

Μακροθρεπτικά & Υγεία

Εμμανουέλα Μαγριπλή
Επίκουρη Καθηγήτρια Διατροφικής Επιδημιολογίας & Δημόσιας Υγείας,
Τμήμα Επιστήμης Τροφίμων και Διατροφής του Ανθρώπου
Γεωπονικό Πανεπιστήμιο Αθηνών
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Αθήνα 11855



1



Υγεία

Ορίζεται ως πηγή ζωής, όπως αυτή βιώνεται καθημερινά, και όχι σαν στόχος για τη ζωή

- Είναι μία θετική έννοια που τονίζει τους κοινωνικούς και προσωπικούς πόρους καθώς και τις φυσικές δυνατότητες.

2

Πτυχές της Υγείας

- Σωματική υγεία
- Ψυχική υγεία
- Κοινωνική υγεία

3

Causes of death in 15- to 49-year-olds, World, 1990

The estimated annual number of deaths from each cause, among people aged 15-49 years old. Estimates come with wide uncertainties especially for countries with poor vital registration¹.

Data source: IHME, Global Burden of Disease (2019) OurWorldInData.org/causes-of-death | CC BY

1. Civil and Vital Registration System: A Civil and Vital Registration System (CVRS) is an administrative system in a country that manages information on births, marriages, deaths and divorces. It generates and stores 'vital records' and legal documents such as birth certificates and death certificates. You can read more about how deaths are registered around the world in our article: How are causes of death registered around the world?

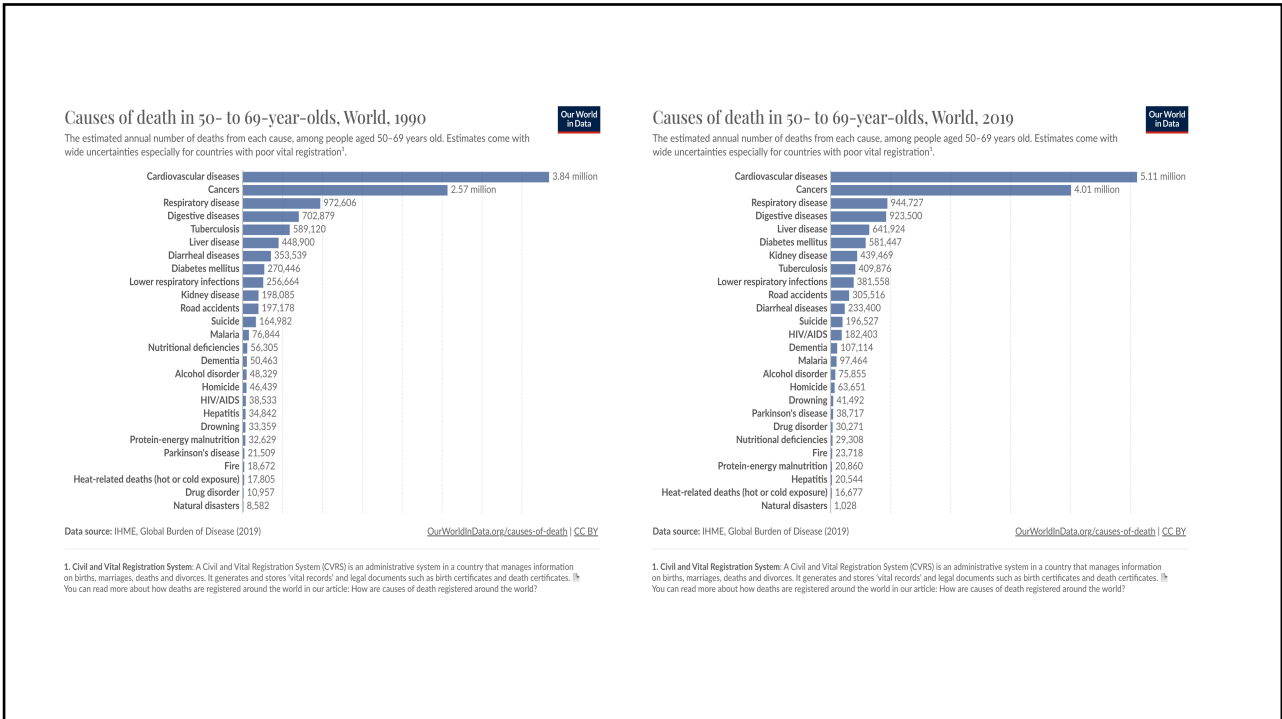
Causes of death in 15- to 49-year-olds, World, 2019

The estimated annual number of deaths from each cause, among people aged 15-49 years old. Estimates come with wide uncertainties especially for countries with poor vital registration¹.

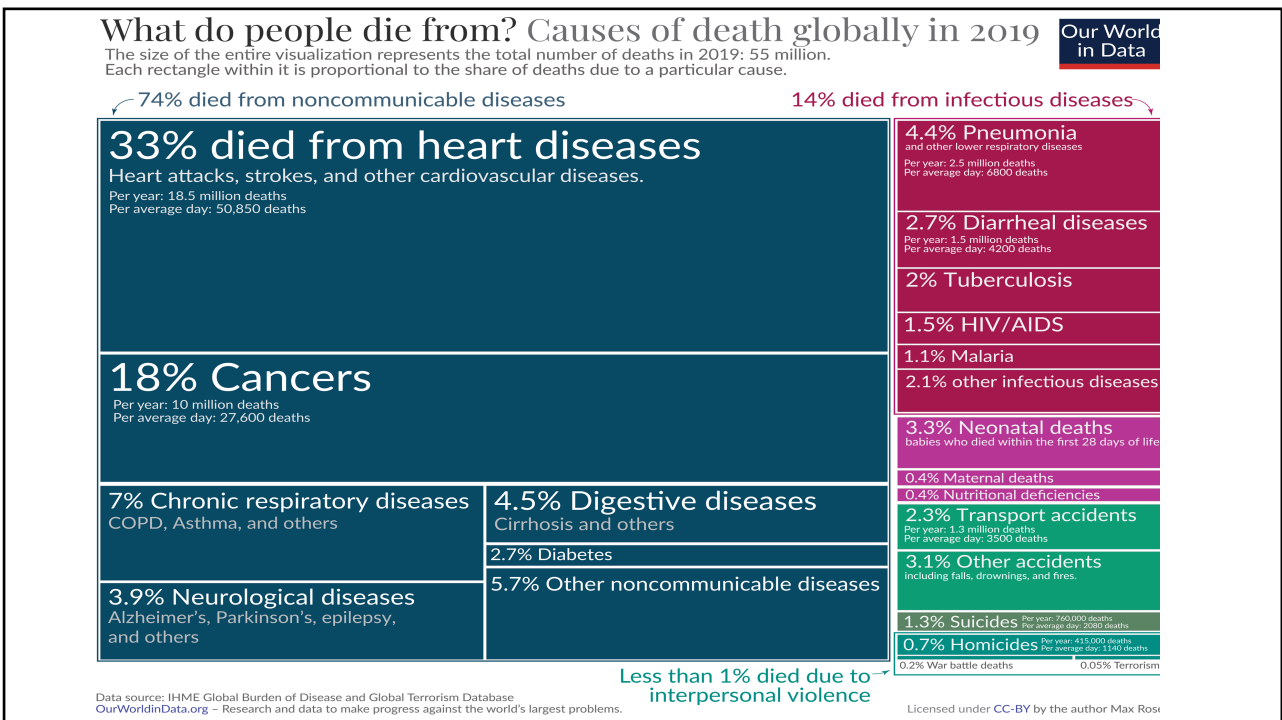
Data source: IHME, Global Burden of Disease (2019) OurWorldInData.org/causes-of-death | CC BY

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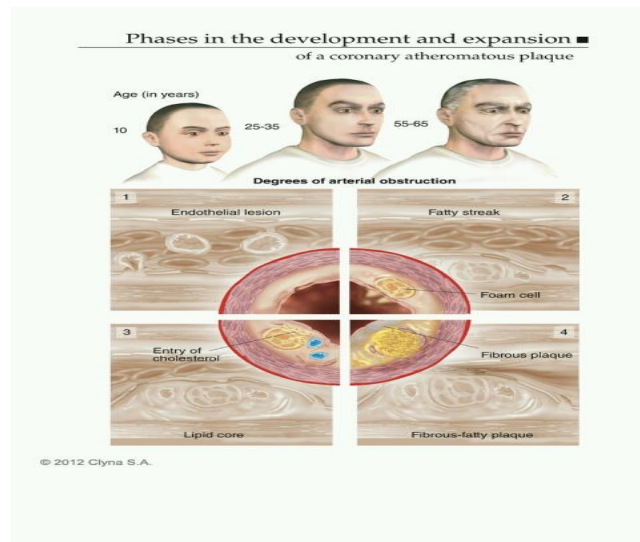


6

TABLE 11-2 Research Milestones of the Framingham Study	
1960	Cigarette smoking found to increase the risk of heart disease
1961	Elevated cholesterol levels, high blood pressure, and electrocardiogram (EKG) abnormalities found to increase the risk of heart disease
1967	Physical activity found to reduce the risk of heart disease; obesity found to increase the risk
1970	High blood pressure found to increase the risk of stroke
1976	Menopause found to increase the risk of heart disease
1978	Psychosocial factors found to affect heart disease
1988	High levels of HDL cholesterol found to reduce the risk of death from cardiovascular disease
1999	Lifetime risk of developing coronary heart disease is 1:2 in men and 1:3 in women
2002	Lifetime risk of developing high blood pressure in middle-aged adults is 9:10; obesity found to be a risk factor in heart failure

Based on: Framingham Heart Study; Research Milestones: <http://www.framinghamheartstudy.org/about/milestones.html>

7



8

Παράγοντες Κινδύνου και Πρόληψη (συνέχεια)

TABLE 11-7 Optimal Levels of Various Lipids

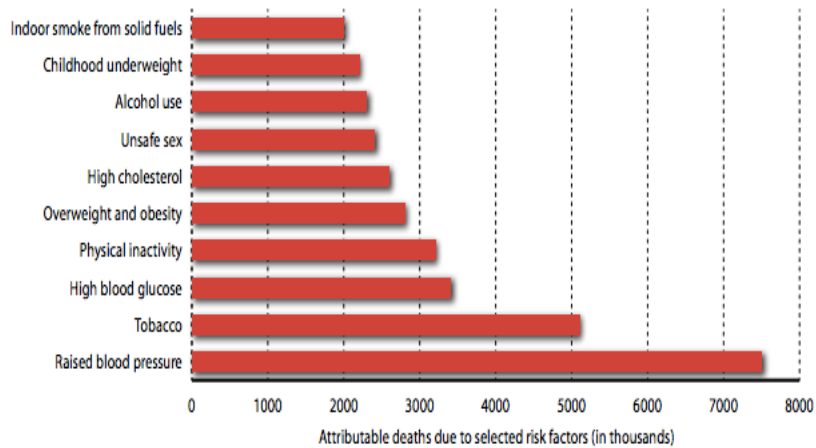
Lipid	Desired Levels (mg/dL)
Total Cholesterol	< 200
Low-Density Lipoprotein (LDL)	< 100
High-Density Lipoprotein (HDL)	≥ 40 (men) ≥ 50 (women)
Triglycerides	< 150

© Cengage Learning 2013

9

9

Figure 29 Ranking of 10 selected risk factors of cause of death (2).



