

I HAVE A CARROT AND A STENT, YOU PICK!

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Treasurer: American College of Lifestyle Medicine

Founding Co-Chair : VHA and DoD Member Interest Group – American College of Lifestyle Medicine

Founding Co-Chair: Cardiology Member Interest Group – American College of Lifestyle Medicine

Founder and President Plant Based Lifestyle Movement



NUTRITION



EXERCISE



TOBACCO
& ALCOHOL



STRESS
MANAGEMENT



SLEEP



HEALTHY
RELATIONSHIPS

COI AND DISCLOSURES

NONE





THANK YOU, VETERANS AND FAMILIES

REALITY CHECK!

MY PRESENCE ON THIS STAGE?!

THIS IS MY STAGE



REALITY OF WHAT I DO!

“Nothing, nothing, nothing—not statins, not angiotensin-receptor blockers, not beta-blockers, and most assuredly, neither BMS nor DES nor bypass grafts—constitutes either a cure for coronary artery disease or is risk free.”

-Douglas A. Morrison, MD

J Am Coll Cardiol. 2010 May, 55 (18) 1943–1944

I AM STILL THE GUY WHO...



TEDx

0:11 / 15:52

YouTube: I Have a Carrot and a Stent





LET'S START WITH THREE QUESTIONS

WHAT IS MY WHY?

I TOOK AN OATH!

**“I will prevent disease whenever I can,
for prevention is better than cure.”**

-Hippocratic Oath

WHAT IS HEALTH?

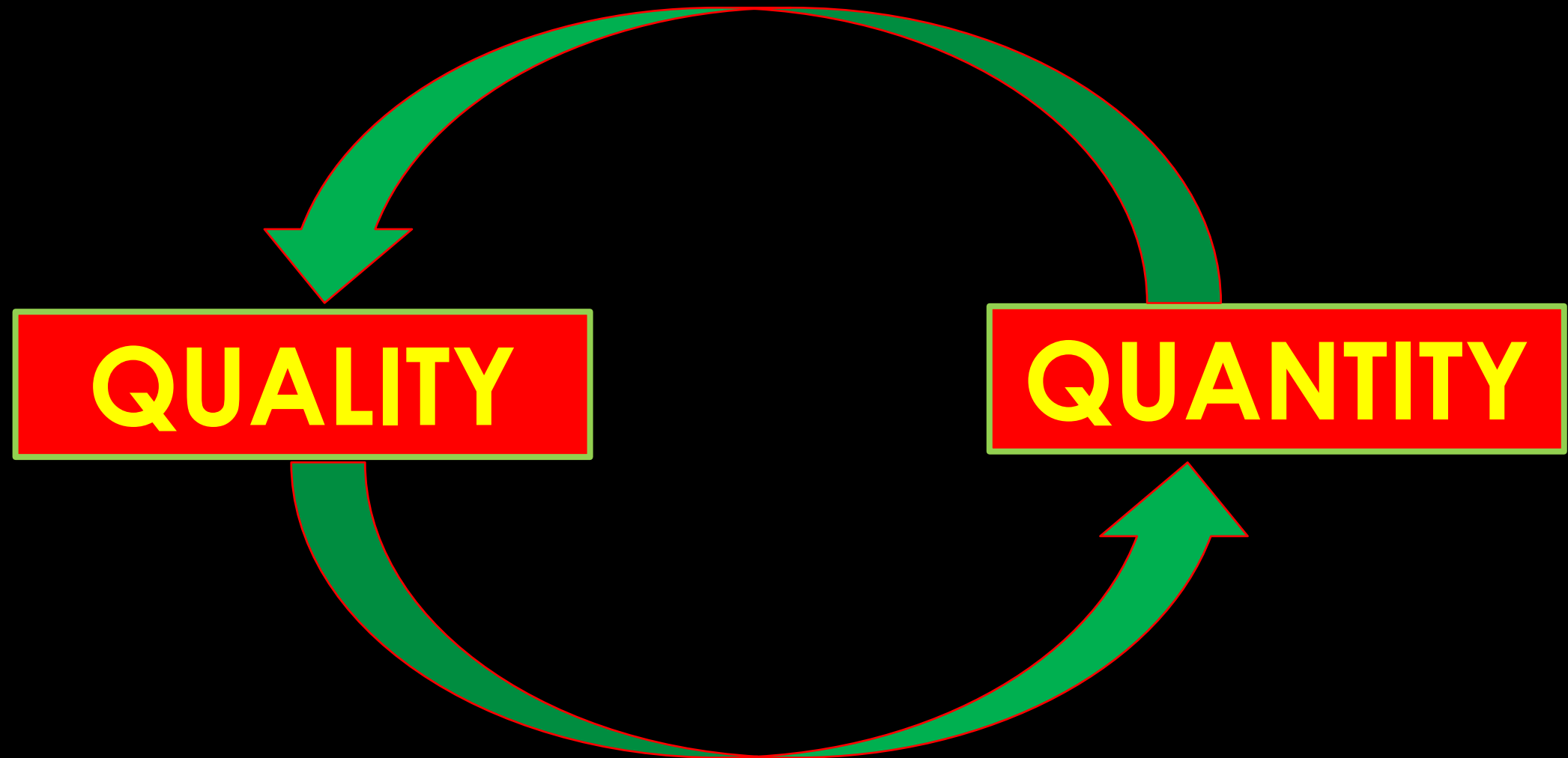
“A state of complete **physical, mental and social well-being** and not merely the absence of disease or infirmity.”

