Meat

Reflections on the Complexities of “Too Much” Consumption

Alice V. Stanton

Professor, Royal College of Surgeons in Ireland

&

Director Human Health, Devenish Nutrition



RCSI UNIVERSITY OF MEDICINE AND HEALTH SCIENCES

DEVENISH™
Beyond Nutrition

WHO Definition of Healthy Diet

A healthy diet helps to protect against;

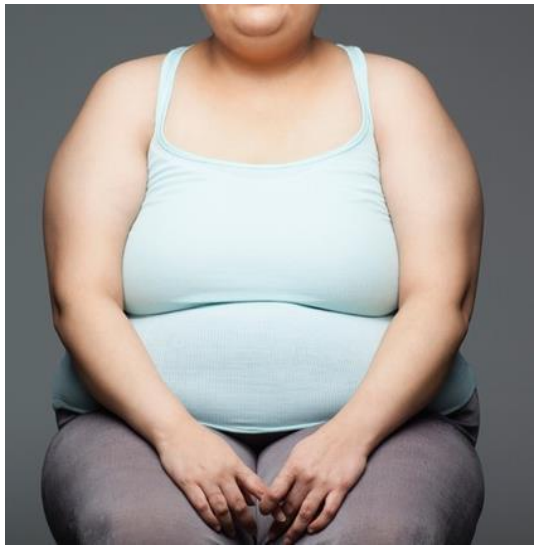
Malnutrition in all its forms,

as well as

Non-communicable diseases (NCDs),

such as diabetes, heart disease, stroke and cancer.

Current ~~Double~~ Triple Health Burden of Malnutrition.



1.9 billion are
Overweight or **Obese**



850 million are
Chronically Undernourished



2 billion suffer from
Hidden Hunger

Sources: FAO, 2015 | WHO, 2017 | WHO, 2012

Wealth of Recent Publications Recommending Dramatic Reductions or Total Exclusion of Animal-Sourced Foods (Particularly Meat) from the Human Diet.

Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019

GBD 2019 Risk Factors Collaborators*

ARTICLES

https://doi.org/10.1038/s43016-021-00343-4

nature food

Check for updates

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]✉

The 2020 report of The *Lancet* Countdown on health and climate change: responding to converging crises

Nick Watts, Markus Amann, Nigel Arnell, Sonja Ayeb-Karlsson, Jessica Beagley, Kristine Belesova, Maxwell Boykoff, Peter Byass, Wenjia Cai, Diarmid Campbell-Lendrum, Stuart Capstick, Jonathan Chambers, Samantha Coleman, Carole Dalin, Meaghan Daly, Niheer Dasandi, Shouro Dasgupta, Michael Davies, Claudia Di Napoli, Paula Dominguez-Salas, Paul Drummond, Robert Dubrow, Kristie L Ebi, Matthew Eckelman, Paul Ekins, Luis E Escobar, Lucien Georgeson, Su Golder, Delia Grace, Hilary Graham, Paul Haggar, Ian Hamilton, Stella Hartinger, Jeremy Hess, Shih-Che Hsu, Nick Hughes, Slava Jankin Mikhaylov, Marcia P Jimenez, Ilan Kelman, Harry Kennard, Gregor Kiesewetter, Patrick L Kinney, Tord Kjellstrom, Dominic Kniveton, Pete Lampard, Bruno Lemke, Yang Liu, Zhao Liu, Melissa Lott, Rachel Lowe, Jaime Martinez-Urtaza, Mark Maslin, Lucy McAllister, Alice McGushin, Celia McMichael, James Milner, Maziar Moradi-Lakeh, Karyn Morrissey, Simon Munzert, Kris A Murray, Tara Neville, Maria Nilsson, Maquins Odhiambo Sewe, Tadj Oreszczyn, Matthias Otto, Fereidoon Owfi, Olivia Pearman, David Pencheon, Ruth Quinn, Mahnaz Rabbaniha, Elizabeth Robinson, Joacim Rocklöv, Marina Romanello, Jan C Semenza, Jodi Sherman, Liuhua Shi, Marco Springmann, Meisam Tabatabaei, Jonathon Taylor, Joaquin Triñanes, Joy Shumake-Guillemot, Bryan Vu, Paul Wilkinson, Matthew Winning, Peng Gong, Hugh Montgomery*, Anthony Costello**

Global, regional, and national burden of stroke and its risk factors, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019

Lancet Neurol 2021; 20: 795–820

GBD 2019 Stroke Collaborators*

PLOS MEDICINE

RESEARCH ARTICLE

Estimating impact of food choices on life expectancy: A modeling study

Lars T. Fadnes[1,2]*, Jan-Magnus Økland[1,3], Øystein A. Haaland[1,3☯], Kjell Arne Johansson[1,2,3☯]

1 Department of Global Public Health and Primary Care, University of Bergen, Norway, 2 Bergen Addiction Research, Department of Addiction Medicine, Haukeland University Hospital, Bergen, Norway, 3 Bergen Center for Ethics and Priority Setting, University of Bergen, Norway

BMJ Global Health

Global red and processed meat trade and non-communicable diseases

Min Gon Chung[1,2] Yingjie Li[1,3] Jianguo Liu[1]

Wealth of Recent Publications Recommending Dramatic Reductions or Total Exclusion of Animal-Sourced Foods (Particularly Meat) from the Human Diet.

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Each single serving of Frankfurter sandwich results in 35 minutes of life lost

…onal, and national burden of stroke and its risk …0–2019: a systematic analysis for the Global …of Disease Study 2019

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Lancet Neurol 2021; 20: 795–820

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The longevity diet: what to eat for a healthier life





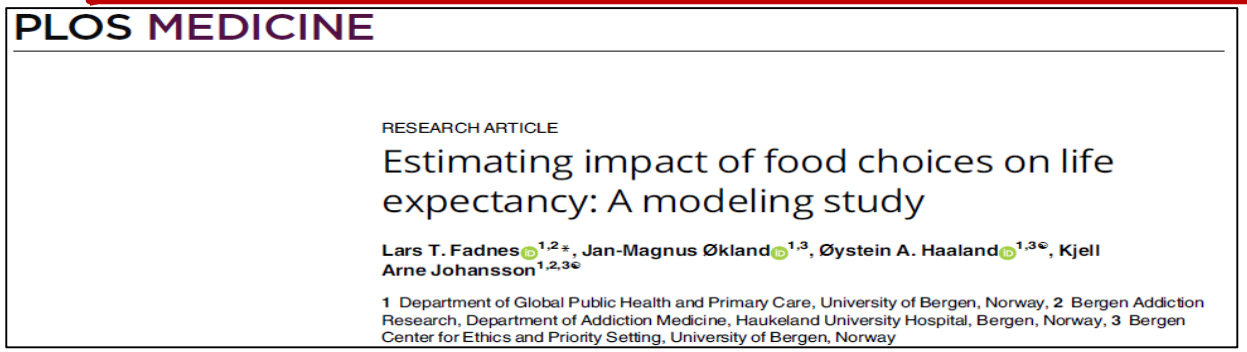
If you were to start somewhere, there is a clear pecking order to dietary change. "Cutting out red and processed meats was one of the most important shifts, adding an average 1.6 years to a young woman's lifespan and 1.9 years to a man's," says Jan-Magnus Okland, a co-author on the paper.