10

Table 2-3. Leading 20 Risk Factors of YLL and Death in the United States: Rank, Number, and Percentage Change, 1990 and 2019

Risk factors for disability	YLL rank (for total number)		Total No. of YLLs, in thousands (95% UI)		Percent change, 1990–2019 (95% UI)		Corresponding total No. of deaths, in thousands (95% UI)		Corresponding percent change, 1990–2019 (95% UI)	
	1990	2019	1990	2019	Total No. of YLLs	Age-standardized YLL rate	1990	2019	Total No. of deaths	Age-standardized death rate
Smoking	1	1	11 005.06 (10 692.42 to 11 351.22)	10 371.03 (10 017.19 to 10 728.28)	–5.76% (–8.46% to –2.93%)	–46.43% (–47.91% to –44.85%)	515.41 (496.77 to 537.03)	527.74 (505.55 to 550.83)	2.39% (–1.3% to 6.28%)	–42.21% (–44.18% to –40.15%)
High SBP	2	2	8466.11 (7465.95 to 9424.27)	7815.63 (6814.38 to 8821.87)	–7.68% (–13.09% to –2.58%)	–45.76% (–48.82% to –42.81%)	503.63 (425.60 to 573.56)	495.20 (407.47 to 574.65)	–1.67% (–9.73% to 6.05%)	–45.94% (–49.57% to –42.07%)
High BMI	4	3	4994.23 (3131.76 to 6877.86)	7778.57 (5416.09 to 9912.24)	55.75% (41.31% to 80.47%)	–9.18% (–17.75% to 5.86%)	232.16 (138.00 to 334.08)	393.86 (257.61 to 528.44)	69.65% (52.54% to 98.96%)	–5.82% (–15.3% to 10%)
High FPG	5	4	4664.81 (3563.73 to 6006.04)	7121.62 (5548.50 to 9006.14)	52.67% (37.87% to 68%)	–12.25% (–20.59% to –3.79%)	263.41 (193.27 to 355.67)	439.38 (320.11 to 582.66)	66.81% (48.24% to 85.48%)	–8.01% (–17.9% to 2.09%)

Circulation. 2022;145:e153–e639. DOI:10.1161/CIR.000000000001052

11

Παράγοντες Κινδύνου και Πρόληψη (συνέχεια)

- Παράγοντες κινδύνου για καρδιαγγειακά νοσήματα:
 - Σωματική αδράνεια
 - Παχυσαρκία
 - Διατροφή
 - Υψηλή αρτηριακή πίεση
 - Κάπνισμα τσιγάρων
 - Υψηλή χοληστερόλη
 - Σακχαρώδης διαβήτης

TABLE 11-8 Risk Factors in American Adults, 2006

Risk Factor	% American Adults with This Risk Factor	Increased Relative Risk for CHD
Physical Inactivity	39.5%	1.5-2.4
Obesity	33.9%	na
High Blood Pressure	30.5%	1.7-2.1
Cigarette Smoking	20.8%	2-3
High Cholesterol	15.6%	1.3-2.6
Diabetes	10.1%	2-4

na = not available

Based on: Centers for Disease Control and Prevention; Stroke Facts: <http://www.cdc.gov/stroke/facts.htm>; and American Heart Disease—*Circulation*, 1998; 97:1837-1847: <http://circ.ahajournals.org/cgi/content/full/97/18/1837#T3>

12

12

Παράγοντες Κινδύνου και Πρόληψη (συνέχεια)

- Στρατηγικές για την πρόληψη καρδιαγγειακών νοσημάτων:
 - Για τροποποιήσιμους παράγοντες κινδύνου:
 - Πρόληψη και έλεγχος υψηλής χοληστερόλης στο αίμα
 - Πρόληψη και έλεγχος υψηλής αρτηριακής πίεσης
 - Πρόληψη και έλεγχος διαβήτη, όταν υπάρχει
 - Καμία χρήση καπνού

13

13

Παράγοντες Κινδύνου και Πρόληψη (συνέχεια)

- Μέτρια χρήση αλκοόλ
- Διατήρηση υγιούς σωματικού βάρους
- Τακτική φυσική δραστηριότητα
- Δίαιτα και διατροφή

14

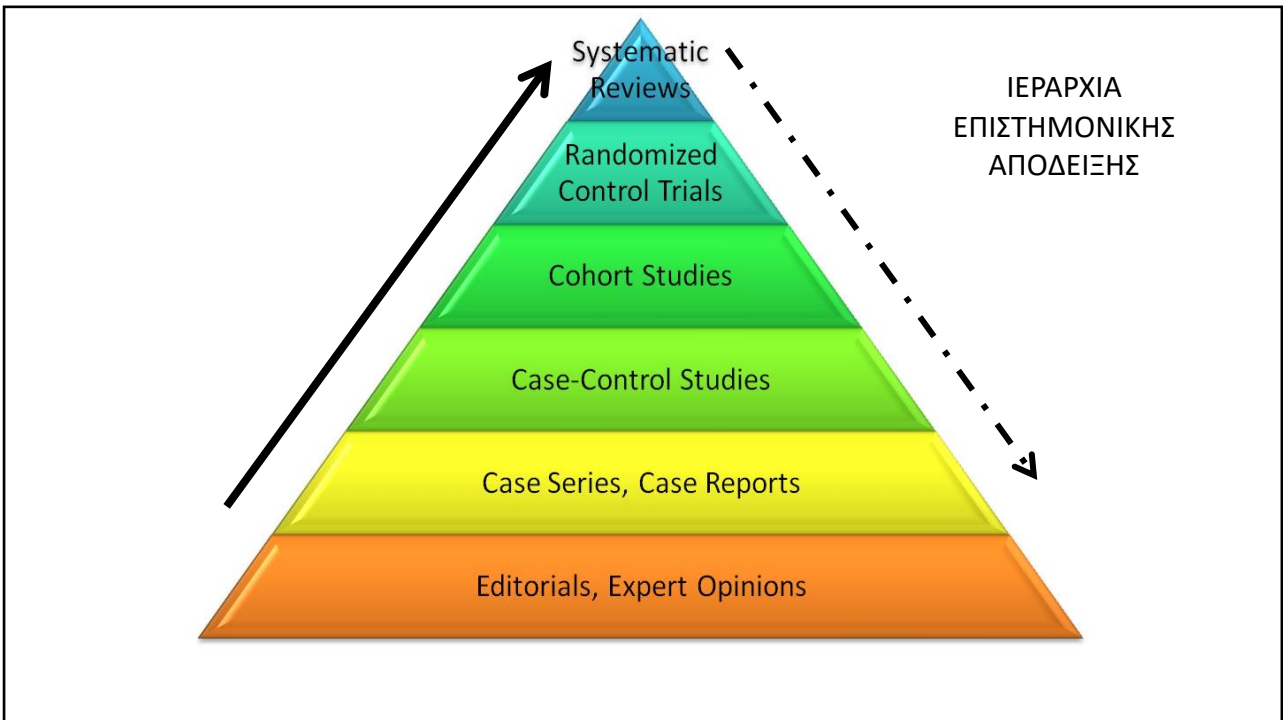
14



Figure. AHA's My Life Check–Life's Simple 7.

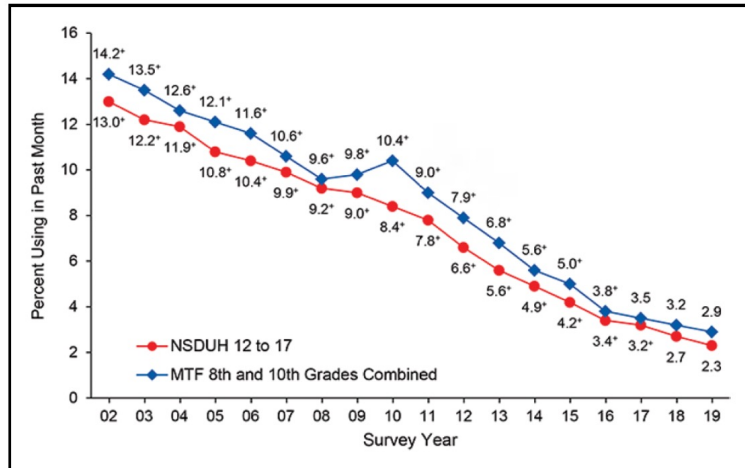
Circulation. 2022;145:e153–e639. DOI:10.1161/CIR.0000000000001052

