



Une alimentation saine comme partie intégrante d'une alimentation durable

10e Conférence Agroscope sur la durabilité
26 janvier 2023

PD Dr Guy Vergères
Agroscope





Alimentation saine et durable - Principes directeurs





Remplacement de l'alimentation d'origine animale par une alimentation d'origine végétale

Prospective cohorts	EPIC-Oxford, UK (n=65'429)					AHS-2, USA (n=96'194)				
	Regular meat-eaters	Low meat-eaters	Fish-eaters	Vegetarians	Vegans	Non-vegetarian	Semi-vegetarian	Pesco-vegetarian	Lacto-ovo vegetarian	Vegans
Mortality, hazard ratios ^a										
All causes	1.00	0.93 (0.86, 1.00)	0.96 (0.87, 1.06)	1.00 (0.93, 1.08)	1.14 (0.97, 1.35)	1.00	0.92 (0.75, 1.13)	0.81 (0.69, 0.94)	0.91 (0.82, 1.00)	0.85 (0.73, 1.01)
Ischemic heart disease	1.00	0.93 (0.76, 1.15)	1.00 (0.75, 1.34)	1.00 (0.80, 1.25)	0.85 (0.51, 1.44)	1.00	0.92 (0.57, 1.51)	0.65 (0.43, 0.97)	0.82 (0.62, 1.06)	0.90 (0.60, 1.33)
Cardiovascular disease	1.00	0.96 (0.84, 1.10)	1.22 (1.02, 1.46)	1.10 (0.95, 1.27)	1.16 (0.84, 1.59)	1.00	0.85 (0.63, 1.16)	0.80 (0.62, 1.03)	0.90 (0.76, 1.06)	0.91 (0.71, 1.16)
Cerebrovascular disease ^b	1.00	0.88 (0.68, 1.13)	1.36 (0.99, 1.86)	1.17 (0.90, 1.51)	1.63 (0.98, 2.69)	—	—	—	—	—
All cancers	1.00	0.96 (0.87, 1.08)	0.83 (0.70, 0.97)	0.91 (0.80, 1.03)	1.14 (0.88, 1.47)	1.00	0.94 (0.66, 1.35)	0.94 (0.72, 1.22)	0.90 (0.75, 1.09)	0.92 (0.68, 1.24)
Morbidity and risk factors, relative risks/odds ratios										
All cancers ^{c, d}	—	1.00 ^e	0.89 (0.81, 0.98)	0.89 (0.83, 0.96)	0.81 (0.66, 0.98)	1.00	0.98 (0.82, 1.17)	0.88 (0.77, 1.01)	0.93 (0.85, 1.02)	0.84 (0.72, 0.99)
Colorectal ^{c, f}	—	1.00 ^e	0.67 (0.48, 0.92)	1.00 (0.81, 1.24)	1.29 (0.81, 2.07)	1.00	0.93 (0.62, 1.38)	0.58 (0.40, 0.84)	0.83 (0.66, 1.05)	0.86 (0.59, 1.24)
Breast (female) ^{c, b}	—	1.00 ^e	1.09 (0.93, 1.28)	0.96 (0.84, 1.10)	0.91 (0.61, 1.34)	—	—	—	—	—
Prostate ^{c, b}	—	1.00 ^e	0.89 (0.81, 0.98)	0.90 (0.84, 0.97)	0.82 (0.68, 1.00)	—	—	—	—	—
Hypertension ^{g, h}	—	—	—	—	—	1.00	0.92 (0.70, 1.50)	—	0.57 (0.36, 0.92)	0.37 (0.19, 0.74)
Type 2 diabetes ^{i, h}	—	—	—	—	—	1.00	0.49 (0.31, 0.76)	0.79 (0.58, 1.09)	0.62 (0.50, 0.76)	0.38 (0.24, 0.62)
Diverticular disease ^{k, b}	—	1.00	0.90 (0.71, 1.16)	0.73 (0.58, 0.92)	0.28 (0.10, 0.74)	—	—	—	—	—
Metabolic syndrome (%) ^{k, h}	—	—	—	—	—	39.7	37.6	—	25.2	—
BMI (kg/m ²) ^l	—	23.7	22.8	22.9	22.2	28.6	27.2	26.2	25.9	24.0

Segovia-Siapco & Sabaté. Eur. J. Clin. Nutr. 2019; 72: 60-70

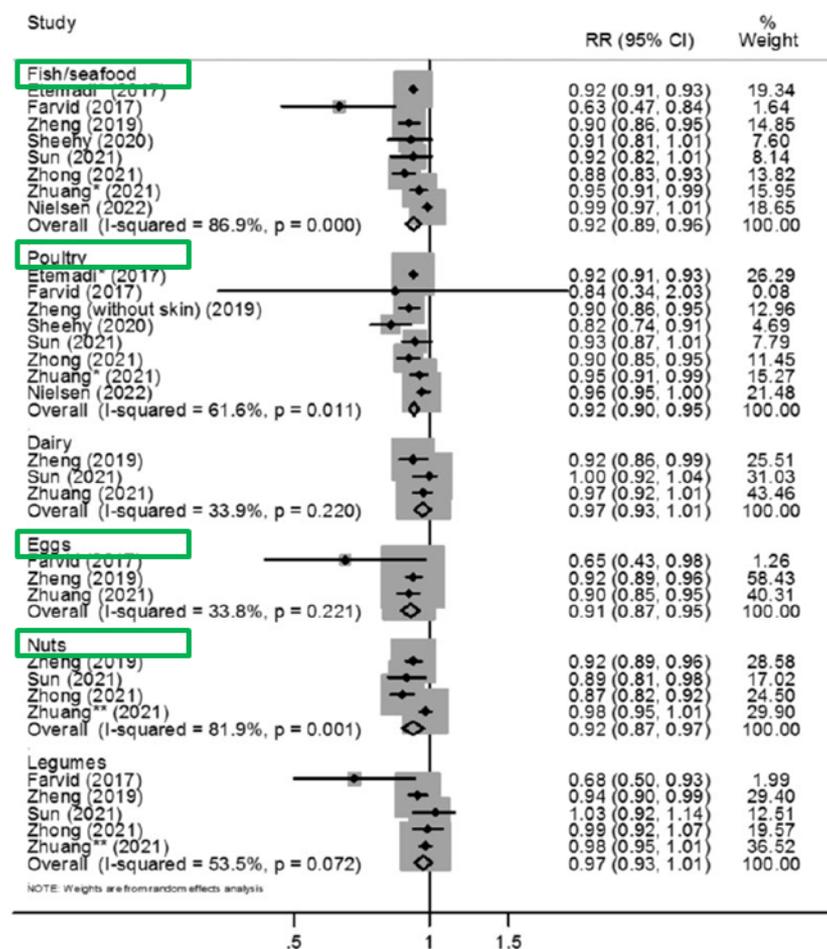
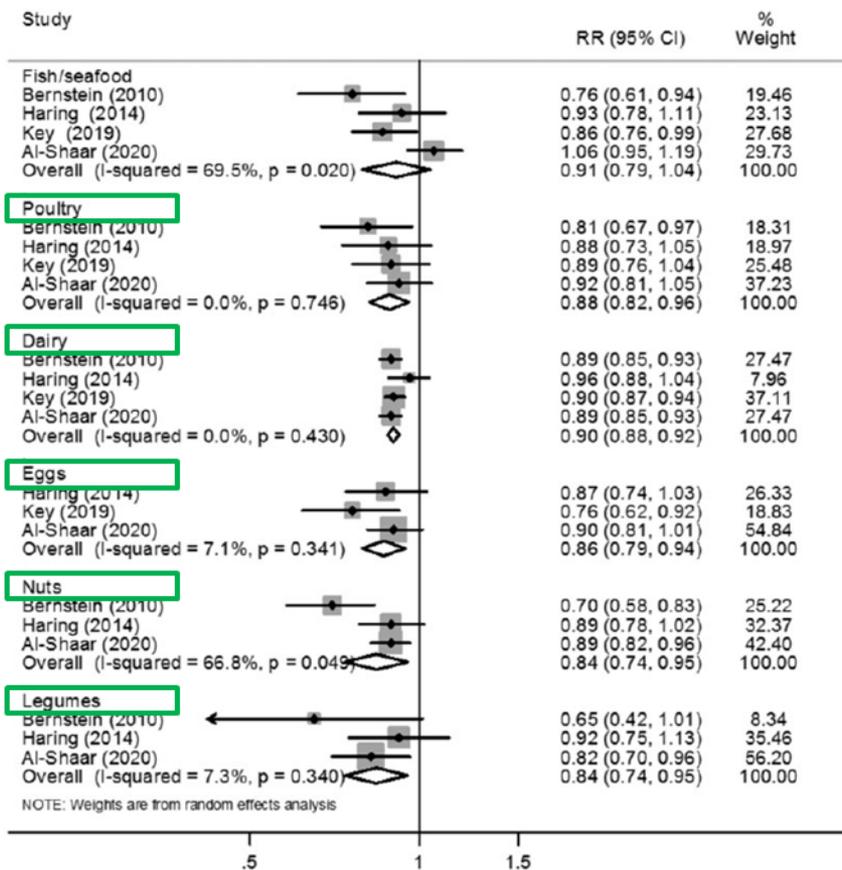


