

MALNUTRITION: FROM AWARENESS TOWARDS CONTROL

A NUTRITIONAL CARE POLICY SUMMIT

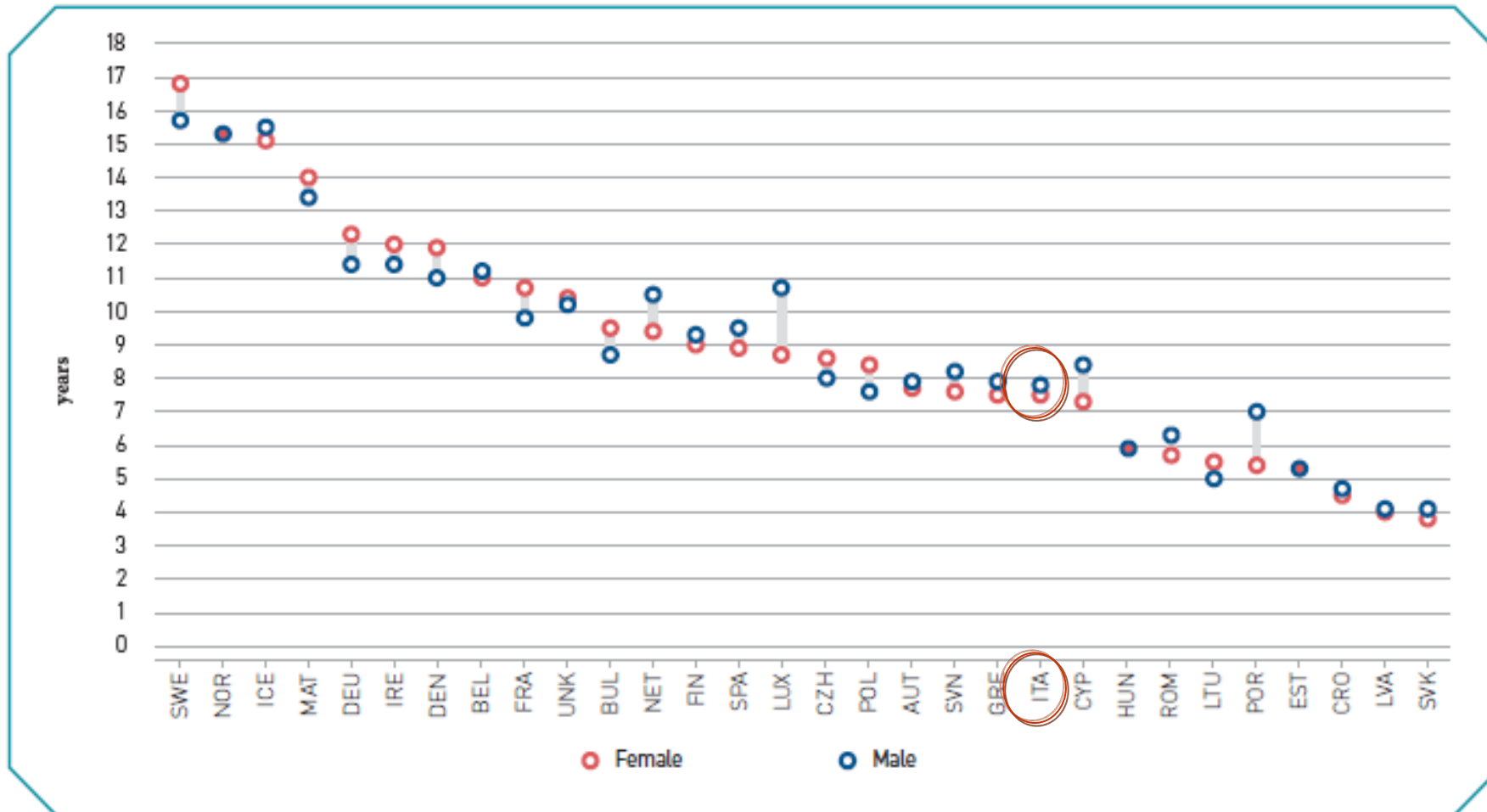
Aligning Health: Nutritional Care Strategies in Pursuit
of CVD Policy Objectives



Roberto Volpe
European Heart Network

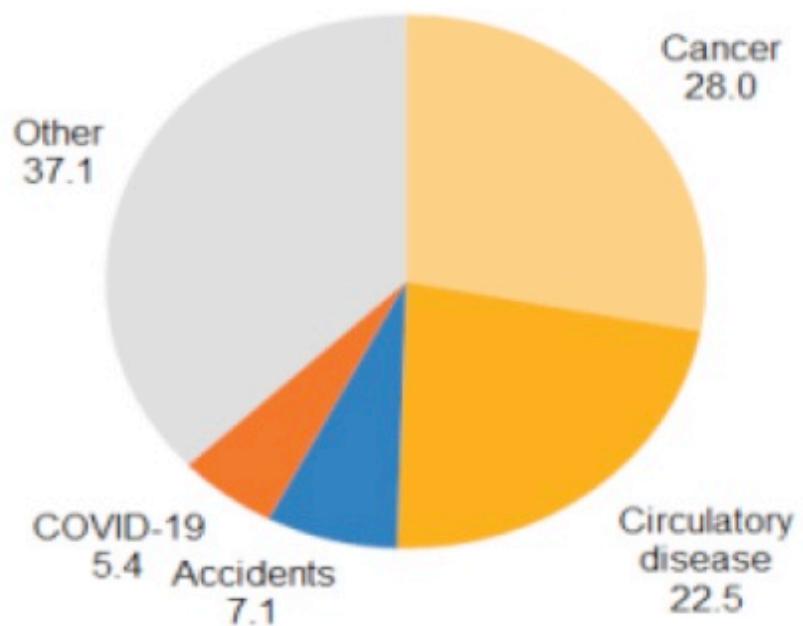


Figure 2.20. Healthy life years at age 65, by sex, 2015

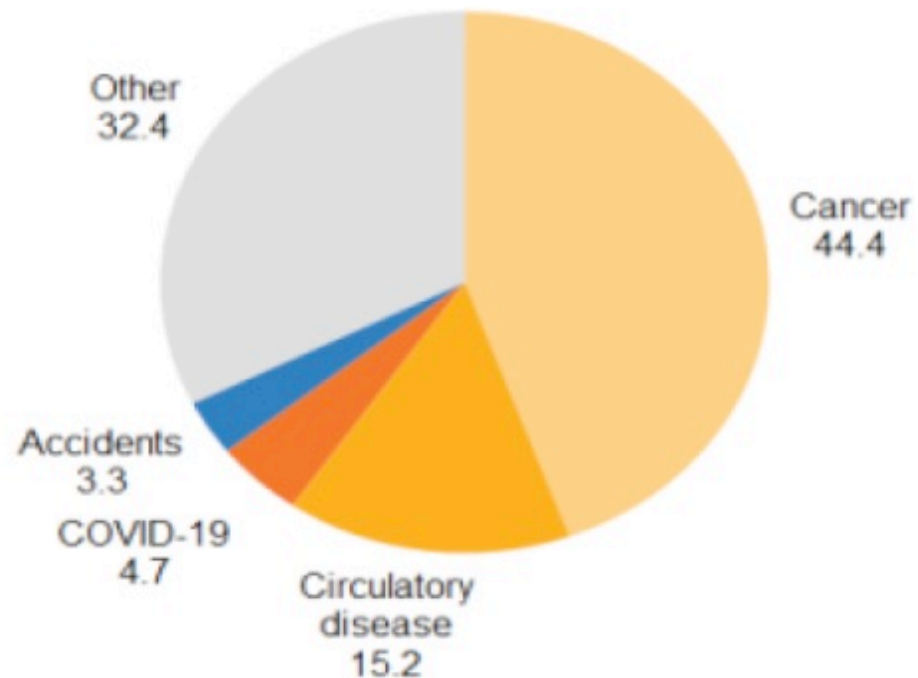


Longevity but often not in good health!

