@fleroy1974

frederic.leroy@vub.be

City Meat Lecture

The rightful place of MEAT in the national diet

Worshipful Company of Butchers
Butchers Hall, London, November 11, 2021

Prof. dr. ir. Frédéric LEROY

VRIJE UNIVERSITEIT BRUSSEL

Research Group of Industrial Microbiology and Food Biotechnology
Prof. Dr. ir. Luc De Vuyst
Prof. Dr. ir. Frédéric Leroy
Prof. Dr. Stefan Weckx

And yet…

Most 'meat' in 2040 will not come from dead animals, says report

Report by the global consultancy AT Kearney

Gunhild A. Stordalen @G_stordalen · 6 Oct 2017

.@richardbranson invests in healthy sustainable food & predicts all meat to be either clean or plant-based by 2050: bit.ly/2y5uFnP

MIT Technology Review

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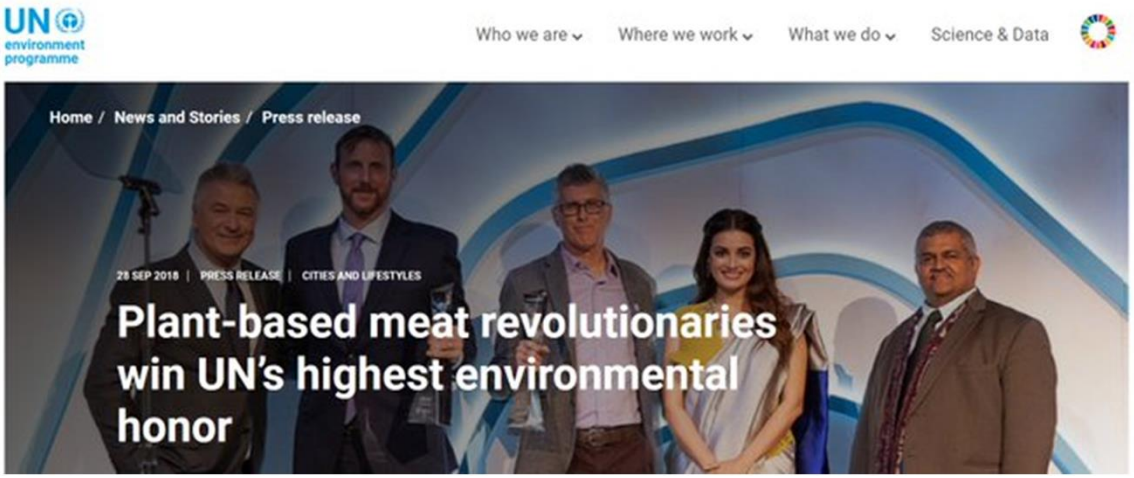
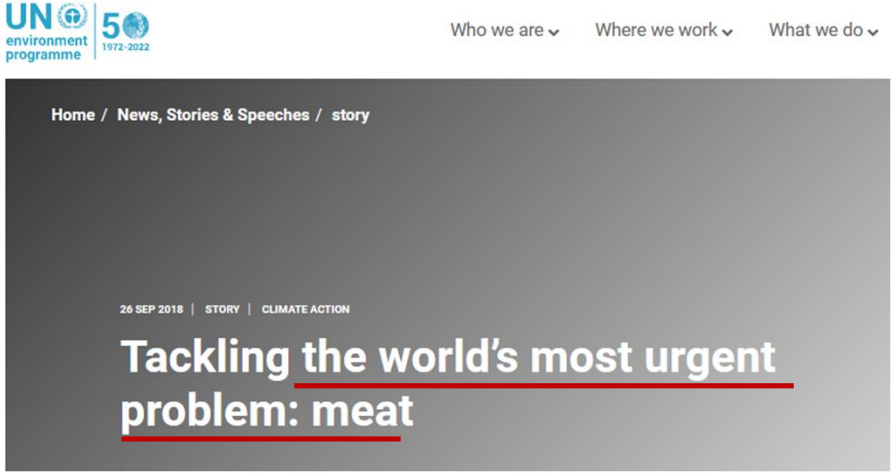
Climate change / Clean energy

Bill Gates: Rich nations should shift entirely to synthetic beef

Radical discourse but influential at the highest levels





Why is UNEP (1) being unscientific? (2) endorsing a ‘fast food’ culture? and (3) supporting extremist agendas?

The goal of such radicalism is displacement, not co-existence

Pat Brown, CEO of Impossible Foods (The New Yorker, 30/09/2019):

recall the topic at hand. But the mojo is conquest. “We plan to take a double-digit portion of the beef market within five years, and then we can push that industry, which is fragile and has low margins, into a death spiral,” he said. “Then we can just point to the pork industry and the chicken industry and say ‘You’re next!’ and they’ll go bankrupt even faster.”

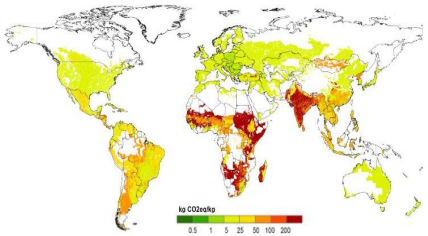
“Livestock are a **prehistoric food production technology**” [we’ll] ‘put the animal agriculture industry out of business. It’s that simple”

https://www.theguardian.com/environment/2021/jan/08/lets-get-rid-of-friggin-cows-why-one-food-ceo-says-its-game-over-for-meat-aoe

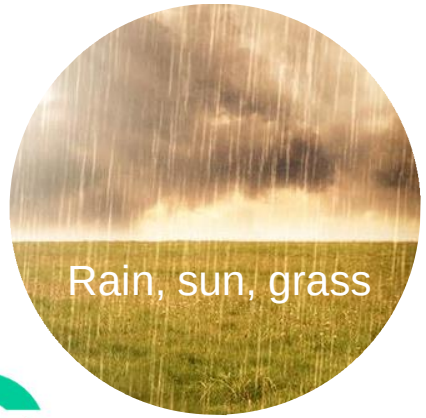
It's not that simple

Huge variability in environmental impact

kg CO_2-eq per kg bovine meat in the year 2000 (Herrero et al., 2013)



CO_2 eq



Complexity: the case of GHGE

CO_2

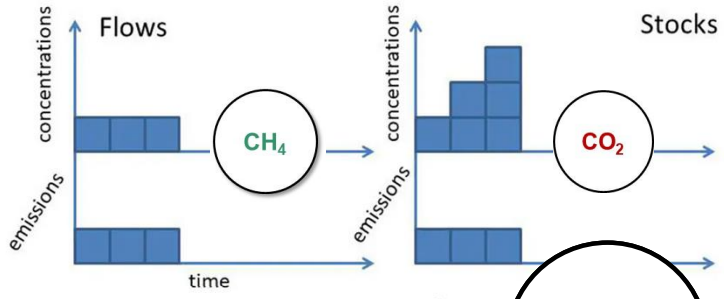
Impacts of soil carbon sequestration on life cycle greenhouse gas emissions in Midwestern USA beef finishing systems

Paige L. Stanley [a, 1], Jason E. Rowntree [a], David K. Beede [a], Marcia S. DeLonge [b], Michael W. Hamm [c]

Adaptive multi-paddock grazing produces lower emissions than feedlot production but sequesters large amounts of soil C that can **offset emissions**

Soil C sequestration from well-managed grazing may help to mitigate climate change

Frame, Macey & Allen, The Conversation 2018



CH_4

CO_2 eq

CO_2

Carbohydrates

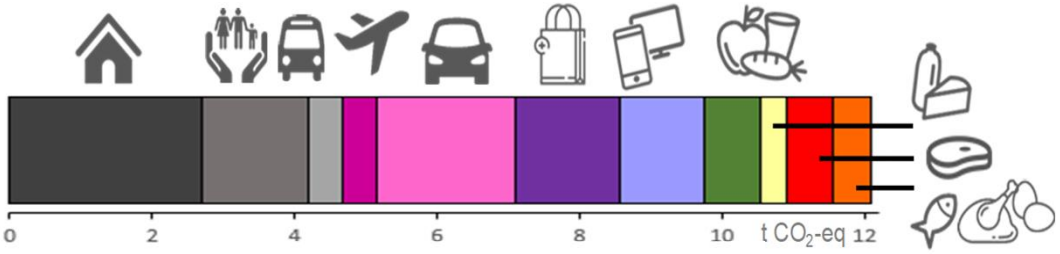
?

CH_4

Ancient C

C

Hyperbolic statements are distracting us from the real root causes



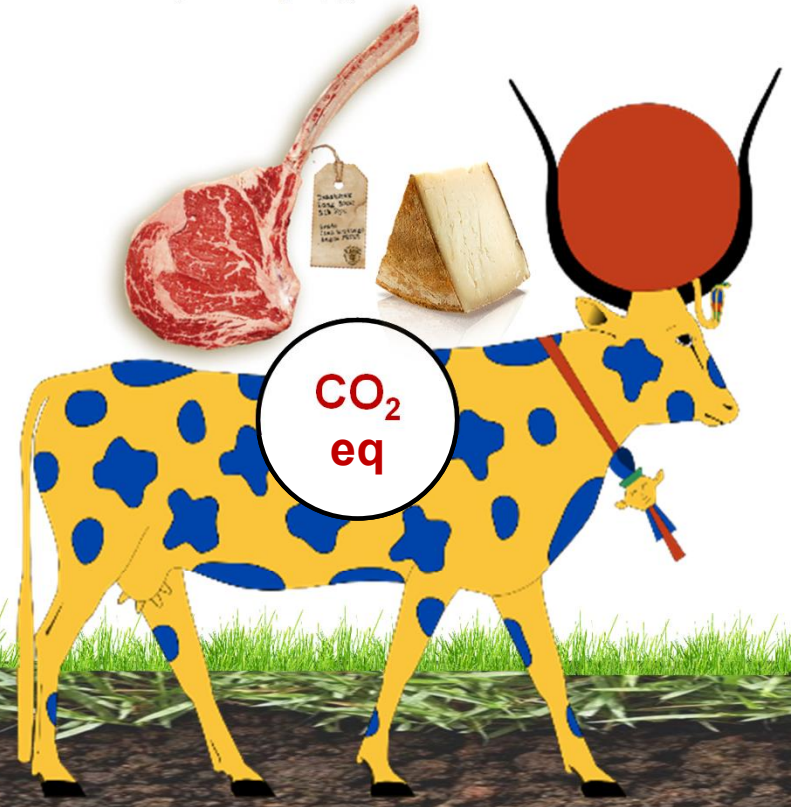
Total footprint of a Frenchman (12 t CO_2-eq/y)

