Nutrizione e salute: cosa c’è di nuovo nel piatto?

Andrea Poli,
NFI – Nutrition Foundation of Italy

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Attenzione:

Questo Non Lo Possiamo Dire!

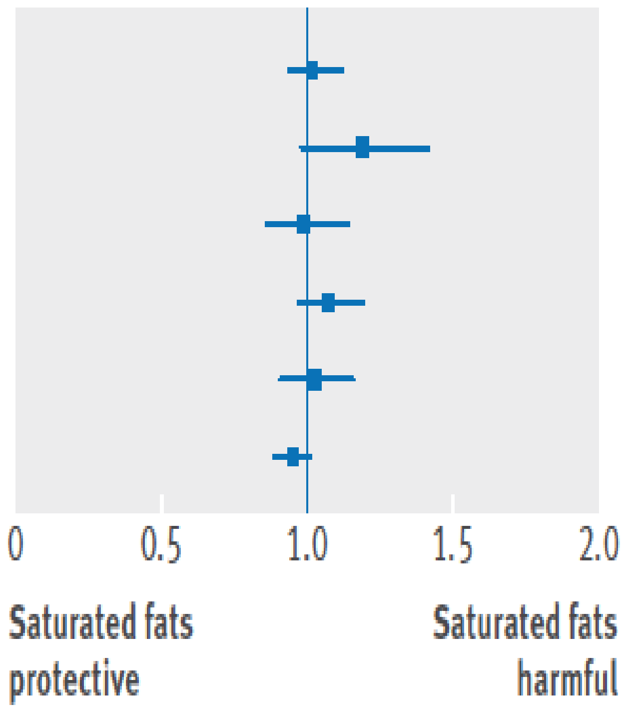
Healthy diet characteristics according to the 2016 ESC guidelines for CV prevention

• Saturated fatty acids to account for <10% of total energy intake, through replacement by polyunsaturated fatty acids.
• Trans unsaturated fatty acids: as little as possible, preferably no intake from processed food, and <1% of total energy intake from natural origin.
• <5 g of salt per day.
• 30–45 g of fibre per day, preferably from wholegrain products.
• ≥200 g of fruit per day (2–3 servings).
• ≥200 g of vegetables per day (2–3 servings).
• Fish 1–2 times per week, one of which to be oily fish.
• 30 grams unsalted nuts per day.
• Consumption of alcoholic beverages should be limited to 2 glasses per day (20 g/d of alcohol) for men and 1 glass per day (10 g/d of alcohol) for women.
• Sugar-sweetened soft drinks and alcoholic beverages consumption must be discouraged.

Piepoli MF et al, Eur Heart J, 2016

Intake of saturated and trans unsaturated fatty acids and risk of all cause mortality, cardiovascular disease, and type 2 diabetes: systematic review and meta-analysis of observational studies

Outcome	No of studies /comparisons	No of events /participants	Risk ratio (95% CI)	Relative risk (95% CI)	P	P_{het}	I^2 (%)
All cause mortality	5/7	14 090/99 906		0.99 (0.91 to 1.09)	0.91	0.17	33
CHD mortality	11/15	2970/101 712		1.15 (0.97 to 1.36)	0.10	<0.001	70
CVD mortality	3/5	3792/90 501		0.97 (0.84 to 1.12)	0.69	0.29	19
CHD total	12/17	6383/267 416		1.06 (0.95 to 1.17)	0.29	0.02	47
Ischemic stroke	12/15	6226/339 090		1.02 (0.90 to 1.15)	0.79	0.002	59
Type 2 diabetes	8/8	8739/237 454		0.95 (0.88 to 1.03)	0.20	0.61	0



Saturated fats

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de Souza RJ et al, Brit Med J 2015

Dietary Fatty Acid Intake and Risk of Fatal Coronary Heart Disease

The Kuopio Ischemic Heart Disease Risk Factor Study

Table 3. Dietary Fatty Acid Intake and Risk of Fatal Coronary Heart Disease

	Intake Quartile				
	1 (n=495)	2 (n=495)	3 (n=496)	4 (n=495)	*P* Trend
Total fat					
Median intake (E%)	31.9	36.9	40.7	45.6	...
No. of events	44	39	49	51	...
Model 1	1	0.88 (0.57–1.37)	1.11 (0.73–1.68)	1.12 (0.74–1.69)	0.42
Model 2	1	1.03 (0.66–1.60)	1.19 (0.77–1.84)	1.12 (0.71–1.75)	0.55
Saturated fatty acids					
Median intake (E%)	13.4	16.5	19.1	22.8	...
No. of events	42	40	43	58	...
Model 1	1	0.91 (0.59–1.41)	0.94 (0.61–1.47)	1.24 (0.81–1.89)	0.24
Model 2	1	1.10 (0.70–1.73)	1.16 (0.73–1.86)	1.29 (0.79–2.08)	0.30
Model 3	1	0.98 (0.61–1.56)	0.96 (0.58–1.58)	0.88 (0.48–1.62)	0.68

Virtanen JK et al, Arterioscl Thromb Vasc Biol 2014

Total fat and different types of fat intake in spanish high risk patients of the PREDIMED cohort: effects on all-cause mortality

Total fat						
Cases, *n* (%)	1408 (6.3)	1408 (6.9)	1407 (5.3)	1408 (6.0)	1407 (6.0)	
Median, % of energy	31.3	36.7	40.2	43.5	48.2	
Multivariable model 1	1 (Ref)	1.04 (0.77, 1.40)	0.73 (0.53, 1.01)	0.80 (0.58, 0.82)	0.57 (0.40, 0.82)	<0.01
Multivariable model 2	1 (Ref)	1.02 (0.75, 1.37)	0.71 (0.51, 0.98)	0.75 (0.54, 1.05)	0.53 (0.37, 0.76)	<0.01
MUFAs						
Cases, *n* (%)	1408 (6.3)	1408 (6.1)	1407 (5.9)	1408 (5.4)	1407 (5.4)	
Median, % of energy	14.7	17.9	20.5	22.8	26.0	
Multivariable model 1	1 (Ref)	0.85 (0.62, 1.16)	0.78 (0.56, 1.08)	0.70 (0.49, 1.00)	0.64 (0.43, 0.95)	0.02
Multivariable model 2	1 (Ref)	0.86 (0.63, 1.17)	0.78 (0.56, 1.09)	0.69 (0.48, 0.99)	0.64 (0.43, 0.94)	0.01
PUFAs						
Cases, *n* (%)	1408 (8.1)	1408 (5.9)	1407 (5.9)	1408 (4.9)	1407 (4.4)	
Median, % of energy	4.2	5.3	6.2	7.2	9.0	
Multivariable model 1	1 (Ref)	0.72 (0.53, 0.97)	0.71 (0.52, 0.97)	0.56 (0.40, 0.78)	0.50 (0.35, 0.71)	<0.01
Multivariable model 2	1 (Ref)	0.73 (0.54, 0.99)	0.72 (0.53, 0.99)	0.56 (0.39, 0.80)	0.50 (0.35, 0.73)	<0.01
SFAs						
Cases, *n* (%)	1408 (5.0)	1408 (5.8)	1407 (5.7)	1408 (6.2)	1407 (6.6)	
Median, % of energy	6.9	8.3	9.4	10.5	12.1	
Multivariable model 1	1 (Ref)	1.20 (0.86, 1.68)	1.17 (0.82, 1.67)	1.22 (0.84, 1.77)	1.21 (0.81, 1.80)	0.47
Multivariable model 2	1 (Ref)	1.16 (0.83, 1.62)	1.12 (0.78, 1.61)	1.12 (0.78, 1.60)	1.08 (0.74, 1.58)	0.90
trans Fat						
Cases, *n* (%)	1408 (4.8)	1408 (5.9)	1407 (4.7)	1408 (6.4)	1407 (7.5)	
Median, % of energy	0.05	0.10	0.16	0.23	0.36	
Multivariable model 1	1 (Ref)	1.15 (0.83, 1.60)	0.90 (0.64, 1.29)	1.22 (0.87, 1.72)	1.38 (1.00, 1.94)	0.03
Multivariable model 2	1 (Ref)	1.11 (0.80, 1.54)	0.86 (0.59, 1.24)	1.13 (0.78, 1.64)	1.29 (0.87, 1.90)	0.12

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Guasch-Ferré M et al, Am J Clin Nutr 2015

Total fat and different types of fat intake in spanish high risk patients of the PREDIMED cohort: effects on all-cause mortality

Total fat						
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Median, % of energy	0.05	0.10	0.16	0.23	0.36	
Multivariable model 1	1 (Ref)	1.15 (0.83, 1.60)	0.90 (0.64, 1.29)	1.22 (0.87, 1.72)	1.38 (1.00, 1.94)	0.03
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Guasch-Ferré M et al, Am J Clin Nutr 2015

A changing view on SFAs and dairy: from enemy to friend

CONCLUSIONS

The totality of evidence does not support that dairy SFAs increase the risk of coronary artery disease or stroke or CVD mortality. In contrast, lean dairy is clearly associated with decreased risk of type 2 diabetes, and this effect is partly independent of any effect of body fat loss. In addition, lean dairy does not increase body fatness but tends to preserve lean body tissue. There is no evidence left to support the existing public health advice to limit consumption of dairy to prevent CVD and type 2 diabetes. Cheese and other dairy products are, in fact, nutrient-dense foods that give many people pleasure in their daily meals.

Astrup A, Am J Clin Nutr 2014

Dairy, total CVD and CHD: a metanalysis

Study name	Rate ratio	Lower limit	Upper limit
Kondo 2013 (F)	0·79	0·62	1·00
Kondo 2013 (M)	1·12	0·90	1·39
Louie 2013	0·76	0·56	1·03
Sonestedt 2011	0·89	0·78	1·01
Bonthuis 2010	0·28	0·06	1·32
SRRE =	0·88	0·75	1·04

$P_H = 0·076$

$I^2 = 52·7$

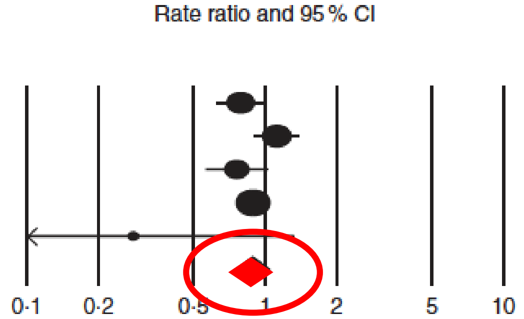


Fig. 2. Meta-analysis of total dairy intake and total CVD (high *v.* low intake analysis). SRRE, summary relative risk estimate. Individual studies required to report a composite total dairy variable and a compositive total CVD variable. F, female; M, male.

Study name	Rate ratio	Lower limit	Upper limit
Bernstein 2010	0·99	0·91	1·08
Bostick 1999	0·94	0·66	1·34
Haring 2014	1·04	0·84	1·29
Kondo 2013 (F)	0·60	0·36	1·00
Kondo 2013 (M)	1·49	0·91	2·45
Louie 2013	0·71	0·51	0·99
Patterson 2013	0·77	0·63	0·95
Soedamah-Muthu 2012	0·91	0·68	1·22
SRRE =	0·91	0·80	1·04

$P_H = 0·038$

$I^2 = 52·8$

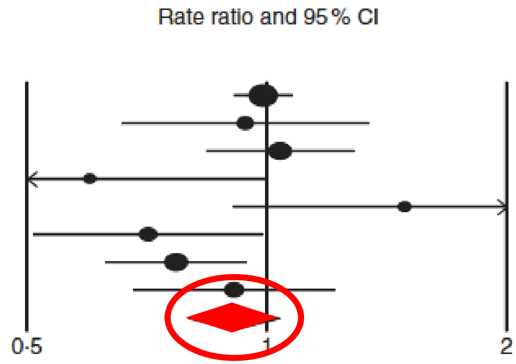
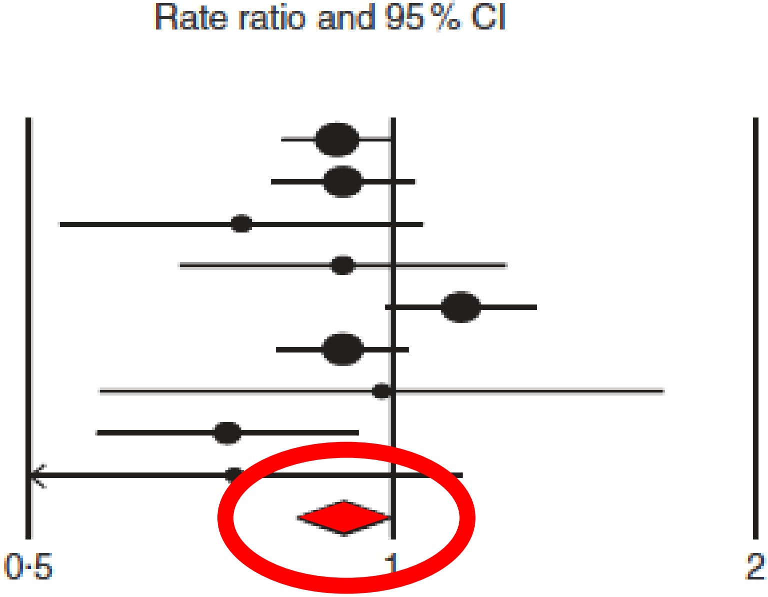


Fig. 3. Meta-analysis of total dairy intake and total CHD (high *v.* low intake analysis). SRRE, summary relative risk estimate. Individual studies required to report a composite total dairy variable and a compositive total CHD variable. F, female; M, male.

Alexander DD et al, Brit J Nutr 2016

Dairy and stroke: a metanalysis

Study name	Rate ratio	Lower limit	Upper limit
Bernstein 2012 (F)	0·90	0·81	1·00
Bernstein 2012 (M)	0·91	0·79	1·04
Kondo 2013 (F)	0·75	0·53	1·06
Kondo 2013 (M)	0·91	0·67	1·24
Larsson 2009 (ischaemic)	1·14	0·99	1·32
Larsson 2012	0·91	0·80	1·03
Louie 2013	0·98	0·57	1·68
Sauvaget 2003	0·73	0·57	0·94
Lin 2013	0·74	0·48	1·14
SRRE =	0·91	0·83	0·99