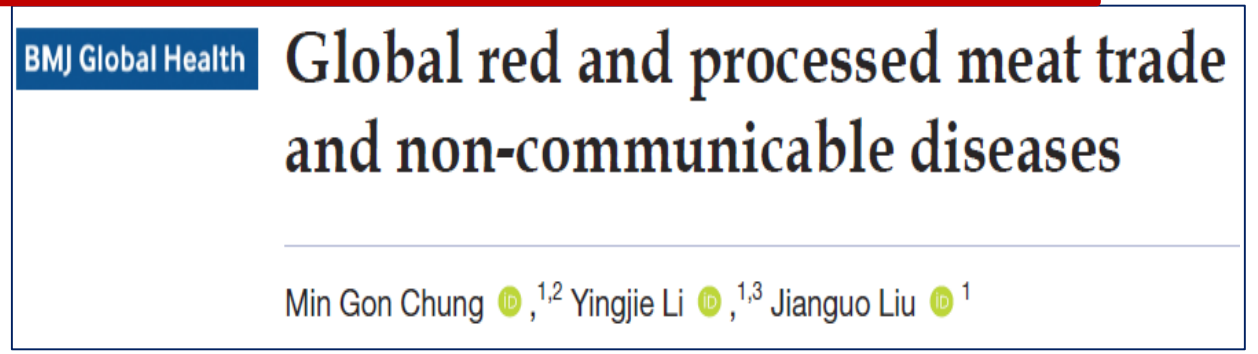
Peta Bee

Saturday July 09 2022, 12.01am BST, The Times

Wealth of Recent Publications Recommending Dramatic Reductions or Total Exclusion of Animal-Sourced Foods (Particularly Meat) from the Human Diet.







Global Burden of Disease (GBD) Data and Analyses are Quoted and Influence Policies of;

- **Food and Agriculture Organization** of the **United Nations**
- **World Health Organization**.
- **European Commission** - Farm to Fork Strategy for a fair, healthy and environmentally-friendly food system.

GBD studies are led by the Institute for
Health Metrics and Evaluation, University of Washington, Seattle,
who recently described the GBD studies as

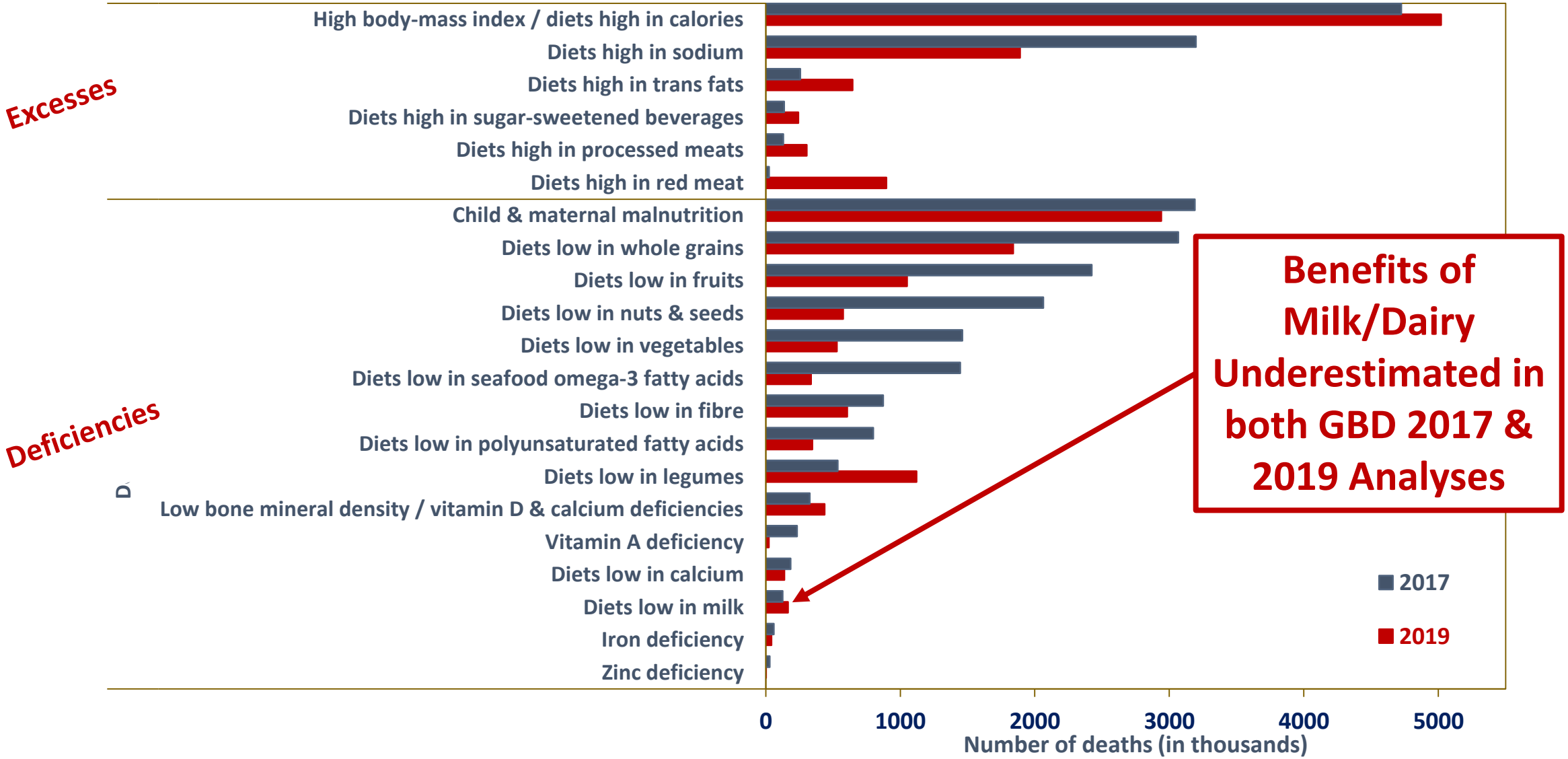
“THE DE-FACTO SOURCE FOR GLOBAL HEALTH ACCOUNTING”.

Dietary Risks and Deaths

GBD 2017 Analysis *Versus* *GBD* 2019 Analysis

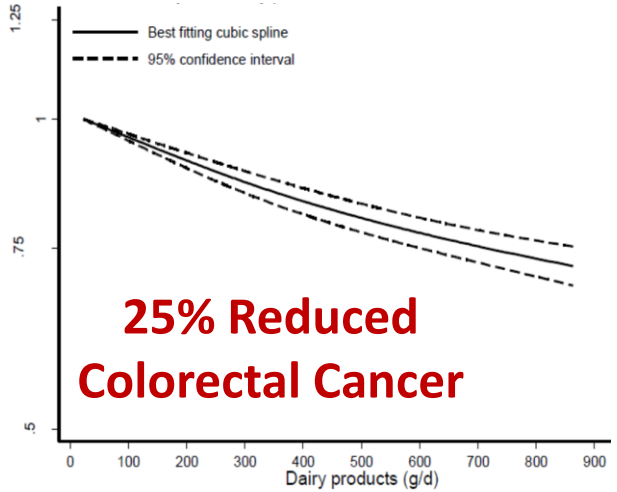
Christopher JL Murray & GBD 2017 Diet Collaborators. Lancet 2019I
Institute for Health Metrics and Evaluation (2018) GBD Compare. Seattle, WA: IHME, University of Washington. http://vizhub.healthdata.org/gbd-compare.

