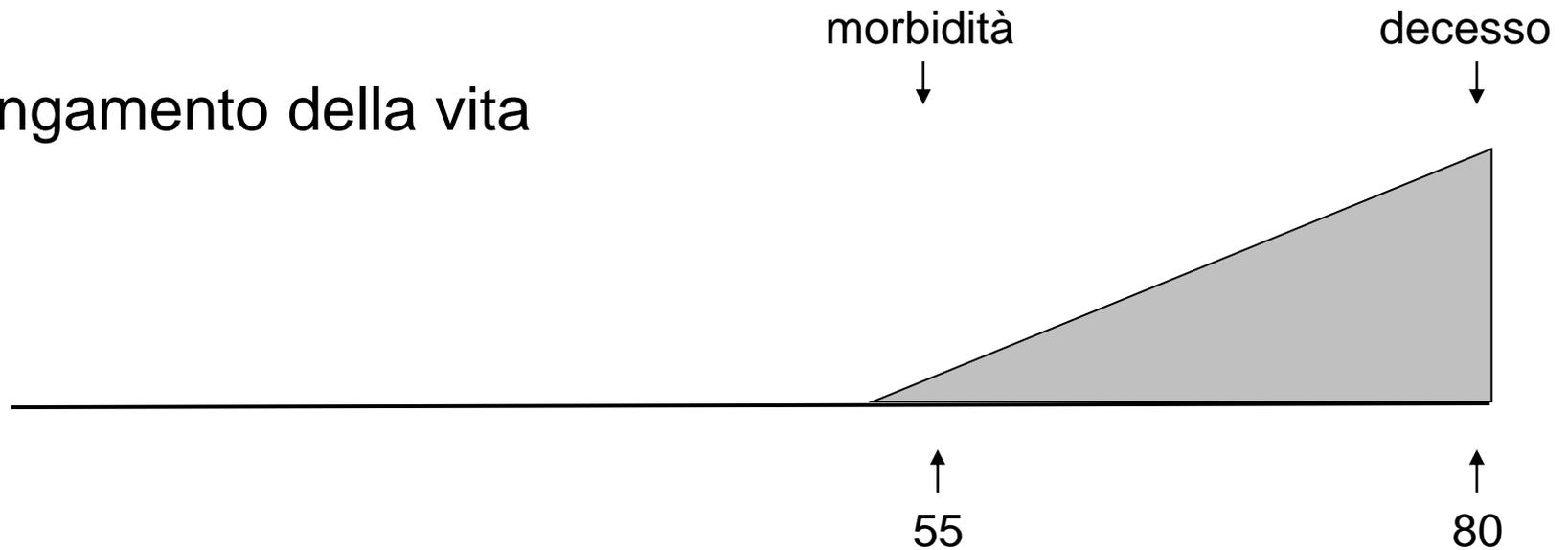


decesso



Situazione attuale

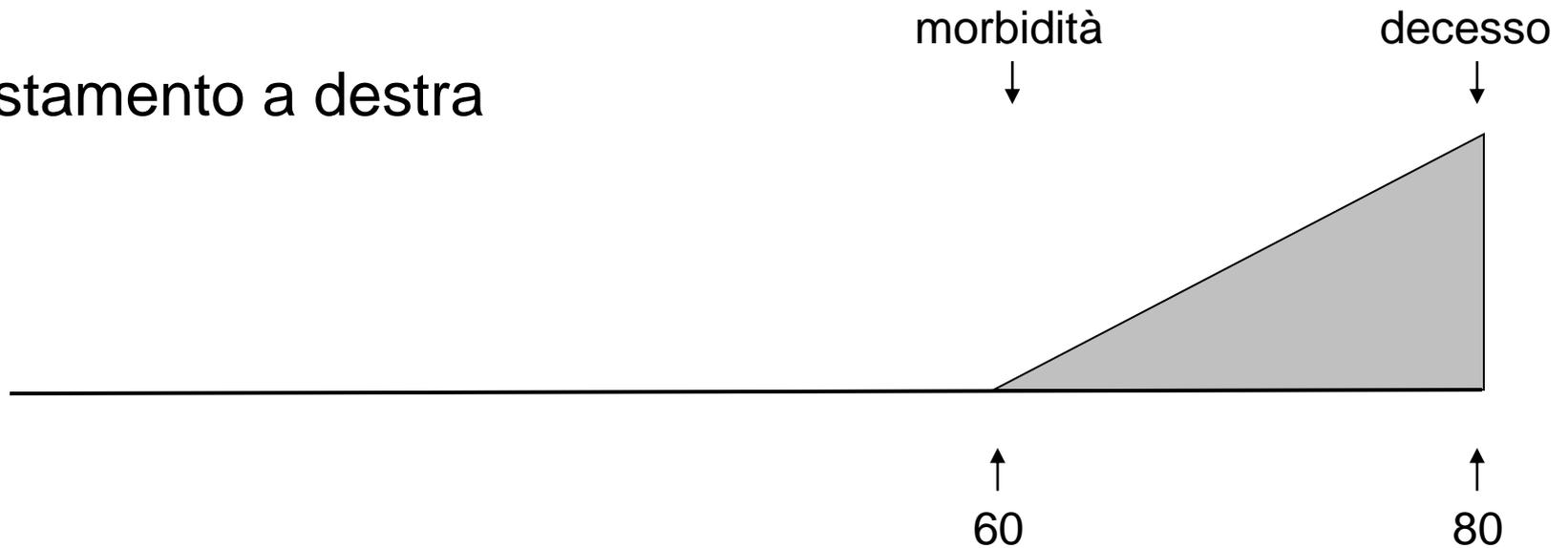
Allungamento della vita



Scenario 1:

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

Spostamento a destra



Scenario 2:

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

Compressione della
morbidity



Scenario 3:

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

Summary of coverage, main effects, and costs of selected preventive interventions – part 2

	School-based intervention	Worksite interventions	Mass media campaigns	Fiscal measures	Physician counselling	Food advertising regulation	Food labelling
Effect sizes							
Fibre consumption (g per day)	37.6	45.6	18.4	3.6-10.4	..	..	9.87
Fat (% total energy)	-1.64%	-2.2%	..	-0.4% to -0.6%	-1.6%	..	-0.36%
Physical activity (% of people who are active)	..	11.9%	2.4%	..	..	..	..
BMI (kg/m ²)	-0.2	-0.5	..	..	-0.83	-0.03 to -0.78	-0.02
Cholesterol (mmol/L)	..	..	..	..	-0.12	..	..
SBP (mm Hg)	..	..	..	..	-2.3	..	..

BMI=body-mass index. SBP=systolic blood pressure. *Cost per head is less than US\$0.01.