15



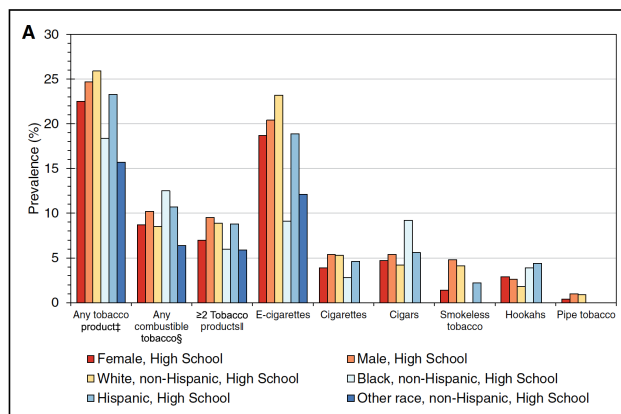
16

Past-month cigarette use among US youths in NSDUH and MTF: 2002 to 2019

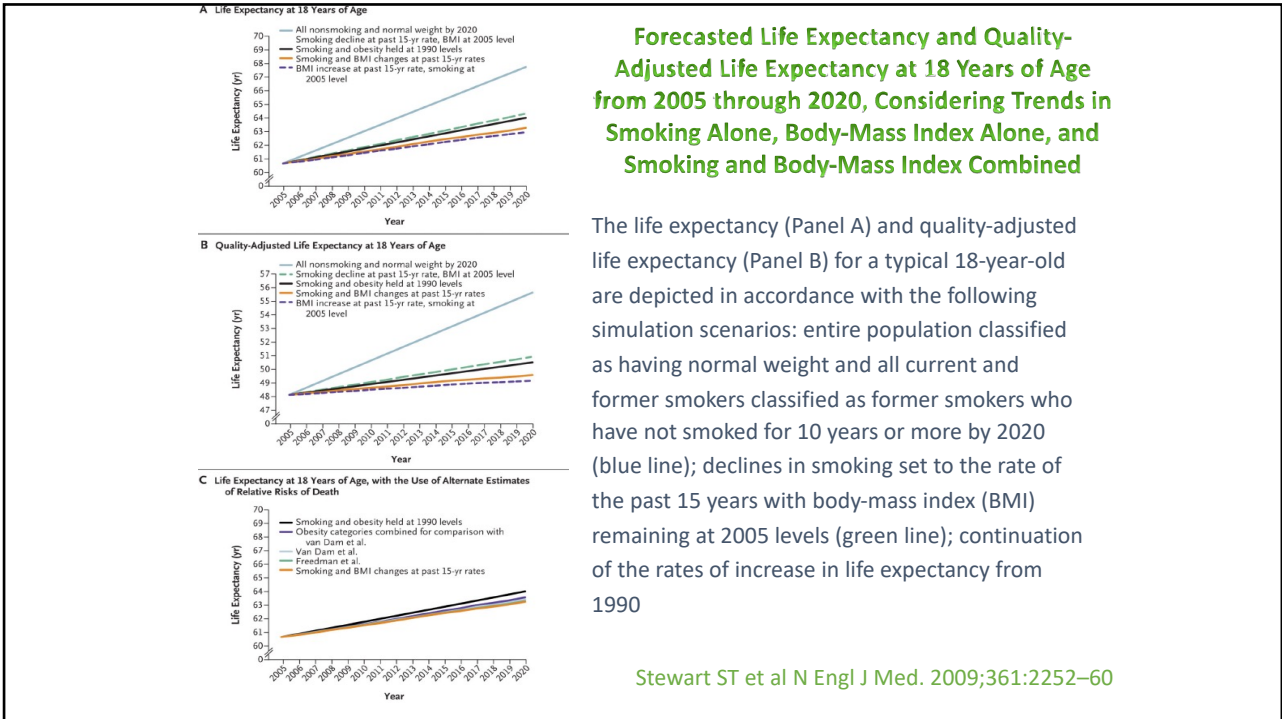


17

Prevalence (percent) of tobacco use in the United States in the past 30 days by product,* school level, sex, and race and ethnicity† (NYTS, 2020).



18



19

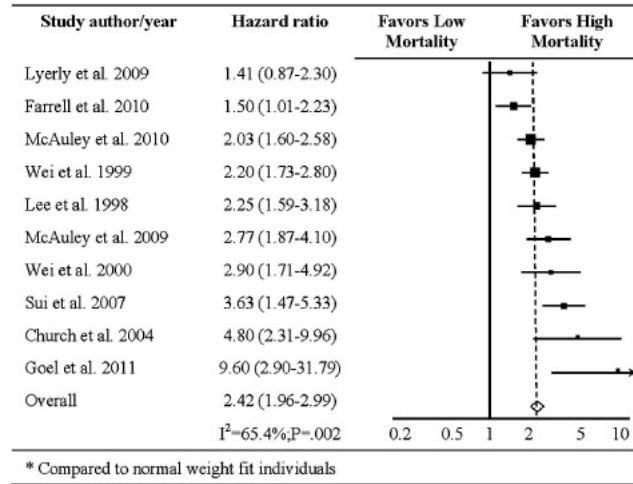
Study Conclusions

- If past obesity trends continue unchecked, the negative effects on the health of the U.S. population will increasingly outweigh the positive effects gained from declining smoking rates.
- Failure to address continued increases in obesity could result in an erosion of the pattern of steady gains in health observed since early in the 20th century.

Stewart ST et al N Engl J Med. 2009;361:2252–60

20

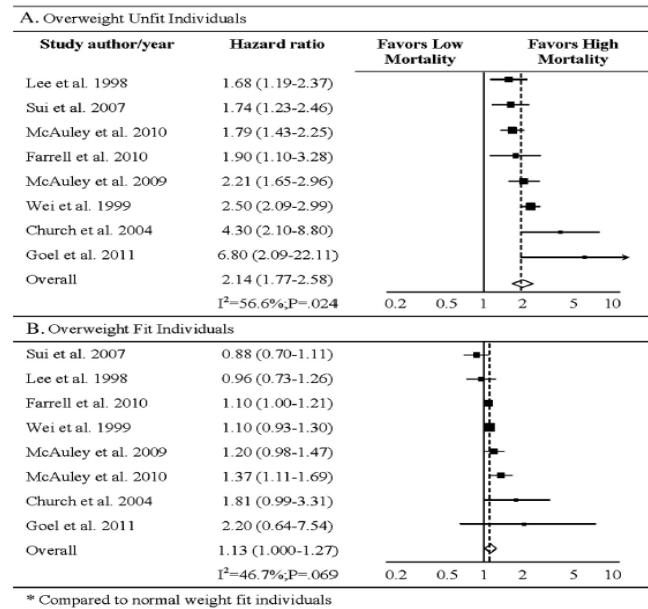
Meta-analysis of all-cause mortality on normal weight unfit individuals



Barry VW et al Progress Cardiovasc Dis 2014;56:382-90

21

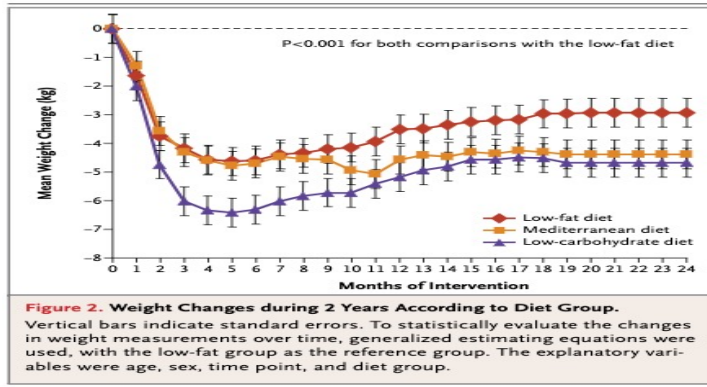
Meta-analysis of all-cause mortality on overweight individuals



Barry VW et al Progress Cardiovasc Dis 2014;56:382-90

22

DIRECT TRIAL



Included moderately obese individuals
 BMI: 31 kg/m²
 Mean age 52 years
 N=322

Shai et al., 2008; NEJM

23

Healthy Diet Characteristics

- 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.

24

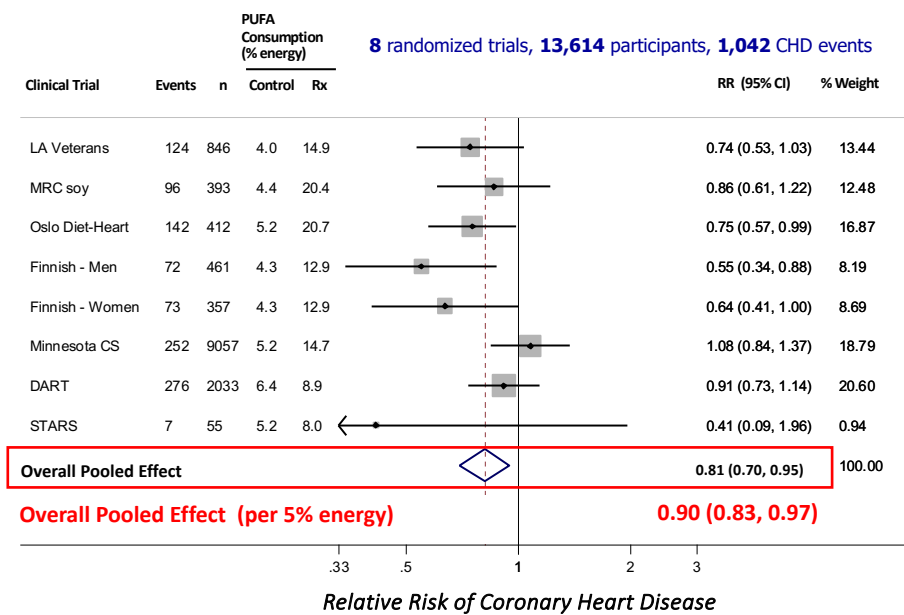
Διατροφικές Οδηγίες - Συστάσεις για βέλτιστη υγεία

	Σύσταση επί %Ενεργειακής πρόσληψης
Υδατάνθρακες	55 (45-65) Από τα οποία, <10% της ενεργειακής πρόσληψης σε σάκχαρα και 25 γρ φυτικές ίνες Τουλάχιστον η μισή ποσότητα από σιτηρά ολικής
Πρωτεΐνες % (γρ/κιλό βάρους)	10-20 (15%) (0.8 γρ ανά κιλό βάρους)
Συνολικά Λίπη & Έλαια (%)	30-35 (20-35)
Κεκορεσμένα Λίπη	<10
Μονοακόρεστα	*
Πολυακόρεστα	6-10

*δεν υπάρχει ακόμη και σήμερα συγκεκριμένη σύσταση

25

Replacing SFA with PUFA: Randomized Trials



Mozaffarian, Micha et al, PLoS Med 2010

26

Intake of individual saturated fatty acids and risk of coronary heart disease in US men and women: two prospective longitudinal cohort studies