Males aged less than 65 years



Females aged less than 65 years



Source: Eurostat (online data code: hlth_cd_aro)

**Frequency of major causes of death analysed by age group and sex, EU,
2020**
(%)

Main causes of tumors

(Anand, 2008)

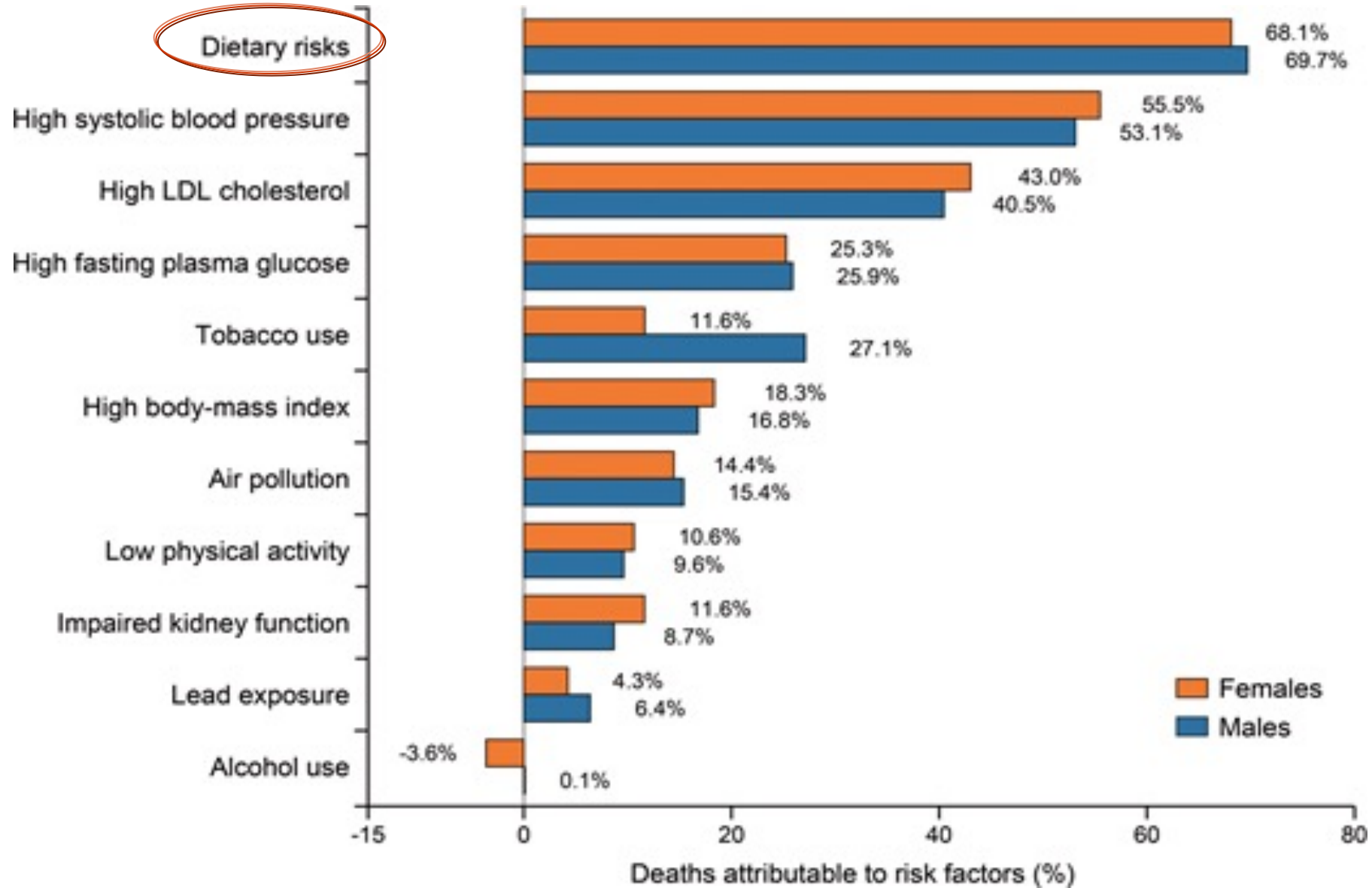
	%
Nutrition* /obesity*	30-35
Smoking	25-30
Infections	15-20
Geophysical factors (radiation)	<10
Genetics	5-10
Environmental pollution	
Sedentary life	

***by inflammation, estrogens, leptin, insuline, insuline-like growth factor-1 (→ increased cellular proliferation)**



Percentage contributions of major risk factors to ischaemic heart disease age-standardized deaths by sex, 2017.

The cumulative impact of risk factors is not the simple addition of their individual contributions as the risk factors may overlap. GBD 2017 Diet Collaborators, Lancet, 2019





European Heart Network
Fighting heart disease and stroke



Topics

(evidence based, against inequalities, in alliances-collaborations)

Marketing to children

Food in public institutions

Food taxation

Healthy food promotion (vending machines, schools, hospitals)

Dietary sugar tax
Subsidies for healthier foods

Labelling

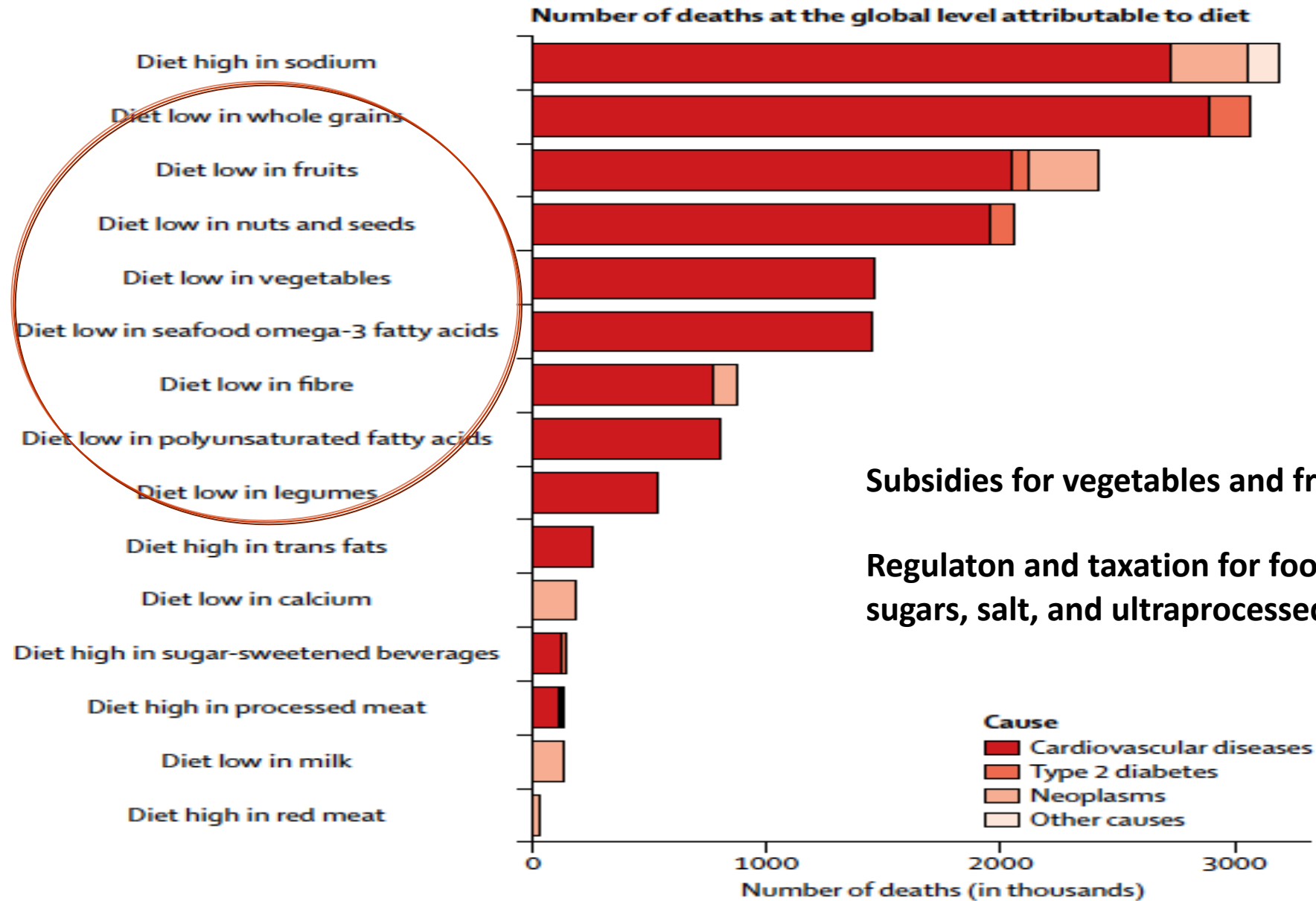
Trans fats

Salt reduction

Healthy food promotion
Food reformulation, portions

Food and environment

Health effects of dietary risks in 195 countries, 1990–2017:
a systematic analysis for the Global Burden of Disease Study 2017
GBD 2017 Diet Collaborators, Lancet, 2019 taxation for HFSS foods



Subsidies for vegetables and fruit.