Study: Going vegetarian can cut your food carbon footprint in half

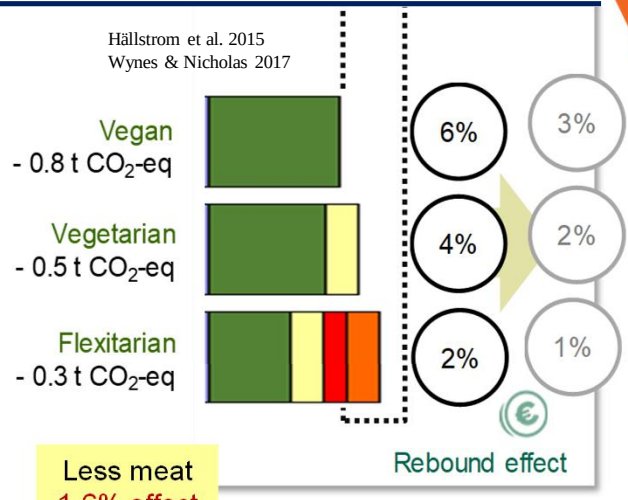
New Study: Vegan Diet Reduces Carbon Footprint by 73%

University of Oxford
@UniofOxford

'A vegan diet is probably the single biggest way to reduce your impact on planet Earth, not just greenhouse gases, but global acidification, eutrophication, land use and water use' > po.st /FqUUmm
[J.Poore, School of Geography & Environment]



Hällstrom et al. 2015
Wynes & Nicholas 2017



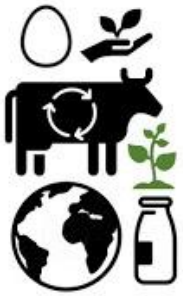
Less meat
1-6% effect

Nutritional and greenhouse gas impacts of removing animals from US agriculture
ï White & Hall (2017) ï PNAS

The plants-only systems had greater excess of dietary energy and resulted in a greater number of **deficiencies in essential nutrients**.

Vegan US
2.6% effect

We *always* need to factor in nutrition!



Numerator

litre

ha

CO_2-eq

< Sustainability

Denominator

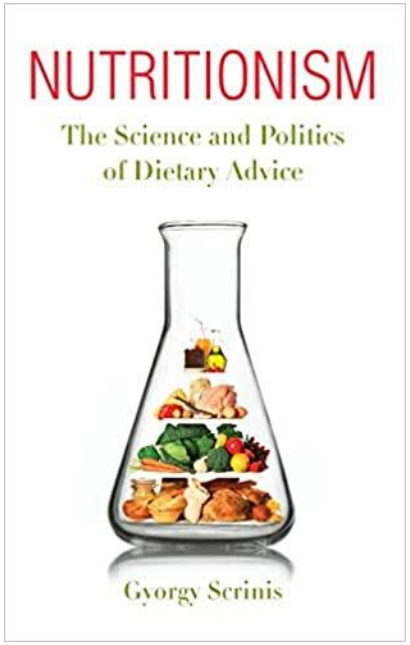
kg food

kcal

kg protein

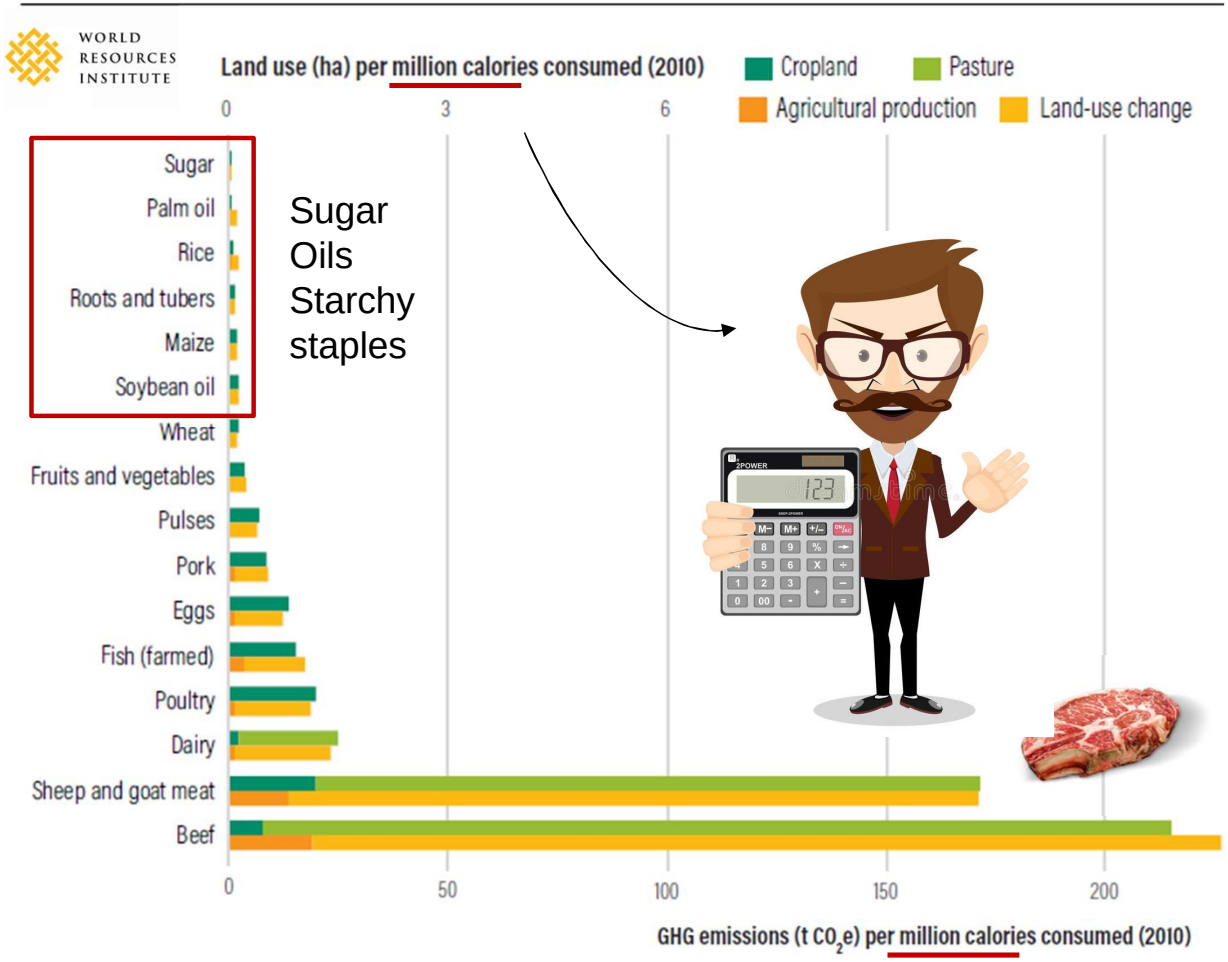
< Unit of nutrition

Various complexities & trade-offs!
Beware of reductionism



Example

Figure 6-6a | Foods differ vastly in land-use and greenhouse gas impacts



Energy and nutrient density of foods in relation to their carbon footprint

Adam Drewnowski, Colin D Rehm, Agnes Martin, Eric O Verger, Marc Voinnesson, Philippe Imbert

The American Journal of Clinical Nutrition, Volume 101, Issue 1, 1 January 2015, Pages 184–191, https://doi.org/10.3945/ajcn.114.092486

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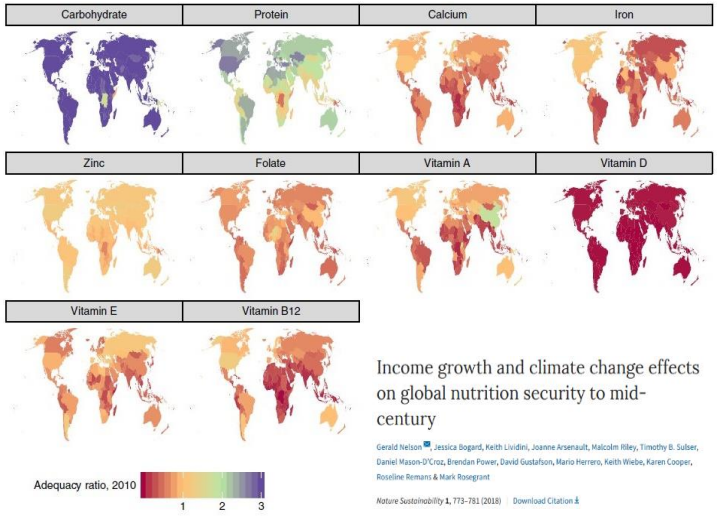

Income growth and climate change effects on global nutrition security to mid-century

Gerald Nelson, Jessica Bogard, Keith Lividini, Joanne Arsenault, Malcolm Riley, Timothy B. Sulser, Daniel Mason-D'Croz, Brendan Power, David Gustafson, Mario Herrero, Keith Wiebe, Karen Cooper, Roseline Remans & Mark Rosegrant

Nature Sustainability 1, 773–781 (2018) | Download Citation

Micronutrients are a concern worldwide, also in high-income countries

Not only LMICs; e.g., too low iron intake in Australia:

- 40% of Australian teenage girls
- 8% (boys) to 15% (girls) of toddlers (2-3y)
- MDs refer to fussy eating, excessive milk (infants, toddlers), but also restrictive diets and confusion among young parents regarding meat

Doctors seeing more iron deficiency in children

Daisy Webber says that, soon after turning 13, her energy levels just plummeted and she could not concentrate at school but a simple ...

abc.net.au

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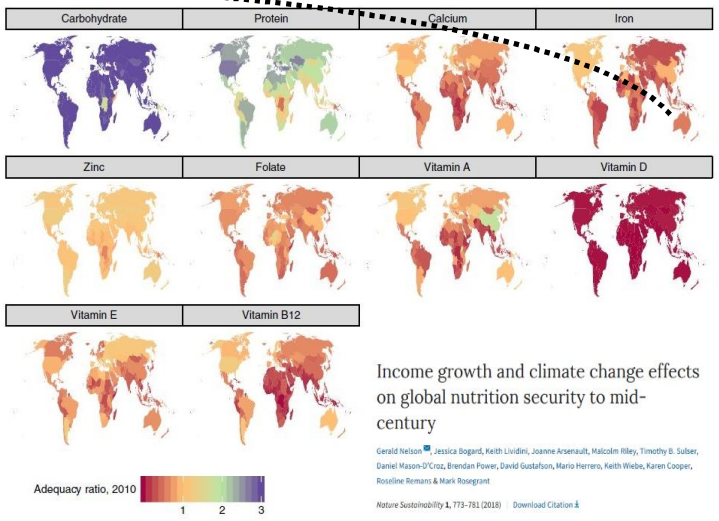

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We need to talk about protein! Common assumption: *too much* and the *wrong kind* ?