- The WHO

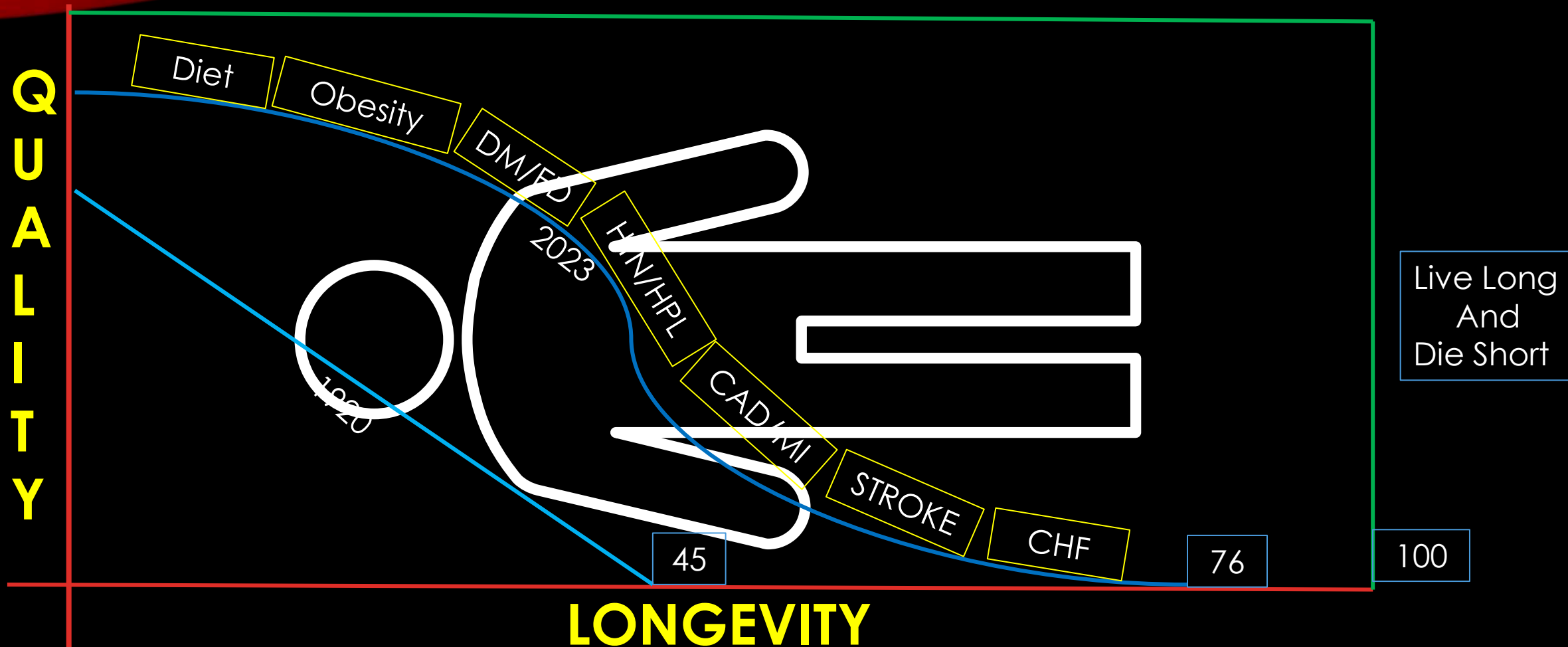
A DEEPER QUESTION

WHY DO YOU WANT TO BE HEALTHY?

REASONS TO BE HEALTHY?!

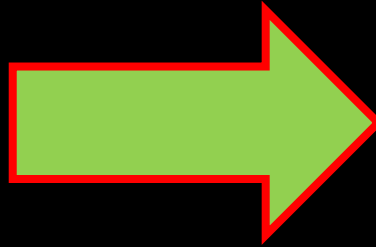


RECTANGULARIZATION OF LIFE



HEALTH – AN INSIDE JOB?!

HEALTHY



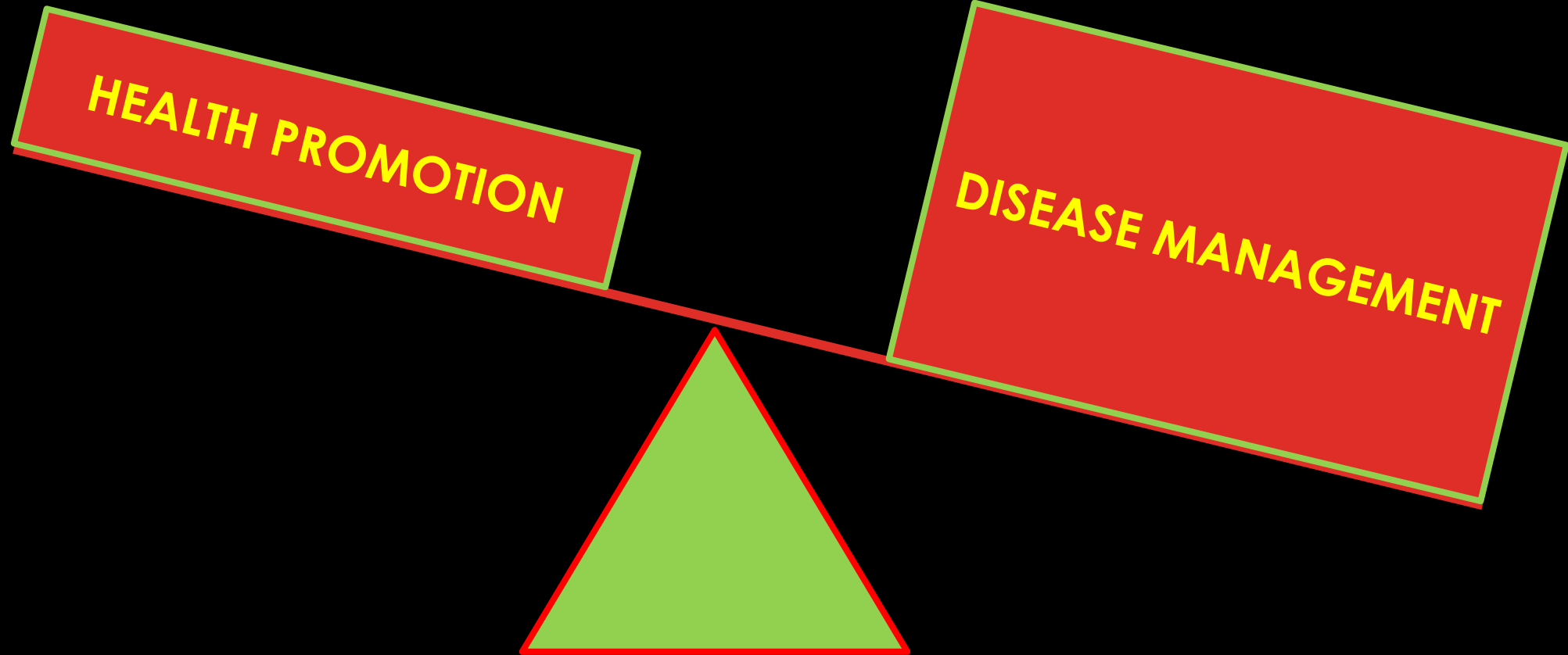
HEAL+THY

HEALTH – PERSONAL RESPONSIBILITY

“The idea of preventive medicine is faintly un-American. It means, first, recognizing that **the enemy is us.**”

-Chicago Tribune 1975

HEALTH – A CLEAR DISTINCTION



MD = **M**anager of **D**isease?

