Plantebaseret Kost

Ved Læge Tobias Schmidt Hansen, Formand for Dansk Selskab for Livsstilsmedicin.

DSKE d. 28/1 2019


Klinisk diætist, cand. scient. Maria Felding
& læge Tobias Schmidt Hansen
Den plantebaserede kost
Ren besked om, hvordan mad påvirker din sundhed, og hvad du kan opnå med en optimal kost
muusmann sundhed

Tilgangen til de næste to timer

Min tilgang:

- Ikke at omvende nogle til en bestemt slags kost.
- Men forsøge at videregive potentialet af en optimal kost.

Mit håb for jeres tilgang:

- Nysgerrighed – Så spørg løs! Nu og senere på tobias.schmidt.hansen@gmail.com
- Skepsis – Tjek meget gerne kilderne.
- Åbenhed - Vær opmærksom på modstand imod ny viden.

Begrebs

- Vegar
  - Fr
  - Et
  - Ik
- Plant
  - Ba
  - Ko
  - Ik
  - Vi

Hvor vigtig er kosten?

Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks in 188 countries, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013

*GBD 2013 Risk Factors Collaborators**

	1990 deaths (in thousands)	2013 deaths (in thousands)	Median percent change deaths	Median percent change of age-standardised deaths PAF	1990 DALYs (in thousands)	2013 DALYs (in thousands)	Median percent change DALYs	Median percent change of age-standardised DALYs PAF
(Continued from previous page)								
Tobacco smoke	**5229 (4816 to 5681)**	**6149 (5587 to 6762)**	**17·8% (10·9 to 23·9)**	**−9·6% (−13·2 to −6·3)**	**142 341 (131 399 to 153 920)**	**143 512 (129 979 to 159 147)**	**0·7% (−5·5 to 7·5)**	**−14·5% (−18·9 to −10·2)**
Smoking	4634 (4222 to 5079)	5818 (5258 to 6435)	25·7% (17·9 to 32·6)	−5·1% (−9·3 to −1·3)	115 910 (105 383 to 127 110)	134 196 (120 872 to 149 759)	15·8% (8·6 to 23·6)	−7·4% (−12·4 to −2·2)
Second hand smoke	595 (540 to 654)	331 (308 to 355)	−44·4% (−48·2 to −40·0)	−50·9% (−53·6 to −48·2)	26 431 (22 494 to 30 676)	9316 (8417 to 10,277)	−64·7% (−68·3 to −60·8)	−60·2% (−63·3 to −56·9)
Alcohol and drug use	**2092 (1671 to 2438)**	**3163 (2537 to 3656)**	**51·3% (44·3 to 58·4)**	**19·4% (15·3 to 23·7)**	**89 844 (76 788 to 101 767)**	**126 053 (107 154 to 142 356)**	**40·2% (34·8 to 46·3)**	**23·5% (18·9 to 28·3)**
Alcohol use	1977 (1555 to 2329)	2786 (2146 to 3287)	40·9% (33·2 to 47·9)	11·1% (6·9 to 14·8)	76 029 (63 443 to 87 186)	99 278 (81 295 to 113 616)	30·5% (23·9 to 37·0)	13·6% (8·6 to 18·1)
Drug use	132 (109 to 155)	429 (381 to 480)	224·8% (188·0 to 273·4)	179·5% (147·0 to 222·3)	14 481 (11 607 to 17 286)	28 578 (24 505 to 33 104)	97·4% (83·2 to 114·8)	89·3% (74·3 to 107·1)
Dietary risks	**8068 (6991 to 9159)**	**11 274 (9656 to 12 957)**	**39·6% (34·1 to 46·2)**	**2·9% (0·3 to 5·8)**	**177 408 (154 661 to 200 097)**	**241 351 (209 634 to 273 339)**	**35·9% (29·8 to 43·0)**	**7·7% (4·1 to 12·0)**
(Continued from previous page)								
Low physical activity	**1489 (1257 to 1741)**	**2182 (1858 to 2555)**	**46·5% (40·9 to 52·9)**	**6·4% (4·0 to 9·2)**	**31 247 (26 556 to 36 521)**	**45 143 (38 328 to 52 671)**	**44·3% (37·2 to 52·8)**	**13·6% (9·4 to 18·3)**

Balancing Life-Style and Genomics Research for Disease Prevention

Walter C. Willett

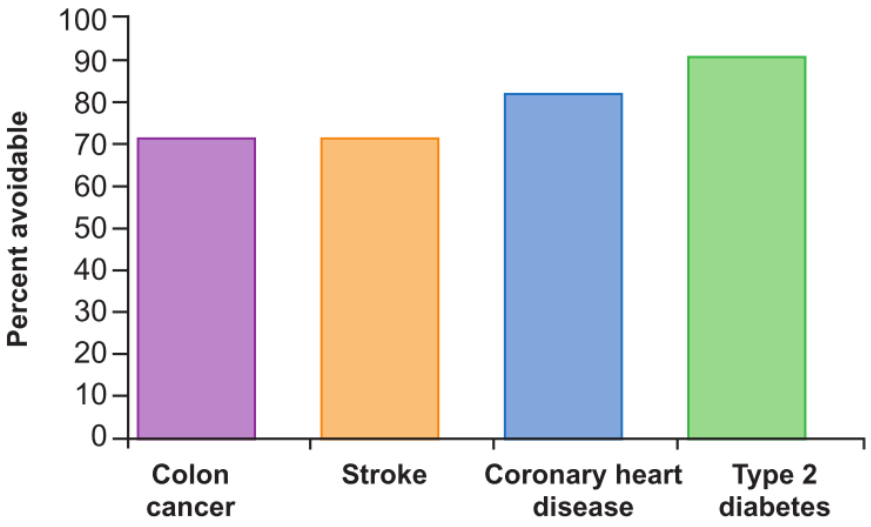


Fig. 1. Percentage of colon cancer, stroke, coronary heart disease, and type 2 diabetes that is potentially preventable by life-style modifications. For colon cancer (*7*), the low-risk definition includes body mass index <25 kg/m^2, physical activity equivalent to >30 min per day of brisk walking, folic acid supplement of 100 μg per day or more, less than three alcoholic drinks per day, lifetime nonsmoking, and fewer than three servings of red meat per week. For stroke (unpublished data) and coronary heart disease (*6*), the low-risk definition includes nonsmoking, a good diet (incorporating low intake of saturated and trans fat and glycemic load and adequate intake of polyunsaturated fat, N-3 fatty acids, cereal fiber, and folic acid), body mass index <25 kg/m^2, physical activity equivalent to > 30 min per day of brisk walking, and moderate alcohol consumption. For diabetes (*8*), the low-risk definition was similar to that for coronary heart disease except that the dietary score did not include folic acid or N-3 fatty acids.

Det skal en optimal kost.

- Sikre tilstrækkeligt med makro- og mikronæringsstoffer.
- Bidrage til global sundhed.
- Medvirke til at opnå og bibeholde en normal vægt.
- Medvirke til et optimalt kolesteroltal.
- Medvirke til et optimalt blodtryk.
- Forebygge udviklingen af insulinresistens.
- Begrænse inflammation.
- Minimere risikoen for kræft.
- Bidrage til at opretholde en sund mikrobiota.

Overvægt

- Forårsager 10-20 procent af alle kræfttilfælde.

Kilde: Obesity and Cancer. Wolin 2010.

- Stærkt stigende.
- 47,3 procent af danskere er overvægtige(BMI over 25).

Kilde: The Nordic Monitoring System 2011-2014

- Ifølge World Heart Federation skyldes 58% af Type 2 sukkersyge og 21% af iskæmisk hjertesygdom et BMI over 21.
- Øger risikoen for inflammatoriske sygdomme.

Meat consumption and prospective weight change in participants of the EPIC-PANACEA study[1–3]

Abstract

BACKGROUND: Meat intake may be related to weight gain because of its high energy and fat content. Some observational studies have shown that meat consumption is positively associated with weight gain, but intervention studies have shown mixed results.

OBJECTIVE: Our objective was to assess the association between consumption of total meat, red meat, poultry, and processed meat and weight gain after 5 y of follow-up, on average, in the large European population who participated in the European Prospective Investigation into Cancer and Nutrition-Physical Activity, Nutrition, Alcohol, Cessation of Smoking, Eating Out of Home and Obesity (EPIC-PANACEA) project.

DESIGN: A total of 103,455 men and 270,348 women aged 25-70 y were recruited between 1992 and 2000 in 10 European countries. Diet was assessed at baseline with the use of country-specific validated questionnaires. A dietary calibration study was conducted in a representative subsample of the cohort. Weight and height were measured at baseline and self-reported at follow-up in most centers. Associations between energy from meat (kcal/d) and annual weight change (g/y) were assessed with the use of linear mixed models, controlled for age, sex, total energy intake, physical activity, dietary patterns, and other potential confounders.

RESULTS: Total meat consumption was positively associated with weight gain in men and women, in normal-weight and overweight subjects, and in smokers and nonsmokers. With adjustment for estimated energy intake, an increase in meat intake of 250 g/d (eg, one steak at approximately 450 kcal) would lead to a 2-kg higher weight gain after 5 y (95% CI: 1.5, 2.7 kg). Positive associations were observed for red meat, poultry, and processed meat.