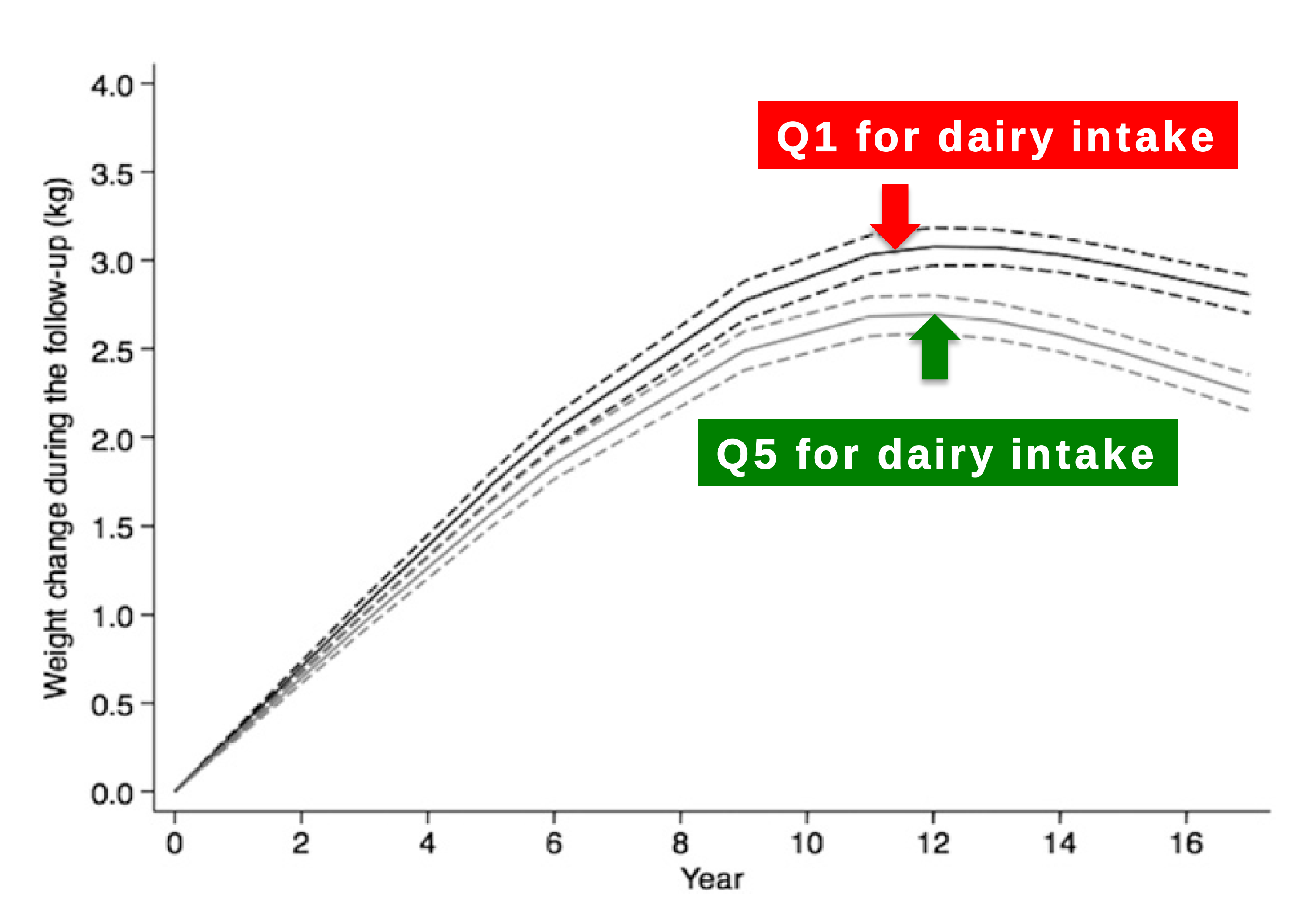
$P_H = 0{\cdot}324$

$I^2 = 0{\cdot}0$

Removal of Larsson 2009 in a sensitivity analyses resulted in and SRRE of 0·88 (95 % CI 0·83, –0·94) with no heterogeneity ($P_H = 0{\cdot}73$, $I^2 = 0{\cdot}00$)

Alexander DD et al, Brit J Nutr 2016

Dairy intake and body weight change in a US non-overweight women cohort



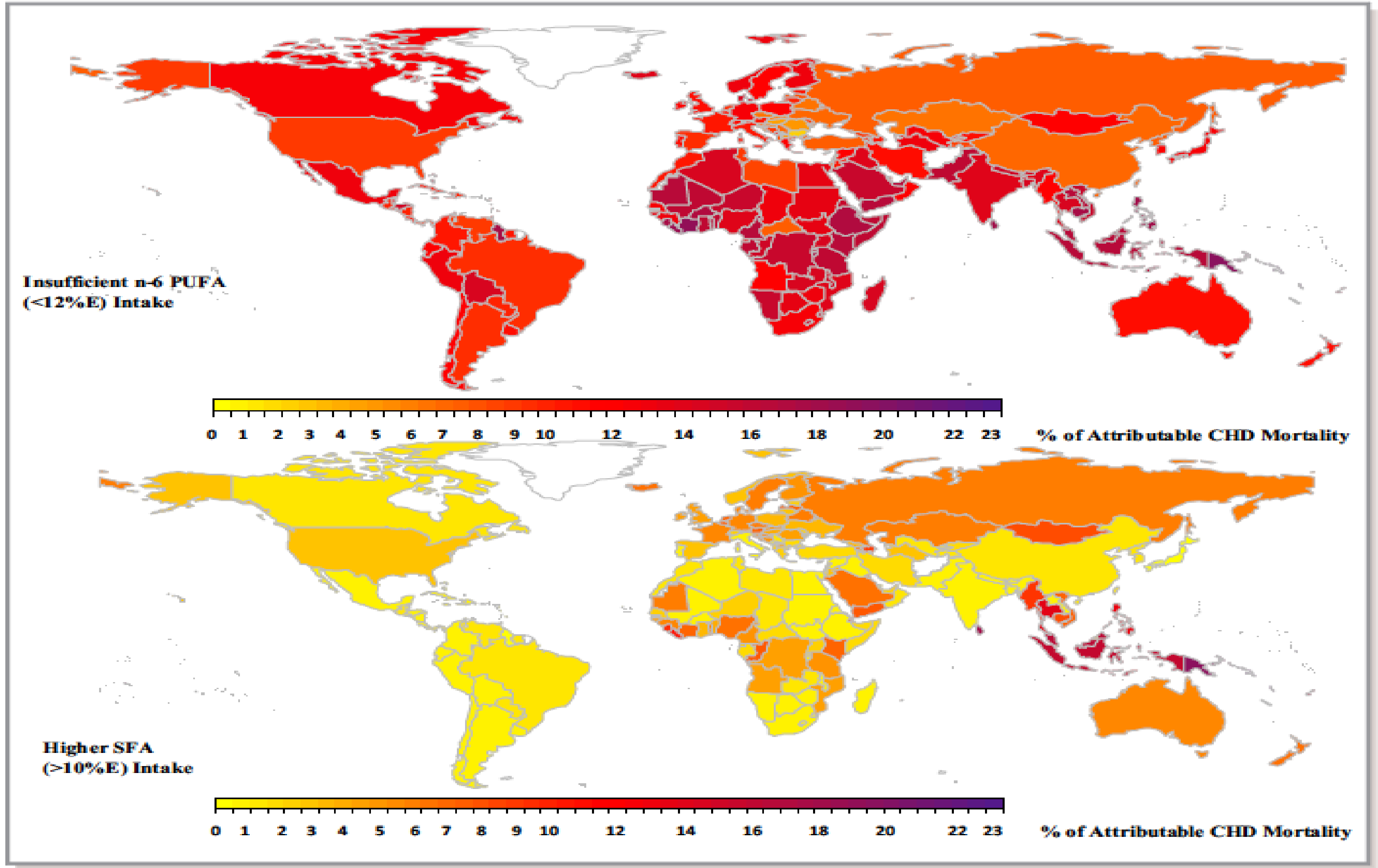
Rautiainen S et al, Am J Clin Nutr 2016

Latte e tumori: le evidenze della letteratura

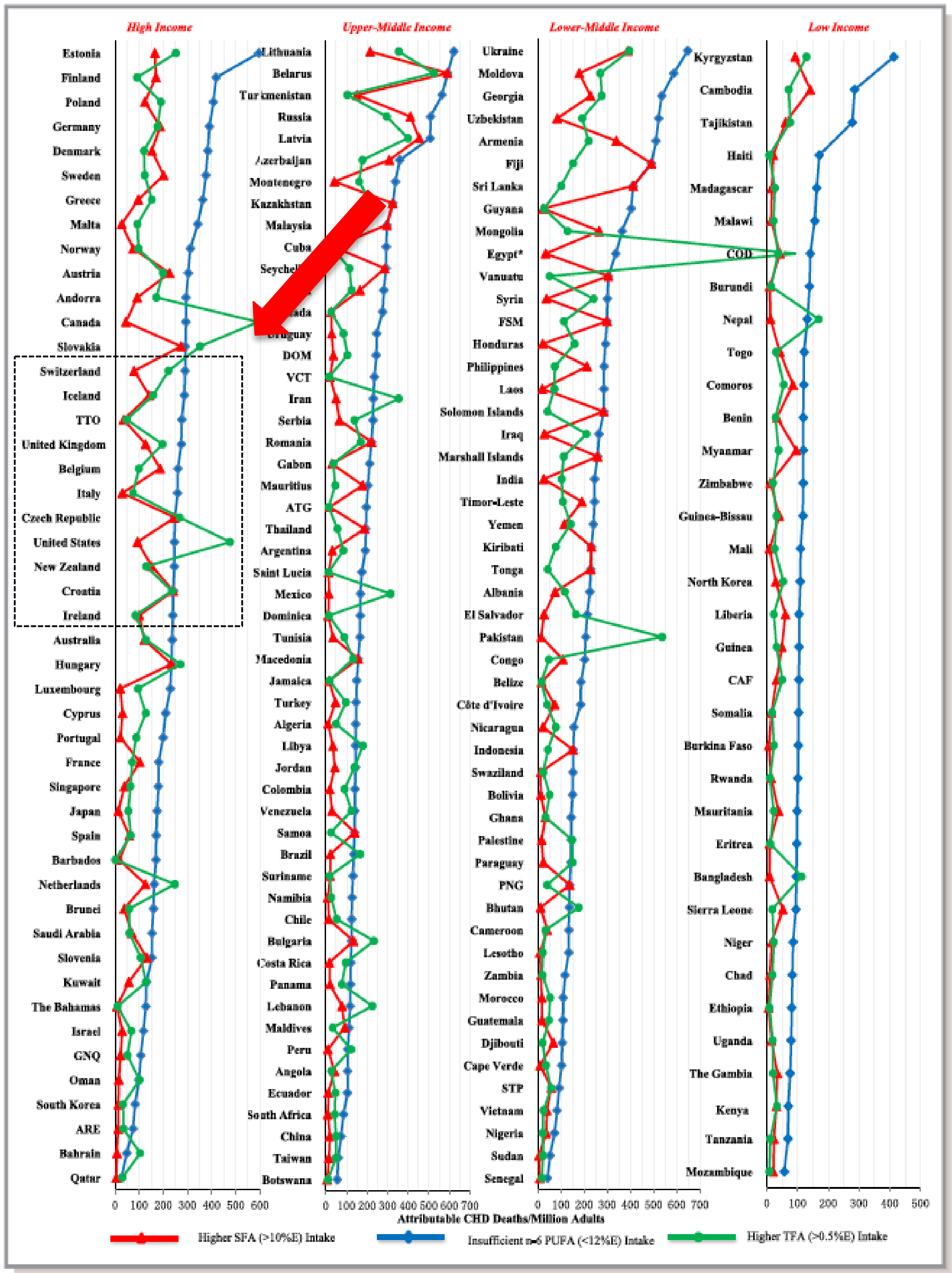
Sede	Rischio	Pubblicazione	Note
Prostata	+3%	Am J Clin Nutr 2015	Metanalisi
Stomaco	ns	World J Gastroenterol 2014	Metanalisi
Colon	-7%	PLOSone 2013	EPIC
Mammella	ns	Cancer Causes Control 2013	Black Women Study
Pancreas	ns	Ann Oncol 2014	Metanalisi
Mammella	ns	Breast Cancer Res Treat 2011	Metanalisi

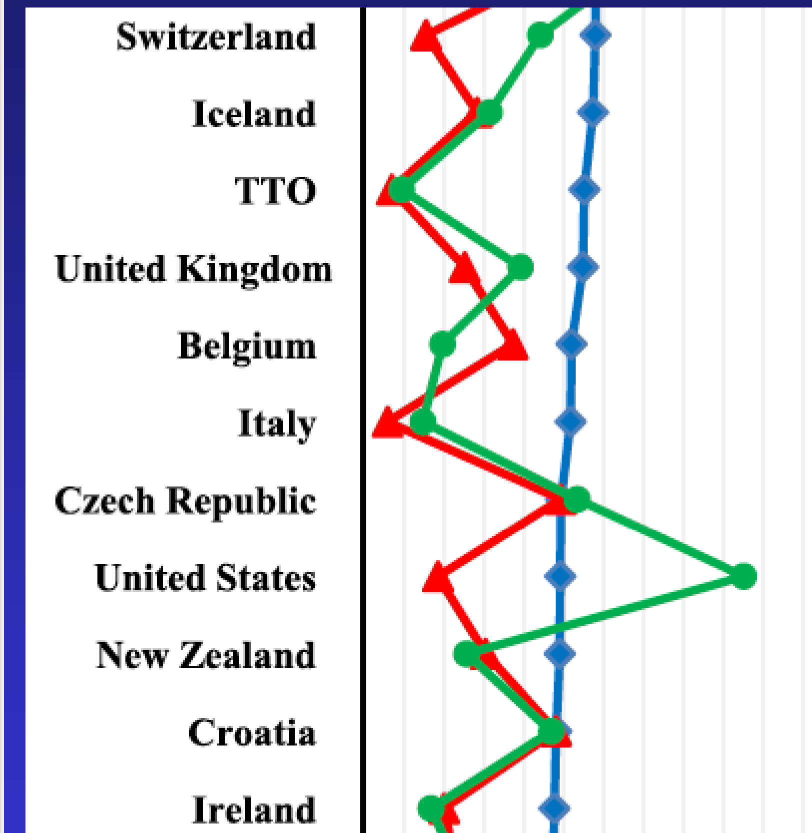
Impact of Nonoptimal Intakes of Saturated, Polyunsaturated, and Trans Fat on Global Burdens of Coronary Heart Disease

Qianyi Wang, ScD; Ashkan Afshin, ScD, MD; Mohammad Yawar Yakoob, ScD, MD; Gitanjali M. Singh, PhD; Colin D. Rehm, PhD, MPH; Shahab Khatibzadeh, MD; Renata Micha, PhD; Peilin Shi, PhD; Dariush Mozaffarian, MD, DrPH; on behalf of the Global Burden of Diseases Nutrition and Chronic Diseases Expert Group (NutriCoDE)*



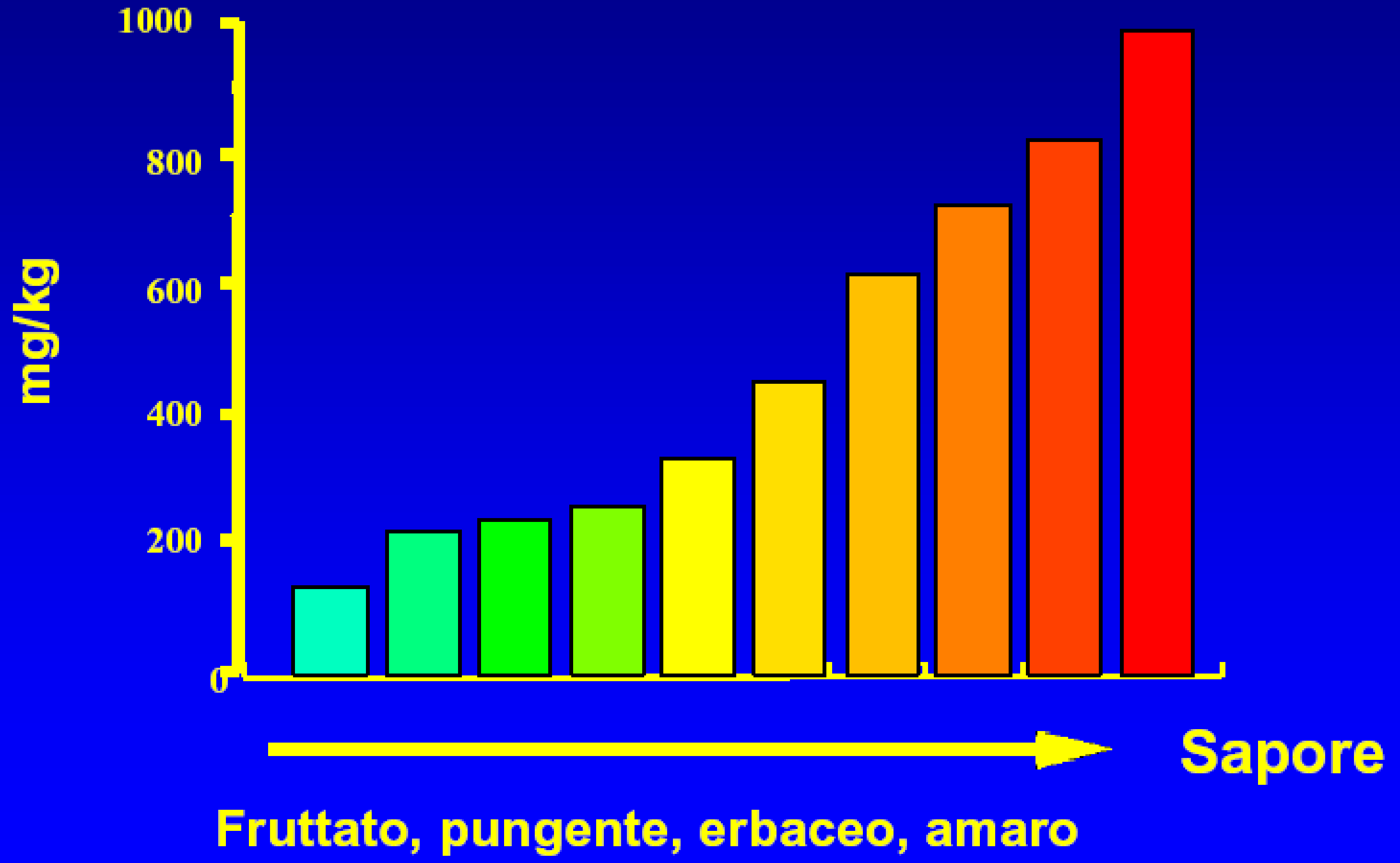
CHD Deaths attributable to low PUFA n-6 high SFA or high TFA in various countries