Regulation and taxation for foods high in fats, sugars, salt, and ultraprocessed.

Feedback from: SIPREC (Italian Society for Cardiovascular Prevention)

Feedback reference
F14800

Submitted on
1 November 2018

Submitted by
Roberto Volpe

Organisation
SIPREC (Italian Society for Cardiovascular Prevention)

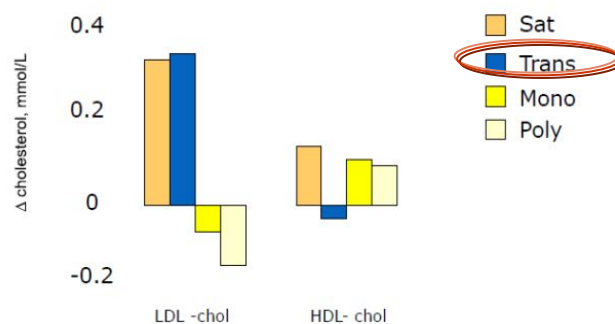
Country of origin
Italy

Initiative
Industrial trans fats in foods – setting a legal limit



As SIPREC (Italian Society for Cardiovascular Prevention), the only Italian Medical Society member of the EHN (European Heart Network), we appreciate the regulation that reduce the levels of industrial trans fatty acids in foodstuffs. Where this strong limitation has been done (as Denmark, New York City), there was also a concurrent 3-4% reduction in cardiovascular mortality in the years after restrictions were put in place. So, this limitation is technically, ethically, politically, and also economically feasible. We hope that this regulation could have a short transition period and not until 1st April 2021. From a meta-analysis of 32 controlled dietary trials in humans (Zock, 1997), are more than 20 years that we know that trans fatty acids increase LDL-cholesterol (the "bad" cholesterol), decrease HDL-cholesterol (the "protective" cholesterol) and inflame the artery vessels and the plaques, increasing the risk of cardiovascular diseases.

Effects of sat, trans, mono and poly fatty acids on LDL- and HDL-Cholesterol



Values obtained by meta-analysis of 32 controlled dietary trials in humans (Zock, 1997)

Total Fat	12g
Saturated Fat	3g
Trans Fat	0g
Cholesterol	20mg
Sodium	470mg

24/04/2019 14:50

Marleen Kestens <mkestens@ehnheart.org>

Flash news: European Commission adopts regulation on trans fatty acids!

Dear EHN members,

GOOD NEWS! Today, the European Commission finally adopted its Regulation on Trans Fatty Acids!

Companies will now have two years (until 1 April 2021) to ensure products comply with the maximum limit of 2 grams of industrially produced trans fats per 100 grams of fat in food intended for the final consumer and food intended for the supply to retail.

With kind regards!

Marleen





Denmark: action on trans fat

- First country in world to **legislate (in 2004)** against trans-fat (maximum level of 2 grams of trans fatty acids per 100g of fat/oil).
- **Cardiovascular disease death rates decreased 3.2%** more than in similar countries that did not implement restrictions.
(Restrepo, BJ and Rieger, M. Am J Prev Med. 2016; **50**: 69–76)
- **No strong objection from industry** and near universal compliance within one year.

Estonia taxes soft drinks



On 2 May 2024, the Estonian Parliament passed the first reading of the **sweet drink tax bill**. The aim is to reduce sugar consumption and push industry towards reformulation of sweet drinks. If passed in second reading, the tax will become applicable as of **January 2026**.

Sweet drinks are not a necessary part of the meal. Consumption of sugary drinks is associated with a number of serious health concerns, such as type 2 diabetes, cardiovascular and fatty liver diseases, as well as affecting oral health and contributing to obesity. It would be beneficial for everyone to reduce their consumption.

Drinks with a sugar content of at least 5 grams per 100 milliliters and/or to which a sweetener has been added will be taxed. Higher rates of sugar and/or sweetener will be taxed more.

UNESDA, representing the European soft drinks industry argues there is no clear evidence of the effectiveness of a soft drink tax in reaching public health goals, including reducing obesity or non-communicable diseases. **However**, UNESDA will favor self regulation for industry to reduce its sugar content (**reformulation**).



France



- 2004: banned vending machines from schools
- 2011: limited servings of French fries to once a week in school cafeterias/canteens
- 2012: “soda tax”**
- 2017: no school canteen can offer free refills of sodas and other sugary drinks



Balduzzi decree (6 September 2012): the tax on sugary carbonated drinks disappears. It was “at most an increase of three cents per bottle”.
Sugar tax 2024: **postpone to 2025.**



ASSOBIBE: avoid increases so as not to exacerbate the difficulties of beverage manufacturing companies.

The EU fails to effectively regulate the marketing of unhealthy foods also due to the **intervention of nations and/or transversal lobbies** that put their interest before the common good or due to the conflict between the Ministry of Health and that of the Economy which often appeal to **blackmail the jobs that could be lost** by limiting the marketing of products, even if they are unhealthy.



Article 26 of the “Treaty on the Functioning of European Union” (TFEU):

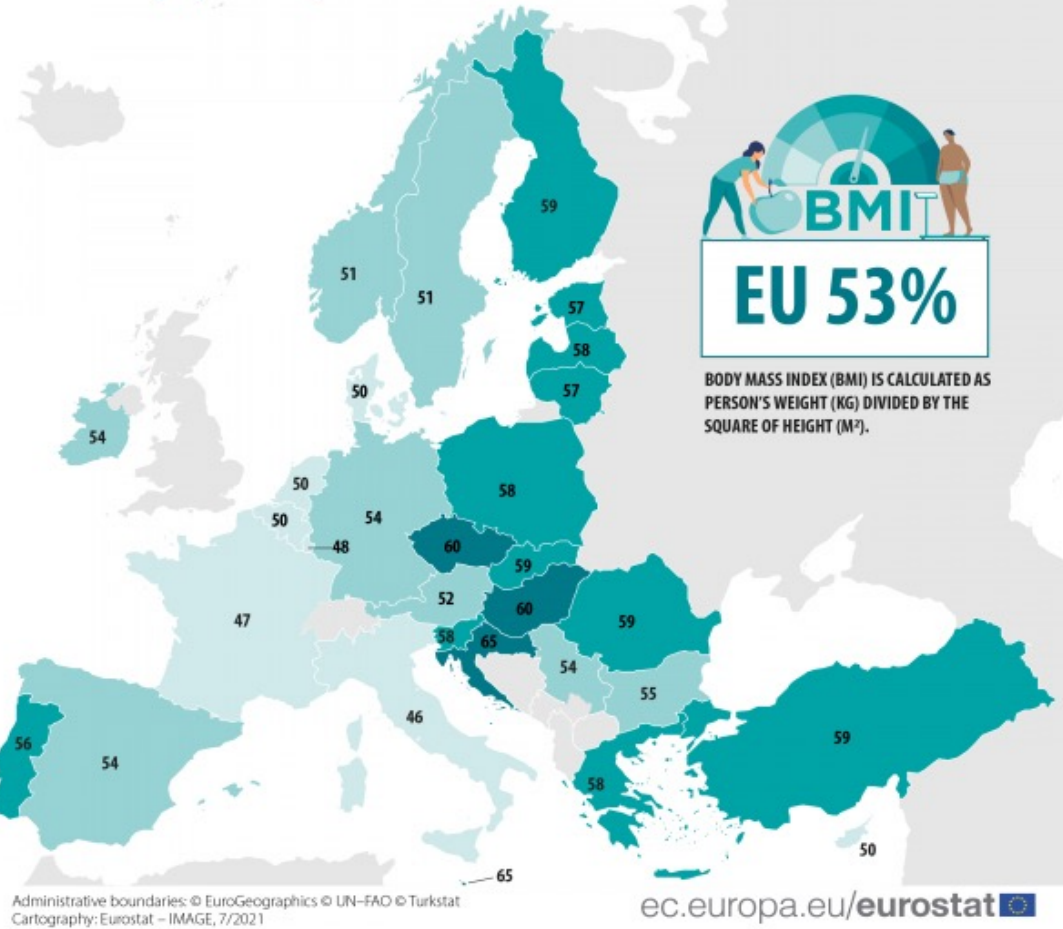
“The internal market comprises an area without internal frontiers, in which the **free movement of goods**, people, services and capital is ensured in accordance with the provisions of the Treaties.”