Energy and nutrient density of foods in relation to their carbon footprint FREE

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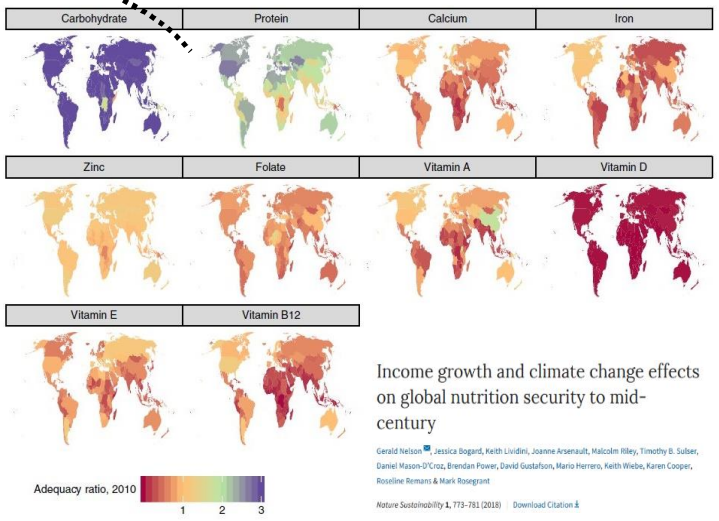

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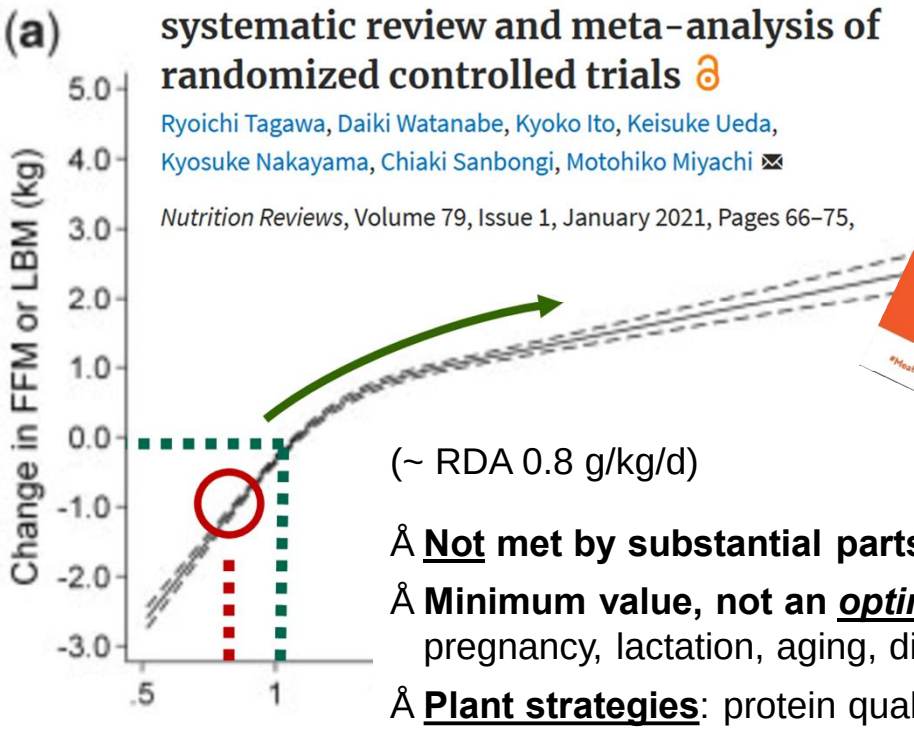
Nature Sustainability **1**, 773–781 (2018) Download Citation

Yes, but…

Dose–response relationship between protein intake and muscle mass increase: a systematic review and meta-analysis of randomized controlled trials

Ryoichi Tagawa, Daiki Watanabe, Kyoko Ito, Keisuke Ueda, Kyosuke Nakayama, Chiaki Sanbongi, Motohiko Miyachi

Nutrition Reviews, Volume 79, Issue 1, January 2021, Pages 66–75,



(~ RDA 0.8 g/kg/d)

- **Not met by substantial parts of the population**
- **Minimum value, not an *optimal* one** (muscle, pregnancy, lactation, aging, disease: 1.2-2.2 g/kg/d)
- **Plant strategies**: protein quality! fortification, multiple sources, or higher intake (often 2-3x kcal intake, even beans/nuts)
- **Suitable?** Tolerance, allergies, taste, culinary skills
- **Misleading perspective**: Much more than ñproteinò

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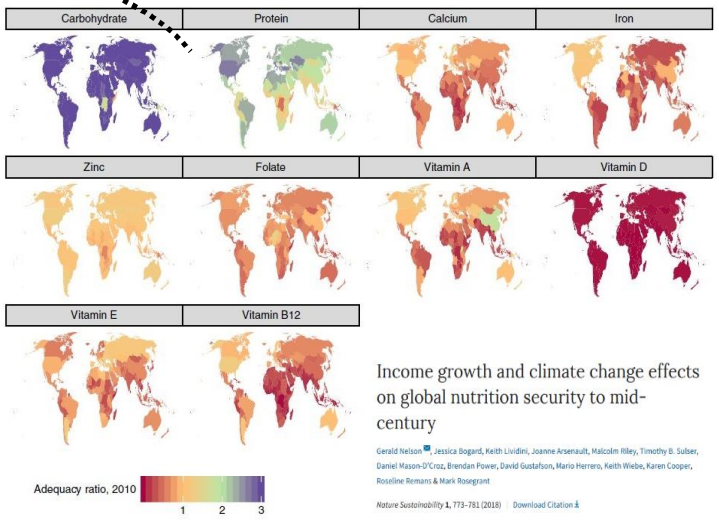

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The excessive focus on 'protein' *will* come with trade-offs

Vs.

Ingredients list, Beyond Burger: Water, pea protein isolate, expeller-pressed canola oil, refined coconut oil, contains 2% or less of the following: cellulose from bamboo, methylcellulose, potato starch, natural flavor, maltodextrin, yeast extract, salt, sunflower oil, vegetable glycerin, dried yeast, gum arabic, citrus extract (to protect quality), ascorbic acid (to mai… …eet juice extract (for color), acetic acid, succin… …rch, annatto (for color).

ñ**Focus has been on protein quality and quantity**, but our case study highlights the risk of unintentionally increasing undesirable nutrients **while reducing the overall nutrient density** of the diet when less healthy plant-based substitutes are selected"

Unintended Consequences: Nutritional Impact and Potential Pitfalls of Switching from Animal- to Plant-Based Foods

by Rachel Tso [1] and Ciarán G. Forde [1,2,3,*]

nutrients

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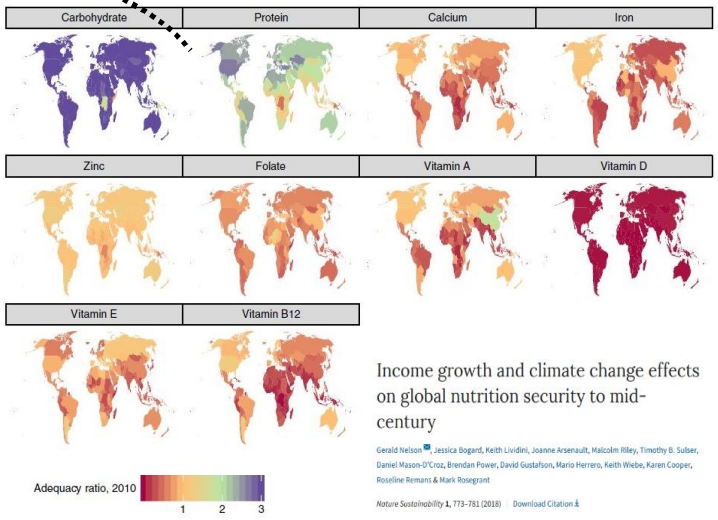

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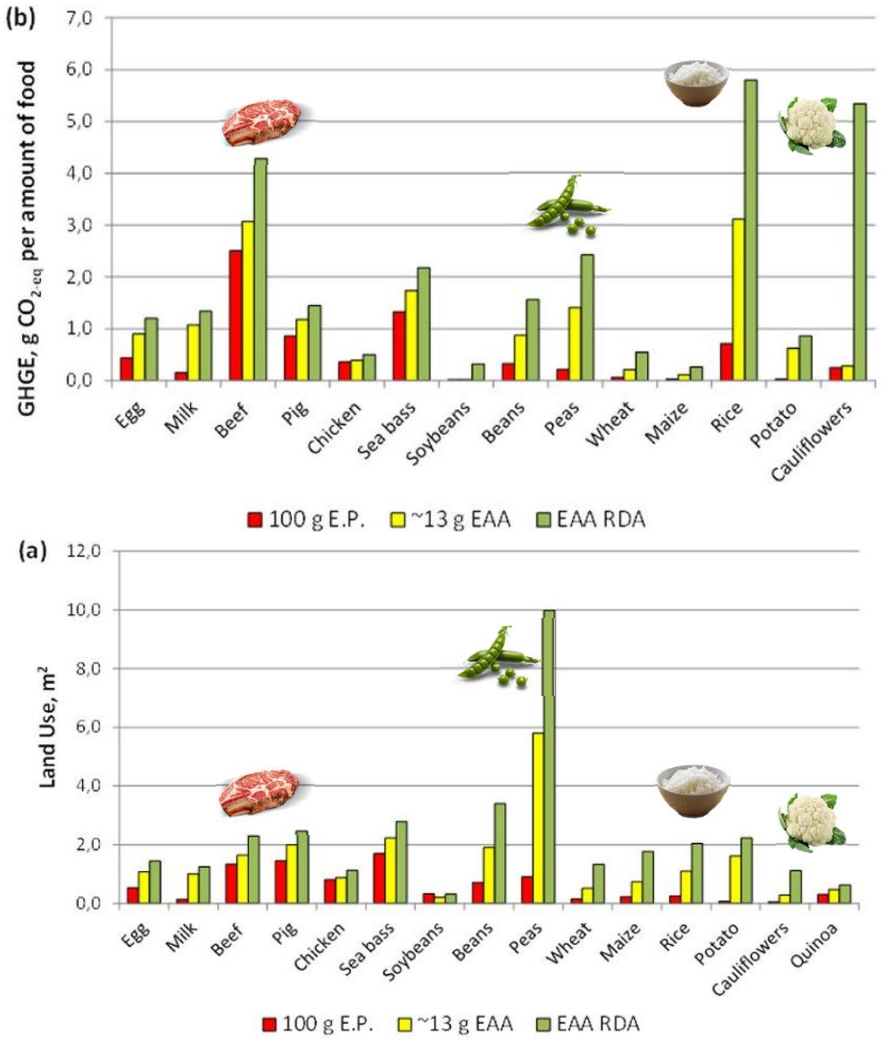
Protein quality affects the environmental assessments too