CHRONIC DISEASE BURDEN - CDC

Chronic Diseases in America

CDC's National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)

CHRONIC DISEASES IN AMERICA

6 IN 10

Adults in the US
have a chronic disease



4 IN 10

Adults in the US
have two or more

THE LEADING CAUSES OF DEATH AND DISABILITY
and Leading Drivers of the Nation's **\$4.1 Trillion in Annual Health Care Costs**



HEART DISEASE



CANCER



CHRONIC LUNG
DISEASE



STROKE



ALZHEIMER'S
DISEASE



DIABETES



CHRONIC
KIDNEY DISEASE



LEADING CAUSES OF DEATH

March 31, 2021

The Leading Causes of Death in the US for 2020

Farida B. Ahmad, MPH¹; Robert N. Anderson, PhD²

» Author Affiliations | Article Information

JAMA. Published online March 31, 2021. doi:10.1001/jama.2021.5469

LEADING CAUSES OF DEATH IN 2020

Table. Number of Deaths for Leading Causes of Death, US, 2015-2020^a

Cause of death	No. of deaths by year					
	2015	2016	2017	2018	2019	2020
Total deaths	2 712 630	2 744 248	2 813 503	2 839 205	2 854 838	3 358 814
Heart disease	633 842	635 260	647 457	655 381	659 041	690 882
Cancer	595 930	598 038	599 108	599 274	599 601	598 932
COVID-19 ^b						345 323
Unintentional injuries	146 571	161 374	169 936	167 127	173 040	192 176
Stroke	140 323	142 142	146 383	147 810	150 005	159 050
Chronic lower respiratory diseases	155 041	154 596	160 201	159 486	156 979	151 637
Alzheimer disease	110 561	116 103	121 404	122 019	121 499	133 382
Diabetes	79 535	80 058	83 564	84 946	87 647	101 106
Influenza and pneumonia	57 062	51 537	55 672	59 120	49 783	53 495
Kidney disease	49 959	50 046	50 633	51 386	51 565	52 260
Suicide	44 193	44 965	47 173	48 344	47 511	44 834

LEADING CAUSES OF DEATH - 2021

60,000 more people died of COVID-19 during 2021 compared with 2020;
COVID-19 remained the 3rd leading cause of death

PROVISIONAL 2021 DEATHS



* Provisional National Vital Statistics System (NVSS) death certificate data on underlying causes of death among U.S. residents in the United States during January–December 2021

bit.ly/MMWR7117

APRIL 22, 2022

MMWR

LEADING CAUSES OF DEATH - 2022

2022 Leading Causes of Death

1



Heart Disease

2



All Cancers

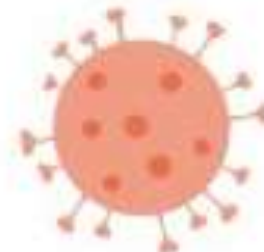
Cancer

3



Unintentional Injury

4



COVID-19



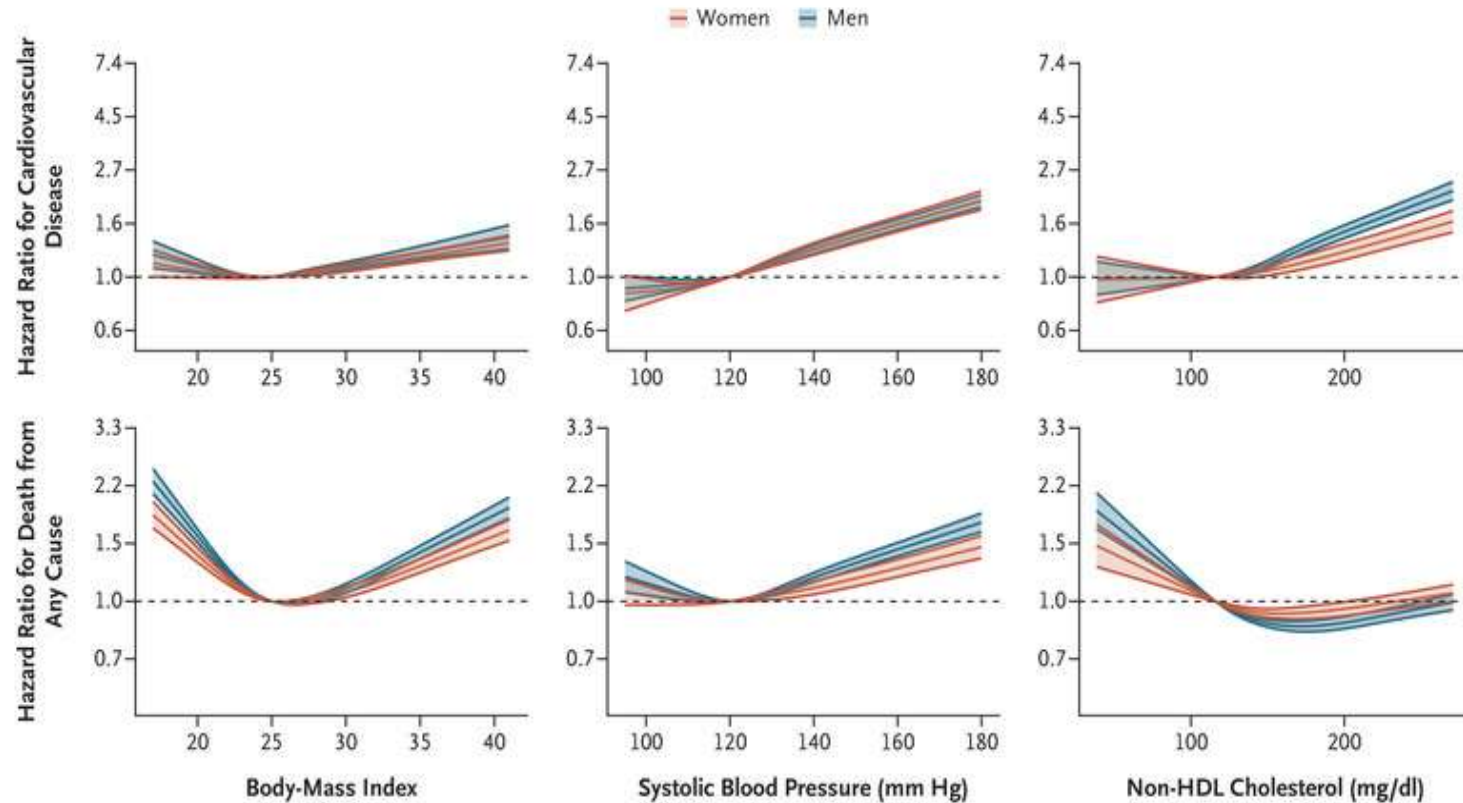
* Provisional National Vital Statistics System death certificate data on underlying causes of death among U.S. residents during January–December 2022

bit.ly/mm7218a3

MAY 5, 2023

MMWR

A VAST MAJORITY IS PREVENTABLE



- Body-Mass Index
- Systolic Blood Pressure
- Non-HDLc
- Current Smoking
- Diabetes

- **10-year incidence of CVD**
 - Women: 57.2% (95%[CI], 52.4 to 62.1)
 - Men: 52.6% (95% CI, 49.0 to 56.1)
- **10-year all-cause mortality**
 - Women: 22.2% (95% CI, 16.8 to 27.5)
 - Men: 19.1% (95% CI, 14.6 to 23.6).