It follows that, having to safeguard free circulation and, with it, competition, **it is difficult to place restrictions on marketing, unless there are valid justifications ("good reasons")**, as ... obesity.



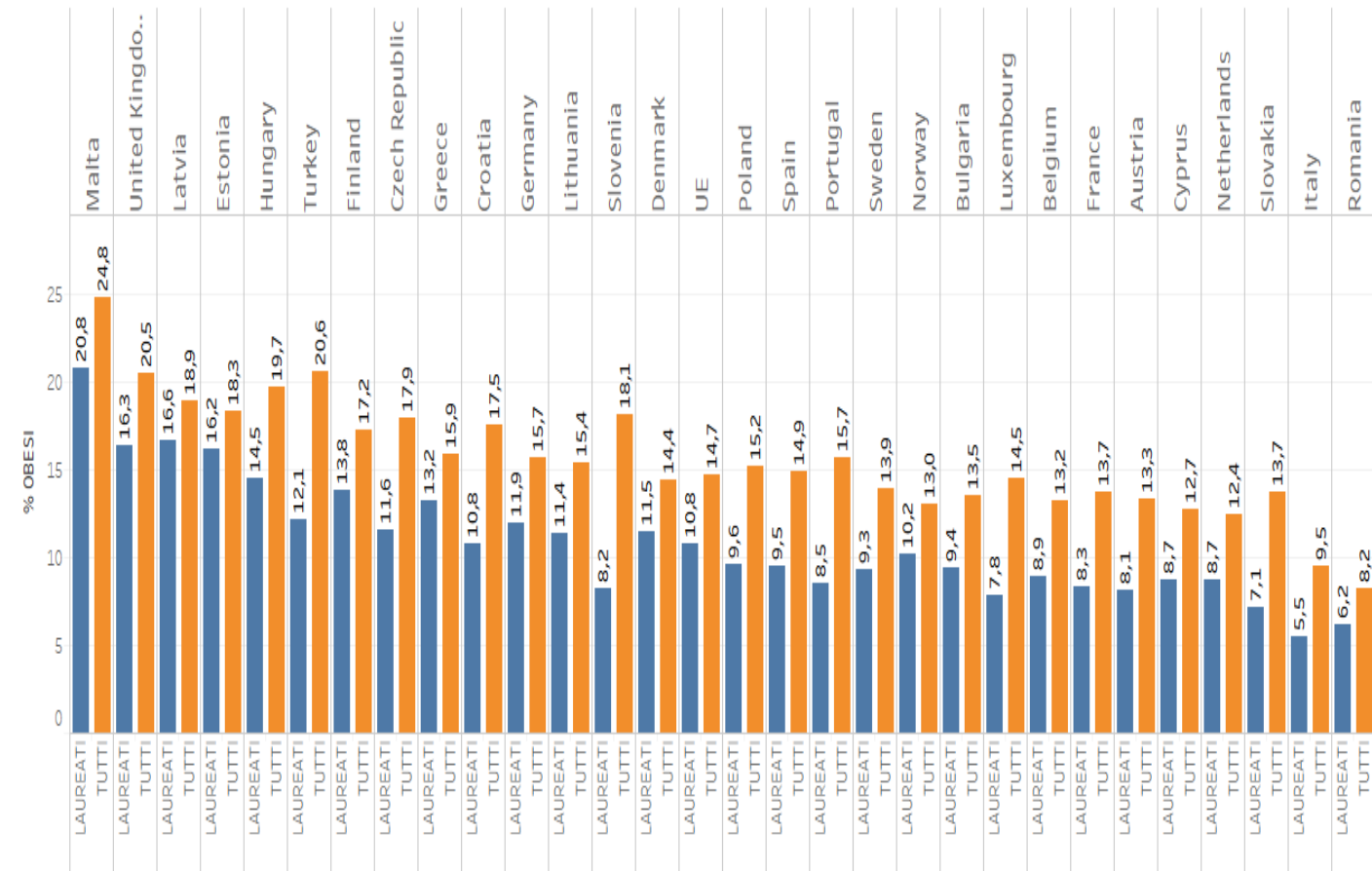
Overweight population (BMI ≥ 25)

% of adult population, 2019



Obesity by school education: graduates are less obese.

OBESITÀ PER ISTRUZIONE



The risk of diet-related diseases is higher for those with **lower socio-economic-educational status.**

unicef
for every child

THE STATE OF THE WORLD'S CHILDREN 2019
Children, food and nutrition
Growing well in a changing world



- Snacking
- Skipping or missing meals
- Negative self-image
- Peer influence on food choice

The children who suffer from overweight are usually from socio-economically disadvantaged families

FIGURE 1.8 | Percentage of children and adolescents 5–19 years who are overweight in 41 OECD and EU countries

Country	Prevalence (%) 2016	% increase since 1990	Country	Prevalence (%) 2016	% increase since 1990
United States	41.86	49.7	Croatia	28.00	160.0
New Zealand	39.46	44.6	Republic of Korea	27.63	94.9
Greece	37.26	48.9	Norway	27.47	42.1
Malta	37.11	20.1	Czechia	27.19	81.2
Italy	36.87	39.1	Slovenia	27.18	168.8
Chile	35.54	61.1	Finland	26.81	35.7
Mexico	35.51	76.0	Austria	26.68	48.8
Israel	34.80	18.2	Germany	26.58	37.0
Australia	34.11	35.1	Luxembourg	26.33	29.3
Spain	33.80	38.4	Poland	25.72	131.1
Cyprus	33.47	50.6	Denmark	25.11	13.6
Portugal	32.57	86.2	Netherlands	24.77	61.9
Canada	32.15	45.1	Romania	24.56	171
United Kingdom	31.12	33.1	Belgium	23.93	-1.8
Ireland	30.86	84.4	Sweden	23.62	24.6
France	30.09	38.7	Slovakia	23.36	157.0
Turkey	29.55	151.1	Switzerland	21.87	39.4
Bulgaria	28.47	120.6	Latvia	21.33	75.9
Hungary	28.45	117.3	Lithuania	20.58	84.2
Iceland	28.33	15.3	Estonia	20.46	68.0
			Japan	14.42	14.3

unicef 
for every child

ISBN: 978-92-806-5003-7




© United Nations Children's Fund (UNICEF)
October 2019

Children often grow up in an **obesogenic environment** that promotes an unhealthy diet rich in fat, sugar, salt and calories by traditional marketing and digital marketing of unhealthy foods that is not regulated at European level.

unicef 

for every child

ISBN: 978-92-806-5003-7



9 789280 650037

© United Nations Children's Fund (UNICEF)
October 2019

Acquista 1 McMenu® Large*
+ 1 Chicken McNuggets™ da 6pz

A SOLI € 6,90*



1x

Offerta valida dal 10.02.2020 al 10.03.2020
nei ristoranti McDonald's® di Roma
Termini Galleria, Termini Forum e Giolitti



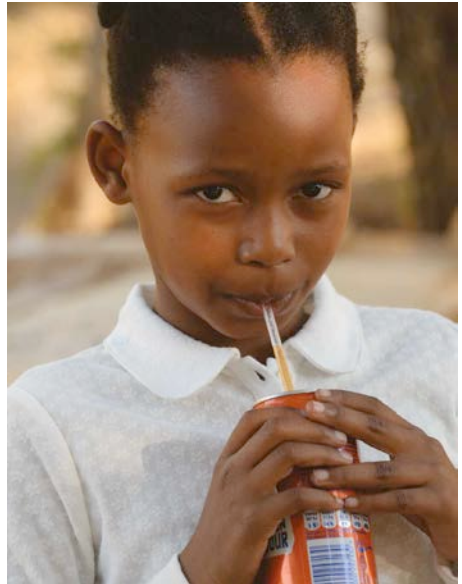
Presenta questo buono sconto alla cassa di McDonald's e digita il testo "NO UN COUPON" al classico digitale.