Cecchini M. Lancet 2010; 376: 1775–84

Summary of coverage, main effects, and costs of selected preventive interventions – part 3

	School-based intervention	Worksite interventions	Mass media campaigns	Fiscal measures	Physician counselling	Food advertising regulation	Food labelling
Cost per head (2005 US\$)							
Brazil	0.82	0.82	0.27	0.01	1.71	0.04	0.15
China	0.53	0.20	0.37	*	0.47	*	0.05
England	1.41	5.48	2.32	0.11	10.12	0.30	1.05
India	0.73	0.17	0.29	*	0.20	*	0.05
Mexico	1.22	1.70	0.45	0.02	4.40	0.09	0.23
Russia	0.51	0.86	0.80	0.02	2.70	0.13	0.22
South Africa	0.99	0.40	0.67	0.02	1.05	0.08	0.22

BMI=body-mass index. SBP=systolic blood pressure. *Cost per head is less than US\$0.01.

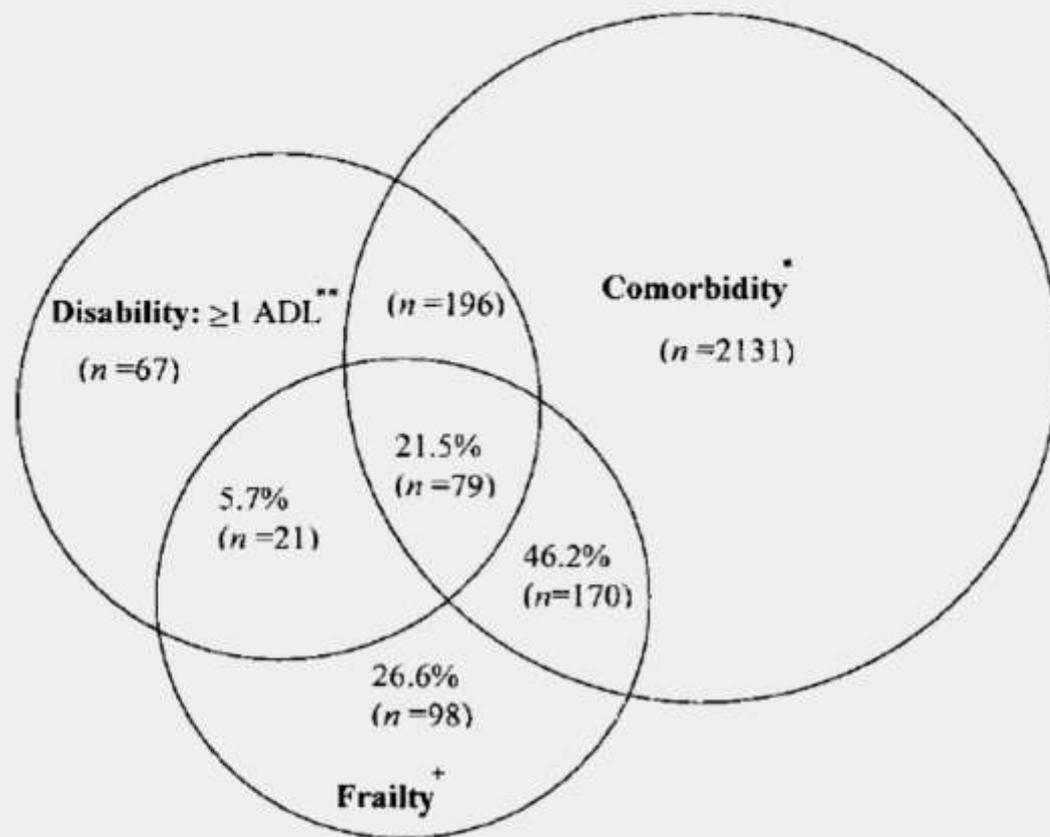
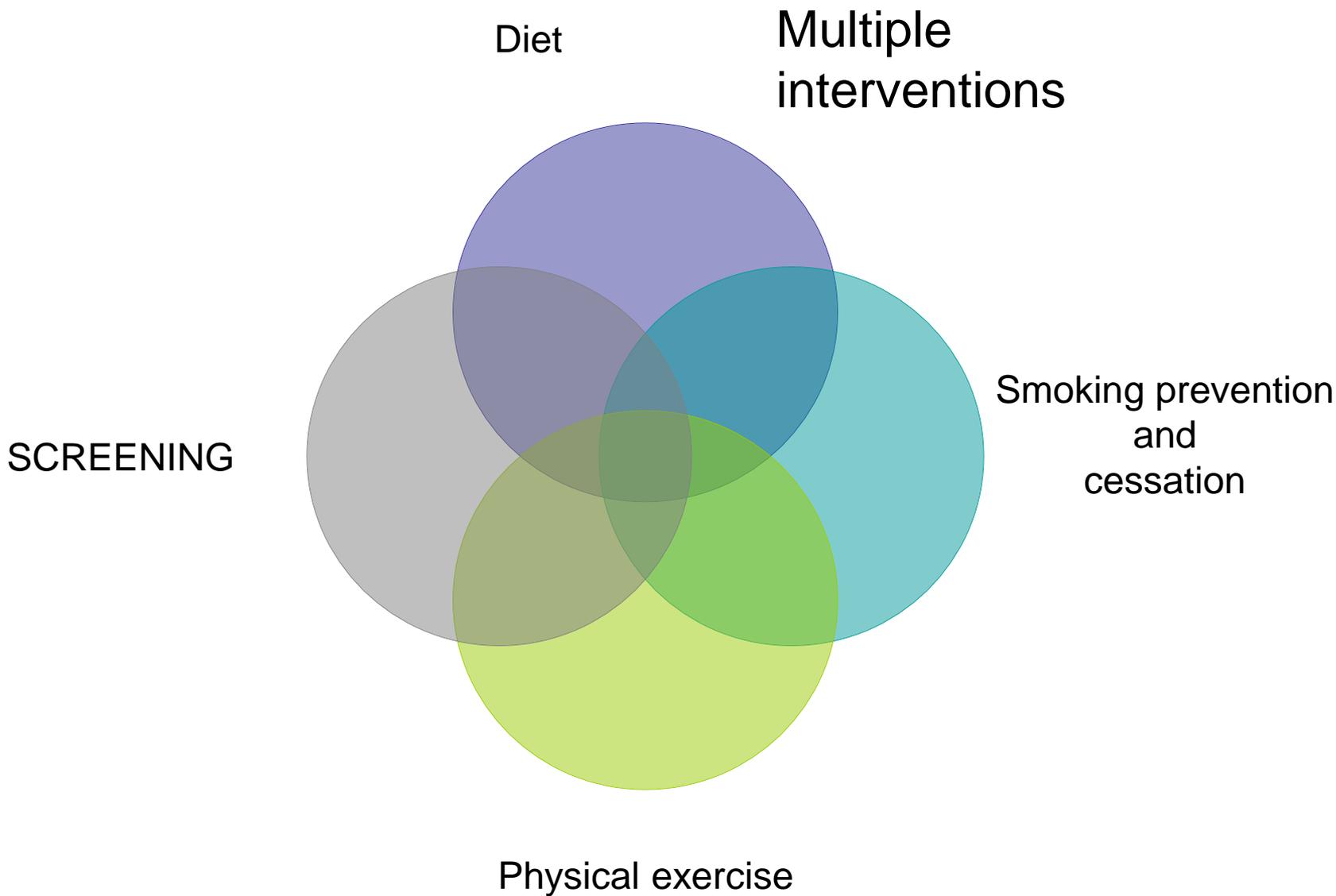
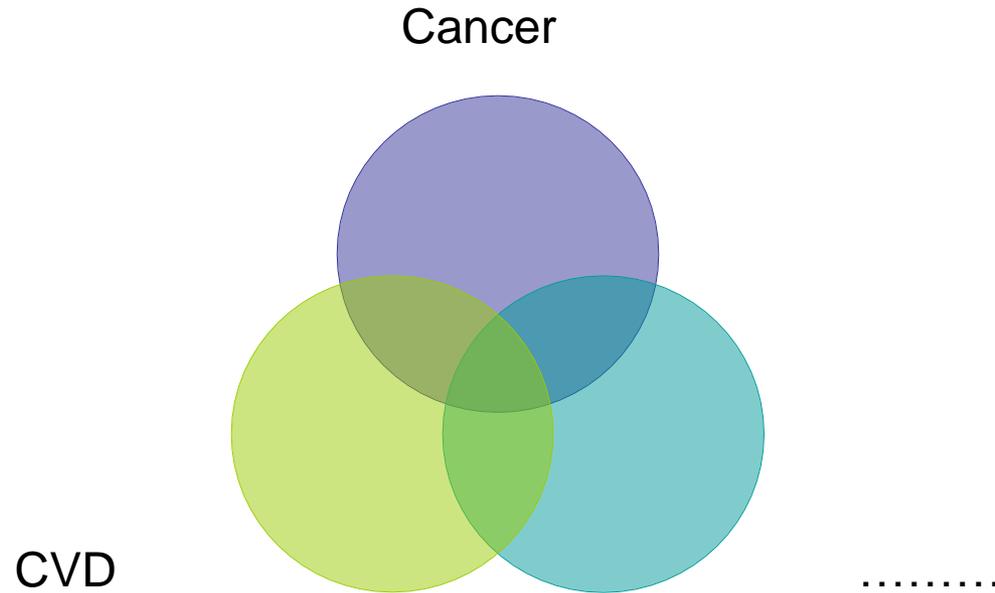


