

The 5-Flavored Case

For Food & Lifestyle as Medicine

David L. Katz, MD, MPH, FACPM, FACP, FACLM

CEO, Diet ID

Founder, True Health Initiative

Founding Director, Prevention Research Center, Yale University

Past-President, American College of Lifestyle Medicine

Ogden SMS

Ogden, UT

May 19, 2023



5 Flavors

- People
- Pandemic
- Planet
- Profit
- Promise



People

There's **Diet, Lifestyle,** *and everything else...*



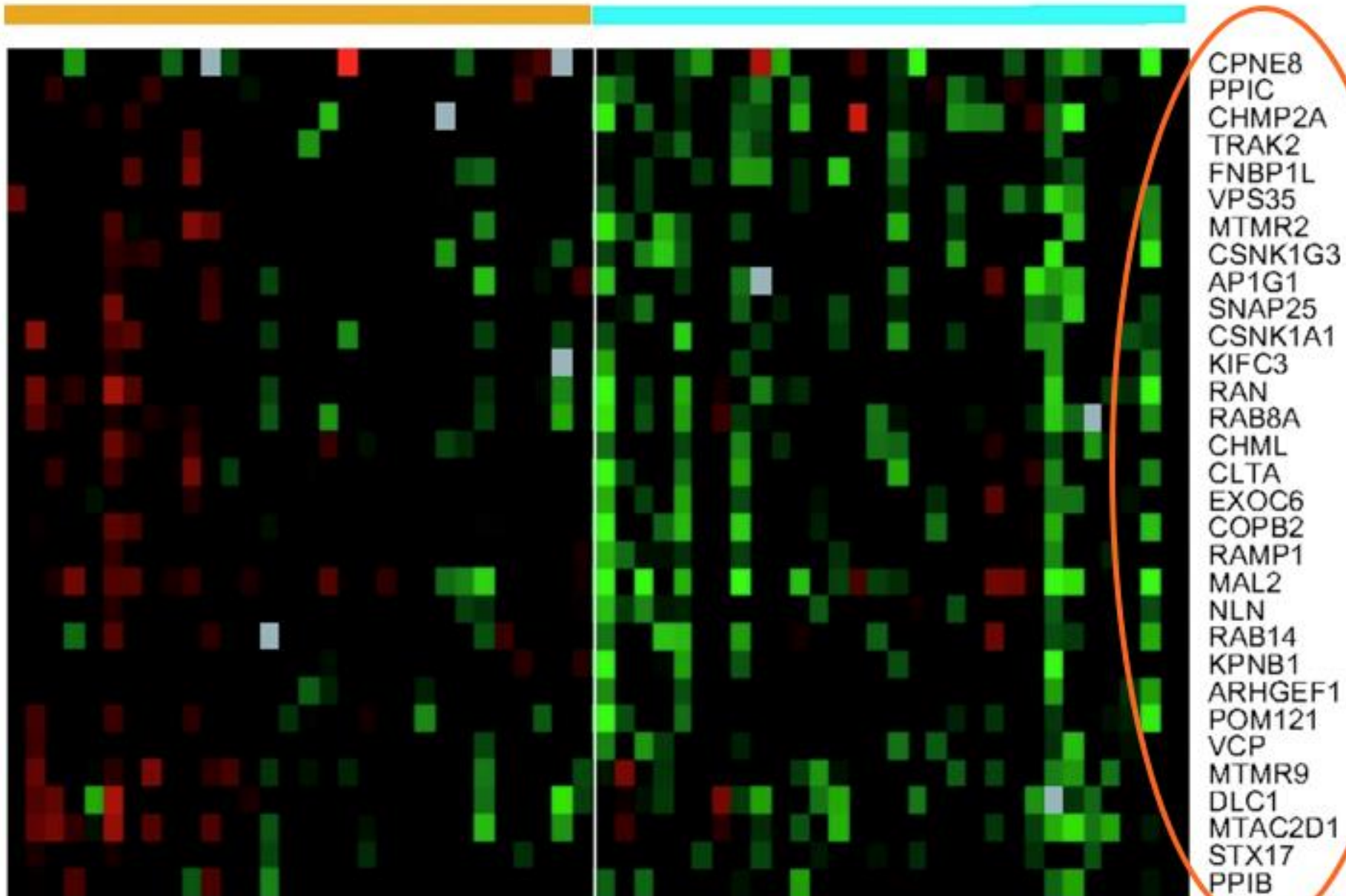
- Mokdad AH, Marks JS, Stroup DF, Gerberding JL. **Actual causes of death** in the United States, 2000. *JAMA*. 2004;291:1238-45

The People in Potsdam

- Ford ES, Bergmann MM, Kröger J, Schienkiewitz A, Weikert C, Boeing H. **Healthy living is the best revenge: findings from the European Prospective Investigation Into Cancer and Nutrition-Potsdam study.** *Arch Intern Med.* **2009** Aug 10;169(15):1355-62


Pre-intervention

Post-intervention



The Epigenetic Power of Lifestyle

- Khera AV, Emdin CA, Drake I, Natarajan P, Bick AG, Cook NR, Chasman DI, Baber U, Mehran R, Rader DJ, Fuster V, Boerwinkle E, Melander O, Orho-Melander M, Ridker PM, Kathiresan S. **Genetic Risk, Adherence to a Healthy Lifestyle, and Coronary Disease.** *N Engl J Med.* 2016 Dec 15;375(24):2349-2358



Ornish D, Lin J, Chan JM, Epel E, Kemp C, Weidner G, Marlin R, Frenda SJ, Magbanua MJ, Daubenmier J, Estay I, Hills NK, Chainani-Wu N, Carroll PR, Blackburn EH. Effect of **comprehensive lifestyle changes** on telomerase activity and telomere length in men with biopsy-proven low-risk prostate cancer: 5-year follow-up of a descriptive pilot study. *Lancet Oncol.* 2013 Oct;14(11):1112-20

Familial Clonal Hematopoiesis in a Long Telomere Syndrome

Emily A. DeBoy, B.S., Michael G. Tassia, Ph.D., Kristen E. Schratz, M.D., Stephanie M. Yan, B.A., Zoe L. Cosner, M.D., Emily J. McNally, B.S., Dustin L. Gable, M.D., Ph.D., Zhimin Xiang, M.B., B.S., David B. Lombard, M.D., Ph.D., Emmanuel S. Antonarakis, M.D., Christopher D. Gocke, M.D., Rajiv C. McCoy, Ph.D., et. al.

Abstract



Background

Telomere shortening is a well-characterized cellular aging mechanism, and short telomere syndromes cause age-related disease. However, whether long telomere length is advantageous is poorly understood.

Methods

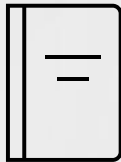
We examined the clinical and molecular features of aging and cancer in persons carrying heterozygous loss-of-function mutations in the telomere-related gene *POT1* and noncarrier relatives.

Results

A total of 17 *POT1* mutation carriers and 21 noncarrier relatives were initially included in the study, and a validation cohort of 6 additional mutation carriers was subsequently recruited.

OXFORD
Academic

The American
CLINICAL



Volume 114
Issue 2
August 2021

Article Contents

Conclusions

Our results from a large,
population-based survey confirm

**Translation: what's good for us is
good for our microbiome, and
vice versa**

compositionally distinct microbiota,
and with a greater potential to
produce SCFAs.

es with gut

, Aki S Havulinna,
olfo Salido,

es 605–616,

■ ANNUAL REVIEWS

Home / Annual Review of Public Health / Volume 35, 2014 / Katz, pp 83-103

Can We Say What Diet Is Best for Health?