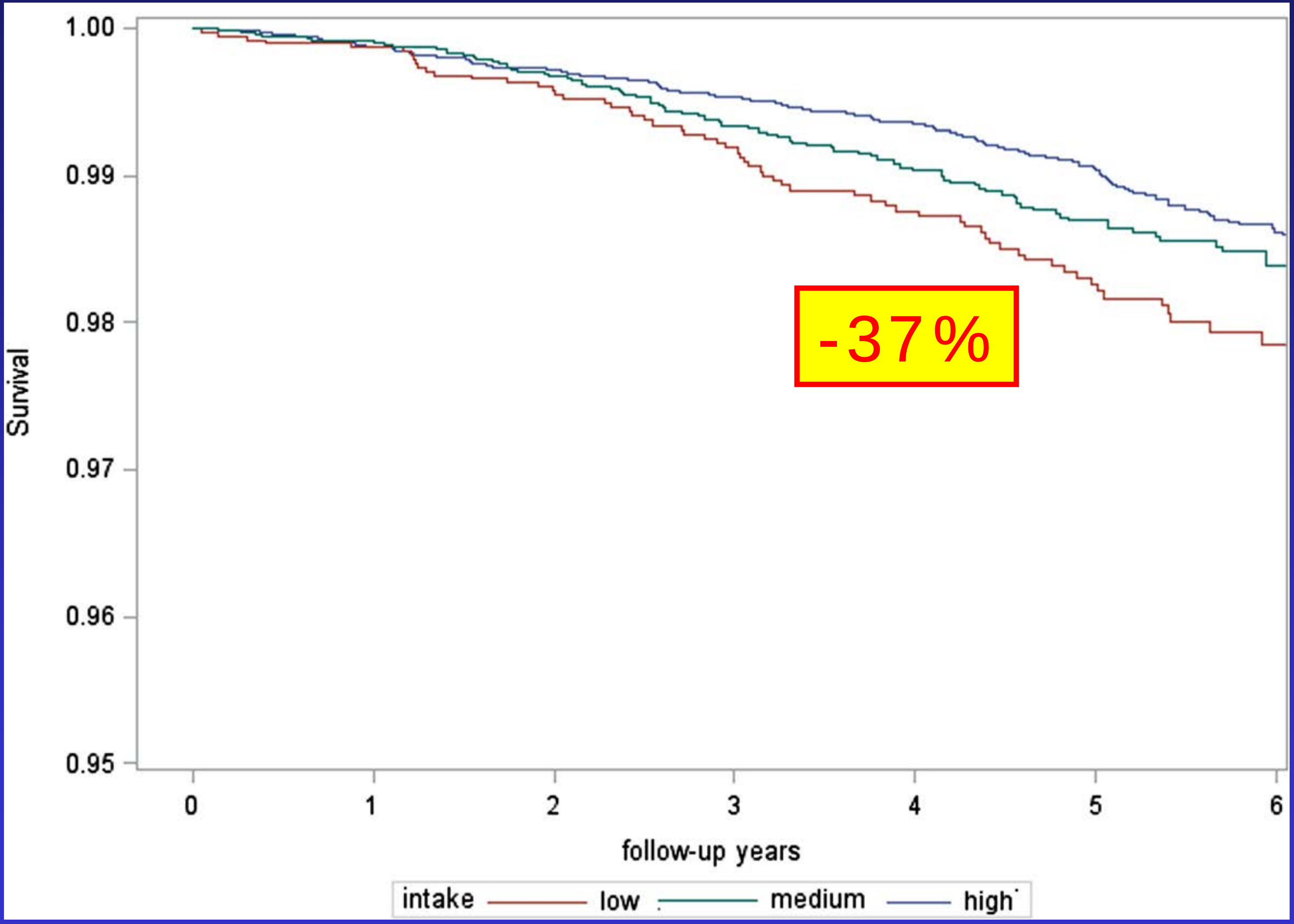


Wang Q et al, J Am Heart Assoc 2016

Contenuto in polifenoli e gusto dell'olio



Polyphenol intake and all-cause mortality risk: a re-analysis of the PREDIMED trial



Tresserra-Rimbau A et al, BMC Medicine 2014

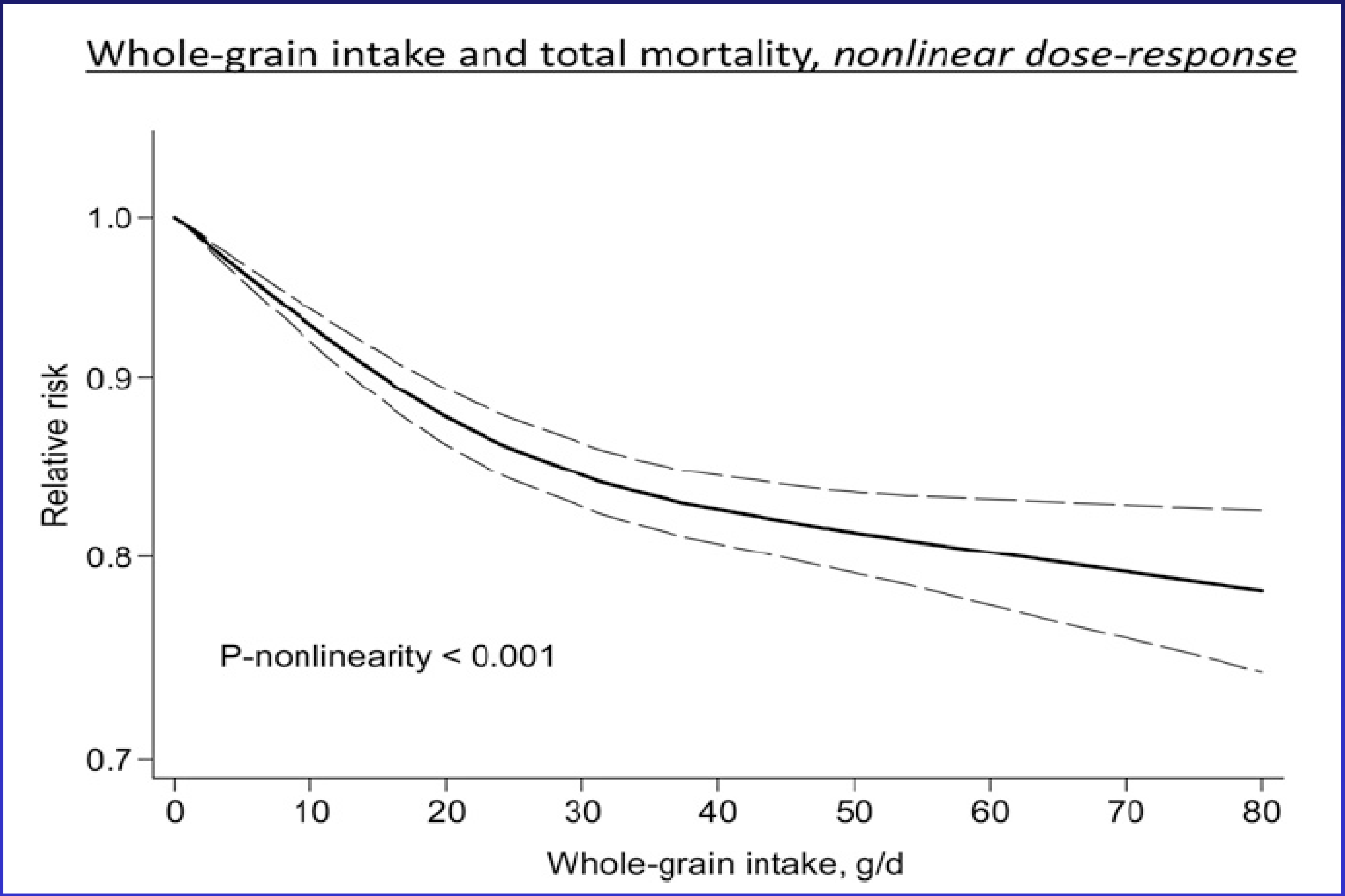
Epicatechin intake and CV risk in the Zutphen elderly cohort (25 years follow-up)

	At risk, *n*	CVD death, *n*	Epicatechin intake, mg/d		
			Tertile 1	Tertile 2	Tertile 3
Epicatechin intake,[2] mg/d			7.9 (5.1–9.4)	14.7 (12.5–15.9)	21.9 (19.5–25.6)
CVD mortality					
Prevalent CVD	166	93	1.00 (—)[3]	0.56 (0.31, 1.03)	0.54 (0.31, 0.96)
CVD free	578	236	1.00 (—)	1.03 (0.73, 1.43)	0.90 (0.61, 1.33)
CHD mortality					
Prevalent CVD	166	46	1.00 (—)	0.34 (0.14, 0.84)	0.46 (0.20, 1.05)
CVD free	578	102	1.00 (—)	1.08 (0.67, 1.75)	0.63 (0.34, 1.16)
Stroke mortality					
Prevalent CVD	166	17	1.00 (—)	1.17 (0.25, 5.46)	0.50 (0.11, 2.27)
CVD free	578	55	1.00 (—)	0.70 (0.34, 1.44)	0.92 (0.41, 2.05)

Sources: tea 51%, apples 25%, cocoa 7%

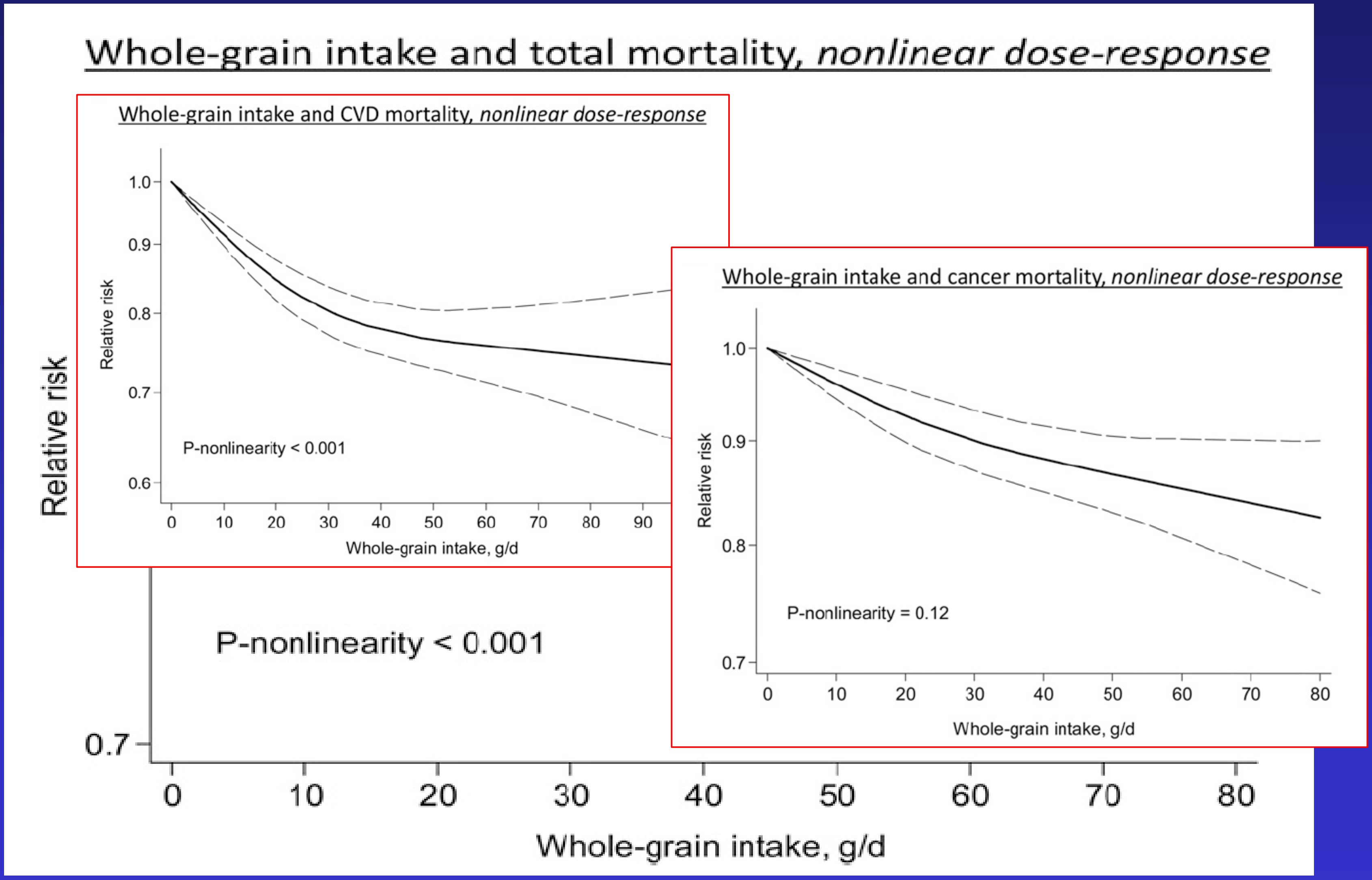
Dower JI et al, Am J Clin Nutr 2016

Whole-grain intake and total, cardiovascular, and cancer mortality: a systematic review and meta-analysis of prospective studies



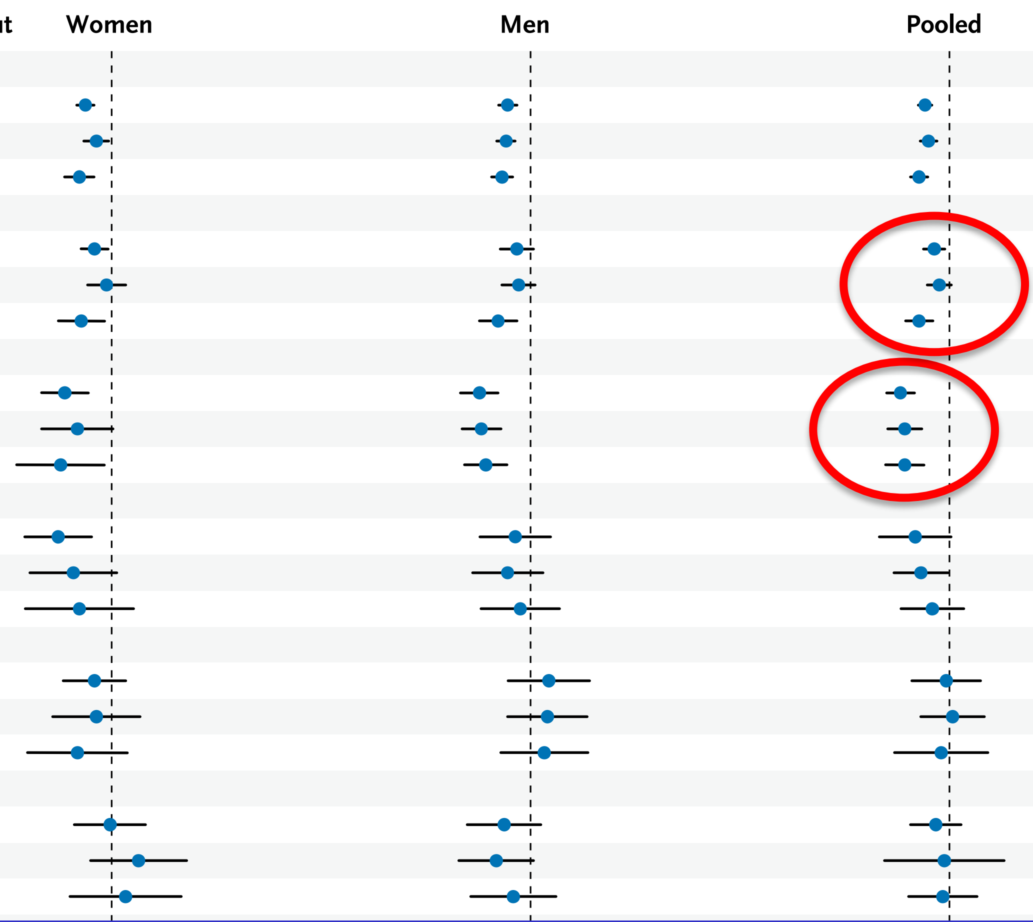
Chen GC et al, Am J Clin Nutr 2016

Whole-grain intake and total, cardiovascular, and cancer mortality: a systematic review and meta-analysis of prospective studies