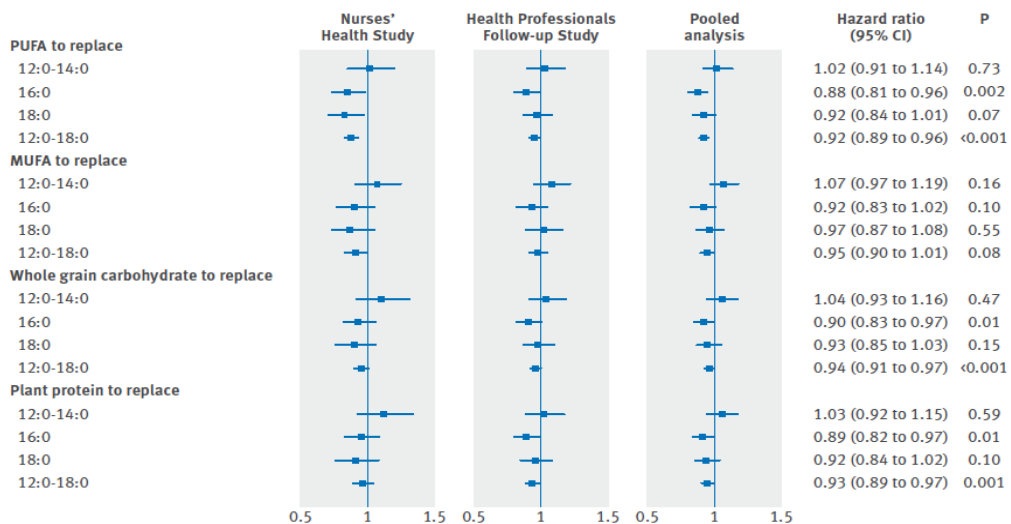
Geng Zong,¹ Yanping Li,¹ Anne J Wanders,² Marjan Alsema,² Peter L Zock,² Walter C Willett,³ Frank B Hu,³ Qi Sun⁴

- Design: Prospective, longitudinal cohort study
- Setting: Health professionals in the United States
- Participants: 73 147 women in the Nurses' Health Study (1984-2012) and 42 635 men in the Health Professionals Follow-up Study (1986-2010), who were free of major chronic diseases at baseline

Zong G et al BMJ 2016;355:i5796

27

Multivariate adjusted hazard ratios of CHD after substitution of 1% of energy from individual SFAs by alternative nutrients, based on the Nurses' Health Study (1984-2012) and Health Professionals Follow-up Study (1986-2010)



Zong G et al BMJ 2016;355:i5796

28

Λίπη & έλαια (Dietary fat)

Lifestyle Management: Standards of Medical Care in Diabetes-2018

- Ακόμα δεν υπάρχουν αρκετά αποδεικτικά στοιχεία.
- Έμφαση σε Μεσογειακού τύπου διατροφής πλούσια σε MUFA & PUFA για πρόληψη καρδιαγγειακής νόσου (ΚΝ).
- Έμφαση στην κατανάλωση ψαριών πλούσια σε λίπη (ω-3) & σε ξηρούς καρπούς και σποράκια για μείωση ΚΝ.

29

Αλκοόλ

Lifestyle Management: Standards of Medical Care in Diabetes-2018

- Με μέτρο (<1 μερίδα για γυναίκες και <2 για άνδρες ανά ημέρα).
 - Αποφυγή περιστασιακής μεγάλης πρόσληψης σε μία στιγμή (binge drinking).
- Μπορεί να αυξήσει τον κίνδυνο για υπογλυκαιμικά επεισόδια
 - Ειδικά σε άτομα που κάνουν ινσουλίνη (θεραπευτική αγωγή).

30



31

Nurses Health
study: prospective
cohort to assess
dietary fat and
CHD risk

- Started in 1976
- Registered nurses enrolled N=121 700 (age 35-55 years)
- Medical history at baseline
- For this study, 78 778 used after exclusion criteria
- Follow up questionnaires every 2 years
- FFQ at baseline (61 foods)
- FFQ in 1984 (116 foods)
- Then similar FFQ used ever 4 years
- Fat intake = nutr content in portion * frequency & accounting for type of fat consumed – used in cooking

Am J Epidemiol., 2005 Apr 1;161(7):672-9.
doi: 10.1093/aje/kwi085.

32

Nurses Health study: prospective cohort to assess dietary fat and CHD risk

- Exclusion criteria at baseline June 1, 1980:
 - Those who left 10 or more food items blank or whose total energy intake was implausible
 - Those who had a history of
 - Cardiovascular disease (angina, myocardial infarction, stroke, other cardiovascular disease),
 - Cancer,
 - Diabetes,
 - Hypercholesterolemia

Am J Epidemiol., 2005 Apr 1;161(7):672-9. doi: 10.1093/aje/kwi085.

33

Διατροφική Ανάλυση

Am J Epidemiol
2005;161:672-679

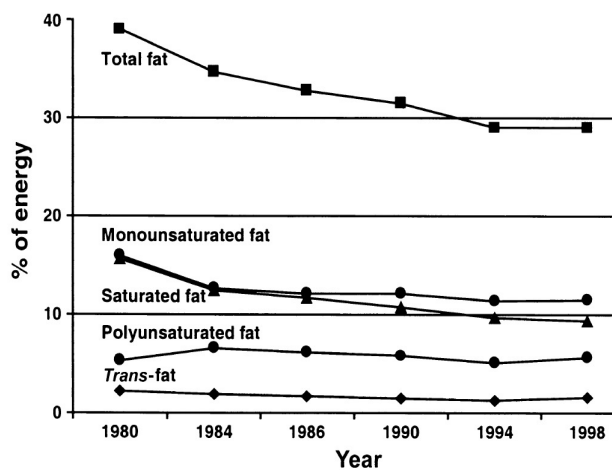


FIGURE 1. Trends in intakes of total fat and specific types of fat over time in the Nurses' Health Study, United States, 1980-2000.

34

Διατροφική Ανάλυση

Am J Epidemiol
2005;161:672-679**TABLE 1. Characteristics and risk factors for coronary heart disease according to intake of specific types of fat* in 1990, Nurses' Health Study, United States**

	Saturated fat		Monounsaturated fat		Polyunsaturated fat		Trans-fat	
	1	5	1	5	1	5	1	5
Age (years)	57	55	57	55	57	55	57	55
Body mass index (kg/m ²)	24	24	24	24	24	25	24	24
Current smoking (%)	14	23	15	22	20	18	16	19
Physical activity (hours/week) †	3.6	2.9	3.7	2.9	3.3	3.0	3.8	2.7
History of hypertension (%)	15	16	15	16	16	15	15	16
Parental history of MI ‡ (%)	20	19	20	19	20	20	20	19
Current hormone use (%)	31	25	29	26	26	30	30	25
Aspirin use (%)	51	45	51	46	46	54	50	49
Multivitamin use (%)	34	23	35	23	29	28	36	23
Total energy (kcal/day)	1,698	1,721	1,684	1,715	1,672	1,764	1,676	1,758
Cholesterol (mg/day)	200	244	203	240	219	223	216	222
Protein (g/day)	75	76	76	76	76	74	78	73
Dietary fiber (g/day)	21	18	21	18	20	19	21	18
Alcohol (g/day)	6.5	4.3	6.4	4.1	6.8	4.3	7.1	3.5

35

TABLE 2. Relative risks of coronary heart disease according to intake of specific types of dietary fat, Nurses' Health Study, United States, 1980-2000

	Quintile					P _{trend}
	1 (lowest)	2	3	4	5 (highest)	
Total fat						
Median (% of energy)	28.3	32.6	35.6	38.7	44.0	
Age-adjusted RR*	1	0.97	1.02	1.17	1.26	0.001
95% CI*		0.84, 1.12	0.88, 1.18	1.01, 1.35	1.07, 1.47	
Multivariate† RR	1	0.94	0.91	0.98	0.92	0.49
95% CI		0.81, 1.08	0.79, 1.06	0.84, 1.15	0.77, 1.09	
Saturated fat						
Median (% of energy)	10.1	11.9	13.3	14.8	17.6	
Age-adjusted RR	1	1.05	1.16	1.35	1.52	<0.0001
95% CI		0.91, 1.21	1.00, 1.34	1.16, 1.56	1.30, 1.79	
Multivariate† RR	1	0.94	0.96	1.01	0.97	0.93
95% CI		0.80, 1.11	0.79, 1.16	0.81, 1.26	0.73, 1.27	
Monounsaturated fat						
Median (% of energy)	10.6	12.5	13.8	15.3	18.0	
Age-adjusted RR	1	1.01	1.11	1.18	1.30	0.0003
95% CI		0.87, 1.16	0.96, 1.28	1.02, 1.37	1.11, 1.53	
Multivariate† RR	1	0.94	0.95	0.91	0.82	0.19
95% CI		0.79, 1.11	0.78, 1.17	0.72, 1.16	0.62, 1.10	
Polyunsaturated fat						
Median (% of energy)	4.1	5.0	5.6	6.3	7.4	
Age-adjusted RR	1	0.93	0.81	0.83	0.80	0.002
95% CI		0.81, 1.07	0.70, 0.94	0.72, 0.97	0.69, 0.94	
Multivariate† RR	1	0.98	0.83	0.84	0.75	0.004
95% CI		0.84, 1.14	0.70, 0.99	0.70, 1.02	0.60, 0.92	
Trans-fat						
Median (% of energy)	1.3	1.6	1.9	2.2	2.8	
Age-adjusted RR	1	1.11	1.31	1.24	1.39	<0.0001
95% CI		0.96, 1.28	1.14, 1.52	1.07, 1.44	1.19, 1.63	
Multivariate† RR	1	1.08	1.29	1.19	1.33	0.01
95% CI		0.92, 1.26	1.09, 1.53	0.99, 1.44	1.07, 1.66	

Am J Epidemiol., 2005 Apr 1;161(7):672-9. doi: 10.1093/aje/kwi085.