Christopher JL Murray et al. Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019 Lancet 2020



Two or more Full-Fat Dairy Servings/Day Associated With:

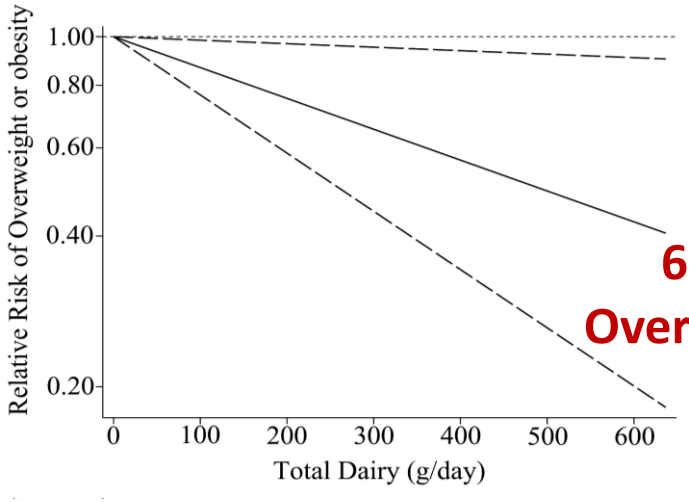
Relative Risk of Colorectal Cancer



25% Reduced Colorectal Cancer

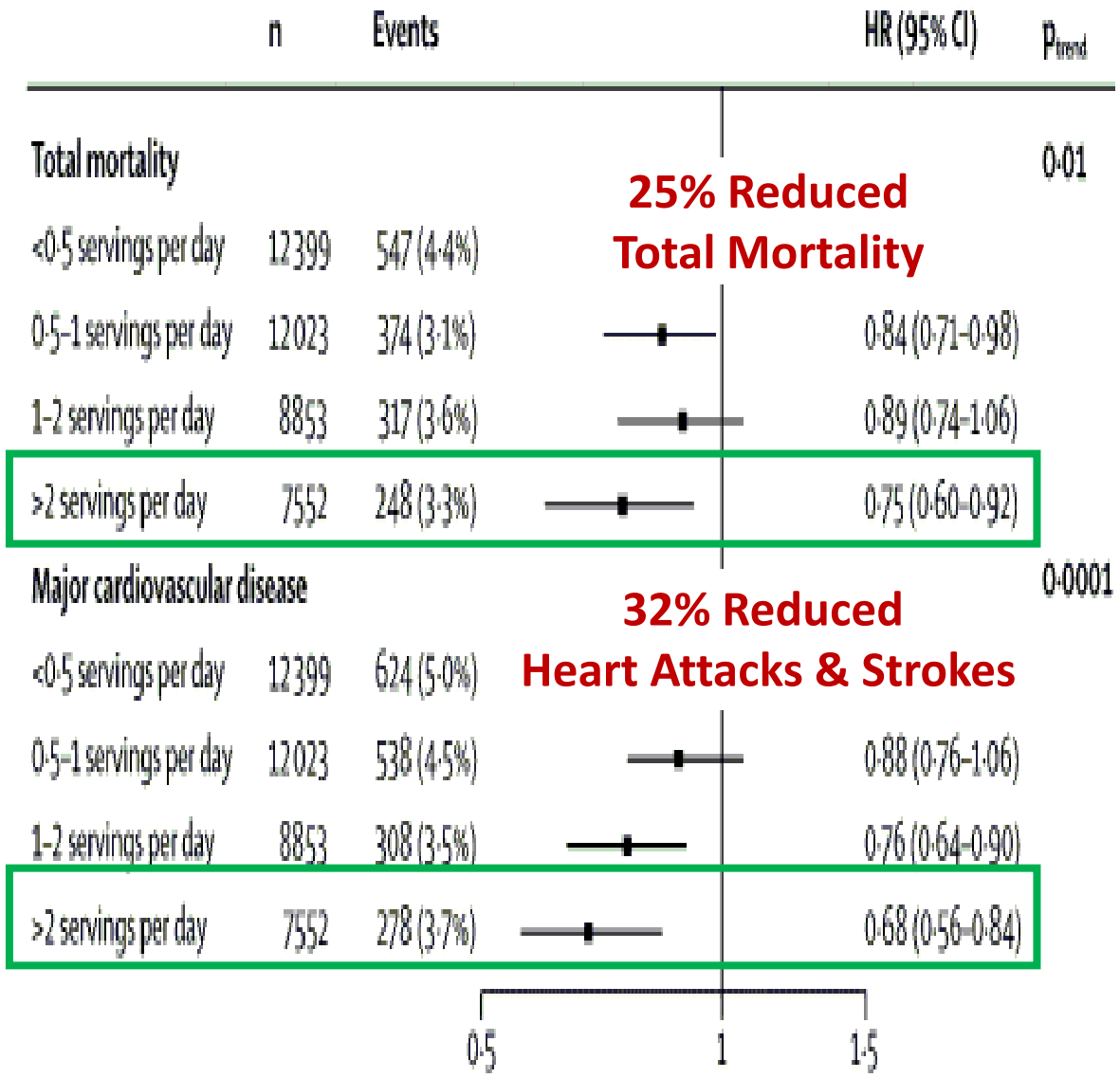
World Cancer Research Fund/ American Institute for Cancer Research. Continuous Update Project Expert Report 2018.





60% Reduced Overweight/Obesity

Feng et al, Adv Nutr 2022; 13 (6): 2165–2179.



25% Reduced Total Mortality

32% Reduced Heart Attacks & Strokes

Dehghan M et al. Association of dairy intake with cardiovascular disease and mortality in 21 countries from five continents (PURE): a prospective cohort study. Lancet 2018

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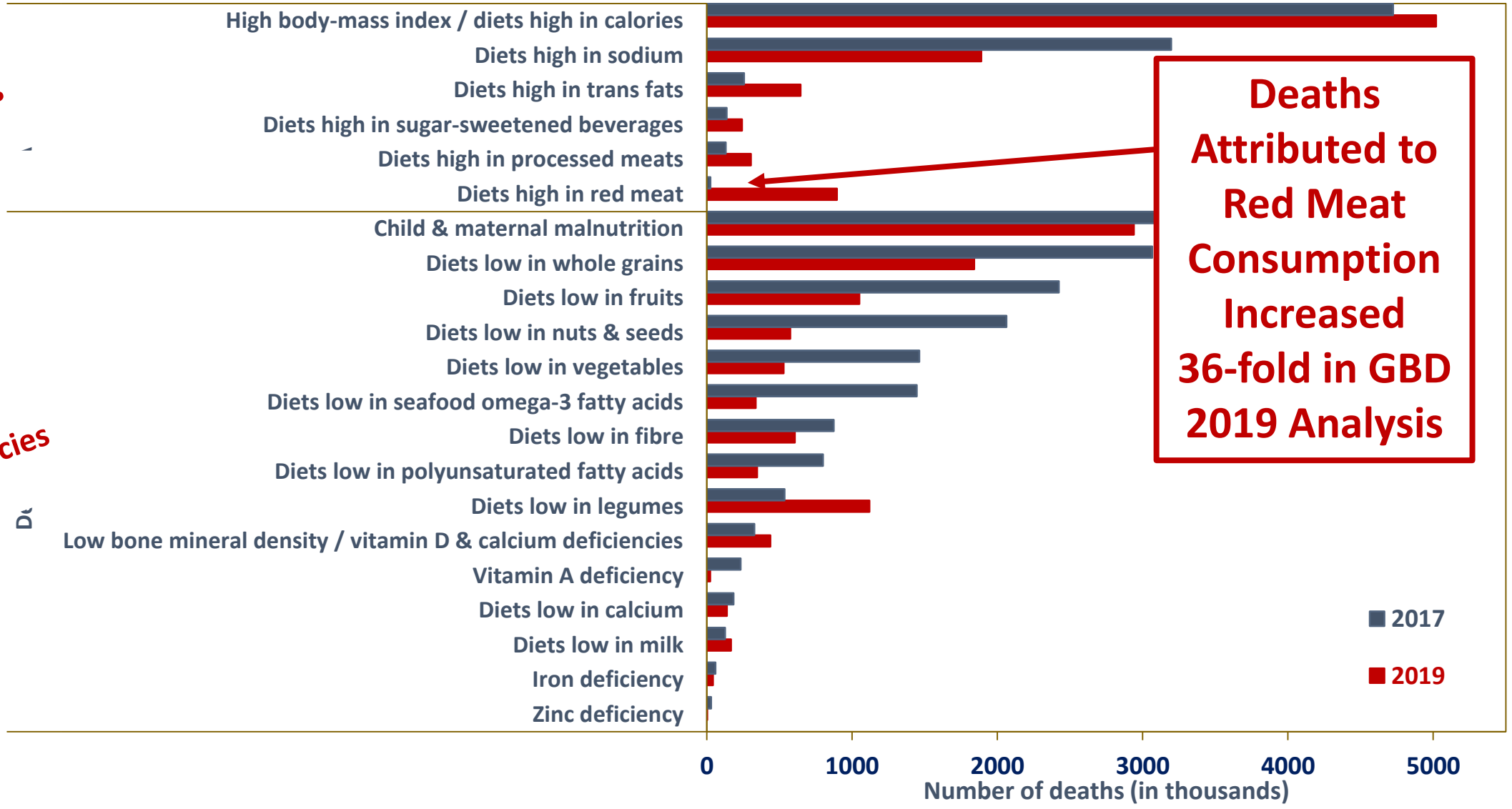