Acquista 2 panini a scelta
tra i Grandi Classici*

A SOLI € 4,90*



Offerta valida dal 10.02.2020 al 10.03.2020
nei ristoranti McDonald's® di Roma
Termini Galleria, Termini Forum e Giolitti

The marketing of unhealthy food
to children in Europe

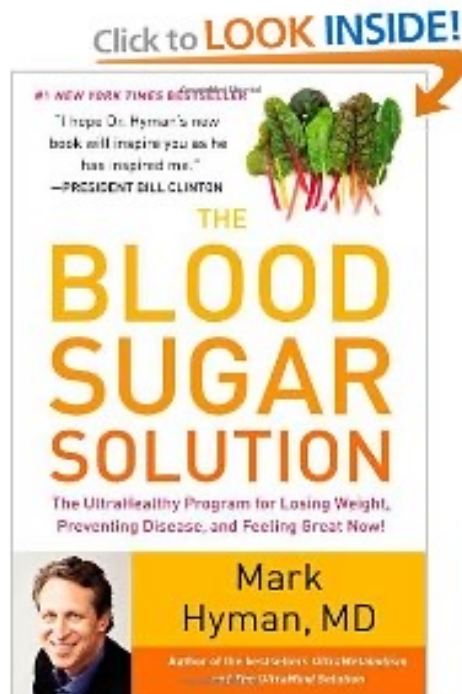
A report of Phase 1 of the
"Children, obesity and associated conditions" research project



with national income. Oils/fats and sugar are very cheap in all regions. However, sugar- and fat-rich processed

“Every child born in the new millennium has the right to live until the age of at least 65 without suffering from avoidable cardiovascular disease.”

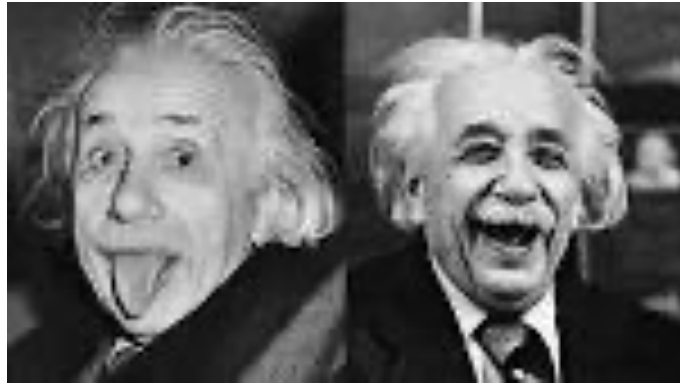
Saint Valentine's declaration - 14 February 2000 - the Winning Hearts conference



“The risk for the new generations: living less than their parents”

Bill Clinton





“The world is a disaster non so much for the troubles combined by the evildoers, but because of the inertia of the justs who perceive it and are watching.”

Albert Einstein (1879-1955)

“Don’t ask what your Country can do for you, but what you can do for your Country.”

JFK, Washington, DC, 1961.01.20



We have to protect the health of consumers and, in particular, of children, young and elderly people who tend to be **vulnerable and defenseless subjects**, and counteract the **socio-economic inequalities**.



Regarding the **EU school scheme**, we have the evidence to underline the role of:

1) **whole bread**, also if processed, because : the cereals, also if processed, don't increase the risk of cancer and cardiometabolic diseases;

2) **cheese** with its multiple benefits that go further its content of saturated fatty acids.

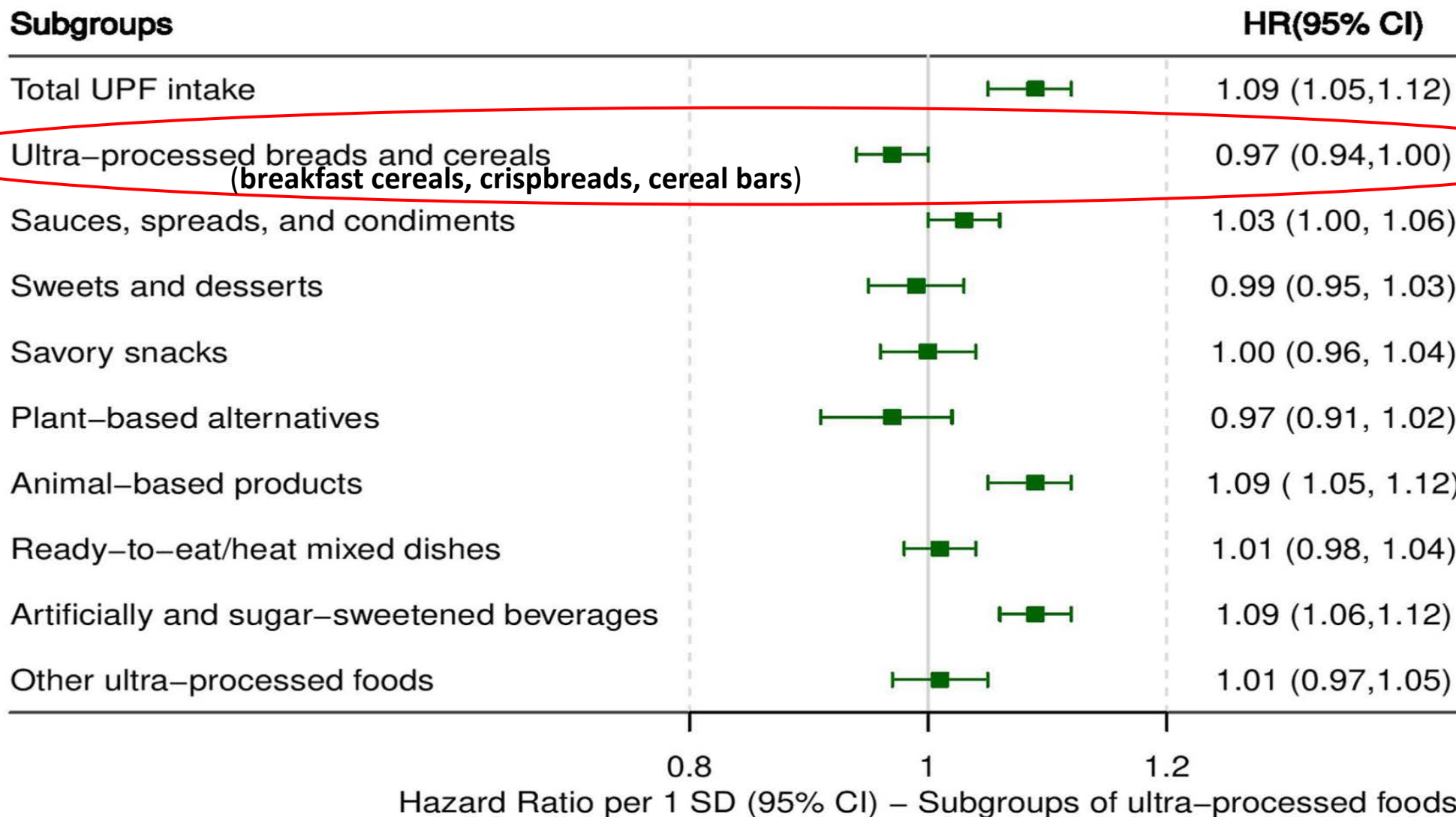


European Heart Network
Fighting heart disease and stroke

Cordova R et al: Consumption of **ultra-processed foods** and risk of multimorbidity of cancer and cardiometabolic diseases: a multinational cohort study

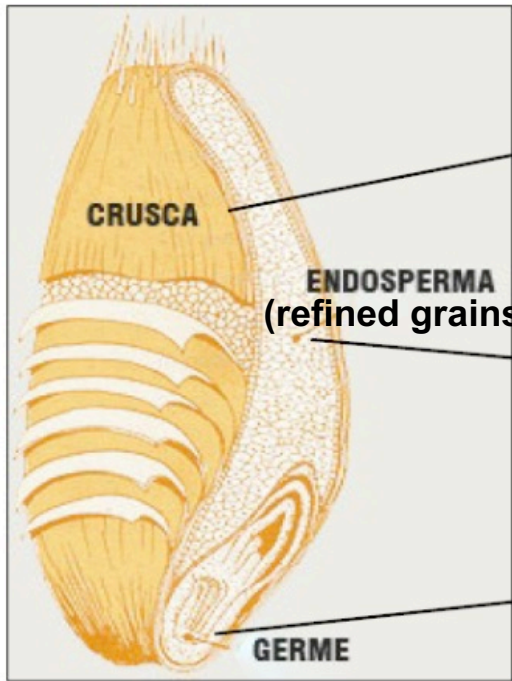
(7 European Countries, food-frequency questionnaire, n. 266.666, 35-74 years, 60% women, primary prevention, follow-up 11 years, 21.917 cancers, 10.939 cardiovascular diseases, 11.322 diabetes type 2)