Chen GC et al, Am J Clin Nutr 2016

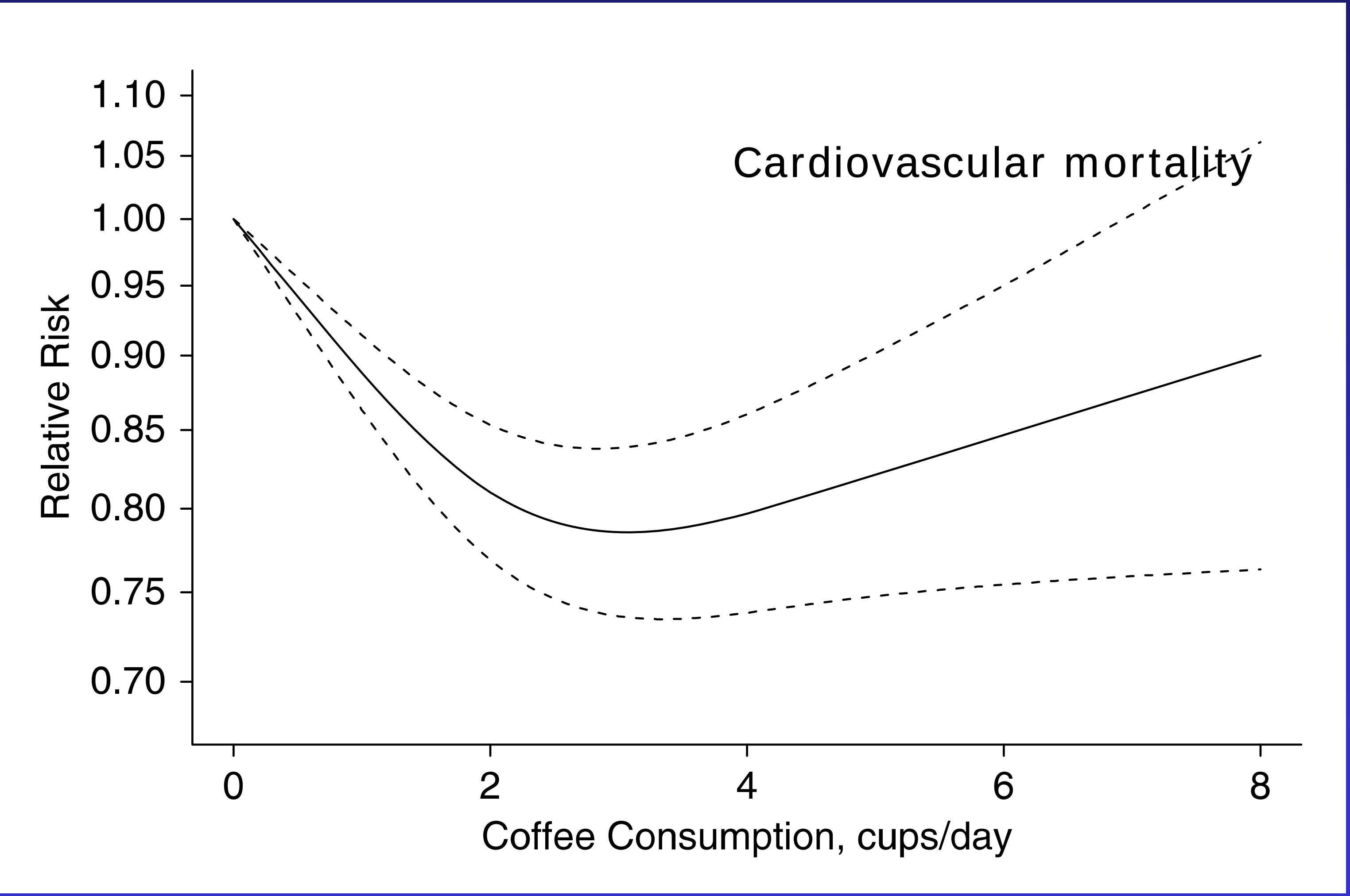
Cause specific mortality, according to frequency of nut consumption



Cause of Death and Type of Nut	Hazard Ratio (95% CI)
All causes	
Any nut	0.86 (0.82–0.89)
Peanut	0.88 (0.84–0.93)
Tree nut	0.83 (0.79–0.88)
Cancer	
Any nut	0.91 (0.85–0.97)
Peanut	0.94 (0.88–1.02)
Tree nut	0.83 (0.76–0.90)
Heart disease	
Any nut	0.74 (0.68–0.81)
Peanut	0.76 (0.68–0.84)
Tree nut	0.76 (0.67–0.85)
Respiratory disease	
Any nut	0.81 (0.65–1.01)
Peanut	0.84 (0.71–0.99)
Tree nut	0.90 (0.74–1.09)
Neurodegenerative disease	
Any nut	0.98 (0.80–1.22)
Peanut	1.02 (0.84–1.24)
Tree nut	0.95 (0.71–1.26)
Stroke	
Any nut	0.92 (0.79–1.08)
Peanut	0.97 (0.67–1.40)
Tree nut	0.96 (0.78–1.19)

Bao Y et al, N Engl J Med 2013

Coffee Consumption and Mortality From All Causes, Cardiovascular Disease, and Cancer: A Dose-Response Meta-Analysis



Crippa A et al, Am J Epidemiol 2014

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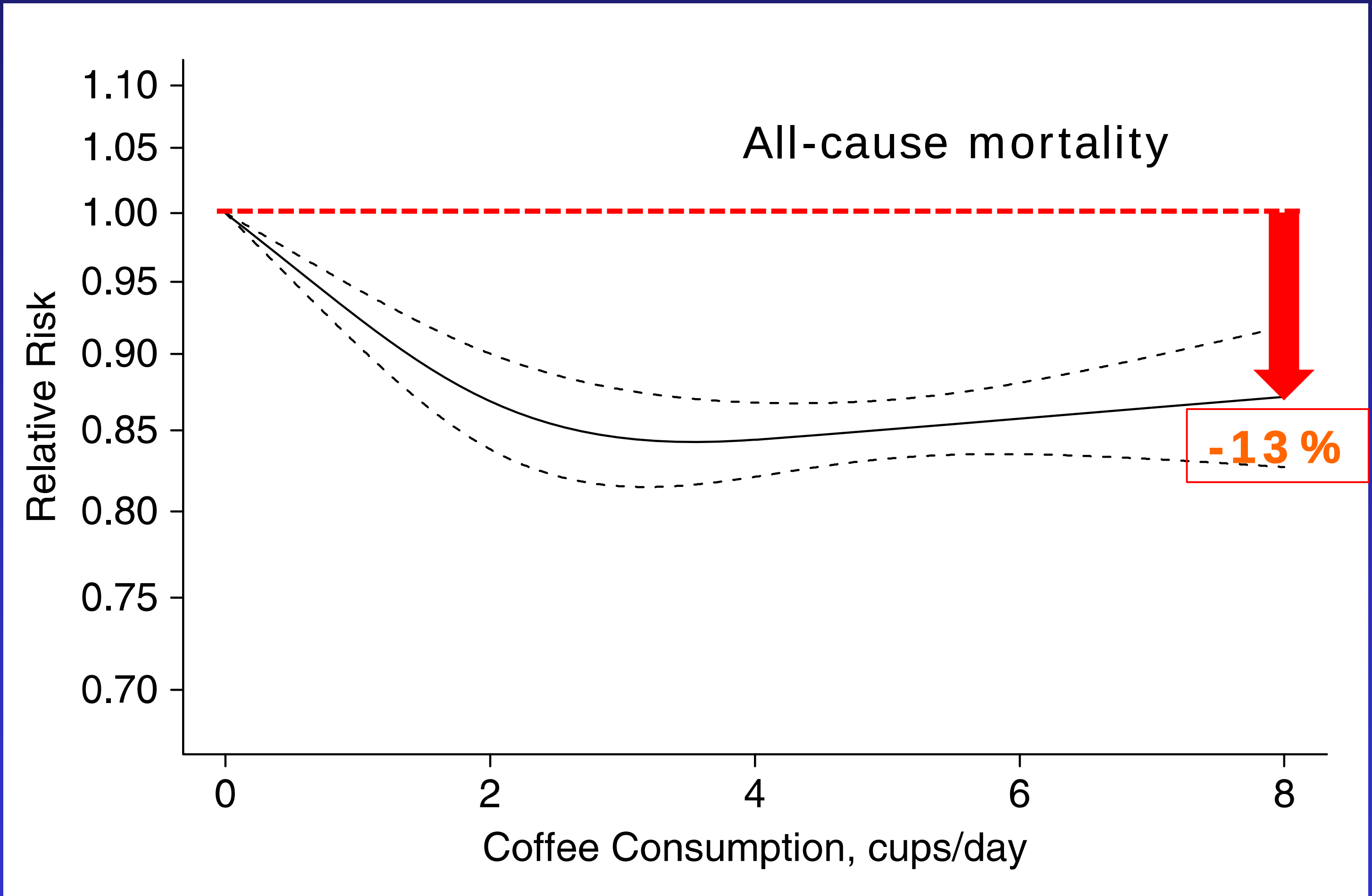

Crippa A et al, Am J Epidemiol 2014

Chocolate intake and myocardial infarction risk: a meta-analysis of prospective studies

	Categories of chocolate consumption, servings				
	0	1–3/month	1–2/week	≥3–4/week	p for trend
MI cases*/participants (%)	833/10 037 (8.3%)	2142/34 231 (6.3%)	1049/17 487 (6.0%)	393/5885 (6.7%)	
Total person-years	116 942	413 046	211 491	69 317	
Age-adjusted and sex-adjusted	1.00	0.82 (0.76 to 0.89)	0.77 (0.70 to 0.84)	0.76 (0.67 to 0.85)	<0.001
Multivariable model 1†	1.00	0.85 (0.79 to 0.92)	0.82 (0.75 to 0.90)	0.80 (0.70 to 0.90)	0.002
Multivariable model 2‡	1.00	0.91 (0.84 to 0.99)	0.89 (0.81 to 0.97)	0.87 (0.77 to 0.98)	0.04

Larsson S et al, Heart 2016

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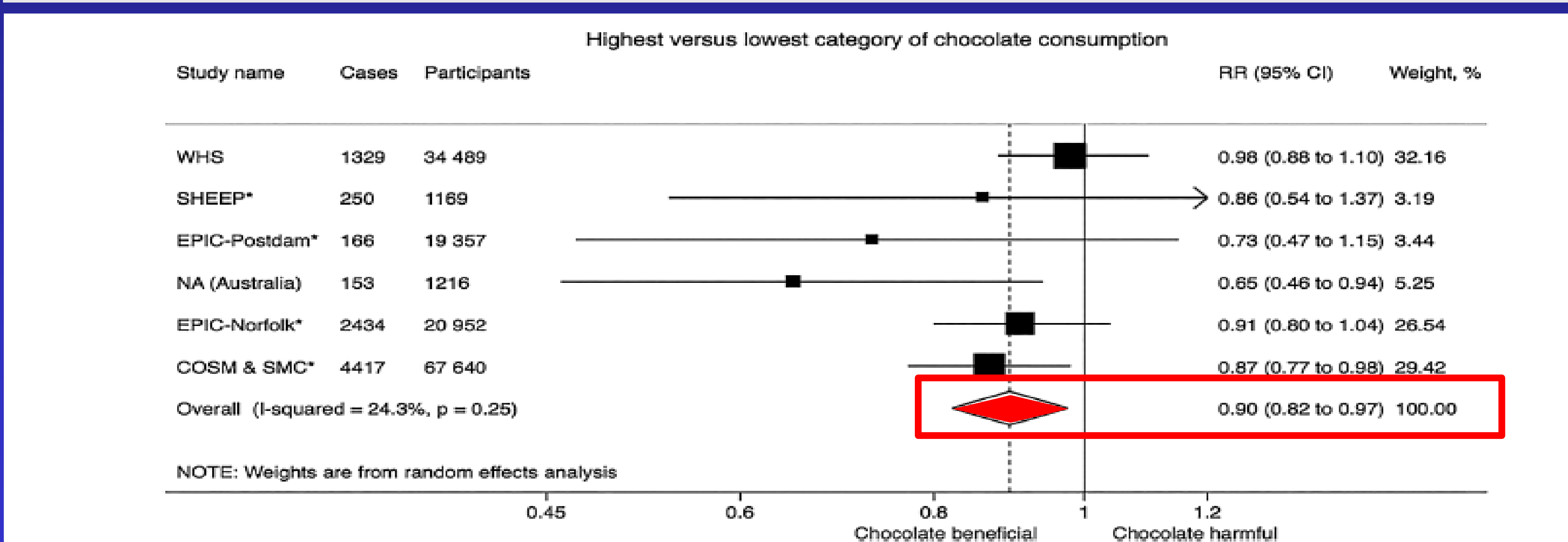


Larsson S et al, Heart 2016

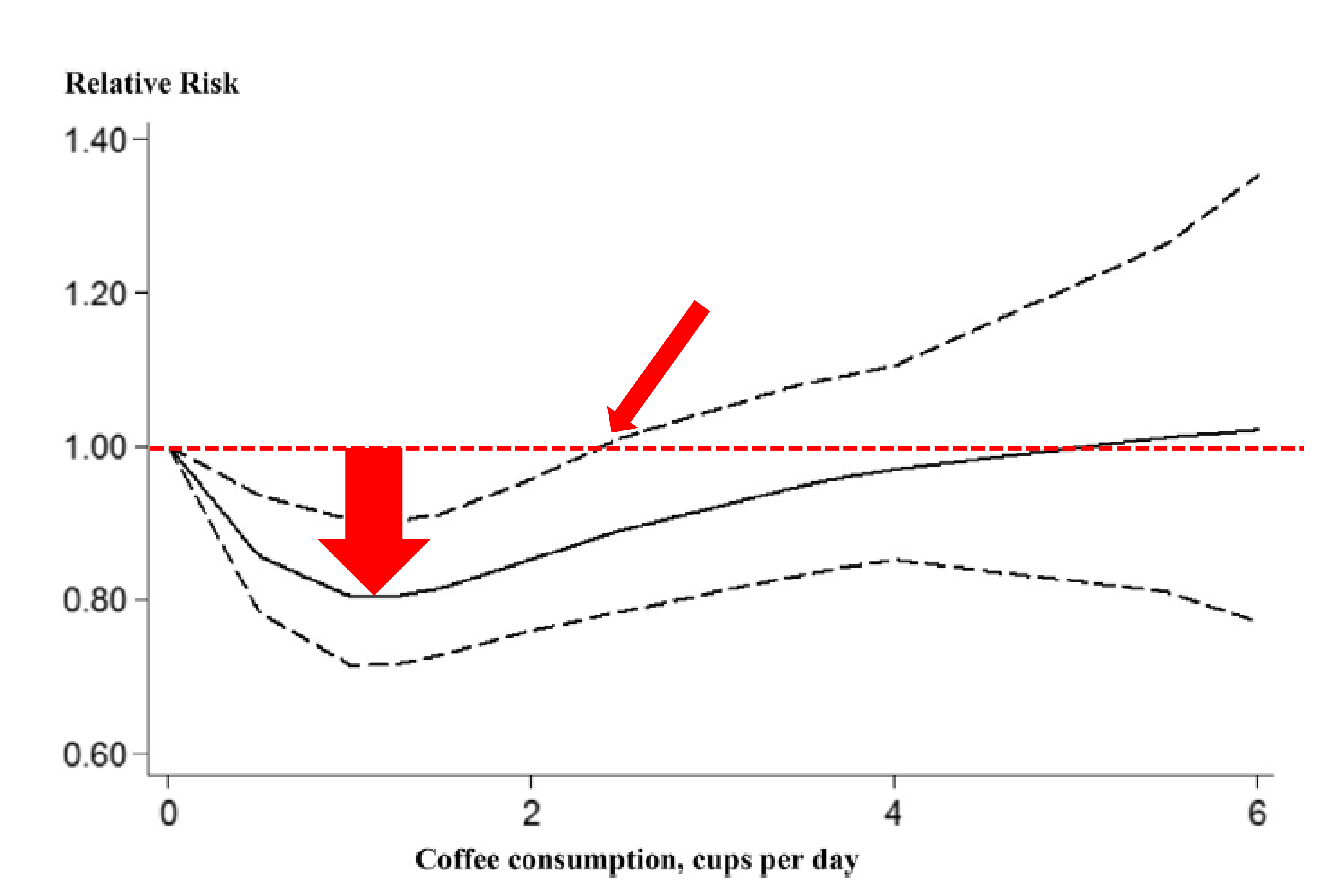
Chocolate flavanols consumption and cognition: the Cocoa, Cognition and Aging (CoCoA) Study