Annual Review of Public Health

Vol. 35:83-103 (Volume publication date March 2014)

<https://doi.org/10.1146/annurev-publhealth-032013-182351>

D.L. Katz^{1,2} and S. Meller²

¹Prevention Research Center, Yale University School of Public Health, Griffin Hospital, Derby, Connecticut, 06418

²Yale University School of Medicine, New Haven, Connecticut 06510

The Evidence That, Arguably, Matters Most

The infographic features a world map with five longevity hotspots highlighted: Loma Linda, California; Nicoya, Costa Rica; Sardinia, Italy; Okinawa, Japan; and Ikara, Greece. A large white circle on the left contains the text 'BLUE ZONES' in yellow, with 'AFP/UEP' written in red over it. Below this circle is the text 'LONGEVITY HOTSPOTS'. On the right, a smaller version of the map is shown with a white circle containing 'BLUE ZONES' and 'LONGEVITY HOTSPOTS' below it. To the right of this smaller map is the text 'PFP/RFP' in large black letters. Below the main map, the text 'BLUE ZONE LIFE LESSONS' is followed by four icons and their corresponding phrases: a walking person for 'MOVE NATURALLY', a group of people for 'RIGHT TRIBE', a sun for 'RIGHT OUTLOOK', and a plate of food for 'EAT WISELY'.

AFP/UEP

BLUE ZONES

LONGEVITY HOTSPOTS

PFP/RFP

BLUE ZONE LIFE LESSONS

- MOVE NATURALLY
- RIGHT TRIBE
- RIGHT OUTLOOK
- EAT WISELY

Lifestyle Is the Medicine, Culture Is the Spoon: The Covariance of Proposition and Preposition

David L. Katz, MD, MPH, FACPM, FACP

First Published April 7, 2014

<https://doi.org/10.1177/1559827614527720>

Abstract

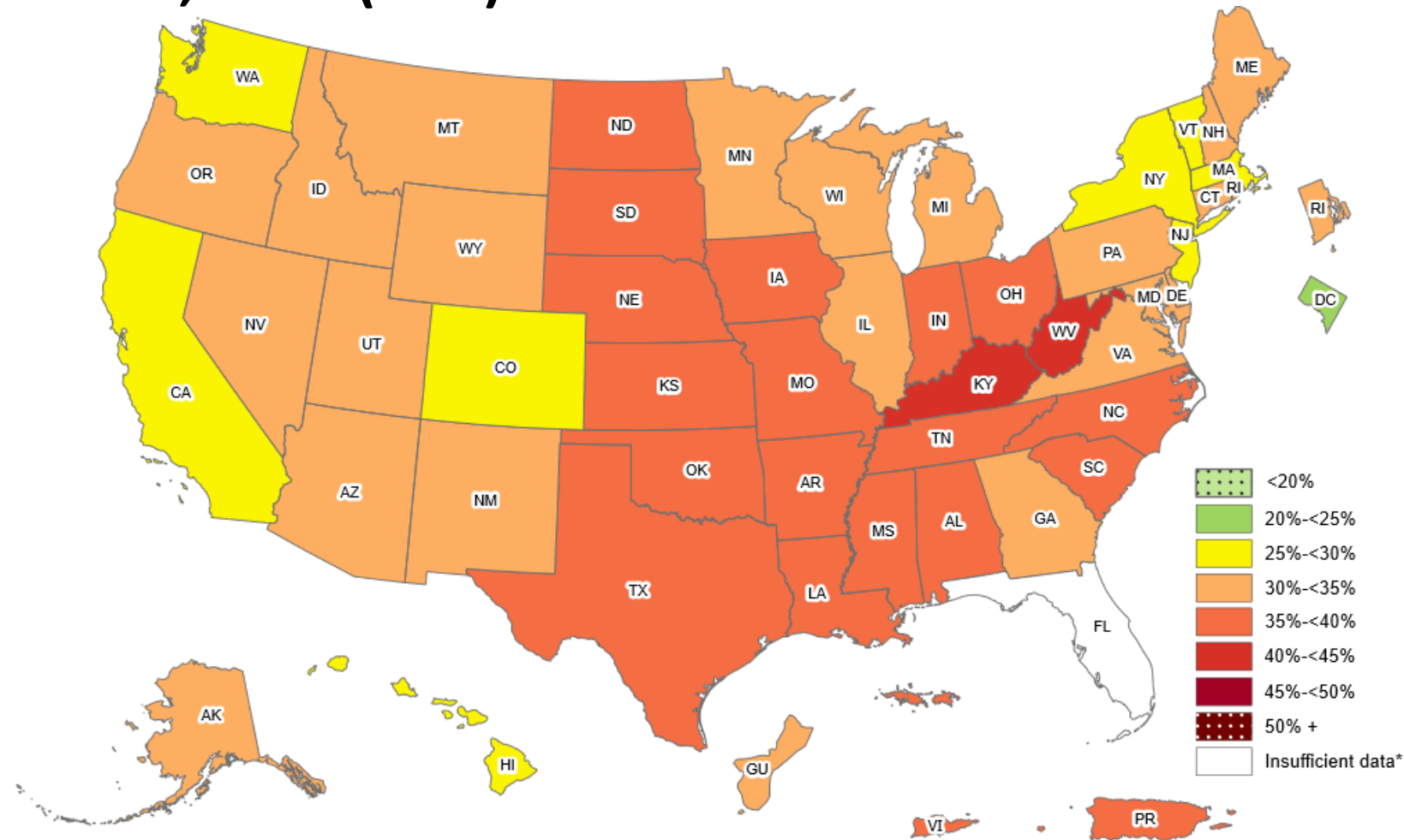
We have known now for a span of decades that the leading causes of premature death and chronic disease in the United States and increasingly around the world are behavioral factors under our potential control. We have as well consistent evidence from diverse sources indicating that amelioration of a short list of such factors, with an emphasis on dietary pattern, physical activity, and tobacco use, can slash rates of chronic disease and premature death alike. But choices people make...

QT	PAL	KET	LOC	SOU	AME	LOF	MED	NRM	FLX	PES	VET	VEG	MEX	SA	SA_V	CES	CEN
10																	
9																	
8																	
7																	
6																	
5																	
4																	
3																	
2																	
1																	

Lost in Translation...

- Knowledge, alas, isn't power...
 - Katz DL. **Life and death, knowledge and power: why knowing what matters isn't what's the matter.** *Arch Intern Med.* 2009 Aug 10;169(15):1362-3

Prevalence[¶] of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS[†], 2021 (CDC)