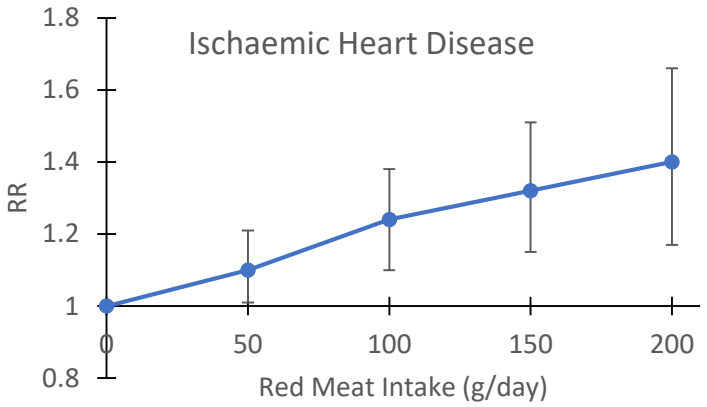
Global Burden of Disease Study 2019

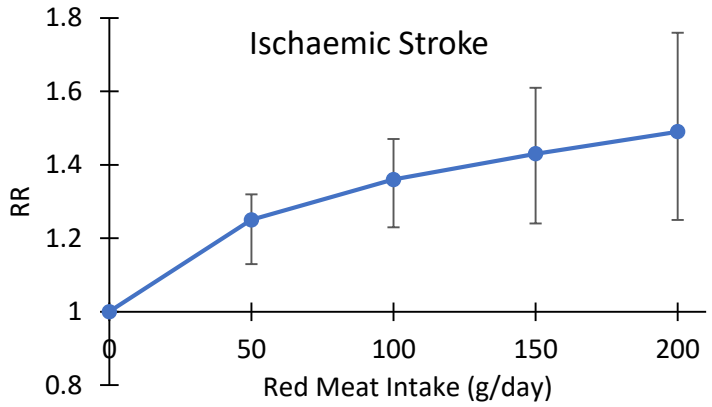
More empirical standardised methods for selecting the theoretical minimum risk exposure level (TMREL)

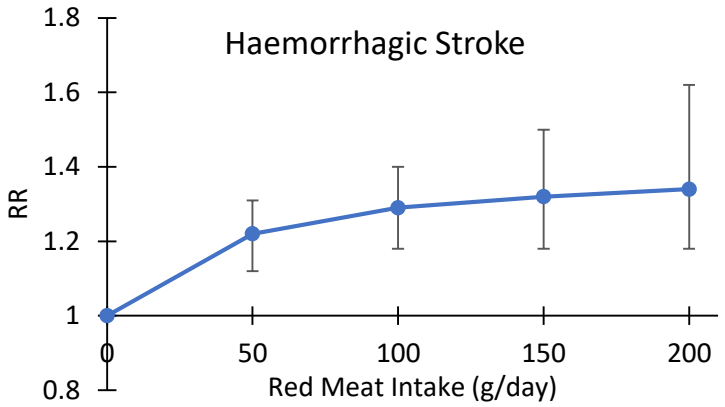
"Red meat TMREL changed from 22·5g/day to 0 g/day."

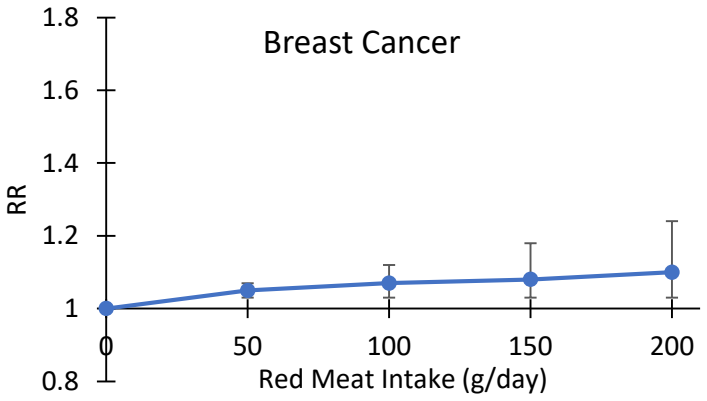
Conducted their own systematic reviews and meta-regressions, and stated that they found

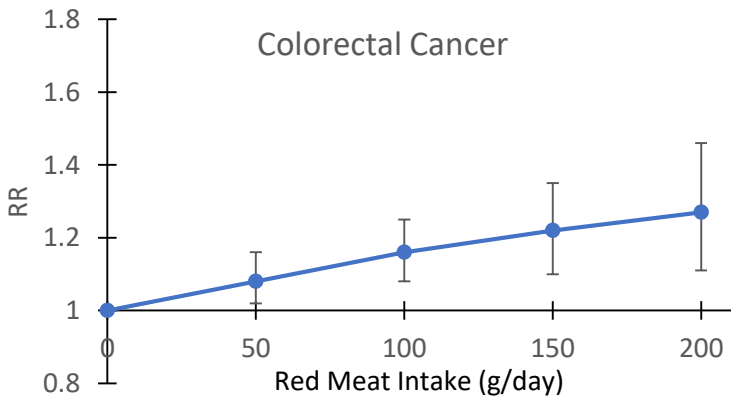
"Sufficient evidence supporting the causal relationship of red meat intake with 6 adverse outcomes"