Global Effect of Modifiable Risk Factors on Cardiovascular Disease and Mortality

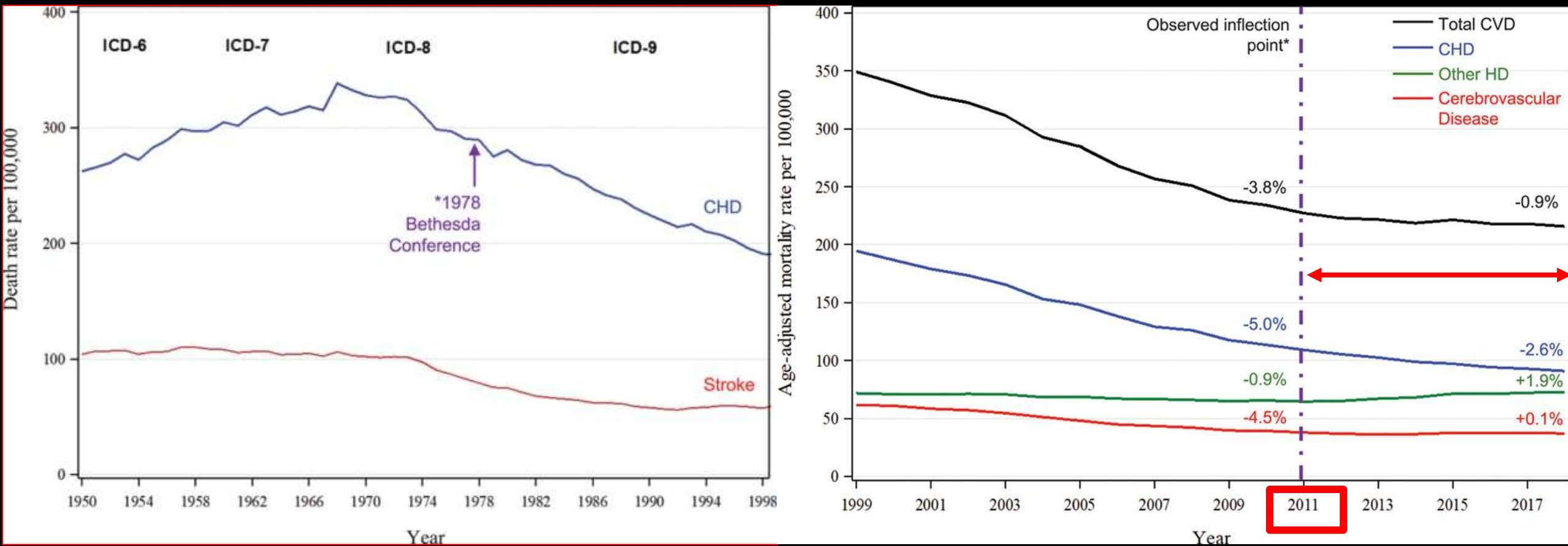
The Global Cardiovascular Risk Consortium*

N Engl J Med. 2023 Aug 26. doi: 10.1056/NEJMoa2206916. Epub ahead of print. PMID: 37632466.