Tessari et al. 2016



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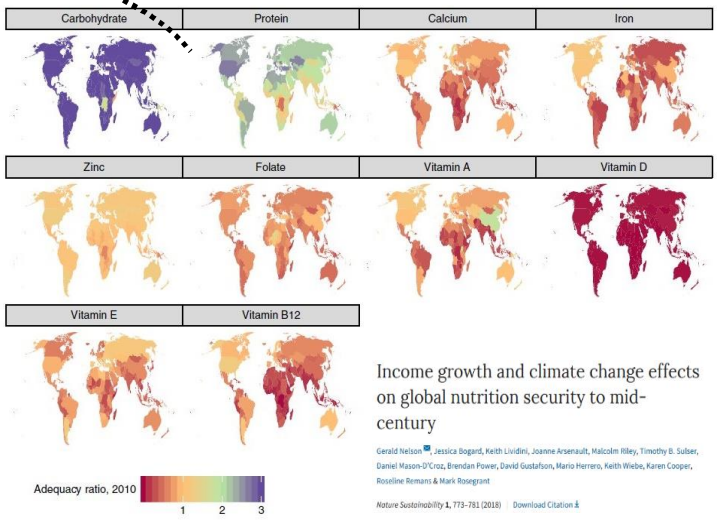

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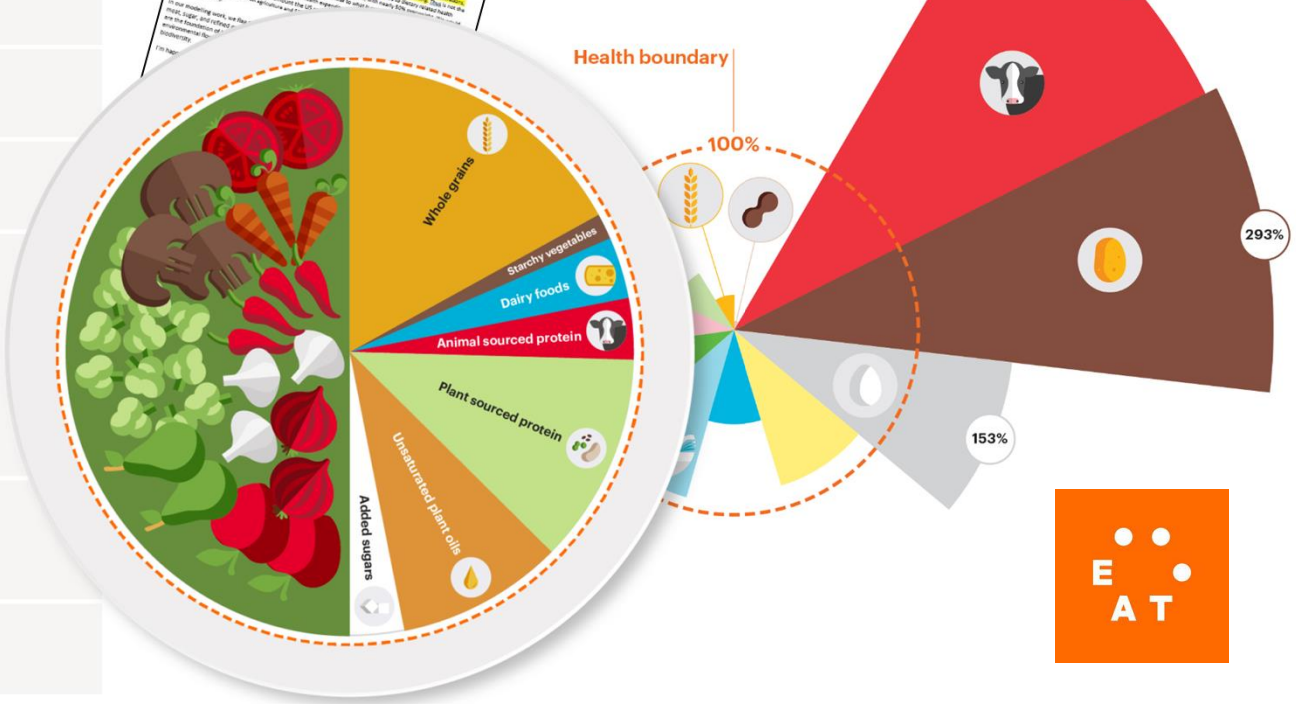
Planetary Health Diet – yet: designed for “health boundaries”, not environment

	Macronutrient intake grams per day (possible range)	
Whole grains		
Rice, wheat, corn and other	232	811
Tubers or starchy vegetables		
Potatoes and cassava	50 (0–100)	
Vegetables		
All vegetables	300 (200–600)	78
Fruits		
All fruits	200 (100–300)	126
Dairy foods		
Whole milk or equivalents	250 (0–500)	153
Protein sources		
Beef, lamb and pork	14 (0–28)	30
Chicken and other poultry	29 (0–58)	62
Eggs	13 (0–25)	19
Fish	28 (0–100)	40
Legumes	75 (0–100)	284
Nuts	50 (0–75)	291
Added fats		
Unsaturated oils	40 (20–80)	354
Saturated oils	11.8 (0-11.8)	96
Added sugars		
All sugars	31 (0–31)	120

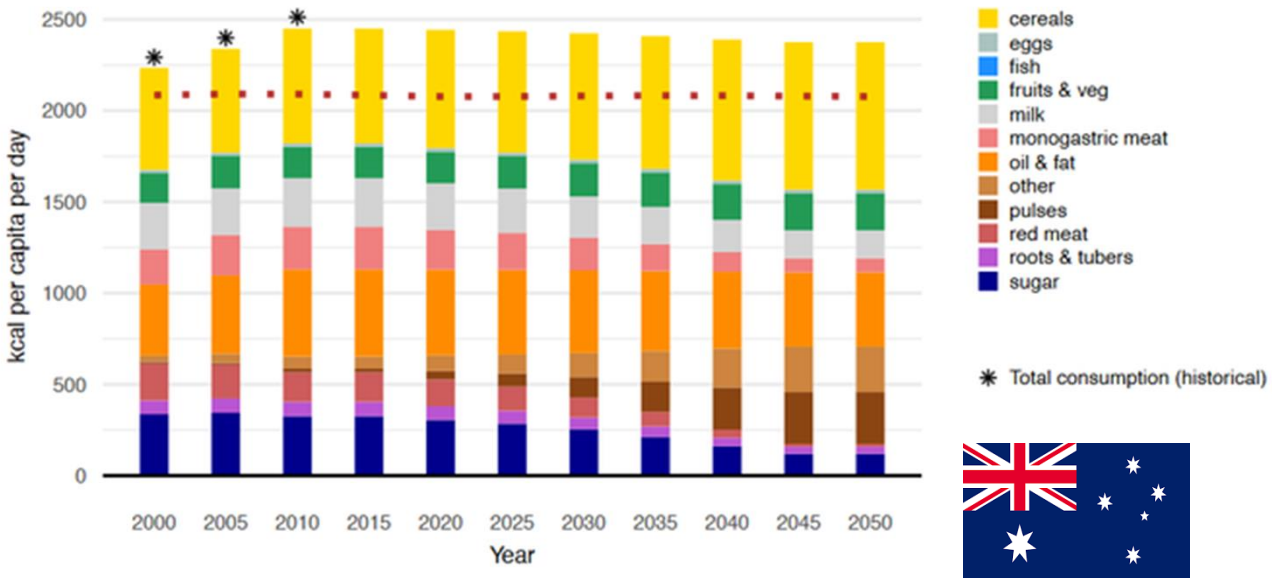
Essential nutrition Ÿ nutritional epidemiology of chronic disease

Benefits << harms overconsumption to the point of being replaceable??

Finally, the meat consumption limits proposed by the Commission were not set due to environmental considerations, but were solely in light of health recommendations. The dietary guidelines only refer to healthy eating. Thus is not the



Drastic reduction in animal source foods, (red) meat in particular



91% reduction in red meat

The **Food and Land Use** Coalition

"FOLU is a self-governing coalition composed of over 30 organizations established to transform the global food and land use systems. It uses the EAT-Lancet dietary guidelines […] to develop global and national science-based targets, and pathways towards them. This work will be used to iteratively inform and raise the ambition of the private sector."

"FOLU will also go deep into the policy, regulatory environment, and businesses of individual countries. Its efforts will start with Colombia, Indonesia and Ethiopia, and could later include the Nordics, Australia and Europe."

But can they?

GLOBAL COMMONS ALLIANCE
A PLAN FOR THE PLANET

Integrated in massive and influential PPPs

The Ceres network includes over 170 institutional investors, managing more than $29 trillion in assets, and 50+ companies, including dozens of leading consumer brands and Fortune 500s

The hand of Davos (also cf. UN Food Systems Summit 2021)?

EAT – Stockholm Food Forum: a Davos for food

May 7th 2014

Tweet Like 0

On 26-27 May 2014, EAT – Stockholm Food Forum will welcome participants from all over the world to set goals and guidelines for the future of food. This first annual forum will offer lectures and panel discussions featuring global leaders in the fields of science, politics and business; it's a unique arena for interdisciplinary dialogue linking food, health and sustainability.

There are already several international forums on nutrition, health and sustainability but EAT will be the first forum that incorporates all three fields. It's modelled on the World Economic Forum in Davos, and has strong similarities with Stockholm's World Water Week – which has been an annual focal point for the globe's water issues since 1991.