Remplacement de la viande rouge par d'autres sources de protéines

Meta-analyses of prospective studies

All-cause mortality

Coronary heart disease

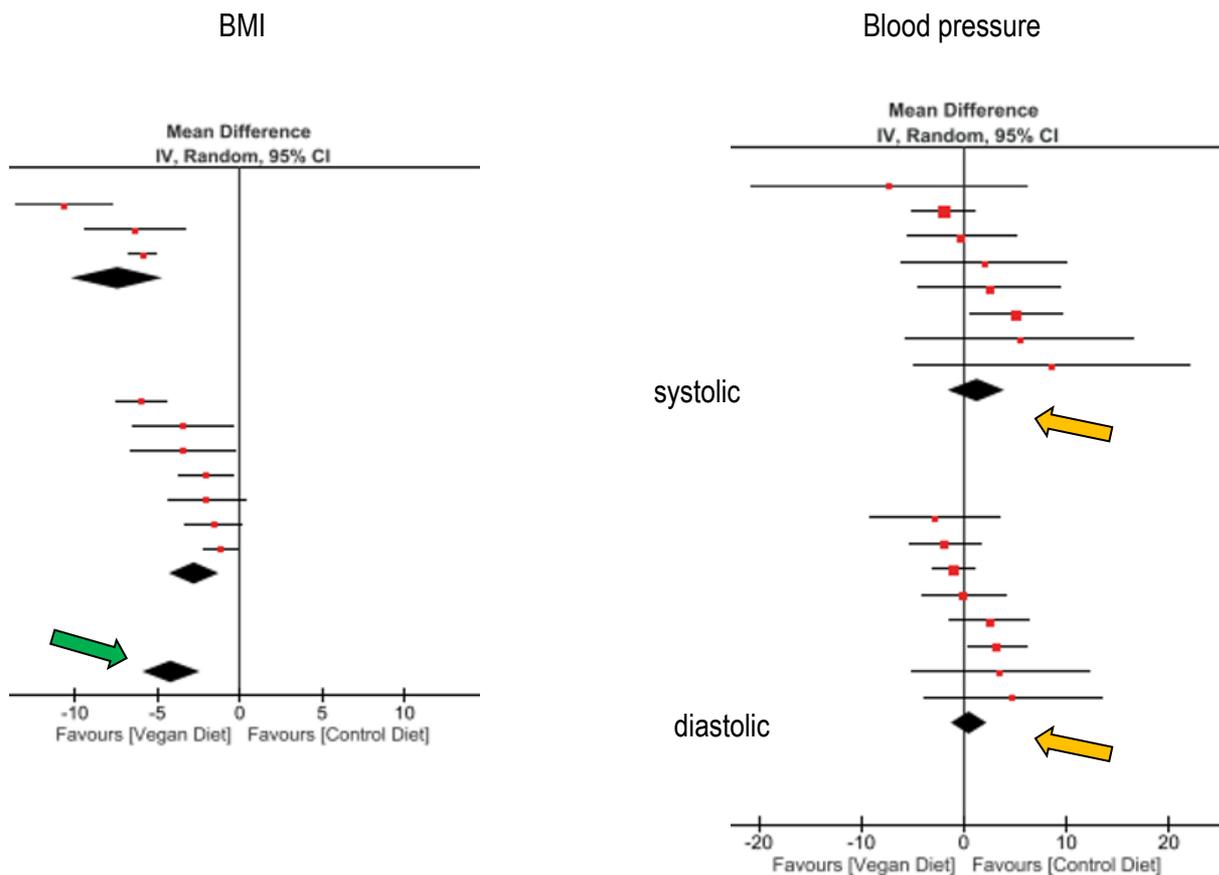


Hidayat *et al.* Nutr. Rev. 2022; 80: 1959-1973



Effets des régimes végétaliens sur la santé cardiométabolique

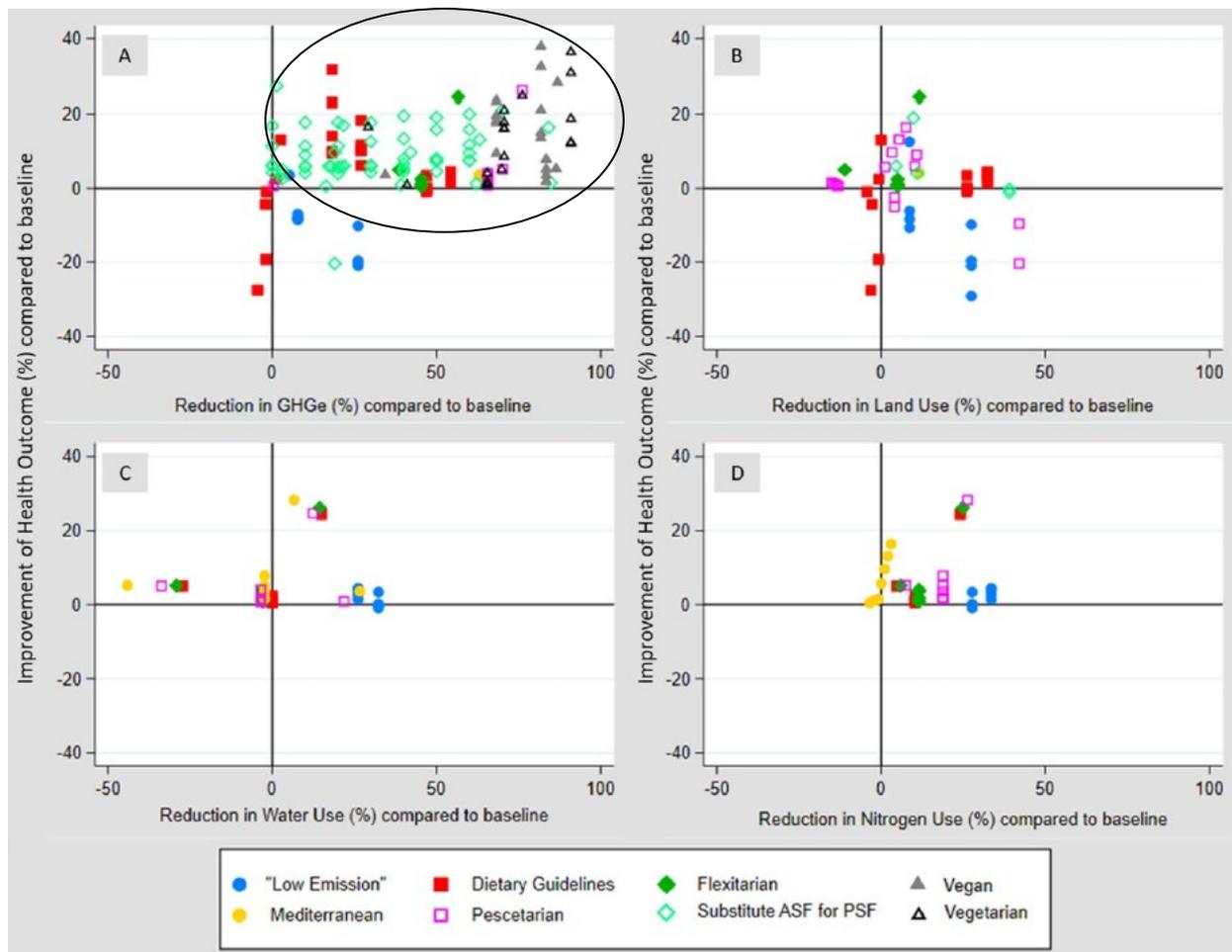