The Lancet Regional Health - Europe 2023



along

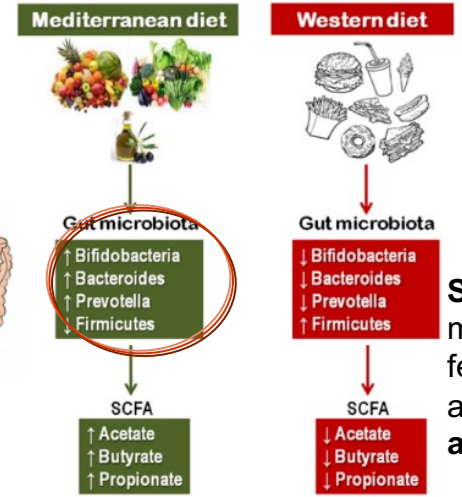
Whole grains (caryopsis)



- Bran:**
 - fibres
 - phenolic acid
 - vitamins (B₁, B₃, B₉)
 - minerals (P, Fe, Mg, Ca)
 - alchilresorcinoli
 - phytic acid
 - lignins
- Endosperm:**
 - starch
 - proteins
 - vitamines B
- Germ:**
 - lipids
 - proteins
 - vitamin E
 - minerals (Zn, Cu, Mn, Se)
 - phytosterols
 - antioxidants

($P = 0.05$) related to CRP levels. Phenolic acids, particularly ferulic acid, have been shown to also exhibit anti-inflammatory activity⁽⁵³⁾, suggesting that additional bioactive compounds within whole grains may also contribute to the association found.

unexpected, as folate and pyridoxine (vitamin B₆), both contained within whole grain foods, are key cofactors in the metabolism of homocysteine, and supplements with both (as well as vitamin B₁₂) has been found to restore elevated homocysteine levels⁽⁵⁴⁾. Therefore, it is probable



Short Chain Fatty Acids (SCFAs), the main metabolites produced in the colon by bacterial fermentation of dietary fibers and resistant starch, play a key role in the regulation of metabolic, endocrine and immune functions by the gut-brain interaction.

Oxygen free radicals
 Production during natural metabolic actions
 Overproduction by infections, inflammations, or by smoking, pollution, food abuse, psycho-physical stress

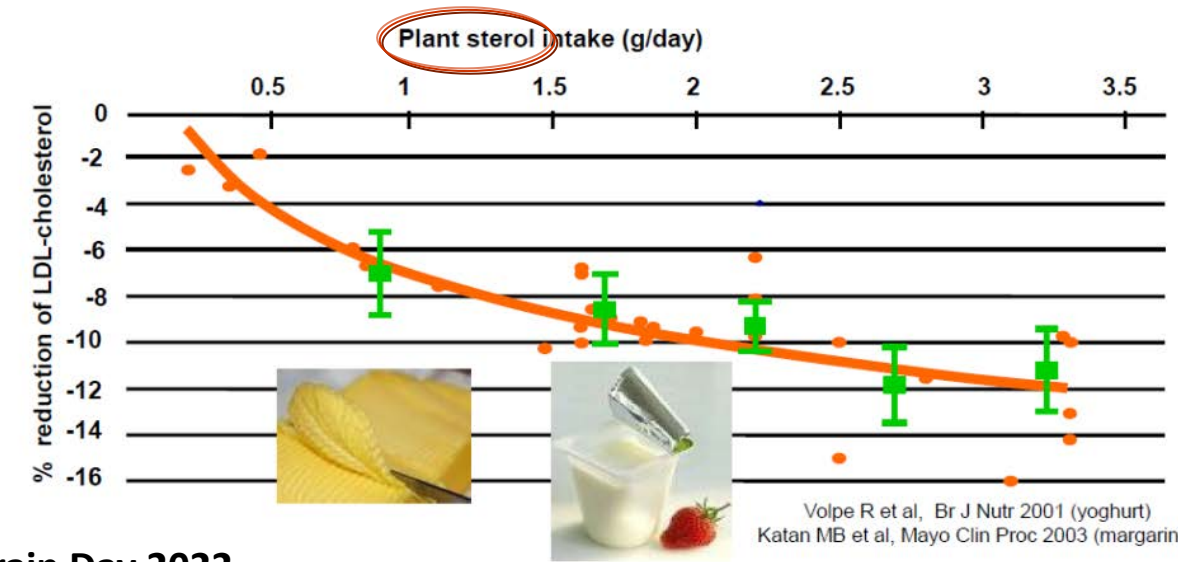


antioxidants ↓

Interaction with cells and structural damage (e.g., membranes, mitochondria, DNA)

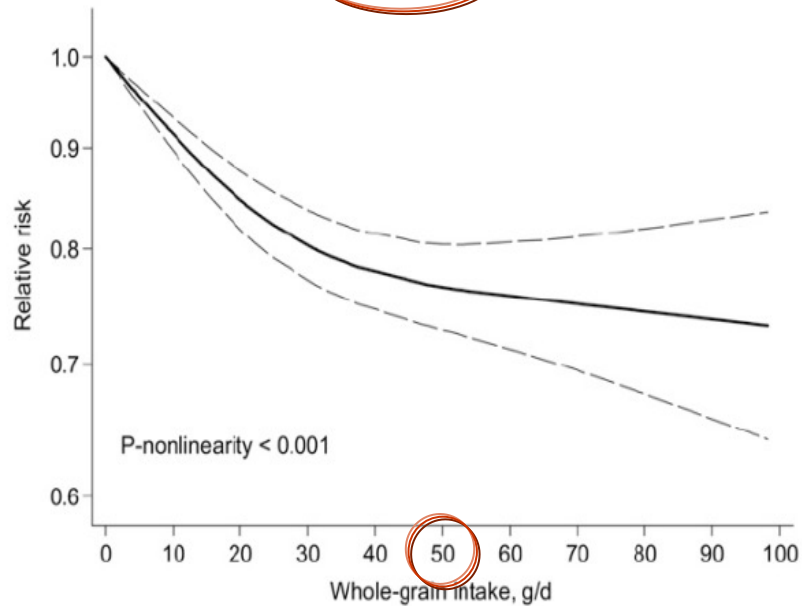


Aging, heart attack, stroke, cancer

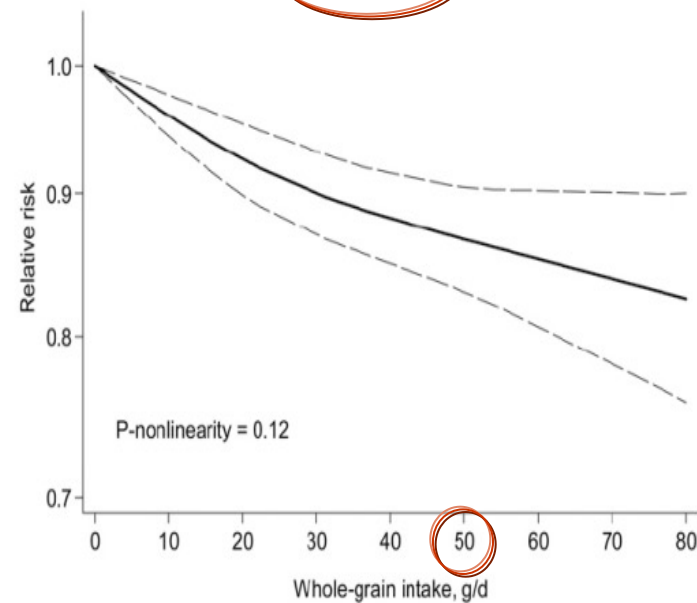


A diet with only 50g of whole grains consumption (=3 portions/serves per day) is a highly protective factor for our health