CONCLUSION: Our results suggest that a decrease in meat consumption may improve weight management.

Rødt, hvidt og forarbejdet kød, forbundet med vægtøgning, selv efter justering for indtag af kalorier.

High dietary protein intake is associated with an increased body weight and total death risk.

Hernández-Alonso P[1], Salas-Salvadó J[2], Ruiz-Canela M[3], Corella D[4], Estruch R[5], Fitó M[6], Arós F[7], Gómez-Gracia E[8], Fiol M[9], Lapetra J[10], Basora J[11], Serra-Majem L[12], Muñoz MÁ[13], Buil-Cosiales P[3], Saiz C[4], Bulló M[14].

Author information

Abstract

BACKGROUND & AIMS: High dietary protein diets are widely used to manage overweight and obesity. However, there is a lack of consensus about their long-term efficacy and safety. Therefore, the aim of this study was to assess the effect of long-term high-protein consumption on body weight changes and death outcomes in subjects at high cardiovascular risk.

METHODS: A secondary analysis of the PREDIMED trial was conducted. Dietary protein was assessed using a food-frequency questionnaire during the follow-up. Cox proportional hazard models were used to estimate the multivariate-adjusted hazard ratio (HR) and 95% confidence intervals (95%CI) for protein intake in relation to the risk of body weight and waist circumference changes, cardiovascular disease, cardiovascular death, cancer death and total death.

RESULTS: Higher total protein intake, expressed as percentage of energy, was significantly associated with a greater risk of weight gain when protein replaced carbohydrates (HR: 1.90; 95%CI: 1.05, 3.46) but not when replaced fat (HR: 1.69; 95%CI: 0.94, 3.03). However, no association was found between protein intake and waist circumference. Contrary, higher total protein intake was associated with a greater risk of all-cause death in both carbohydrate and fat substitution models (HR: 1.59; 95%CI: 1.08, 2.35; and HR: 1.66; 95%CI: 1.13, 2.43, respectively). A higher consumption of animal protein was associated with an increased risk of fatal and non-fatal outcomes when protein substituted carbohydrates or fat.

CONCLUSIONS: Higher dietary protein intake is associated with long-term increased risk of body weight gain and overall death in a Mediterranean population at high cardiovascular risk.

For hvert gram animalsk gram der indtogs i stedet for kulhydrat, sås der øgning i vægt, samt øget dødeligheden af alle årsager.

Low-Carbohydrate Diets and All-Cause Mortality: A Systematic Review and Meta-Analysis of Observational Studies

Hiroshi Noto[1,2]*, Atsushi Goto[1,2], Tetsuro Tsujimoto[1,2], Mitsuhiko Noda[1,2]

1 Department of Diabetes and Metabolic Medicine, Center Hospital, National Center for Global Health and Medicine, Tokyo, Japan, **2** Department of Diabetes Research, Diabetes Research Center, Research Institute, National Center for Global Health and Medicine, Tokyo, Japan

Abstract

Objective: Low-carbohydrate diets and their combination with high-protein diets have been gaining widespread popularity to control weight. In addition to weight loss, they may have favorable short-term effects on the risk factors of cardiovascular disease (CVD). Our objective was to elucidate their long-term effects on mortality and CVD incidence.

Data sources: MEDLINE, EMBASE, ISI Web of Science, Cochrane Library, and ClinicalTrials.gov for relevant articles published as of September 2012. Cohort studies of at least one year's follow-up period were included.

Review methods: Identified articles were systematically reviewed and those with pertinent data were selected for meta-analysis. Pooled risk ratios (RRs) with 95% confidence intervals (CIs) for all-cause mortality, CVD mortality and CVD incidence were calculated using the random-effects model with inverse-variance weighting.

Results: We included 17 studies for a systematic review, followed by a meta-analysis using pertinent data. Of the 272,216 people in 4 cohort studies using the low-carbohydrate score, 15,981 (5.9%) cases of death from all-cause were reported. The risk of all-cause mortality among those with high low-carbohydrate score was significantly elevated: the pooled RR (95% CI) was 1.31 (1.07–1.59). A total of 3,214 (1.3%) cases of CVD death among 249,272 subjects in 3 cohort studies and 5,081 (2.3%) incident CVD cases among 220,691 people in different 4 cohort studies were reported. The risks of CVD mortality and incidence were not statistically increased: the pooled RRs (95% CIs) were 1.10 (0.98–1.24) and 0.98 (0.78–1.24), respectively. Analyses using low-carbohydrate/high-protein score yielded similar results.

Conclusion: Low-carbohydrate diets were associated with a significantly higher risk of all-cause mortality and they were not significantly associated with a risk of CVD mortality and incidence. However, this analysis is based on limited observational studies and large-scale trials on the complex interactions between low-carbohydrate diets and long-term outcomes are needed.

Low-carb diæter er forbundet med signifikant øget risiko for død af alle årsager.

Anbefalinger fra Verdensorganisationen for kræftforskning(WCRF)

Strategies for Cancer Prevention:

1. Eat mostly plant-based foods, which are low in energy density
2. Be physically active
3. Maintain a healthy weight (via steps 1 and 2, as well as reducing portion size)

Caloric Density

400 Calories of Oil

400 Calories of Beef

400 Calories of Vegetables

Stretch receptors are located throughout the stomach. When they are triggered by food, they send signals to your brain to tell you to stop eating. With high fiber, whole plant foods, you can eat the most quantity for the least amount of calories.

Comparative effectiveness of plant-based diets for weight loss: A randomized controlled trial of five different diets

Gabrielle M. Turner-McGrievy Ph.D., R.D. [a,*], Charis R. Davidson M.P.H. [a], Ellen E. Wingard M.P.H., R.D. [b], Sara Wilcox Ph.D. [b], Edward A. Frongillo Ph.D. [a]

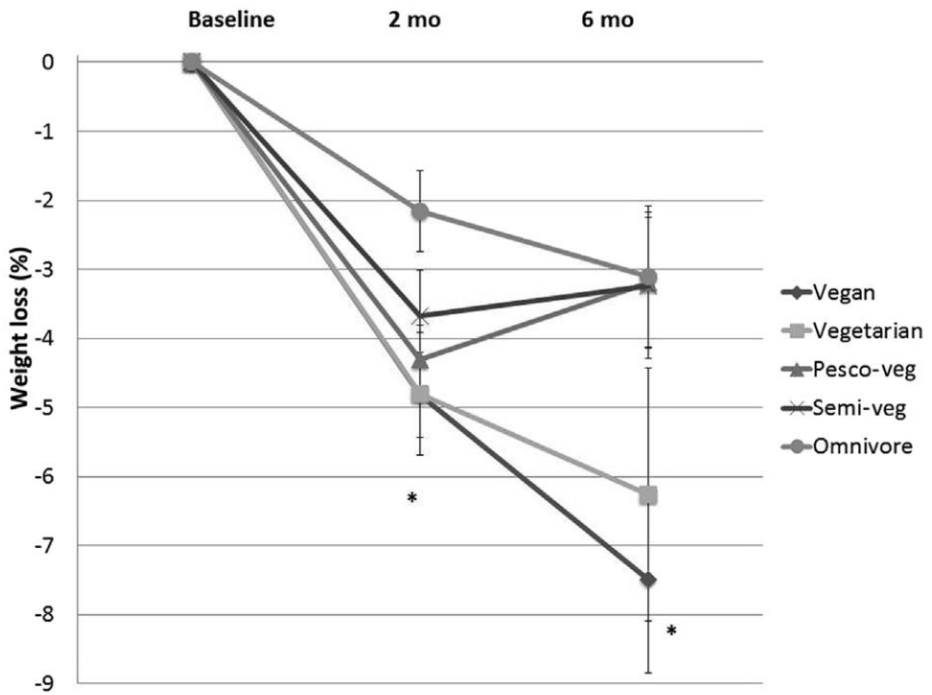


Fig. 2. Percent weight loss (±SE) during 6-mo New DIET's trial by diet group. New DIET, New Dietary Interventions to Enhance the Treatments. *P trend < 0.01.

ORIGINAL ARTICLE

The BROAD study: A randomised controlled trial using a whole food plant-based diet in the community for obesity, ischaemic heart disease or diabetes

N Wright[1], L Wilson[2], M Smith[3], B Duncan[4] and P McHugh[5]

- Almen praksis setting i socialt udsat område af New Zealand.
- 65 personer med overvægt og anden komorbiditet(T2DM, hypertension, dyslipidæmi eller iskæmisk hjertesygedom) randomiseret til en low-fat plantebaseret kost eller gængs behandling.
- Interventionsgruppen fik kostvejledning to gange ugentligt i 12 uger. 23 ud af 33 gennemførte 12 måneders opfølgning.
- Efter seks måneder oplevede interventionsgruppen et fald i BMI på 4,4, versus 0,4 i kontrolgruppen. Vægttabet var bibeholdt ved kontrol efter 12 mdr.
- Største vægttab i et studie, uden kalorierestriktion.