Figure 1. Prevalences—and overlaps—of comorbidity, disability, and frailty among community-dwelling men and women 65 years and older participating in the Cardiovascular Health Study (Ref. 23, reprinted with permission). Percents listed indicate the proportion among those who were frail ($n = 368$), who had comorbidity and/or disability, or neither. Total represented: 2762 participants who had comorbidity and/or disability and/or frailty. ⁺ $n = 368$ frail participants overall. ^{*} $n = 2576$ overall with 2 or more of the following 9 diseases: myocardial infarction, angina, congestive heart failure, claudication, arthritis, cancer, diabetes, hypertension, chronic obstructive pulmonary disease. Of these, 249 (total) were also frail. ^{**} $n = 363$ overall with an activity of daily living disability; of these, 100 (total) were also frail.



Multiple outcomes



PHYSICAL ACTIVITY, AND THE RISK OF CANCER

In the judgement of the Panel, physical activity¹ modifies the risk of the following cancers. Judgements are graded according to the strength of the evidence.

	DECREASES RISK	INCREASES RISK
Convincing	Colon ²	
Probable	Breast (postmenopause) Endometrium	
Limited — suggestive	Lung Pancreas Breast (premenopause)	
Substantial effect on risk unlikely	None identified	

- 1 Physical activity of all types: occupational, household, transport, and recreational.
- 2 Much of the evidence reviewed grouped colon cancer and rectal cancer together as 'colorectal' cancer. *The Panel judges that the evidence is stronger for colon than for rectum.*

La prevenzione dovrebbe essere attuata
in un contesto unico
dove interventi di prevenzione
individuale, collettiva e ambientali siano
strettamente legati
poichè esposizioni a fattori di rischio
esogeni ed endogeni agiscono
simultaneamente sullo (stesso) individuo.

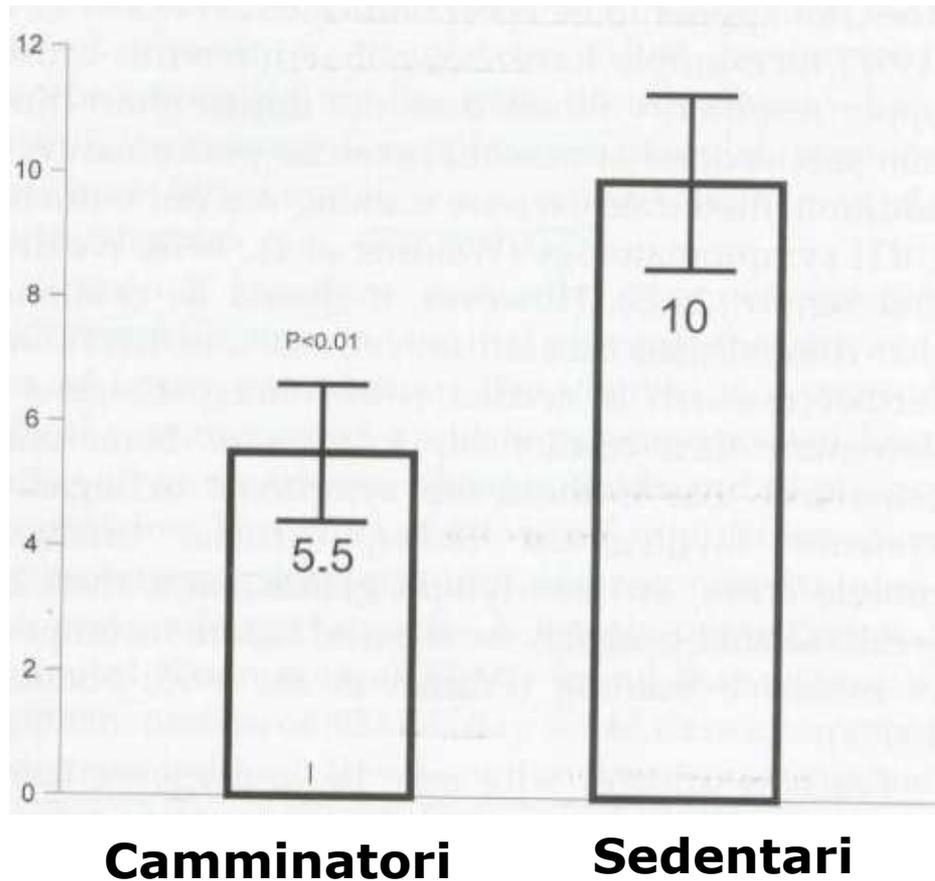
- Un'intervento di prevenzione va collocato in un contesto di occorrenza di eventi competitivi rispetto all'evento che si vuole prevenire.