Neuropsychological tests	Treatment group: HF (n = 30)	IF (n = 30)	LF (n = 30)	*P*: ANOVA	Time × treatment interaction
MMSE					
Week 0	29.07 ± 0.20	29.27 ± 0.20	29.23 ± 0.22	0.76	0.52[2]
Week 8	29.20 ± 0.17	29.27 ± 0.18	29.20 ± 0.19		
Change	0.13 ± 0.13	0.00 ± 0.10	−0.03 ± 0.09		
TMT A, s					
Week 0	33.87 ± 1.81	32.27 ± 1.67	33.07 ± 1.75	0.81	<0.0001
Week 8	25.25 ± 1.45[a]	25.58 ± 1.53[a]	32.13 ± 1.82[b]	0.0035	
Change	−8.57 ± 0.38[a]	−6.67 ± 0.45[a]	−0.77 ± 1.57[b]	<0.0001	
P (ANOVA)	<0.0001	<0.0001	0.63		
TMT B, s					
Week 0	79.23 ± 3.37	78.27 ± 3.43	77.45 ± 4.17	0.94	<0.0001
Week 8	62.71 ± 2.80[a]	63.99 ± 3.14[a]	76.43 ± 4.21[b]	0.01	
Change	−16.50 ± 0.8[a]	−14.20 ± 0.49[a]	−1.10 ± 0.68[b]	<0.0001	
P (ANOVA)	<0.0001	<0.0001	0.12		
VFT, words/60 s					
Week 0	24.87 ± 1.08	26.13 ± 1.11	23.72 ± 1.28	0.38	<0.0001
Week 8	32.58 ± 1.60[a]	29.62 ± 1.35[a,b]	25.05 ± 1.44[b]	0.002	
Change	7.70 ± 1.09[a]	3.57 ± 1.23[b]	1.33 ± 0.45[b]	<0.0001	
P (ANOVA)	<0.0001	0.007	0.01		
z Score					
Week 0	−0.058 ± 0.10	0.083 ± 0.10	−0.026 ± 0.17	0.72	<0.0001
Week 8	0.656 ± 0.10[a]	0.582 ± 0.10[a]	0.063 ± 0.15[b]	0.0013	
Change	0.714 ± 0.03[a]	0.498 ± 0.05[b]	0.089 ± 0.7[c]	<0.0001	
P (ANOVA)	<0.0001	<0.0001	0.19		

TMT, Trail Making Test; VFT, Verbal Fluency Test.

Mastroiacovo D et al, Am J Clin Nutr 2014

Coffee consumption and incident cognitive decline: a dose-response meta-analysis



Wu L et al, Clinical Nutrition 2016

I molteplici effetti dei polifenoli

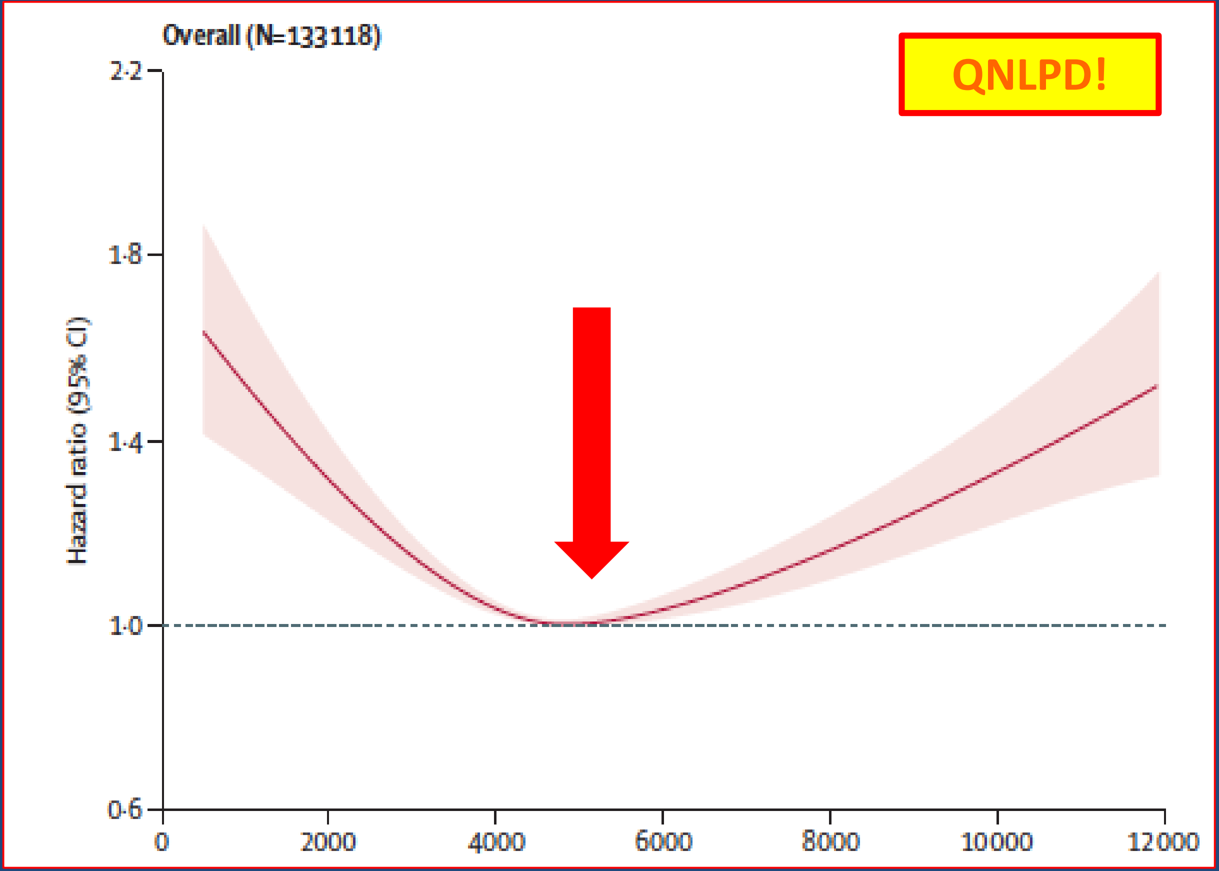
- Effetto antiossidante (?)
- Effetto antiinfiammatorio
- Effetti sulla trascrizione genica
- Inibizione dell’attività delle amilasi
- Effetti sul microbiota (con formazione di metaboliti secondari)
- Effetto sulla conversione degli omega-3 a più corta catena (ALA ed EPA) in DHA

Plasma fatty acids in vegans and omnivorous

Sarter B et al, Clin Nutr 2014

Associations of urinary sodium excretion with cardiovascular events in individuals with and without hypertension: a pooled analysis of data from four studies

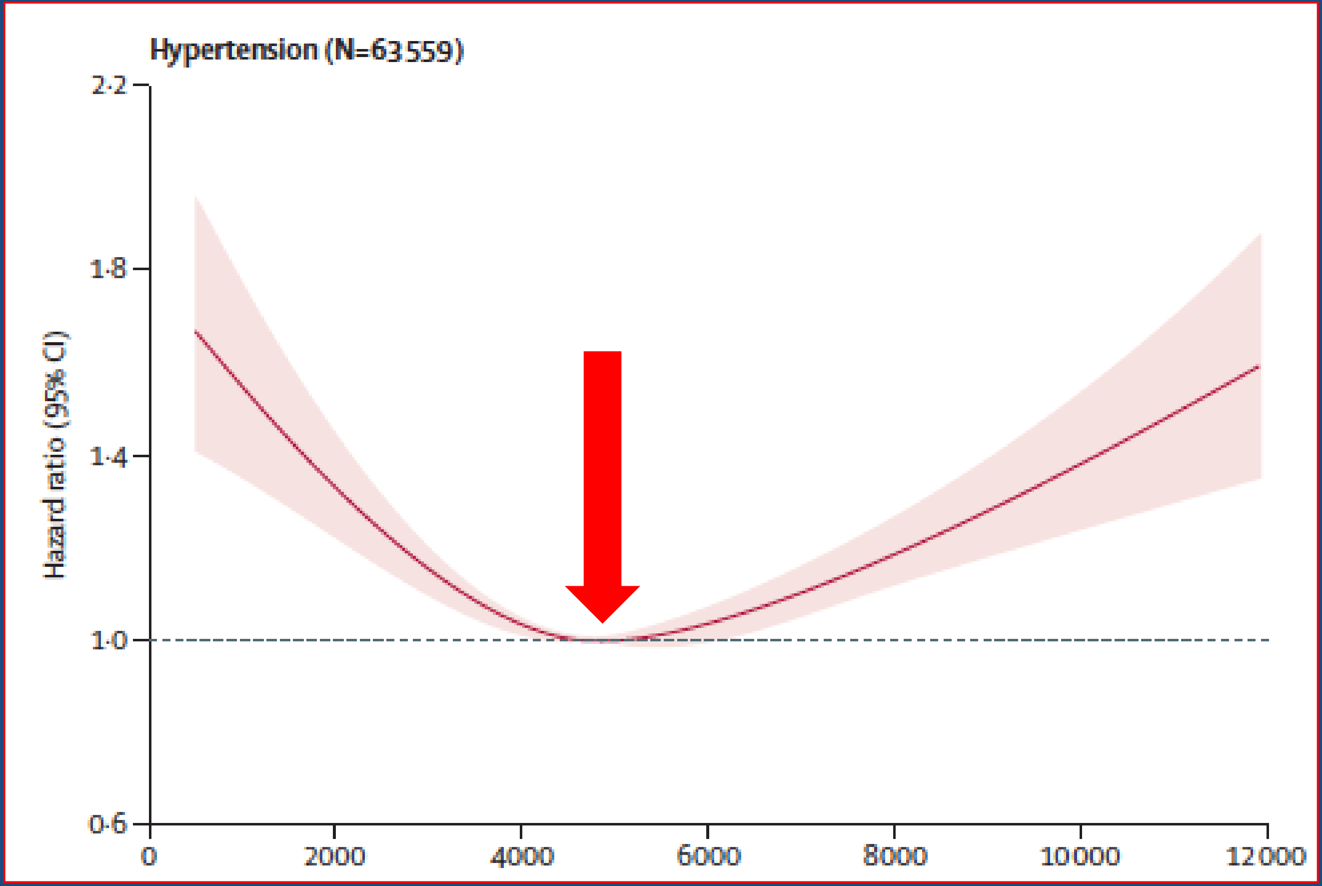
Andrew Mente, Martin O'Donnell, Sumathy Rangarajan, Gilles Dagenais, Scott Lear, Matthew McQueen, Rafael Diaz, Alvaro Avezum, Patricio Lopez-Jaramillo, Fernando Lanas, Wei Li, Yin Lu, Sun Yi, Lei Rensheng, Romaina Iqbal, Prem Mony, Rita Yusuf, Khalid Yusoff, Andrzej Szuba, Aytekin Oguz, Annika Rosengren, Ahmad Bahonar, Afzalhussein Yusufali, Aletta Elisabeth Schutte, Jephat Chifamba, Johannes F E Mann, Sonia S Anand, Koon Teo, S Yusuf, for the PURE, EPIDREAM, and ONTARGET/TRANSCEND Investigators



Il minimo dell'end-point combinato mortalità/eventi CV maggiori si osserva in associazione con apporti **di 5 g/die di Sodio , pari a 12,5 g di NaCl/die**

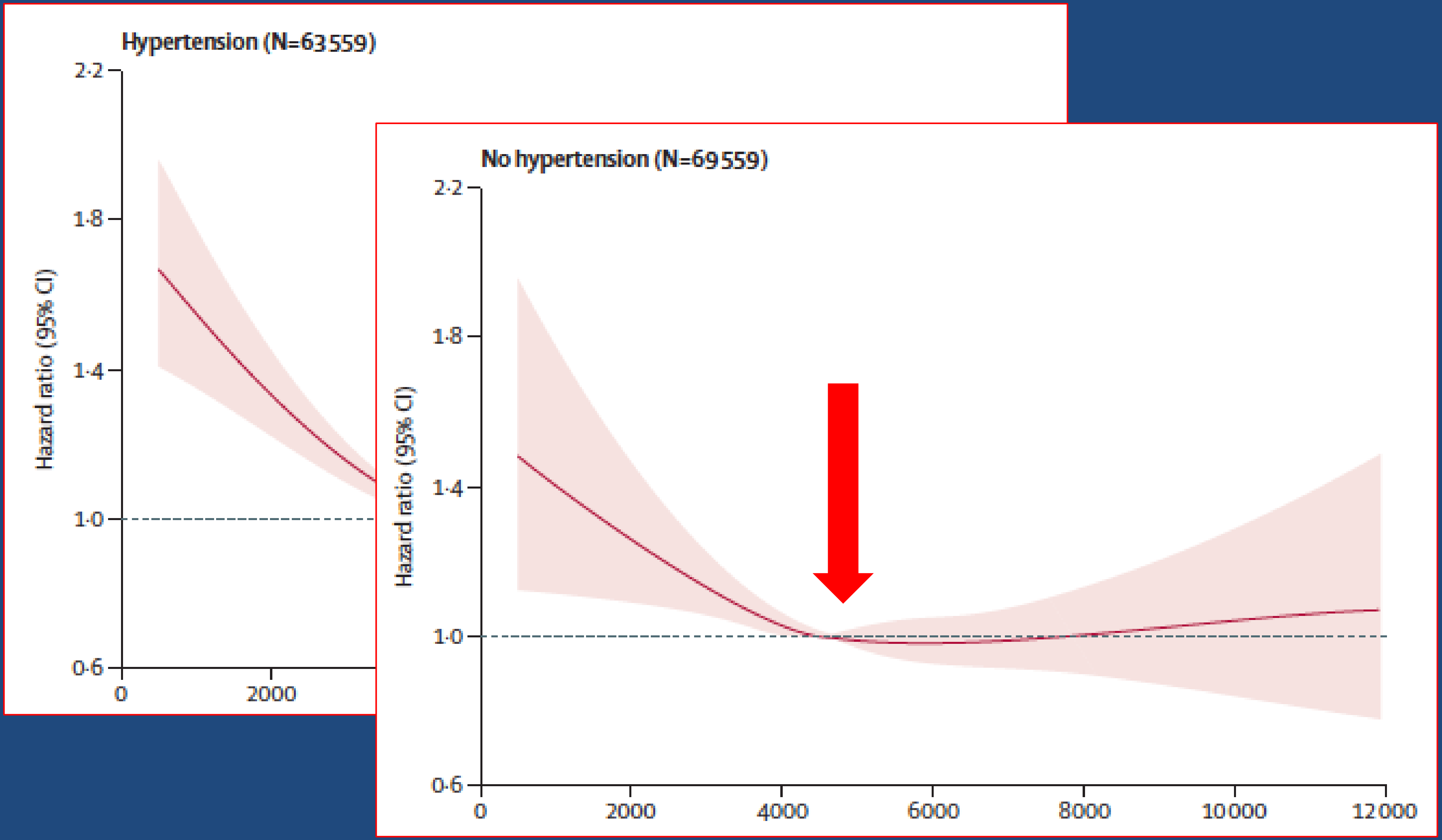
Mente A et al, Lancet, 2016

Sodium excretion, CV events and overall mortality in subjects with and without hypertension



Mente A et al, Lancet, 2016

Sodium excretion, CV events and overall mortality in subjects with and without hypertension



Mente A et al, Lancet, 2016

International Journal of Epidemiology, 2016, 1–10
doi: 10.1093/ije/dyv184
Original article

Original article

Why do we think we know what we know? A metaknowledge analysis of the salt controversy

Ludovic Trinquart,[1]* David Merritt Johns[2] and Sandro Galea[1,3]

[1]Department of Epidemiology, [2]Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, New York, NY, USA and [3]Boston University School of Public Health, Boston, MA, USA

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Current address: Cochrane France, Hôpital Hôtel-Dieu, 1 Place du Parvis Notre-Dame, 75004 Paris, France. E-mail: ludovic.trinquart@htd.aphp.fr

Key Messages

- We documented a strong polarization of scientific reports on the link between sodium intake and health outcomes.
- A majority of the existing papers are supportive of the salt hypothesis but a substantial minority are not.
- Published reports supporting either side of the hypothesis are less likely to cite contradictory papers.
- There was very little consistency in the selection of primary studies in systematic reviews on the topic.

