Les complications cardiovasculaires II

La prévention primaire

- Style de vie:
  - IMC
  - Alimentation (régime méditerranéen)
  - Alcool
  - Exercice physique

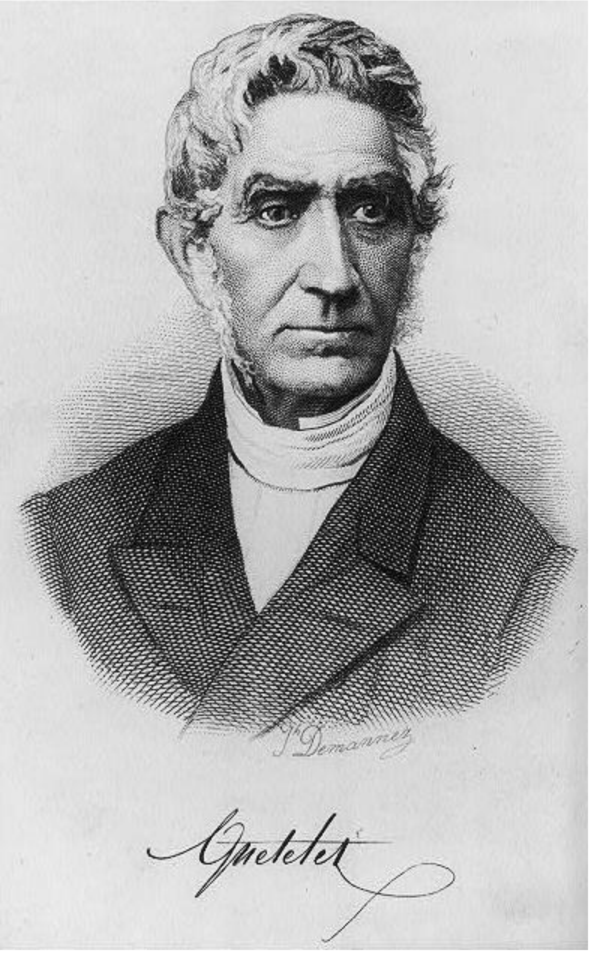
- (Facteurs de risque modifiables)

Prévention primaire

Les mesures de style de vie

- Arrêt du tabagisme et éviter le tabagisme passif
- Correction des habitudes alimentaires : au niveau des lipides, graisses saturées, cholestérol, acides gras polyinsaturés (d'origine végétale et marine), fruits frais et légumes, nombre de calories, sel et alcool: cf régime méditerranéen
- Activité physique régulière

Indice de masse corporelle


Jn Demannez
Quetelet

Body-mass index and cause-specific mortality in 900 000 adults: collaborative analyses of 57 prospective studies

Prospective Studies Collaboration*

Lancet 2009; 373: 1083–96

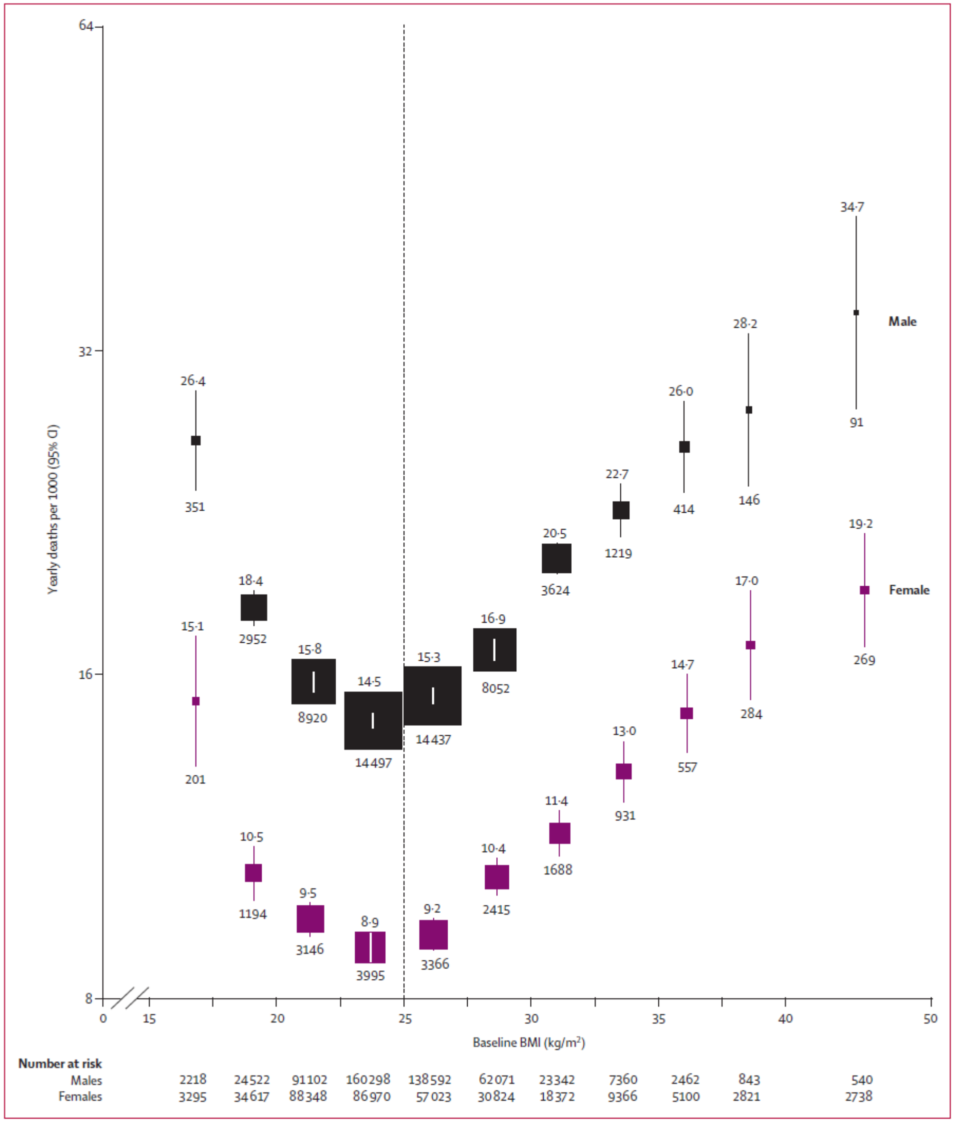


***Figure 2:* All-cause mortality versus BMI for each sex in the range 15–50 kg/m² (excluding the first 5 years of follow-up)**
Relative risks at ages 35–89 years, adjusted for age at risk, smoking, and study, were multiplied by a common factor (ie, floated) to make the weighted average match the PSC mortality rate at ages 35–79 years. Floated mortality rates shown above each square and numbers of deaths below. Area of square is inversely proportional to the variance of the log risk. Boundaries of BMI groups are indicated by tick marks. 95% CIs for floated rates reflect uncertainty in the log risk for each single rate. Dotted vertical line indicates 25 kg/m² (boundary between upper and lower BMI ranges in this report).

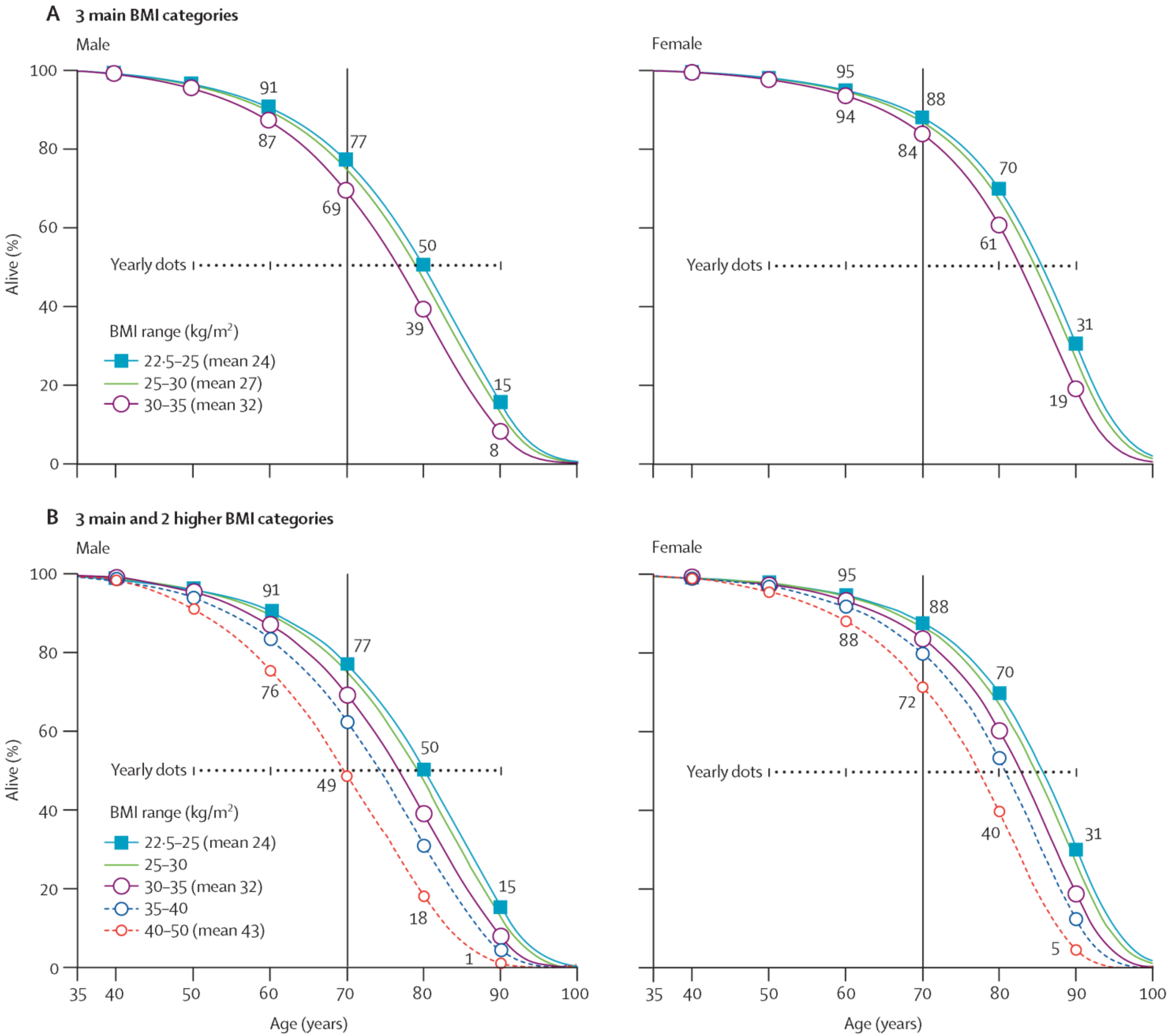


Figure 7: BMI versus lifespan in western Europe, year 2000

Separate and combined associations of body-mass index and abdominal adiposity with cardiovascular disease: collaborative analysis of 58 prospective studies

*The Emerging Risk Factors Collaboration**

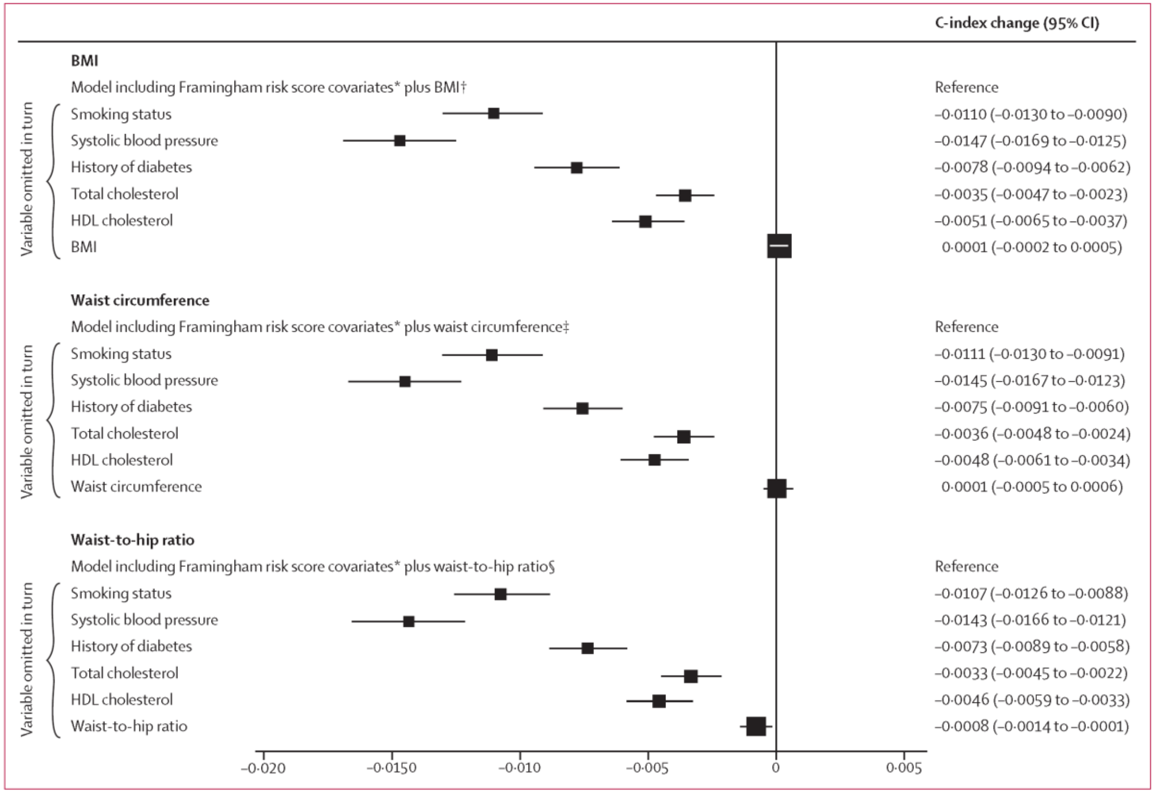


***Figure 6:* Changes in C-index for cardiovascular disease risk prediction from omission of individual risk factors from a full model containing Framingham risk score covariates plus BMI, waist circumference, or waist-to-hip ratio**

Analyses were based on 144 795 participants (8347 cardiovascular events) in 39 studies. Analyses were restricted to participants with BMI of 20 kg/m² or higher. BMI=body-mass index. *Framingham risk score covariates include age, smoking status, systolic blood pressure, history of diabetes, and total and HDL cholesterol, and model was stratified by sex. †Reference C-index of 0·7324 (95% CI 0·7272 to 0·7375). ‡Reference C-index of 0·7324 (95% CI 0·7273 to 0·7376). §Reference C-index of 0·7333 (95% CI 0·7281 to 0·7384).

Lancet 2011; 377: 1085–95

Régime méditerranéen

- Consommation de céréales accrue : pain, pâtes, riz, semoule…
- Consommation accrue de pommes de terre, fruits et légumes dont légumineuses (haricots, fèves…)
- Consommation accrue de noix, noisettes, amandes Huile d'olive : principale source de graisses
- Consommation modérée de poissons et volailles et de yaourts et fromages
- Réduction de la consommation en viande rouge
- Vin en quantité modérée aux repas

THE LANCET

Mediterranean alpha-linolenic acid-rich diet in secondary prevention of coronary heart disease

Michel de Lorgeril, Serge Renaud, Nicole Mamelle, Patricia Salen, Jean-Louis Martin, Isabelle Monjaud, Jeannine Guidollet, Paul Touboul, Jacques Delaye

Lancet 1994; **343:** 1454–59

Mediterranean Diet, Traditional Risk Factors, and the Rate of Cardiovascular Complications After Myocardial Infarction

Final Report of the Lyon Diet Heart Study

Michel de Lorgeril, MD; Patricia Salen, BSc; Jean-Louis Martin, PhD; Isabelle Monjaud, BSc;
Jacques Delaye, MD; Nicole Mamelle, PhD

(*Circulation.* 1999;99:779-785.)

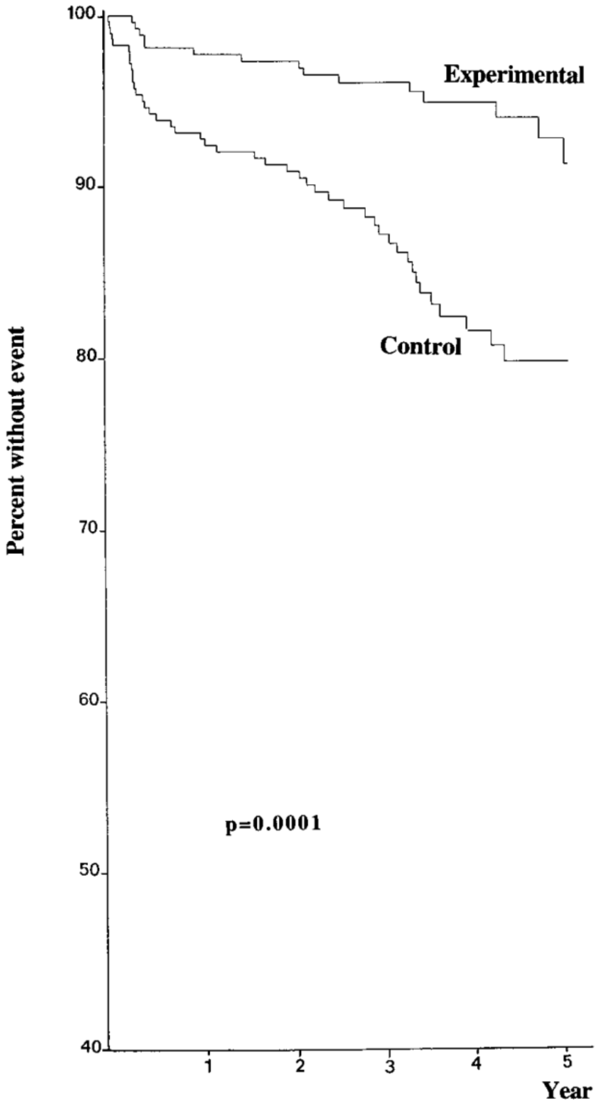


Figure 1. Cumulative survival without nonfatal myocardial infarction (CO 1) among experimental (Mediterranean group) patients and control subjects.

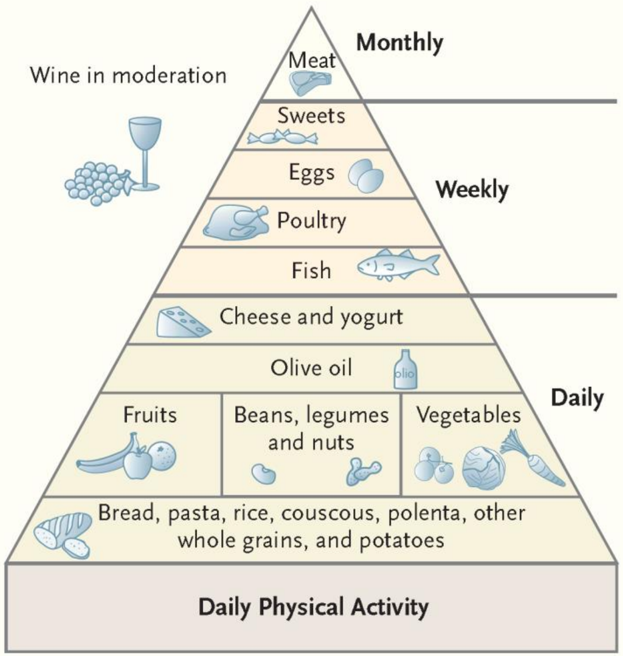
TABLE 1. End Points in the 2 Groups and Risk Ratios for the 3 Composite Outcomes Calculated With the Cox Proportional-Hazards Model

	Control		Experimental			
	Number	Rate*	Number	Rate	Risk Ratio† (95% CI)	*P*
Major primary end points						
Cardiac deaths	19	1.37	6	0.41	0.35 (0.15–0.83)	0.01
Nonfatal AMI	25	2.70	8	0.83		
Total primary end points (composite outcome 1)	44	4.07	14	1.24	0.28 (0.15–0.53)	0.0001
Noncardiac deaths	5	0.36	8	0.54		
All-cause deaths	24	1.74	14	0.95	0.44 (0.21–0.94)	0.03
Major secondary end points						
Periprocedural infarction	2		0			
Unstable angina	24		6			
Heart failure	11		6			
Stroke	4		0			
Pulmonary embolism	3		0			
Peripheral embolism	2		1			
Total secondary end points	46	4.96	13	1.35		
Total primary+secondary end points (composite outcome 2)	90	9.03	27	2.59	0.33 (0.21–0.52)	0.0001
Minor secondary end points						
Stable angina	29		21			
Elective myocardial revascularization	45		37			
Post-PTCA restenosis	15		9			
Thrombophlebitis	1		2			
Total minor end points	90	9.71	68	7.04		
Total major and minor end points (composite outcome 3)	180	18.74	95	9.63	0.53 (0.38–0.74)	0.0002

AMI indicates acute myocardial infarction.