Global Agenda | Agriculture, Food and Beverage | Environment and Natural Resource Security | Global Health | WORLD ECONOMIC FORUM | Agenda

Why we all need to go on the 'planetary health diet' to save the world

Already being implemented to some degree via the C40 Cities roadmap

C40 CITIES

UN Climate Change @UNFCCC · Oct 10

Barcelona ✅
Copenhagen ✅
Guadalajara ✅
Lima ✅
London ✅
Los Angeles ✅
Milan ✅
Oslo ✅
Paris ✅
Quezon City ✅
Seoul ✅
Stockholm ✅
Tokyo ✅
Toronto ✅

CONSUMPTION INTERVENTION	PROGRESSIVE TARGET IN 2030	AMBITIOUS TARGET IN 2030
Dietary change (this intervention is characterised by three major changes which are described in more detail) C40 CITIES HEADLINE REPORT	**16 kg** of meat per person per year[31]	**0 kg** meat consumption
	90 kg dairy consumption (milk or derivative equivalent) per person per year[32]	**0 kg** dairy consumption (milk or derivative equivalent) per person per year
	2,500 kcal per person per day	**2,500 kcal** per person per day

These cities have just committed to achieve a planetary health diet for all by 2030. 🍅🍆🥕🫘

The example of London

C40 CITIES

DECLARATION COMMITMENT	INTENDED ACTION/APPROACH TO MEET COMMITMENT	
Aligning our food procurement to the Planetary Health Diet, ideally sourced from organic agriculture.	• Align food procurement of the GLA Group (7 million meals per year) to the planetary health diet	• We will promote the potential for sustainable food procurement to be applied by partners in different settings
Supporting an overall increase of healthy plant-based food consumption in our cities by shifting away from unsustainable, unhealthy diets.	• Implementation of the Mayor's ban on advertising of unhealthy food and drinks on the Transport for London estate, and work to promote benefits via that estate of healthy food including fruit and vegetables.	• Supporting good food businesses to improve London's food environment and make healthy, affordable options more widely available: in partnership with the Association of London Environmental Health Managers, supporting the delivery and

ñAligning our food procurement to the Planetary Health Dietò

ñSupporting an overall increase of healthy plant-based food consumption in our cities shifting away from unsustainable, unhealthy dietsò

Is basis for health claims such that it would *overrule* their value as source of key nutrients?

Food in the Anthropocene: the EAT–*Lancet* Commission on

Medical News & Perspectives

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

Rita Rubin, MA

It's almost unheard of for medical journals to get blowback for studies before the data are published. But that's what happened to the *Annals of Internal Medicine* last fall as editors were about to post several studies showing that the evidence linking red meat consumption with cardiovascular disease and cancer is too weak to recommend that adults eat less of it.

Annals Editor-in-Chief Christine Laine, MD, MPH, saw her inbox flooded with roughly 2000 emails—most bore the same message, apparently generated by a bot—in a half hour. Laine's inbox had to be shut down, she said. Not only was the volume unprecedented in her decade at the helm of the respected journal, the tone of the emails was particularly caustic.

"We've published a lot on firearm injury prevention," Laine said. "The response from the NRA (National Rifle Association) was less vitriolic than the response from the True Health Initiative."

Certainly not consensus

Unprocessed Red Meat and Processed Meat Consumption: Dietary Guideline Recommendations From the Nutritional Recommendations (NutriRECS) Consortium FREE

Annals of Internal Medicine
CLINICAL GUIDELINES | 19 NOVEMBER 2019

Bradley C. Johnston, PhD; Dena Zeraatkar, MSc; Mi Ah Han, PhD; Robin W.M. Vernooij, PhD; Claudia Valli, MSc; Regina El Dib, PhD; Catherine Marshall; Patrick J. Stover, PhD; Susan Fairweather-Taitt, PhD; Grzegorz Wójcik, PhD; Faiz Bhatia, PEng; Russell de Souza, ScD; Carlos Brotons, MD, PhD; Joerg J. Meerpohl, MD; Chirag J. Patel, PhD; Benjamin Djulbegovic, MD, PhD; Pablo Alonso-Coello, MD, PhD; Malgorzata M. Bala, MD, PhD; Gordon H. Guyatt, MD

Guyatt
niversity

GRADE

ests that adults continue current unprocessed
nption (weak recommendation, low-certainty
rly, the panel suggests adults continue current
consumption (weak recommendation, low-
e).”

Disclaimer: health reasons only

Underlying assumption: which standards of evidence are needed?

BMJ Best Practice

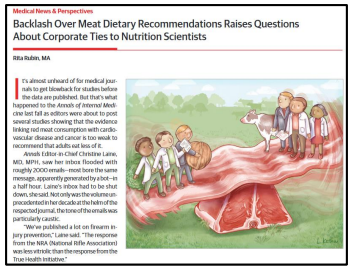
What is GRADE?

» Evidence based medicine (EBM) toolkit » Learn EBM » **What is GRADE?**

GRADE

ñ[We argue] that **standards across health fields should be identical** [é] GRADE provides a well-tested and highly credible approach to rating the certainty of evidence in such situations. The other camp, including **the most vocal nutritional epidemiologists**, argue that GRADE is applicable only to contexts in which randomized trials are feasible, and that in areas in which they are not, different standards of certainty or trustworthiness of evidence, are required. One such alternative is the **NutriGrade method**, for which the lead author now endorses GRADE over his own alternative approachò

Vernooij et al. 2021 ï J. Clin. Epidem.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Rita Rubin, MA

It's almost unheard of for medical journals to get blowback for studies before the data are published. But that's what happened to the *Annals of Internal Medicine* last fall as editors were about to post several studies showing that the evidence linking red meat consumption with cardiovascular disease and cancer is too weak to recommend that adults eat less of it.

Annals Editor-in-Chief Christine Laine, MD, MPH, saw her inbox flooded with roughly 2000 emails—most bore the same message, apparently generated by a bot—in a half hour. Laine's inbox had to be shut down, she said. Not only was the volume unprecedented in her decade at the helm of the respected journal, the tone of the emails was particularly caustic.

"We've published a lot on firearm injury prevention," Laine said. "The response from the NRA (National Rifle Association) was less vitriolic than the response from the True Health Initiative."

Perspective: NutriGrade: A Scoring System to Assess and Judge the Meta-Evidence of Randomized Controlled Trials and Cohort Studies in Nutrition Research[1–3]

Lukas Schwingshackl,[5]* Sven Knüppel,[5] Carolina Schwedhelm,[5] Georg Hoffmann,[6] Benjamin Missbach,[6] Marta Stelmach-Mardas,[5,7] Stefan Dietrich,[5] Fabian Eichelmann,[4,5] Evangelos Kontopanteils,[8] Khalid Iqbal,[5] Krasimira Aleksandrova,[4,5] Stefan Lorkowski,[9,10] Michael F Leitzmann,[11] Anja Kroke,[12] and Heiner Boeing[5]

[4]Nutrition, Immunity, and Metabolism Start-Up Lab, [5]Department of Epidemiology, German Institute of Human Nutrition Potsdam Rehbruecke, Nuthetal, Germany; [6]Department of Nutritional Sciences, University of Vienna, Vienna, Austria; [7]Department of Pediatric Gastroenterology and Metabolic Diseases, Poznan University of Medical Sciences, Poznan, Poland; [8]Centre for Primary Care, Institute of Population Health, University of Manchester, Manchester, United Kingdom; [9]Institute of Nutrition, Friedrich Schiller University Jena, Jena, Germany; [10]Competence Cluster of Nutrition and Cardiovascular Health, Halle-Jena-Leipzig, Germany; [11]Department of Epidemiology and Preventive Medicine, University of Regensburg, Regensburg, Germany; and [12]Department of Nutritional, Food, and Consumer Sciences, University of Applied Sciences, Fulda, Germany

Unprocessed Red Meat and Processed Meat Consumption: Dietary Guideline Recommendations From the Nutritional Recommendations (NutriRECS) Consortium FREE

Annals of Internal Medicine
CLINICAL GUIDELINES | 19 NOVEMBER 2019

Bradley C. Johnston, PhD; Dena Zeraatkar, MSc; Mi Ah Han, PhD; Robin W.M. Vernooij, PhD; Claudia Valli, MSc; Regina El Dib, PhD; Catherine Marshall; Patrick J. Stover, PhD; Susan Fairweather-Taitt, PhD; Grzegorz Wójcik, PhD; Faiz Bhatia, PEng; Russell de Souza, ScD; Carlos Brotons, MD, PhD; Joerg J. Meerpohl, MD; Chirag J. Patel, PhD; Benjamin Djulbegovic, MD, PhD; Pablo Alonso-Coello, MD, PhD; Malgorzata M. Bala, MD, PhD; Gordon H. Guyatt, MD

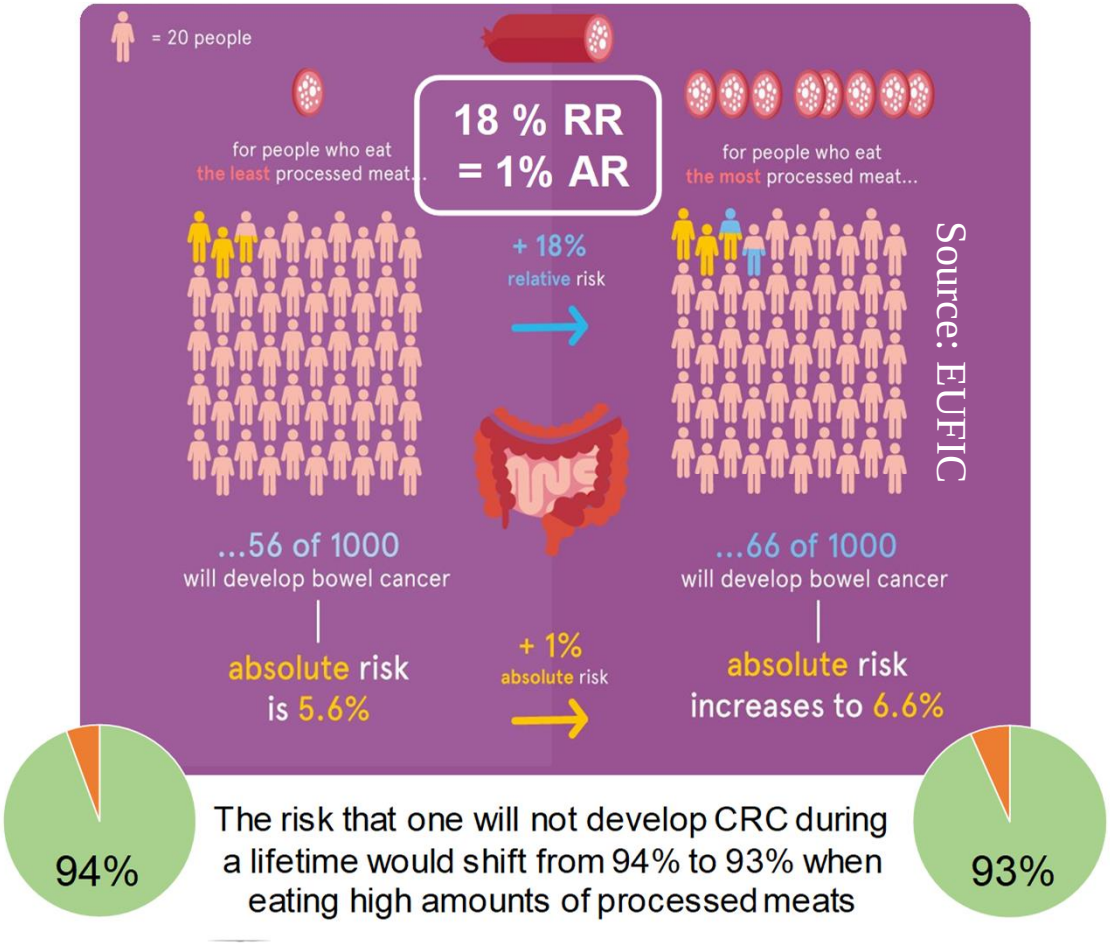
The rationale for our recommendation to continue rather than reduce consumption of unprocessed red meat or processed meat is based on the following factors.