Meta-analysis of randomized controlled trials



Termansen *et al. Obesity Rev.* 2022; 23:e13462



Association de l'empreinte environnementale des "régimes alimentaires durables" avec la santé

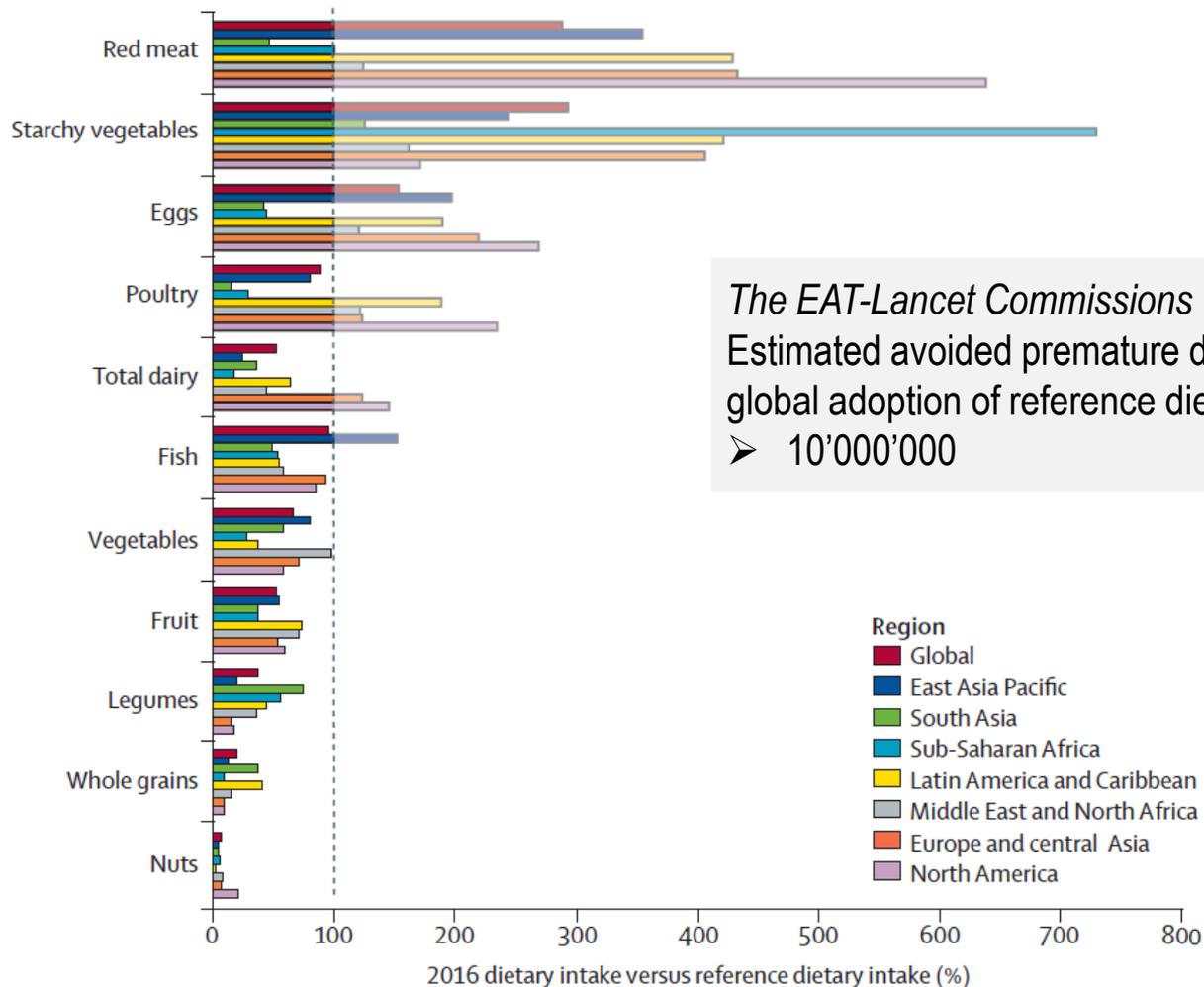


Jarmul *et al.* Environ. Res. Lett. 2020; 15: 123014

Alimentation durable et saine / guy.vergeres@agroscope.admin.ch / Reckenholz, 26. Janvier 2023