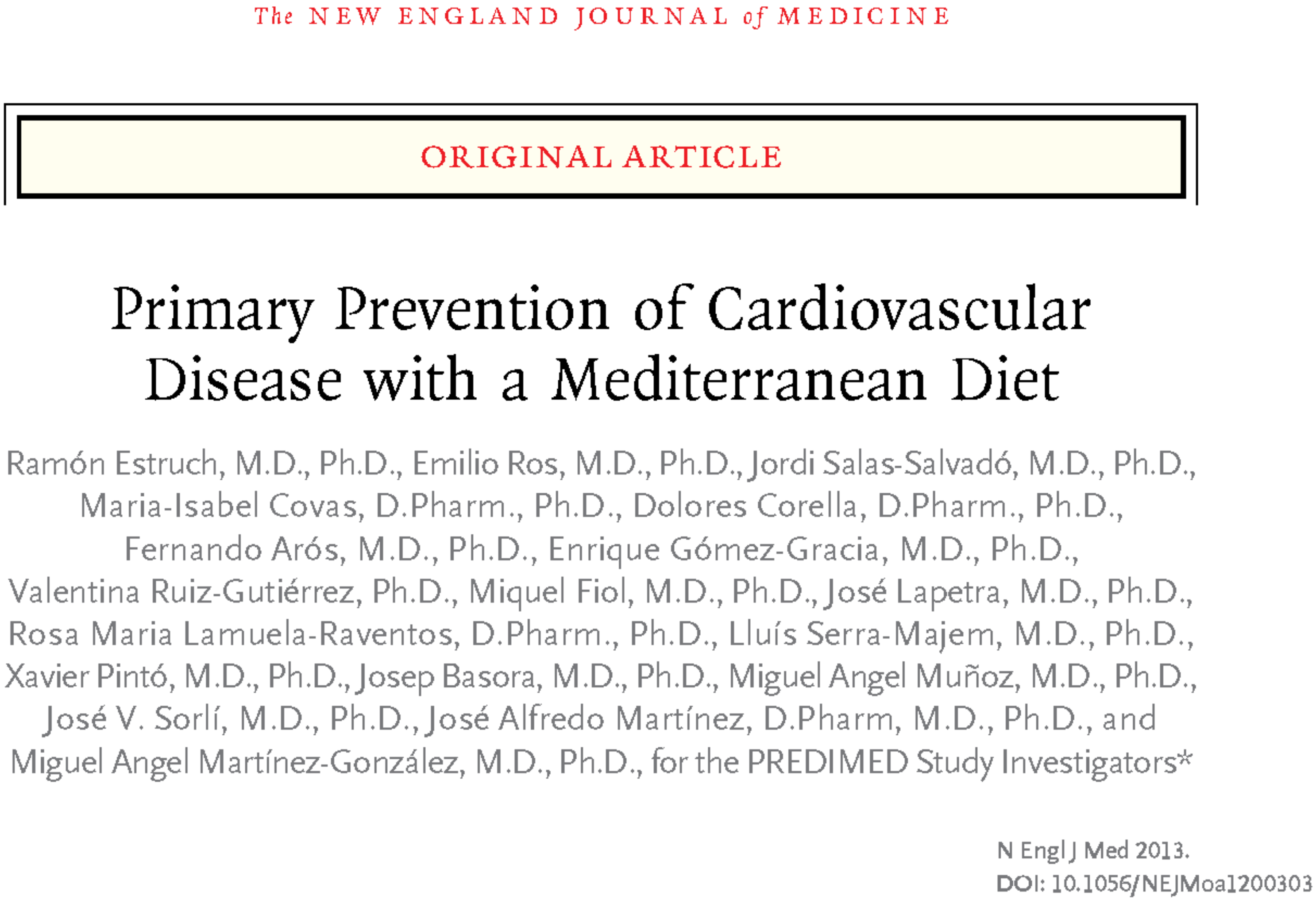
The Mediterranean Diet and Mortality — Olive Oil and Beyond

Frank B. Hu, M.D., Ph.D.


Wine in moderation
Meat
Monthly
Sweets
Eggs
Weekly
Poultry
Fish
Cheese and yogurt
Olive oil
olio
Daily
Fruits
Beans, legumes and nuts
Vegetables
Bread, pasta, rice, couscous, polenta, other whole grains, and potatoes
Daily Physical Activity

Food Pyramid Reflecting the Traditional Healthy Mediterranean Diet.

Adapted, with permission, from Oldways Preservation and Exchange Trust.



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

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-Raventos, 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.,
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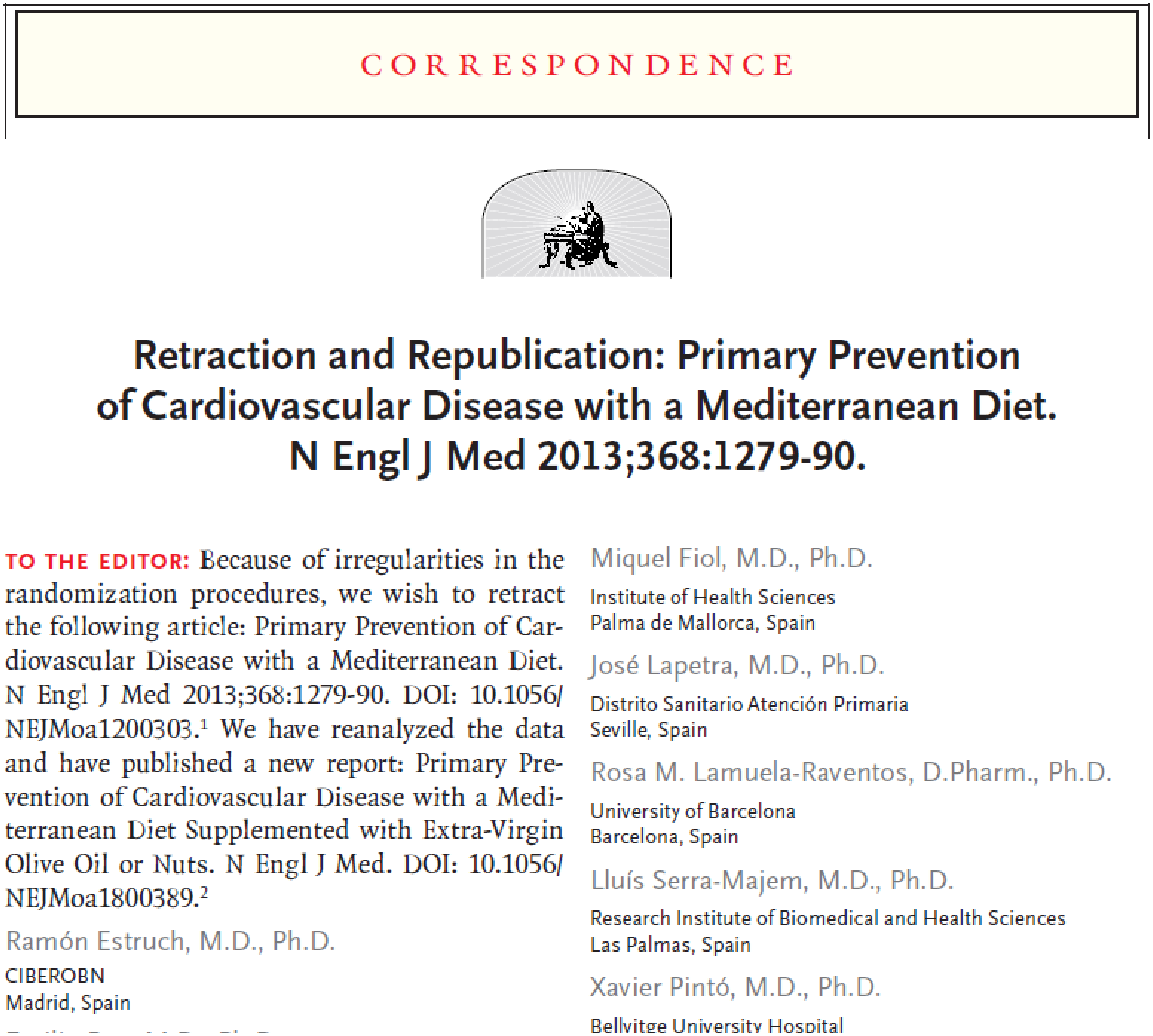
Miguel Angel Martínez-González, M.D., Ph.D., for the PREDIMED Study Investigators*

N Engl J Med 2013.
DOI: 10.1056/NEJMoa1200303



CORRESPONDENCE

Retraction and Republication: Primary Prevention of Cardiovascular Disease with a Mediterranean Diet. N Engl J Med 2013;368:1279-90.

TO THE EDITOR: Because of irregularities in the randomization procedures, we wish to retract the following article: Primary Prevention of Cardiovascular Disease with a Mediterranean Diet. N Engl J Med 2013;368:1279-90. DOI: 10.1056/NEJMoa1200303.[1] We have reanalyzed the data and have published a new report: Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts. N Engl J Med. DOI: 10.1056/NEJMoa1800389.[2]

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The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Primary Prevention of Cardiovascular Disease with a Mediterranean Diet Supplemented with Extra-Virgin Olive Oil or Nuts

R. Estruch, E. Ros, J. Salas-Salvadó, M.-I. Covas, D. Corella, F. Arós,
E. Gómez-Gracia, V. Ruiz-Gutiérrez, M. Fiol, J. Lapetra, R.M. Lamuela-Raventos,
L. Serra-Majem, X. Pintó, J. Basora, M.A. Muñoz, J.V. Sorlí, J.A. Martínez, M. Fitó,
A. Gea, M.A. Hernán, and M.A. Martínez-González,
for the PREDIMED Study Investigators*

N Engl J Med 2018;378:e34.
DOI: 10.1056/NEJMoa1800389

« Le critère d'évaluation principal était un événement cardiovasculaire majeur (infarctus du myocarde, accident vasculaire cérébral ou décès d'origine cardiovasculaire). Après un suivi médian de 4,8 ans, l'essai a été arrêté sur la base d'une analyse intermédiaire préalablement spécifiée. En 2013, nous avons présenté les résultats du critère d'évaluation principal dans le NEJM. Nous avons ensuite identifié des écarts de protocole, y compris l'inscription de membres du ménage sans randomisation, l'affectation à un groupe d'étude sans randomisation de certains participants dans l'un des 11 sites d'étude et l'utilisation apparemment incohérente des tables de randomisation sur un autre site. Nous avons retiré notre rapport précédemment publié et présentons maintenant des estimations d'effet révisées basées sur des analyses qui ne reposent pas exclusivement sur l'hypothèse selon laquelle tous les participants ont été attribués au hasard ».

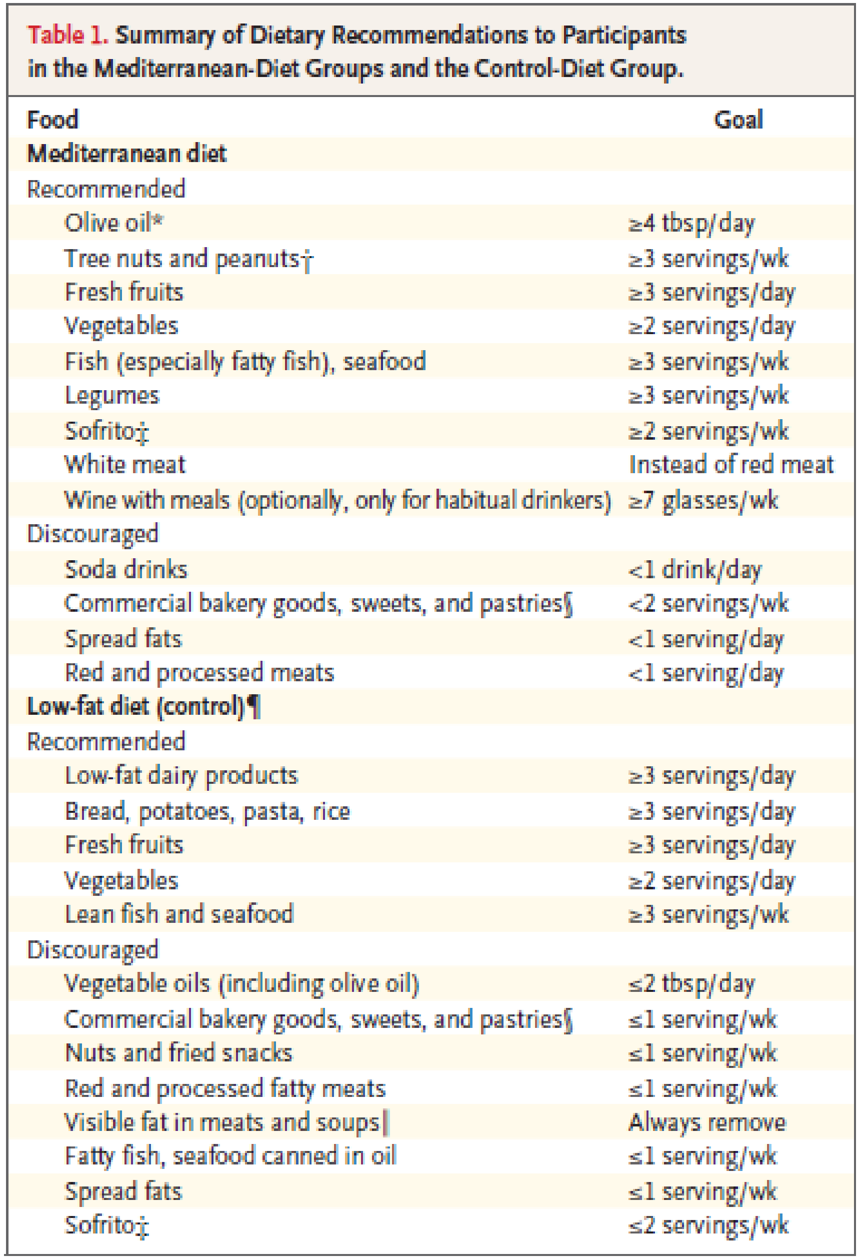


Table 1. Summary of Dietary Recommendations to Participants in the Mediterranean-Diet Groups and the Control-Diet Group.

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§	<2 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

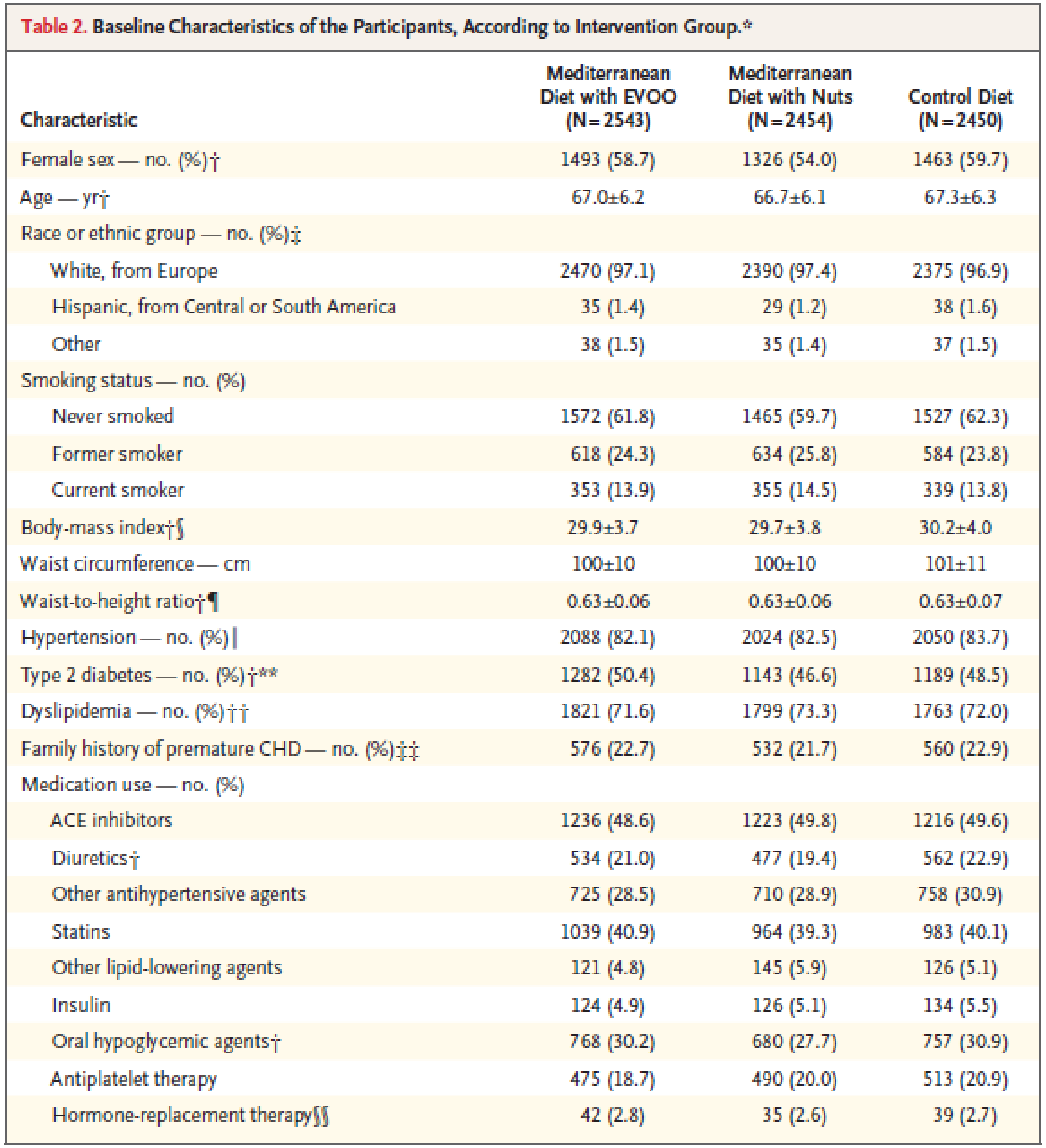
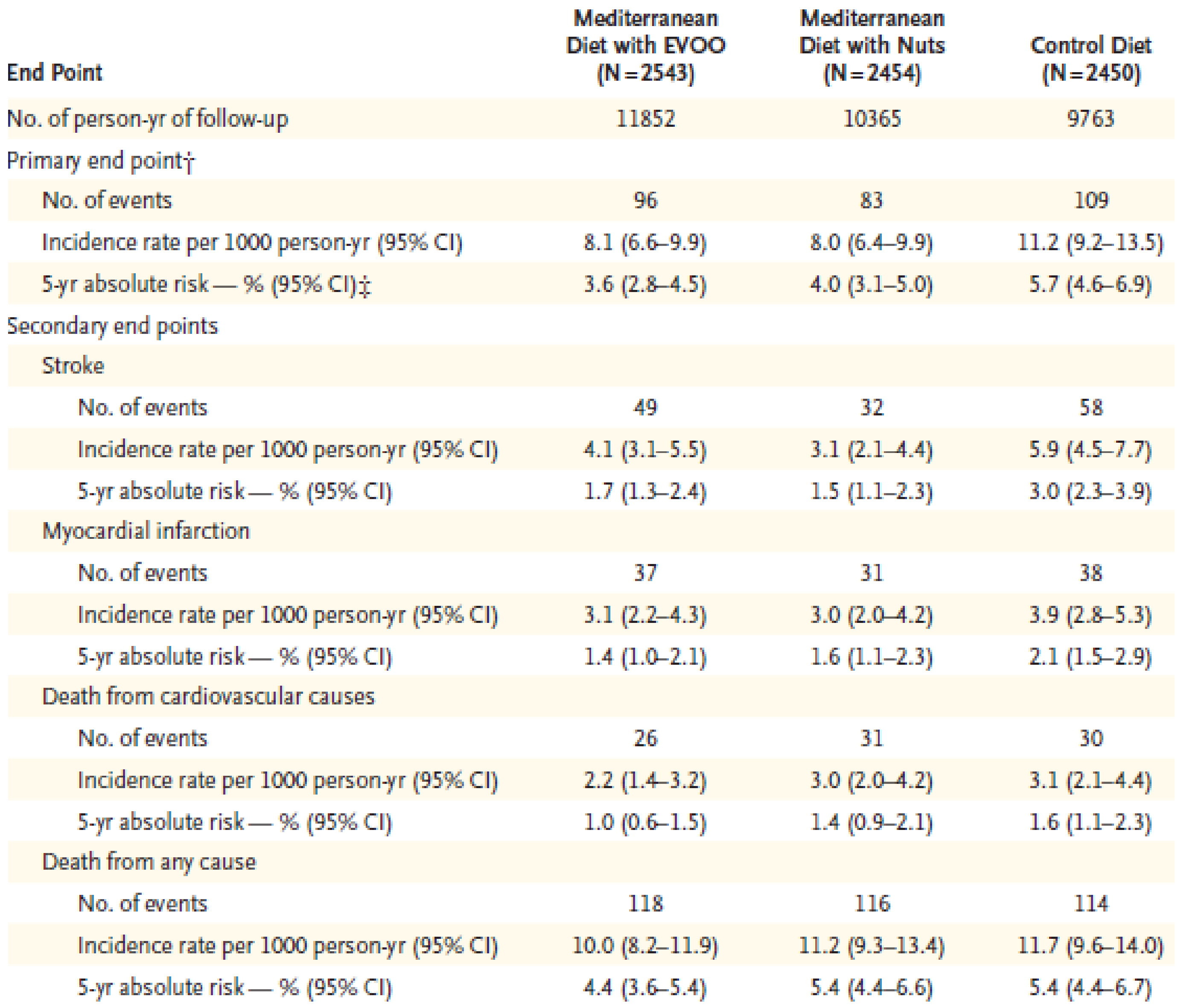