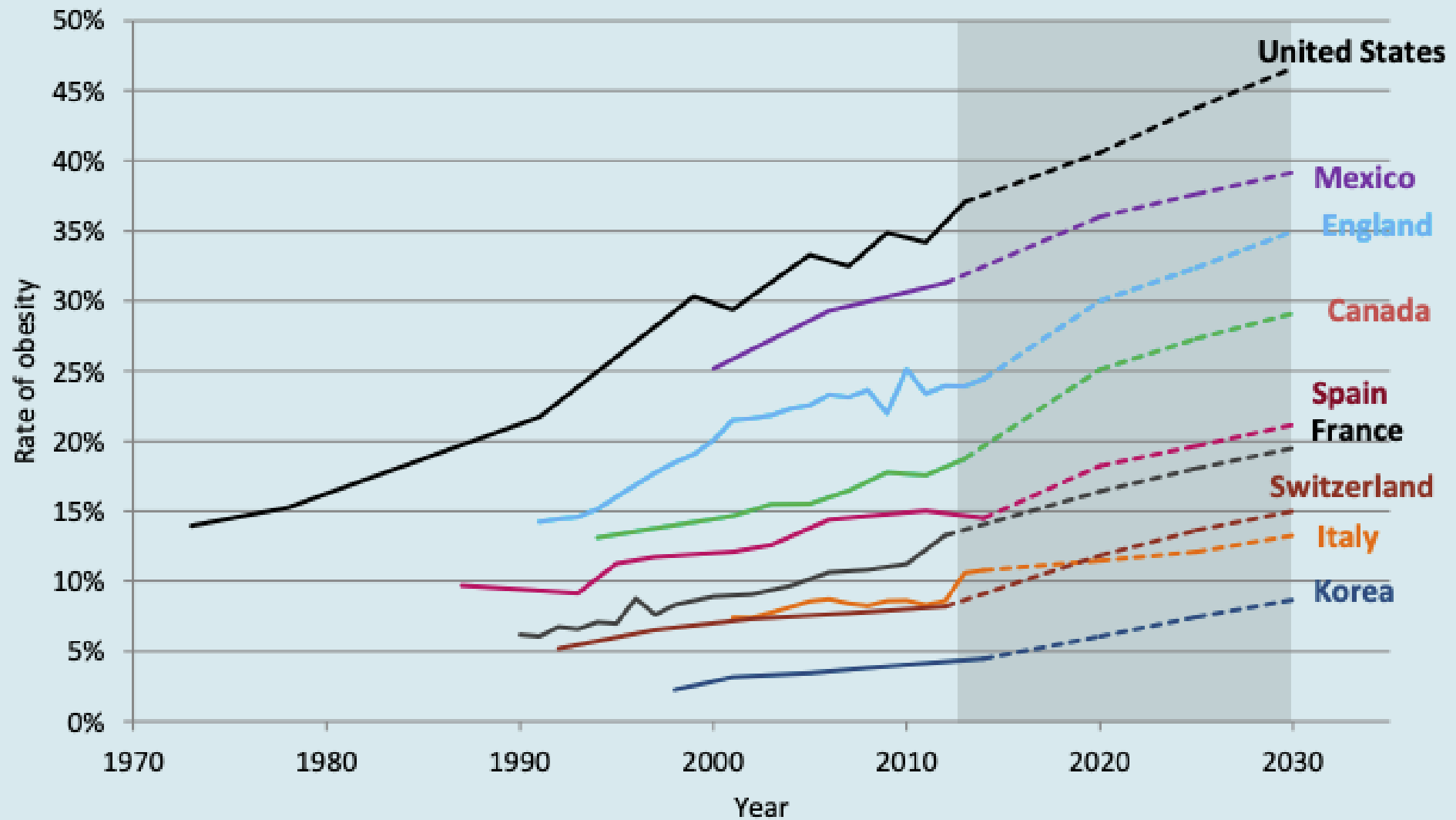


[¶]Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

[†]BRFSS = Behavioral Risk Factor Surveillance System

*Sample size <50, the relative standard error (dividing the standard error by the prevalence) $\geq 30\%$, or no data in a specific year.

Figure 5: Projected rates of obesity



Note: Obesity defined as Body Mass Index (BMI) $\geq 30\text{kg/m}^2$. OECD projections assume that BMI will continue to rise as a linear function of time.

Our Food Is Killing Too Many of Us

Improving American nutrition would make the biggest impact on our health care.

By Dariush Mozaffarian and Dan Glickman

Dr. Mozaffarian is dean of the Tufts Friedman School of Nutrition Science and Policy. Mr. Glickman was the secretary of agriculture from 1995 to 2001.



THE LANCET

Health effects of dietary risks in 195 countries, 1990-2017; a systematic analysis for the Global Burden of Disease Study 2017

GBD 2017 Diet Collaborators

First Published April 30, 2019 | DOI: [https://doi.org/10.1016/S0140-6736\(19\)30041-8](https://doi.org/10.1016/S0140-6736(19)30041-8)

Summary

Background

Suboptimal diet is an important preventable risk factor for non-communicable diseases (NCDs); however, its impact on the burden of NCDs has not been systematically evaluated. This study aimed to evaluate the consumption of major foods and nutrients across 195 countries and to quantify the impact of their suboptimal intake on NCD mortality and morbidity.

The Pandemic

Centers for Disease Control and Prevention

EMERGING INFECTIOUS DISEASES

Volume 26, Number 9 – September 2020

Dispatch

Updated Estimates of Chronic Conditions Affecting Risk for Complications from Coronavirus Disease, United States

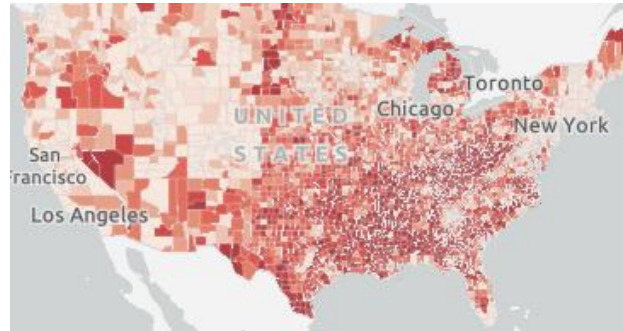
Mary L. Adams, David L. Katz, and Joseph Grandpre

Author affiliations: On Target Health Data LLC, Suffield, Connecticut, USA (M.L. Adams); True Health Initiative, Derby, Connecticut, USA (D.L. Katz); Wyoming Department of Health, Cheyenne, Wyoming, USA; (J. Grandpre)

Abstract

We estimated that 45.4% of US adults are at increased risk for complications from coronavirus disease because of cardiovascular disease, diabetes, respiratory disease, hypertension, or cancer. Rates increased by age, from 19.8% for persons 18–29 years of age to 80.7% for persons ≥ 80 years of age, and varied by state, race/ethnicity, health insurance status, and employment.

The New York Times



Where Chronic Health Conditions and Coronavirus Could Collide

By Nadja Popovich, Anjali Singhvi, and Matthew Conlen

May 18, 2020

As the new coronavirus continues to spread over the next months, and maybe even years, it could exact a heavy new toll in areas of the United States that have not yet seen major outbreaks but have high rates of diabetes, obesity, high blood pressure, and other chronic health conditions. Large parts of the South and Appalachia are especially vulnerable, according to a health-risk index created for The New York Times.

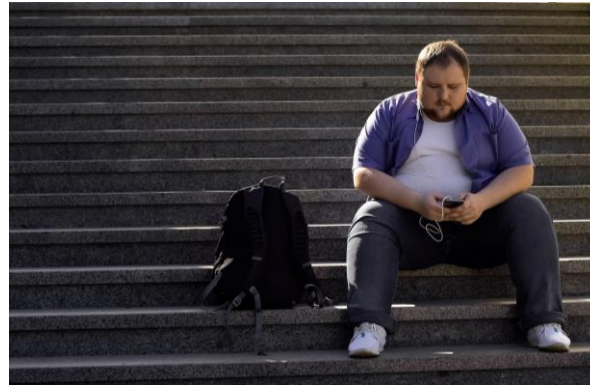
The New York Times

Covid and Diabetes, Colliding in a Public Health Train Wreck

By Andrew Jacobs

April 3, 2022

After older people and nursing home residents, no group perhaps has been harder hit by the pandemic than people with diabetes. Experts hope policymakers will take notice, and finally get serious about tackling the nation's diabetes crisis.



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Journal of the American Heart Association

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Coronavirus Disease 2019 Hospitalizations Attributable to Cardiometabolic Conditions in the United States: A Comparative Risk Assessment Analysis

Megan O'Hearn, Junxiu Liu, Frederick Cudhea, Renata Micha, and Darush Mozaffarian

Originally published 25 Feb 2021 | <https://doi.org/10.1161/JAHA.120.019259> | Journal of the American Heart Association. 2021;10:e019259

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Article Text



Article Info



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Diet quality and risk and severity of COVID-19: a prospective cohort study

Jordi Merino, Amit D Joshi, Long H Nguyen, Emily R Leeming, Mohsen Mazidi, David A Drew, Rachel Gibson, Mark S Graham, Chun-Han Lo, Joan Capdevila, Benjamin Murray, Christina Hu, Somesh Selvachandran, Alexander Hammers, Shilpa N Bhupathirahi, Shreela V Sharma, Carole Sudre, Christina M Astley, Jorge E Chavarro, Shoee Kwon, Wenjie Ma, Cristina Menni, Walter C Willett, Sebastien Ourselin, Claire J Steves, Jonathan Wolf, Payl W Franks, Timothy D Spector, Sarah Berry, Andrew T Chan

Abstract

Objective Poor metabolic health and unhealthy lifestyle factors have been associated with risk and severity of COVID-19, but data for diet are lacking. We aimed to investigate the association of diet quality with risk and severity of COVID-19 and its interaction with socioeconomic deprivation.