Cosa ne dicono gli epidemiologi del PURE Study

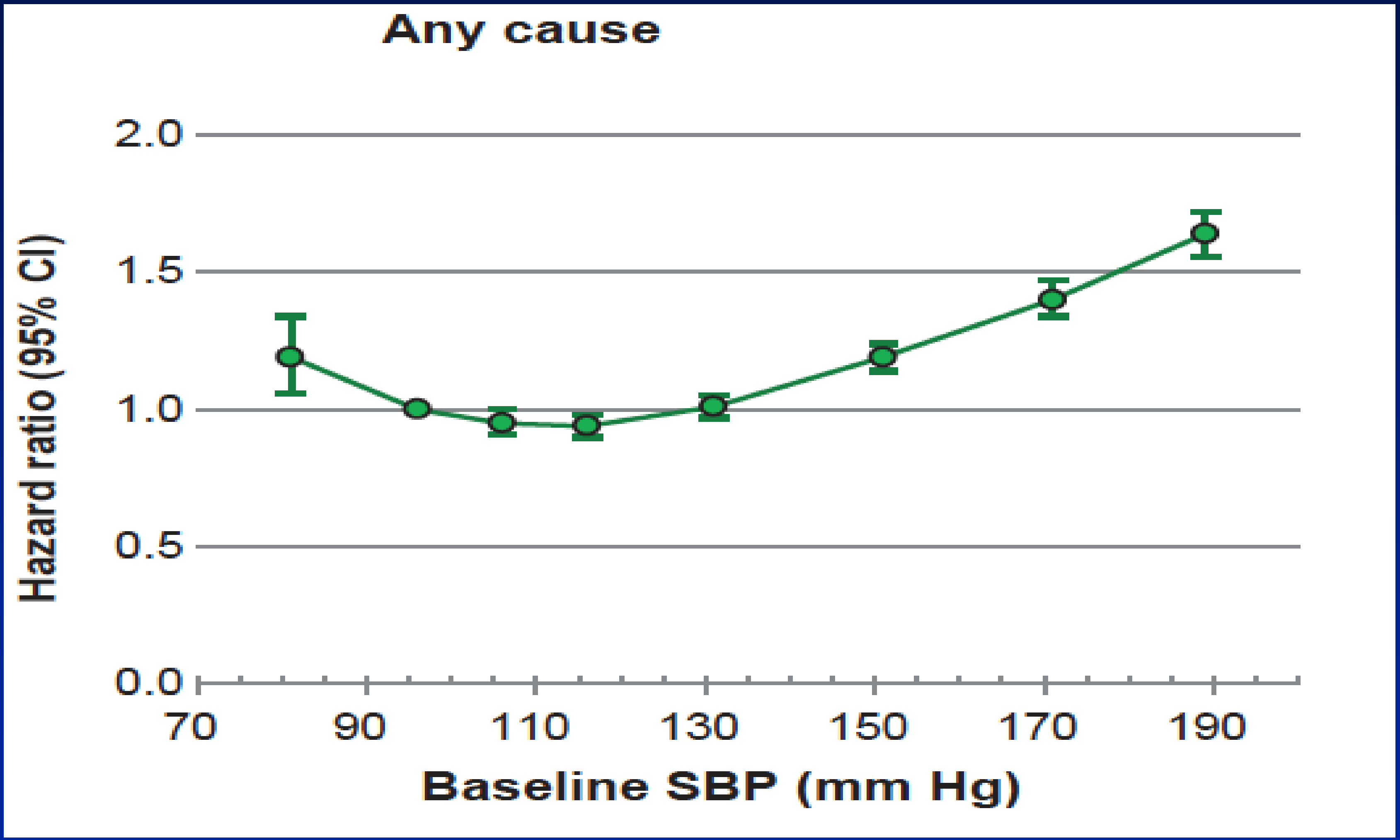
- Most reviews say salt is dangerous, most recent experimental papers find no correlation or “J” shaped correlations

- Several short-term studies also demonstrate ***activation of the renin-aldosterone-angiotensin system with low sodium intake***, which provides a biological rationale for the higher rates of cardiovascular events reported in several prospective cohort studies

- Reducing sodium intake in those consuming high sodium intake (>5 g/day), to moderate intake levels (3–5 g/day) is not controversial, as there is general consensus based on the consistency of blood pressure and cardiovascular data.
- ***The controversy resides in whether sodium intake should be further restricted to very low levels (< 2.4 g/day),*** which has yet to be sustainably achieved in any population, which is a range where the effects on blood pressure are modest and there are additional concerns about safety.

O’Donnell M et al, Intern J Epidemiol 2016

SBP and overall mortality in 1,000,000 Korean Adults



Yi SW et al, Circulation 2016

Sensibilità al sale in vari gruppi

TABLE 1 Salt Sensitivity in Various Groups*

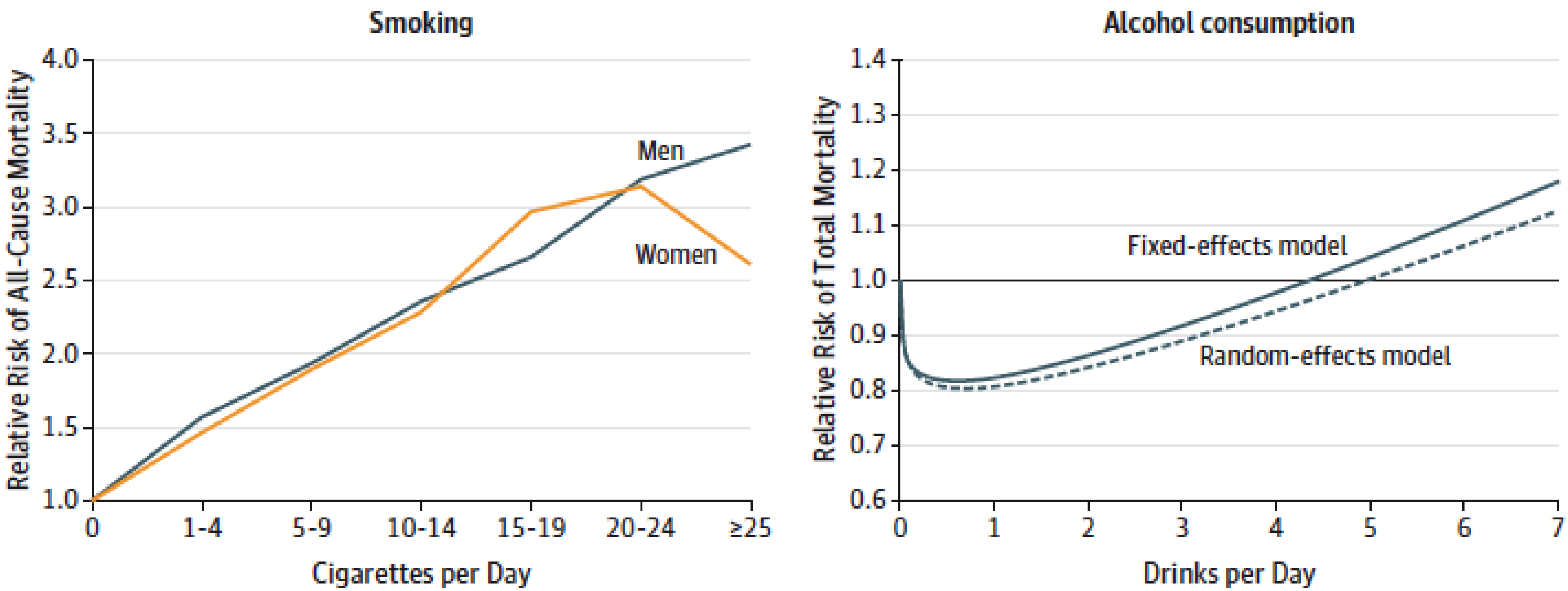
Salt Resistant	Salt Sensitive
Young	Aged
Middle-aged	Hypertensive
Normotensive	African American
Caucasian	Chronic kidney disease
	History of pre-eclampsia
	Low birth weight

*Data derived from Weinberger et al. (4), de Bier et al. (9), Koomans et al. (10), Martillotti et al. (11), Weinberger (12,13), and Weinberger et al. (14)

Farquhar WB et al, J Am Coll Cardiol 2015

J-Shaped Curves and Public Health

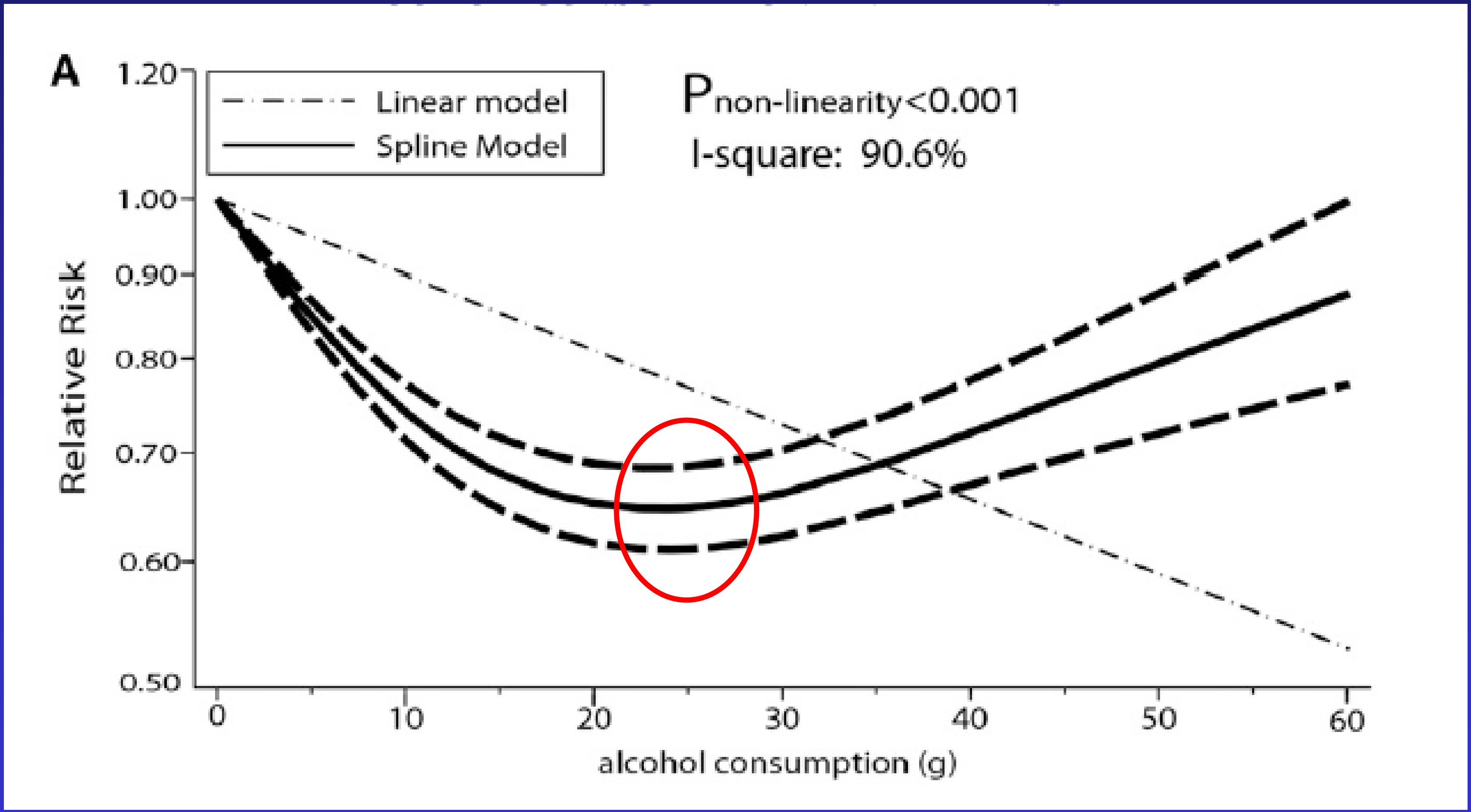
Figure. Examples of Linear Curve for Mortality vs Cigarette Use and J-Shaped Curve for Mortality vs Alcohol Consumption



Chokshi DA et al, JAMA 2015

Alcool e rischio di diabete di tipo II: una metanalisi

(700k soggetti, da 26 studi, 30k casi di diabete)



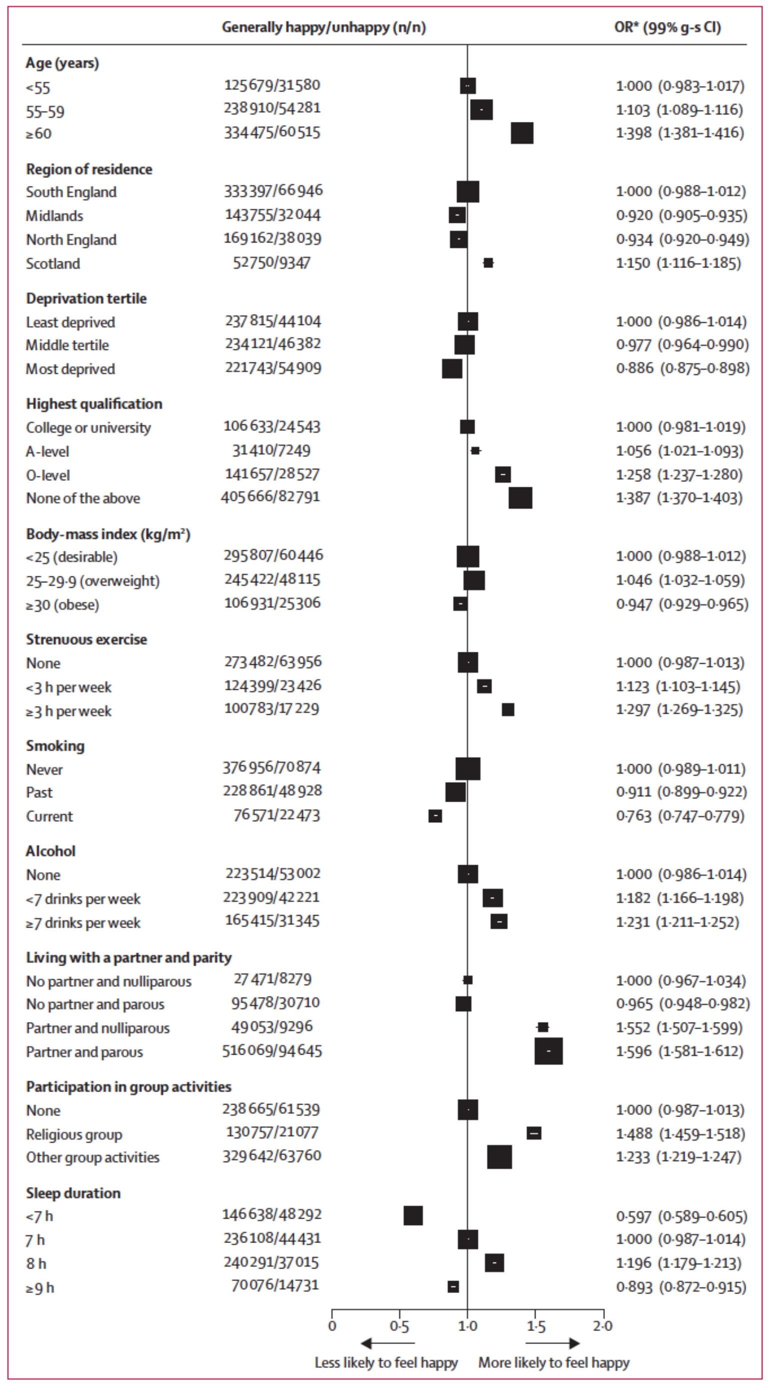
Li XH et al, *Am J Clin Nutr* 2016

Table 3. Selected Areas of Concordance and Controversy Related to Diet and Cardiometabolic Health*