1. There was a very small and often **trivial absolute risk reduction** based on a realistic decrease of 3 servings of red or processed meat per week
2. **[Low to very low] certainty of evidence** for potential adverse health outcomes associated with meat consumption
3. Given **people's attachment to their meat-based diet**, the associated risk reduction is not likely to provide sufficient motivation … in fully informed individuals

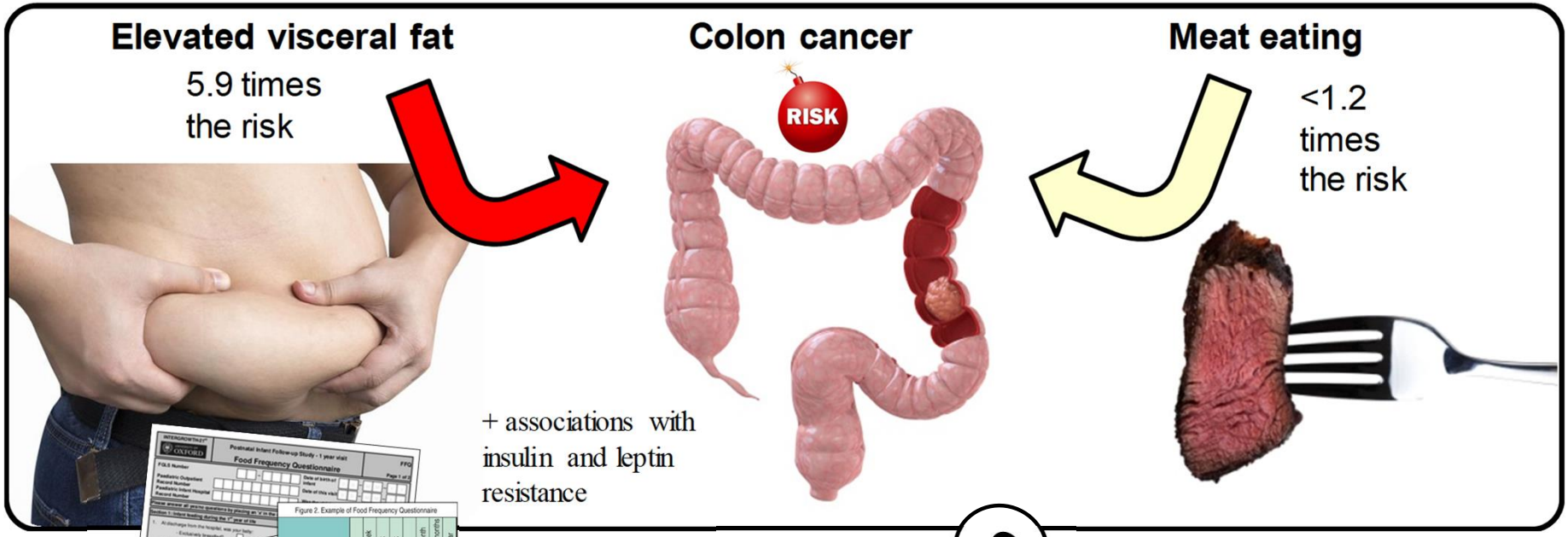
‘Trivial absolute risk reduction’

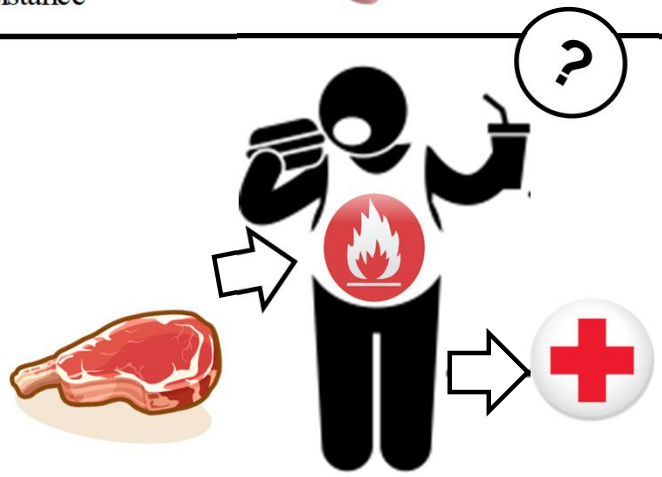
Use of relative risk is often used to increase sensationalist impact, leading to hyperbole

Absolute risk yields a very different picture



‘Low certainty of evidence’ (weak associations, bias, and residual confounding)





Heavy meat eaters, not the health-adhering type

- Higher body fat, waist circumference, BMI
- Lower education
- More physical inactivity
- More smoking, alcohol
- Low-quality diet

We need to be careful when using causal language

Use of Causal Language in Observational Studies of Obesity and Nutrition

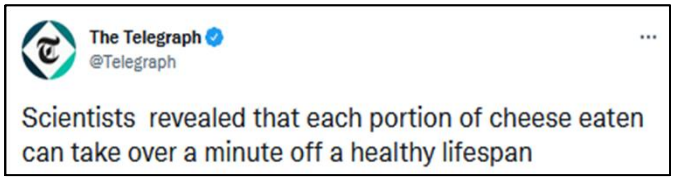
Stacey S. Cofield[a] Rachel V. Corona[b] David B. Allison[a,c]

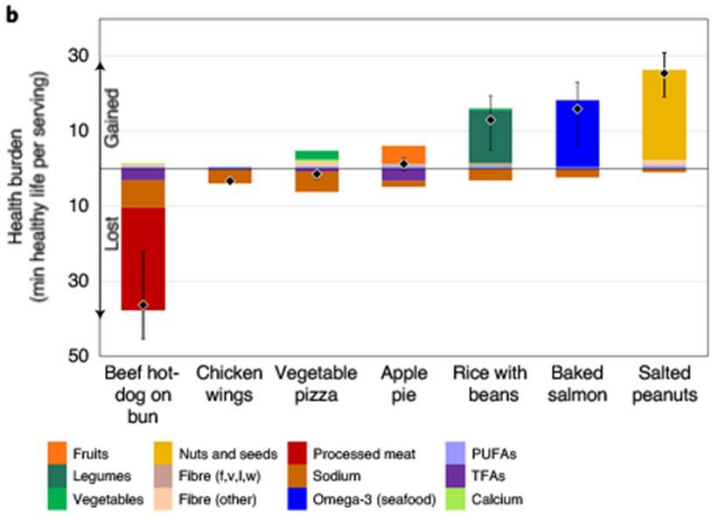
[a] Department of Biostatistics, School of Public Health,
[b] Department of Epidemiology, School of Public Health,
[c] Nutrition Obesity Research Center, University of Alabama at Birmingham, Birmingham, AL, USA

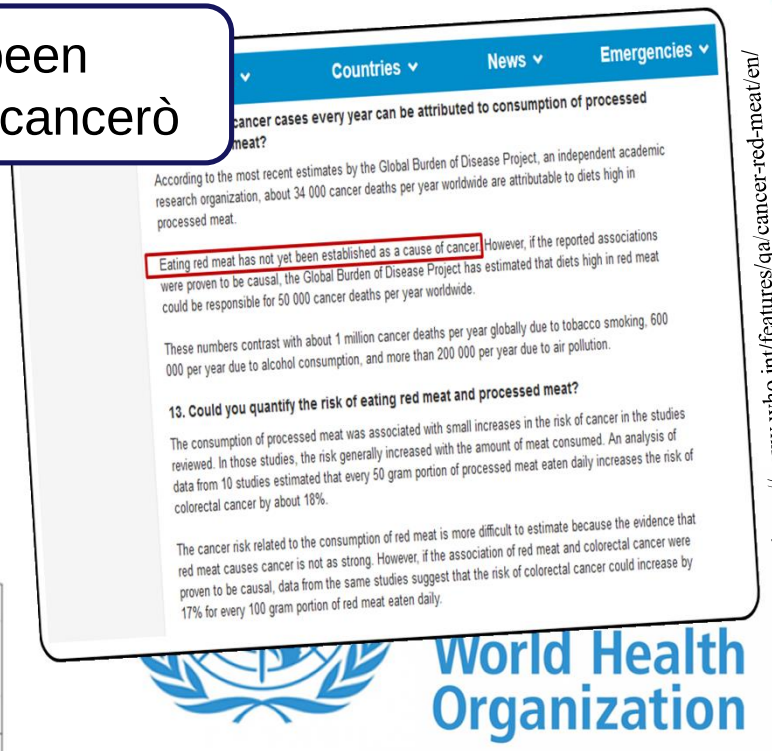
ñEating meat has *not* yet been established as a *cause* of cancerò

ñUnwarranted use of **causal language** is widespread in nutritional sciences, posing a systemic problem and undermining credibilityò

ñChance, bias, and confounding could not be ruled out [é] There is inadequate evidence in experimental animalsò IARC Monograph 114 summary in Lancet Oncology (2015)