“The Great Food Transformation”



The EAT-Lancet Commissions
 Estimated avoided premature deaths per year among adults by global adoption of reference diet
 ➤ 10'000'000

Willett *et al.* Lancet. 2019; 393: 447-492



Recommandations nutritionnelles du Consortium NutriRECS

Evaluation of randomized trials and cohort studies

Outcome

Unprocessed Red Meat

Risk Difference

Certainty of Evidence

Cardiovascular

4 fewer per 1000 persons

Very low

This Issue

Views **190,298**

Web of Science **16**

Altmetric **2794**

Medical News & Perspectives

January 15, 2020

Backlash Over Meat Dietary Recommendations Raises Questions About Corporate Ties to Nutrition Scientists

Rita Rubin, MA

JAMA. 2020;323(5):401-404. doi:10.1001/jama.2019.21441

Recommendations: The panel suggests that adults continue current unprocessed red meat consumption (weak recommendation, low-certainty evidence). Similarly, the panel suggests adults continue current processed meat consumption (weak recommendation, low-certainty evidence).

Johnston *et al.* Ann. Intern. Med. 2019; 171: 756-764



Doit-on éviter de consommer des produits d'origine animale pour réduire le risque de maladies chroniques ?

Children and adults should avoid consuming animal products to reduce risk for chronic disease: YES.

Barnard ND, et al. *Am J Clin Nutr.* 2020. PMID: 32889521

Children and adults should avoid consuming animal products to reduce risk for chronic disease: NO.

Leroy F, et al. *Am J Clin Nutr.* 2020. PMID: 32889537

Children and adults should avoid consuming animal products to reduce the risk for chronic disease: Debate Consensus.

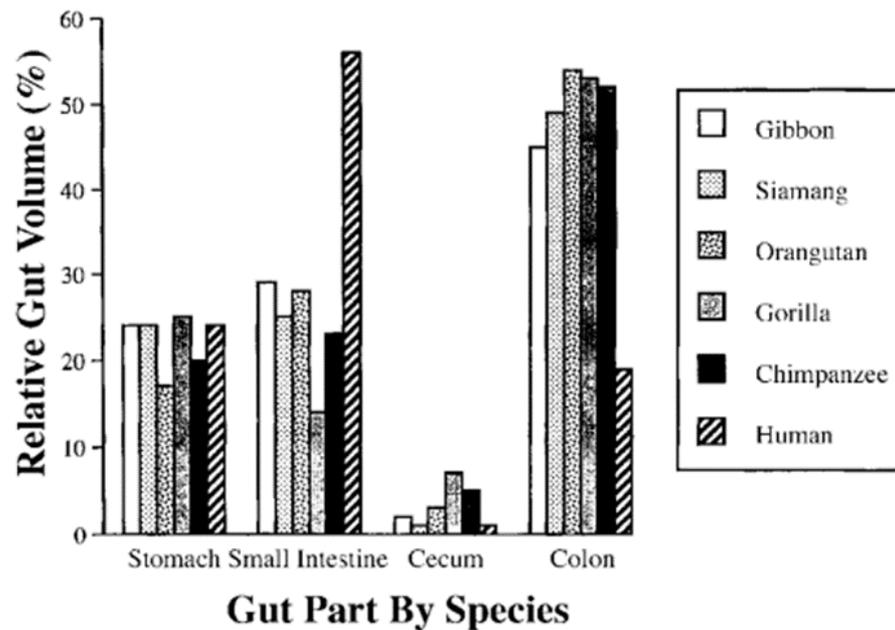
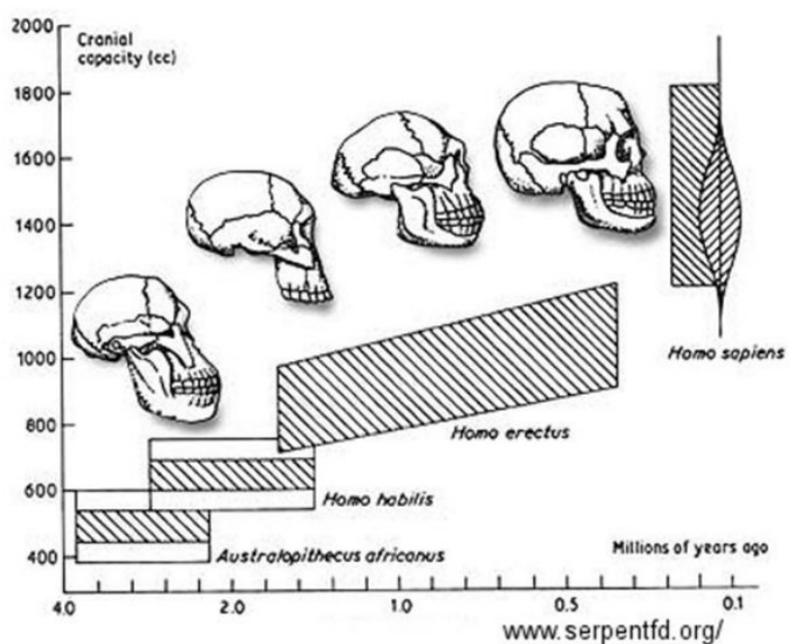
Barnard ND, et al. *Am J Clin Nutr.* 2020. PMID: 32889545