36

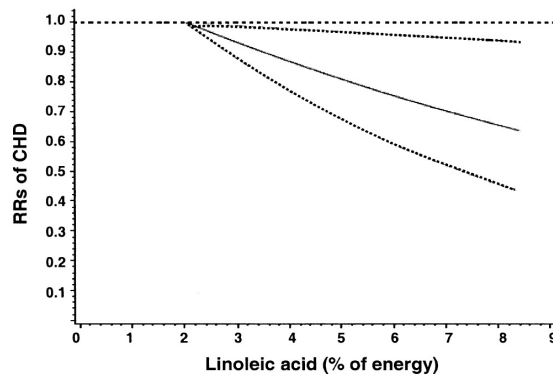
TABLE 3. Relative risks* of coronary heart disease according to intakes of specific types of fat, stratified by age and body mass index, Nurses' Health Study, United States, 1980–2000

	Quintile					P _{trend}
	1 (lowest)	2	3	4	5 (highest)	
Age (years)						
<65 (n = 1,111)						
Polyunsaturated fat						
RR†	1	0.87	0.68	0.74	0.66	0.002
95% CI‡		0.72, 1.05	0.55, 0.85	0.59, 0.93	0.50, 0.85	
Trans-fat						
RR	1	1.20	1.35	1.37	1.50	0.01
95% CI		0.97, 1.48	1.08, 1.70	1.07, 1.75	1.13, 2.00	
≥65 (n = 655)						
Polyunsaturated fat						
RR	1	1.22	1.18	1.08	0.96	0.60
95% CI		0.94, 1.59	0.89, 1.57	0.78, 1.49	0.66, 1.39	
Trans-fat						
RR	1	0.94	1.22	0.96	1.15	0.49
95% CI		0.74, 1.19	0.94, 1.58	0.71, 1.31	0.80, 1.66	
Body mass index (kg/m²)						
<25 (n = 752)						
Polyunsaturated fat						
RR	1	1.08	0.84	0.92	0.91	0.43
95% CI		0.86, 1.36	0.65, 1.10	0.69, 1.23	0.67, 1.26	
Trans-fat						
RR	1	1.28	1.42	1.48	1.53	0.02
95% CI		1.00, 1.62	1.09, 1.86	1.11, 1.99	1.09, 2.15	
≥25 (n = 1,014)						
Polyunsaturated fat						
RR	1	0.90	0.81	0.78	0.63	0.002
95% CI		0.73, 1.11	0.65, 1.02	0.60, 1.00	0.47, 0.84	
Trans-fat						
RR	1	0.94	1.21	1.02	1.19	0.26
95% CI		0.76, 1.16	0.97, 1.51	0.79, 1.31	0.88, 1.60	

Am J Epidemiol., 2005 Apr 1;161(7):672-9. doi: 10.1093/aje/kwi085.

37

Spline regression model of the relative risks (RRs) of coronary heart disease (CHD) according to linoleic acid intake in the Nurses' Health Study, United States, 1980–2000.



Relative risks were adjusted for the variables listed as multivariate in table 2. Solid line, point estimates; dotted lines, 95% confidence interval

38

Fish consumption and CHD mortality: an updated meta-analysis of seventeen cohort studies

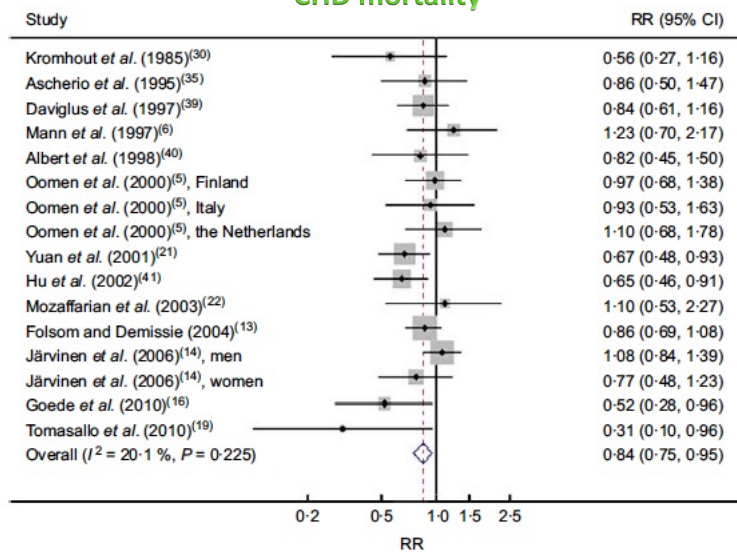
Jusheng Zheng¹, Tao Huang¹, Yinghua Yu^{1,2}, Xiaojie Hu¹, Bin Yang¹ and Duo Li^{1,3,*}

Seventeen cohorts with 315 812 participants and average follow-up period of 15.9 years were identified.

Zheng J et al Public Health Nutr 2011;15:725–37

39

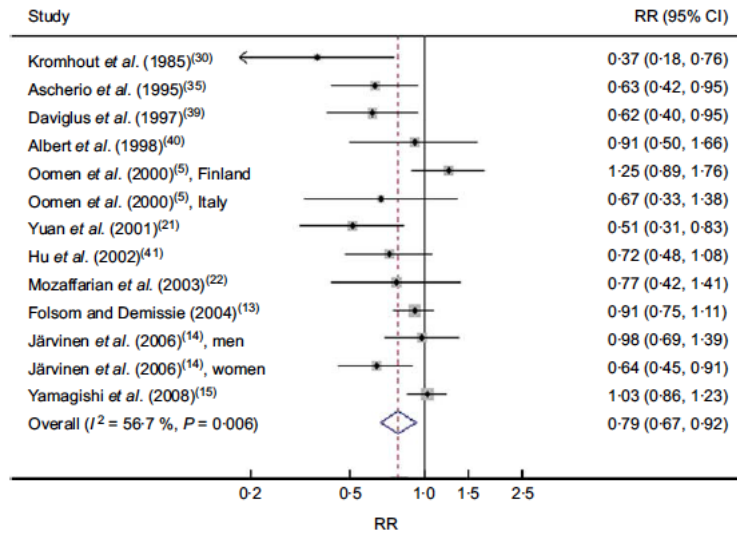
Pooled relative risk (RR) and 95% CI of studies assessing the association between low fish consumption (1 serving/week) and CHD mortality



Zheng J et al Public Health Nutr 2011;15:725–37

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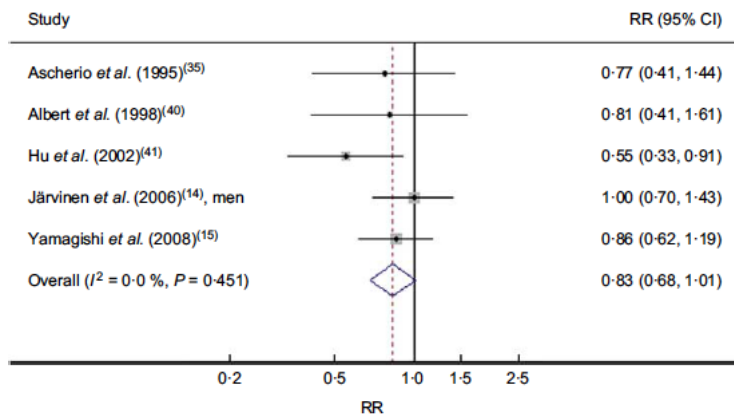
Pooled relative risk (RR) and 95% CI of studies assessing the association between moderate fish consumption (2–4 servings/week) and CHD mortality



Zheng J *et al* Public Health Nutr 2011;15:725–37


41

Pooled relative risk (RR) and 95% CI of studies assessing the association between high fish consumption (>5 servings/week) and CHD mortality



Zheng J *et al* Public Health Nutr 2011;15:725–37

42



ESTABLISHED IN 1812 APRIL 4, 2013 VOL. 368 NO. 14

Primary Prevention of Cardiovascular Disease with a Mediterranean Diet

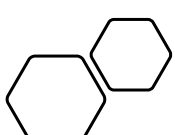
Ramón Estruch, M.D., Ph.D., Emilio Ros, M.D., Ph.D., Jordi Salas-Salvadó, M.D., Ph.D., Maria-Isabel Covas, D.Pharm., Ph.D., Dolores Corella, D.Pharm., Ph.D., Fernando Arós, M.D., Ph.D., Enrique Gómez-Gracia, M.D., Ph.D., Valentina Ruiz-Gutiérrez, Ph.D., Miquel Fiol, M.D., Ph.D., José Lapetra, M.D., Ph.D., Rosa Maria Lamuela-Raventós, D.Pharm., Ph.D., Lluís Serra-Majem, M.D., Ph.D., Xavier Pintó, M.D., Ph.D., Josep Basora, M.D., Ph.D., Miguel Angel Muñoz, M.D., Ph.D., José V. Sorlí, M.D., Ph.D., José Alfredo Martínez, D.Pharm., M.D., Ph.D., and Miguel Angel Martínez-González, M.D., Ph.D., for the PREDIMED Study Investigators*

- **Methods:** Randomly assigned participants who were at high cardiovascular risk, but with no cardiovascular disease at enrollment, to one of three diets. Participants received quarterly individual and group educational sessions and, depending on group assignment, free provision of extra-virgin olive oil, mixed nuts, or small nonfood gifts. The primary end point was the rate of major cardiovascular events. On the basis of the results of an interim analysis, the trial was stopped after a median follow-up of 4.8 years.
- **Results:** A total of 7447 persons were enrolled (age range, 55 to 80 years); 57% were women. A primary end-point event occurred in 288 participants

43

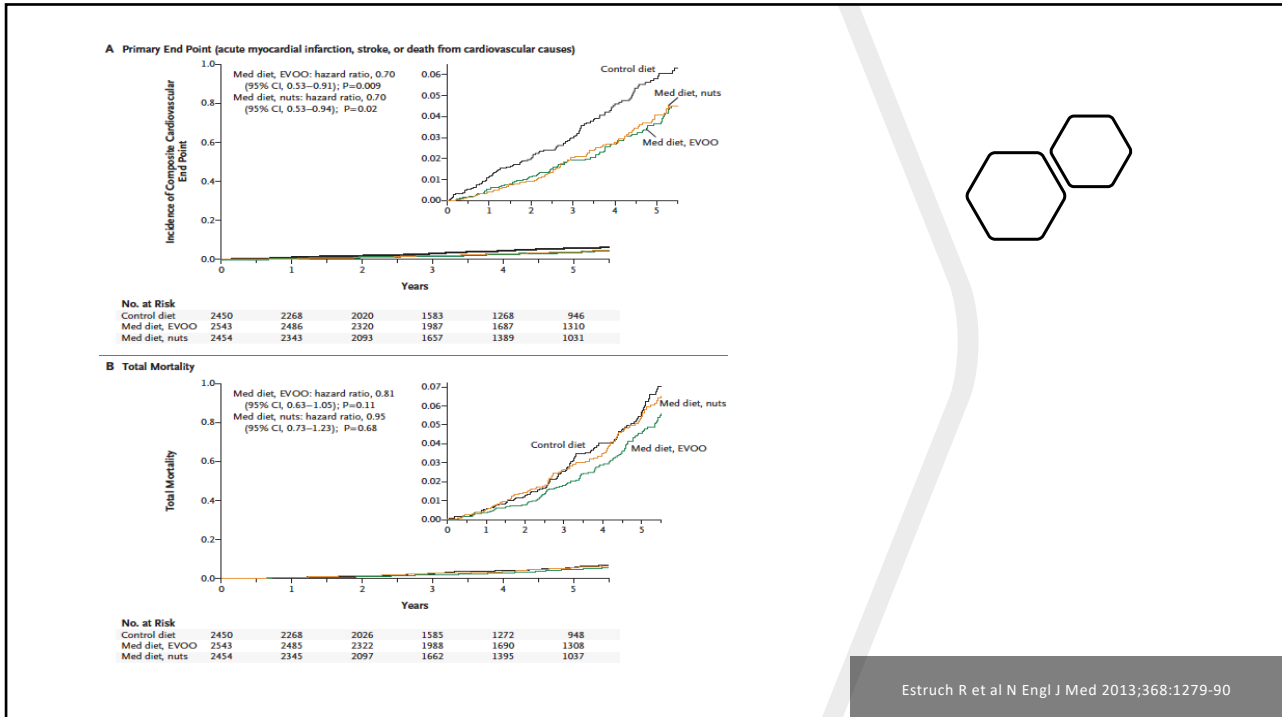
Table 1. Summary of Dietary Recommendations to Participants in the Mediterranean-Diet Groups and the Control-Diet Group.