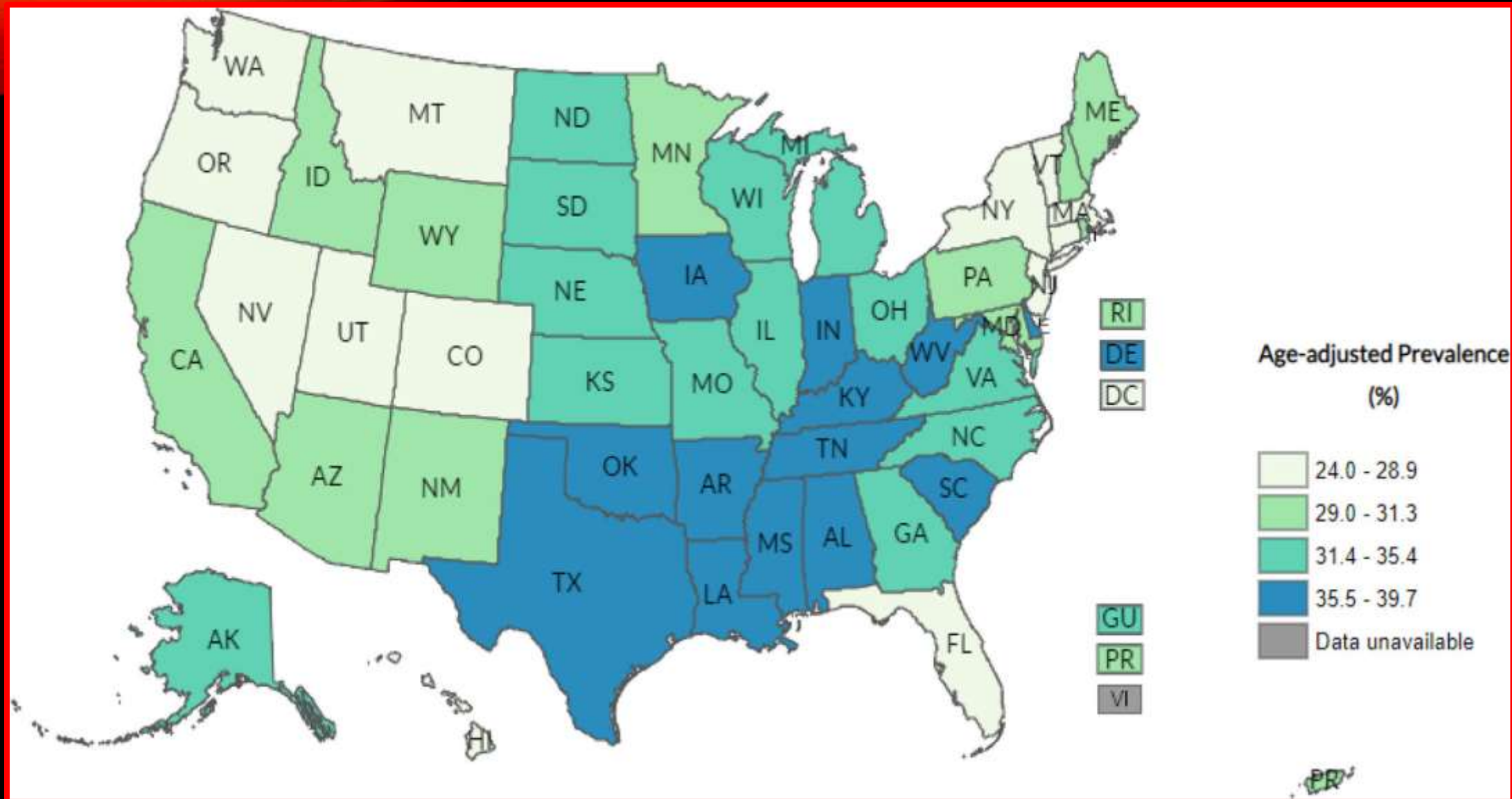
CVD TRENDS – A PERSPECTIVE

CVD TRENDS – BENDING THE CURVE



Bending the Curve of Cardiovascular Mortality Circulation. 2021;143:837–851

CURRENT STATUS – STATE OF THE UNION



AHA STATISTICS Circulation. 2023;147:e93–e621

BIGGEST KILLER MAKES A DEADLY COMEBACK



**“Heart Attack at 49—America’s Biggest Killer
Makes a Deadly Comeback**

Younger people, women and nonsmokers are more likely to be victims of the crisis in cardiovascular health, driven by skyrocketing obesity and diabetes.”

JUNE 21, 2019

THE WALL STREET JOURNAL.



Mr. Washington, shown in 2015, had been on blood-pressure and cholesterol medications for years, but he also worked out regularly and hadn’t been diagnosed with a heart condition.

CURRENT TRENDS – WHERE ARE WE TODAY?

CENTRAL ILLUSTRATION: Trends in Risk Profiles in U.S. Adults With Cardiovascular Disease, 1999 to 2018

A Representative Sample of U.S. Adults With a Self-Reported History of CVD
(N = 6,335)

Hemoglobin A_{1c}

- Overall worsening trend
- 52% with ideal profile (HbA_{1c} <7% if diabetes or 5.7% if not) in 2015-2018
- Worst profile in Asian adults



Blood Pressure

- Overall worsening trend after 2010
- 49% with ideal profile (BP <130/80 mm Hg) in 2015-2018
- Worst profile in Black adults



Non-HDL-C

- Overall improving trend
- 30% with ideal profile (non-HDL-C <100 mg/dL) in 2015-2018
- Worsening trend in Hispanic adults



Body Mass Index

- Overall worsening trend
- 18% with ideal profile (BMI <25 kg/m²) in 2015-2018
- No interaction of trends with race/ethnicity



Smoking

- Overall unchanged
- 78% with ideal profile (never smoked or quit smoking >1 year) in 2015-2018
- Worsening trend in Black adults



Moderate or Vigorous Physical Activity

- Overall worsening trend
- 22% with ideal profile meeting guideline-recommended levels in 2015-2018
- Improving trend in Hispanic adults



Diet

- Overall unchanged
- 1% with ideal profile (HEI score ≥80) in 2015-2018
- No interaction of trends with race/ethnicity



MEETING IDEAL STATUS

- A_{1c}: 52%
- BP: 49%
- Non-HDL-C: 30%
- BMI: 18%
- Smoking: 78%
- Physical Activity: 22%
- Diet: 1%

Failing Cardiovascular Health: A Population Code Blue*

Editorial Comment

Thomas E. Kottke, Ajay K. Gupta, and Randal J. Thomas

J Am Coll Cardiol. 2022 Jul, 80 (2) 152–154

WHERE ARE WE HEADED?

CENTRAL ILLUSTRATION: Projected Future of Cardiovascular Risk Factors and Cardiovascular Diseases by 2060



Projections of Future Cardiovascular Risk Factors and Cardiovascular Disease in the United States From 2025 to 2060

Cardiovascular Risk Factors

Diabetes: ↑ of 39.3% to 55 million persons
Hypertension: ↑ of 27.1% to 162 million persons
Dyslipidemia: ↑ of 27.6% to 126 million persons
Obesity: ↑ of 18.3% to 126 million persons

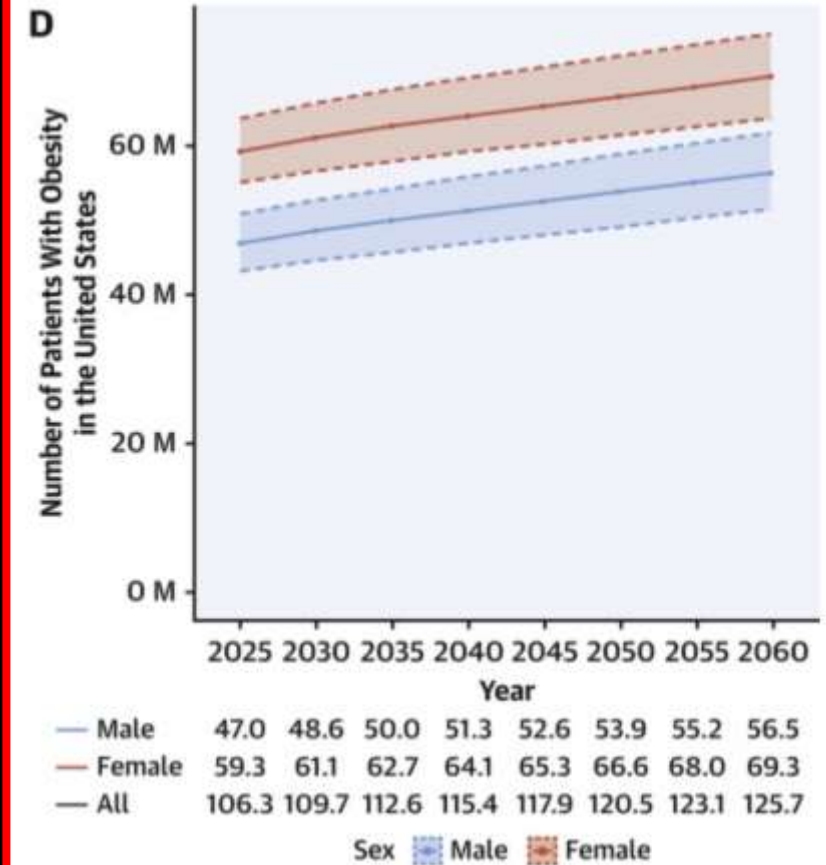
Cardiovascular Diseases

Ischemic heart disease: ↑ of 30.7% to 29 million persons
Heart failure: ↑ of 33.4% to 13 million persons
Myocardial infarction: ↑ of 16.9% to 16 million persons
Stroke: ↑ of 33.8% to 15 million persons