Barnard and Leroy. *Am. J. Clin. Nutr.* 2020

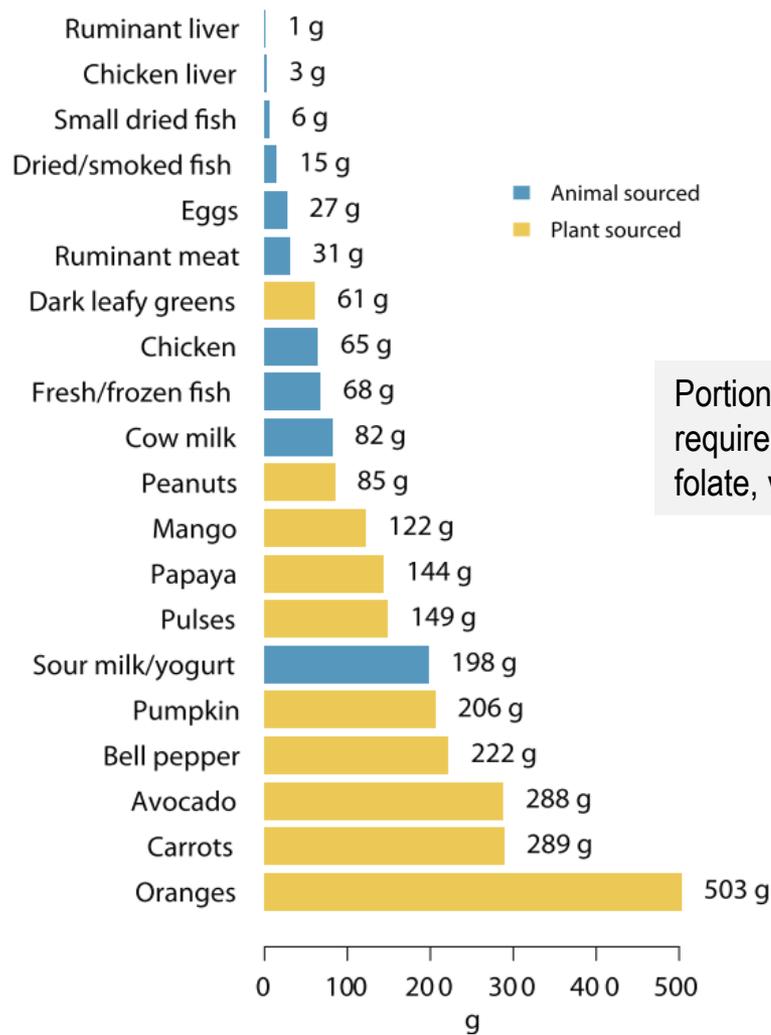


Consommation de viande et évolution de *Homo*





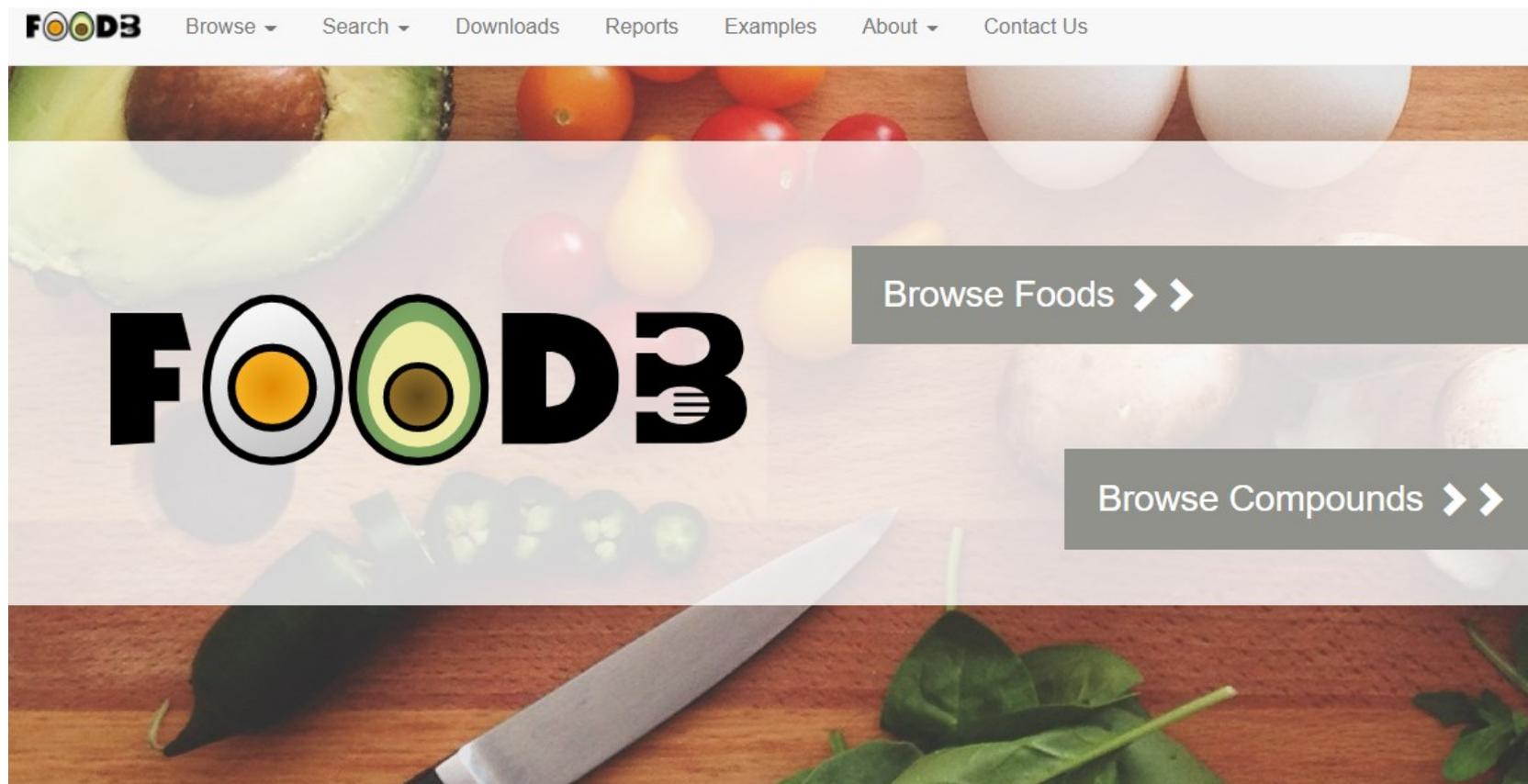
Un argument contre la limitation drastique du bétail dans le système alimentaire



Portion size to achieve 33% of requirements for iron, vitamin A, zinc, folate, vitamin B12, and calcium