Blodtryk

- Hypertension defineret som 140 mmHg systolisk og/eller 90 mmHg diastolisk.
- Cirka 20-25% af danskere har hypertension.
- Ifølge WHO er optimalt systolisk tryk under 115.
- 2/3 af alle slagtilfælde og halvdelen af al iskæmisk hjertekarsygdom skyldes et systolisk tryk over 115.
- Den risikofaktor der dræber flest mennesker på verdensplan - 10,4 mio.

Kilde: World Health Organization, Ezzati M et al. Comparative Quantification of Health Risks Global and Regional Burden of Disease 7Attributable to Selected Major Risk Factors Volume 1, s 337)

Mekanismer

- Grundlæggende forkrampet kar, der er fortykket af åreforkalkning og som har mistet evnen til at udvide sig.

Årsager til overstående:

- Salt
- Fedt
- Inflammation
- Overvægt
- Rygning
- Manglende nitrat (grøntbladet grønt/rødbeder)

Restriktion af salt og rødt kød: DASH

- Dietary Approach to Stopping Hypertension.
- Sundhedsstyrelsens anbefaling.
- Baseret på vegetarisk og middelhavs kost.
- Fokus på fuldkorn, frugt, grønt, bælgfrugter, nødder, mejeriprodukter fisk og fjerkræ.
- I store randomiserede kliniske forsøg. Ses et fald på 11 mmHg ved hypertensive patienter. Øvrige 7 mmHg.

Kilde: Effects on Blood Pressure of Reduced Dietary Sodium and the Dietary Approaches to Stop Hypertension (DASH) Diet

Nutrients. 2014 Jun; 6(6): 2131–2147.
Published online 2014 May 27. doi: 10.3390/nu6062131
PMCID: PMC4073139

Beyond Meatless, the Health Effects of Vegan Diets: Findings from the Adventist Cohorts

Lap Tai Le and Joan Sabaté*

Cardiometabolic-related factors among vegan and lacto-ovo-vegetarian Adventists.

Cardio-Metabolic Factors	Person at-Risk	No. of Events	Parameter Estimates	Lacto-ovo-Vegetarian	Vegan	Cohort(s) & References
				Mean, RR, or OR (95% CI)		
Body mass index [a],*	89,224	-	Mean	25.5 (25.4, 25.5)	23.1 (23.0, 23.2)	AHS-2 [27]
Body mass index [c],‡	60,903	-	Mean ± SD	25.7 ± 5.1	23.6 ± 4.4	AHS-2 [16]
Hypertension [a],*	89,224	-	RR	0.45 (0.44, 0.47)	0.25 (0.22, 0.28)	AHS-2 [27]

Ingen kontrovers om salt

Lancet. 1989 Nov 25;2(8674):1244-7.

Double-blind study of three sodium intakes and long-term effects of sodium restriction in essential hypertension.

MacGregor GA[1], Markandu ND, Sagnella GA, Singer DR, Cappuccio FP.

Author information

Abstract

20 patients with mild hypertension (average supine blood pressure without treatment, 164/101 mm Hg) reduced their salt intake to 50 mmol (3 g) per day for a month. They then entered a 3 month double-blind randomised crossover study of three levels of sodium intake: 200, 100, and 50 mmol per day. Blood pressure was significantly reduced on the middle and lowest sodium intakes. The average fall in blood pressure from the highest to the lowest sodium intake was 16/9 mm Hg. Patients continued to restrict their sodium intake for a further year. In 16 of the 20 patients blood pressure remained well controlled with salt restriction alone. Supine blood pressure at 1 year was 142/87 (SE 3/2) mm Hg with a 24 h urinary sodium excretion of 54 (7) mmol. These results show a progressive blood pressure fall as salt intake is reduced and that, in many patients with mild essential hypertension, blood pressure can be controlled without the need for drug therapy.

12 gram salt om dagen versus 3 gram, giver forskel i systolisk blodtryk på 16 mmHg.

Potent antihypertensive action of dietary flaxseed in hypertensive patients.

Rodriguez-Leyva D[1], Weighell W, Edel AL, LaVallee R, Dibrov E, Pinneker R, Maddaford TG, Ramjiawan B, Aliani M, Guzman R, Pierce GN.

Author information

Abstract

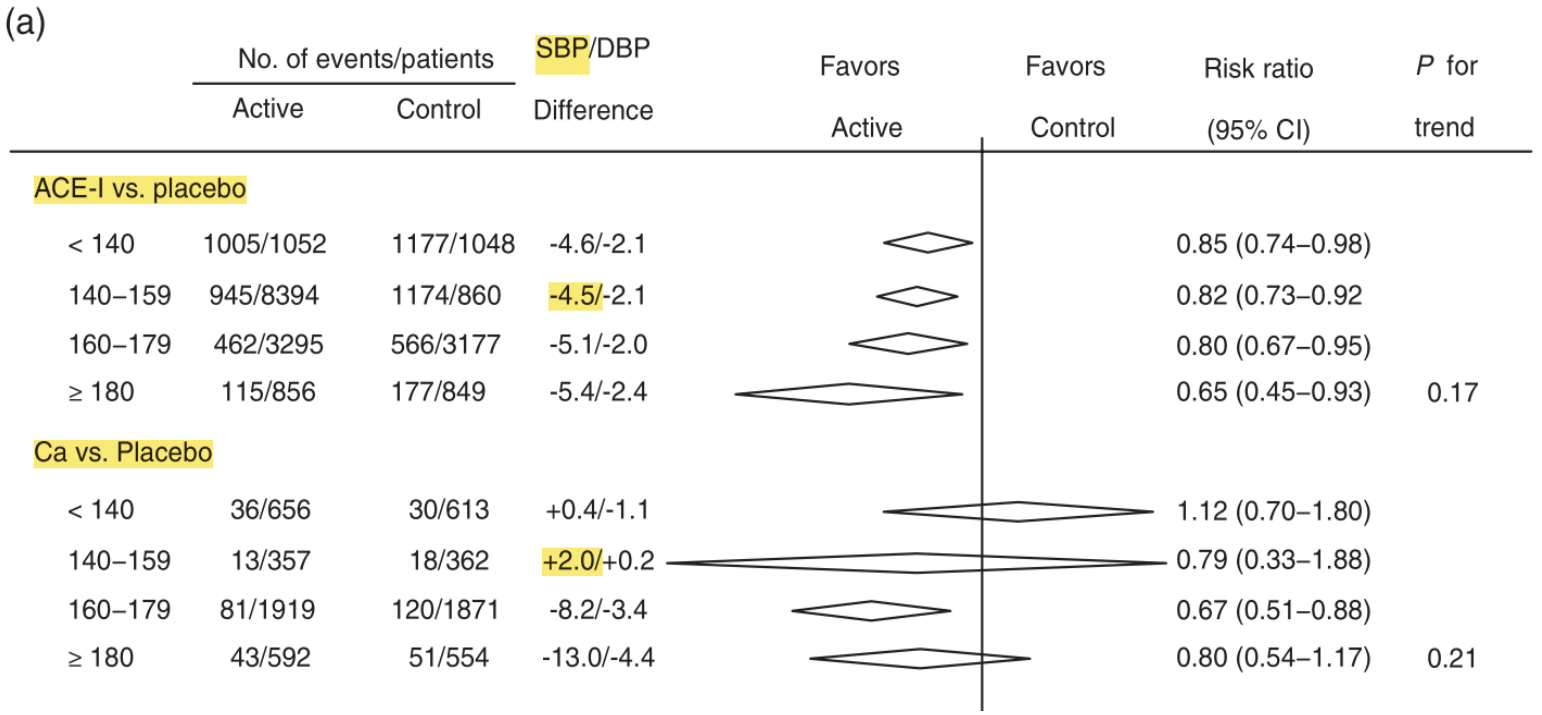
Flaxseed contains ω-3 fatty acids, lignans, and fiber that together may provide benefits to patients with cardiovascular disease. Animal work identified that patients with peripheral artery disease may particularly benefit from dietary supplementation with flaxseed. Hypertension is commonly associated with peripheral artery disease. The purpose of the study was to examine the effects of daily ingestion of flaxseed on systolic (SBP) and diastolic blood pressure (DBP) in peripheral artery disease patients. In this prospective, double-blinded, placebo-controlled, randomized trial, patients (110 in total) ingested a variety of foods that contained 30 g of milled flaxseed or placebo each day over 6 months. Plasma levels of the ω-3 fatty acid α-linolenic acid and enterolignans increased 2- to 50-fold in the flaxseed-fed group but did not increase significantly in the placebo group. Patient body weights were not significantly different between the 2 groups at any time. SBP was ≈ 10 mm Hg lower, and DBP was ≈ 7 mm Hg lower in the flaxseed group compared with placebo after 6 months. Patients who entered the trial with a SBP ≥ 140 mm Hg at baseline obtained a significant reduction of 15 mm Hg in SBP and 7 mm Hg in DBP from flaxseed ingestion. The antihypertensive effect was achieved selectively in hypertensive patients. Circulating α-linolenic acid levels correlated with SBP and DBP, and lignan levels correlated with changes in DBP. In summary, flaxseed induced one of the most potent antihypertensive effects achieved by a dietary intervention.