Key points

- Projections for future cardiovascular risk factors and cardiovascular disease were based on NHANES data combined with 2020 U.S. Census projections for future population distributions
- Although steep rise in cardiovascular risk factors and cardiovascular diseases are expected in upcoming years, differences between women and men will largely remain stable over time
- Disproportionate increase in cardiovascular risk factors and cardiovascular disease are projected to impact racial and ethnic minority populations
- The results from this study have important implications for motivating policy decisions regarding equitable delivery of quality health care to all Americans

Mohebi R, et al. J Am Coll Cardiol. 2022;80(6):565-578.



SOCIETY'S PRIORITIES



See what was trending

Searches

- 1 World Cup
- 2 Hurricane Florence
- 3 Mac Miller
- 4 Kate Spade
- 5 Anthony Bourdain
- 6 Black Panther
- 7 Mega Millions Results
- 8 Stan Lee
- 9 Demi Lovato
- 10 Election Results

Searches

- 1 Disney Plus
- 2 Cameron Boyce
- 3 Nipsey Hussle
- 4 Hurricane Dorian
- 5 Antonio Brown
- 6 Luke Perry
- 7 Avengers: Endgame
- 8 Game of Thrones
- 9 iPhone 11
- 10 Jussie Smollett

\$#!%

No one is
searching for...
"How not to die
from heart
disease?!"



PERSPECTIVE AND PRIORITIES - CARDIOLOGISTS

Nutrition Education From Medical School to Fellowship

Receive a formal, practical lecture, series, or discussion on the role of nutrition and diet in overall health	During Medical / Professional School		During Residency	
	FIT	MD	FIT	MD
Yes, part of one lecture	0%	4%	7%	2%
Yes, one lecture	24%	17%	21%	9%
Yes, a series of lectures	39%	21%	5%	6%
Yes, a bedside discussion on teaching rounds	0%	3%	11%	7%
No	21%	31%	43%	59%
Don't recall	16%	24%	13%	17%

During Fellowship Training...	FIT	MD
I recall receiving a high level of nutrition education that gave me excellent skills for counseling patients.	0%	1%
I recall receiving a solid nutrition education during my fellowship training that adequately prepared me for counseling patients.	9%	8%
I recall receiving minimal nutrition education during my fellowship training that did not adequately prepare me for counseling patients.	35%	33%
I do not recall receiving any nutrition education during my fellowship training.	56%	57%

MD n= 646
FIT n= 75

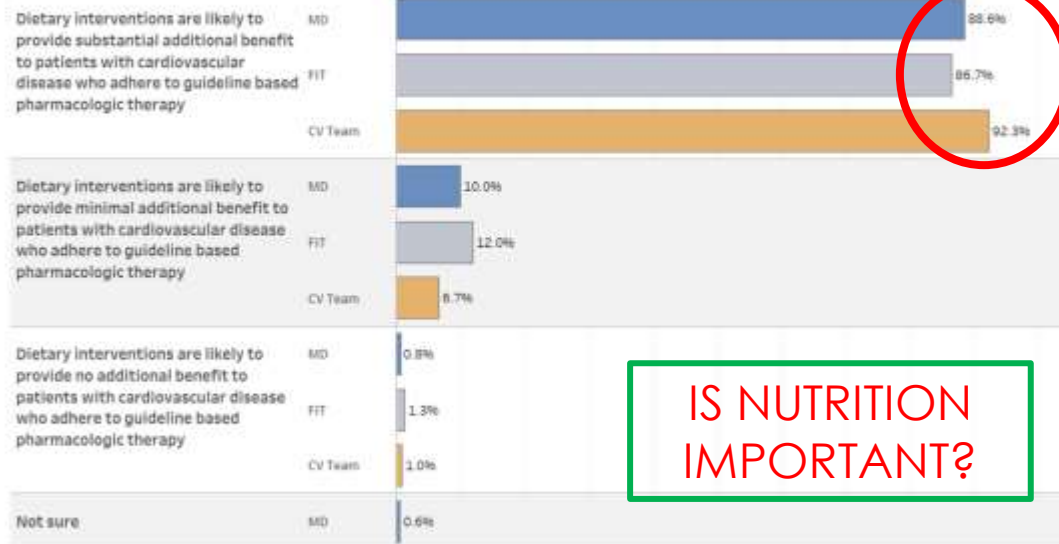
- 930 surveys were completed.
- ~90% reported no or minimal training in nutrition

A Deficiency of Nutrition Education and Practice in Cardiology
The American Journal of Medicine
November 2017 Volume 130, Issue 11, Pages 1298–1305

PERSPECTIVE AND PRIORITIES - CARDIOLOGISTS

Attitudes Regarding Dietary Interventions

Dietary Interventions Most Closely Resembling Your Own...