Table 2
Distribution of the six most prevalent comorbid conditions among 363 cancer patients

Tumour sites	Total		Males		Females	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Arthrosis-arthritis	112	30.9	26	15.5	86	44.1
Hypertension	105	28.9	41	24.4	64	32.8
Digestive diseases	84	23.1	38	22.6	46	23.6
Cardiac diseases	76	20.9	33	19.6	43	22.1
Vascular diseases	69	19.0	16	9.5	53	27.2
Genitourinary diseases	55	15.2	32	19.0	23	11.8

- Un'intervento di prevenzione va collocato in un contesto di occorrenza di eventi competitivi rispetto all'evento che si vuole prevenire.

**Giorni di
malattia**



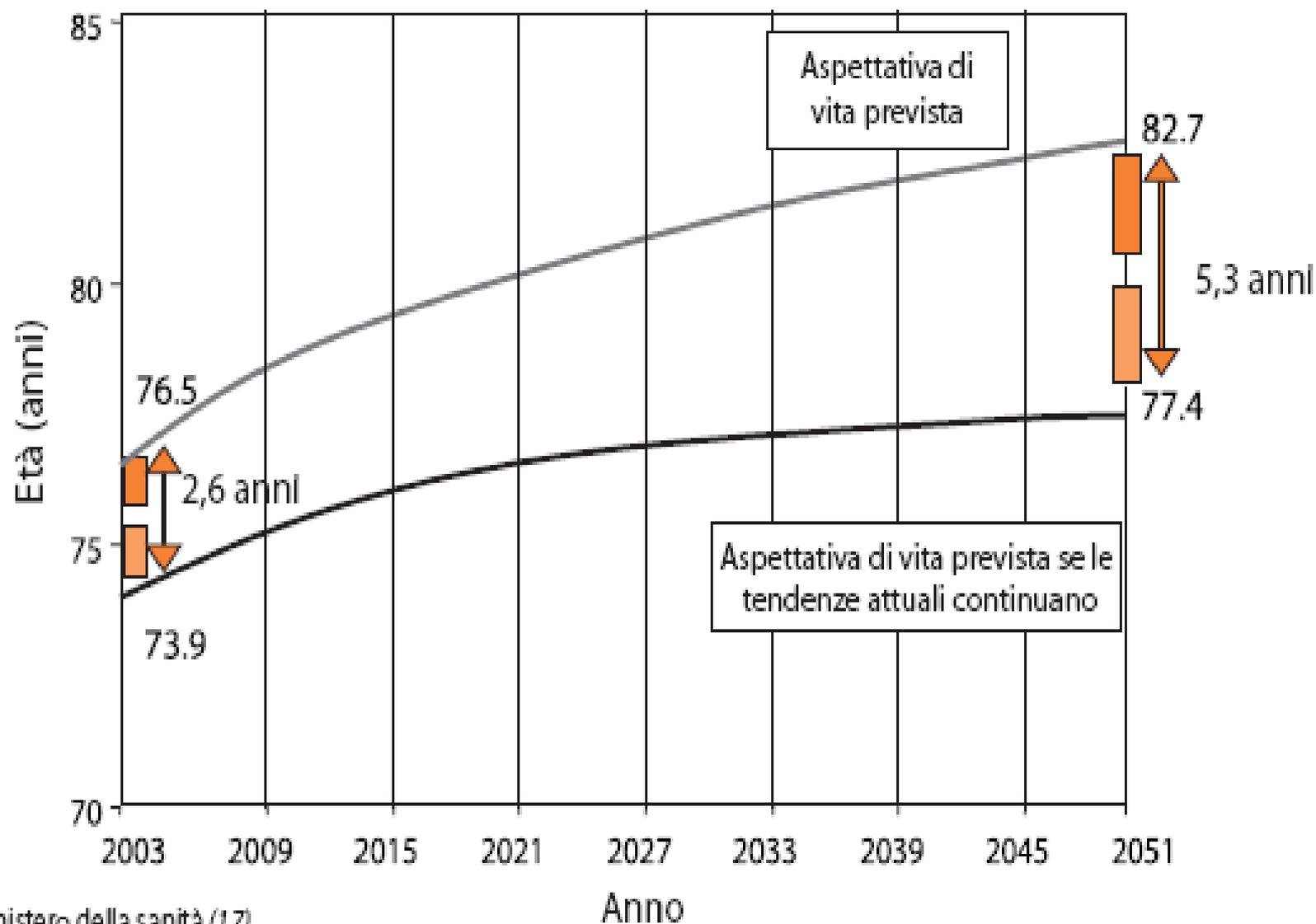
Camminatori

Sedentari

Nieman, DC., *Exercise and immunity: Clinical studies*, Academic Press, Amsterdam 2007

Studi controllati dimostrano che l'attività fisica moderata (camminare 5 giorni a settimana, 45 minuti per volta per 15 settimane) dimezza le giornate di malattia per infezioni respiratorie del tratto superiore.

Fig. 7. Riduzioni previste nella aspettativa di vita media dei maschi nel Regno Unito, se si mantengono le attuali tendenze per obesità/sovrappeso