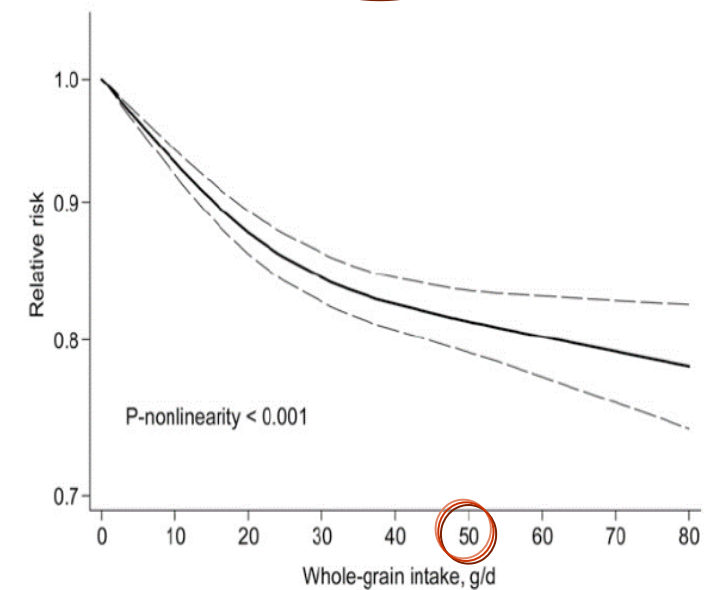
B Whole-grain intake and CVD mortality, *nonlinear dose-response*



B Whole-grain intake and cancer mortality, *nonlinear dose-response*



B Whole-grain intake and total mortality, *nonlinear dose-response*



Chen GC, et al: Whole-grain intake and total, cardiovascular, and cancer mortality: a systematic review and meta-analysis of prospective studies. Am J Clin Nutr. 2016;104(1):164-72. (n. 104,061 subjects, a systematic review and meta-analysis of 13 prospective studies)

EU school scheme: whole bread as an option

Several scientific evidences (Chan 2016, Aune 2016, Reynolds 2019) clearly indicate a quantitative recommendations for about 50g (= 3 portions) per day of whole grains that would help consumers.

1 portion = 16g of dry weight
(US 2015 Dietary Guidelines)



1 slice of bread

3-4 crispbreads



1 cup of breakfast cereals (without added sugar)



80 g of pasta

80 g of rice



DEFINITION OF A WHOLE-GRAIN FOOD

DEFINITION - INCLUDING REQUIREMENTS FOR DESIGNATING WHOLE GRAIN FRONT-OF-PACK

I. Definition of a whole-grain food

A whole-grain food shall contain at least 50% whole-grain ingredients based on dry weight

However, the number of portions depends on the WG content in the product.

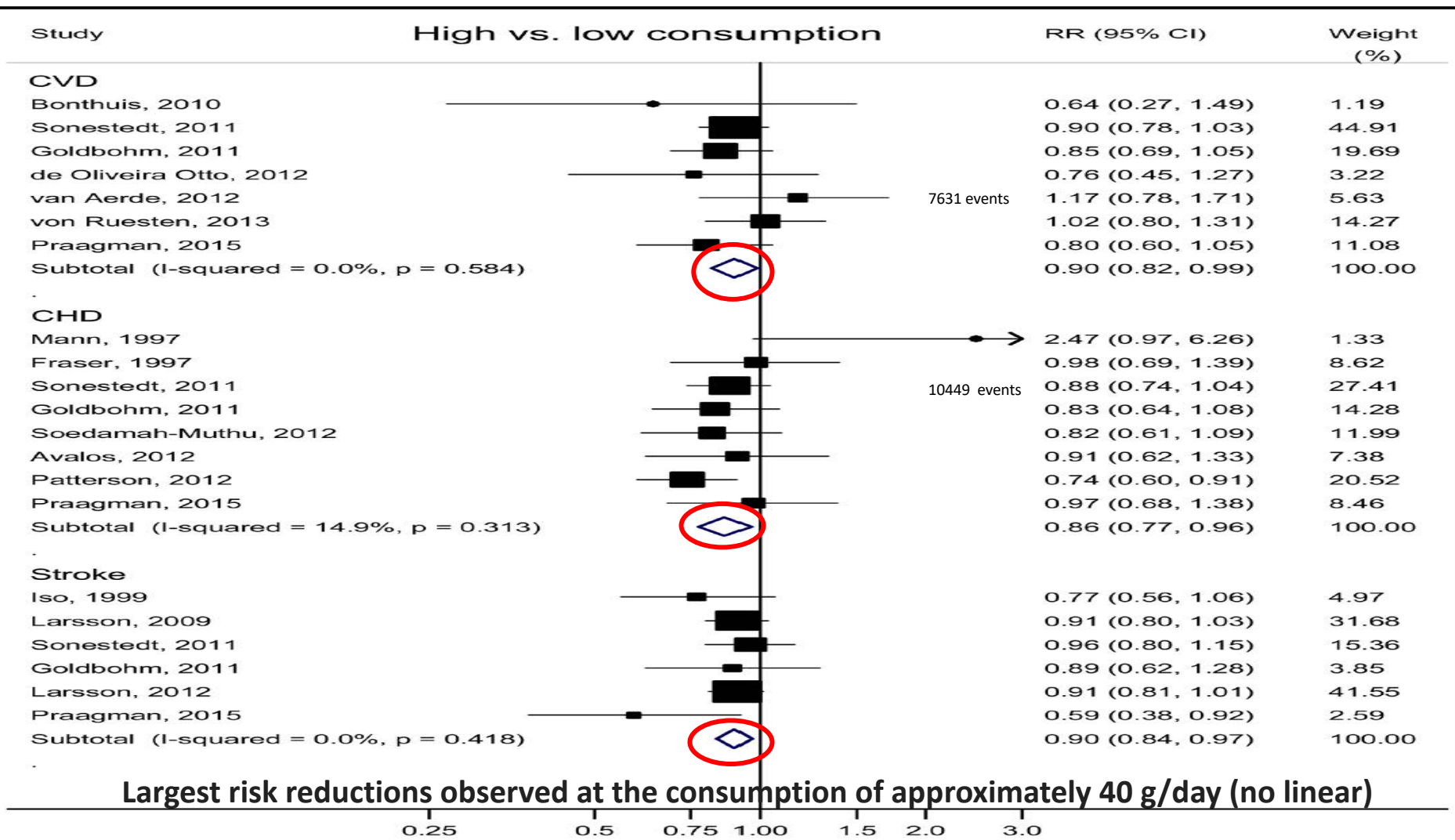




ORIGINAL CONTRIBUTION

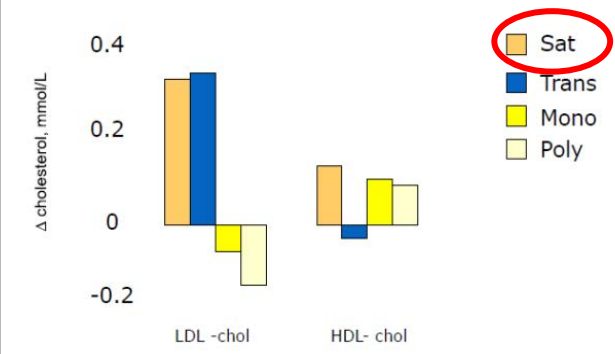
Cheese consumption and risk of cardiovascular disease: a meta-analysis of prospective studies Primary prevention (14/15 studies), >10years (13/15 studies)

Guo-Chong Chen¹ · Yan Wang² · Xing Tong¹ · Ignatius M. Y. Szeto² · Gerrit Smit³ · Zeng-Ning Li⁴ · Li-Qiang Qin¹



Largest risk reductions observed at the consumption of approximately 40 g/day (no linear)

Effects of sat, trans, mono and poly fatty acids on LDL- and HDL-Cholesterol



Values obtained by meta-analysis of 32 controlled dietary trials in humans (Zock, 1997)

- Saturated fatty acids
- and
- ACE-inhibitors
- Conjugated linoleic acid (CLA)
- Probiotics
- Tripeptides



Vending Machines and Cardiovascular Prevention: How to Implement **Healthy Dietary Habits at School**

Roberto Volpe^{1,2} · Sarah Marchant³

Italian Society for Cardiovascular Prevention (SIPREC),
Rome, Italy

UNICEF Office of Research-Innocenti, Florence, Italy

Journal of Food and Nutrition Sciences

2023; 11(3): 63-69

<http://www.sciencepublishinggroup.com/j/jfns>

doi: 10.11648/j.jfns.20231103.11

ISSN: 2330-7185 (Print); ISSN: 2330-7293 (Online)



Results of European Heart Network Pilot Project “A Vending Machine for a Friend”

Roberto Volpe^{1, 2, *}, Sigita Glaveckaitė^{3, 4, *}, Gianluca Sotis², Dziugile Kersnauskaitė⁴,
Kristina Sulskute⁴, Vita Polevoda⁴, Ingrida Dudoniene³, Massimo Volpe^{1, 5}

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European Heart Network
Fighting heart disease and stroke



SIPREC
società italiana
per la prevenzione
cardiovascolare



Nutrition labels

The labels need to be **easy to read and to understand** independently of the consumer's cultural level.