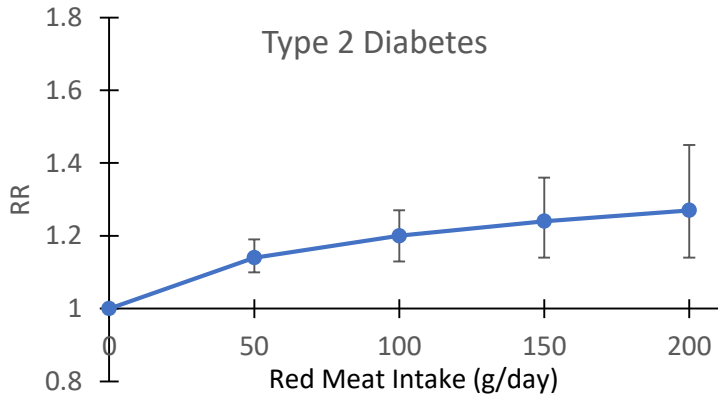






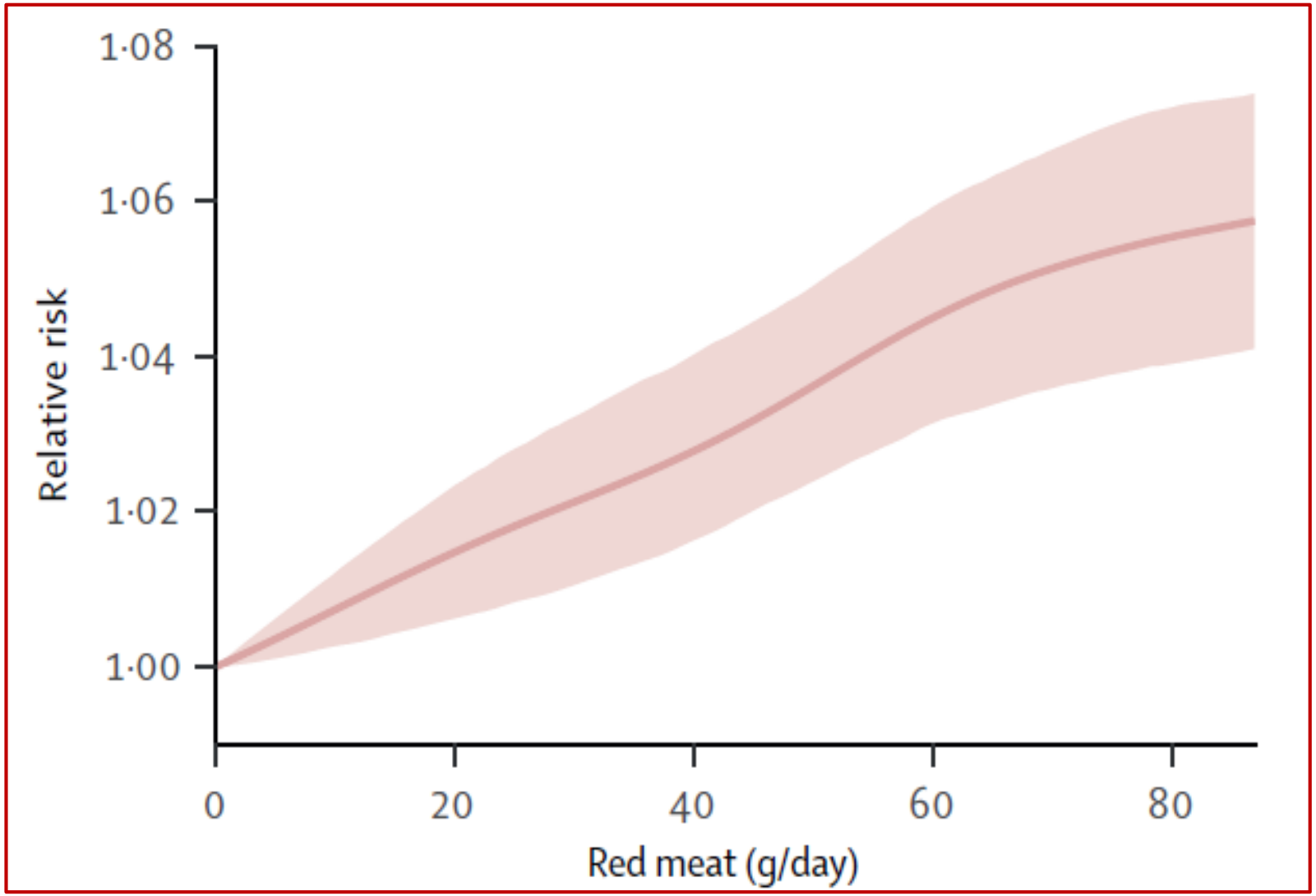




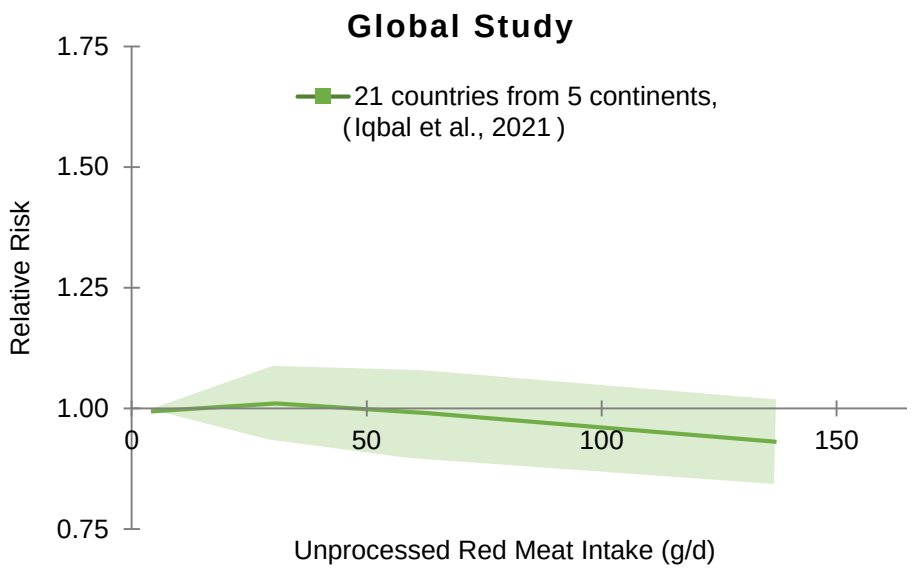


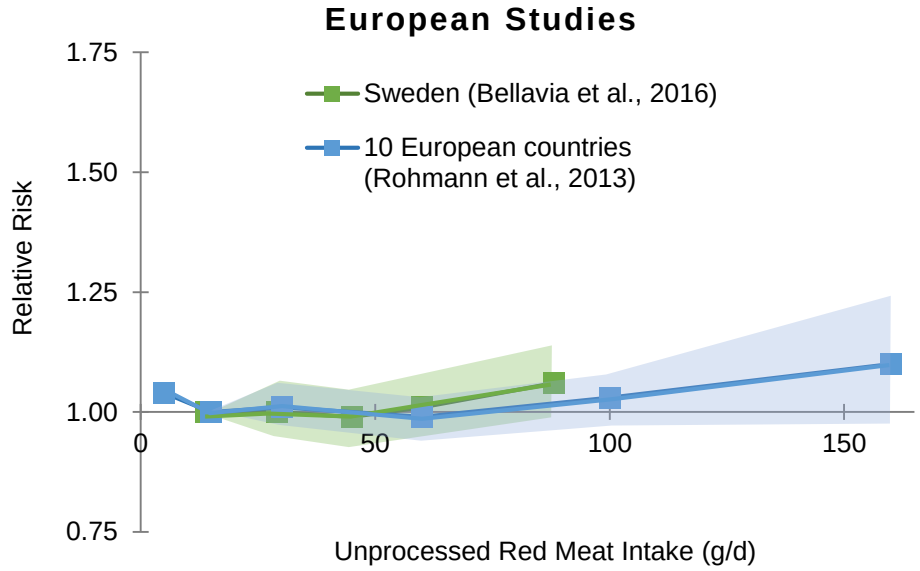
Global Burden of Disease Study 2019

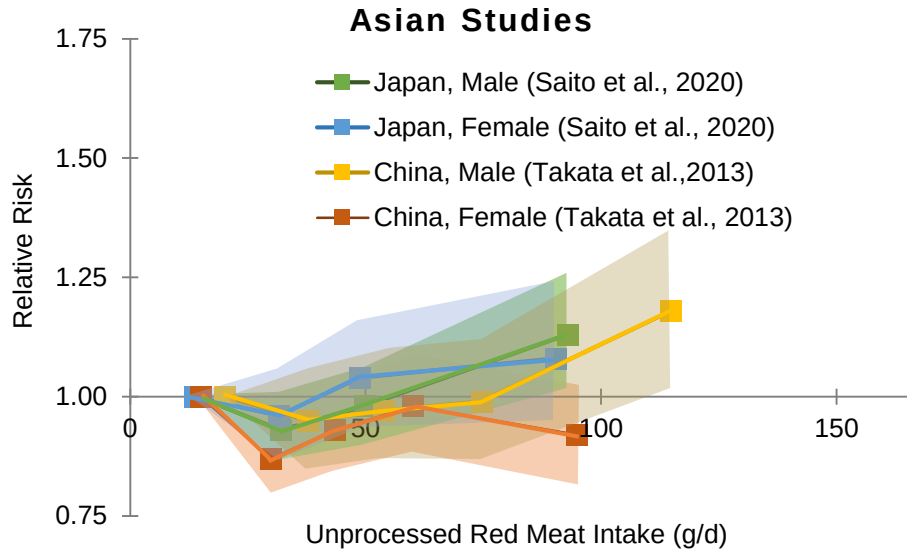
Red Meat Consumption & All-Cause Mortality Risk

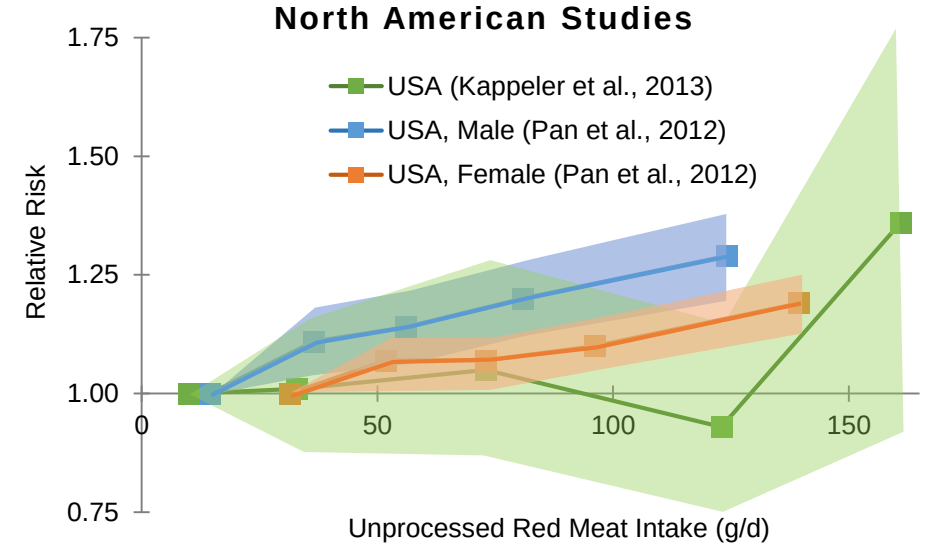


Relative Risk for All-Cause Mortality from Large Published Cohort Studies









THE LANCET

February 2022

CORRESPONDENCE

36-fold higher estimate of deaths attributable to red meat intake in GBD 2019: is this reliable?

Alice V Stanton, Frédéric Leroy, Christopher Elliott, Neil Mann, Patrick Wall, Stefaan De Smet

RCSI, Vrije Universiteit Brussel, QUB, University of Melbourne, UCD, Ghent University

THE LANCET

April 2022

CORRESPONDENCE

36-fold higher estimate of deaths attributable to red meat intake in GBD 2019: is this reliable? – Author's reply