	Broad Concordance and Less Controversy or Uncertainty†	General Concordance but Some Remaining Controversy and Uncertainty	Substantial Controversy and Uncertainty
Benefits of:	Fruits, nonstarchy vegetables, nuts/seeds, legumes, yogurt	Seafood, whole grains	Cheese, low-fat milk
	Dietary fiber, potassium	Certain vegetable oils (eg, soybean, canola, extra virgin olive)	Certain vegetable oils (eg, corn, sunflower, safflower)
	Moderate alcohol use	n-3 and n-6 polyunsaturated fats, plant-derived monounsaturated fats	Total or animal-derived monounsaturated fats
	Mediterranean-style or higher fat DASH-style diet patterns	Phenolic compounds	Coffee, tea, cocoa
			Vitamin D, magnesium, fish oil
Harms of:	Partially hydrogenated vegetable oils, processed meats	Moderate sodium	Saturated fats, dietary cholesterol
	High sodium	White/russet potatoes	Unprocessed red meats, eggs
	Sugar-sweetened beverages, foods rich in refined grains, starches, added sugars	High glycemic index/load	Butter
	Greater than moderate alcohol use		
Little effect of:	Total fat	Total carbohydrate	Poultry
		Isolated antioxidant vitamins, calcium	100% fruit juice
			Total protein, specific amino acids
			Noncaloric sweeteners

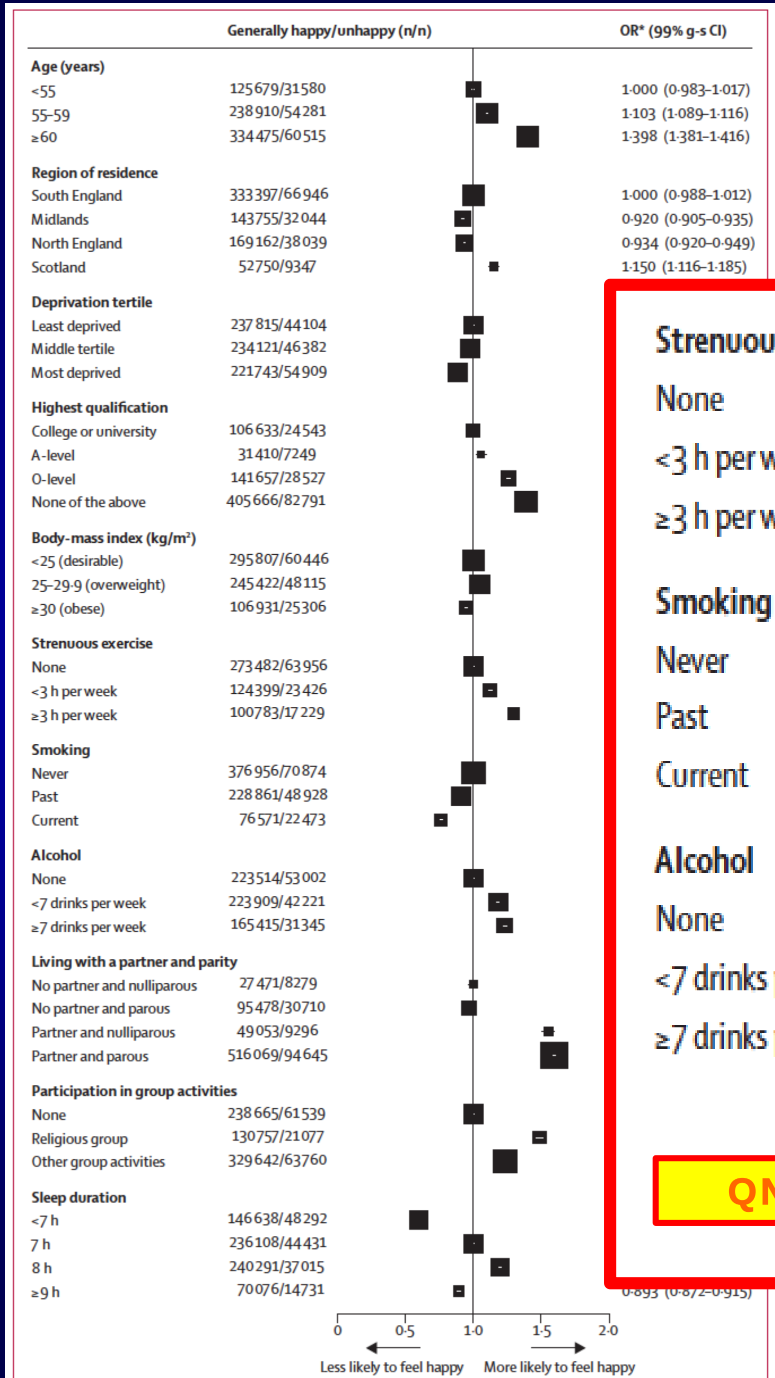
Mozaffarian D, Circulation, 2016

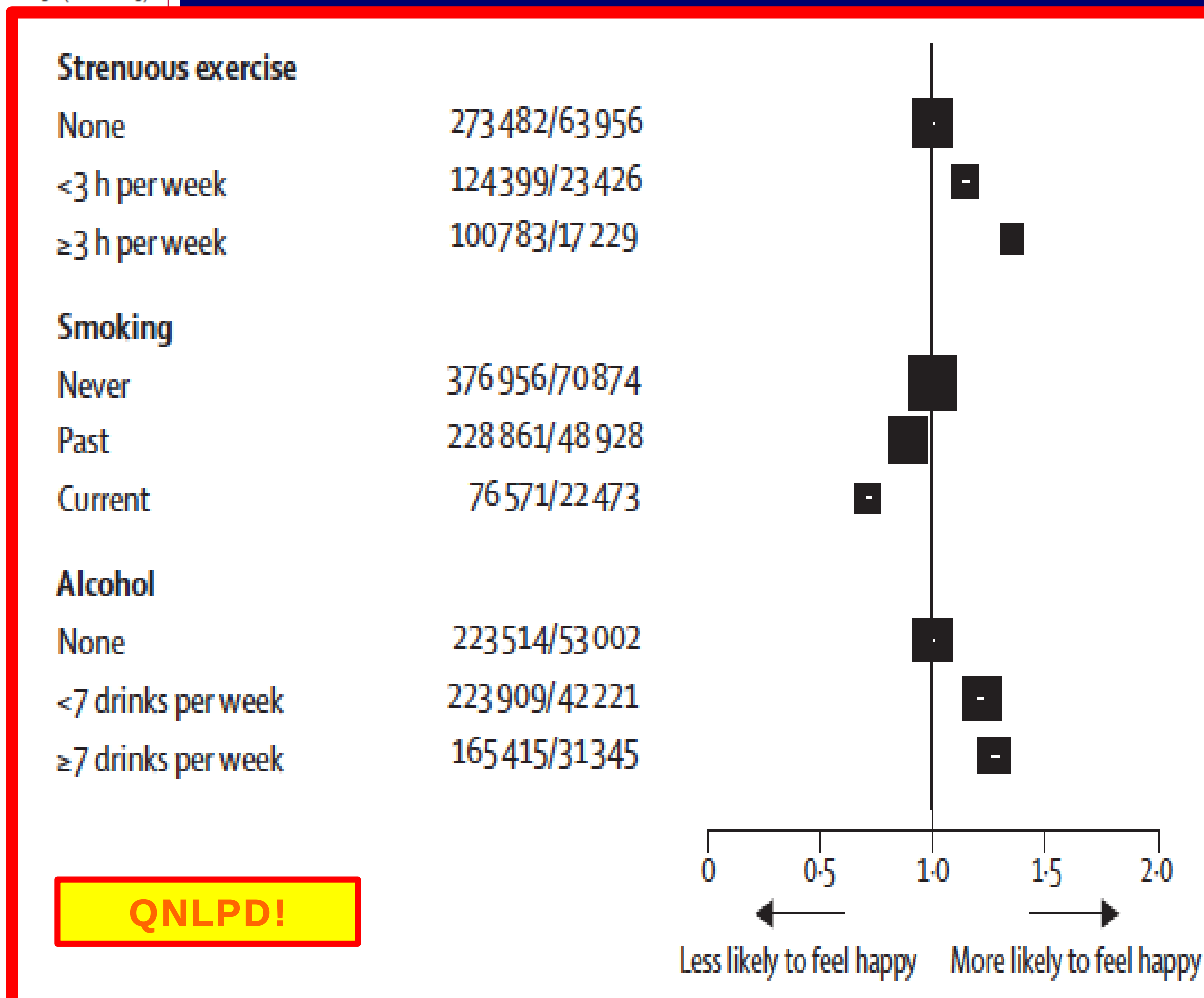
Markers di felicità nel "Million Women Study"



Liu B et al., Lancet 2015

Markers di felicità nel "Million Women Study"

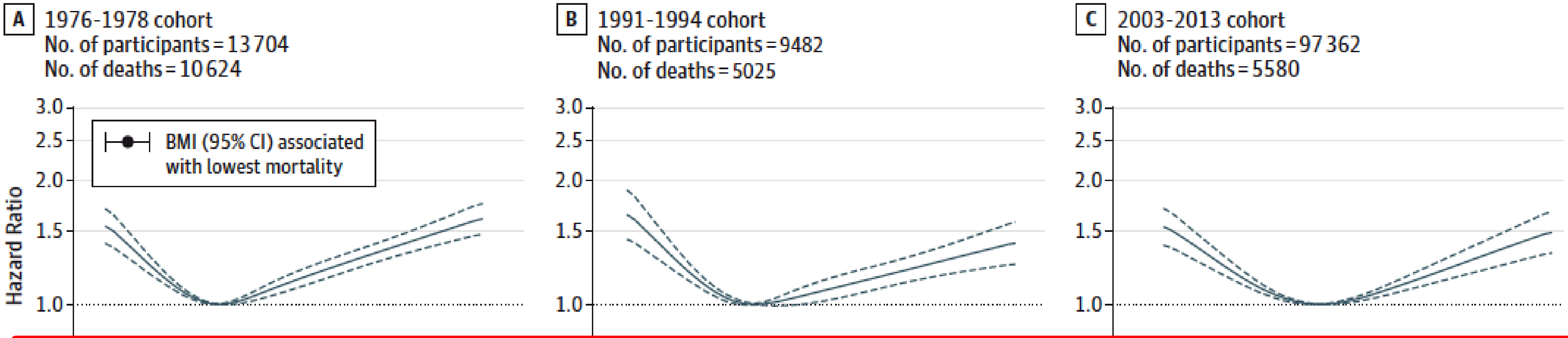




Liu B et al., Lancet 2015

BMI e mortalità per tutte le cause: un bersaglio mobile?

Figure 1. Multivariable-Adjusted Hazard Ratios for All-Cause Mortality in the 1976-1978, 1991-1994, and 2003-2013 Cohorts According to Body Mass Index

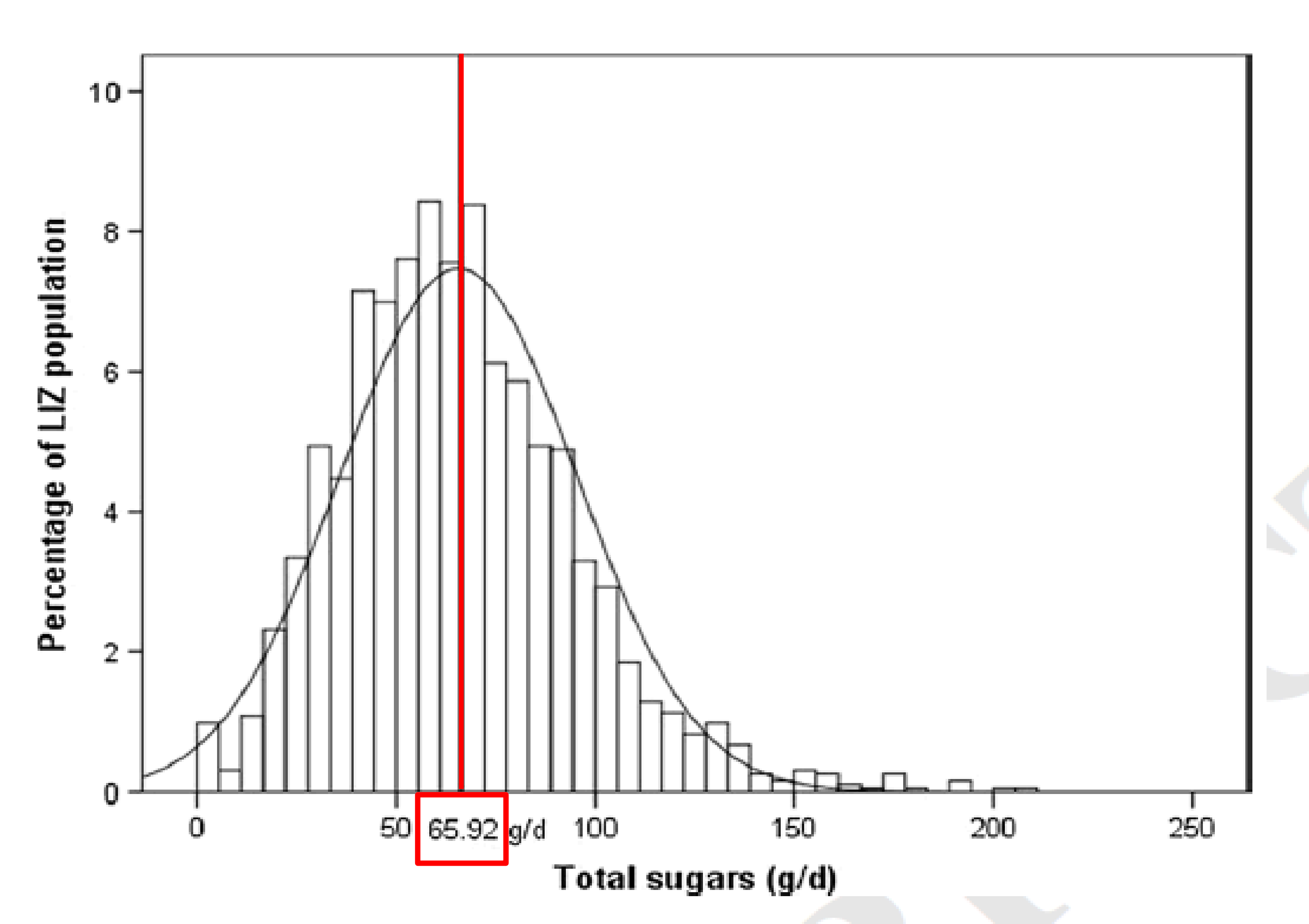


	BMI Associated With Lowest Mortality by Type of Mortality (95% CI)		
Cohort	All-Cause	Cardiovascular	Other
1976-1978	23.7 (23.4-24.3)	23.2 (22.6-23.7)	24.1 (23.5-25.9)
1991-1994	24.6 (24.0-26.3)	24.0 (23.4-25.0)	26.8 (26.1-27.9)
2003-2013	27.0 (26.5-27.6)	26.4 (24.1-27.4)	27.8 (27.1-29.6)

QNLPD ASSOLUTAMENTE

Afzal S et al, JAMA 2016

Distribuzione del consumo di zuccheri totali nello studio LIZ



Marangoni et al., Eur J Nutr 2016

Caratteristiche dei soggetti con differente consumo di zuccheri nello studio LIZ

Quartile	I	II	III	IV
Total sugar range (g/day)	>0, ≤44.8	>44.8, ≤63	>63, ≤82.8	>82.8
Sugar intakes				
Total sugar (g/day)	31.23 ± 10.66	54.47 ± 5.19	72.13 ± 5.64	104.84 ± 21.49
Sucrose (g/day)	11.56 ± 9.41	21.78 ± 11.63	32.79 ± 14.07	61.27 ± 24.48
Fructose (g/day)	16.55 ± 10.23	28.24 ± 11.56	33.94 ± 13.23	36.84 ± 14.41
Lactose (g/day)	3.12 ± 3.25	4.45 ± 3.66	5.40 ± 4.39	6.73 ± 4.90
Age (y)	51.31 ± 16.46	52.66 ± 15.01	52.04 ± 15.84	47.81 ± 16.07
Weight (kg)	71.64 ± 15.05	72.39 ± 13.95	70.79 ± 12.94	71.64 ± 15.52
BMI	26.03 ± 5.01	26.15 ± 4.56	25.7 ± 4.19	25.51 ± 4.7
Waist circumference (cm)	91.84 ± 14.98	93.15 ± 12.85	90.89 ± 12.57	90.79 ± 14.85
SBP (mmHg)	125.35 ± 13.21	125.24 ± 13.3	124.55 ± 14.21	123.69 ± 13.19
DBP (mmHg)	77.05 ± 8.93	76.86 ± 7.66	77.14 ± 8.74	76.42 ± 9.68

Data are mean ± SD

QNLPD!