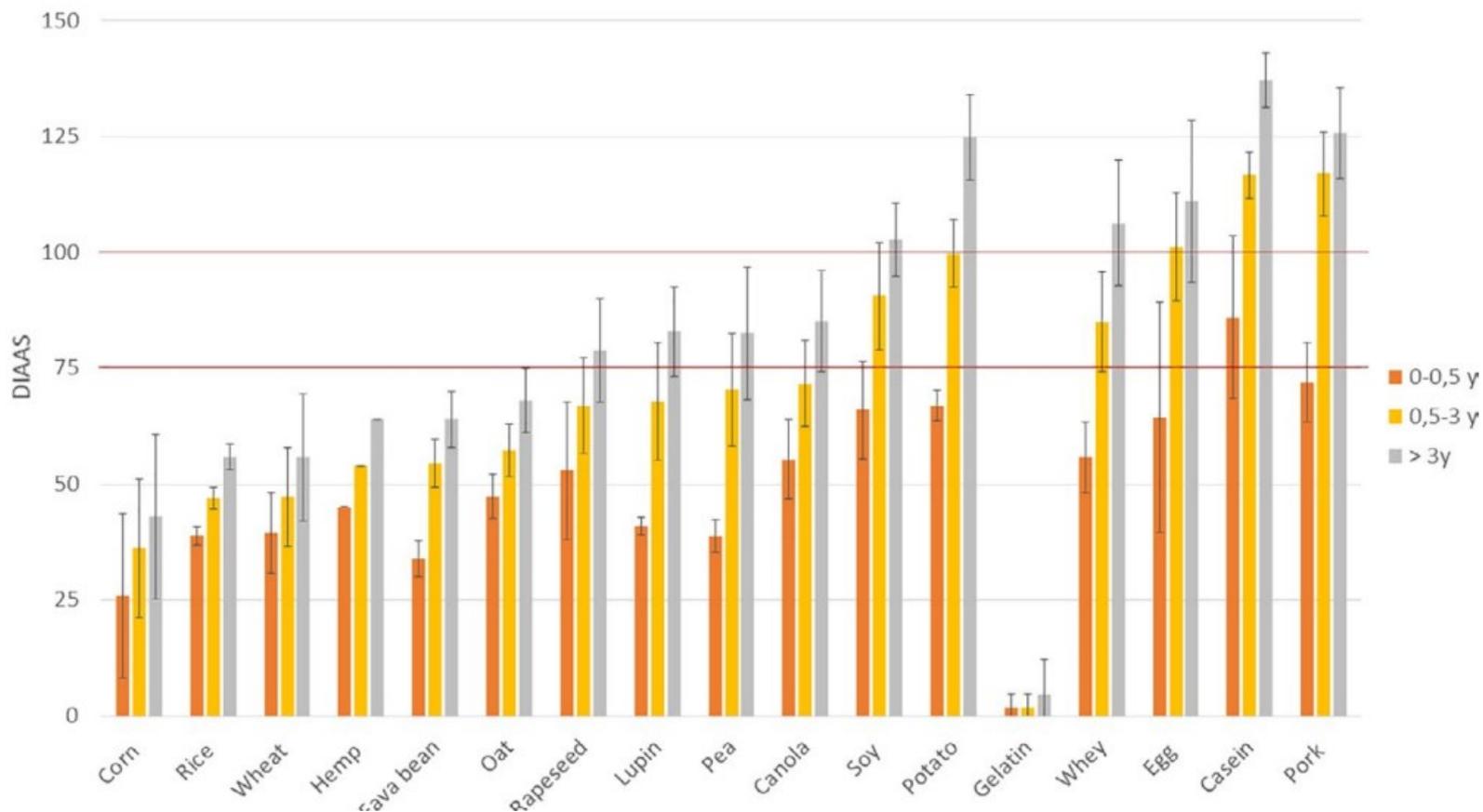
Importance de la diversité alimentaire - Fonction des 70'9276 composés listés dans FoodDB ?



<https://foodb.ca/>



Qualité des protéines d'origine végétale et animale basée sur leur digestibilité

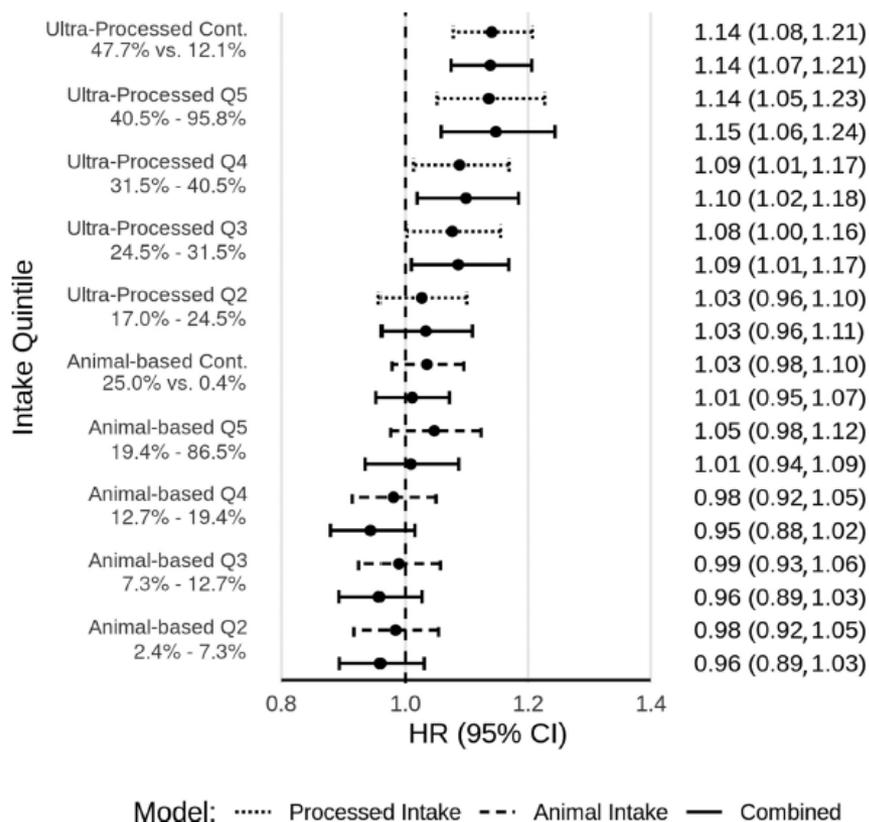


Herreman *et al.* Food Sci. Nutr. 2020; 8: 5379–5391



Association entre la consommation d'aliments ultra-transformés et d'origine animale et la mortalité

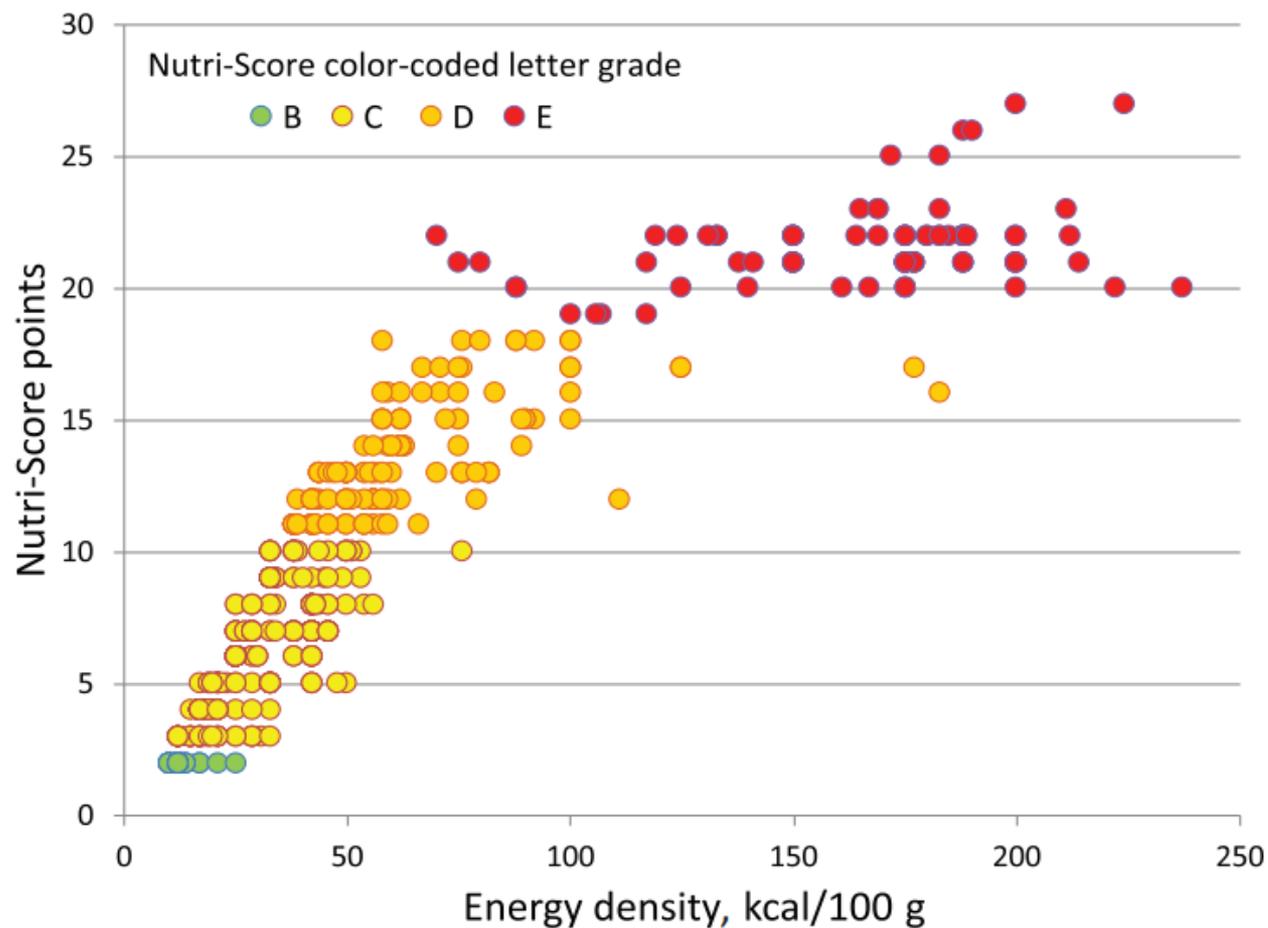
Prospective cohort AHS-2, USA (n=77'437)