A **colored coding, logo, and key words** in addition to mandatory nutritional information could assist consumers in interpreting the nutritional composition of a food product **at a glance**, and in distinguishing between products belonging to the same category.



Stella Kyriakides
Commissioner for Health and Consumer Policy

Endorsement (“Positive”) logos

The symbol is applied only to products judged to be healthy using a **binary system** (positive/negative in light of their content in total fats, saturated fats, carbohydrates, sugar, fiber, salt).



 **Hjärt-
Lungfonden**



1989

ZA SRCE
DRUŠTVO ZA ZDRAVJE SRCA IN OŽILJA SLOVENIJE



1992



 **sydänlapset
ja -aikuiset**



2000





The **Nutriscore (NS)** express a **global judgement**. It converts the nutritional value of the calories, saturated fats, sugars, fibers, proteins, vegetables, fresh fruit, dry fruit and salt present in a food product into a **numerical and color code rating**.

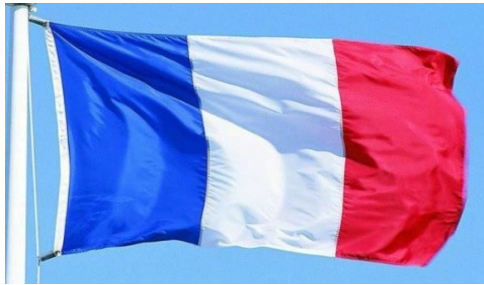


Figure 5: Nutri-Score

2017

Plus points:

- easy to read and to understand;
- helps consumers see at a glance how healthy is the product;
- considers proteins, fibers, vegetables, fruit;
- consistency with the Pyramid of the Mediterranean Diet;
- the negative scores D and E may reduce impulsivity to buy unhealthy foods;
- facilitates the comparison between food products belonging to the same category;
- can be an incentive for food reformulation.



Nutrition Labelling: We Need a New European Algorithm

Research Article

Roberto Volpe^{1*} and Stefania Maggi²

¹The Italian Society for Cardiovascular Prevention (SIPREC), The National Research Council of Italy (CNR), Italy;

²CNR Padova, The Mediterranean Diet Foundation, Italy

Received: May 19, 2020; Accepted: July 16, 2020; Published: July 21, 2020



The need for a new European algorithm

Starting from the algorithms that express a **global judgement**, the new algorithm should:

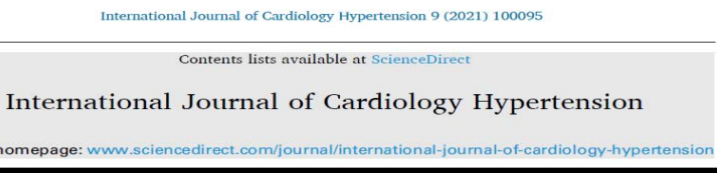
-take into consideration also **some other important nutrition facts** (often evaluated in Endorsement logos), such as

- a) the specific animal's origins of saturated fats (meat versus dairy foods)
- b) the presence of cholesterol
- c) the presence of partially hydrogenated vegetable fats ("trans fatty acids")
- d) the difference between refined and whole grains
- e) the glycemic index
- f) the difference between natural and added sugars
- g) calcium
- h) vitamins
- i) polyphenols

-in line with the international guidelines, but also with the **national guidelines**

-represent **all European countries** with different food and eating and nutritional problems

Additionally, but not mandatory, information regarding the product's environmental impact, meaning its energy consumption, greenhouse gas emissions, and biodiversity could be provided.



Research Paper
 Critical questions in cardiovascular risk: What nutrition labels should be used on food?
 Roberto Volpe
 CNR (The National Research Council of Italy), SIPREC (The Italian Society for Cardiovascular Prevention), Italy





Working group on Food Policy



Subject: Inclusion of whole grain in the Nutri-Score scheme

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Roberto Volpe, MD, PhD, AMS

On behalf of the
Italian Society for Cardiovascular Prevention (SIPREC) and the National Research Council of Italy (CNR), Prevention Unit



SIPREC
società italiana
per la prevenzione
cardiovascolare



Unità Prevenzione e Protezione
Consiglio Nazionale delle Ricerche

Stefania Maggi, MD, MPH, PhD

Research Director
CNR Aging Branch-IN Padua
President, Mediterranean Diet Foundation, Italy



**FONDAZIONE
DIETA
MEDITERRANEA**

Update of the Nutri-Score algorithm

Update report from the Scientific Committee of the Nutri-Score
2022

Bread

- Increased discrimination between whole-grain and refined grain breads
 - Based on fibers and salt contents



Olive oil receives the B (margarines the C or D and butter the E).



Figure 5: Nutri-Score

- Improved discrimination based on sugar content

- For high-sugar products

- Confectionery, biscuits and cakes

- For medium-high content

- Breakfast cereals, sweetened dairy



- Alignment with recommendations of limiting the consumption of red meat



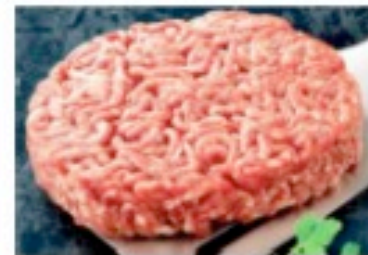
Wiener Schnitzel



Beef stew steak



Rib steak



Minced steak
5% fat



However, processed food!

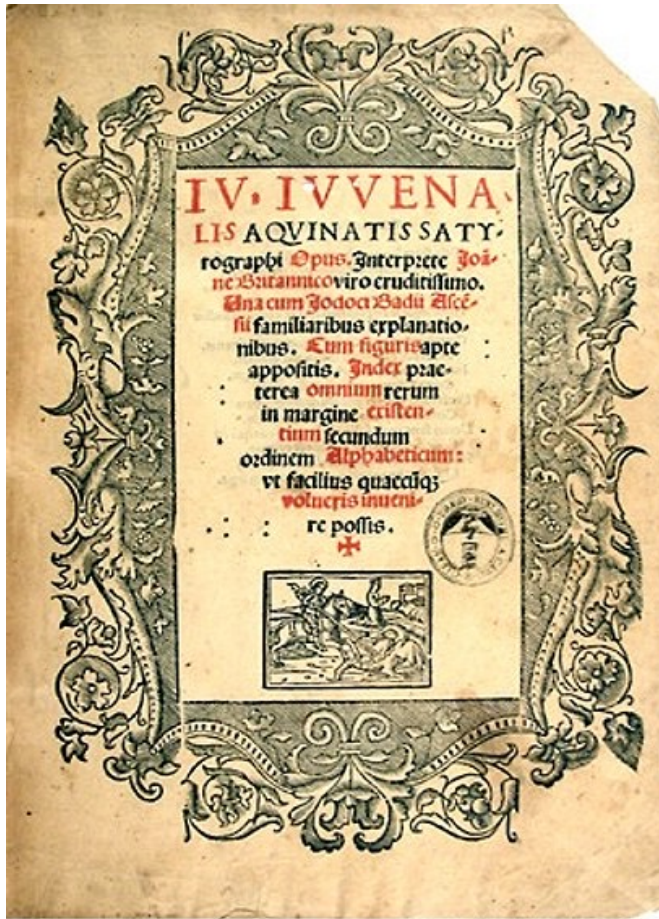
The food industry must accelerate action to tackle the global nutrition crisis

Food industry: the healthy reformulation, increasing availability, improving the appeal and the taste, and reducing the cost.

The food industry must accelerate action to tackle the global nutrition crisis

Food industry: the healthy reformulation, increasing availability, improving the appeal and the taste, and reducing the cost.





Compliance to drug treatment!



European Heart Network
Fighting heart disease and stroke



MEP HEART GROUP



Partnerships from the heart

- WHO European Region
- European Society of Cardiology
- European Chronic Disease Alliance
- European Public Health Alliance
- Smoke Free Partnership
- World Heart Federation



optimal
nutritional care
for all