Christopher J L Murray on behalf of the GBD Risk Factors Collaborators

Institute for Health Metrics & Evaluation, University of Washington, Seattle

Twitter

April 2022

@GuyattGH

Professor Gordon Guyatt

McMaster University



Latest estimates of deaths from #redmeat by Global Burden Disease Study 36 times greater than 2017. Red meat may not kill at all, but something seriously wrong in estimate.

Calls for evidence remain unanswered even in latest author's response

BIG PROBLEM

THE LANCET

August 2022

CORRESPONDENCE

Troubling assumptions behind GBD 2019 on the health risks of red meat

Vanessa L Z Gordon-Dseagu, Martin J Wiseman, Kate Allen, Judy Buttriss, Christine Williams

Academy of Nutrition Sciences & World Cancer Research Fund

nature medicine

ARTICLES

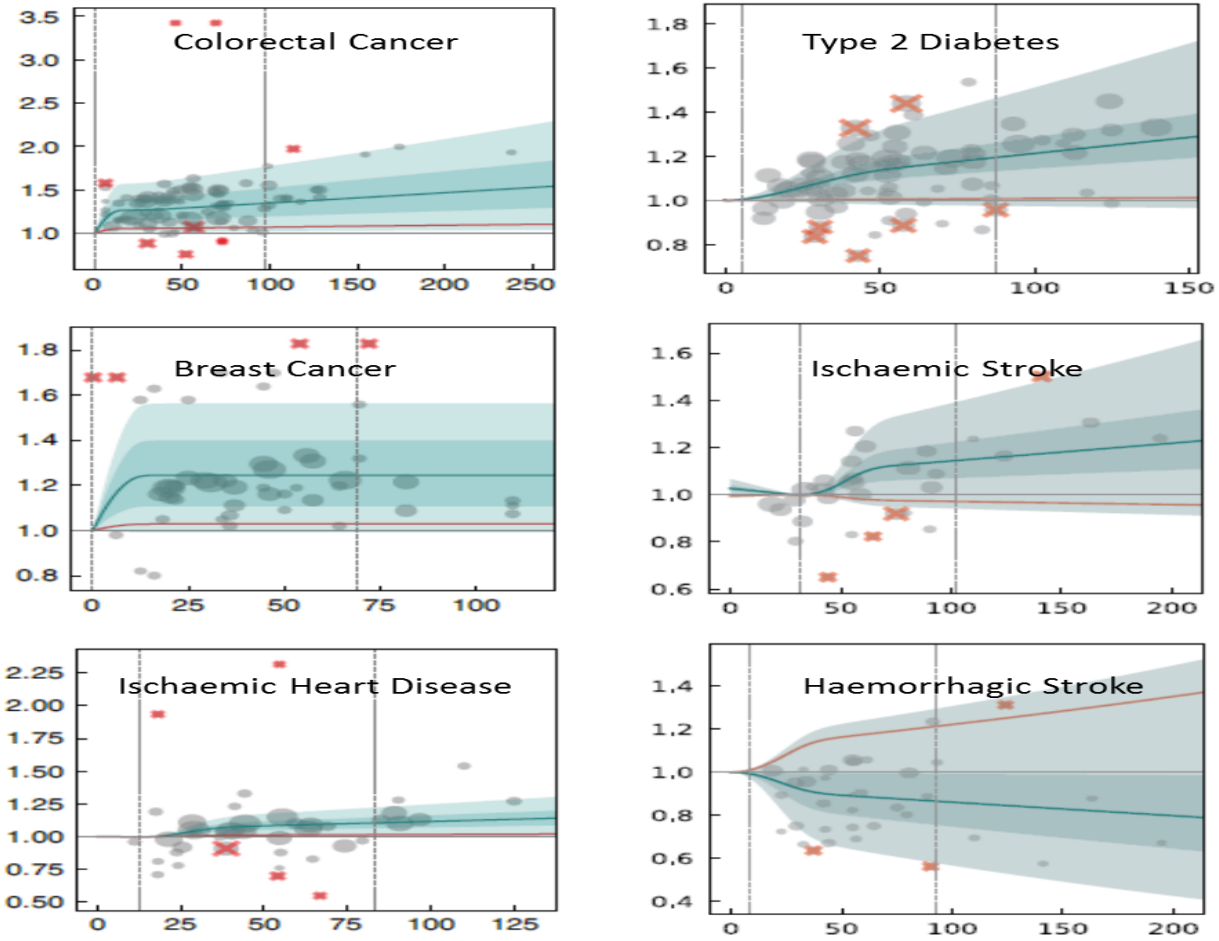
https://doi.org/10.1038/s41591-022-01968-z