Table 2. Baseline Characteristics of the Participants, According to Intervention Group.*

Characteristic	Mediterranean Diet with EVOO (N=2543)	Mediterranean Diet with Nuts (N=2454)	Control Diet (N=2450)
Female sex — no. (%)†	1493 (58.7)	1326 (54.0)	1463 (59.7)
Age — yr†	67.0±6.2	66.7±6.1	67.3±6.3
Race or ethnic group — no. (%)‡			
White, from Europe	2470 (97.1)	2390 (97.4)	2375 (96.9)
Hispanic, from Central or South America	35 (1.4)	29 (1.2)	38 (1.6)
Other	38 (1.5)	35 (1.4)	37 (1.5)
Smoking status — no. (%)			
Never smoked	1572 (61.8)	1465 (59.7)	1527 (62.3)
Former smoker	618 (24.3)	634 (25.8)	584 (23.8)
Current smoker	353 (13.9)	355 (14.5)	339 (13.8)
Body-mass index†§	29.9±3.7	29.7±3.8	30.2±4.0
Waist circumference — cm	100±10	100±10	101±11
Waist-to-height ratio†¶	0.63±0.06	0.63±0.06	0.63±0.07
Hypertension — no. (%)‖	2088 (82.1)	2024 (82.5)	2050 (83.7)
Type 2 diabetes — no. (%)†**	1282 (50.4)	1143 (46.6)	1189 (48.5)
Dyslipidemia — no. (%)††	1821 (71.6)	1799 (73.3)	1763 (72.0)
Family history of premature CHD — no. (%)‡‡	576 (22.7)	532 (21.7)	560 (22.9)
Medication use — no. (%)			
ACE inhibitors	1236 (48.6)	1223 (49.8)	1216 (49.6)
Diuretics†	534 (21.0)	477 (19.4)	562 (22.9)
Other antihypertensive agents	725 (28.5)	710 (28.9)	758 (30.9)
Statins	1039 (40.9)	964 (39.3)	983 (40.1)
Other lipid-lowering agents	121 (4.8)	145 (5.9)	126 (5.1)
Insulin	124 (4.9)	126 (5.1)	134 (5.5)
Oral hypoglycemic agents†	768 (30.2)	680 (27.7)	757 (30.9)
Antiplatelet therapy	475 (18.7)	490 (20.0)	513 (20.9)
Hormone-replacement therapy§§	42 (2.8)	35 (2.6)	39 (2.7)

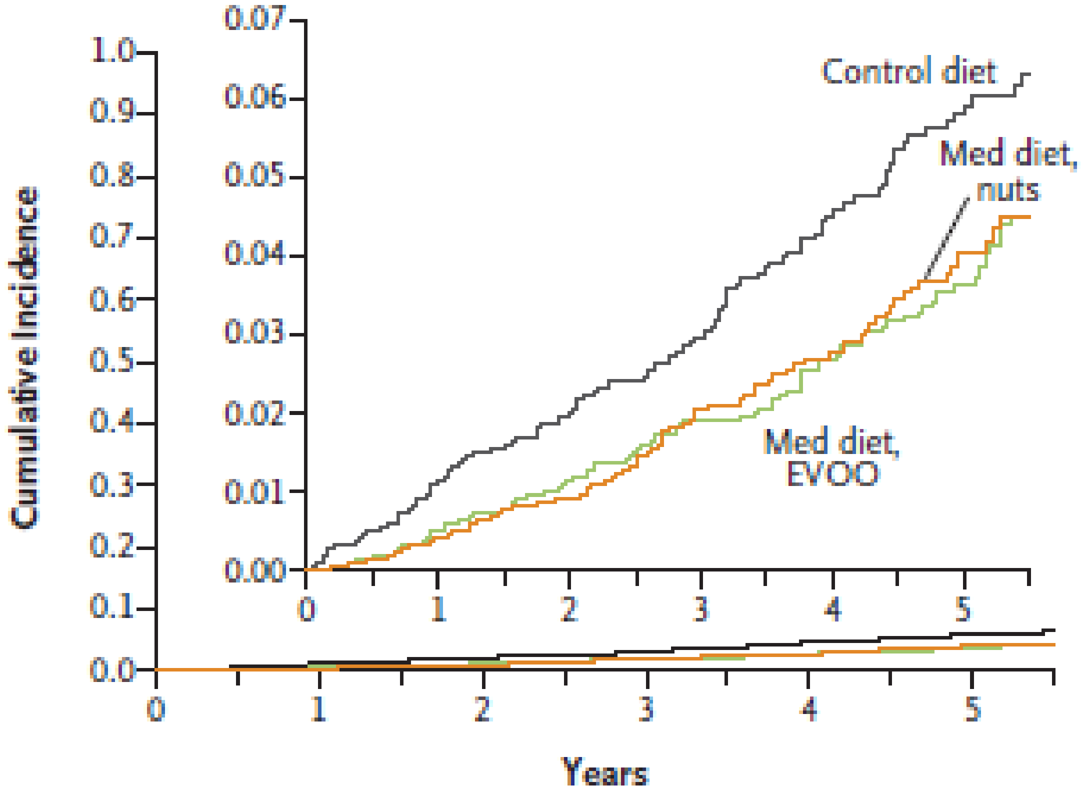


End Point	Mediterranean Diet with EVOO (N=2543)	Mediterranean Diet with Nuts (N=2454)	Control Diet (N=2450)
No. of person-yr of follow-up	11852	10365	9763
Primary end point†			
No. of events	96	83	109
Incidence rate per 1000 person-yr (95% CI)	8.1 (6.6–9.9)	8.0 (6.4–9.9)	11.2 (9.2–13.5)
5-yr absolute risk — % (95% CI)‡	3.6 (2.8–4.5)	4.0 (3.1–5.0)	5.7 (4.6–6.9)
Secondary end points			
Stroke			
No. of events	49	32	58
Incidence rate per 1000 person-yr (95% CI)	4.1 (3.1–5.5)	3.1 (2.1–4.4)	5.9 (4.5–7.7)
5-yr absolute risk — % (95% CI)	1.7 (1.3–2.4)	1.5 (1.1–2.3)	3.0 (2.3–3.9)
Myocardial infarction			
No. of events	37	31	38
Incidence rate per 1000 person-yr (95% CI)	3.1 (2.2–4.3)	3.0 (2.0–4.2)	3.9 (2.8–5.3)
5-yr absolute risk — % (95% CI)	1.4 (1.0–2.1)	1.6 (1.1–2.3)	2.1 (1.5–2.9)
Death from cardiovascular causes			
No. of events	26	31	30
Incidence rate per 1000 person-yr (95% CI)	2.2 (1.4–3.2)	3.0 (2.0–4.2)	3.1 (2.1–4.4)
5-yr absolute risk — % (95% CI)	1.0 (0.6–1.5)	1.4 (0.9–2.1)	1.6 (1.1–2.3)
Death from any cause			
No. of events	118	116	114
Incidence rate per 1000 person-yr (95% CI)	10.0 (8.2–11.9)	11.2 (9.3–13.4)	11.7 (9.6–14.0)
5-yr absolute risk — % (95% CI)	4.4 (3.6–5.4)	5.4 (4.4–6.6)	5.4 (4.4–6.7)

ITT analysis: hazard ratio for each Mediterranean diet vs. control (95% CI)§			
Primary end point			
Unadjusted	0.70 (0.53–0.92)	0.70 (0.53–0.94)	1.00 (ref)
Adjusted¶	0.69 (0.53–0.91)	0.72 (0.54–0.95)	1.00 (ref)
Secondary end points¶			
Stroke	0.65 (0.44–0.95)	0.54 (0.35–0.82)	1.00 (ref)
Myocardial infarction	0.82 (0.52–1.30)	0.76 (0.47–1.25)	1.00 (ref)
Death from cardiovascular causes	0.62 (0.36–1.06)	1.02 (0.63–1.67)	1.00 (ref)
Death from any cause	0.90 (0.69–1.18)	1.12 (0.86–1.47)	1.00 (ref)
ITT analysis: hazard ratio for Mediterranean diets combined vs. control (95% CI)§			
Primary end point			
Unadjusted	0.70 (0.55–0.89)		1.00 (ref)
Adjusted¶	0.70 (0.55–0.89)		1.00 (ref)
Secondary end points¶			
Stroke	0.58 (0.42–0.82)		1.00 (ref)
Myocardial infarction	0.80 (0.53–1.21)		1.00 (ref)
Death from cardiovascular causes	0.80 (0.51–1.24)		1.00 (ref)
Death from any cause	0.98 (0.77–1.24)		1.00 (ref)

A Primary End Point (acute myocardial infarction, stroke, or death from cardiovascular causes)

Med diet, EVOO: hazard ratio, 0.69 (95% CI, 0.53–0.91)
Med diet, nuts: hazard ratio, 0.72 (95% CI, 0.54–0.95)

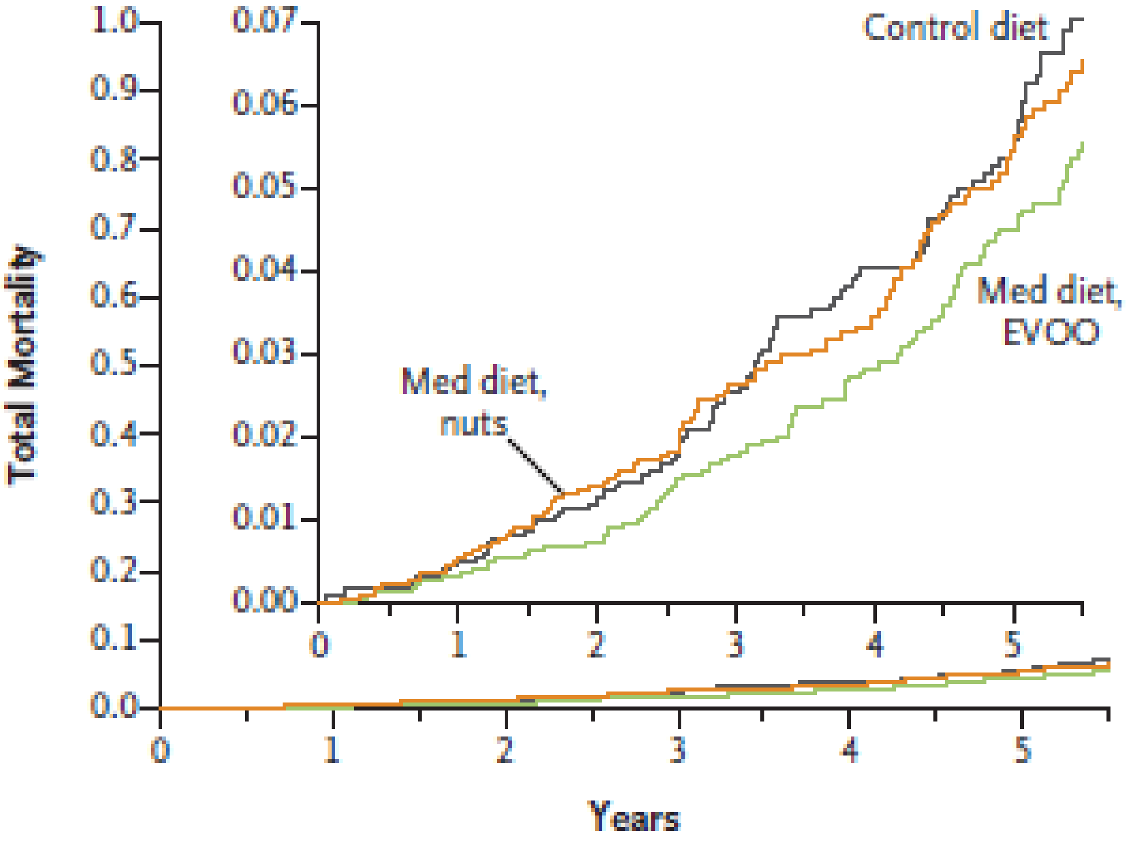


No. at Risk

Control diet	2450	2268	2020	1583	1268	946
Med diet, EVOO	2543	2486	2320	1987	1687	1310
Med diet, nuts	2454	2343	2093	1657	1389	1031

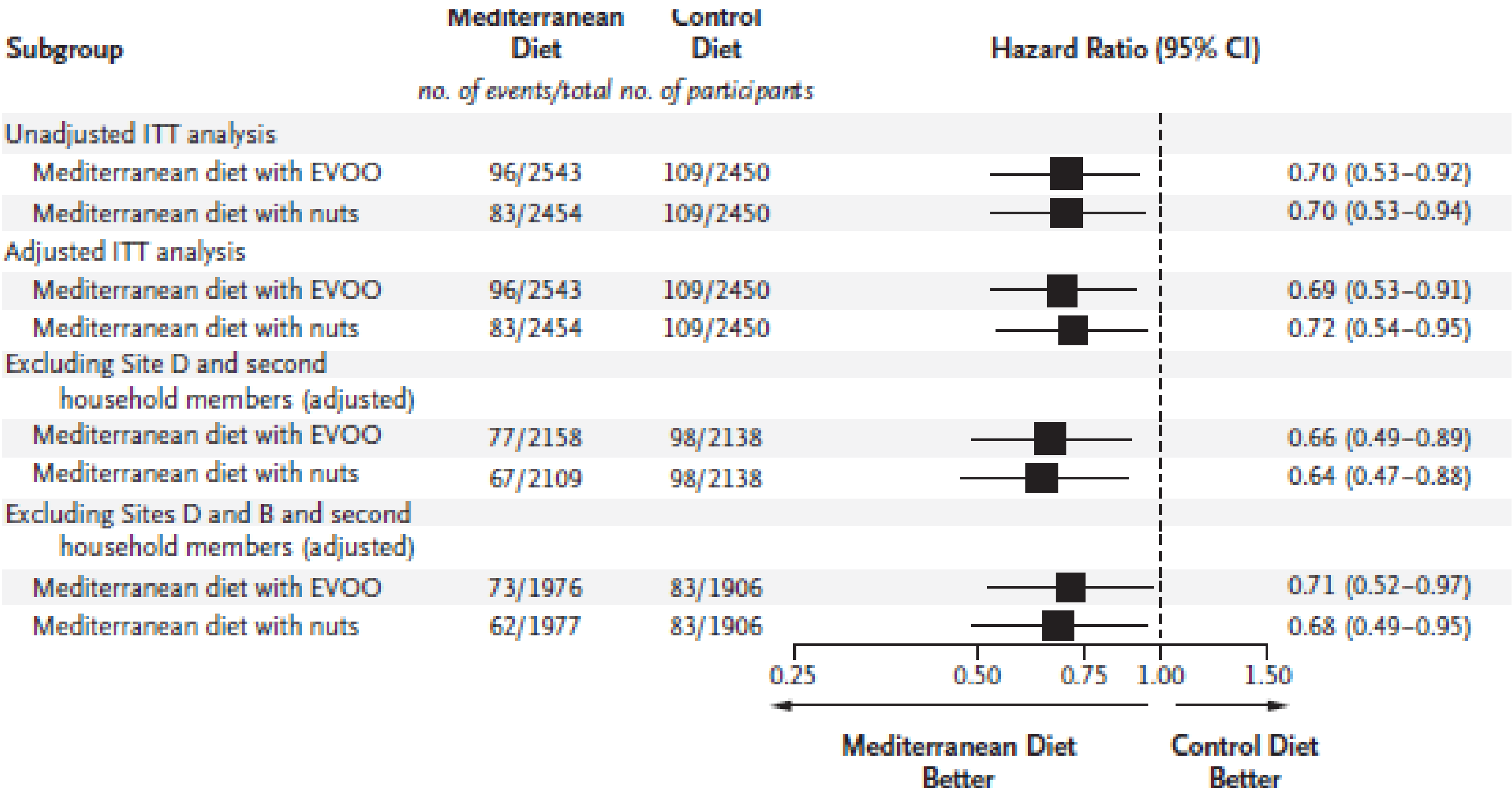
B Total Mortality

Med diet, EVOO: hazard ratio, 0.90 (95% CI, 0.69–1.18)
Med diet, nuts: hazard ratio, 1.12 (95% CI, 0.86–1.47)



No. at Risk

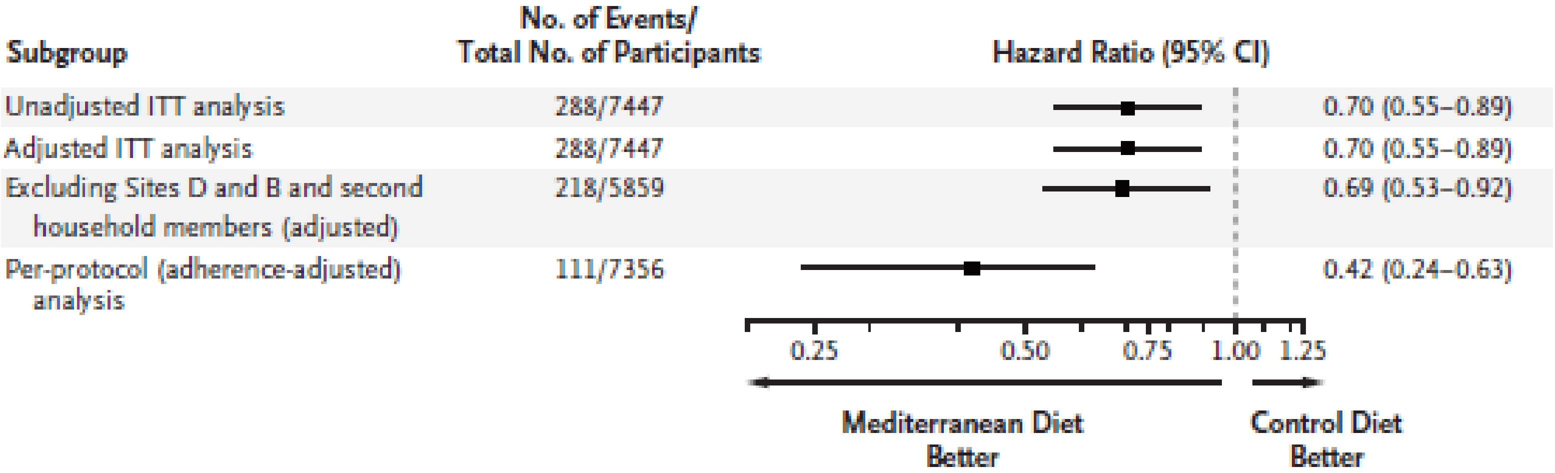
Control diet	2450	2270	2027	1586	1272	949
Med diet, EVOO	2543	2486	2324	1991	1691	1310
Med diet, nuts	2454	2345	2097	1662	1395	1037



Subgroup	Mediterranean Diet	Control Diet	Hazard Ratio (95% CI)
	no. of events/total no. of participants		
Unadjusted ITT analysis			
Mediterranean diet with EVOO	96/2543	109/2450	0.70 (0.53–0.92)
Mediterranean diet with nuts	83/2454	109/2450	0.70 (0.53–0.94)
Adjusted ITT analysis			
Mediterranean diet with EVOO	96/2543	109/2450	0.69 (0.53–0.91)
Mediterranean diet with nuts	83/2454	109/2450	0.72 (0.54–0.95)
Excluding Site D and second household members (adjusted)			
Mediterranean diet with EVOO	77/2158	98/2138	0.66 (0.49–0.89)
Mediterranean diet with nuts	67/2109	98/2138	0.64 (0.47–0.88)
Excluding Sites D and B and second household members (adjusted)			
Mediterranean diet with EVOO	73/1976	83/1906	0.71 (0.52–0.97)
Mediterranean diet with nuts	62/1977	83/1906	0.68 (0.49–0.95)

Table 3. (Continued.)