Marangoni F et al., Eur J Nutr 2016

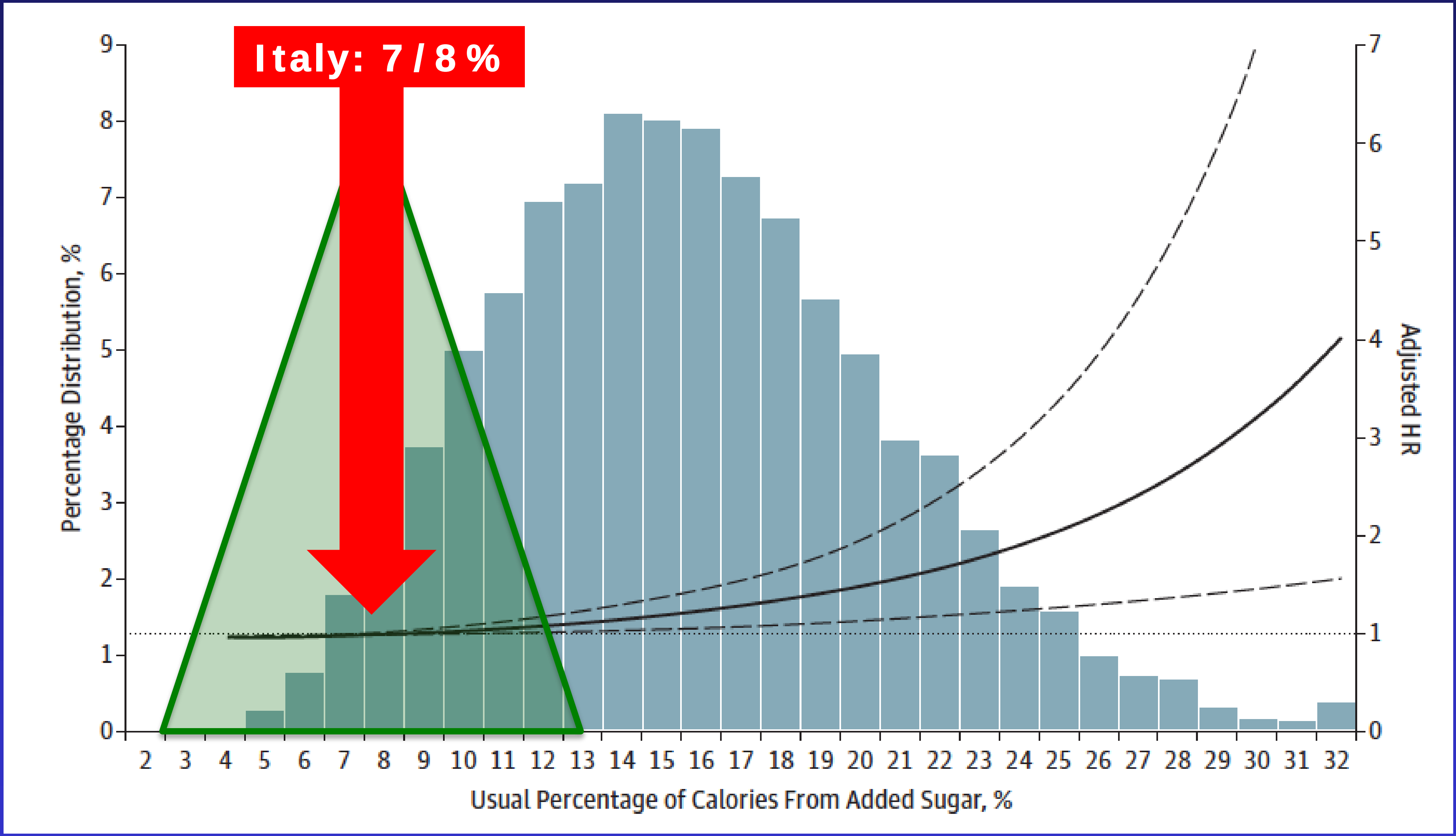
Sugar intake and CVD mortality in US

Table 2. Adjusted HR of CVD Mortality According to Usual Percentage of Calories From Added Sugar[a]

Characteristic	Midvalue of Quintiles of Usual Percentage of Calories From Added Sugar					*P* Value[b]
	Q1 (7.4%)	Q2 (11.4%)	Q3 (14.8%)	Q4 (18.7%)	Q5 (25.2%)	
Range (0-100)/usual percentage, %	0 to <9.6	9.6 to <13.1	13.1 to <16.7	16.7 to <21.3	≥21.3	
HR (95% CI)						
Adjusted only for age, sex, race/ethnicity	1 [Ref]	1.09 (1.05 to 1.13)	1.23 (1.12 to 1.34)	1.49 (1.24 to 1.78)	2.43 (1.63 to 3.62)	<.001
Fully adjusted[c]	1 [Ref]	1.07 (1.02 to 1.12)	1.18 (1.06 to 1.31)	1.38 (1.11 to 1.70)	2.03 (1.26 to 3.27)	.004
Adjusted NNH at 15-y follow-up[d]		265 (166 to 715)	109 (67 to 297)	53 (33 to 152)	22 (13 to 66)	

Yang Q et al, JAMA Intern Med 2014

Sugar intake and CVD mortality in US



Yang Q et al, JAMA Intern Med 2014

Healthy eating and mortality in a cohort of CHD patients whit state-of-the-art drug treatment

The Dutch Healthy Nutrient and Food Score (DHNaFS) included 11 nutrient-dense food groups:
vegetables, fruit, whole grains, protein-rich plant foods (mostly legumes), potatoes, lean meat, fish, eggs, low-fat milk and yogurt, oils and soft margarines, and noncaloric drinks.

The Dutch Undesirable Nutrient and Food Score (DUNaFS) included 13 food groups high in solid fats, sodium, and/or added sugar:
processed fruit, high-fat meat, processed meat, full-fat milk, cheese; refined grains, butter and hard margarines, soups, spreads, ready-to-eat meals, savory snacks, sweet snacks, and sugar-sweetened beverages.

4,307 CHD pts from the Alpha-Omega Trial, 60-80 yrs at baseline, 10 yrs follow-up

Sijstma FPC et al, Am J Clin Nutr, 2015

Healthy eating and mortality in a cohort of CHD patients whit state-of-the-art drug treatment

Multivariable adjusted HRs for all-cause and CVD mortality across quintiles of the DHNaFS and the DUNaFS[1]

	Q1	Q2	Q3	Q4	Q5	*P*-trend
All cause mortality						
DHNaFS						
Model 1	1	0.89 (0.72, 1.10)	0.74 (0.61, 0.90)	0.67 (0.54, 0.84)	0.57 (0.45, 0.71)	<0.0001
Model 2	1	0.97 (0.78, 1.20)	0.81 (0.66, 0.99)	0.78 (0.62, 0.99)	0.72 (0.56, 0.93)	0.0015
Model 3	1	0.95 (0.76, 1.18)	0.77 (0.63, 0.95)	0.76 (0.60, 0.97)	0.70 (0.55, 0.91)	0.0006
DUNaFS						
Model 1	1	1.12 (0.90, 1.39)	1.03 (0.83, 1.27)	1.09 (0.87, 1.36)	0.95 (0.75, 1.20)	0.552
Model 2	1	1.19 (0.94, 1.49)	1.10 (0.87, 1.39)	1.24 (0.95, 1.62)	1.08 (0.79, 1.48)	0.857
Model 3	1	1.22 (0.97, 1.54)	1.14 (0.89, 1.45)	1.28 (0.98, 1.68)	1.15 (0.84, 1.58)	0.702
Cardiovascular mortality						
DHNaFS						
Model 1	1	0.84 (0.60, 1.16)	0.62 (0.46, 0.84)	0.59 (0.41, 0.83)	0.61 (0.44, 0.85)	<0.0001
Model 2	1	0.88 (0.63, 1.23)	0.63 (0.46, 0.87)	0.65 (0.45, 0.94)	0.72 (0.50, 1.03)	0.008
Model 3	1	0.88 (0.63, 1.23)	0.59 (0.43, 0.82)	0.59 (0.41, 0.87)	0.68 (0.47, 0.99)	0.0002
DUNaFS						
Model 1	1	1.17 (0.83, 1.63)	0.90 (0.64, 1.26)	1.14 (0.81, 1.61)	1.05 (0.74, 1.48)	0.99
Model 2	1	1.19 (0.84, 1.68)	0.87 (0.60, 1.27)	1.17 (0.78, 1.76)	1.09 (0.68, 1.74)	0.651
Model 3	1	1.22 (0.86, 1.73)	0.92 (0.63, 1.34)	1.23 (0.82, 1.85)	1.15 (0.72, 1.84)	0.759

4,307 CHD pts from the Alpha-Omega Trial, 60-80 yrs at baseline, 10 yrs follow-up

Sijstma FPC et al, Am J Clin Nutr, 2015

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4,307 CHD pts from the Alpha-Omega Trial, 60-80 yrs at baseline, 10 yrs follow-up

Sijstma FPC et al, Am J Clin Nutr, 2015

Dietary patterns and the risk of major CVD events in high-risk patients with stable CHD

Associations between Mediterranean and western dietary scores and outcomes before and after adjusting for co-variates

Diet score and outcome	HR (95% CI) for adverse event for a one point increase in diet score[a]	*P*-value	HR (95% CI) for adverse event for a one point increase in diet score in the fully adjusted models[b]	*P*-value
MDS >12				
MACE	0.93 (0.90, 0.96)	<0.0001	0.95 (0.92, 0.99)	0.007
Myocardial infarction	0.95 (0.90, 0.99)	0.02	0.96 (0.91, 1.01)	0.12
Stroke	0.89 (0.82, 0.97)	0.006	0.91 (0.83, 0.99)	0.02
Cardiovascular death	0.94 (0.89, 0.99)	0.01	0.97 (0.92, 1.03)	0.29
All-cause death	0.93 (0.89, 0.97)	<0.0001	0.96 (0.92, 1.00)	0.06
Other dietary patterns				
WDS and MACE	1.00 (0.98, 1.02)	0.36	0.99 (0.97, 1.01)	0.27
MDS ≤12 and MACE	0.99 (0.96, 1.02)	0.62	1.00 (0.98, 1.04)	0.61

Stewart RA et al, Eur Heart J, 2016

Dietary patterns and the risk of major CVD events in high-risk patients with stable CHD

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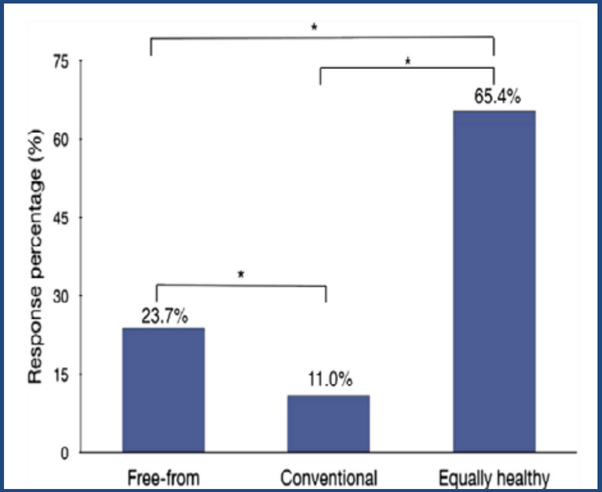
Stroke	0.89 (0.82, 0.97)	0.006	0.91 (0.83, 0.99)	0.02
Cardiovascular death	0.94 (0.89, 0.99)	0.01	0.97 (0.92, 1.03)	0.29
All-cause death	0.93 (0.89, 0.97)	<0.0001	0.96 (0.92, 1.00)	0.06
Other dietary patterns				
WDS and MACE	1.00 (0.98, 1.02)	0.36	0.99 (0.97, 1.01)	0.27
MDS ≤12 and MACE	0.99 (0.96, 1.02)	0.62	1.00 (0.96, 1.04)	0.61

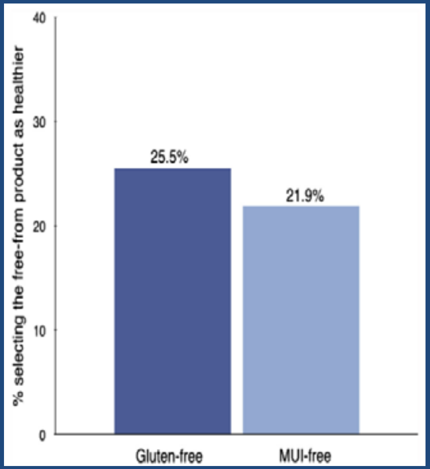
Conclusion Greater consumption of healthy foods may be more important for secondary prevention of coronary artery disease than avoidance of less healthy foods typical of Western diets.

Stewart RA et al, Eur Heart J, 2016

The Influence of a Factitious Free-From Food Product Label on Consumer Perceptions of Healthfulness

Matthew Priven, MS*; Jennifer Baum, MS*; Edward Vieira, PhD, MBA; Teresa Fung, ScD, RD; Nancie Herbold, EdD, RD, LDN





Questo studio suggerisce che l'etichetta "senza" genera la percezione di alimento salutare anche in assenza di informazioni significative, e che questi claim sono un **potente metodo di comunicazione** in grado di manipolare la percezione di salubrità di un prodotto.

J Acad Nutr Diet. 2015;115:1808-1814.

Riassumendo:

- Il ruolo dei grassi nel mantenere lo stato di salute è cambiato profondamente
- Latte e latticini hanno effetti di salute prevalentemente positivi
- Gli alimenti e le bevande ricchi di polifenoli (caffè, tè, cioccolato, frutti rossi, frutta a guscio, ecc.) hanno importanti effetti favorevoli di salute
- Il sale (forse) conta meno di quanto pensassimo
- L’alcool a dosi moderate ha effetti favorevoli sulla salute

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- Il sale (forse) conta meno di quanto pensassimo
- L’alcool a dosi moderate ha effetti favorevoli sulla salute
- ***Forse dobbiamo occuparci più della promozione degli alimenti favorevoli che del controllo degli alimenti meno favorevoli***

QNLPD!