Food	Goal
Mediterranean diet	
Recommended	
Olive oil*	≥4 tbsp/day
Tree nuts and peanuts†	≥3 servings/wk
Fresh fruits	≥3 servings/day
Vegetables	≥2 servings/day
Fish (especially fatty fish), seafood	≥3 servings/wk
Legumes	≥3 servings/wk
Sofrito‡	≥2 servings/wk
White meat	Instead of red meat
Wine with meals (optionally, only for habitual drinkers)	≥7 glasses/wk
Discouraged	
Soda drinks	<1 drink/day
Commercial bakery goods, sweets, and pastries§	<3 servings/wk
Spread fats	<1 serving/day
Red and processed meats	<1 serving/day
Low-fat diet (control)	
Recommended	
Low-fat dairy products	≥3 servings/day
Bread, potatoes, pasta, rice	≥3 servings/day
Fresh fruits	≥3 servings/day
Vegetables	≥2 servings/day
Lean fish and seafood	≥3 servings/wk
Discouraged	
Vegetable oils (including olive oil)	≤2 tbsp/day
Commercial bakery goods, sweets, and pastries§	≤1 serving/wk
Nuts and fried snacks	≤1 serving/wk
Red and processed fatty meats	≤1 serving/wk
Visible fat in meats and soups¶	Always remove
Fatty fish, seafood canned in oil	≤1 serving/wk
Spread fats	≤1 serving/wk
Sofrito‡	≤2 servings/wk



Estruch R et al N Engl J Med 2013;368:1279-90

44



45

Στοιχεία & Προβληματισμοί

- Σε γενικές γραμμές διατροφική λήψη με μειωμένες θερμίδες πρέπει να προτείνεται.

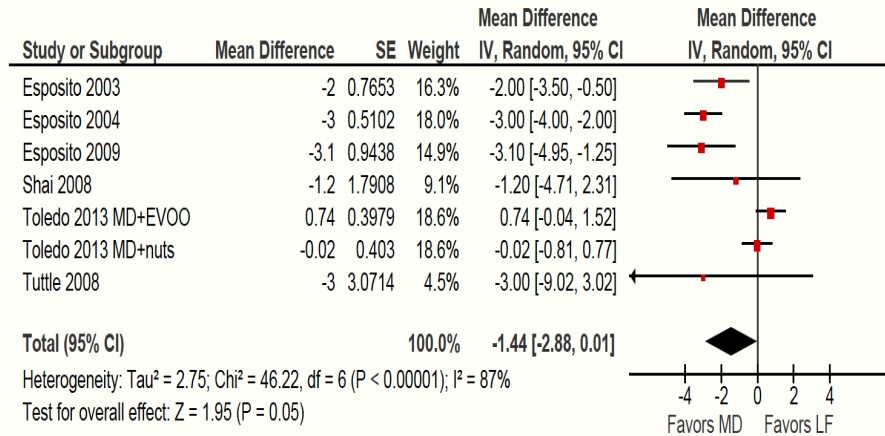
Αλλά

- Ελαττώνοντας γενικά τα λίπη μπορεί να οδηγήσει σε αύξηση απλών υδατανθράκων.
 - Υπάρχουν αποδείξεις πως το είδος του λίπους και όχι τόσο η ποσότητα έχει άμεση σχέση με τα χρόνια νοσήματα
 - “Obesity paradox”
- Η πρόσληψη συγκεκριμένων τροφών μπορεί να βελτιώσει λιπιδαιμικό και διαβητικό προφίλ.
 - Ξηροί καρποί, μπέρις, γιαούρτι, τσάι...
- Κάποιες ενδείξεις για μείωση άλλων τροφών:
 - Κόκκινο κρέας, τυποποιημένο κρέας & ssb’s.

46

46

Systolic BP forest plot & Mediterranean vs Low Fat diet



Nissensohn et al., 2016; Journal of Nutrition Education and Behavior

47

Food choices to lower LDL cholesterol and improve overall lipoprotein profile

	To be preferred	To be used in moderation	To be chosen occasionally in limited amounts
Cereals	Wholegrains	Refined bread, rice, and pasta, biscuits, corn flakes	Pastries, muffins, pies, croissants
Vegetables	Raw and cooked vegetables	Potatoes	Vegetables prepared in butter or cream
Legumes	Lentils, beans, fava beans, peas, chickpeas, soybean		
Fruit	Fresh or frozen fruit	Dried fruit, jelly, jam, canned fruit, sorbets, ice lollies/popsicles, fruit juice	
Sweets and sweeteners	Non-caloric sweeteners	Sucrose, honey, chocolate, sweets/candies	Cakes, ice creams, fructose, soft drinks
Meat and fish	Lean and oily fish, poultry without skin	Lean cuts of beef, lamb, pork, and veal, seafood, shellfish	Sausages, salami, bacon, spare ribs, hot dogs, organ meats
Dairy food and eggs	Skimmed milk and yoghurt	Low-fat milk, low-fat cheese and other milk products, eggs	Regular cheese, cream, whole milk and yoghurt
Cooking fat and dressings	Vinegar, mustard, fat-free dressings	Olive oil, non-tropical vegetable oils, soft margarines, salad dressing, mayonnaise, ketchup	Trans fats and hard margarines (better to avoid them), palm and coconut oils, butter, lard, bacon fat
Nuts/seeds		All, unsalted (except coconut)	Coconut
Cooking procedures	Grilling, boiling, steaming	Stir-frying, roasting	Frying

European Heart Journal (2020) 41, 111-188 doi:10.1093/eurheartj/ehz455

48

Food choices to lower LDL cholesterol and improve overall lipoprotein profile

Διατροφικές Επιλογές για την προστασία της καρδιαγγειακής λειτουργίας

	Να προτιμώνται	Με μέτρο	Να επιλέγονται περιστασιακά και με μέτρο
Δημητριακά & Αμυλούχα τρόφιμα	Ολικής άλεσης προϊόντα	Λευκά & επεξεργασμένα δημητριακά, ψωμιά, ζυμαρικά, ρύζι	Σφολιατοειδή, έτοιμα κέικ ή άλλα γλυκά
Λαχανικά	Ωμά, βραστά, ψητά λαχανικά	Πατάτες	Λαχανικά μαγειρεμένα με βούτυρο ή κρέμες γάλακτος ή τηγανιτά
Όσπρια	Όλα τα όσπρια		
Φρούτα	Φρέσκα ή κατεψυγμένα (ειδικά το ρόδι)	Αποξηραμένα, ζελέ, μαρμελάδες, χυμούς	Γρανίτες με ζάχαρη ή φρουτοποτά
Γλυκά & γλυκαντικές ουσίες	Γλυκαντικά χωρίς θερμίδες (πχ. στέβια)	Μέλι, σοκολάτα, σουκρόζη	Κέικ, γλυκά, αναψυκτικά
Κρέας, Ψάρια & Αυγά	Ψάρια (+λιπαρά), Πουλερικά χωρίς την πέτσα	Άπαχα κόκκινα κρέατα, θαλασσινά, αυγά	Λουκάνικα, αλλαντικά, παϊδάκια
Γαλακτοκομικά	Άπαχο γάλα & γιαούρτι ή φυτικά	Χαμηλών λιπαρών τυρί, γάλα, γιαούρτι	Πλήρες γαλακτοκομικά
Έλαια & Λίπη	Μπαλσάμικο, μουστάρδα, ελαιόλαδο, Αβοκάντο, ελιές	Μαργαρίνες, έτοιμα ντρέσινγκ	Μαγιονέζα, κέτσαπ, φονικέλαο, λάδι καρύδας, λαρδί
Ξηροί Καρποί	Όλοι οι ανάλατοι & Βούτυρα ξηρών καρπών (ειδικά τα καρύδια)		Καρύδα
Μαγειρέμα	Ψήσιμο στη σχάρα, βράσιμο, ατμός	Σοτέ ή ψήσιμο στο φούρνο	Τηγάνισμα

European Heart Journal (2020) 41, 111-188 doi:10.1093/eurheartj/ehz455

49



RECOMMENDATION

Limit consumption of sugar sweetened drinks

Drink mostly water and unsweetened drinks

GOAL Do not consume sugar sweetened drinks¹


¹ Sugar sweetened drinks are defined here as liquids that are sweetened by adding free sugars, such as sucrose, high fructose corn syrup and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrate. This includes, among others, sodas, sports drinks, energy drinks, sweetened waters, cordials, barley water, and coffee- and tea-based beverages with sugars or syrups added. This does not include versions of these drinks which are 'sugar free' or sweetened only with artificial sweeteners.

50


CHILDREN

5-17 years


Children aged 5-17 should do at least **60 minutes** of physical activity every day.




Physical activity promotes a child's concentration, healthy growth and development, **prevents disease** and unhealthy weight gain.



Urbanization reduces levels of physical activity, cities must be built with enough safe green spaces for children's recreational activities.



Physical activity learned in childhood continues in adulthood, contributing to the person's decreased risk for heart disease and stroke.



51



00028C


00028D

52


ADULTS

18-64 years

Adults should do at least **150 minutes** of moderate intensity or **75 minutes** of vigorous physical activity throughout the week to reduce the risk of high blood pressure, coronary heart disease, stroke and type 2 diabetes.



Physical activity is **not only sport**. It is any bodily movement that uses energy including walking, doing household chores and dancing.



150 minutes of moderate physical activity per week reduces the risk of heart disease by... and the risk of diabetes by...