End Point	Mediterranean Diet with EVOO (N=2543)	Mediterranean Diet with Nuts (N=2454)	Control Diet (N=2450)
Primary end point, excluding Site D and second household members‖			
Each Mediterranean diet and control			
No. of participants	2158	2109	2138
5-year absolute risk — % (95% CI)	3.4 (2.6–4.3)	3.9 (3.0–5.0)	5.9 (4.8–7.2)
Hazard ratio (95% CI)¶	0.66 (0.49–0.89)	0.64 (0.47–0.88)	1.00 (ref)
Mediterranean diets combined and control			
5-year absolute risk — % (95% CI)	3.6 (3.0–4.3)		5.9 (4.8–7.2)
Hazard ratio (95% CI)¶	0.65 (0.50–0.85)		1.00 (ref)



Subgroup	No. of Events/ Total No. of Participants	Hazard Ratio (95% CI)
Unadjusted ITT analysis	288/7447	0.70 (0.55–0.89)
Adjusted ITT analysis	288/7447	0.70 (0.55–0.89)
Excluding Sites D and B and second household members (adjusted)	218/5859	0.69 (0.53–0.92)
Per-protocol (adherence-adjusted) analysis	111/7356	0.42 (0.24–0.63)

Figure 3. Sensitivity Analyses of the Combined Mediterranean-Diet Groups and the Control Group.

Shown are hazard ratios for the primary end point in the combined Mediterranean-diet groups as compared with the control group, with estimates based on different analytic approaches or exclusions. Hazard ratios were stratified according to sex, recruiting site, and educational level (five categories) and (with the exception of the unadjusted ITT analysis) were adjusted for age, smoking (never smoked, former smoker, or current smoker), hypertension (yes or no), dyslipidemia (yes or no), diabetes (yes or no), family history of premature coronary heart disease, body-mass index (continuous variable), waist-to-height ratio (continuous variable), and physical activity (in quintiles). In addition, all multivariable models were adjusted for propensity scores, and we used robust standard errors to account for intracluster correlations.

reduced-fat diet. Our findings support a beneficial effect of the Mediterranean diet for the primary prevention of cardiovascular disease.

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Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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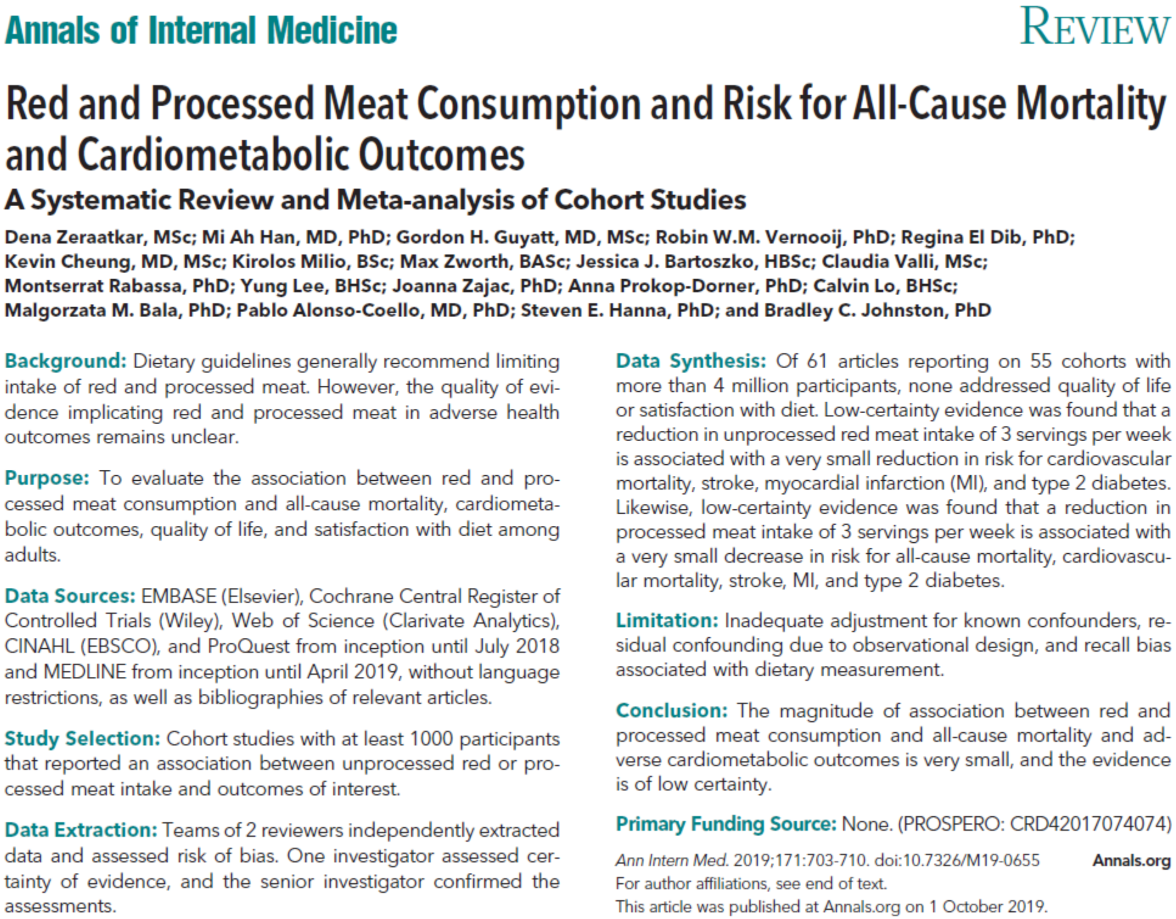
La viande



Annals of Internal Medicine REVIEW

Red and Processed Meat Consumption and Risk for All-Cause Mortality and Cardiometabolic Outcomes

A Systematic Review and Meta-analysis of Cohort Studies

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Background: Dietary guidelines generally recommend limiting intake of red and processed meat. However, the quality of evidence implicating red and processed meat in adverse health outcomes remains unclear.

Purpose: To evaluate the association between red and processed meat consumption and all-cause mortality, cardiometabolic outcomes, quality of life, and satisfaction with diet among adults.

Data Sources: EMBASE (Elsevier), Cochrane Central Register of Controlled Trials (Wiley), Web of Science (Clarivate Analytics), CINAHL (EBSCO), and ProQuest from inception until July 2018 and MEDLINE from inception until April 2019, without language restrictions, as well as bibliographies of relevant articles.

Study Selection: Cohort studies with at least 1000 participants that reported an association between unprocessed red or processed meat intake and outcomes of interest.

Data Extraction: Teams of 2 reviewers independently extracted data and assessed risk of bias. One investigator assessed certainty of evidence, and the senior investigator confirmed the assessments.

Data Synthesis: Of 61 articles reporting on 55 cohorts with more than 4 million participants, none addressed quality of life or satisfaction with diet. Low-certainty evidence was found that a reduction in unprocessed red meat intake of 3 servings per week is associated with a very small reduction in risk for cardiovascular mortality, stroke, myocardial infarction (MI), and type 2 diabetes. Likewise, low-certainty evidence was found that a reduction in processed meat intake of 3 servings per week is associated with a very small decrease in risk for all-cause mortality, cardiovascular mortality, stroke, MI, and type 2 diabetes.

Limitation: Inadequate adjustment for known confounders, residual confounding due to observational design, and recall bias associated with dietary measurement.

Conclusion: The magnitude of association between red and processed meat consumption and all-cause mortality and adverse cardiometabolic outcomes is very small, and the evidence is of low certainty.

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For author affiliations, see end of text.

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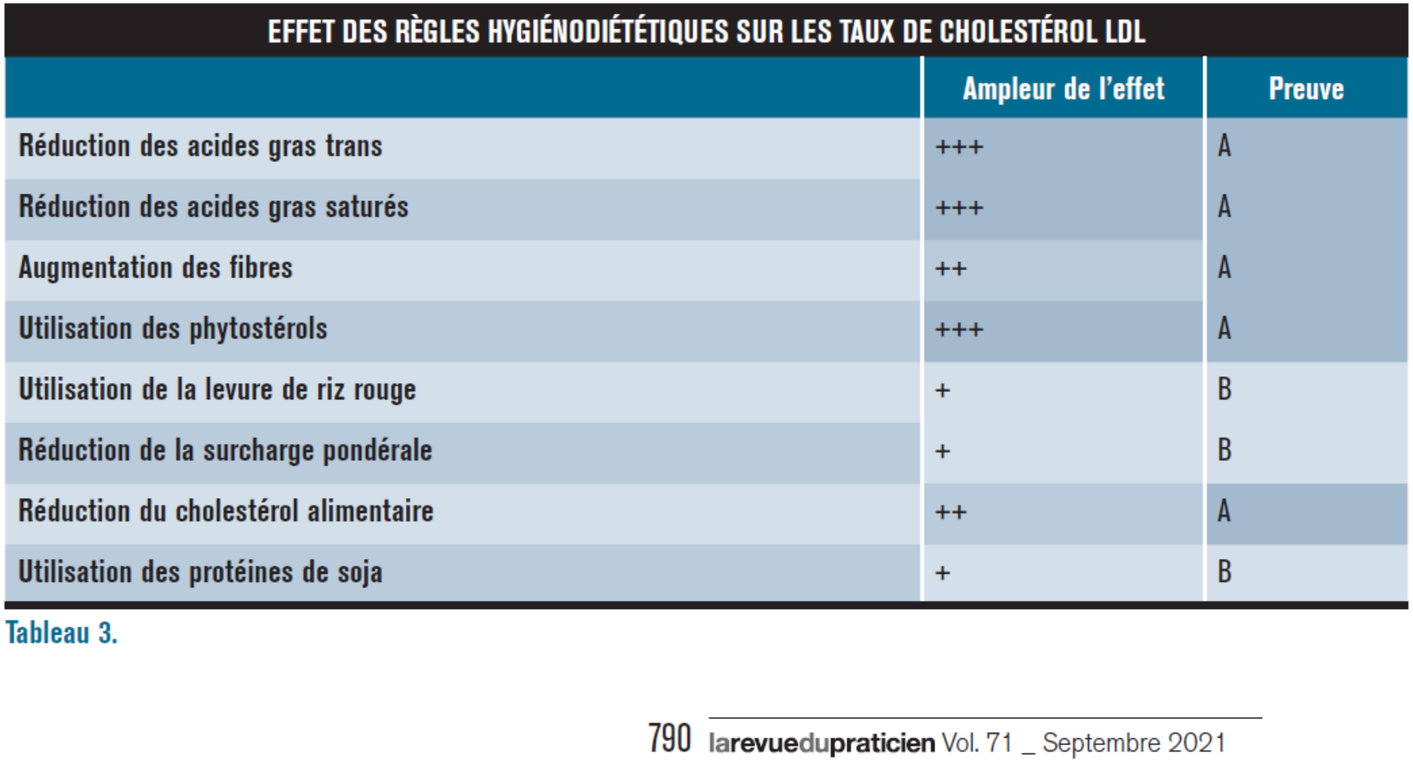
Conclusion

« L'ampleur de l'association entre la consommation de viande rouge et transformée et la mortalité toutes causes confondues et les résultats cardiométaboliques défavorables est très faible, et les preuves sont de faible certitude. »

Les RPC ESC/EAS



EFFET DES RÈGLES HYGIÉNODIÉTÉTIQUES SUR LES TAUX DE CHOLESTÉROL LDL	Ampleur de l'effet	Preuve
Réduction des acides gras trans	+++	A
Réduction des acides gras saturés	+++	A
Augmentation des fibres	++	A
Utilisation des phytostérols	+++	A
Utilisation de la levure de riz rouge	+	B
Réduction de la surcharge pondérale	+	B
Réduction du cholestérol alimentaire	++	A
Utilisation des protéines de soja	+	B

Tableau 3.

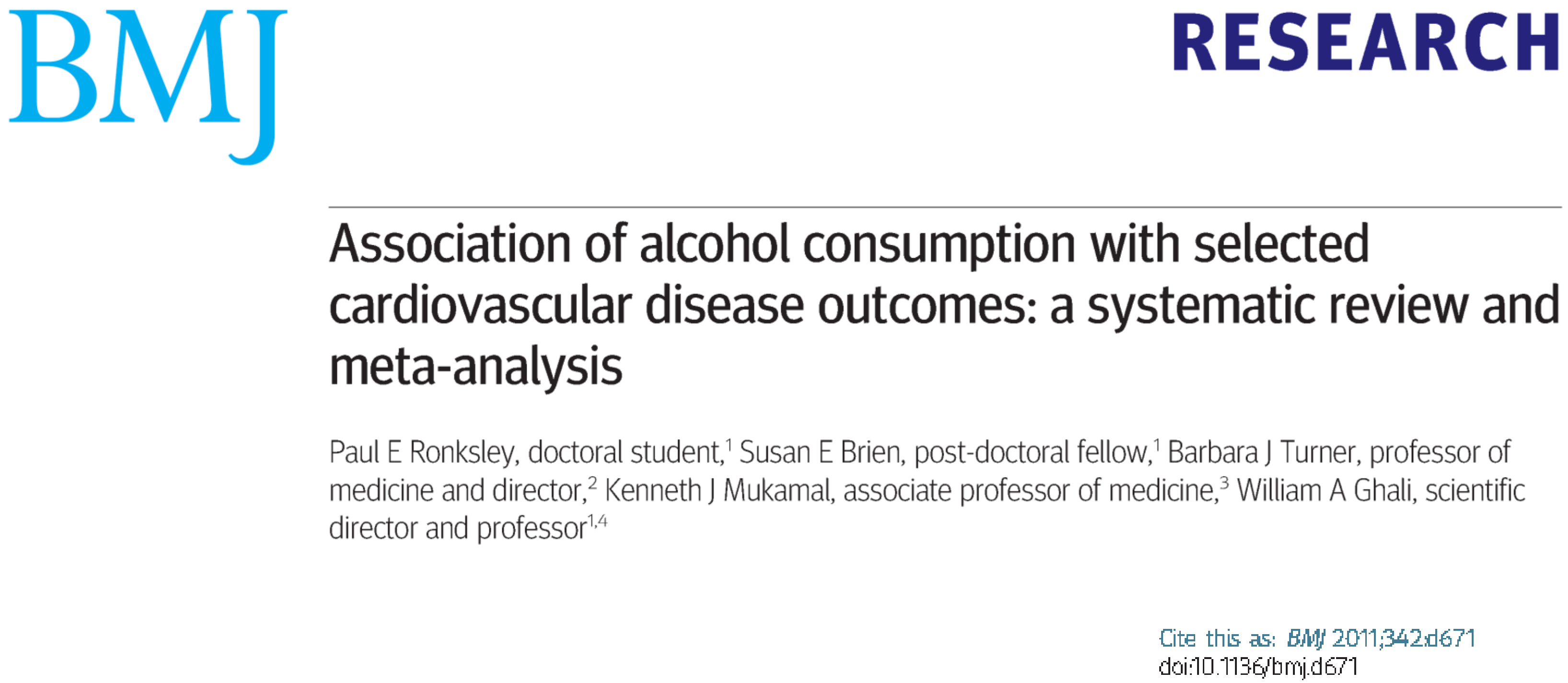
790 larevuedupraticien Vol. 71 _ Septembre 2021

EFFET DES RÈGLES HYGIÉNODIÉTÉTIQUES SUR LES TAUX DE TRIGLYCÉRIDES

	Ampleur de l'effet	Preuve
Perte de poids	+	A
Diminution de la consommation d'alcool	+++	A
Augmentation de l'activité physique	++	A
Diminution de l'apport quotidien en glucides	++	A
Utilisation des suppléments riches en oméga-3	++	A
Diminution de la consommation de mono- et disaccharides	++	B
Substitution des graisses saturées par des graisses mono- ou polyinsaturées		B

Tableau 4.

Consommation alcool



BMJ

RESEARCH

Association of alcohol consumption with selected cardiovascular disease outcomes: a systematic review and meta-analysis

Paul E Ronksley, doctoral student,[1] Susan E Brien, post-doctoral fellow,[1] Barbara J Turner, professor of medicine and director,[2] Kenneth J Mukamal, associate professor of medicine,[3] William A Ghali, scientific director and professor[1,4]

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doi:10.1136/bmj.d671

Table 2 | **Stratified analyses of pooled relative risks (95% CI) for cardiovascular and stroke outcomes (number of pooled studies in parentheses after each effect estimate)**

	Cardiovascular disease mortality (n=21 studies, 1 184 956 subjects)	Coronary heart disease		Stroke	
		Incident (n=29 studies, 549 504 subjects)	Mortality (n=31 studies, 1 925 106 subjects)	Incident (n=17 studies, 458 811 subjects)	Mortality (n=10 studies, 723 571 subjects)
Active drinkers *v* non-drinkers:					
Least adjusted models	0.84 (0.75 to 0.95) (11)	0.73 (0.65 to 0.82) (14)	0.80 (0.70 to 0.91) (10)	1.01 (0.88 to 1.16) (10)	1.13 (0.96 to 1.32) (3)
Most adjusted models	0.75 (0.70 to 0.80) (21)	0.71 (0.66 to 0.77) (29)	0.75 (0.68 to 0.81) (31)	0.98 (0.91 to 1.06) (17)	1.06 (0.91 to 1.23) (10)
Active drinkers *v* lifetime abstainers	0.82 (0.78 to 0.86) (9)	0.73 (0.61 to 0.88) (9)	0.75 (0.66 to 0.85) (7)	0.93 (0.85 to 1.02) (7)	1.29 (1.09 to 1.53) (3)
Former drinkers *v* non-drinkers	1.48 (1.23 to1.79) (6)	1.10 (0.91 to 1.33) (8)	1.31 (1.02 to 1.68) (6)	0.87 (0.72 to 1.07) (4)	Not reported (2)
Alcohol intake (g/day) *v* none:					
<2.5	0.71 (0.57 to 0.89) (7)	0.96 (0.86 to 1.06) (6)	0.92 (0.80 to 1.06) (6)	0.81 (0.74 to 0.89) (3)	1.00 (0.75 to 1.34) (3)
2.5–14.9	0.77 (0.71 to 0.83) (15)	0.75 (0.65 to 0.88) (9)	0.79 (0.73 to 0.86) (18)	0.80 (0.74 to 0.87) (3)	0.86 (0.75 to 0.99) (6)
15–29.9	0.75 (0.70 to 0.80) (13)	0.66 (0.59 to 0.75) (15)	0.79 (0.71 to 0.88) (15)	0.92 (0.82 to 1.04) (5)	1.15 (0.86 to 1.54) (6)
30–60	0.85 (0.73 to 0.98) (10)	0.67 (0.56 to 0.79) (9)	0.77 (0.72 to 0.83) (12)	1.15 (0.98 to 1.35) (4)	1.10 (0.85 to 1.45) (5)
>60	0.99 (0.84 to 1.17) (6)	0.76 (0.52 to 1.09) (9)	0.75 (0.63 to 0.89) (9)	1.62 (1.32 to 1.98) (4)	1.44 (0.99 to 2.10) (3)
Sex:					
Men	0.80 (0.73 to 0.87) (13)	0.71 (0.66 to 0.77) (25)	0.77 (0.72 to 0.82) (21)	1.02 (0.92 to 1.13) (11)	1.07 (0.89 to 1.28) (9)
Women	0.69 (0.60 to 0.78) (9)	0.71 (0.66 to 0.77) (11)	0.78 (0.64 to 0.94) (10)	0.87 (0.75 to 1.01) (4)	0.81 (0.67 to 0.98) (3)
Adjustment for confounding factors*:					
Weak	0.74 (0.67 to 0.82) (10)	0.69 (0.62 to 0.76) (11)	0.72 (0.63 to 0.83) (15)	0.99 (0.86 to 1.13) (7)	1.30 (1.11 to 1.52) (5)
Strong	0.76 (0.70 to 0.83) (11)	0.72 (0.65 to 0.79) (18)	0.80 (0.75 to 0.86) (16)	0.99 (0.89 to 1.09) (10)	0.96 (0.81 to 1.14) (5)
Median follow-up time†:					
Short	0.76 (0.71 to 0.83) (8)	0.71 (0.65 to 0.79) (14)	0.75 (0.67 to 0.85) (12)	0.98 (0.90 to 1.07) (9)	1.01 (0.82 to 1.24) (5)
Long	0.75 (0.67 to 0.84) (13)	0.72 (0.64 to 0.80) (15)	0.75 (0.67 to 0.84) (19)	1.00 (0.88 to 1.13) (8)	1.18 (1.02 to 1.37) (5)

*Adjustment for confounding factors was dichotomised as weak (<median value) or strong (≥median value). Cut points: ≥5 for coronary heart disease and stroke mortality, ≥6 for cardiovascular disease mortality and incident coronary heart disease, ≥7 for incident stroke.