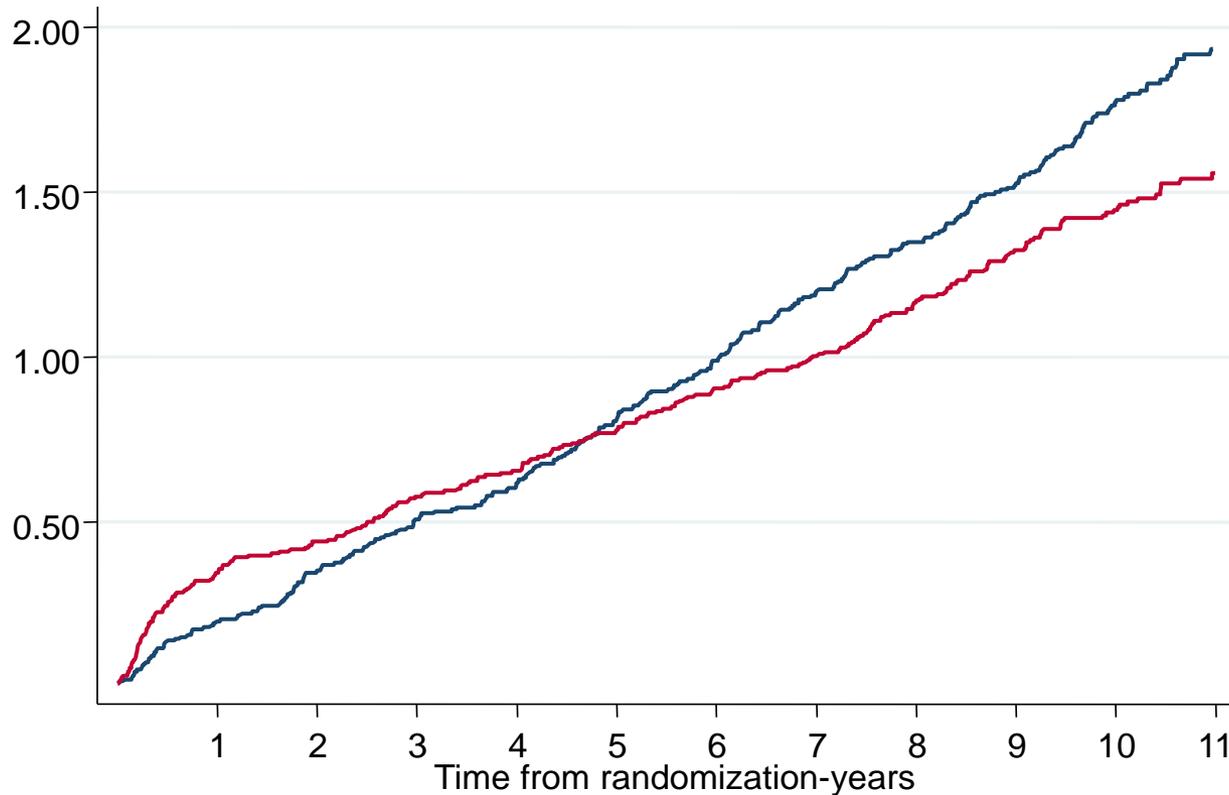


Fonte: Ministero della sanità (17).

Intention to treat analysis - Colorectal cancer

INCIDENCE, ALL SITES

Nelson Aalen Cumulative Hazard (%) by time from randomization



RR (95%CI) =
0.82 (0.69-0.96)

— Control — Intervention

Cumulative Events by years from randomization						
	≤2	≤4	≤6	≤8	≤10	>10
Control	60	104	165	223	286	306
Intervention	75	111	152	195	237	251

Riconversione Regione Piemonte – screening mammografico

DOPPIO CANALE screening mammografico

Periodo 2007-2011, tutte le età, totale 732.120 donne

Dallo screening vengono esclusi i casi positivi

fanno solo ambulatoriale		
1 mx	152.193	20,79%
2 mx	56.037	7,65%
3 mx	25.358	3,46%
4 mx	14.593	1,99%
5 mx	8.600	1,17%
6 mx	416	0,06%
7 mx	30	0,00%
>7 mx	7	0,00%
totale	257.234	35%

fanno solo screening		
1 mx	128.846	17,60%
2 mx	185.272	25,31%
3 mx	63.503	8,67%
4 mx	4.285	0,59%
5 mx	911	0,12%
6 mx	59	0,01%
7 mx	2	0,00%
totale	382.878	52%

fanno entrambi		
2 mx	38.367	5,24%
3 mx	34.180	4,67%
4 mx	14.326	1,96%
5 mx	4.623	0,63%
6 mx	458	0,06%
7 mx	47	0,01%
> 7 mx	7	0,00%
totale	92.008	13%

Riconversione Regione Piemonte – screening mammografico DOPPIO CANALE screening cervice uterina

Periodo 2005-2011, tutte le età, totale 915.327 donne

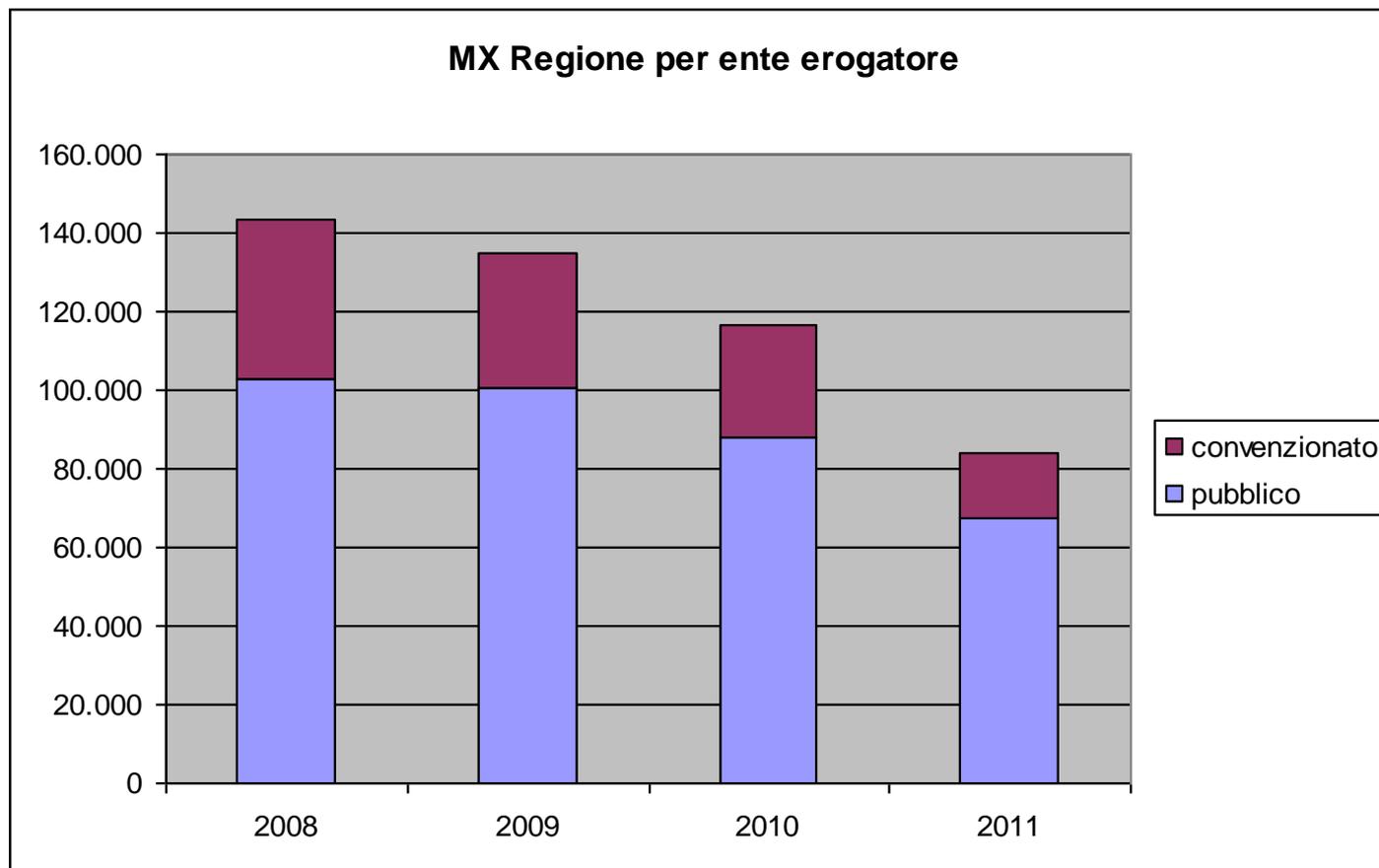
Dallo screening vengono esclusi i casi positivi