Diet-related diseases pose a major risk for Covid-19. But the U.S. overlooks them.

Other countries have been galvanized to confront diet issues.
The U.S. has had no such wakeup call.

By Helena Bottemiller Evich

10/31/2021

The same week British Prime Minister Boris Johnson was admitted to intensive care for Covid-19, two studies came out identifying obesity as a significant risk factor for serious illness and death. It was April 2020, and doctors were scrambling to understand why coronavirus gave some people mild symptoms and left others so sick they were gasping for air.

After Johnson recovered, he became vocal about the role he believed his obesity had played in his brush with the virus: “When I went into ICU, when I was really ill ... I was way overweight,” he said.

That summer, Johnson, a conservative who in the past has colorfully railed against “the continuing creep of the nanny state,” launched a new governmentwide obesity strategy, complete with a ban on junk food advertising on TV before 9 p.m., new mandates to label calories in restaurants and a requirement that healthier products be stocked near checkout lines. The prime minister began jogging daily and urged the public to adopt healthier habits.

ORIGINAL ARTICLE

Obesity as a driver of international differences in COVID-19 death rates

Julian Gardiner, PhD, Alastair Sutcliffe, PHD

First Published: 23 February 2023 | [https://Doi.Org/10.1111/Dom.14357](https://doi.org/10.1111/Dom.14357)

Abstract

Aim

To determine what proportion of the inter-country variation in death rates can be explained in terms of obesity rates and other known risk factors for coronavirus disease 2019 (COVID-19).

[nature](#) > [scientific reports](#) > [articles](#) > article

Article | Open Access | Published: 08 July 2022

Long COVID and symptom trajectory in a representative sample of Americans in the first year of the pandemic

Qiao Wu, Jennifer A. Ailshire & Eileen M Crimmins

[Scientific Reports](#), **12**, Article number: 11647 (2022)

Abstract

People who have COVID-19 can experience symptoms for months. Studies on long COVID in the population lack representative samples and longitudinal data focusing on new-onset symptoms occurring with COVID while accounting for pre-infection symptoms. We use a sample representing the U.S. community population from the Understanding America Study COVID-19 Survey, which surveyed around 8000 respondents bi-weekly from March 2020 to March 2021. Our final sample includes 308 infected individuals who were interviewed one month before, around the time of, and 12 weeks after infection. About 23% of the sample experienced new-onset symptoms during infection which lasted for more than 12 weeks, and thus can be considered as having long COVID. The most common new-onset persistent symptoms among those included in the study were headache (22%), runny or stuffy nose (19%), abdominal discomfort (18%), fatigue (17%), and diarrhea (13%). Long COVID was more likely among obese individuals (OR = 5.44, 95% CI 2.12–13.96) and those who experienced hair loss (OR = 6.94, 95% CI...

[nature](#) > [outlook](#) > article

Published: 16 April 2015

Perspective: Obesity is not a disease

[D.L. Katz](#)

[Nature](#) 508, S57 (2014)

The misguided urge to pathologize this condition reflects society's failure to come to terms with the need for prevention, says D. L. Katz.

Doctors are historically ill-prepared to address the problem of obesity — with a tendency either to ignore it, or to ineffectually wag an admonishing finger. To focus physicians' attention on this prevalent health issue, the American Medical Association (AMA) recently declared obesity to be a disease. This well-intentioned move by the AMA is misguided in that it implies that tens of millions of people must now have bodies or minds, or both, that are not working properly. Even seemingly healthy, but heavy, people — adults and children alike — are now, by definition, diseased. Imposing such a status has broad ramifications for society and requires careful reflection.

The New York Times Magazine

The Extraordinary Science of Addictive Junk Food



By Michael Moss

Feb. 20, 2013

On the evening of April 8, 1999, a long line of Town Cars and taxis pulled up to the Minneapolis headquarters of Pillsbury and discharged 11 men who controlled America's largest food companies. Nestlé was in attendance, as were Kraft and Nabisco, General Mills and Procter & Gamble, Coca-Cola and Mars. Rivals any other day, the C.E.O.'s and company presidents had come together for a rare, private...

What are these "Evenings"? And threw
these of their feathers and put rags on
out in ink! The Pasichnik also wanted
can't think of anything to wrap it in soon
I say that our brother, a farmer, to stick
happens, sometimes you come to the
even if it's the highest flunkies, no, some
stick; and they will start stamping their
you... What can I say? It is easier for me:
by a district court judge or a venerable
try, give the answer.



VIOLINE

the beekeeper tells you easily, like some
as soon as work in the field, man will climb
in a dark cellar, when no cranes in the
probably already somewhere in the end of
strumming a balalaika, and sometimes

CLINICAL AND TRANSLATIONAL REPORT | VOLUME 30, ISSUE 1, P67-77, E3, JULY 02, 2019

Ultra-processed Diets Cause Excess Calorie Intake and Weight Gain: An Inpatient Randomized Controlled Trial of *Ad Libitum* Food Intake

Kevin D. Hall | Alexis Ayuketah | Robert Brychta | ... Peter J. Walter | Shanna Yang | Megan Zhou

[Open Archive](#) | Published: May 16, 2019 | DOI: <https://doi.org/10.1016/j.cmet.2019.05.008>

Summary

We investigated whether ultra-processed foods affect energy intake in 20 weight-stable adults, aged (mean \pm SE) 31.2 ± 1.6 years and BMI = 27 ± 1.5 kg/m². Subjects were admitted to the NIH Clinical Center and randomized to receive either ultra-processed or unprocessed diets for 2 weeks immediately followed by the alternate diet for 2 weeks. Meals were designed to be matched for presented calories, energy density, macronutrients, sugar, sodium, and fiber. Subjects were instructed to consume as much or as little as desired...



Why Two Pandemics are Better than One: The COVID19 Opportunity

Published on May 23, 2020

David L. Katz, MD, MPH, FACPM, FACP, FACLM

CEO, DietID; President, True Health Initiative, Founding Director, Yale-Griffin

One could be forgiven for thinking that however bad it is to be in the middle of one pandemic, it would be worse to be in the middle of two at the same time. In fact, though, we are very much in the middle of two- and at least through one pertinent lens, two pandemics are better than one. One pandemic is, obviously, COVID19. The other is the massive, global burden of chronic diseases that have been siphoning years from lives and life from years for the past half century and more- and will be doing so long after COVID19 is archived in history books.

Why are two concomitant pandemics good news, rather than bad? Well, if the toll of SARS-CoV-2 pertained to the virus and nothing else, there would be little we could do about it other than shelter from exposure by various means; scramble for a vaccine with unprecedented alacrity; and hope for the best. If COVID19 were an equal opportunity menace, we would all be comparably at risk, and that risk would derive from the virus itself. The “fault,” as it were, would lie with SARS (only), not with ourselves, our culture, and such benighted misadventures as the routine acceptance of “junk” as a food group.

		Age-Related Risk Tiers		
		<i>High</i> (≥70)	<i>Intermediate</i> (50-69)	<i>Low</i> (<50)
Health-Related Risk Tiers	<i>High</i> (significant burden of organ-system disease)	A	B	C
	<i>Intermediate</i> (generally healthy)	D	E	F
	<i>Low</i> (healthy; no chronic medical conditions; no activity restrictions)	G	H	I

A COVID19 Risk Stratification Matrix.