30 gram knust hørfrø sænker det systolisk blodtryk med 15 mmHg, hos dem med forhøjet systolisk bloddtryk(over 140)

incidence of cardiovascular events over time. A reduction of 7 mm Hg in DBP would be expected to result in a 46% and 29% decrease in the incidence of stroke and coronary heart disease, respectively.[25,26] A 10 mm Hg decrease in SBP would result in a 36% and 27% decrease in the incidence of stroke and myocardial infarctions, respectively.[25,26] Our results show a trend for a beneficial effect of flaxseed in decreasing the incidence of these events (2 patients and 1 patient suffered strokes in the placebo and flaxseed groups, respectively; and 4

The effects of blood pressure reduction and of different blood pressure-lowering regimens on major cardiovascular events according to baseline blood pressure: meta-analysis of randomized trials

Sébastien Czernichow[a,b], Alberto Zanchetti[c], Fiona Turnbull[a],



(a)

	No. of events/patients		SBP/DBP	Favors	Favors	Risk ratio	*P* for
	Active	Control	Difference	Active	Control	(95% CI)	trend
ACE-I vs. placebo							
< 140	1005/1052	1177/1048	-4.6/-2.1			0.85 (0.74–0.98)	
140–159	945/8394	1174/860	-4.5/-2.1			0.82 (0.73–0.92	
160–179	462/3295	566/3177	-5.1/-2.0			0.80 (0.67–0.95)	
≥ 180	115/856	177/849	-5.4/-2.4			0.65 (0.45–0.93)	0.17
Ca vs. Placebo							
< 140	36/656	30/613	+0.4/-1.1			1.12 (0.70–1.80)	
140–159	13/357	18/362	+2.0/+0.2			0.79 (0.33–1.88)	
160–179	81/1919	120/1871	-8.2/-3.4			0.67 (0.51–0.88)	
≥ 180	43/592	51/554	-13.0/-4.4			0.80 (0.54–1.17)	0.21

Typisk blodtrykssænkende medicin kan sænke det systoliske blodtryk med 5 mmHg

Hørfrøs bivirkninger

- 30 gram sænker LDL kolesterol med 15%.

Kilde:. Dietary flaxseed independently lowers circulating cholesterol and lowers it beyond the effects of cholesterol-lowering medications alone in patients with peripheral artery disease. J Nutrition. 2015;145:749–57

- En spiseske dækker WHOs anbefaling for dagligt indtag af Omega-3.
- Sænker muligvis langtidsblodsukker/Hb1Ac. (Op til 20 procent)

Kilde: An open-label study on the effect of flax seed powder (Linum usitatissimum) supplementation in the management of diabetes mellitus. Mani 2011

- Beskytter imod prostatakræft.

Kilde: Flaxseed supplementation (not dietary fat restriction) reduces prostate cancer proliferation rates in men presurgery. Demark-Wahnefried 2008

- Beskytter imod brystkræft.

Kilde: Flax and Breast Cancer: A Systematic Review. Flower. 2013.

- Obs Cadmium. (Max) 1 spiseske kværnet dagligt. Gerne økologisk.

Kolesterol

- Officielle anbefalinger:
- Total kolesterol mindre end 5.0 mmol/l.
- LDL-kolesterol(Det dårlige) mindre end 3 mmol/l.
- Danskernes gennemsnitlige total kolesteroltal = 6.0 mmol/l.
- 2 millioner voksne danskere har et LDL kolesterol over 3 mmol/l.

Kilde: www.hjerteforeningen.dk/forbyggelse/forhoejet-kolesterol/hvad-er-kolesterol/

- Primære årsag til åreforkalkning.
- Øger også risiko for demens, rygsmerter, impotens og brystkræft.

Optimalt Kolesterol

- Ifølge WHO er et optimalt total kolesterol under 3,8 mmol/l

Kilde: World Health Organization. Ezzati, M et al. 2004: Comparative Quantification of Health Risks. Global and Regional Burden of Disease Attributable to Selected Major Risk Factors

- I Framingham studiet fandt man ikke et eneste dødsfald af hjertekarsygdom hos de personer, hvor total kolesterol lå under 3,9 mmol/l.

Kilde: Esselstyn, CB Jr., : In Cholesterol-lowering, moderation kills. Clev Clin J Med 2000 Aug;67(8):560'

- Større analyse fundet at riskoen for åreforkalkning nærmer sig nul, ved LDL omkring 1,5 mmol/l.

Kilde: Leiter, L, 2006: PROVE-IT proved it: Lower is better – Pro. Can J Cardiol. 2006 Feb; 22(Suppl B): 91B–94B.

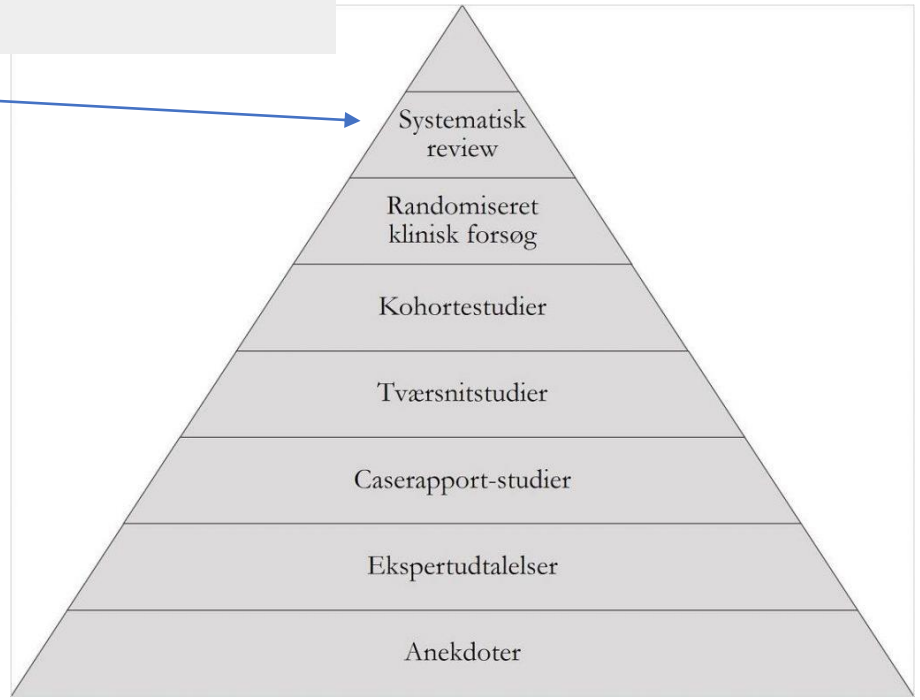
Kolesterol og mættet fedt

- Indtag af mættet fedt er den vigtigste faktor, der påvirker ens kolesterol.
- Ifølge den amerikanske hjerteforening, må man indtage 13 gram mættet fedt dagligt. (ved en et energi indtag på 2000 kalorier)
- Gennemsnitligt indtag i Danmark er 39 gram.
- Den primære kilde er mejeriprodukter, dernæst rødt kød.
- Kokos og palmeolie er også en rig kilde til mættet fedt.

Dietary lipids and blood cholesterol: quantitative meta-analysis of metabolic ward studies

BMJ 1997 ; 314 doi: http://dx.doi.org/10.1136/bmj.314.7074.112 (Published 11 January 1997)
Cite this as: *BMJ* 1997;314:112

Conclusions: In typical British diets replacing 60% of saturated fats by other fats and avoiding 60% of dietary cholesterol would reduce blood total cholesterol by about 0.8 mmol/l (that is, by 10-15%), with four fifths of this reduction being in low density lipoprotein cholesterol.



Kostfibre øger udskillelsen af kolesterol

Dietary fibre intake and risk of cardiovascular disease: systematic review and meta-analysis

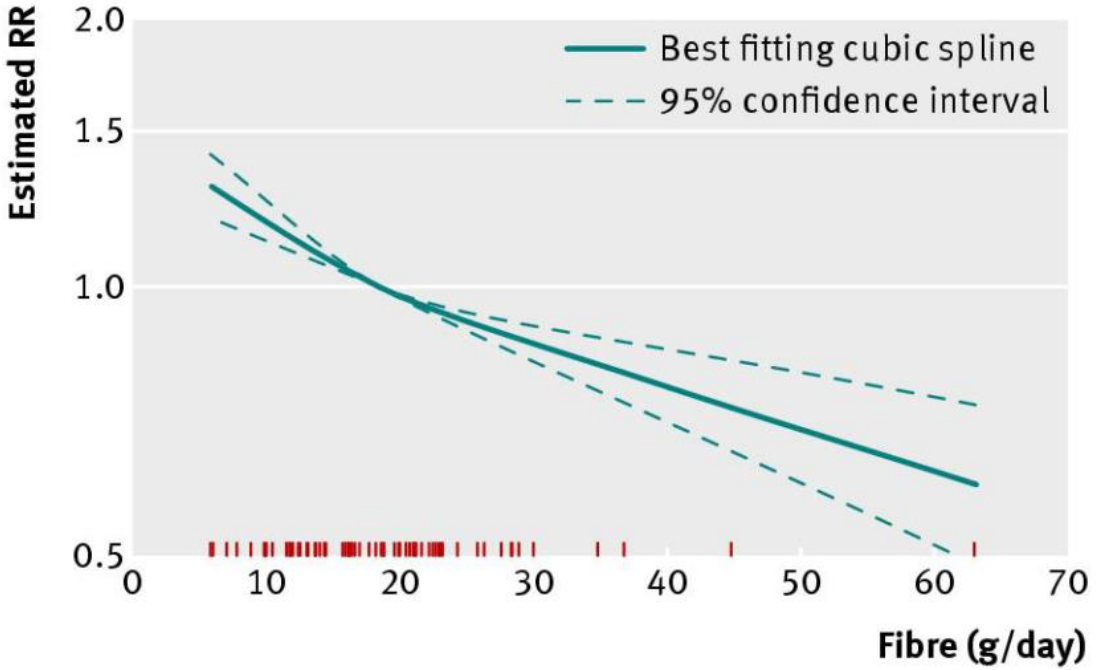


Fig 2 Risk of CHD across increasing levels of total fibre intake. RR=risk ratio

Pr gram/pr dag = Fald i risiko på 1,3 %
Portion fuldkornspasta(7 gram) = fald i risiko på 11%

Section 2. The Work Under Consideration for Publication

Did you or your institution **at any time** receive payment or services from a third party (government, commercial, private foundation, etc.) for any aspect of the submitted work (including but not limited to grants, data monitoring board, study design, manuscript preparation, statistical analysis, etc.)?