fanno solo ambulatoriale		
1 pap test	85.964	9,39%
2	22.137	2,42%
3	7.830	0,86%
4	4.074	0,45%
5	2.445	0,27%
6	1.645	0,18%
7	1.098	0,12%
8	611	0,07%
>8	721	0,08%
totale	126.525	14%

fanno solo screening		
1 pap test/HPV	282.634	30,88%
2	283.566	30,98%
3	100.776	11,01%
4	11.621	1,27%
5	1.330	0,15%
6	143	0,02%
7	21	0,00%
8	3	0,00%
>8	1	0,00%
totale	680.095	74%

fanno entrambi		
2pap test/HPV	35.675	3,90%
3	40.650	4,44%
4	20.135	2,20%
5	6.964	0,76%
6	2.858	0,31%
7	1.298	0,14%
8	561	0,06%
9	286	0,03%
>9	280	0,03%
totale	108.707	12%

Riconversione Regione Piemonte – MX ambulatoriale

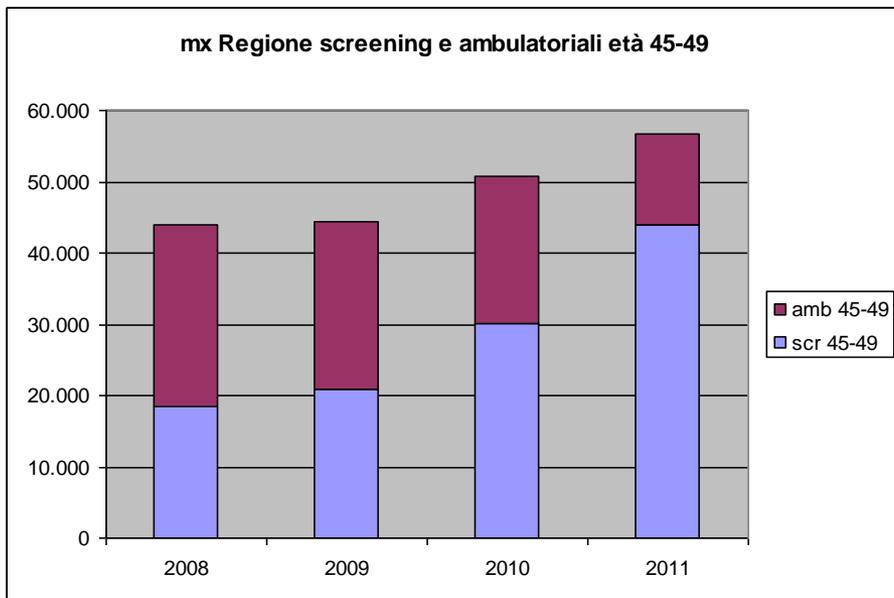


	2008	2009	2010	2011
pubblico	102.654	100.685	88.228	67.706
convenzionato	40.624	34.176	28.534	16.130
totale	143.278	134.861	116.762	83.836

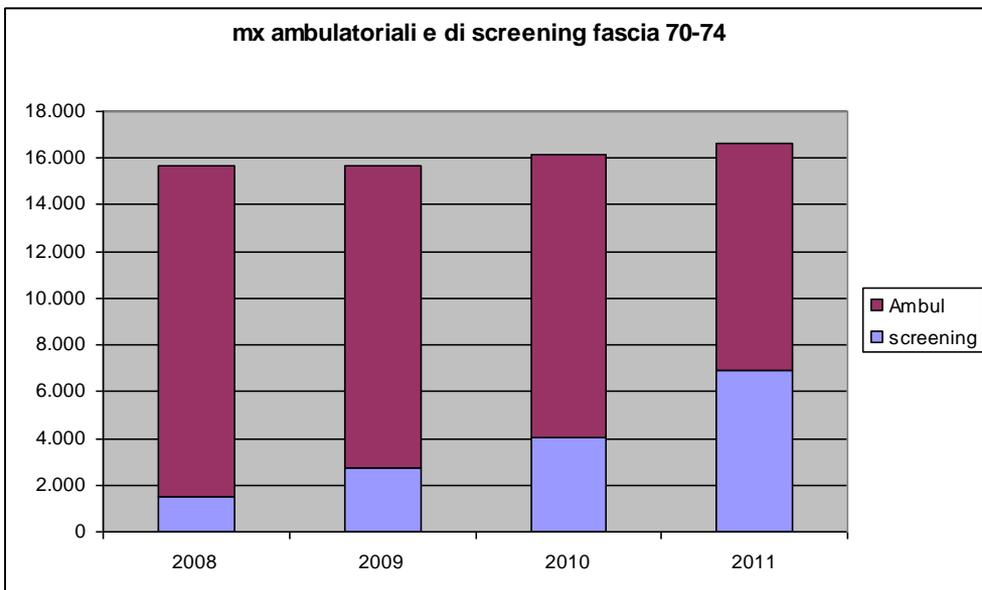
	2008	2009	2010	2011
pubblico	71,65%	74,66%	75,56%	80,76%
convenzionato	28,35%	25,34%	24,44%	19,24%

Dal 2008 al 2011 il numero di MX è diminuito del 41% in totale, del 34% nel pubblico e del 60% nelle strutture convenzionate

Riconversione Regione Piemonte – screening mammografico



anno	screenin	ambulatoriale	totale	%screenin
2008	18.366	25.488	43.854	42%
2009	20.979	23.452	44.431	47%
2010	30.160	20.540	50.700	59%
2011	44.053	12.607	56.660	78%



anno	screening	ambulatoriale	totali	% screening
2008	1.526	14.135	15.661	9,74%
2009	2.706	12.995	15.701	17,23%
2010	4.069	12.064	16.133	25,22%
2011	6.905	9.714	16.619	41,55%