†Total follow-up time was dichotomised as short (<median value) or long (≥median value). Cut points: ≥9 for incident coronary heart disease, ≥10 for cardiovascular disease mortality, ≥12 for coronary heart disease mortality and incident stroke, ≥14 for stroke mortality.

1 verre standard = 10 g d’alcool

- 7 cl d'apéritif à 18°
- 2,5 cl de digestif à 45°
- 10 cl de champagne à 12°
- 25 cl de cidre "sec" à 5°
- 2,5 cl de whisky à 45°
- 25 cl de bière à 5°
- 2,5 cl de pastis à 45°
- 10 cl de vin rouge ou blanc à 12°

25 cl de bière forte correspond à 2 verres standard et une bouteille de vin à 8 verres standard

Alcohol Drinking and Cardiovascular Risk in a Population With High Mean Alcohol Consumption

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Jean-Bernard Daeppen, MD[d], Jacques Cornuz, MD, MPH[c], Daniel Hayoz, MD[f], Alain Pécoud, MD[c],
Vincent Mooser, MD[h], Gérard Waeber, MD[g], Peter Vollenweider, MD[g], Fred Paccaud, MD[a], and
Nicolas Rodondi, MD, MAS[c,*]

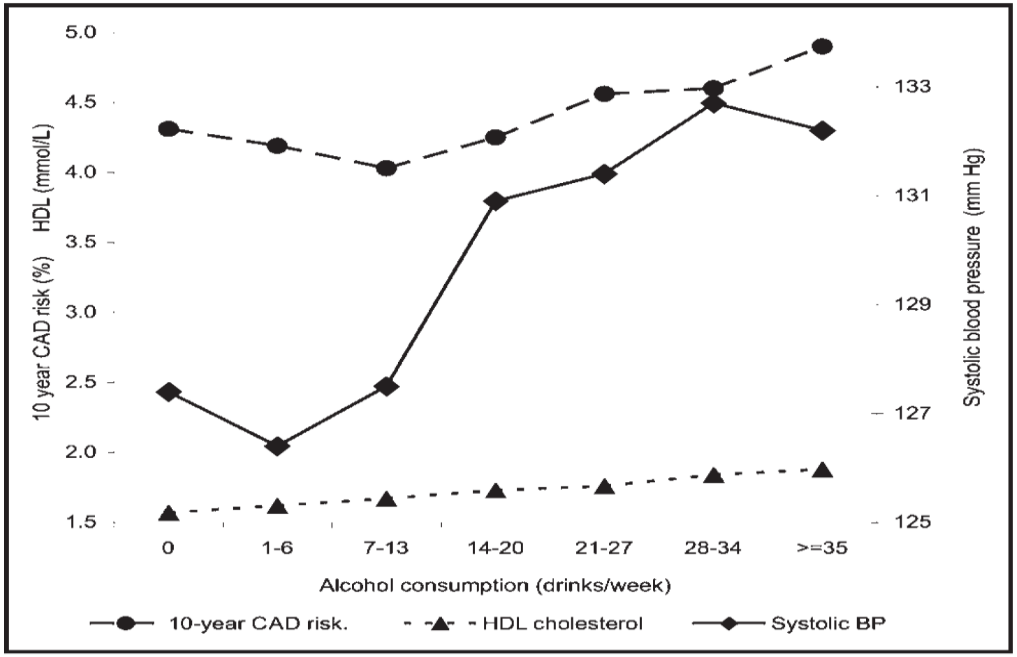

Figure 1. Association between alcohol consumption, cardiovascular risk factors, and 10-year CAD risk. HDL cholesterol, systolic blood pressure (BP), and 10-year CAD risk according to last week alcohol consumption. Values are adjusted for age, gender, education, units of weekly physical activity, tobacco use, body mass index, statins (for HDL cholesterol), and antihypertensive medications (for systolic BP). Alcohol consumption was associated with increased HDL cholesterol (p for trend <0.001), systolic BP (p for trend <0.001), and 10-year CAD risk (p for trend $= 0.03$).

Suisse

(Am J Cardiol 2009;103:

O'Neill *et al. BMC Medicine* (2018) 16:124
https://doi.org/10.1186/s12916-018-1123-6

BMC Medicine

RESEARCH ARTICLE **Open Access**

Association of longitudinal alcohol consumption trajectories with coronary heart disease: a meta-analysis of six cohort studies using individual participant data

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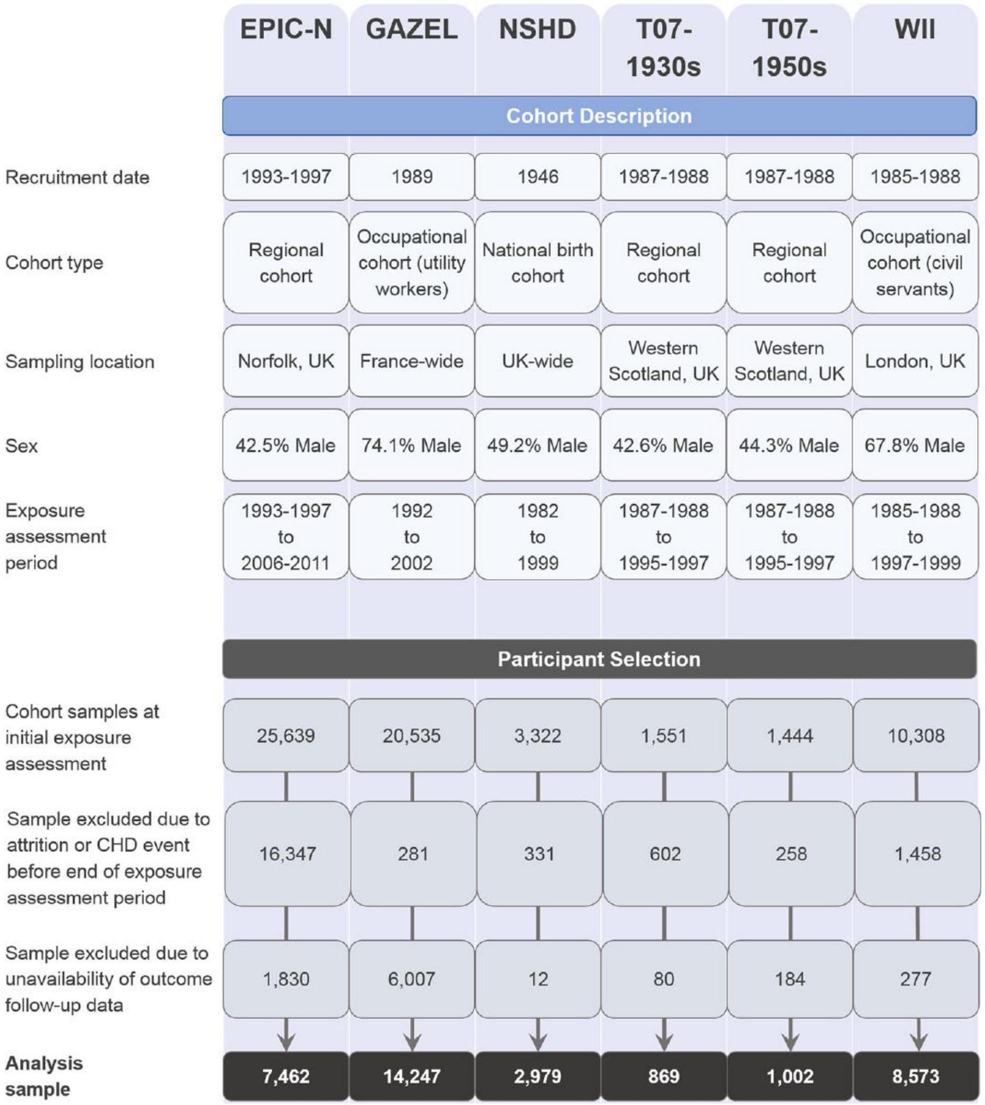


	EPIC-N	GAZEL	NSHD	T07-1930s	T07-1950s	WII
Cohort Description						
Recruitment date	1993-1997	1989	1946	1987-1988	1987-1988	1985-1988
Cohort type	Regional cohort	Occupational cohort (utility workers)	National birth cohort	Regional cohort	Regional cohort	Occupational cohort (civil servants)
Sampling location	Norfolk, UK	France-wide	UK-wide	Western Scotland, UK	Western Scotland, UK	London, UK
Sex	42.5% Male	74.1% Male	49.2% Male	42.6% Male	44.3% Male	67.8% Male
Exposure assessment period	1993-1997 to 2006-2011	1992 to 2002	1982 to 1999	1987-1988 to 1995-1997	1987-1988 to 1995-1997	1985-1988 to 1997-1999
Participant Selection						
Cohort samples at initial exposure assessment	25,639	20,535	3,322	1,551	1,444	10,308
Sample excluded due to attrition or CHD event before end of exposure assessment period	16,347	281	331	602	258	1,458
Sample excluded due to unavailability of outcome follow-up data	1,830	6,007	12	80	184	277
Analysis sample	**7,462**	**14,247**	**2,979**	**869**	**1,002**	**8,573**

Fig. 1 Cohort description and participant selection flowchart. CHD coronary heart disease, EPIC-N European Prospective Investigation of Cancer, Norfolk, GAZEL Gaz et Electricité, T07-1930s West of Scotland Twenty-07 Study 1930s, T07-1950s West of Scotland Twenty-07 Study 1950s, WII Whitehall II

Table 1 Drinker type definitions with observed counts and percentages (within sex and overall)

Drinker type	Weekly alcohol intake	*N* (%)		
		Male	Female	Total
Consistent non-drinker	0 g at each wave of data collection	807 (4.6)	1335 (12.4)	2142 (7.5)
Former drinker	0 g at last wave but intake >0 g at any earlier wave	1831 (10.4)	2249 (21.0)	4080 (14.4)
Consistently moderate	Male: 1–168 g at each wave Female: 1–112 g at each wave	7249 (41.0)	4161 (38.8)	11,410 (40.2)
Inconsistently moderate	Male: 1–168 g for most but not all waves Female: 1–112 g for most but not all waves	3599 (20.4)	2037 (19.0)	5636 (19.8)
Consistently heavy	Male: >168 g at each wave Female: >112 g at each wave	2216 (12.5)	349 (3.3)	2565 (9.0)
Inconsistently heavy	Male: >168 g for most but not all waves Female: >112 g for most but not all waves	1979 (11.2)	598 (5.6)	2577 (9.1)

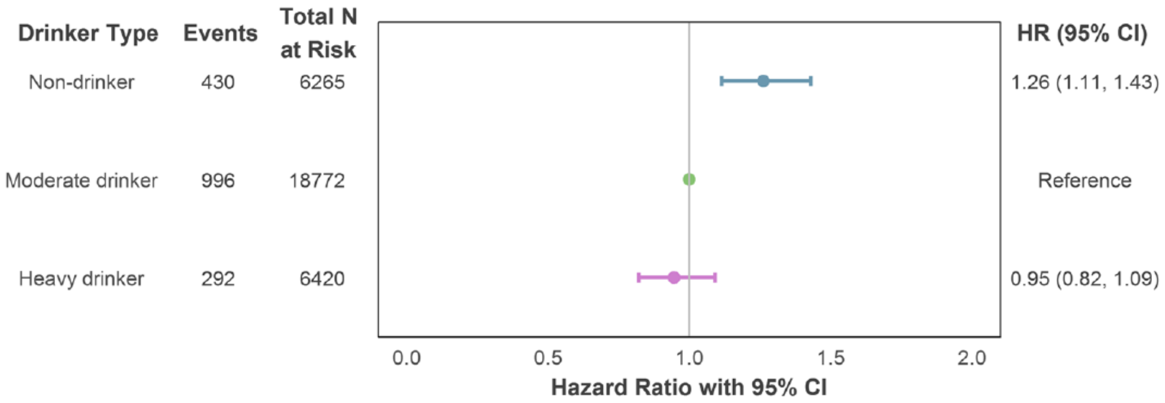


Fig. 2 Association of drinker type (single intake measurement) with incident (fatal or non-fatal) CHD using maximal adjustment for confounding. Adjustment variables comprised age, sex (reference category: male), socioeconomic position (reference category: intermediate), smoker status (reference category: non-smoker) and intake assessment interval. CHD coronary heart disease, CI confidence interval, HR hazard ratio

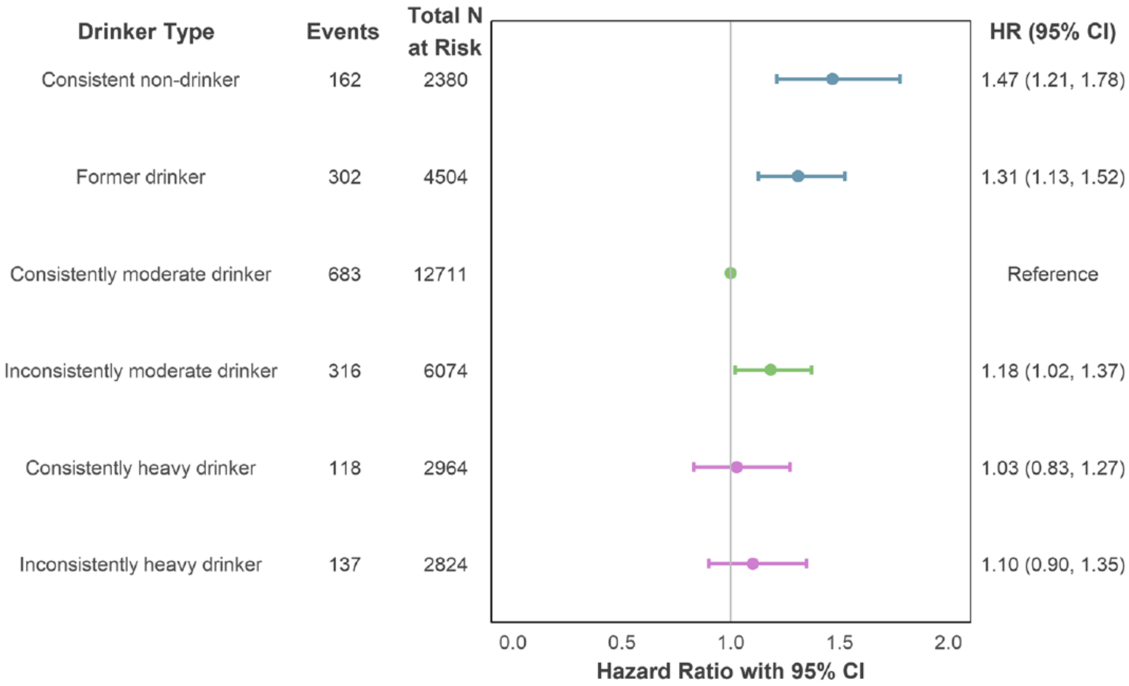
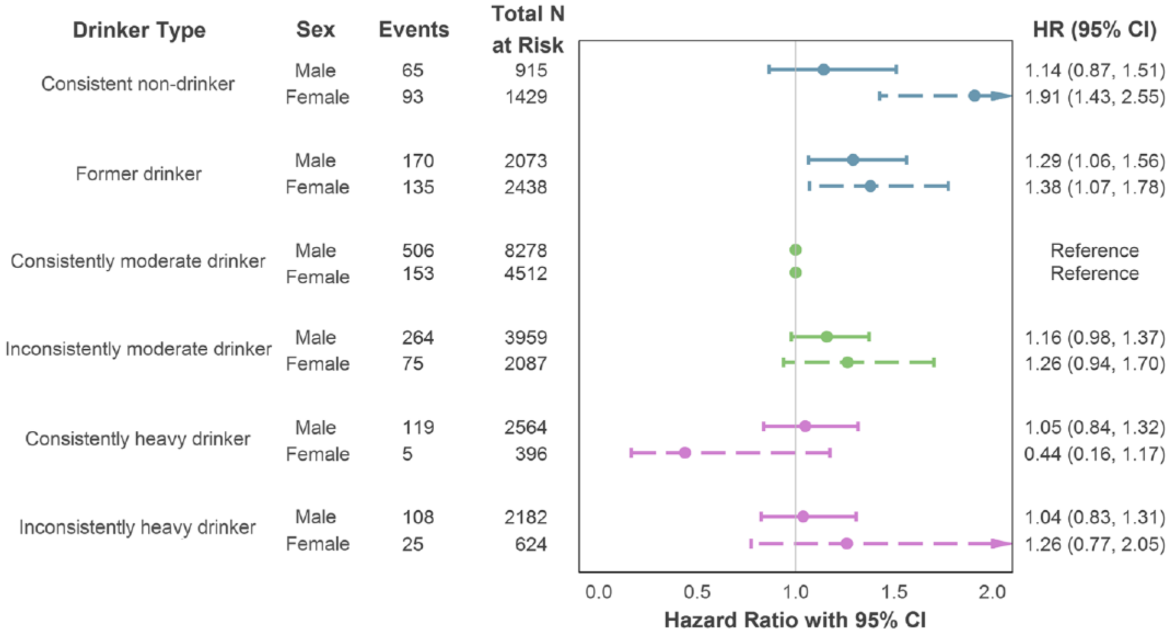


Fig. 3 Association of drinker type (longitudinal intake measurement) with incident (fatal or non-fatal) CHD using maximal adjustment for confounding. Adjustment variables comprised age, sex (reference category: male), socioeconomic position (reference category: intermediate), smoker status (reference category: non-smoker) and intake assessment interval. CHD coronary heart disease, CI confidence interval, HR hazard ratio



Drinker Type	Sex	Events	Total N at Risk	HR (95% CI)
Consistent non-drinker	Male	65	915	1.14 (0.87, 1.51)
	Female	93	1429	1.91 (1.43, 2.55)
Former drinker	Male	170	2073	1.29 (1.06, 1.56)
	Female	135	2438	1.38 (1.07, 1.78)
Consistently moderate drinker	Male	506	8278	Reference
	Female	153	4512	Reference
Inconsistently moderate drinker	Male	264	3959	1.16 (0.98, 1.37)
	Female	75	2087	1.26 (0.94, 1.70)
Consistently heavy drinker	Male	119	2564	1.05 (0.84, 1.32)
	Female	5	396	0.44 (0.16, 1.17)
Inconsistently heavy drinker	Male	108	2182	1.04 (0.83, 1.31)
	Female	25	624	1.26 (0.77, 2.05)

Fig. 5 Sex-stratified association of drinker type (longitudinal intake measurement) with incident (fatal or non-fatal) CHD using maximal adjustment for confounding. Adjustment variables comprised age, socioeconomic position (reference category: intermediate), smoker status (reference category: non-smoker) and intake assessment interval. CHD coronary heart disease, CI confidence interval, HR hazard ratio

Conclusions

- À l'aide de données sur l'alcool enregistrées de manière prospective, cette étude a montré comment l'instabilité des comportements de consommation au fil du temps est associée au risque de coronaropathie.
- Outre les personnes qui s'abstiennent de boire (à long terme ou plus récemment), les personnes dont la consommation d'alcool n'est pas modérée de façon consistante ont un risque plus élevé de contracter une coronaropathie.
- Cette découverte suggère que les politiques et les interventions encourageant spécifiquement la cohérence dans le respect des directives de consommation à faible risque pourraient avoir des effets bénéfiques sur la santé publique en réduisant le fardeau de la coronaropathie pour la population.
- L'absence d'effet chez les grands buveurs doit être interprétée avec prudence, compte tenu des risques plus généraux connus pour la santé liés à une telle consommation.