Check for updates

OPEN

Health effects associated with consumption of unprocessed red meat: a Burden of Proof study

Haley Lescinsky[1], Ashkan Afshin[1,2], Charlie Ashbaugh[1], Catherine Bisignano[1], Michael Brauer[1,2,3], Giannina Ferrara[1], Simon I. Hay[1,2], Jiawei He[1,2], Vincent Iannucci[1], Laurie B. Marczak[1], Susan A. McLaughlin[1], Erin C. Mullany[1], Marie C. Parent[1], Audrey L. Serfes[1], Reed J. D. Sorensen[1], Aleksandr Y. Aravkin[1,2,4], Peng Zheng[1,2] and Christopher J. L. Murray[1,2]



Very Different Conclusions from GBD Collaborators Concerning Risks of Red Meat

- "No or very weak evidence that unprocessed red meat is associated with any increased risk."
- "Evidence insufficient to make any strong or conclusive recommendations."
- "95% uncertainty interval for the TMREL for unprocessed red meat is very wide (0-200g/d)." – optimal intake could be as high as 200g per day.

Unprocessed Red Meat and Processed Meat Consumption: Dietary Guideline Recommendations From the NutriRECS Consortium

Johnson BC et al. Ann Intern Med October 2019

Table 1. Causal Inference Assessment Based on Summary of Evidence for Statistically Significant Effects for Red Meat, Processed Meat, and Dietary Patterns

Outcome	Unprocessed Red Meat		Processed Meat		Dietary Patterns	
	Risk Difference	Certainty of Evidence	Risk Difference	Certainty of Evidence	Risk Difference	Certainty of Evidence
Cardiovascular mortality*†	4 fewer per 1000 persons (from 5 fewer to 4 fewer) over 10.8 y	Very low	4 fewer per 1000 persons (from 7 fewer to 1 fewer) over 10.8 y	Very low	6 fewer per 1000 persons (from 9 fewer to 2 fewer) over 10.8 y	Very low
Type 2 diabetes*†	6 fewer per 1000 persons (from 7 fewer to 4 fewer) over 10.8 y	Low	12 fewer per 1000 persons (from 16 fewer to 9 fewer) over 10.8 y	Very low	14 fewer per 1000 persons (from 18 fewer to 8 fewer) over 10.8 y	Very low
Overall cancer mortality†‡	7 fewer per 1000 persons (from 9 fewer to 6 fewer) over lifetime	Low	8 fewer per 1000 persons (from 12 fewer to 6 fewer) over lifetime	Low	12 fewer per 1000 persons (from 18 fewer to 4 fewer) over lifetime	Very low

Conclusions

Considerable uncertainty surrounding the evidence linking red and processed meat consumption to adverse outcomes

Recommendations

Adults should continue current red and processed meat eating habits

Consequences of Non-Correction / Retraction of GBD Risk Factors Study 2019

April 2023
2,147 Scientific Paper Citations
40 Policy Document Citations

THE LANCET — Published online October 25, 2022

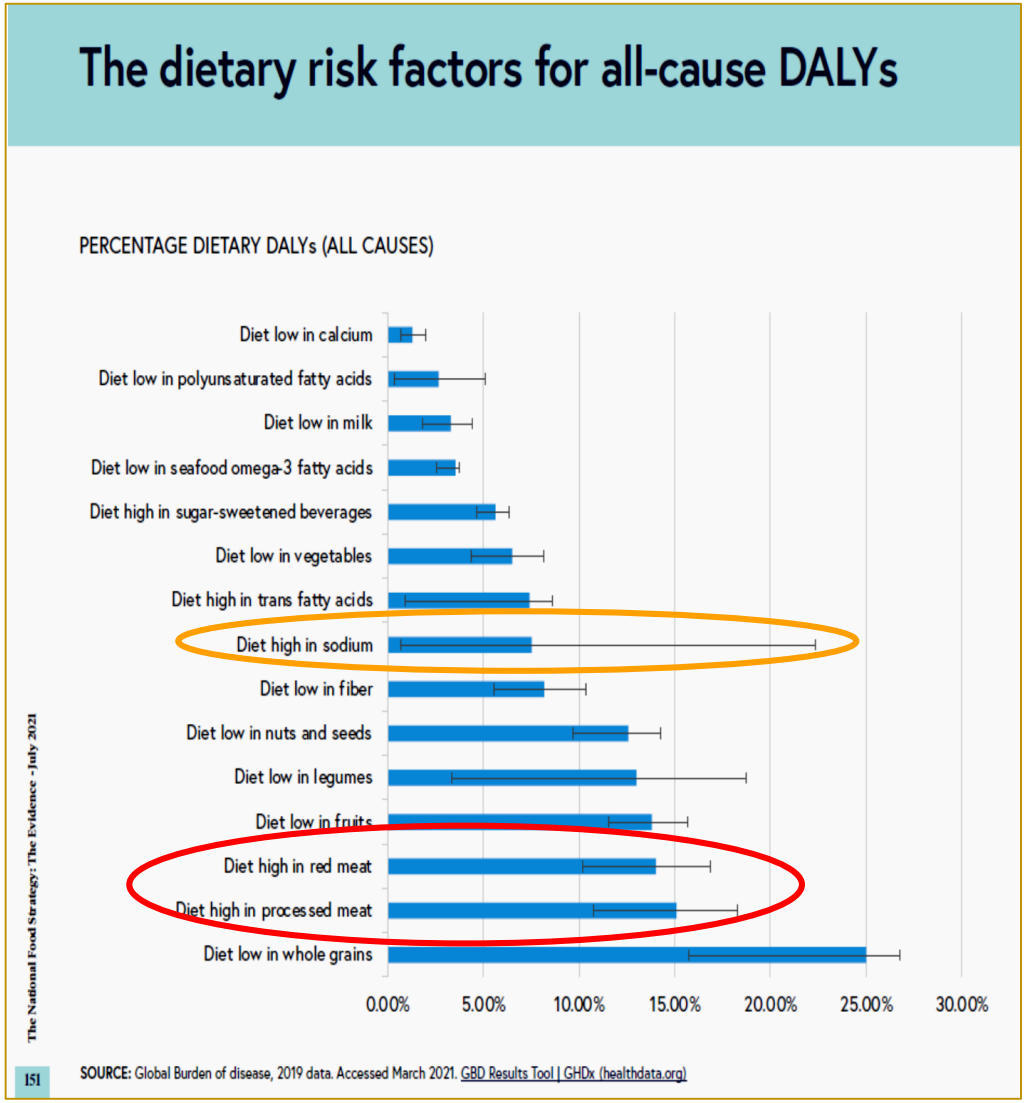
The 2022 report of the *Lancet* Countdown on health and climate change: health at the mercy of fossil fuels