30% 27%

Each year, physical inactivity contributes to over

3million

preventable deaths

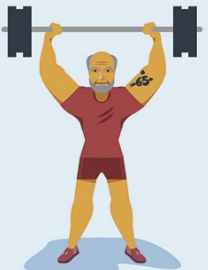
Brisk walking, dancing, housework and gardening would be classed as **moderate-intensity** physical activity...

...whereas **vigorous physical activity** would be running, cycling, swimming and playing competitive sports.


53

In adults aged **65 years** and above, physical activity can range from sports and planned exercise to other activities such as walking, dancing or gardening.

The body burns fewer calories as you get older. **Excess weight** causes the heart to work harder and increases the risk for heart disease, high blood pressure, diabetes and high cholesterol.




Exercising regularly and eating a balanced **diet rich in fruit and vegetables** can help maintain a healthy weight.




SENIORS

65 and above

Older adults should do at least **150 minutes** of moderate intensity or **75 minutes** of vigorous physical activity throughout the week to lower rates of coronary heart disease, high blood pressure, stroke and type 2 diabetes.



If you are not active, **start with small amounts** of physical activity and gradually increase duration, frequency and intensity over time. It is recommended to talk to a doctor before starting an exercise programme to be sure it is the right one.

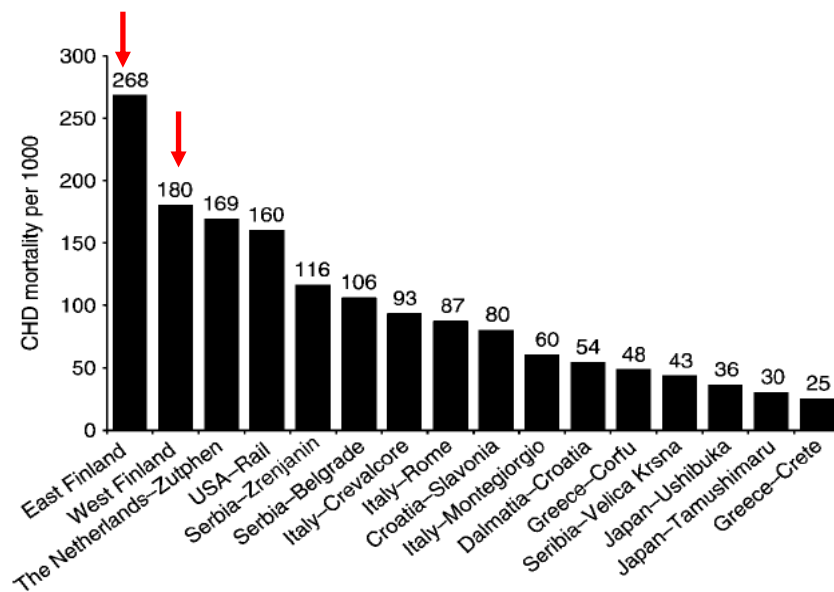


54

*The North Karelia Project:
Cardiovascular disease
prevention in Finland*

55

Η Μελέτη των 7 Χωρών, 1960-1985



56

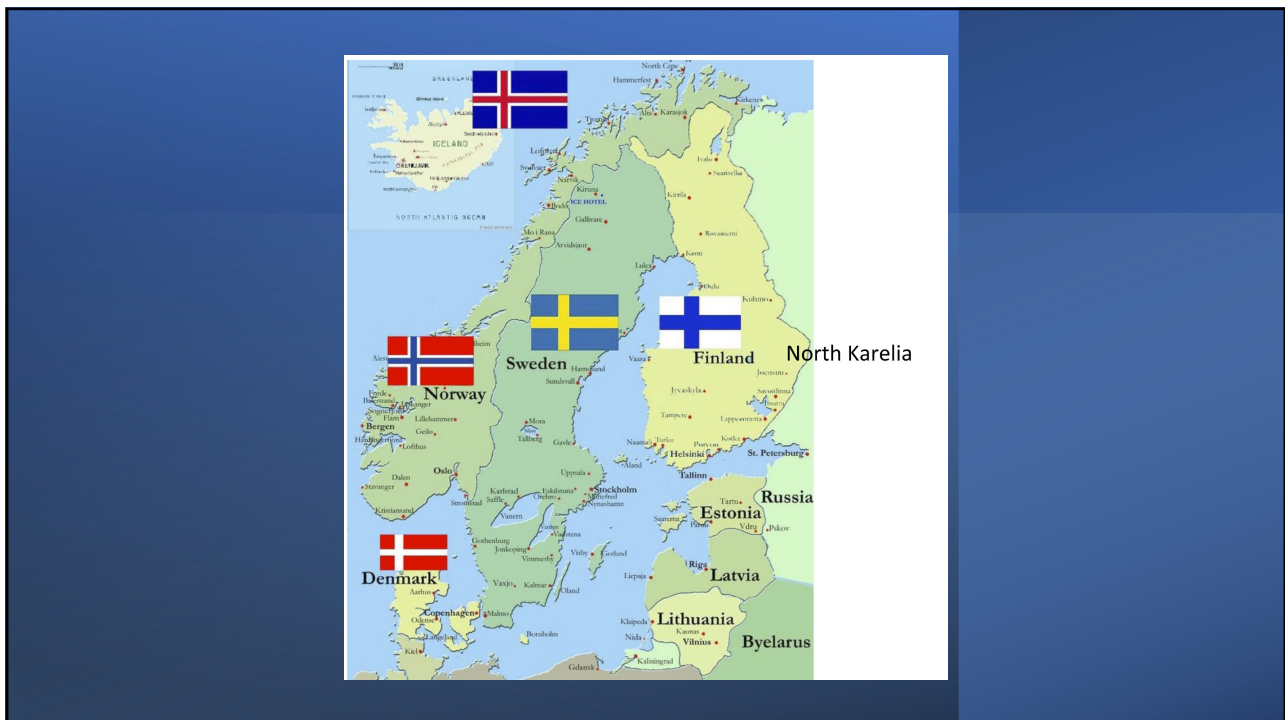
56

The North Karelia Project

- Αποτελέσματα από τη μελέτη των «7 χωρών» φανέρωσε το μεγάλο πρόβλημα της Φινλανδίας σε ισχαιμικά επεισόδια, ειδικά στους άνδρες και με ακόμα μεγαλύτερο ποσοστό θνησιμότητας στην περιοχή North Karelia
 - 1960-1970
- Επιδημιολογικές μελέτες έδειξαν ότι υπήρχε σχέση ανάμεσα στα επίπεδα χοληστερόλης ορού, καπνίσματος και υπέρτασης με τον επιπολασμό Καρδιακών Νοσημάτων.
 - 60% των ανδρών ήταν καπνιστές
 - Μέση τιμή πίεσης αυξημένη
 - Μέση τιμή χοληστερόλης ορού υψηλότερη συγκριτικά με τις υπόλοιπες χώρες της μελέτης.

• <http://dx.doi.org/10.21542/gcsp.2018.13>

57



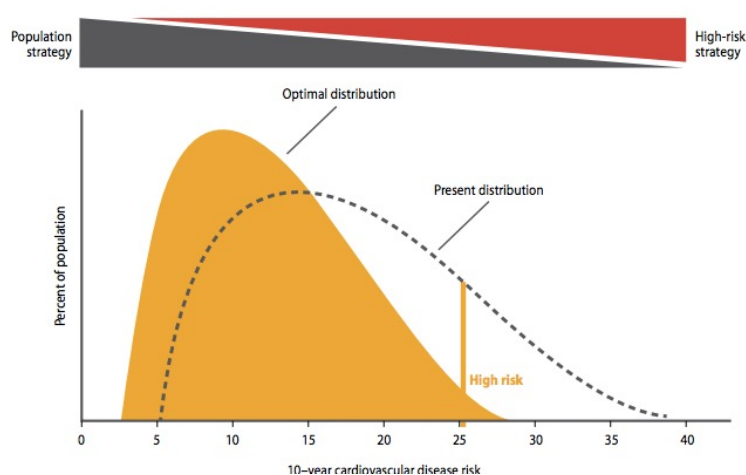
58

The North Karelia Project

- Το πρόγραμμα συμπεριέλαβε 2 πτυχές/επίπεδα
 1. Σε επίπεδο γενικού πληθυσμού: μείωση τη μέση τιμή σε όλους τους παράγοντες κινδύνου
 - I. Η λογική ήταν πως το μεγαλύτερο ποσοστό των ισχαιμικών και καρδιακών επεισοδίων προέρχονταν από το γενικό πληθυσμό μεσαίου κινδύνου και μόλις το 10-15% από τον πληθυσμό υψηλού κινδύνου.
 2. Σε επίπεδο πληθυσμό ήδη αυξημένου κινδύνου: Μείωση παραγόντων κινδύνου στοχεύοντας συγκεκριμένα στα άτομα υψηλού κινδύνου
 - I. Καπνιστές
 - II. υψηλή χοληστερόλη ορού
 - III. Άνδρες
 - IV. Αυξημένη πίεση

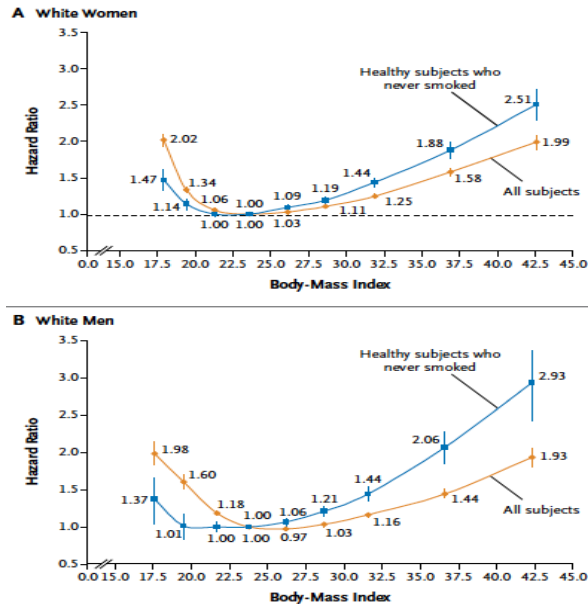
59

Figure 31 A combination of population wide and high risk strategies are required to shift the cardiovascular risk distribution of populations to more optimal levels (23).