OPEN ACCESS

Alcohol intake in relation to non-fatal and fatal coronary heart disease and stroke: EPIC-CVD case-cohort study

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ABSTRACT

OBJECTIVE

To investigate the association between alcohol consumption (at baseline and over lifetime) and non-fatal and fatal coronary heart disease (CHD) and stroke.

DESIGN

Multicentre case-cohort study.

RESULTS

There were 9307 non-fatal CHD events, 1699 fatal CHD, 5855 non-fatal stroke, and 733 fatal stroke. Baseline alcohol intake was inversely associated with non-fatal CHD, with a hazard ratio of 0.94 (95% confidence interval 0.92 to 0.96) per 12 g/day higher intake. There was a J shaped association between baseline alcohol intake and risk of fatal CHD. The

Table 1 | Sex and country specific numbers of cardiovascular events (n=17 594) and descriptive statistics about baseline and lifetime alcohol status and consumption (g/day) among the subcohort (n=16 244)

		CHD		Stroke		Baseline alcohol		Lifetime alcohol		Types of alcohol		
Country	Total events	Non-fatal	Fatal	Non-fatal	Fatal	Non-drinkers (%)	Drinkers*	Never drinkers (%)	Drinkers*	Wine	Beer	Spirits†
Men												
Italy	622	472	25	115	10	5	26 (1-65)	3	24 (2-60)	22 (0-59)	1 (0-5)	2 (0-11)
Spain	1265	797	93	343	32	13	33 (2-88)	3	46 (3-111)	26 (0-73)	3 (0-16)	4 (0-17)
UK	1568	1042	292	161	73	11	11 (1-39)	1	14 (1-38)	5 (0-29)	4 (0-22)	2 (0-8)
The Netherlands	498	385	31	75	7	10	18 (1-55)	NA	NA	3 (0-14)	9 (0-35)	3 (0-22)
Greece	399	177	62	104	56	9	20 (1-67)	5	32 (0-96)	10 (0-43)	4 (0-19)	6 (0-28)
Germany	761	383	93	263	22	4	26 (2-68)	1	29 (3-76)	8 (0-44)	15 (0-60)	2 (0-7)
Sweden	2763	1220	407	1,057	79	11	11 (1-36)	NA	NA	3 (0-12)	4 (0-12)	4 (0-16)
Denmark	2158	1055	154	922	27	2	29 (2-78)	1	21 (3-51)	11 (0-30)	14 (0-55)	4 (0-11)
All	10 034	5531	1157	3040	306	8	24 (1-70)	2	30 (2-87)	13 (0-51)	7 (0-32)	3 (0-15)
Women												
Italy	596	403	10	160	23	23	11 (0-36)	16	8 (1-23)	9 (0-35)	1 (0-3)	1 (0-11)
Spain	630	311	23	260	36	50	9 (0-30)	37	7 (0-22)	7 (0-30)	1 (0-8)	0 (0-17)
UK	1233	780	142	203	108	16	7 (0-29)	6	7 (0-22)	5 (0-12)	1 (0-4)	2 (0-8)
The Netherlands	1444	986	67	321	70	20	11 (0-37)	11	9 (1-24)	6 (0-24)	1 (0-3)	4 (0-22)
Greece	271	87	30	91	63	36	6 (1-18)	34	5 (0-17)	3 (0-12)	1 (0-6)	1 (0-28)
Germany	318	112	23	172	11	5	10 (0-36)	3	7 (1-23)	7 (0-26)	2 (0-14)	1 (0-7)
Sweden	1866	641	187	950	88	18	7 (0-21)	NA	NA	3 (0-12)	1 (0-5)	2 (0-16)
Denmark	1202	456	60	658	28	2	14 (1-41)	6	9 (1-24)	6 (0-30)	3 (0-12)	2 (0-11)
All	7560	3776	542	2815	427	24	10 (0-33)	15	8 (0-23)	6 (0-27)	2 (0-7)	2 (0-7)

NA=Information on lifetime consumption not available in Bilthoven (The Netherlands), Naples (Italy), and Sweden.

*Mean and 5th-95th centile values calculated among drinkers only.

†Spirits, liquors, and fortified wine.

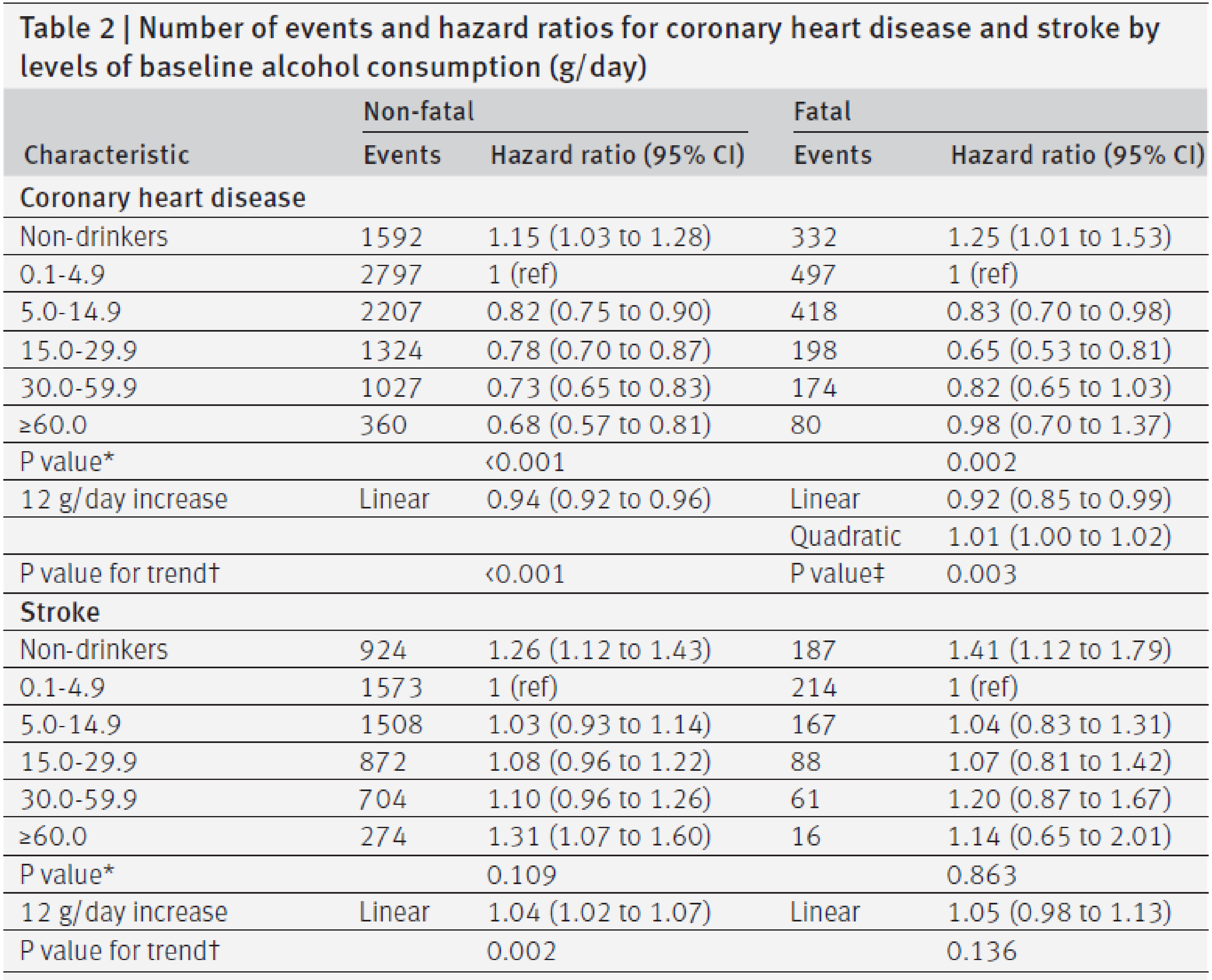

Table 2 | Number of events and hazard ratios for coronary heart disease and stroke by levels of baseline alcohol consumption (g/day)

	Non-fatal		Fatal	
Characteristic	Events	Hazard ratio (95% CI)	Events	Hazard ratio (95% CI)
Coronary heart disease				
Non-drinkers	1592	1.15 (1.03 to 1.28)	332	1.25 (1.01 to 1.53)
0.1-4.9	2797	1 (ref)	497	1 (ref)
5.0-14.9	2207	0.82 (0.75 to 0.90)	418	0.83 (0.70 to 0.98)
15.0-29.9	1324	0.78 (0.70 to 0.87)	198	0.65 (0.53 to 0.81)
30.0-59.9	1027	0.73 (0.65 to 0.83)	174	0.82 (0.65 to 1.03)
≥60.0	360	0.68 (0.57 to 0.81)	80	0.98 (0.70 to 1.37)
P value*		<0.001		0.002
12 g/day increase	Linear	0.94 (0.92 to 0.96)	Linear	0.92 (0.85 to 0.99)
			Quadratic	1.01 (1.00 to 1.02)
P value for trend†		<0.001	P value‡	0.003
Stroke				
Non-drinkers	924	1.26 (1.12 to 1.43)	187	1.41 (1.12 to 1.79)
0.1-4.9	1573	1 (ref)	214	1 (ref)
5.0-14.9	1508	1.03 (0.93 to 1.14)	167	1.04 (0.83 to 1.31)
15.0-29.9	872	1.08 (0.96 to 1.22)	88	1.07 (0.81 to 1.42)
30.0-59.9	704	1.10 (0.96 to 1.26)	61	1.20 (0.87 to 1.67)
≥60.0	274	1.31 (1.07 to 1.60)	16	1.14 (0.65 to 2.01)
P value*		0.109		0.863
12 g/day increase	Linear	1.04 (1.02 to 1.07)	Linear	1.05 (0.98 to 1.13)
P value for trend†		0.002		0.136

Table 4 | Number of events and hazard ratios for non-fatal coronary heart disease (CHD) and non-fatal stroke by levels of types of alcohol consumption at baseline (g/day)

	Wine intake		Beer intake	
Characteristic	Events	Hazard ratio (95% CI)	Events	Hazard ratio (95% CI)
Non-fatal CHD				
Non-drinkers	2932	1.14 (1.03 to 1.25)	4021	1.08 (0.98 to 1.18)
0.1-2.9	2823	1 (ref)	2733	1 (ref)
3.0-9.9	1869	0.86 (0.77 to 0.93)	1611	1.07 (0.97 to 1.19)
10.0-19.9	649	0.86 (0.75 to 0.98)	473	0.98 (0.84 to 1.15)
20.0-39.9	686	0.76 (0.66 to 0.86)	317	0.86 (0.71 to 1.04)
≥40.0	348	0.73 (0.61 to 0.87)	152	0.79 (0.59 to 1.05)
P value*		<0.001		0.069
12 g/day increase		0.94 (0.91 to 0.97)		0.94 (0.89 to 0.99)
P value for trend†		<0.001		0.013
Non-fatal stroke				
Non-drinkers	1764	1.13 (1.01 to 1.25)	2094	1.14 (1.03 to 1.26)
0.1-2.9	1671	1 (ref)	1829	1 (ref)
3.0-9.9	1398	0.95 (0.85 to 1.05)	1167	1.21 (1.08 to 1.35)
10.0-19.9	391	1.00 (0.85 to 1.16)	369	1.16 (0.98 to 1.37)
20.0-39.9	436	1.01 (0.87 to 1.17)	248	1.31 (1.07 to 1.60)
≥40.0	195	1.05 (0.84 to 1.30)	148	1.40 (1.06 to 1.84)
P value*		0.762		0.002
12 g/day increase		1.03 (0.99 to 1.07)		1.07 (1.03 to 1.12)
P value for trend†		0.204		0.002

Conclusions

- « La consommation d'alcool est inversement associée au risque de cardiopathie non mortelle, mais positivement au risque d'accident vasculaire cérébral, soulignant les associations opposées de la consommation d'alcool avec différents types de MCV.
- Compte tenu des connaissances antérieures sur l'association positive de l'alcool à la mortalité toutes causes confondues et au risque de cancer, nos résultats renforcent les politiques visant à réduire la consommation d'alcool ».

Effet protecteur à petites doses

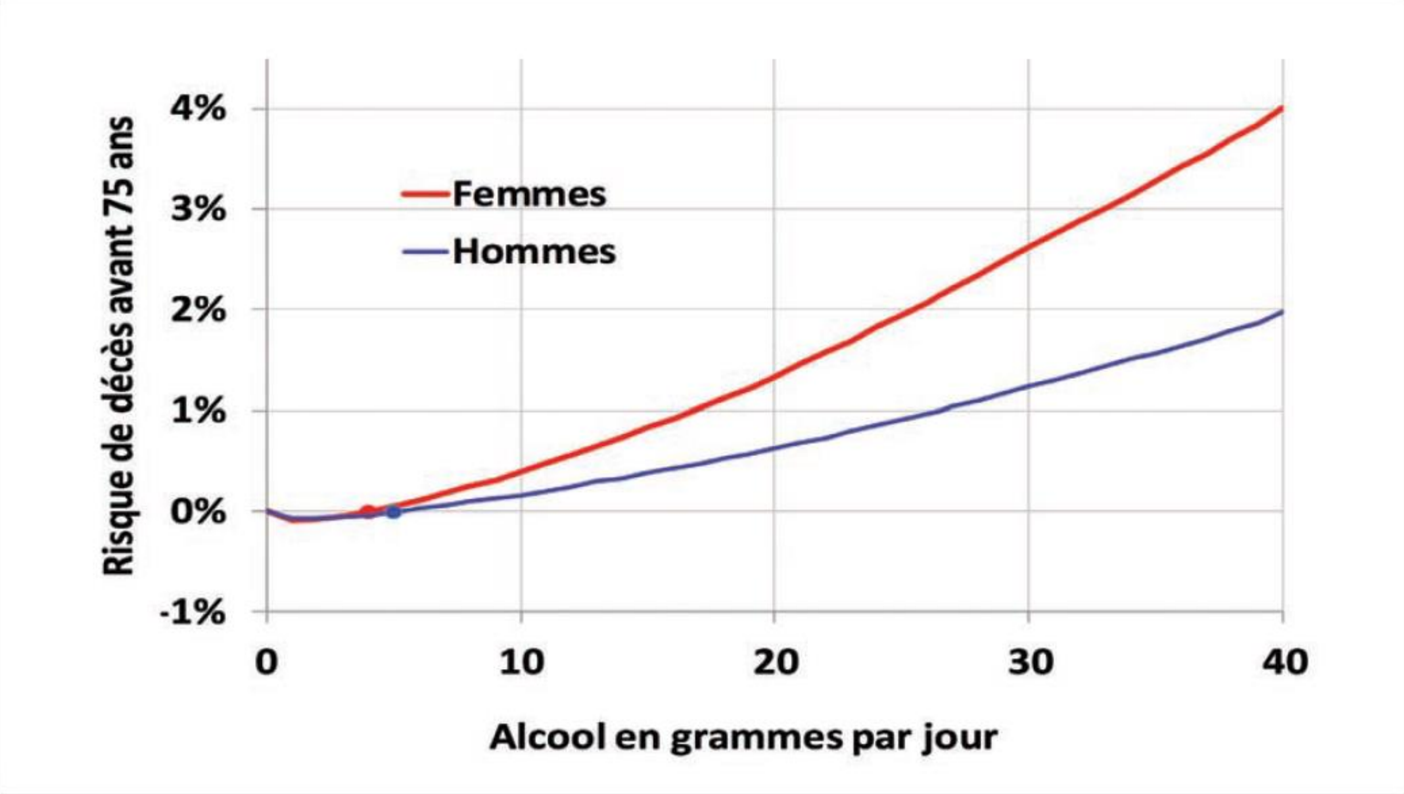

Figure 2. Risque d'un décès attribuable à l'alcool avant 75 ans en France en 2012, en fonction de la dose quotidienne d'alcool. D'après la réf. 3. Picturefalse* MERGEFORMAT

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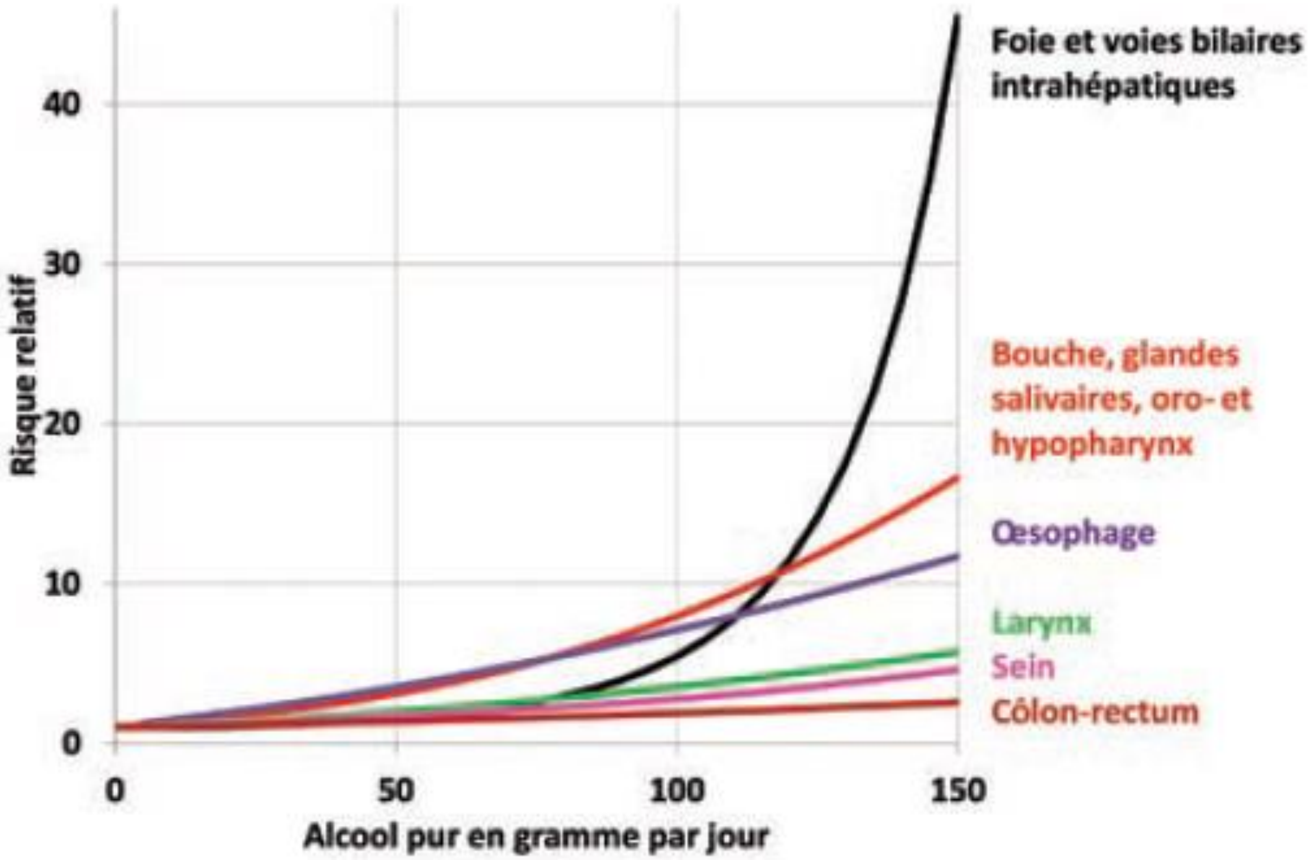
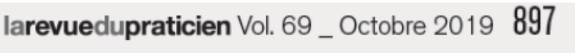
Les autres risques : les cancers