Are there any relevant conflicts of interest? ☑ Yes ☐ No

If yes, please fill out the appropriate information below. If you have more than one entity press the "ADD" button to add a row. Excess rows can be removed by pressing the "X" button.

Name of Institution/Company	Grant?	Personal Fees?	Non-Financial Support?	Other?	Comments	
Danish Agriculture and Food Council	☑	☐	☐	☐		

Section 3. Relevant financial activities outside the submitted work.

Place a check in the appropriate boxes in the table to indicate whether you have financial relationships (regardless of amount of compensation) with entities as described in the instructions. Use one line for each entity; add as many lines as you need by clicking the "Add +" box. You should report relationships that were **present during the 36 months prior to publication**.

Are there any relevant conflicts of interest? ☑ Yes ☐ No

If yes, please fill out the appropriate information below.

Name of Entity	Grant?	Personal Fees?	Non-Financial Support?	Other?	Comments	
Danish Agriculture and Food Council	☑	☑	☐	☐		

Æg øger serumkolesterol hos vegetarer

Lancet. 1984 Mar 24;1(8378):647-9.

Ingestion of egg raises plasma low density lipoproteins in free-living subjects.

Sacks FM, Salazar J, Miller L, Foster JM, Sutherland M, Samonds KW, Albers JJ, Kass EH.

Abstract

In addition to their usual diet, 17 lactovegetarian college students consumed 400 kcal of test foods per day containing one extra-large egg for three weeks and similar isocaloric eggless foods for an additional three weeks in a randomised double-blind crossover trial. Ingestion of the egg increased dietary cholesterol from 97 to 418 mg per day. Mean plasma low density lipoprotein (LDL) cholesterol was 12% higher ($p = 0.005$) and mean plasma apolipoprotein B was 9% higher ($p = 0.007$) when eggs were being consumed than during the eggless period. Mean plasma high density lipoprotein cholesterol, apolipoproteins A-I and A-II, very low density lipoprotein cholesterol, and total triglycerides did not change significantly. Thus, ingestion of egg seems selectively to raise cholesterol and protein in LDL particles in the plasma of free-living normal people. Plasma LDL may be more sensitive to cholesterol at low intakes than at moderate to high intakes.

Et stort æg øger LDL-Kolesterol med 12%

Am J Cardiol. 2009 Oct 1;104(7):947-56. doi: 10.1016/j.amjcard.2009.05.032.

Effects of plant-based diets on plasma lipids.

Ferdowsian HR[1], Barnard ND.

Author information

Abstract

Dyslipidemia is a primary risk factor for cardiovascular disease, peripheral vascular disease, and stroke. Current guidelines recommend diet as first-line therapy for patients with elevated plasma cholesterol concentrations. However, what constitutes an optimal dietary regimen remains a matter of controversy. Large prospective trials have demonstrated that populations following plant-based diets, particularly vegetarian and vegan diets, are at lower risk for ischemic heart disease mortality. The investigators therefore reviewed the published scientific research to determine the effectiveness of plant-based diets in modifying plasma lipid concentrations. Twenty-seven randomized controlled and observational trials were included. Of the 4 types of plant-based diets considered, interventions testing a combination diet (a vegetarian or vegan diet combined with nuts, soy, and/or fiber) demonstrated the greatest effects (up to 35% plasma low-density lipoprotein cholesterol reduction), followed by vegan and ovolactovegetarian diets. Interventions allowing small amounts of lean meat demonstrated less dramatic reductions in total cholesterol and low-density lipoprotein levels. In conclusion, plant-based dietary interventions are effective in lowering plasma cholesterol concentrations.

Systematisk gennemgang: En plantebaseret kost sænker LDL-Kolesterol med 35%

Når ulykken har ramt

Intensive Lifestyle Changes for Reversal of Coronary Heart Disease

Dean Ornish, MD; Larry W. Scherwitz, PhD; James H. Billings, PhD, MPH; K. Lance Gould, MD;

The Lifestyle Heart trial

- 48 patienter med moderat til svære koronare forkalkninger radomiseret til 5 års intensive livsstilsforandringer, inkluderende en lowfat plantebaseret kost, eller standard moderate livsstilsændringer.
- I interventionsgruppen gennemførte 28 ud af 20(71%). I kontrolgruppen gennemførte 15 ud af 20(75%).
- Hos interventionsgruppen var der en gennemsnitlig relativ forbedring af karforsnævringen på 7,9 procent.
- I kontrolgruppen var den gennemsnitlig relativ forværring på 27,7 procent.
- I interventionsgruppen var der 91 % færre rapporteret tilfælde af angina pectoris efter år. I kontrol gruppen var der en stigning på 186%.

Caldwell B. Esselstyn Jr, MD; Gina Gendy, MD; Jonathan Doyle, MCS; Mladen Golubic, MD, PhD; Michael F. Roizen, MD
The Wellness Institute of the Cleveland Clinic, Lyndhurst, Ohio

aesselstyn@aol.com

The authors reported no potential conflict of interest relevant to this article.

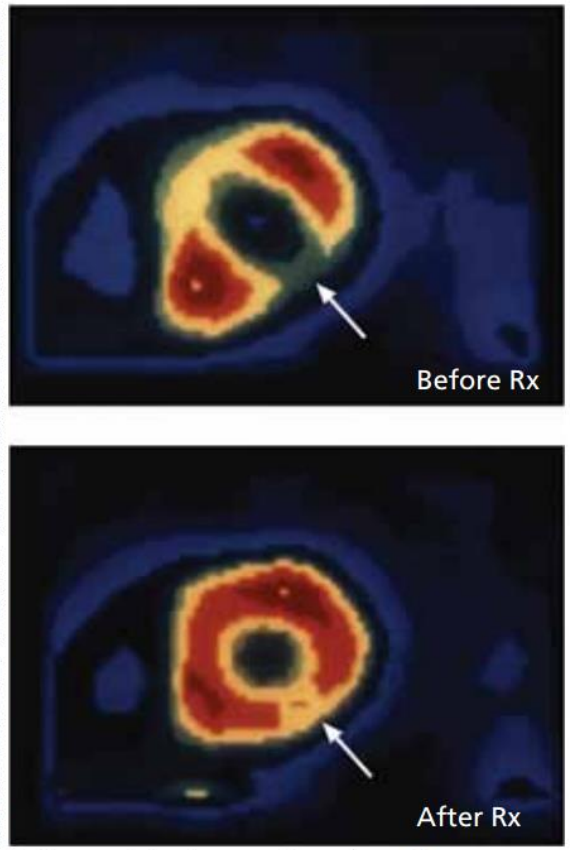
ORIGINAL RESEARCH

A way to reverse CAD?

Though current medical and surgical treatments manage coronary artery disease, they do little to prevent or stop it. Nutritional intervention, as shown in our study and others, has halted and even reversed CAD.