Cell **A** requires the strictest interdiction policies- sheltering in place- to prevent viral exposure due to very high risk of adverse outcomes. Cells **B** and **D** represent the next level of requirement, warranting strict social distancing, mask use, and active monitoring. Cells **A**, **B**, and **D** would not return to the worksite until the *all clear** is sounded. Cells **C**, **E**, and **G** can return to the worksite, but with social distancing and personal protection practices encouraged or mandated, plus monitoring. Cells **F** and **H** can return to the worksite with discretionary use of social distancing, personal protection. Cell **I** can return to the worksite with no precautions. Arrows represent opportunities to migrate from higher to lower risk tiers with health promotion / lifestyle medicine interventions.

**The “all clear” is achieved with herd immunity and near-zero viral transmission, whether due to native infection or vaccination.*

The Planet

HEALTH

Your Diet Is Cooking the Planet

But two simple changes can help.

Annie Lowrey

April 6, 2021



What's for dinner?

On a planet wracked by rising seas, expanding deserts, withering biodiversity, and hotter temperatures, that's a fraught question to answer. Food production accounts for roughly a quarter of the world's greenhouse-gas emissions, ...

VIOLINE

the beekeeper tells you easily, like some
as soon as work in the field, man will climb
in a dark cellar, when no cranes in the
probably already somewhere in the end of
strumming a balalaika, and sometimes









Bloomberg Businessweek

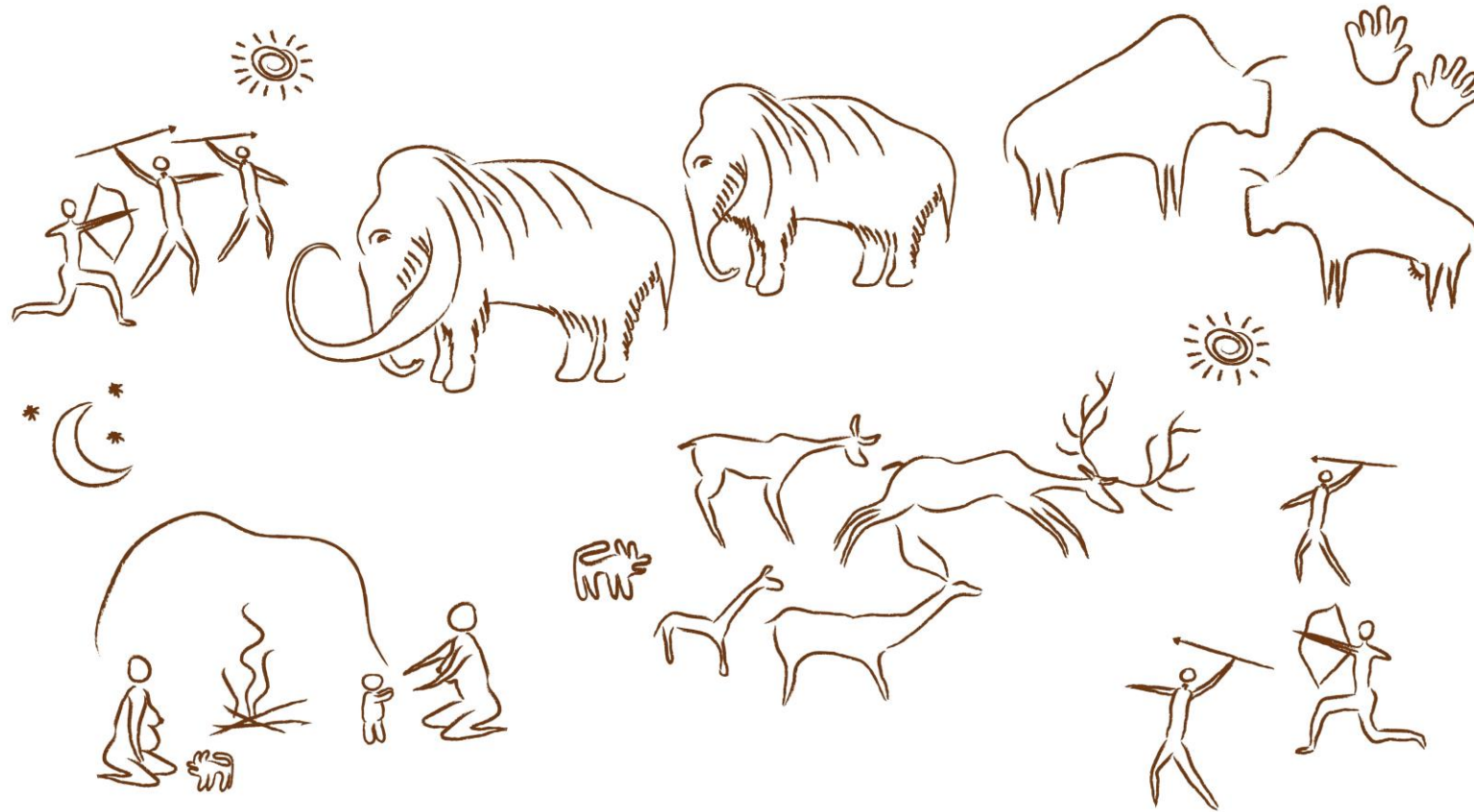
The Amazon Is Fast Approaching a Point of No Return

Brazil's rainforest is being stolen and cleared at an accelerating pace, and the Bolsonaro government is fanning the flames.

By Jessica Brice and Michael Smith



We are constitutional omnivores, and so...



- we have **CHOICES** -

Including the choice of a grand confluence

The EAT-Lancet Commission on Food, Planet, Health

Can we feed a future population of 10 billion people a healthy diet within planetary boundaries?