Orlich *et al.* Am. J. Clin. Nutr. 2022; 115: 1589-1601



Propriétés nutritionnelles des substituts du lait à base de plantes





Modes d'alimentation à base de plantes et incidence du diabète de type 2

Plant-based diet index (PDI)

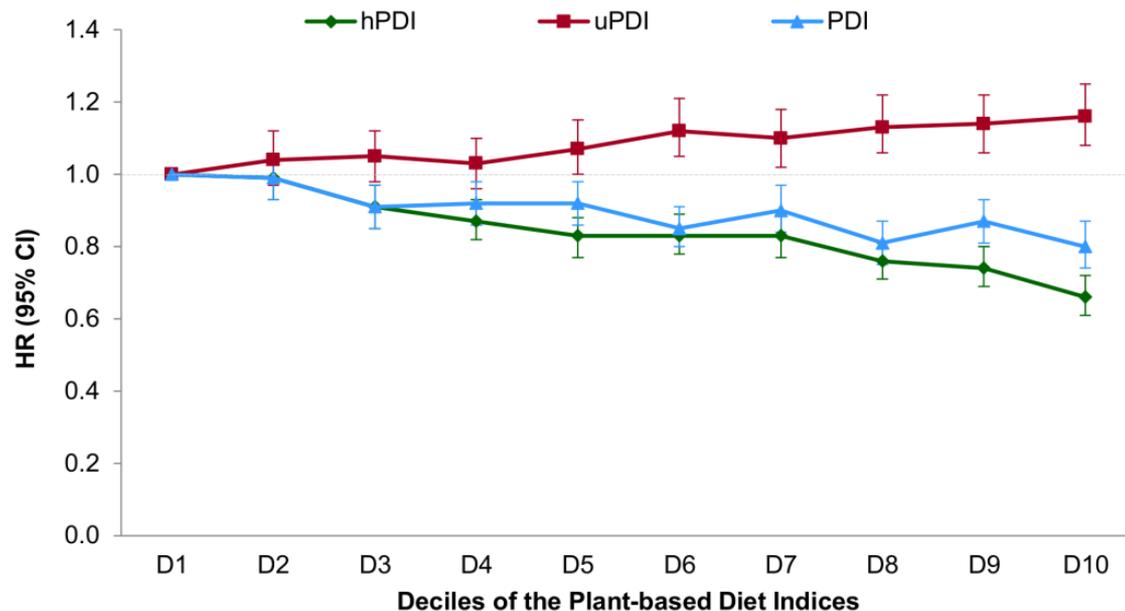
Healthful plant-based diet index (hPDI)

- whole grains
- fruits
- vegetables
- nuts
- legumes
- vegetables
- oils
- tea/coffee

Unhealthful plant-based diet index (uPDI)

- fruit juices
- sweetened beverages
- refined grains
- potatoes
- sweets/desserts

Meta-analysis of three US prospective cohort studies (n=200'727)





Rapport d'experts de la Commission Fédérale de l'alimentation pour la nutrition sur les régimes végétaliens

The current scientific evidence is too low to conclude that vegan diets are generally healthy diets, in particular concerning their long-term impact on the risk of several diseases and all-cause mortality. These diets can therefore not be recommended, in a disease prevention optic.

Pregnancy and lactation	Not recommended
Infants	Not recommended
Toddlers	Not recommended
Adolescents	Not recommended
Healthy adults	Acceptable for nutritionally well informed adults
CVD, T2D	Acceptable for nutritionally well informed patients
Special population*	Not recommended

*frail older adults, patients with debilitating diseases, persons with eating disorders