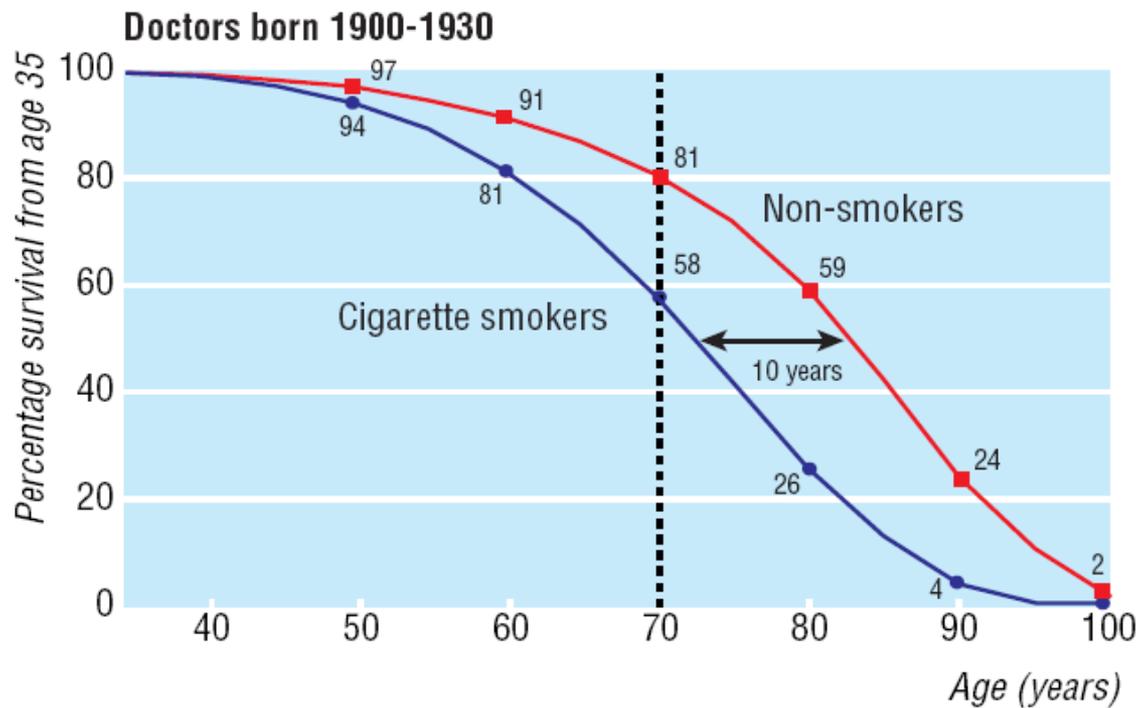


Fig 3 Survival from age 35 for continuing cigarette smokers and lifelong non-smokers among UK male doctors born 1900-1930, with percentages alive at each decade of age

Effectiveness and cost-effectiveness of interventions after 20 years and 50 years

	Brazil		China		England		India		Mexico		Russia		South Africa	
	DALYs	CE*	DALYs	CE*	DALYs	CE*	DALYs	CE*	DALYs	CE*	DALYs	CE*	DALYs	CE*
20 years														
School-based interventions	4	†	10	704863	0	†	8	†	3	†	12	830177	3	†
Worksite interventions	1187	8270	399	7785	1725	45630	405	6151	644	37912	1759	6187	254	25409
Mass media campaigns	627	5074	688	7188	1361	25897	246	15552	533	6858	811	12911	421	23221
Fiscal measures	1642	CS	1027	CS	1496	CS	139	CS	509	CS	1696	CS	528	CS
Physician counselling	2805	8503	864	9390	5562	25284	523	6155	2796	23811	6988	5982	719	23841
Food advertising regulation	38	CS	145	556	245	25672	49	3186	112	11151	288	5718	89	13241
Food labelling	1030	9962	779	71	1134	12577	495	952	358	3974	1176	396	389	7953
50 years														
School-based interventions	170	93350	337	35174	245	152989	232	59665	83	235957	696	26114	152	153233
Worksite interventions	3323	3541	1383	3393	6078	20506	939	4491	2175	16932	5929	2926	739	14561
Mass media campaigns	1803	1994	2500	3177	4025	13796	670	8575	1530	2778	2914	5822	1047	15211
Fiscal measures	5483	CS	3909	CS	6049	CS	355	CS	1978	CS	5898	CS	1725	CS
Physician counselling	7163	5156	2306	5718	14776	15731	1045	5553	7477	15108	16644	4331	1739	16591
Food advertising regulation	988	CS	1314	CS	2179	4278	752	332	658	3415	5823	552	610	3352
Food labelling	3259	CS	2805	CS	4019	5268	1089	776	1304	CS	4099	CS	1157	3927
Cost-effectiveness threshold (US\$/DALY)‡	..	15000	..	5000	..	50000‡	..	2500	..	20000	..	15000	..	15000

DALYs=disability-adjusted life-years saved per million population. CE=cost-effectiveness. CS=cost-saving. * Cost-effectiveness ratios are expressed in US\$ per DALY averted, and represent the net cost of gaining 1 additional year of healthy life, relative to a no prevention or treatment-only scenario. †Cost-effectiveness ratio is higher than US\$1 000 000 per DALY. ‡For countries other than England, the guideline amount of three times gross domestic product per head (US\$2005) is used as a cost-effectiveness threshold. In England, US\$50 000 DALY is a threshold commonly adopted by the UK's National Institute for Health and Clinical Excellence to denote that an intervention is cost effective.

England

	DALYs	CE*
20 years		
School-based interventions	0	†
Worksite interventions	1725	45 630
Mass media campaigns	1361	25 897
Fiscal measures	1496	CS
Physician counselling	5562	25 284
Food advertising regulation	245	25 672
Food labelling	1134	12 577
50 years		
School-based interventions	245	152 989
Worksite interventions	6078	20 506
Mass media campaigns	4025	13 796
Fiscal measures	6049	CS
Physician counselling	14 776	15 731
Food advertising regulation	2179	4 278
Food labelling	4019	5 268
Cost-effectiveness threshold (US\$/DALY)‡	..	50 000‡

Cost and cost-effectiveness of interventions relating to different target areas for alcohol public health policy –

	Coverage	WHO subregion					
		Americas (eg, Brazil, Mexico)		Europe (eg, Russia, Ukraine)		Western Pacific (eg, China, Vietnam)	
		Yearly cost per head (I\$)*	Cost per DALY saved (I\$)†	Yearly cost per head (I\$)*	Cost per DALY saved (I\$)†	Yearly cost per head (I\$)*	Cost per DALY saved (I\$)†
Target area 1: raising awareness and political commitment							
School-based education	80%	0.29	NA‡	0.34	NA‡	0.53	NA‡
Target area 2: health-sector response							
Brief interventions for heavy drinkers	30%	1.04	3870	1.78	2671	0.42	2016
Target area 3: community action							
Mass media campaign	80%	0.31	NA‡	0.79	NA‡	0.19	NA‡
Target area 4: drink-driving policies and countermeasures							
Drink-driving legislation and enforcement (via random breath-testing campaigns)	80%	0.44	924	0.72	781	0.24	1262
Target area 5: addressing the availability of alcohol							
Reduced access to retail outlets	80%	0.24	515	0.47	567	0.16	1307