FIGURE 1

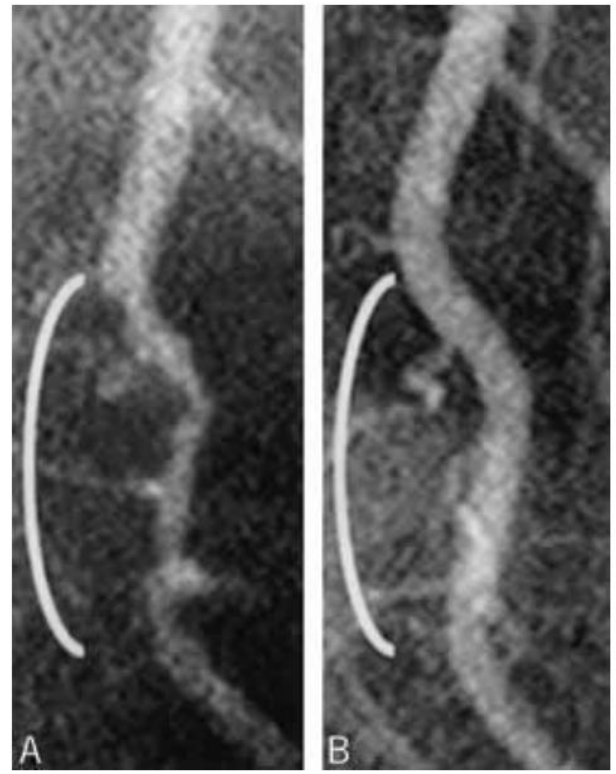
Restoration of myocardial perfusion[2]



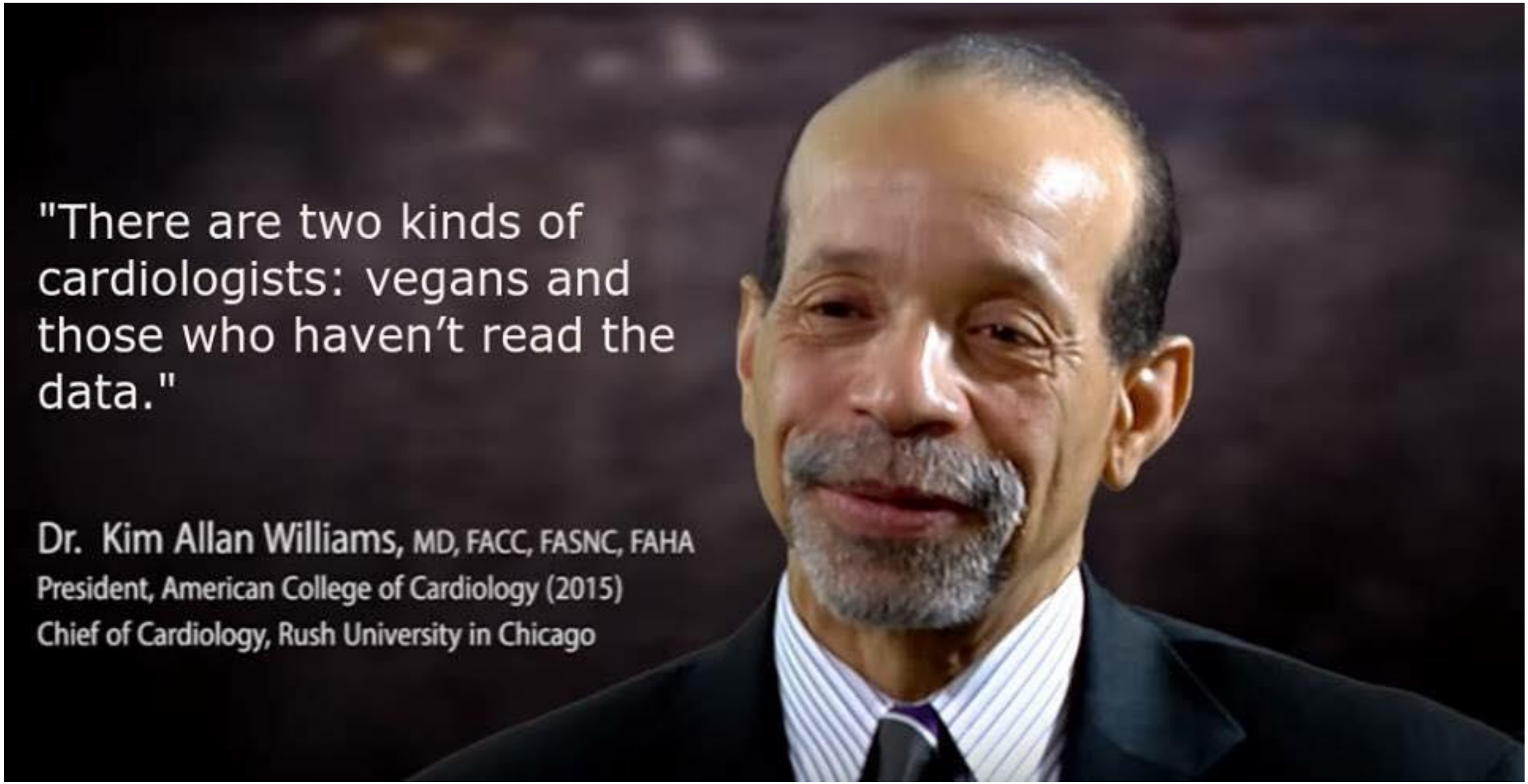
Positron emission tomography performed on a patient with coronary artery disease shows an area of myocardium with insufficient blood flow (top). Following only 3 weeks of plant-based nutritional

FIGURE 2

Reversal of coronary artery disease[4]



Coronary angiography reveals a diseased distal left anterior descending artery (A). Following 32 months of a plant-based nutritional intervention without cholesterol-lowering medication, the artery regained its normal configuration (B).


"There are two kinds of cardiologists: vegans and those who haven't read the data."
Dr. Kim Allan Williams, MD, FACC, FASNC, FAHA
President, American College of Cardiology (2015)
Chief of Cardiology, Rush University in Chicago

Insulinresistens og blodsukker

- 320.545 danskere har type 2-diabetes
- 60.000 danskere ved endnu ikke, at de har type 2-diabetes
- 300.000 danskere skønnes at have forstadie til diabetes (prædiabetes)
- 1 ud af 18 danskere har diabetes
- I gennemsnit får 79 danskere hver dag konstateret diabetes
- Antallet af diabetikere er fordoblet på 10 år
- Diabetes koster det danske samfund omkring 86 mio. kr. om dagen

Tal fra Diabetesforeningen.

doi: 10.1111/j.1742-1241.2008.01705.x

International Journal of Clinical Practice

REVIEW ARTICLE

Prediabetes: a must to recognise disease state

W. Shehab Eldin, M. Emara, A. Shoker

HbA1c (langtidsblodsukker)

Normal : Mindre end 39 mmol/mol

Prædiabetes : 39 til 47 mmol/mol

Diabetes : 48 mmol/mol eller højere

Table 2 Hazards of prediabetes

Risk	Hazards
Total mortality	40% greater than the normal population [17]
Cancer mortality	1.87 times higher than the normal population [45]
Coronary heart disease	1.33 times higher than the normal population [46]
Retinopathy	7.9% of persons with PDM [47]

PDM, prediabetes mellitus.

Mekanismer

- Inflammation

Kilde: Lipotoxicity: Effects of Dietary Saturated and Transfatty Acids. Débora. 2013.

- Intracellulær ophobning af fedt.

Kilde: Integrating Mechanisms for Insulin Resistance: Common Threads and Missing Links. Varman 2013.

- Sekundær til

- Fed kost
- Overvægt

- Sukker spiller meget begrænset rolle.

Am J Clin Nutr. 2011 Oct;94(4):1088-96. doi: 10.3945/ajcn.111.018978. Epub 2011 Aug 10.

Red meat consumption and risk of type 2 diabetes: 3 cohorts of US adults and an updated meta-analysis.

Pan A[1], Sun Q, Bernstein AM, Schulze MB, Manson JE, Willett WC, Hu FB.

Author information

Abstract

BACKGROUND: The relation between consumption of different types of red meats and risk of type 2 diabetes (T2D) remains uncertain.

OBJECTIVE: We evaluated the association between unprocessed and processed red meat consumption and incident T2D in US adults.

DESIGN: We followed 37,083 men in the Health Professionals Follow-Up Study (1986-2006), 79,570 women in the Nurses' Health Study I (1980-2008), and 87,504 women in the Nurses' Health Study II (1991-2005). Diet was assessed by validated food-frequency questionnaires, and data were updated every 4 y. Incident T2D was confirmed by a validated supplementary questionnaire.

RESULTS: During 4,033,322 person-years of follow-up, we documented 13,759 incident T2D cases. After adjustment for age, BMI, and other lifestyle and dietary risk factors, both unprocessed and processed red meat intakes were positively associated with T2D risk in each cohort (all P-trend <0.001). The pooled HRs (95% CIs) for a one serving/d increase in unprocessed, processed, and total red meat consumption were 1.12 (1.08, 1.16), 1.32 (1.25, 1.40), and 1.14 (1.10, 1.18), respectively. The results were confirmed by a meta-analysis (442,101 participants and 28,228 diabetes cases): the RRs (95% CIs) were 1.19 (1.04, 1.37) and 1.51 (1.25, 1.83) for 100 g unprocessed red meat/d and for 50 g processed red meat/d, respectively. We estimated that substitutions of one serving of nuts, low-fat dairy, and whole grains per day for one serving of red meat per day were associated with a 16-35% lower risk of T2D.

CONCLUSION: Our results suggest that red meat consumption, particularly processed red meat, is associated with an increased risk of T2D.

100 gram rødt kød og 50 gram forarbejdet kød øger risikoen for T2DM med henholdvis 19% og 51%.

Table 6

Cardiometabolic-related factors among vegan and lacto-ovo-vegetarian Adventists.