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RESEARCH ARTICLE

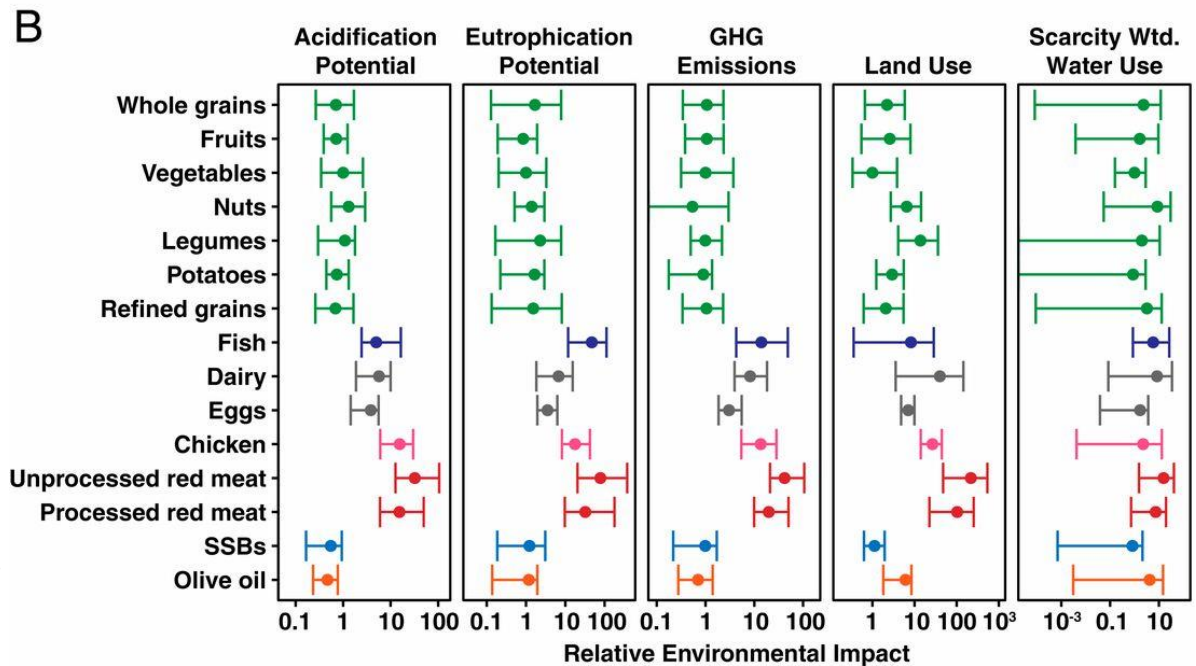
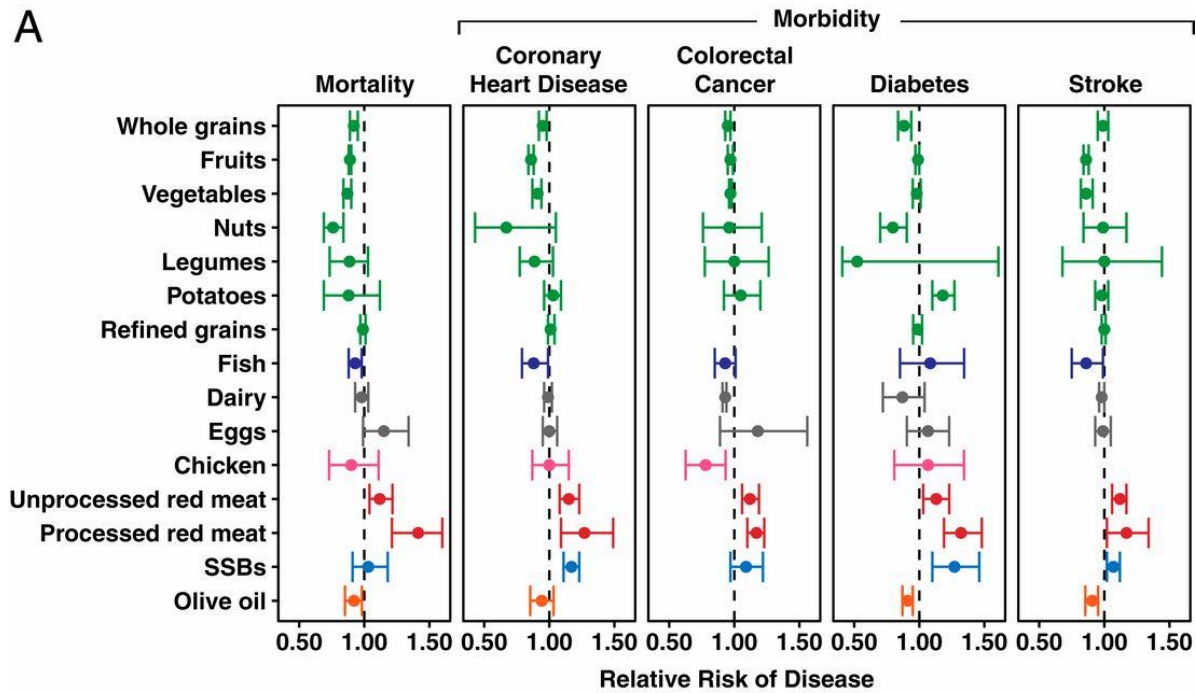
Multiple health and environmental impacts of foods

Michael A Clark, Marco Springmann, Jason Hill, and David Tilman

PNAS November 12, 2019 116 (46) 23357–23362; first published October 28, 2019;
<https://doi.org/10.1072/pnas.1906908116>

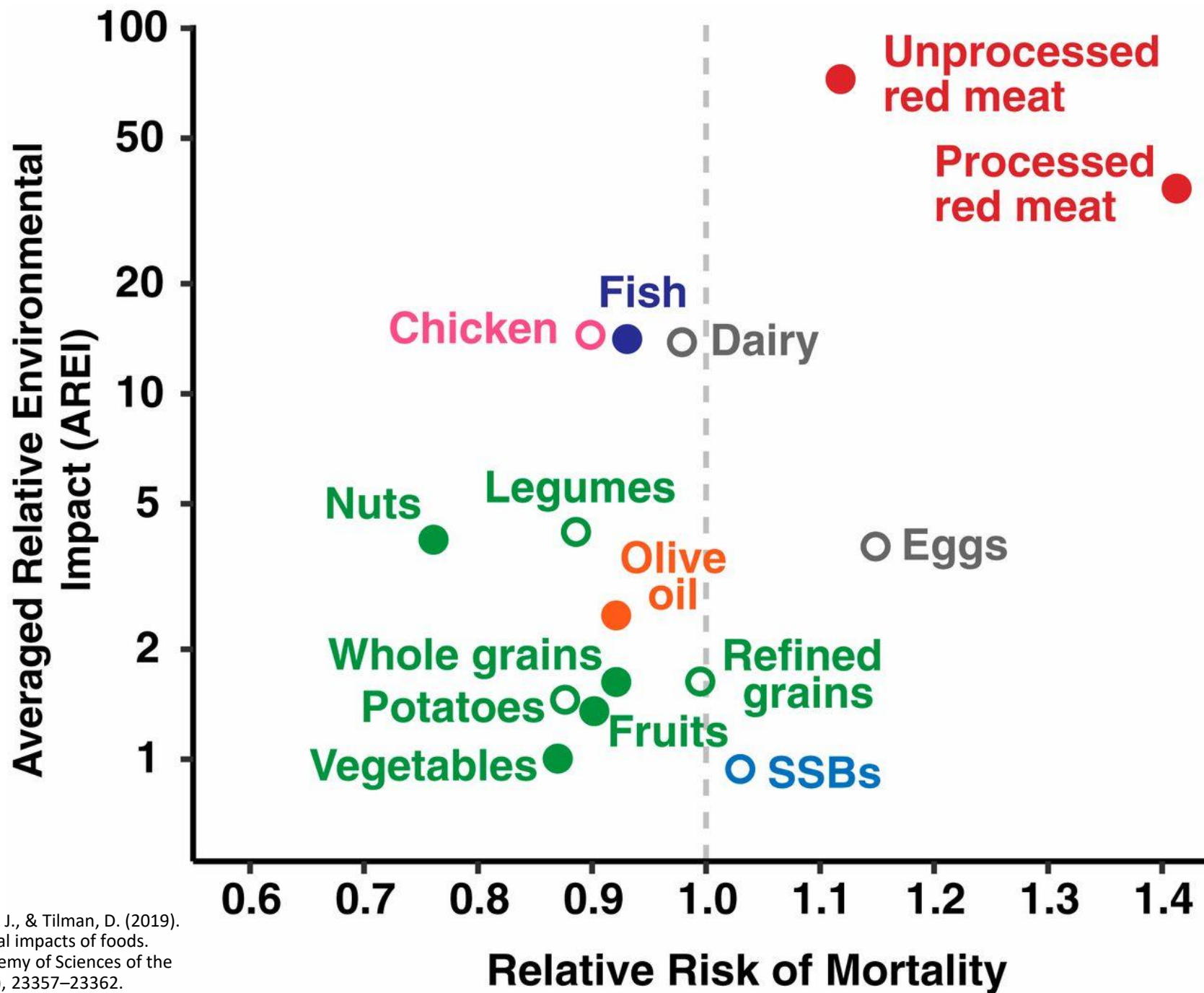
Significance

Dietary choices are a leading global cause of mortality and environmental degradation and threaten the attainability of the UN's Sustainable Development Goals and the Paris Climate Agreement. To inform decision making and to better identify the multifaceted health and environmental impacts of dietary choices, we describe how consuming 15 different food groups is associated with 5 health outcomes and 5 aspects of environmental degradation. We find that foods associated with improved adult health also often have low environmental impacts, indicating that the same dietary transitions that would lower incidences of noncommunicable diseases would also help meet environmental sustainability targets.