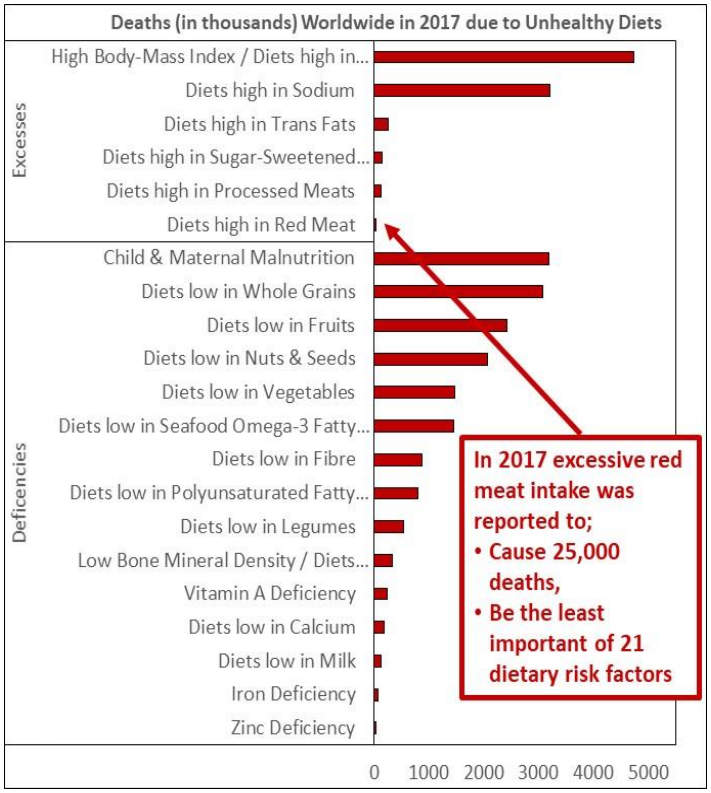


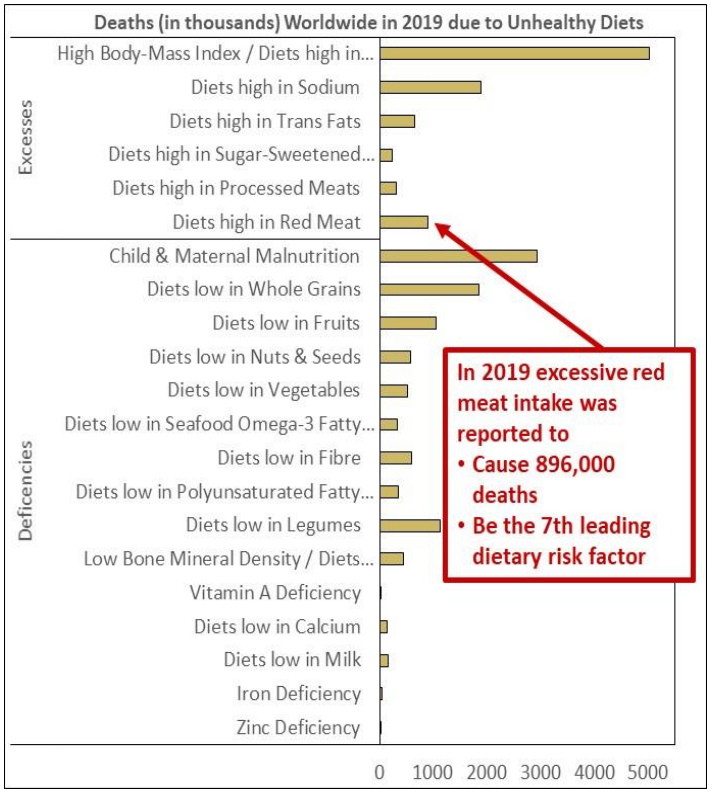
https://www.who.int/features/qa/cancer-red-meat/en/

Small targeted dietary changes can yield substantial gains for human health and the environment

Katerina S. Stylianou[1], Victor L. Fulgoni III[2] and Olivier Jolliet[1]

Underlying assumptions need to be robust and transparent (e.g., GBD study)





Global Burden of Disease 2017 vs. 2019

Courtesy prof. Alice Stanton
Royal College of Surgeons, Ireland

GBD: ñWe found sufficient evidence supporting the causal relationship of red meat intake with ischaemic heart disease, breast cancer, haemorrhagic stroke, and ischaemic stroke and added these outcomes to previously found relationships with diabetes mellitus and colon cancerò

The red meat TMREL (theoretical minimum risk exposure level) changed from 22.5 g/d to 0 g/d

Quid benefits of red meat in balanced diets? Iron deficiency, stunting, cognitive development, dementia, depression, sarcopenia

What matters is dietary *context* and lifestyles: 'hazard' vs. 'risk'

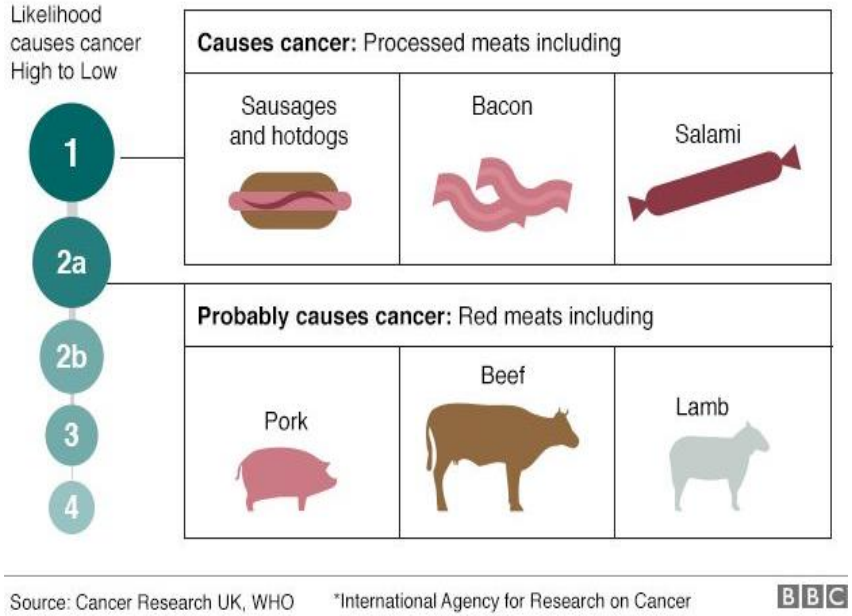
Associations usually vanish or invert (!) when taken out of a USA context, when design of the study improves (cohort vs. case-control studies), or when dietary context improves

Co-consumption of Vegetables and Fruit, Whole Grains, and Fiber Reduces the Cancer Risk of Red and Processed Meat in a Large Prospective Cohort of Adults from Alberta's Tomorrow Project

by Katerina Maximova [1,*], Elham Khodayari Moez [1], Julia Dabravolskaj [1], Alexa R. Ferdinands [1], Irina Dinu [1], Geraldine Lo Siou [2], Ala Al Rajabi [3] and Paul J. Veugelers [1]

All-Cause Cancers [b]

	Vegetables and Fruit (Serving/Day) [d]		
	<55 years: <4	<55 years: 4–6	<55 years: >6
	≥55 years: <3	≥55 years: 3–5	≥55 years: >5
Red meat (gram/week) [e]			
<250	1.04 (0.79–1.36)	1.02 (0.89–1.17)	Ref.
250–500	1.17 (0.92–1.47)	1.01 (0.85–1.21)	0.88 (0.76–1.02)
>500	**1.31 (1.02–1.69)**	1.01 (0.79–1.29)	0.78 (0.57–1.05)

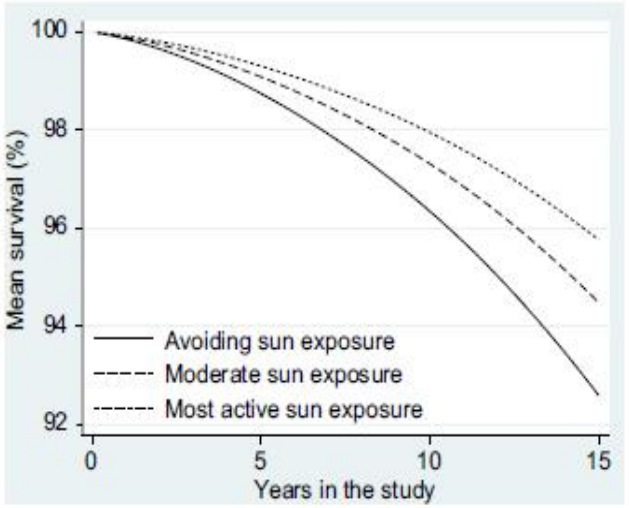


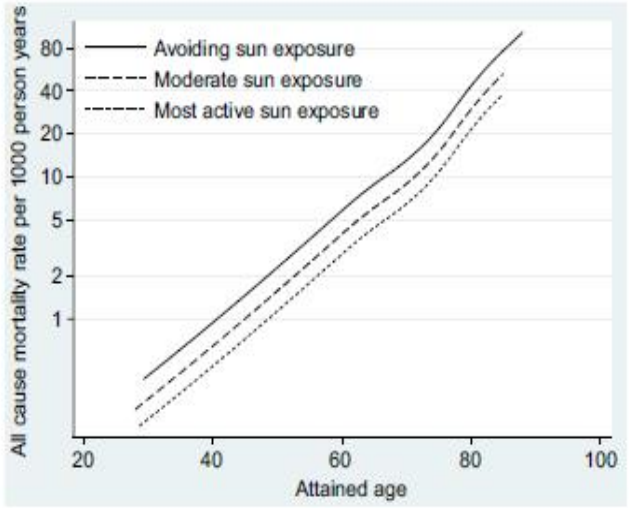
What matters is dietary *context* and lifestyles: 'hazard' vs. 'risk'

Avoidance of sun exposure is a risk factor for all-cause mortality: results from the Melanoma in Southern Swede cohort

Journal of INTERNAL MEDICINE 2014

P. G. Lindqvist[1], E. Epstein[2], M. Landin-Olsson[3], C. Ingvar[4], K. Nielsen[5], M. Stenbeck[6] & H. Olsson[7]





Causes cancer: Processed meats including

Sausages and hotdogs

Bacon

Salami

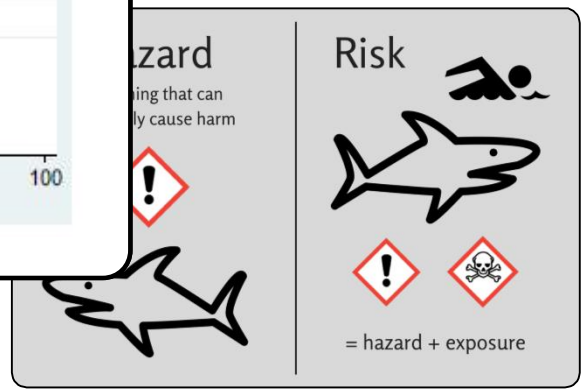
Probably causes cancer: Red meats including