Cardio-Metabolic Factors	Person at-Risk	No. of Events	Parameter Estimates	Lacto-ovo-Vegetarian	Vegan	Cohort(s) & References
				Mean, RR, or OR (95% CI)		
Diabetes [a],*	89,224	-	RR	0.39 (0.36, 0.42)	0.22 (0.18, 0.28)	AHS-2 [27]
Type-2 Diabetes [c],‡	60,903	3394	OR	0.54 (0.49, 0.60)	0.51 (0.40, 0.66)	AHS-2 [16]
Diabetes Mellitus [d],♠	41,387	616	OR	0.62 (0.50, 0.76)	0.38 (0.24, 0.62)	

Can J Diabetes. 2016 Oct;40(5):471-477. doi: 10.1016/j.jcjd.2016.02.011. Epub 2016 Jul 28.

A Comprehensive Review of the Literature Supporting Recommendations From the Canadian Diabetes Association for the Use of a Plant-Based Diet for Management of Type 2 Diabetes.

Rinaldi S[1], Campbell EE[1], Fournier J[1], O'Connor C[1], Madill J[2].

Author information

Abstract

Type 2 diabetes mellitus is considered one of the fastest growing diseases in Canada, representing a serious public health concern. Thus, clinicians have begun targeting modifiable risk factors to manage type 2 diabetes, including dietary patterns such as a plant-based diets (PBDs). The Canadian Diabetes Association has included PBDs among the recommended dietary patterns to be used in medical nutrition therapy for persons with type 2 diabetes. To support knowledge translation, this review summarizes the current literature relating to PBDs and the prevalence of type 2 diabetes, its clinical applications and its acceptability in the management of type 2 diabetes as well as its application in community settings. This comprehensive review seeks to close the literature gap by providing background and rationale to support the use of PBDs as medical nutrition therapy. Within this review is support from large observational studies, which have shown that PBDs were associated with lower prevalence of type 2 diabetes. As well, intervention studies have shown that PBDs were just as effective, if not more effective, than other diabetes diets in improving body weight, cardiovascular risk factors, insulin sensitivity, glycated hemoglobin levels, oxidative stress markers and renovascular markers. Furthermore, patient acceptability was comparable to other diabetes diets, and PBDs reduced the need for diabetes medications. Diabetes education centres in Canada could improve patients' perceptions of PBDs by developing PBD-focused education and support as well as providing individualized counselling sessions addressing barriers to change. The development of more standardized and user-friendly PBD practice guidelines could overcome the disparity in recommendations and, thereby, increase how frequently practitioners recommend PBDs. Based on current published research, PBDs lend support in the management of type 2 diabetes.

Den canadiske diabetesforening anbefaler plantebaseret kost som del af behandlingen for T2DM.

Inflammation

- Engelsk for betændelse.
- Bruges ofte om den ikke-bakterielle generelle betændelsestilstand i kroppen.
- Kommer som følge af et overaktivt immunforsvar.
- Forbundet med diabetes, gigt-sygdomme, eksem, akne, astma, KOL, kræft, hjertekarsygdomme, multipel sklerose, inflammatoriske tarmsygdomme, depression…….

Hvad kommer inflammation af.

- Alt hvad immunforsvaret vurderer som fremmed.
- Toxiner. Ex endotoxiner og miljøtoxiner(PCB og dioxiner)
- Prooxidanter: Tobak, mættet fedt, kolesterol, salt, hæm-jern og stegemutagener.
- Mangel på Antioxidanter: Vitaminer og fytokemikalier.
- Ratio af Omega-3 : Omega-6.
- Acetylsalicylsyre.
- Overvægt.
- Stress

Anti-Inflammatory Effects of a Vegan Diet Versus the American Heart Association-Recommended Diet in Coronary Artery Disease Trial.

Shah B[1,2], Newman JD[1], Woolf K[3], Ganguzza L[1], Guo Y[4], Allen N[1], Zhong J[4], Fisher EA[1], Slater J[1].

Author information

Abstract

Background Dietary interventions may play a role in secondary cardiovascular prevention. hsCRP (High-sensitivity C-reactive protein) is a marker of risk for major adverse cardiovascular outcomes in coronary artery disease. Methods and Results The open-label, blinded end-point, EVADE CAD (Effects of a Vegan Versus the American Heart Association-Recommended Diet in Coronary Artery Disease) trial randomized participants (n=100) with coronary artery disease to 8 weeks of a vegan or American Heart Association-recommended diet with provision of groceries, tools to measure dietary intake, and dietary counseling. The primary end point was high-sensitivity C-reactive protein. A linear regression model compared end points after 8 weeks of a vegan versus American Heart Association diet and adjusted for baseline concentration of the end point. Significance levels for the primary and secondary end points were set at 0.05 and 0.0015, respectively. A vegan diet resulted in a significant 32% lower high-sensitivity C-reactive protein (β, 0.68, 95% confidence interval [0.49-0.94]; P=0.02) when compared with the American Heart Association diet. Results were consistent after adjustment for age, race, baseline waist circumference, diabetes mellitus, and prior myocardial infarction (adjusted β, 0.67 [0.47-0.94], P=0.02). The degree of reduction in body mass index and waist circumference did not significantly differ between the 2 diet groups (adjusted β, 0.99 [0.97-1.00], P=0.10; and adjusted β, 1.00 [0.98-1.01], P=0.66, respectively). There were also no significant differences in markers of glycemic control between the 2 diet groups. There was a nonsignificant 13% reduction in low-density lipoprotein cholesterol with the vegan diet when compared with the American Heart Association diet (adjusted β, 0.87 [0.78-0.97], P=0.01). There were no significant differences in other lipid parameters. Conclusions In patients with coronary artery disease on guideline-directed medical therapy, a vegan diet may be considered to lower high-sensitivity C-reactive protein as a risk marker of adverse outcomes. Clinical Trial Registration URL : http://www.clinicaltrials.gov . Unique identifier: NCT 02135939.

Vegansk kost sænker CRP med 36% versus moderat sund kost.

QJM

Salicylic acid: a link between aspirin, diet and the prevention of colorectal cancer

J.R. PATERSON and J.R. LAWRENCE

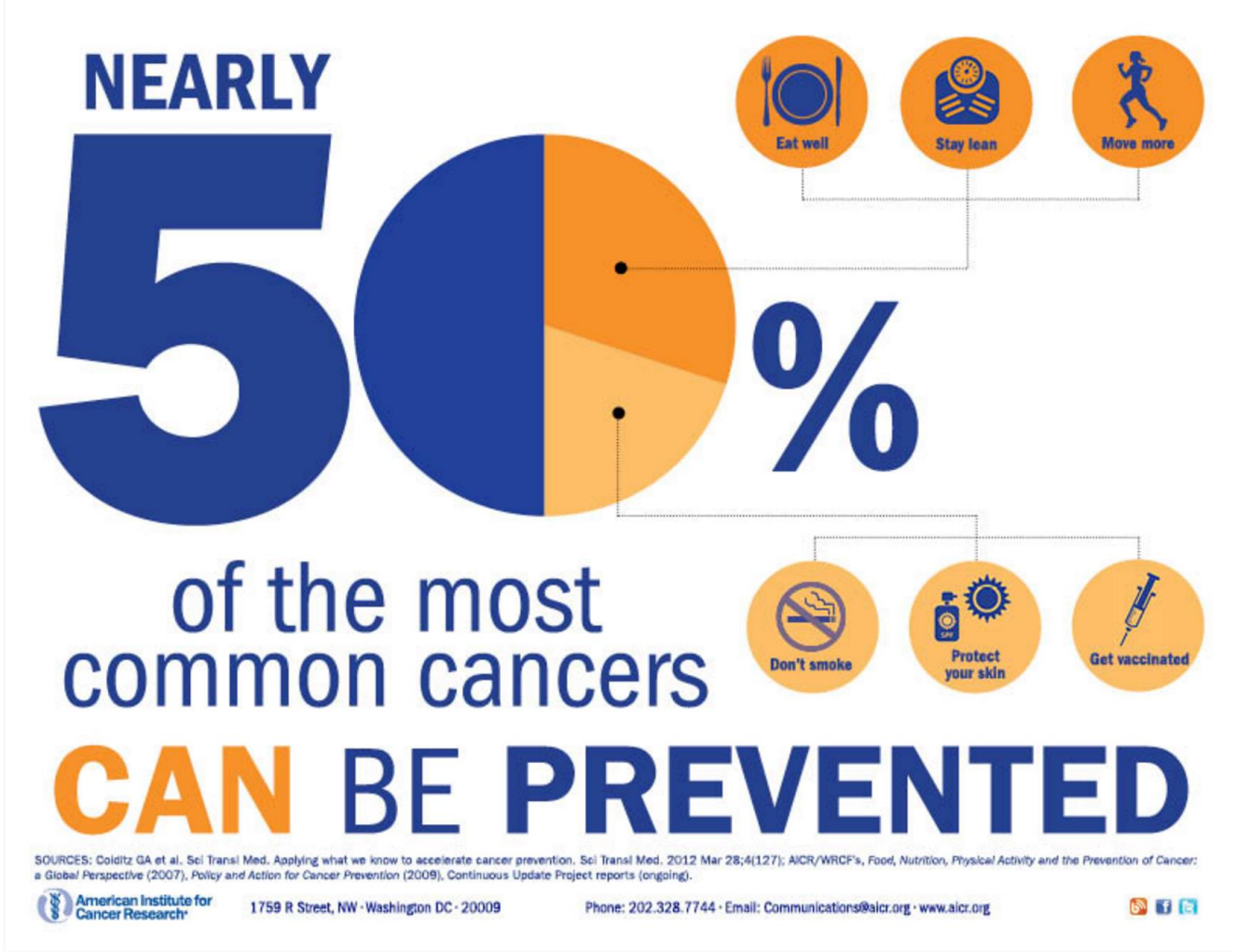
From the Departments of Biochemistry and Medicine, Dumfries and Galloway Royal Infirmary, Dumfries, UK