Durabilité environnementale dans les directives nutritionnelles nationales

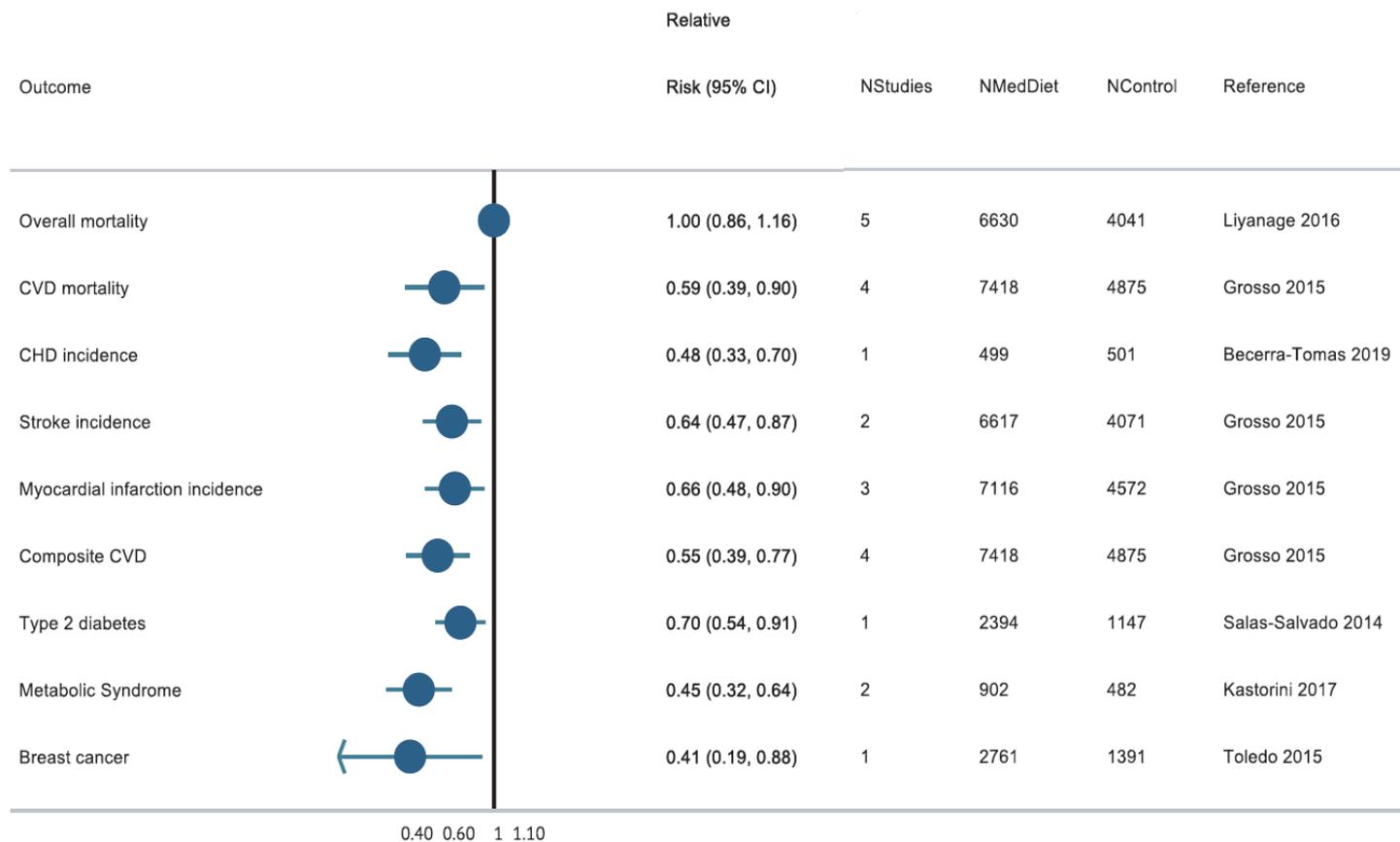
		Consumer FBDG document																	
		Date published	Breastfeeding	Food processing	Plant-based foods	Animal-based foods	Drinking water	Adequate nutrition	Non-communicable disease risk	Food-borne disease	Environmental impacts	Biodiversity	Antibiotics and hormones	Food packaging	Food waste	Culture	Accessibility	Gender effect	Subtotal
Domains of sustainable healthy diets*		Health								Environmental impact					Sociocultural				
Switzerland	2016			X	X	X					X			X	X	X			7

James-Martin *et al.* Lancet Planet Health. 2022; 6: e977–86



Le régime méditerranéen et la santé

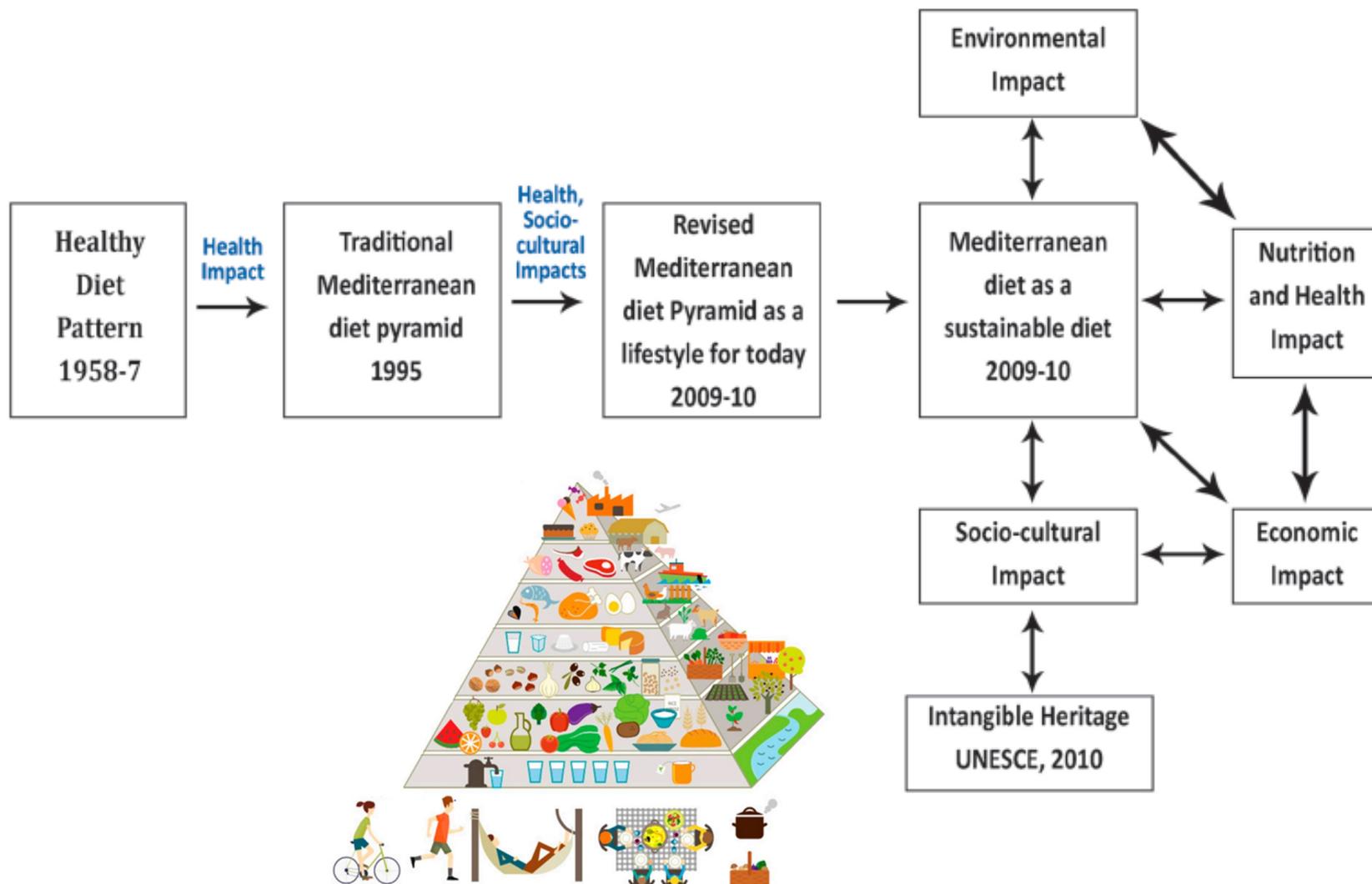
Meta-analyses of randomized controlled trials



Guasch-Ferré and Willett. J. Intern. Med. 2021; 290: 549–566



Le régime méditerranéen - D'un régime sain à un modèle alimentaire durable



Dernini and Berry. Front. Nutr. 2015; 2