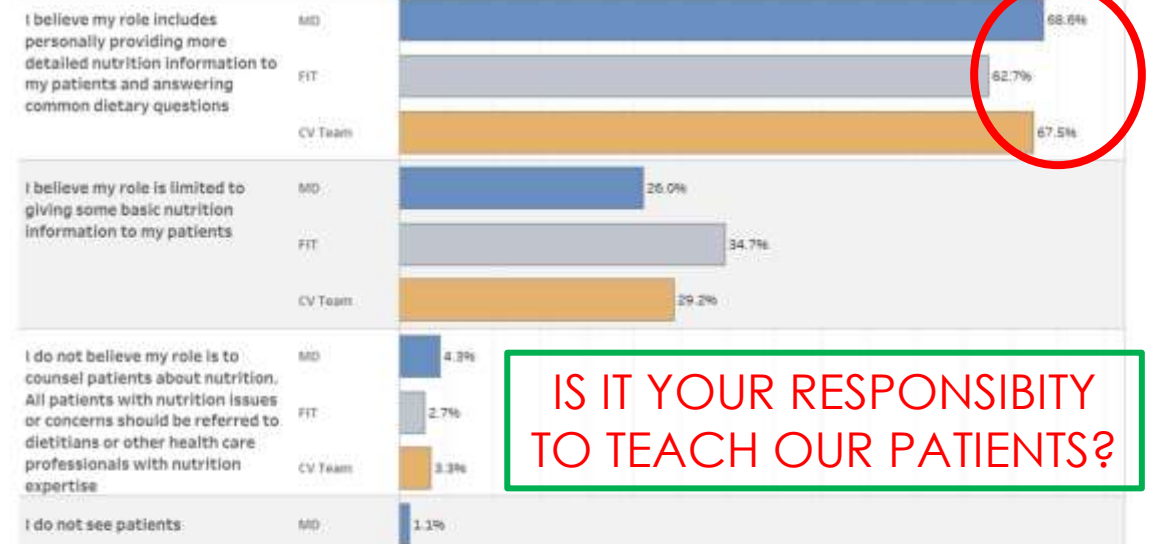


MD n= 642
FIT n= 75
CV Team n= 209

IS NUTRITION
IMPORTANT?

Perceived Role in Delivering Nutrition Information

Philosophy Regarding the Role of Nutrition Counseling in Your Cardiology Practice...



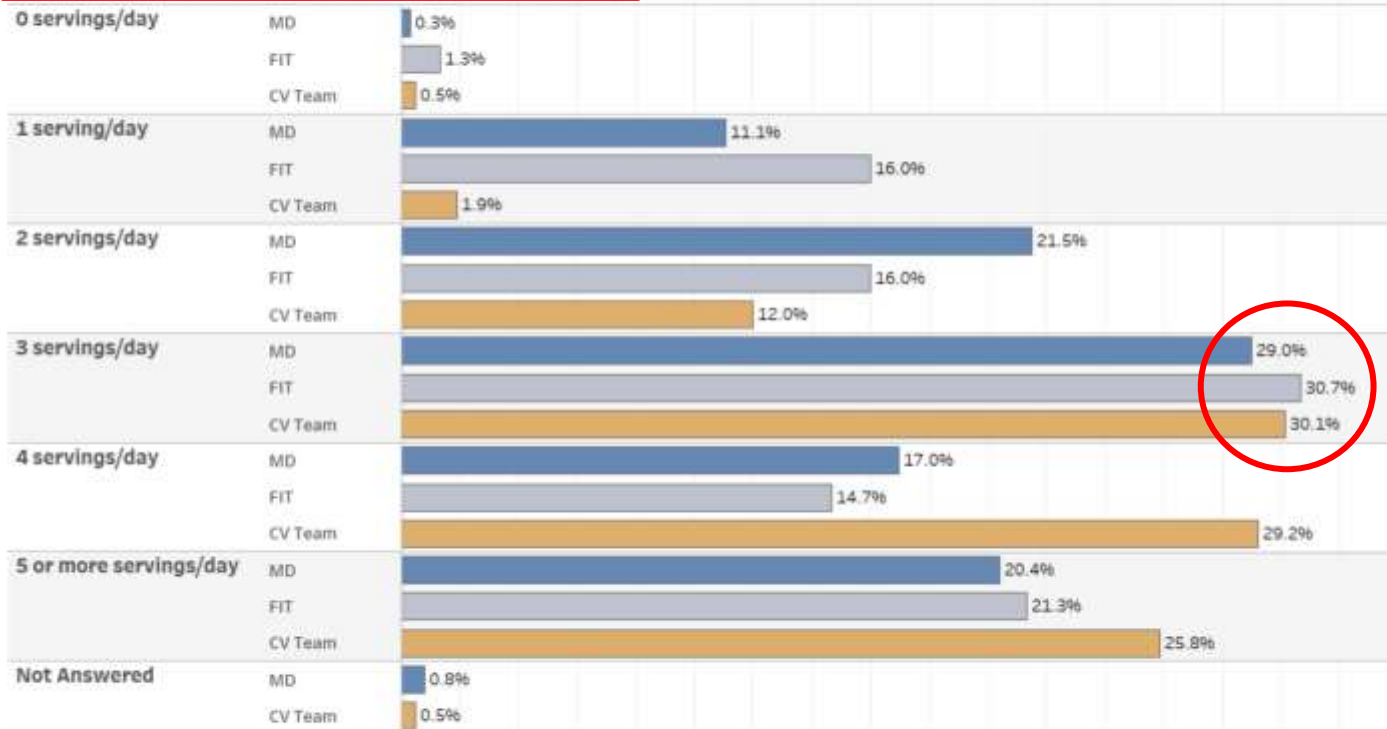
MD n= 646
FIT n= 75
CV Team n= 209

IS IT YOUR RESPONSIBILITY
TO TEACH OUR PATIENTS?

PERSPECTIVE AND PRIORITIES - CARDIOLOGISTS

Dietary Habits of Cardiovascular Professionals

Average Servings of Fruits and Vegetables per day



MD n= 642
FIT n= 75
CV Team n= 209

Are we the
change that
we want to
bring?