Aspirin (acetylsalicylic acid) occupies a unique place in medicine. Since its clinical introduction in 1899, we have become familiar with this drug and its many surprising effects, including reduced risk of cardiovascular disease and possibly colorectal cancer, as well as its analgesic, anti-inflammatory and anti-platelet actions. Aspirin is thought to reduce the risk of colorectal cancer, perhaps by as much as 40%, a property that is shared by other non-steroidal anti-inflammatory drugs (NSAIDS).[1,2] Evidence for this effect comes from multiple epidemiological studies, most of which have found that aspirin reduces the risk of colorectal adenoma[3] and carcinoma,[4] as well as from animal models where aspirin inhibits chemical-induced colonic carcinogenesis.[5,6] Aspirin belongs to a family of compounds called the salicylates, the simplest of which is salicylic acid.

health benefits or not. Paterson *et al.*[15] identified salicylic acid and two other salicylates as normal constituents of serum in individuals not taking salicylate drugs. Salicylates were found to be present in every serum sample analysed. The same group went on to show that higher serum concentrations of salicylic acid were present in vegetarians than in non-vegetarians, and that there was overlap in the serum concentrations between vegetarians and those taking aspirin (75 mg daily).[16]

We postulate that dietary salicylates have beneficial properties because of their effect on the 'inflammatory process', a concept that would explain why both aspirin and a diet rich in fruits and vegetables help prevent colorectal cancer (Figure 1), and probably other inflammatory diseases. Inflammatory processes are involved in carcinogenesis and cancer growth.[17] Most human

Risikoen for kræft



Review

Beyond Meatless, the Health Effects of Vegan Diets: Findings from the Adventist Cohorts

Lap Tai Le and Joan Sabaté *

Table 4. All-cancer and cancer-specific sites among vegetarian and non-vegetarian Adventists.

Cancer Sites	Person at-Risk	No. of Events	Parameter Estimates	Non-vegetarian	Vegetarian	Cohort(s) & References
				RR or HR (95% CI)		
Colon [a],*	34,198	107	RR	1 [*referent*]	0.55 (0.35, 0.81)	AHS-1 [21]
Colon [b],†	34,198	166	RR	1 [*referent*]	0.39 (0.19, 0.83)	AHS-1 [24]
Gastrointestinal Tract [c],♠	69,120	495	HR	1 [*referent*]	0.77 (0.63, 0.93)	AHS-2 [20]
Lung [h]	34,198	45	RR	1 [*referent*]	0.86 (0.42, 1.79)	AHS-1 [21]
Respiratory Tract [c]	69,120	170	HR	1 [*referent*]	0.75 (0.54, 1.04)	AHS-2 [20]

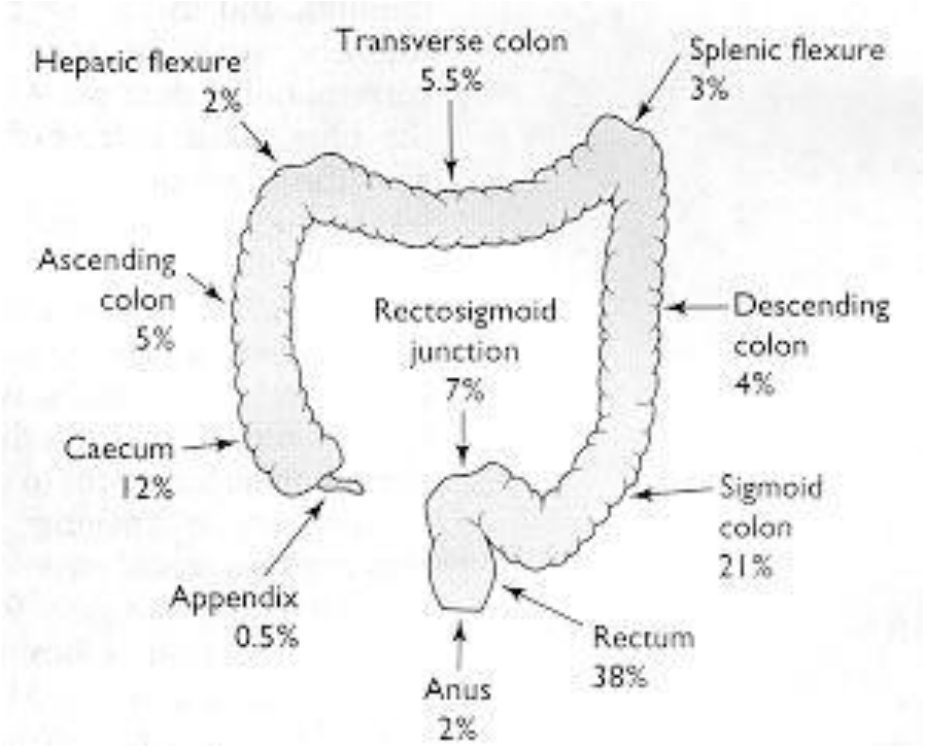
WHOs risikovurdering

- 100 gram rødt kød øger risikoen for tyk- og endetarmskræft med 16%
- 50 gram forarbejdet kød øger risikoen med 18
- For en typisk dansk mand der indtager ca 100 gram rødt kød om dagen og 50 gram forarbejdet kød, så vil det betyde at 1 ud 50 får tyk- og endetarmskræft som direkte konsekvens af deres kødindtag.

Mekanismer bag køds association til kræft.

- Nitrosaminer.
- Hæm-jern.
- Hydrogensulfid.
- Stegemutagener (HCA + PAH).
- Sekundære galdesalte.
- Overvægt.
- Inflammation.
- Østrogen.
- Fremmer kræftens blodforsyning.
- Insulinresistens.

Lokalisation af tumor



Cancer Prevention in Primary Care Screening for colorectal cancer

BMJ 1994 ; 309 doi: https://doi.org/10.1136/bmj.309.6951.382 (Published 06 August 1994)
Cite this as: *BMJ* 1994;309:382

Original Articles

Vegetarian, vegan diets and multiple health outcomes: A systematic review with meta-analysis of observational studies

studies. **Conclusions**: This comprehensive meta-analysis reports a significant protective effect of a vegetarian diet versus the incidence and/or mortality from ischemic heart disease (−25%) and incidence from total cancer (−8%). Vegan diet conferred a significant reduced risk (−15%) of incidence from total cancer.

Soja og brystkræft.

AICR'S
FOODS THAT FIGHT CANCER™

Soy

Intro | Research | Tips | Recipes | FAQ | References

Soy

Tofu, tempeh, edamame, soymilk and miso are a few of the soy foods people around the world enjoy every day. Soy is one of the few plant foods with all the amino acids your body needs to make protein. You may see claims on food packages linking soy protein to lower risk of coronary heart disease. Because soy contains estrogen-like compounds, there was fear that soy may raise risk of hormone-related cancers. Evidence shows this is not true.

Soy Food Consumption and Breast Cancer Prognosis

Bette J. Caan[1], Loki Natarajan[2], Barbara Parker[2], Ellen B. Gold[3], Cynthia Thomson[4], Vicky Newman[2], Cheryl L. Rock[2], Minya Pu[2], Wael Al-Delaimy[2], and John P. Pierce[2]

Abstract

Background: Contrary to earlier clinical studies suggesting that soy may promote breast tumor growth, two recent studies show that soy-containing foods are not adversely related to breast cancer prognosis. We examined, using data from the Women's Healthy Eating and Living (WHEL) study, the effect of soy intake on breast cancer prognosis.

Methods: Three thousand eighty-eight breast cancer survivors, diagnosed between 1991 and 2000 with early-stage breast cancer and participating in WHEL, were followed for a median of 7.3 years. Isoflavone intakes were measured postdiagnosis by using a food frequency questionnaire. Women self-reported new outcome events semiannually, which were then verified by medical records and/or death certificates. HRs and 95% CIs representing the association between either a second breast cancer event or death and soy intake were computed, adjusting for study group and other covariates, using the delayed entry Cox proportional hazards model.

Results: As isoflavone intake increased, risk of death decreased (P for trend $= 0.02$). Women at the highest levels of isoflavone intake (>16.3 mg isoflavones) had a nonsignificant 54% reduction in risk of death.

Conclusion: Our study is the third epidemiologic study to report no adverse effects of soy foods on breast cancer prognosis.

Impact: These studies, taken together, which vary in ethnic composition (two from the United States and one from China) and by level and type of soy consumption, provide the necessary epidemiologic evidence that clinicians no longer need to advise against soy consumption for women with a diagnosis of breast cancer.

Cancer Epidemiol Biomarkers Prev; 20(5); 854–8.