Pork

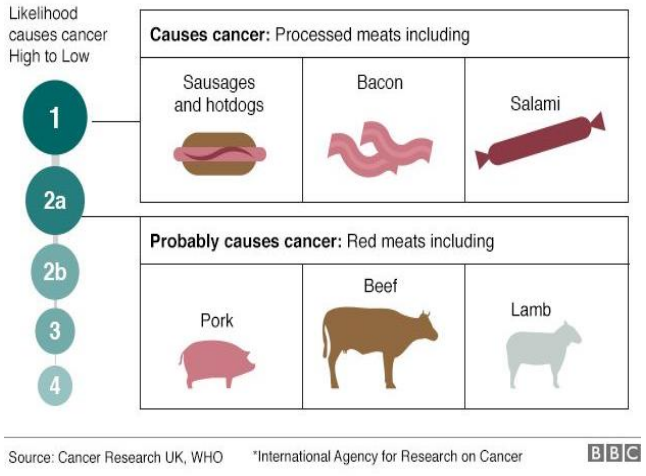
Beef

Lamb

esearch UK, WHO "International Agency for Research on Canc



What matters is dietary context and lifestyles: ‘hazard’ vs. ‘risk’



Regulatory Toxicology and Pharmacology
Volume 82, December 2016, Pages 158-166

Commentary

Classification schemes for carcinogenicity based on hazard-identification have become outmoded and serve neither science nor society

Alan R. Boobis [a], Samuel M. Cohen [b], Vicki L. Dellarco [c], John E. Doe [d], Penelope A. Fenner-Crisp [e], Angelo Moretto [f], Timothy P. Pastoor [g], Rita S. Schoeny [h], Jennifer G. Seed [i], Douglas C. Wolf [j]

ñBecause a risk-based decision framework fully considers hazard in the context of dose, potency, and exposure the **unintended downsides of a hazard only approach** are avoided, *e.g.*, health scares, unnecessary economic costs, loss of beneficial products, adoption of strategies with greater health costs, and diversion of public funds into unnecessary research.

[...] Processed meat and sulfur mustard gas are placed into the same category (group 1) [...] This leads to confusion; should we treat processed meat as we do sulfur mustard gas ï reduce exposure to zero; or should we treat sulfur mustard gas as we do red meat ï consider it part of a healthy life style in moderation?ò

Unintended consequences: the case of a ‘meat tax’

scientific reports

OPEN

Nutrient provision capacity of alternative livestock farming systems per area of arable farmland required

M. R. F. Lee[1], J. P. Domingues[2], G. A. McAuliffe[3], M. Tichit[2], F. Accatino[2] & T. Takahashi[3,4]

Although climate impacts of ruminant agriculture are a major concern worldwide, using policy instruments to force grazing farms out of the livestock industry may diminish opportunities to produce nutritious food without exacerbating the food-feed competition for fertile and accessible land resources […] We also demonstrate that imposition of a naïvely designed “red meat tax” has the potential to invite ***socioeconomic losses*** *far greater than its environmental benefits, due largely to the induced misallocation of resources at the national scale. Our results reiterate the risk inherent in an excessively climate-focused debate on the role of livestock in human society and call for more multidimensional approaches of sustainability assessment to draw better-balanced policy packages.*

Boris Johnson’s food policy strategist says meat tax ‘may be necessary’ but warns of FOOD RIOTS if brought in too soon – reports

RT

25 Jun, 2021 18:29

Get short URL

Plan that suggested meat tax to help people go vegan swiftly deleted

Comment

METRO

Jordan King

Thursday 21 Oct 2021 12:17 pm

Poland 1980-81

The Washington Post

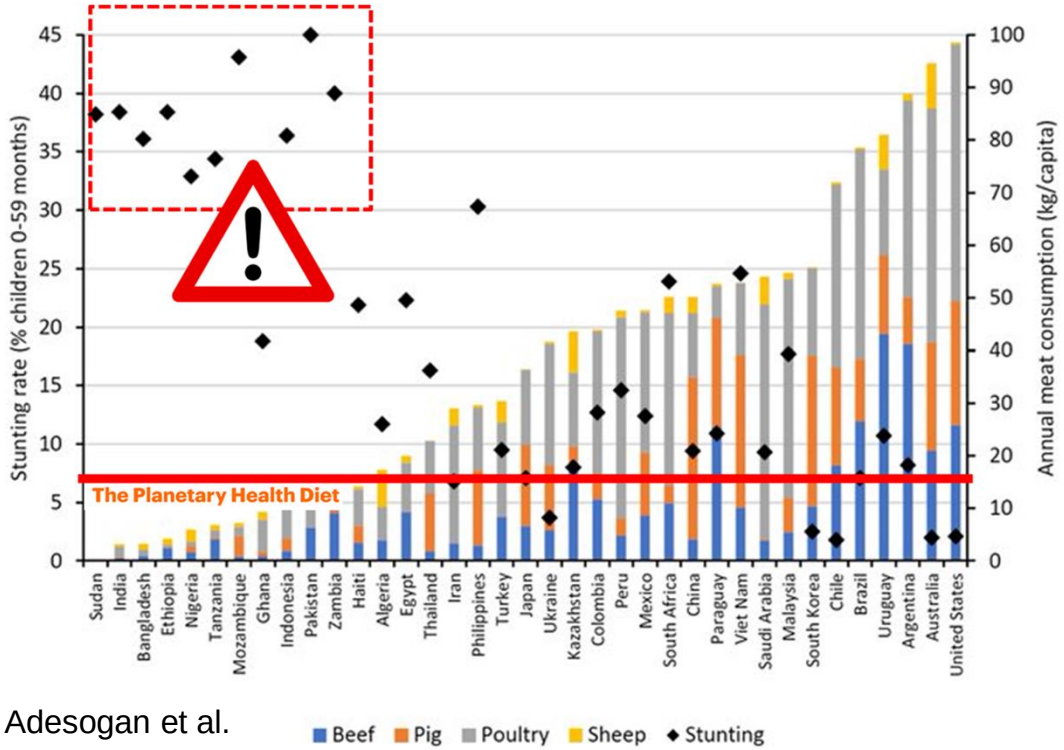
Polish Workers Protest Increase In Meat Prices

Chile 1905

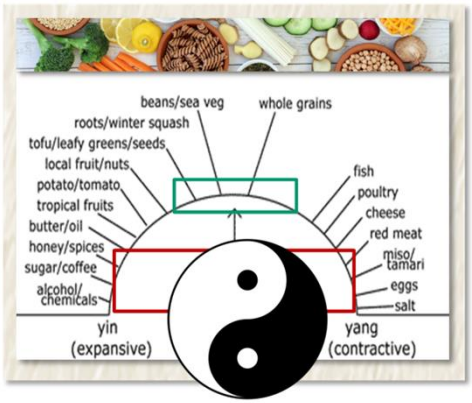
The **Meat riot** (Spanish: *Huelga de la carne*), in the Chilean capital Santiago in October 1905, was a violent riot that originated from a demonstration against the tariffs applied to the cattle imports from Argentina.[1][2]

Radical & blanket recommendations may cause unintended havoc: warning signs

If the global population followed current consumption patterns in individual G20 countries or adopted their NDGs only India and Indonesia would have food consumption patterns that are within the planetary climate boundary for food



Adesogan et al.

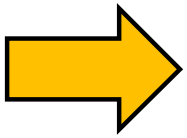


Mostly whole grains, legumes, vegetables, …
No or low levels of dairy, fish, poultry, potato
Restrict or avoid red meat and eggs

- **Macrobiotic Dutch infants (4-18 m)**
- **Ubiquitous deficiencies** (energy, protein, Ca, Fe, vitamins B2, B12, D)
- Retarded growth, fat and muscle wasting, slower psychomotor development, rickets
- Breast milk: less vit B12, Ca, Mg

Van Dusseldorp et al., Am J Clin Nutr 1999
Schneede et al., Pediatr Res 1994
Dagnelie & van Staveren, Am J Clin Nutr 1994
Dagnelie et al., Am J Clin Nutr 1989, 1990

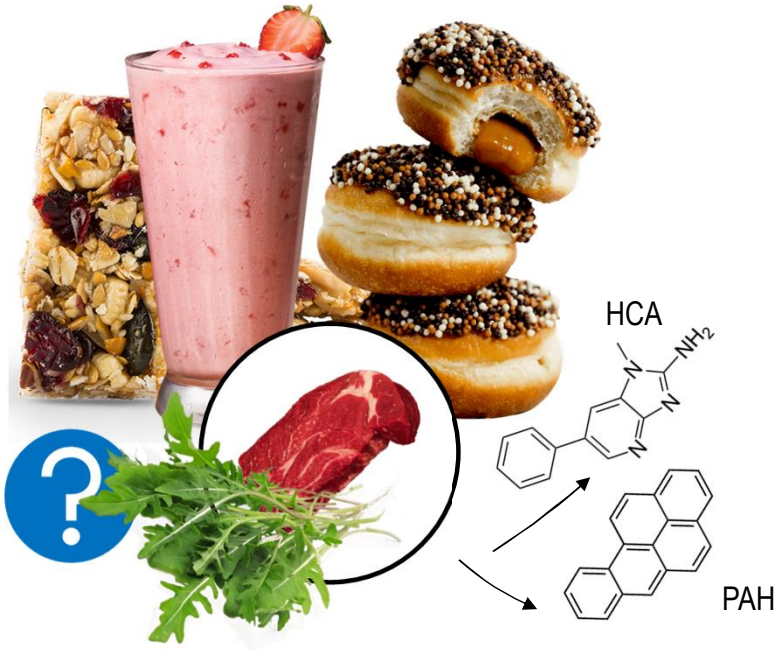
Rethinking food advice



Overfat Adults and Children in Developed Countries: The Public Health Importance of Identifying Excess Body Fat

Philip B. Maffetone[1]*, Ivan Rivera-Dominguez[2] and Paul B. Laursen[3]

Front. Public Health, 24 July 2017



Reprise: what is the rightful place of meat in the national diet?

Don’t let anyone tell you otherwise: meat is a healthy food

- Offers key nutrients (some are difficult to obtain otherwise)
- Important to nourish and protect vulnerable populations
- Within wholesome diets, there is no good evidence for harm

Impact on the environment is contextual, as for any food

- Proper integration improves the food system, offers ecological benefits
- Interventions *are* needed and should be based on the best of science, but technocratic interference with the food system will lead to damage

Meat represents so much more, beyond nutrients

- Livelihoods, tradition, craftmanship, commensality, generosity, passion, e SHOW IT!

Always start from the strengths ï because they are multiple and robust
Superior to its imitations in many ways but people need to understand *why*

Thank you

Frederic.leroy@vub.be

@fleroy1974

https://aleph-2020.blogspot.com