60

Estimated Hazard Ratios for Death from Any Cause According to Body-Mass Index for All Study Participants and for Healthy Subjects Who Never Smoked



Berrington de Gonzalez A et al N Engl J Med 2010;363:2211-9

61

The North Karelia Project

- Αναλυτική αξιολόγηση πληθυσμού – Έρευνα υγείας σε αντιπροσωπευτικό επίπεδο πληθυσμό γνωστή ως: **Κυοριο**
 - Είχε διεξαχθεί μόνο στη North Karelia στην αρχή και μετά τα πρώτα 5 χρόνια
- Συνεχής αξιολόγηση σε συνολικό επίπεδο αλλά και επιμέρους
 - Επιμέρους για αξιολόγηση δράσεων σε:
 - Σχολεία
 - Επαγγελματικούς χώρους
 - Ενημερωτικά από ΜΜΕ (τηλεόραση/ραδιόφωνο/εφημερίδες)
 - Προγράμματα διακοπής καπνίσματος
 - Εκπαίδευση επαγγελματιών υγείας επί του αντικειμένου

62



The North Karelia Project

- Συνολική αξιολόγηση σε επίπεδο πληθυσμού με Έρευνες Υγείας σε διάρκεια μόλις 10 ετών το πρόγραμμα
 - κυλιόμενη μορφή ανά 5 έτη
- *National FINRISK Study*: Πρόγραμμα επιτήρησης χρόνιων (μη μεταδιδόμενων) νοσημάτων

North Karelia and Finland aged 35-64

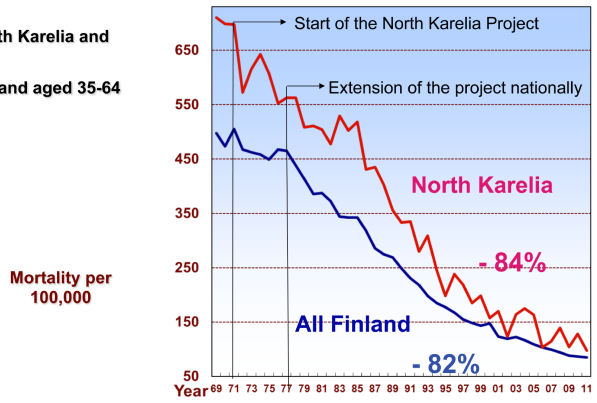


Figure 5. Coronary heart disease mortality in men 1969–2011.

63

The North Karelia Project

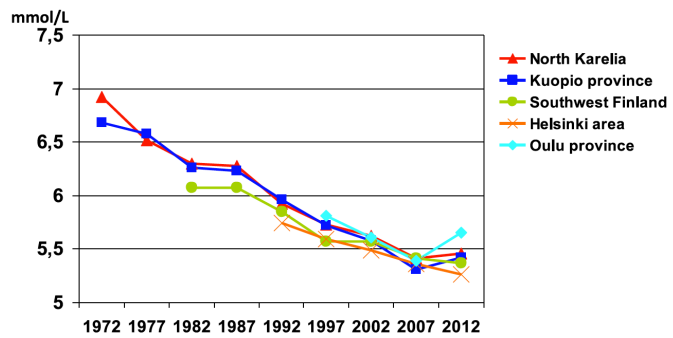
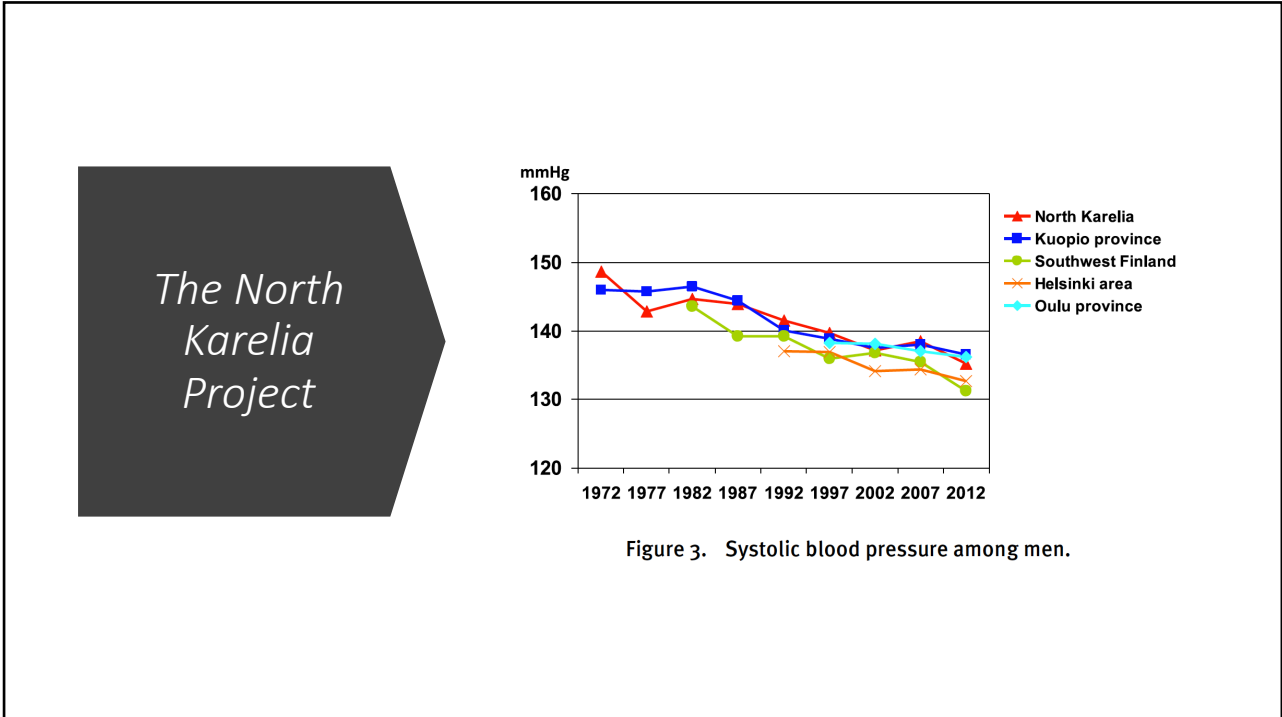
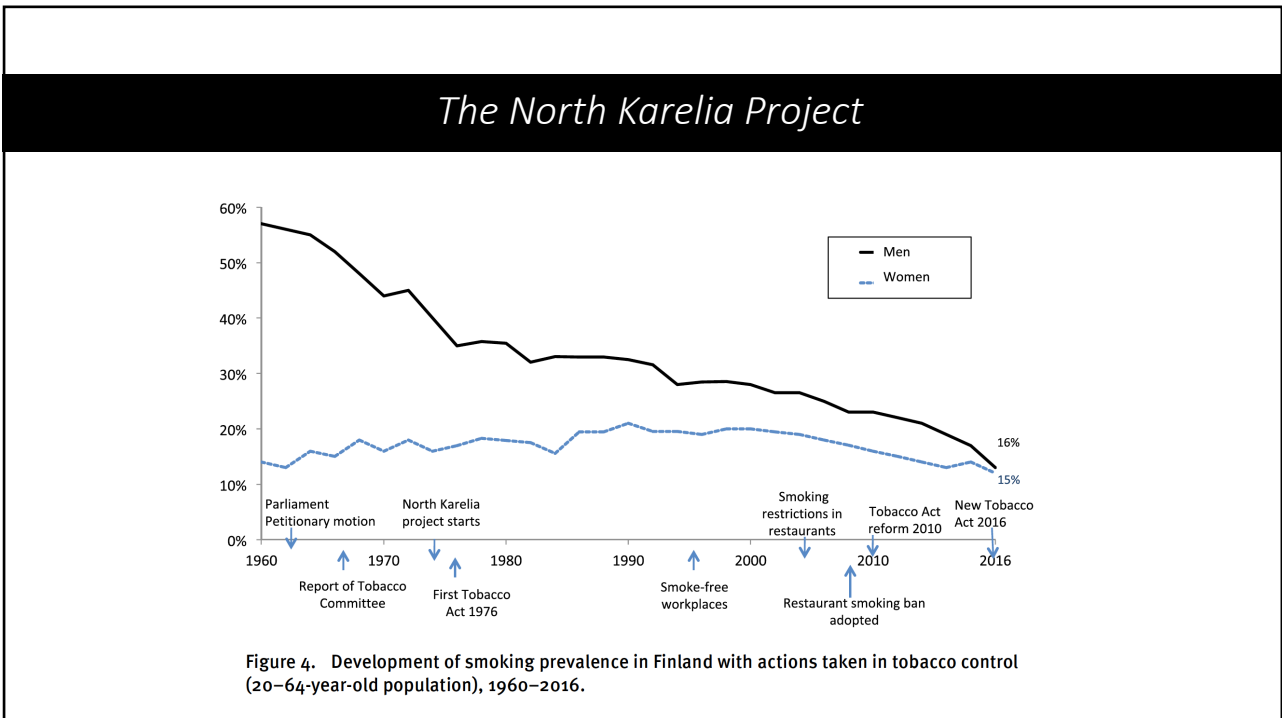


Figure 2. Serum cholesterol among men.

64



65



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The North Karelia Project

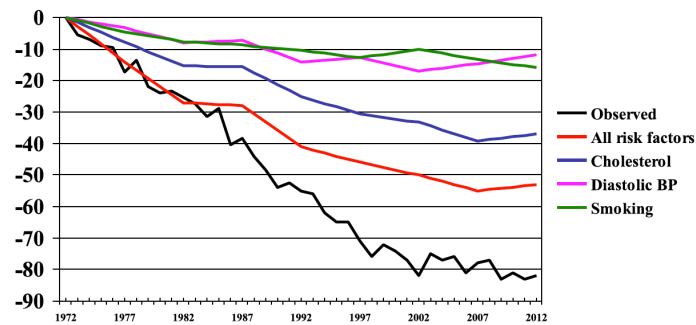


Figure 6. Observed and predicted decline in CHD mortality in men.

67

The North Karelia Project

- Συνολική αξιολόγηση σε επίπεδο πληθυσμού με Έρευνες Υγείας σε διάρκεια μόλις 10 ετών το πρόγραμμα
 - κυλιόμενης μορφής ανά 5 έτη
- *National FINRISK Study*: Πρόγραμμα επιτήρησης χρόνιων (μη μεταδιδόμενων) νοσημάτων
- Εθνικές διατροφικές συστάσεις θεσπίστηκαν για πρώτη φορά το 1981 (National Nutrition Council)
- Οδηγίες για πρόληψη της νόσου γράφτηκαν το 1987 και από τότε ανανεώνονται συστηματικά με βάση νέα δεδομένα πληθυσμού αλλά και ερευνητικών εξελίξεων.

68

Ευχαριστώ πολύ.