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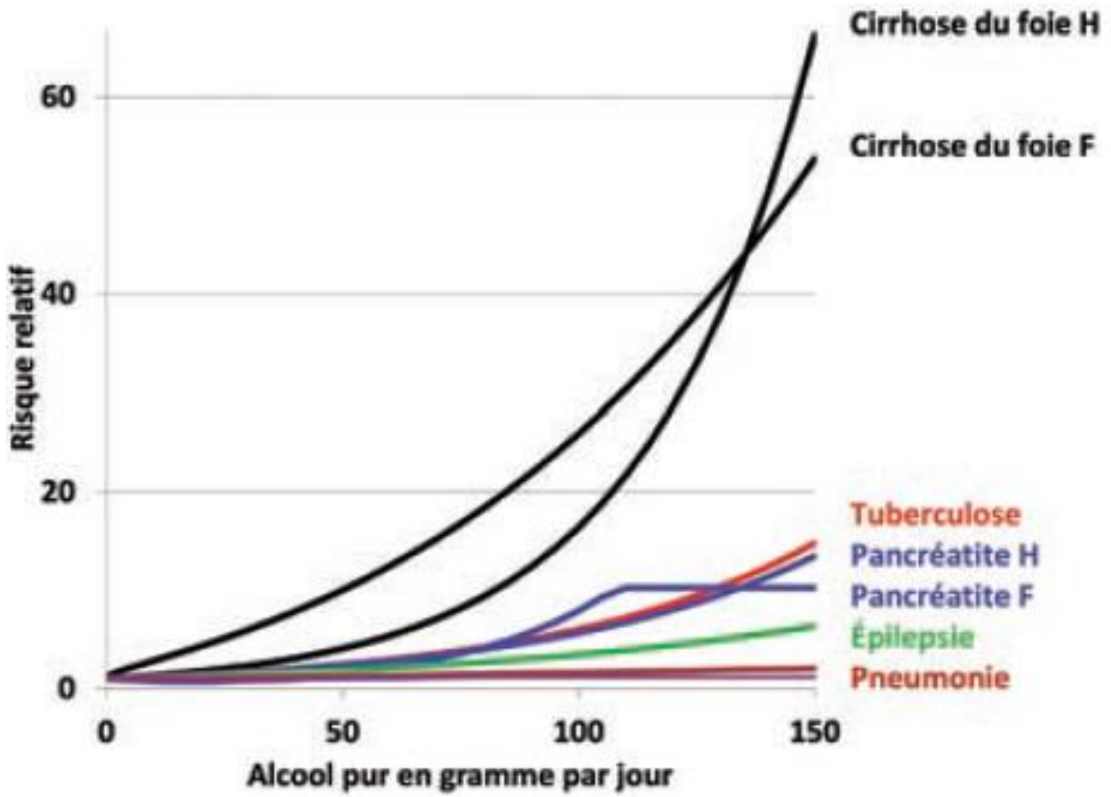
Les autres risques: maladies bénignes



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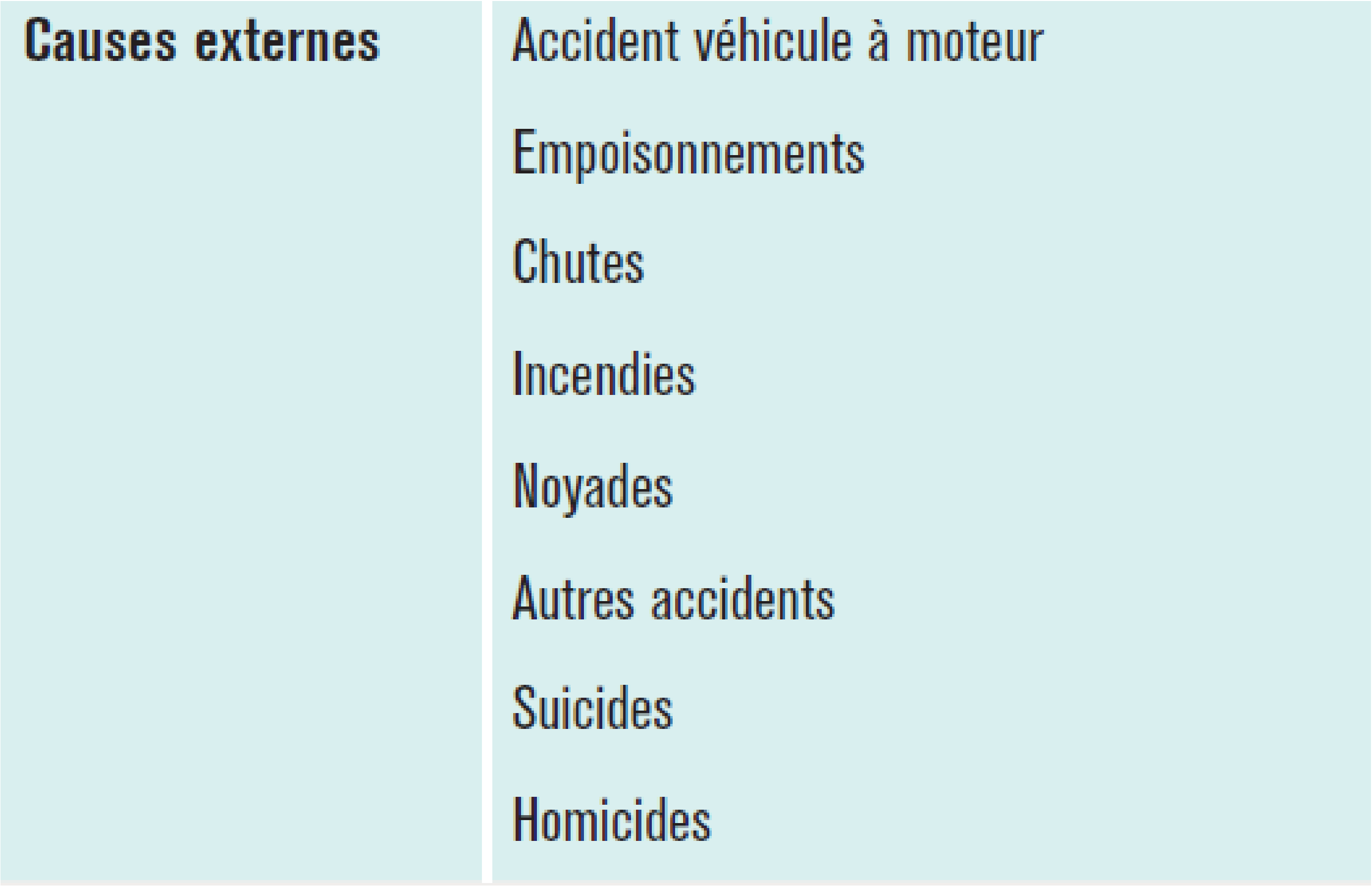
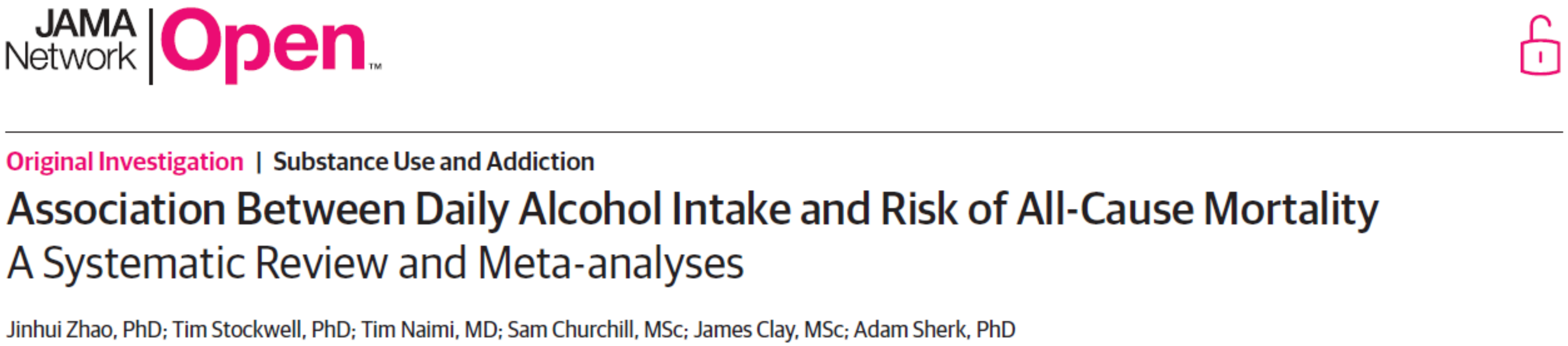
Ne pas oublier



Causes externes	Accident véhicule à moteur
	Empoisonnements
	Chutes
	Incendies
	Noyades
	Autres accidents
	Suicides
	Homicides

898 larevuedupraticien Vol. 69 _ Octobre 2019

Revue systématique sur l'effet global (mortalité)



JAMA Network | Open

Original Investigation | Substance Use and Addiction

Association Between Daily Alcohol Intake and Risk of All-Cause Mortality

A Systematic Review and Meta-analyses

Jinhui Zhao, PhD; Tim Stockwell, PhD; Tim Naimi, MD; Sam Churchill, MSc; James Clay, MSc; Adam Sherk, PhD

107 études sur la consommation d'alcool et la mortalité toutes causes confondues publiées de 1980 à juillet 2021.

JAMA Network Open. 2023;6(3):e236185. doi:10.1001/jamanetworkopen.2023.6185

- Modèles ajustés pour les effets de confusion potentiels de la variation d'échantillonnage, du biais des anciens buveurs et d'autres critères de qualité prédéfinis : aucune réduction significative du risque de mortalité toutes causes confondues chez les occasionnels (> 0 à < 1,3 g d'éthanol par jour ; risque relatif [RR], 0,96 ; IC à 95 %, 0,86-1,06 ; P = 0,41) ou buveurs à faible volume (1,3-24,0 g par jour ; RR, 0,93 ; P = 0,07) par rapport aux non-buveurs à vie.
- Modèle entièrement ajusté : augmentation non significative du risque de mortalité toutes causes confondues chez les buveurs qui buvaient de 25 à 44 g par jour (RR, 1,05 ; P = 0,28) et risque significativement accru pour les buveurs qui buvaient de 45 à 64 et 65 ou plus grammes par jour (RR, 1,19 et 1,35 ; P < 0,001). Il y avait des risques de mortalité significativement plus élevés chez les femmes buveuses que chez les femmes non buveuses à vie (RR, 1,22 ; P = 0,03)

Table 2. Mean Relative Risk Estimates of All-Cause Mortality Due to Alcohol Consumption Up to 2022 According to 107 Studies With 724 Relative Risk Estimates

Drinking categories	Studies, No./risk estimates, No.	Unadjusted[a]		Partially adjusted[b]		Fully adjusted[c]	
		RR (95% CI)	*P* value	RR (95% CI)	*P* value	RR (95% CI)	*P* value
Reference group = lifetime nondrinker							
Abstainer	107/191	1 [Reference]		1 [Reference]		1 [Reference]	
Any drinker vs abstainer	107/724	1.06 (0.90-1.25)	.42	1.03 (0.89-1.19)	.65	1.11 (0.96-1.28)	.12
Former drinker vs abstainer	28/56	1.22 (1.11-1.33)	<.001	1.17 (1.08-1.26)	<.001	1.26 (1.12-1.42)	.0001
Active drinker vs abstainer, g/d	107/668	0.97 (0.94-1.00)	.02	0.93 (0.90-0.96)	<.001	1.02 (0.93-1.13)	.61
Occasional (<1.30)	24/57	0.92 (0.84-1.01)	.08	0.89 (0.83-0.95)	<.001	0.96 (0.86-1.06)	.41
Low-volume (1.30 to <25)	99/306	0.85 (0.81-0.88)	<.001	0.86 (0.83-0.88)	<.001	0.93 (0.85-1.01)	.08
Medium volume (25 to <45)	80/146	1.02 (0.96-1.08)	.55	0.97 (0.92-1.02)	.21	1.05 (0.96-1.14)	.28
High volume (45 to <65)	52/76	1.07 (0.99-1.16)	.09	1.11 (1.03-1.21)	.009	1.19 (1.07-1.32)	.001
Higher volume (≥65)	45/83	1.35 (1.26-1.46)	<.001	1.24 (1.16-1.32)	<.001	1.35 (1.23-1.47)	.0001
Reference group = occasional drinker							
Abstainer		1.09 (0.99-1.19)	.07	1.12 (1.05-1.20)	<.001	1.04 (0.94-1.16)	.45
Any drinker vs occasional drinker	107/724	1.15 (0.95-1.39)	.14	1.16 (0.99-1.36)	.08	1.16 (0.97-1.38)	.11
Former drinker vs abstainer	28/56	1.33 (1.18-1.50)	<.001	1.31 (1.19-1.46)	<.001	1.31 (1.13-1.52)	.0007
Active drinker vs abstainer, g/d	107/668	1.05 (0.96-1.16)	.29	1.04 (0.97-1.13)	.25	1.06 (0.92-1.23)	.41
Occasional (<1.30)	24/57	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	
Low-volume (1.30 to <25)	99/306	0.92 (0.84-1.02)	.12	0.97 (0.90-1.04)	.36	0.97 (0.85-1.11)	.65
Medium volume (25 to <45)	80/146	1.11 (0.99-1.24)	.07	1.09 (1.00-1.19)	.047	1.09 (0.96-1.25)	.19
High volume (45 to <65)	52/76	1.16 (1.03-1.31)	.02	1.25 (1.12-1.39)	<.001	1.24 (1.07-1.44)	.004
Higher volume (≥65)	45/83	1.47 (1.30-1.65)	<.001	1.39 (1.27-1.53)	<.001	1.41 (1.23-1.61)	.0001

Table 4. Mean RRs of All-Cause Mortality Due to Alcohol Consumption by Sex (Men or Women) Up to 2022

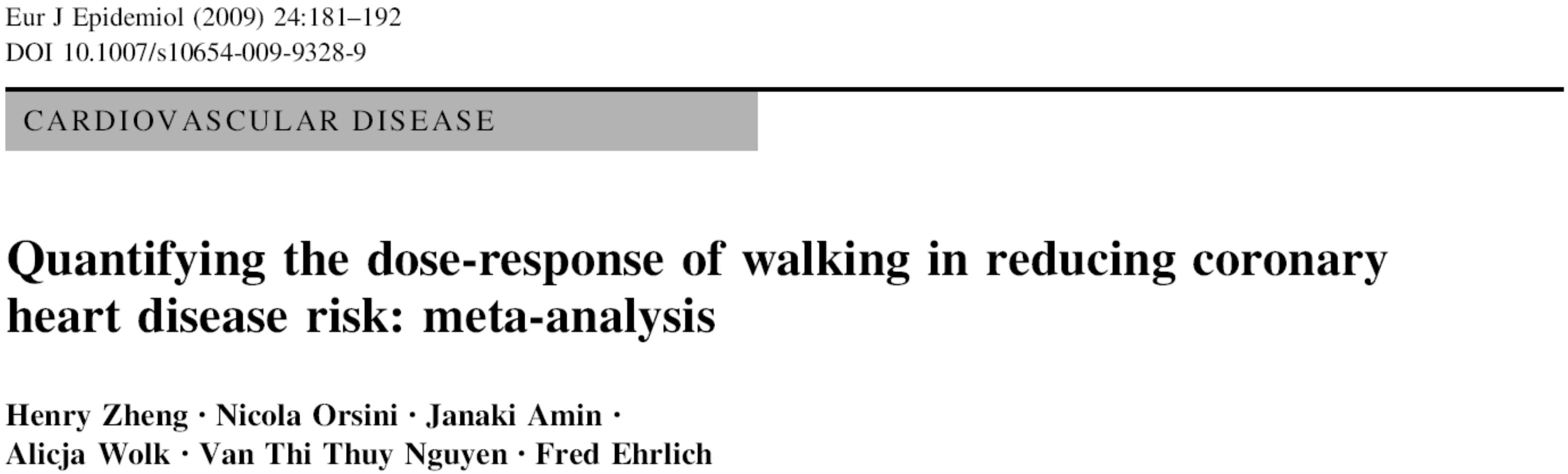
Drinking categories by median age	Studies, No./risk estimates, No.	Unadjusted[a]		Partially adjusted[b]		Fully adjusted[c]	
		RR (95% CI)	*P* value	RR (95% CI)	*P* value	RR (95% CI)	*P* value
Men							
Abstainer	NA	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
Any drinker vs abstainer	73/343	1.05 (0.88-1.24	.52	1.05 (0.89-1.22)	.49	1.12 (0.95-1.34)	.14
Former drinker vs abstainer	20/24	1.24 (1.08-1.42)	<.001	1.29 (1.20-1.39)	<.001	1.39 (1.21-1.58)	<.001
Active drinker vs abstainer, g/d	73/319	0.97 (0.93-1.01)	.09	0.96 (0.92-1.00)	.05	1.05 (0.96-1.15)	.27
Occasional (<1.30)	13/15	0.95 (0.80-1.13)	.58	0.93 (0.85-1.01)	.07	1.00 (0.91-1.09)	.97
Low-volume (1.30 to <25)	66/141	0.84 (0.80-0.89)	<.001	0.87 (0.84-0.91)	<.001	0.94 (0.88-1.01)	.07
Medium volume (25 to <45)	54/70	0.97 (0.89-1.05)	.43	0.94 (0.90-0.98)	.008	1.01 (0.93-1.10)	.81
High volume (45 to <65)	37/41	1.01 (0.91-1.12)	.87	1.07 (1.01-1.12)	.01	1.15 (1.03-1.28)	.01
Higher volume (≥65)	36/52	1.35 (1.23-1.48)	<.001	1.25 (1.16-1.32)	<.001	1.34 (1.23-1.47)	<.001
Women							
Abstainer	NA	1 [Reference]	NA	1 [Reference]	NA	1 [Reference]	NA
Any drinker vs abstainer	48/226	1.12 (0.88-1.44)	.28	1.03 (0.85-1.26)	.69	1.22 (1.02-1.46)	.04
Former drinker vs abstainer	16/22	1.16 (0.98-1.37)	.08	1.09 (1.03-1.14)	.001	1.27 (1.13-1.43)	<.001
Active drinker vs abstainer, g/d	47/204	0.99 (0.93-1.05)	.64	0.88 (0.84-0.92)	<.001	1.03 (0.92-1.15)	.65
Occasional (<1.30)	15/25	0.87 (0.74-1.01)	.08	0.83 (0.78-0.88)	<.001	0.99 (0.87-1.11)	.82
Low-volume (1.30 to <25)	45/106	0.87 (0.81-0.94)	<.001	0.84 (0.80-0.89)	<.001	0.99 (0.90-1.10)	.90
Medium volume (25 to <45)	37/42	1.16 (1.03-1.31)	.01	1.03 (0.96-1.11)	.44	1.21 (1.08-1.36)	.001
High volume (45 to <65)	17/19	1.12 (0.94-1.34)	.21	1.13 (0.95-1.35)	.15	1.34 (1.11-1.63)	.003
Higher volume (≥65)	11/12	1.77 (1.41-2.21)	<.001	1.37 (1.28-1.47)	<.001	1.61 (1.44-1.80)	<.001

Exercice physique et sédentarité

DÉFINITION DU MET

Le *metabolic equivalent task* [MET] ou équivalent métabolique est une unité qui indexe la dépense énergétique lors de la tâche considérée sur la dépense énergétique de repos. La valeur 1 MET chiffre la dépense énergétique de repos et équivaut à une consommation de l'ordre de 3,5 mL O_2/min/kg. 7,5 MET.h/sem correspond à 150 min/sem d'activité physique d'intensité modérée et 15 MET.h/sem équivaut à 300 min/sem d'activité physique d'intensité modérée.