Clark, M. A., Springmann, M., Hill, J., & Tilman, D. (2019). Multiple health and environmental impacts of foods. *Proceedings of the National Academy of Sciences of the United States of America*, 116(46), 23357–23362. <https://doi.org/10.1073/pnas.19069081>





Clark, M. A., Springmann, M., Hill, J., & Tilman, D. (2019). Multiple health and environmental impacts of foods. *Proceedings of the National Academy of Sciences of the United States of America*, 116(46), 23357–23362. <https://doi.org/10.1073/pnas.19069081>



Dietary
Patterns
Best for
Health

Sweet Spot

*Kinder
Gentler*

Dietary
Patterns
Best for the
Environment





PLANETARY
HEALTH
ALLIANCE

Planetary Health

Protecting Nature to
Protect Ourselves

edited by Samuel Myers
and Howard Frumkin

EDUCATION RESOURCES GET INVOLVED ANNUAL MEETING



Adapted from www.planetaryhealthalliance.org



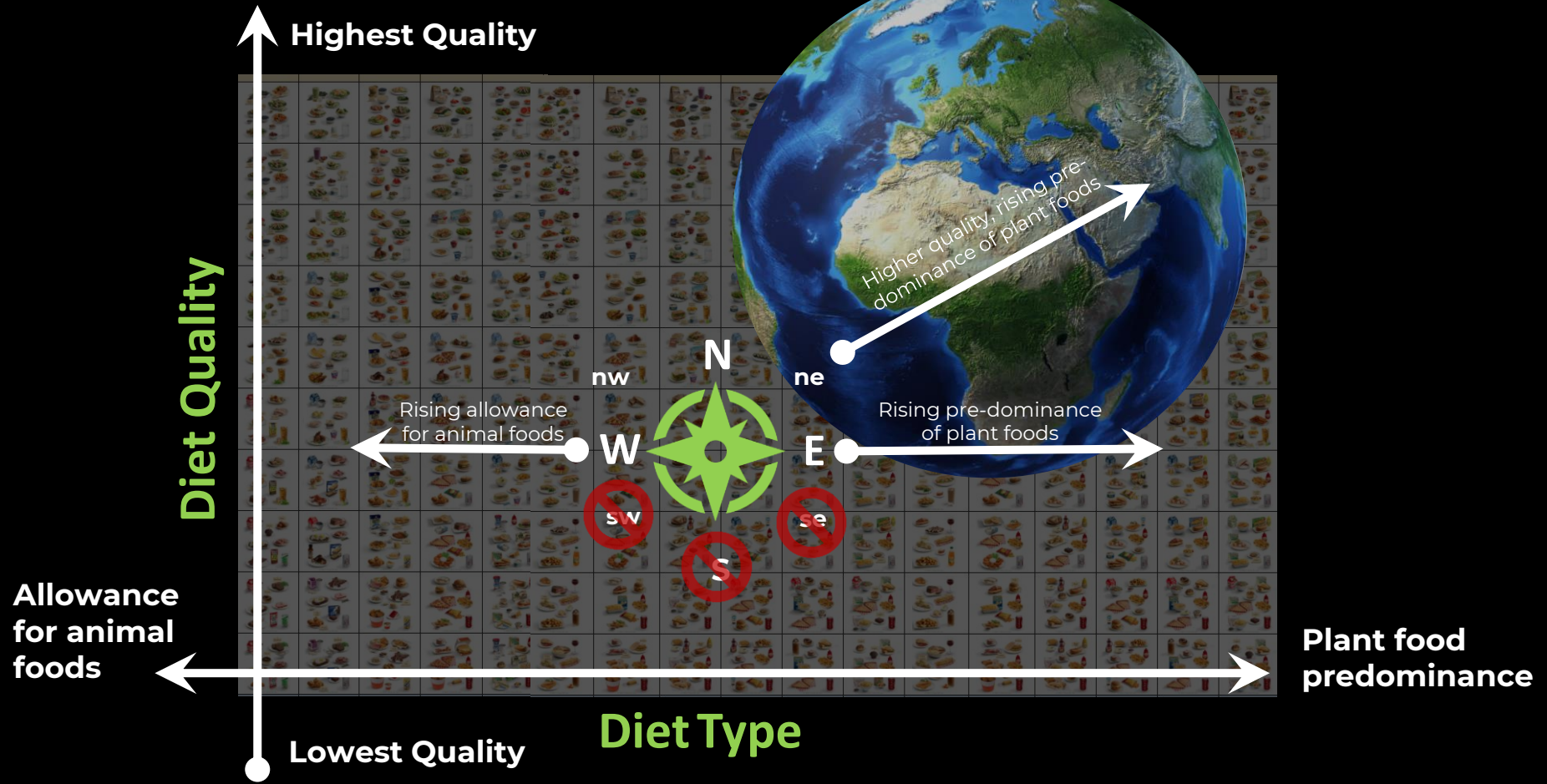


Our food and
planet are **ONE**

Founded in 2020, we are a collective, visionary 501c3 aimed at empowering health professionals to be leaders in sustainable food systems. We envision a science and practice of nutrition that honors nature as the foundation of health.

FOOD 
PLANET

Diet Map Visual: Impact of Diet on Human + Planetary Health



The **DIEM** Project

Dietary Impacts on Environmental Measures

Marie Janiszewski

Harvard T.H. Chan School of Public Health, Nutrition Department

Nurse's Health Study Food Frequency Questionnaire

Gidon Eshel, Ph.D. – Harvard Radcliffe Institute

Environmental Indicators: Land Use, Water Use, GHGEs, and Reactive Nitrogen Use

Martin Heller, Ph.D. – Center for Sustainable Systems

Regional impact of water footprints

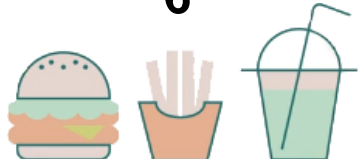
Single Environmental Score



The Future of DIEM

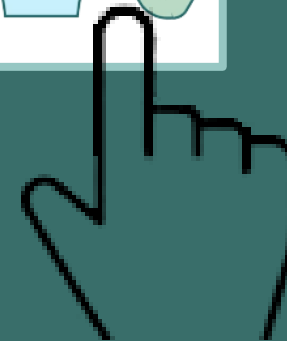

Environmental Impact

6



Environmental Impact

2



How We Know...

What We Know

David L. Katz, MD, MPH, FACPM, FACP, FACLM posted this



What is True? The Evidence Base for “evidence-based”

David L. Katz, MD, MPH, FACPM, FACP, FACLM, on LinkedIn
September 6, 2019

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BMC Medical Research Methodology

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Hierarchies of evidence applied to lifestyle Medicine (HEALM): introduction of a strength-of-evidence approach based on a methodological systematic review

[D.L. Katz](#), [M.C. Karlsen](#), [M. Chung](#), [M.M. Shams-White](#), [L.W. Green](#), [J. Fielding](#), [A. Saito](#), & [W. Willett](#)
[BMC Medical Research Methodology](#). 19, Article number: 178 (2019) | [Download Citation](#)↓
2245 Accesses | 263 Altmetric | [Metrics >>](#)

Abstract

Background

Current methods for assessing strength of evidence prioritize the contributions of randomized controlled trials (RCTs). The objective of this study was to characterize strength of evidence (SOE) tools in recent use, identify their application to lifestyle interventions for improved longevity,...