Co-chairs of the Lancet Countdown
Anthony Costello, Hugh Montgomery (University College London) & Peng Gong (University of Hong Kong)

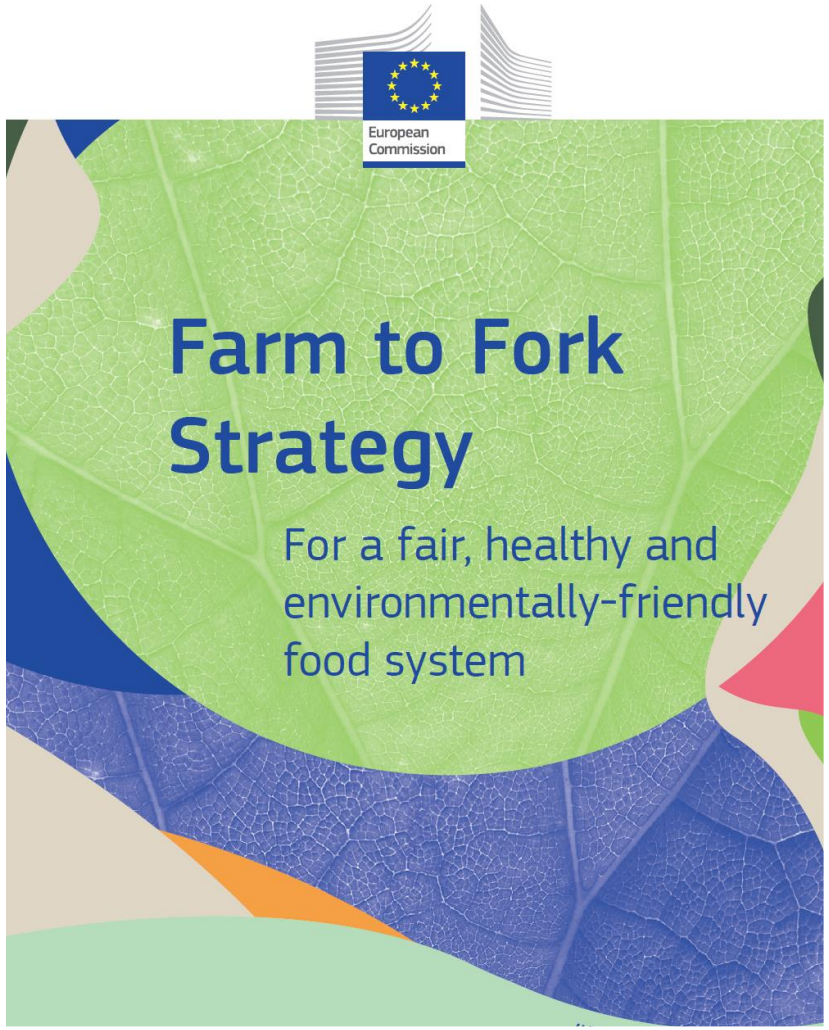
HEADLINE FINDING

In 2019 **two million deaths** were related to **red and processed meat and dairy** consumption.

The National Food Strategy - The Evidence – July 2021.



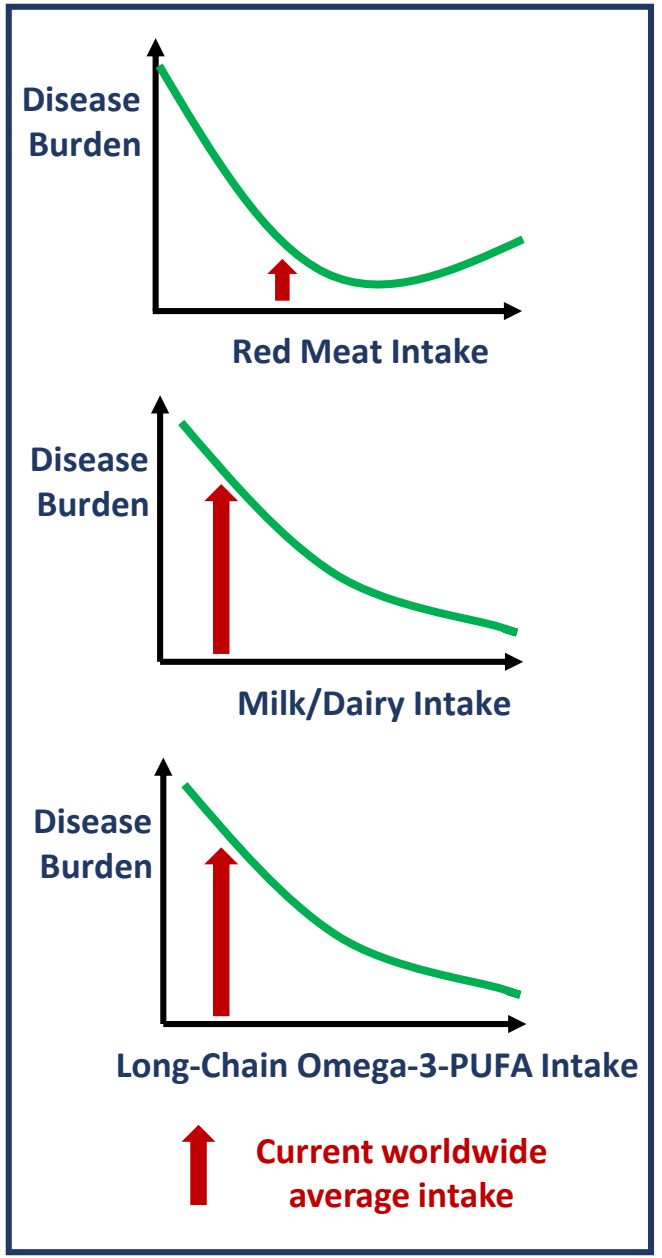
Will the Non-Correction/Retraction of the GBD Risk Factors Study 2019 have Consequences for EU & Other International Policies?





Key Take Home Messages

- Scientists, policy-makers and all involved in the food system should be extremely wary of global health estimates that;
  - Are not rigorously & transparently evidence-based.
  - Ignore the protections against nutritional deficiencies & chronic diseases afforded by animal-source foods.
- The relationship between red meat & disease burden appears U-shaped;
  - Excess red meat consumption (>4 portions or 500g / week) may be associated with small (5-15%) increases in colon cancer.
  - Insufficient red meat consumption (<2 portions / week) is associated with very large (100-1000%) increases in anaemia, stunted childhood growth and cognition, osteoporosis and sarcopenia.
- Consumption of nutrient-rich animal-sourced foods, in appropriate evidence-based quantities, should continue to be included in national and international guidelines for a healthy, balanced diet.



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