Marcher réduit le risque coronarien



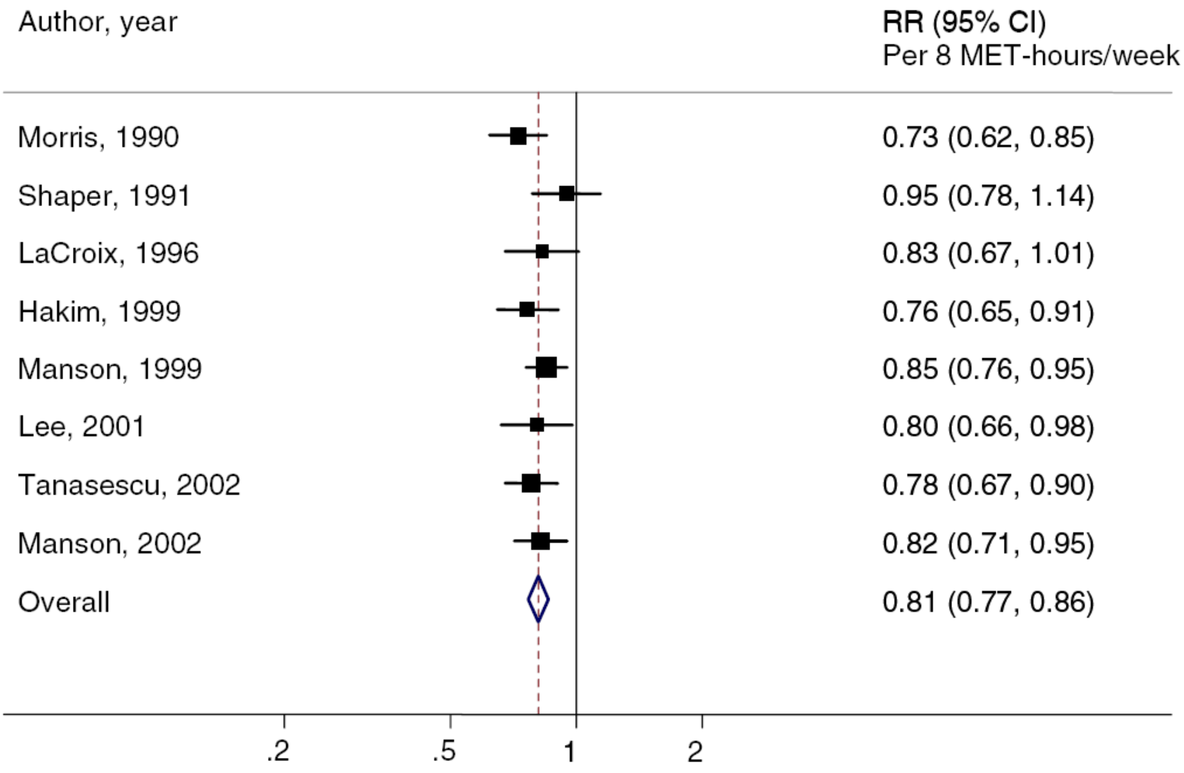
Eur J Epidemiol (2009) 24:181–192
DOI 10.1007/s10654-009-9328-9

CARDIOVASCULAR DISEASE

Quantifying the dose-response of walking in reducing coronary heart disease risk: meta-analysis

**Henry Zheng · Nicola Orsini · Janaki Amin ·
Alicja Wolk · Van Thi Thuy Nguyen · Fred Ehrlich**

Fig. 6 Summary of study-specific trends (8 MET-h/week is equivalent to 30 min of normal walking a day for 5 days a week) examining the association between walking and risk of coronary heart disease. *Squares* indicate study-specific trend estimates (size of the squares reflects the inverse of the variance); *horizontal lines* indicate 95% confidence intervals; *diamond* indicates the summary relative risk estimate with 95% confidence interval. Test for heterogeneity: $Q = 5.81$, $P = 0.56$; $I^2 = 0\%$)



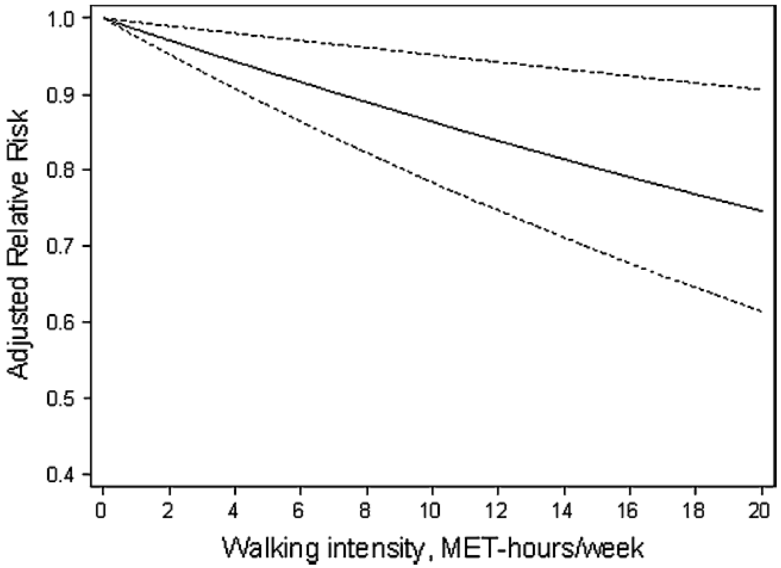


Fig. 2 Dose-response relationship between walking intensity (MET-hours/week) and risk of coronary heart disease. *Dotted lines* represent 95% confidence limits for the linear trend

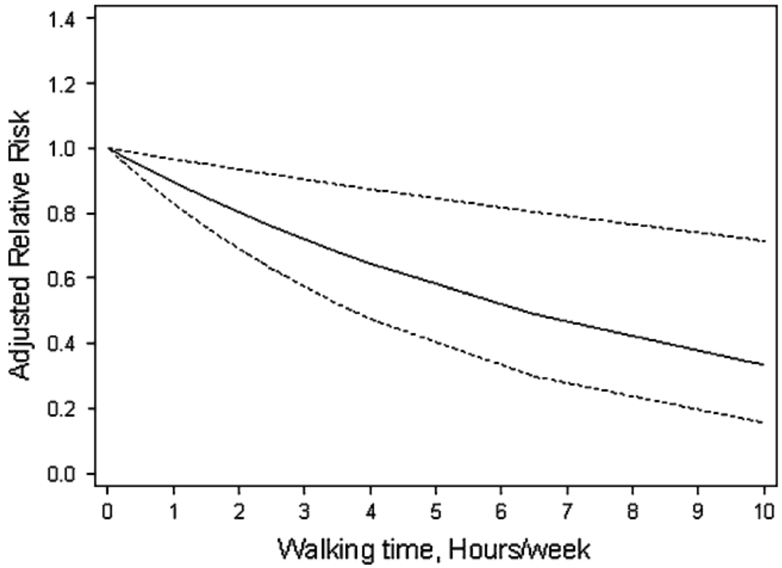


Fig. 4 Dose-response relationship between walking time (h/week) and risk of coronary heart disease. *Dotted lines* represent 95% confidence limits for the linear trend

L’effet est surtout marqué pour les niveaux les plus faibles

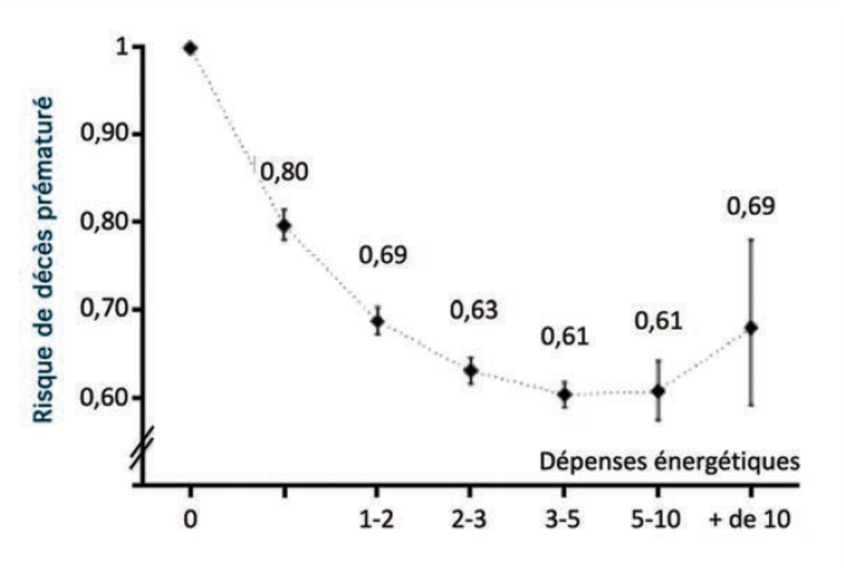


Figure 1. Relation non linéaire entre la dépense énergétique hebdomadaire liée aux activités physiques de loisir et le risque de mortalité générale (toutes causes confondues). Les dépenses énergétiques sont exprimées sous la forme de multiples des recommandations, de la valeur 0 pour les personnes qui ne les atteignent pas à des multiples de 1 pour ceux qui excèdent ces recommandations. On remarquera que le bénéfice santé le plus important est observé pour les très faibles niveaux d’activité physique. En d’autres termes, le degré de diminution du risque est beaucoup plus important pour les faibles niveaux de pratique que pour les niveaux de pratique supérieurs : passer de l’état d’inactivité totale (0) à l’atteinte des recommandations en activité physique (1) a plus d’effets relatifs que de passer de 4 à 5-6 fois les recommandations (d’après la réf. 6).

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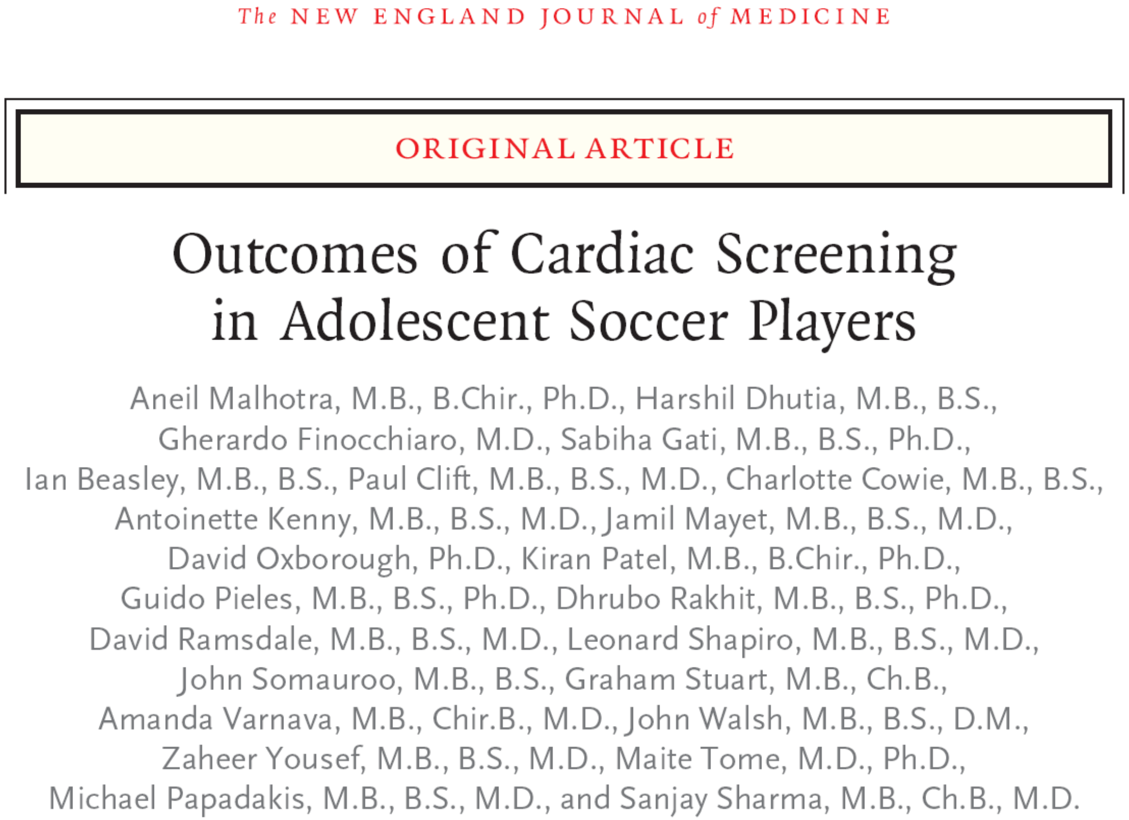
Le sport



The NEW ENGLAND JOURNAL *of* MEDICINE

ORIGINAL ARTICLE

Outcomes of Cardiac Screening in Adolescent Soccer Players

Aneil Malhotra, M.B., B.Chir., Ph.D., Harshil Dhutia, M.B., B.S.,
Gherardo Finocchiaro, M.D., Sabiha Gati, M.B., B.S., Ph.D.,
Ian Beasley, M.B., B.S., Paul Clift, M.B., B.S., M.D., Charlotte Cowie, M.B., B.S.,
Antoinette Kenny, M.B., B.S., M.D., Jamil Mayet, M.B., B.S., M.D.,
David Oxborough, Ph.D., Kiran Patel, M.B., B.Chir., Ph.D.,
Guido Pieles, M.B., B.S., Ph.D., Dhrubo Rakhit, M.B., B.S., Ph.D.,
David Ramsdale, M.B., B.S., M.D., Leonard Shapiro, M.B., B.S., M.D.,
John Somauroo, M.B., B.S., Graham Stuart, M.B., Ch.B.,
Amanda Varnava, M.B., Chir.B., M.D., John Walsh, M.B., B.S., D.M.,
Zaheer Yousef, M.B., B.S., M.D., Maite Tome, M.D., Ph.D.,
Michael Papadakis, M.B., B.S., M.D., and Sanjay Sharma, M.B., Ch.B., M.D.

N Engl J Med 2018;379:524-34.
DOI: 10.1056/NEJMoa1714719

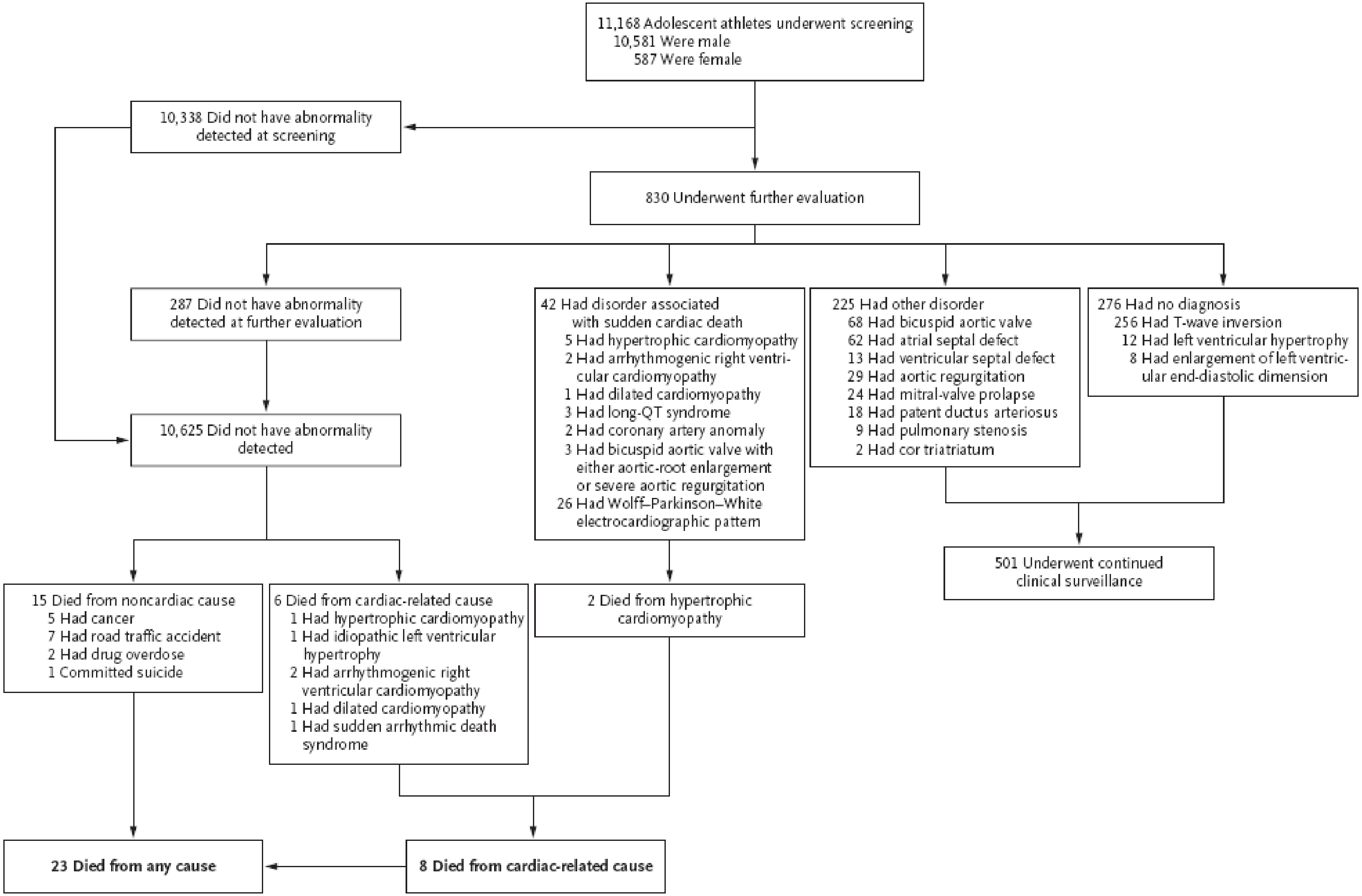

11,168 Adolescent athletes underwent screening
10,581 Were male
587 Were female
10,338 Did not have abnormality detected at screening
830 Underwent further evaluation
287 Did not have abnormality detected at further evaluation
42 Had disorder associated with sudden cardiac death
5 Had hypertrophic cardiomyopathy
2 Had arrhythmogenic right ventricular cardiomyopathy
1 Had dilated cardiomyopathy
3 Had long-QT syndrome
2 Had coronary artery anomaly
3 Had bicuspid aortic valve with either aortic-root enlargement or severe aortic regurgitation
26 Had Wolff–Parkinson–White electrocardiographic pattern
225 Had other disorder
68 Had bicuspid aortic valve
62 Had atrial septal defect
13 Had ventricular septal defect
29 Had aortic regurgitation
24 Had mitral-valve prolapse
18 Had patent ductus arteriosus
9 Had pulmonary stenosis
2 Had cor triatriatum
276 Had no diagnosis
256 Had T-wave inversion
12 Had left ventricular hypertrophy
8 Had enlargement of left ventricular end-diastolic dimension
10,625 Did not have abnormality detected
501 Underwent continued clinical surveillance
15 Died from noncardiac cause
5 Had cancer
7 Had road traffic accident
2 Had drug overdose
1 Committed suicide
6 Died from cardiac-related cause
1 Had hypertrophic cardiomyopathy
1 Had idiopathic left ventricular hypertrophy
2 Had arrhythmogenic right ventricular cardiomyopathy
1 Had dilated cardiomyopathy
1 Had sudden arrhythmic death syndrome
2 Died from hypertrophic cardiomyopathy
23 Died from any cause
8 Died from cardiac-related cause

Figure 1. Outcomes in the Football Association Cardiac Screening Program.

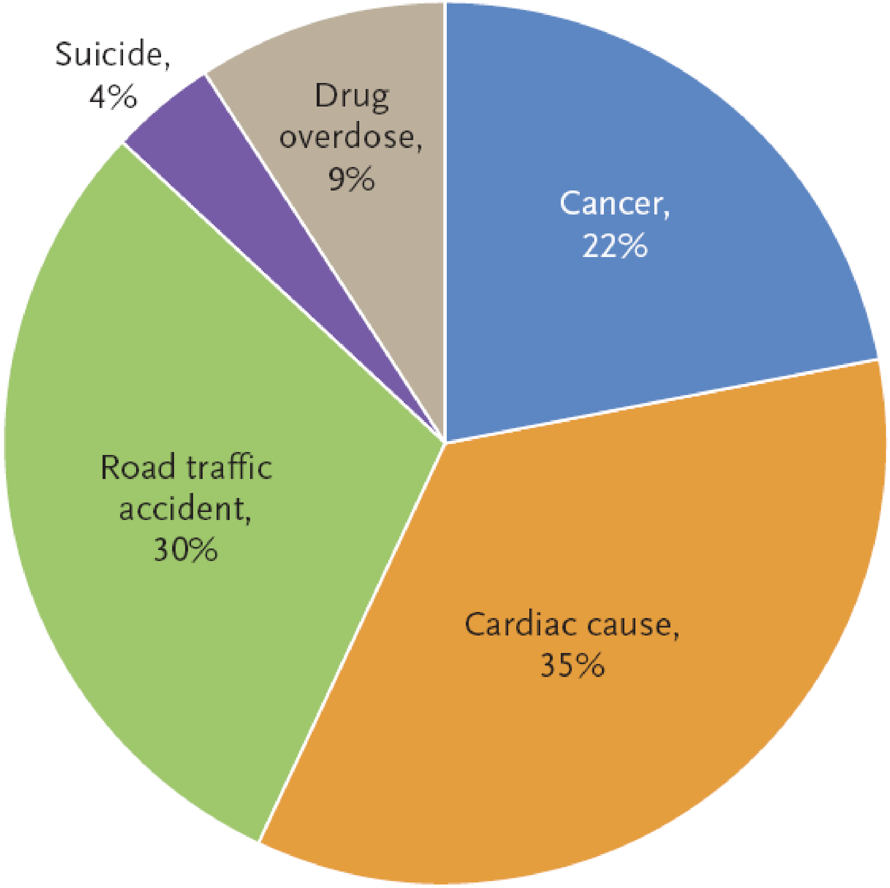


Figure 2. Causes of Death among the 23 Screened Adolescent Soccer Players Who Died.