Editorial

> Am J Health Promot. 2021 Jul;35(6):874-882. doi: 10.1177/08901171211016191

Knowing Well, Being Well: well-being born of understanding: Dietary Research Done Right: From Je Ne Sais Quoi to Sine Qua Non

David L Katz, Michael L Dansinger, Walter C Willett, Tom Rifai, Lauren Q Rhee, Christopher D Gardner, Tushar Megta, Adam Bernstein, Dina Aronson

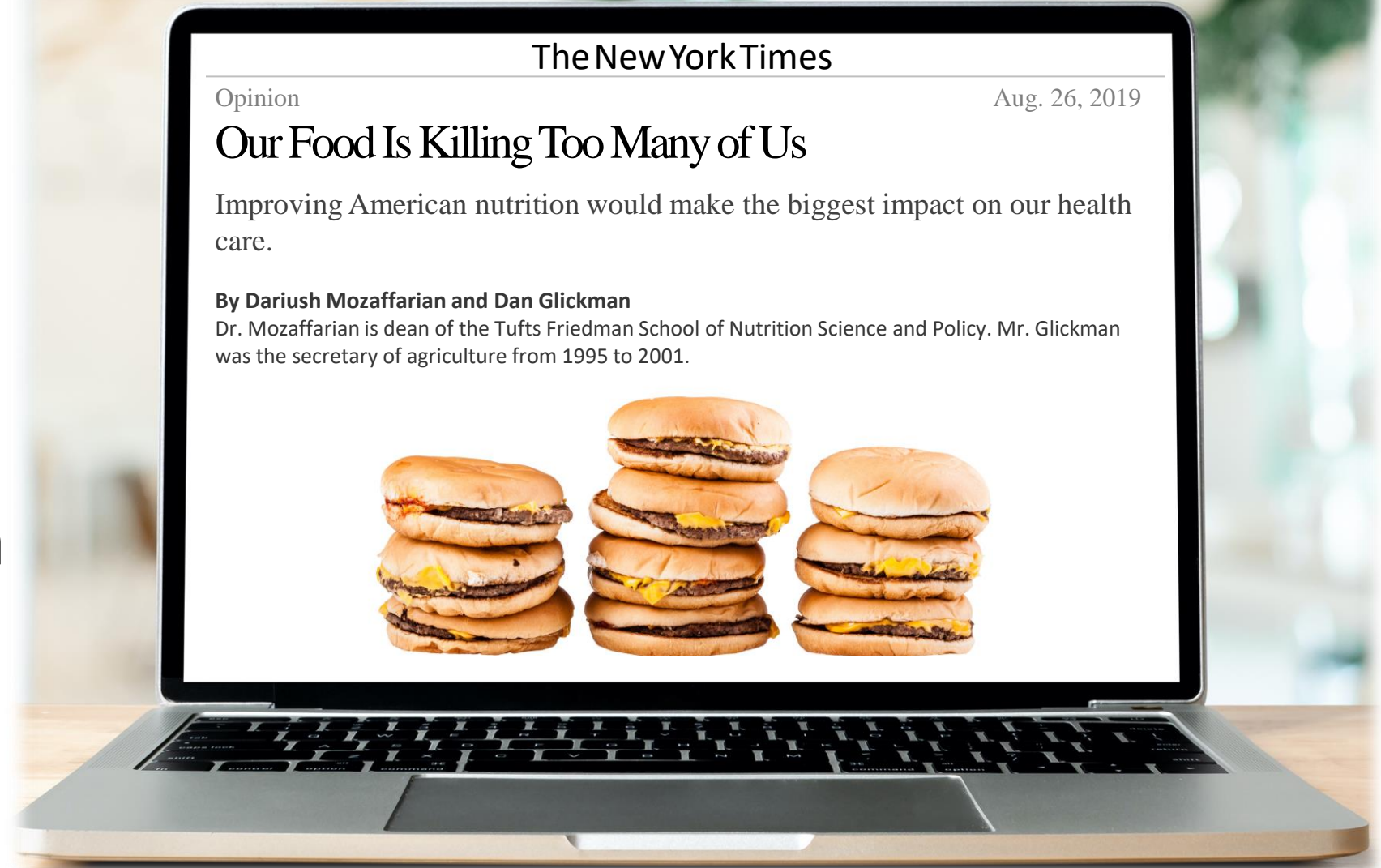
PMID:34120475 DOI: 10.1177/08901171211016191

No abstract available

We manage...

...what we measure.

“Hospitals
should include
nutrition in any
electronic health
record”



Circulation: Cardiovascular Quality and Outcomes

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Rapid Diet Assessment Screening Tools for Cardiovascular Disease Risk Reduction Across Healthcare Settings: A Scientific Statement from the American Heart Association

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Abstract

It is critical that diet quality be assessed and discussed at the point of care with clinicians and other members of the healthcare team to reduce the incidence and improve the management of diet-related chronic disease, especially cardiovascular disease. Dietary screening or counseling is not usually a component of routine medical visits. Moreover,



Dietary assessment can be based on pattern recognition rather than recall

D.L. Katz, L.Q. Rhee, C.S. Katz, D.L. Aronson, G.C. Frank, C.D. Gardner,
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<https://doi.org/10.1016/j.mehy.2020.109644> ↗

Abstract

Diet is the leading predictor of health status, including all-cause mortality, in the modern world, yet is rarely measured; whereas virtually every adult in a developed country knows their approximate blood pressure, hardly any knows their objective diet quality. Leading authorities have called for the inclusion of nutrition in every electronic health record as one of the many remedial steps required to give dietary quality the routine attention it warrants.

Of Profit

Measuring diet quality moves risk measurement upstream:

Manage risk by tracking a critical leading indicator of poor health outcomes



Diet Quality

Before disease diagnosis, unhealthy eating and other lifestyle factors are critical predictors



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Disease onset in the 'rising risk' when poor diet quality goes unmeasured and untreated.



Disease Progression

Downstream metric that is directly associated with higher cost of care, increased pharmacy cost, and health care utilization



Higher Cost of Care

The Financial Case for Food as Medicine: Introduction of a ROI Calculator

David L. Katz, MD, MPH, Rachna Govani, Kieran Anderson, more...
First Published January 17, 2022 | Research Article

<https://doi.org/10.1177/08901171211070751>

[Article Information](#) ▾

Abstract

Diet quality is now established as the single leading predictor of perennial premature death in modern countries. However, practice at scale in modern medicine is driven as much by financial as clinical imperatives and yet, the ability to quantify the potential ROI of Food as medicine (FaM) interventions is limited by a lack of data. Utilizing a novel advance in dietary assessment and data from the peer-reviewed literature, we constructed and tested a web-based calculator simulating the return-on-investment associated with FaM interventions.



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Conclusion

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A
Providing medically-tailored meals significantly increases dietary adherence above 90% and allows patients to realize significantly better chronic disease control. Through this, patients could experience fewer complications (CV events, hospital readmissions and dialysis), resulting in significant annual US healthcare cost reduction of \$27–48 billion.

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Abstract

Original Investigation

January 9, 2023

Healthy Eating Patterns and Risk of Total and Cause-Specific Mortality

Zhilei Shan, MD, PhD; Fenglei Wang, PhD; Yanping Li, MD, PhD; *et. al.*[>> Author Affiliations | Article Information](#)*JAMA Intern Med.* 2023;183(2):142-153. doi:10.1001/jamainternmed.2022.6117

Key Points

Question Is there an association between Dietary Guidelines for Americans - recommended dietary patterns with total and cause-specific mortality?

Findings In this cohort study of 75, 230 women from the Nurses' Health Study (1984-2020) and 44,085 men from the Health Professionals Follow-Up Study (1986-2020), greater adherence to several healthy eating patterns was associated with a lower risk of death. These associations were consistent in different racial and ethnic groups, including Hispanic, non-Hispanic Black, and non-Hispanic White individuals.

Meaning These findings support the recommendations of Dietary Guidelines for Americans that multiple healthy eating patterns can be adapted to individual food traditions and preferences.

CALCULATE THE ROI OF FOOD AS MEDICINE WITHIN YOUR POPULATION

Total Population

Cost Per Active Person Per Year For Intervention

Estimated activation rate in your population
Typically between 10%-60%



Expected improvement in diet quality
Typically between 5%-20%



The Promise

Carpe...



Thank You

It's not what we don't know
about diet that most
threatens our health; it's
the constant, wild
misrepresentations of what
we *do* know.