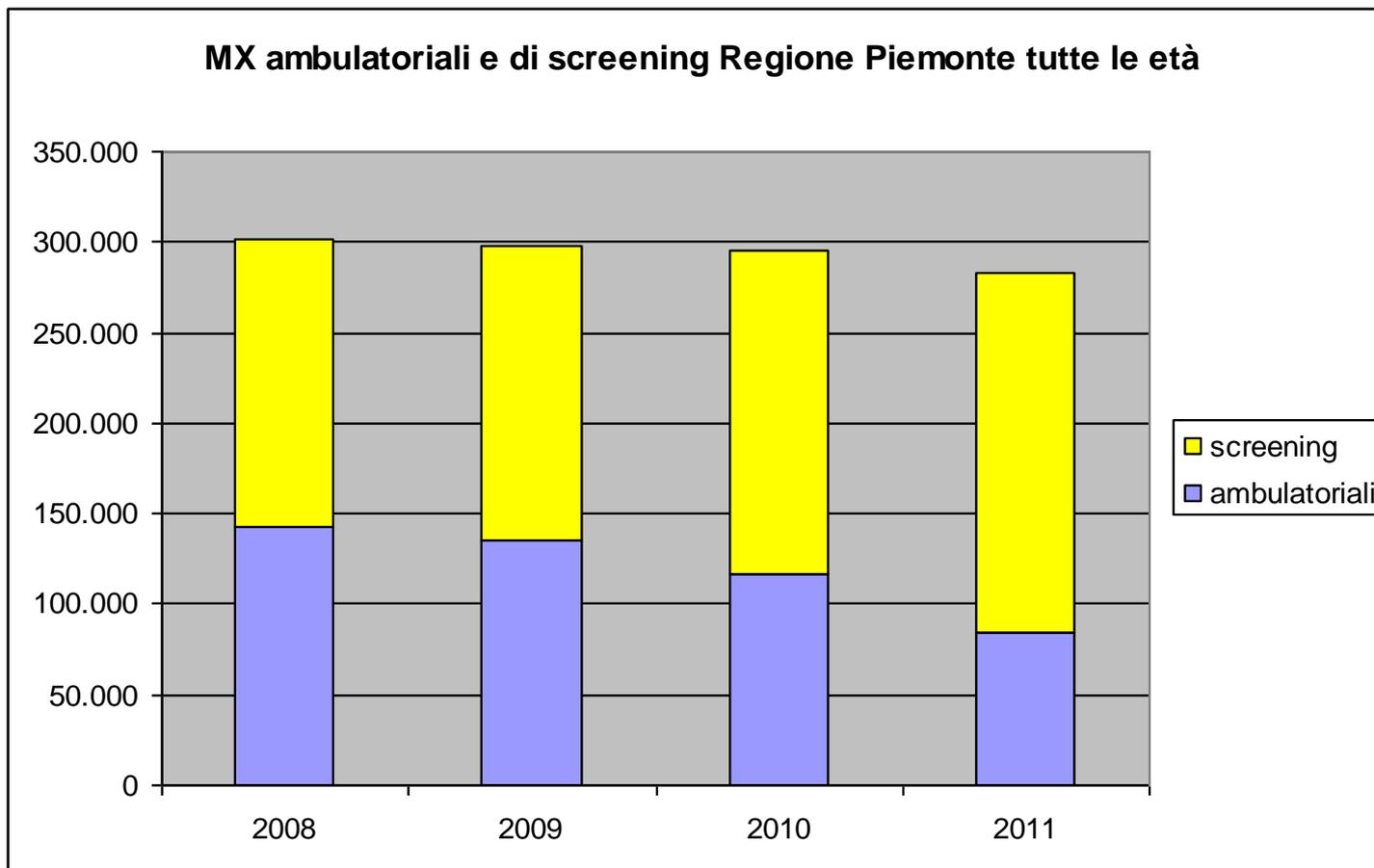
*Implementation cost in 2005 international dollars (I\$). †Cost-effectiveness ratio, expressed in international dollars per disability-adjusted life-year (DALY) saved for the year 2005. ‡Not applicable (NA) because effect size not significantly different from zero (cost-effectiveness ratio would therefore approach infinity).

Cost and cost-effectiveness of interventions relating to different target areas for alcohol public health policy part 2

	Coverage	WHO subregion					
		Americas (eg, Brazil, Mexico)		Europe (eg, Russia, Ukraine)		Western Pacific (eg, China, Vietnam)	
		Yearly cost per head (I\$)*	Cost per DALY saved (I\$)†	Yearly cost per head (I\$)*	Cost per DALY saved (I\$)†	Yearly cost per head (I\$)*	Cost per DALY saved (I\$)†
Target area 6: addressing marketing of alcohol beverages							
Comprehensive advertising ban	95%	0.24	931	0.47	961	0.16	955
Target area 7: pricing policies							
Increased excise taxation (by 20%)	95%	0.34	277	0.67	380	0.20	1358
Increased excise taxation (by 50%)	95%	0.34	241	0.67	335	0.20	1150
Tax enforcement (20% less unrecorded)	95%	0.56	468	0.87	498	0.37	2603
Tax enforcement (50% less unrecorded)	95%	0.63	476	0.93	480	0.43	2733
Combination strategy							
Brief advice, random breath-testing, reduced access, advertising ban, plus increased tax (by 50%) and its enforcement (50% less unrecorded consumption)	..	2.35	691	4.10	754	1.31	1704

*Implementation cost in 2005 international dollars (I\$). †Cost-effectiveness ratio, expressed in international dollars per disability-adjusted life-year (DALY) saved for the year 2005. ‡Not applicable (NA) because effect size not significantly different from zero (cost-effectiveness ratio would therefore approach infinity).

Riconversione Regione Piemonte – screening mammografico



	2008	2009	2010	2011
ambulatoriali	143.233	134.791	116.754	83.836
screening	158.450	162.713	178.406	199.482
totali	303.691	299.513	297.170	283.318
% screening su totale	52,17%	54,33%	60,03%	70,41%

NTCC STUDY

WOMEN AGE 35-60

DETECTION OF CIN 2 or 3 or AIS BY STUDY PERIOD

	Women enrolled (invited to round 2)	screening round1 N (%)	screening round2 N (%)	Total over both rounds N (%)
HPV group	34430 (33363)	206 (0.60%)	16 (0.05%)	222 (0.64%)
Cytology group	34405 (33979)	101 (0.29%)	32 (0.09%)	133 (0.39%)
RR (95%CI)		2.03 (1.60-2.57)	0.51 (0.28-0.93)	1.66 (1.34-2.06)
<i>P heterogeneity between phases</i>		0.70	0.15	0.90

Ronco et al. Lancet Oncol 2010 modif.

Randomised controlled trials

Detection ratio of CIN3 or invasive cancer HPV vs. cytology groups in 2° screening round

Study	Women randomised	Detection ratio (95%CI)
Sweedscreen ¹	12,527 (1:1)	0.53 (0.38-0.98)
POBASCAM ²	18,403 (1:1)	0.43 (0.28-0.66)
ARTISTIC ³	25,078 (3:1)	0.53 (0.30-0.96)
NTCC 35-60yrs ⁴	68,835 (1:1)	0.34 (0.16-0.75)

p heterogeneity: 0.79