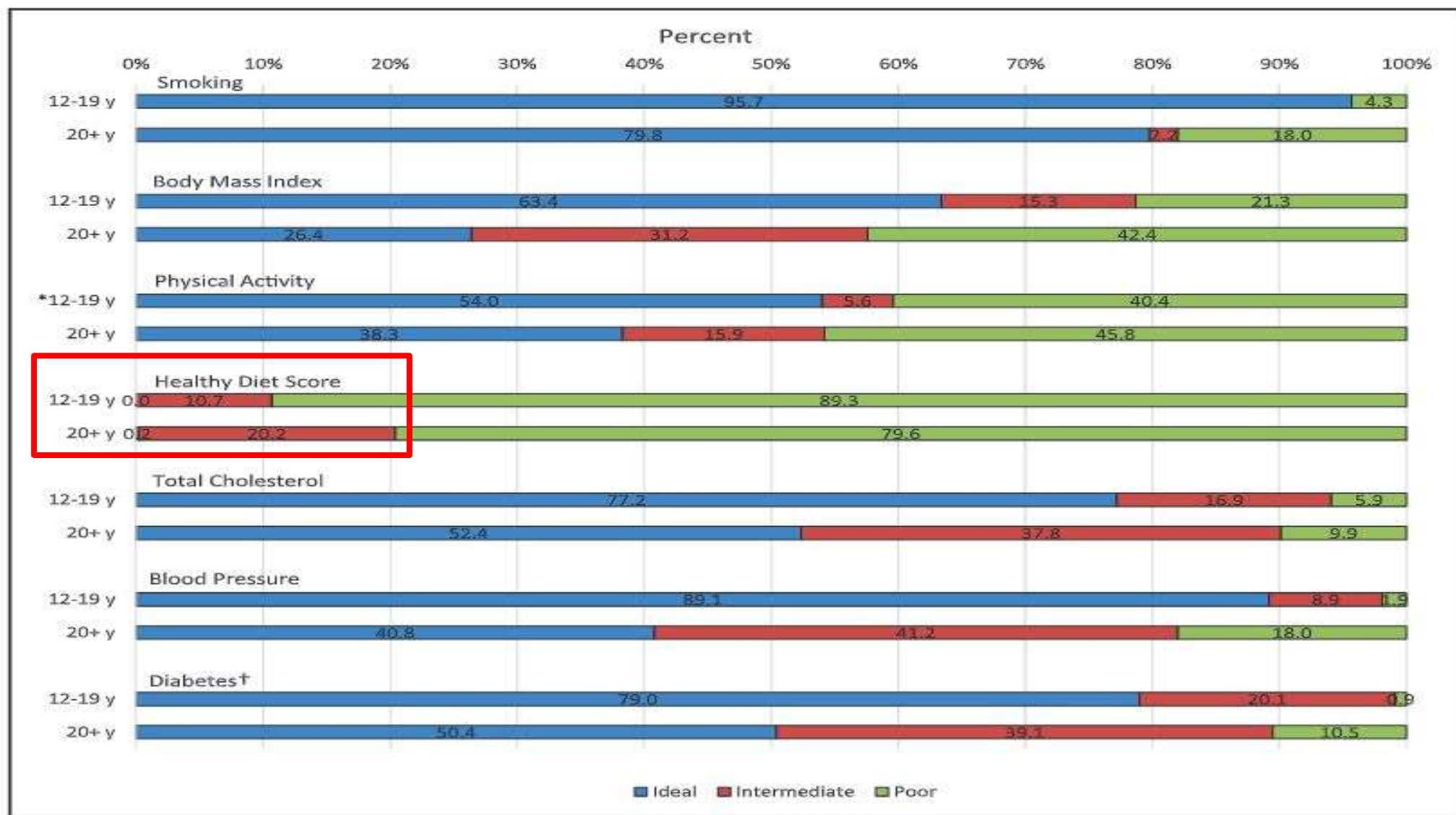
A Deficiency of Nutrition Education and Practice in
Cardiology
The American Journal of Medicine
November 2017 Volume 130, Issue 11, Pages 1298–
1305

AN URGENT UNMET NEED

The Health of Our Kids

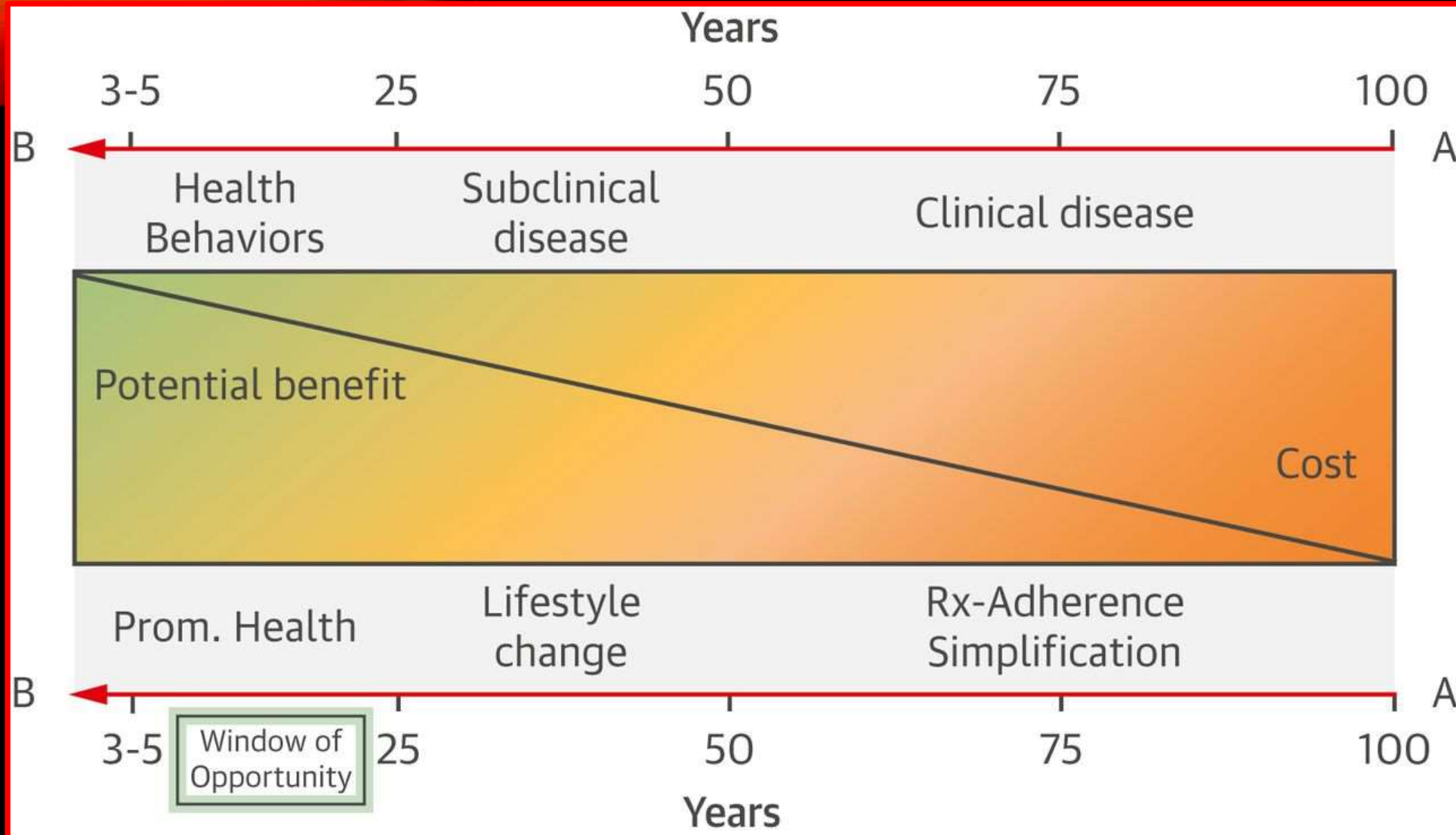


CURRENT STATUS – OUR KIDS

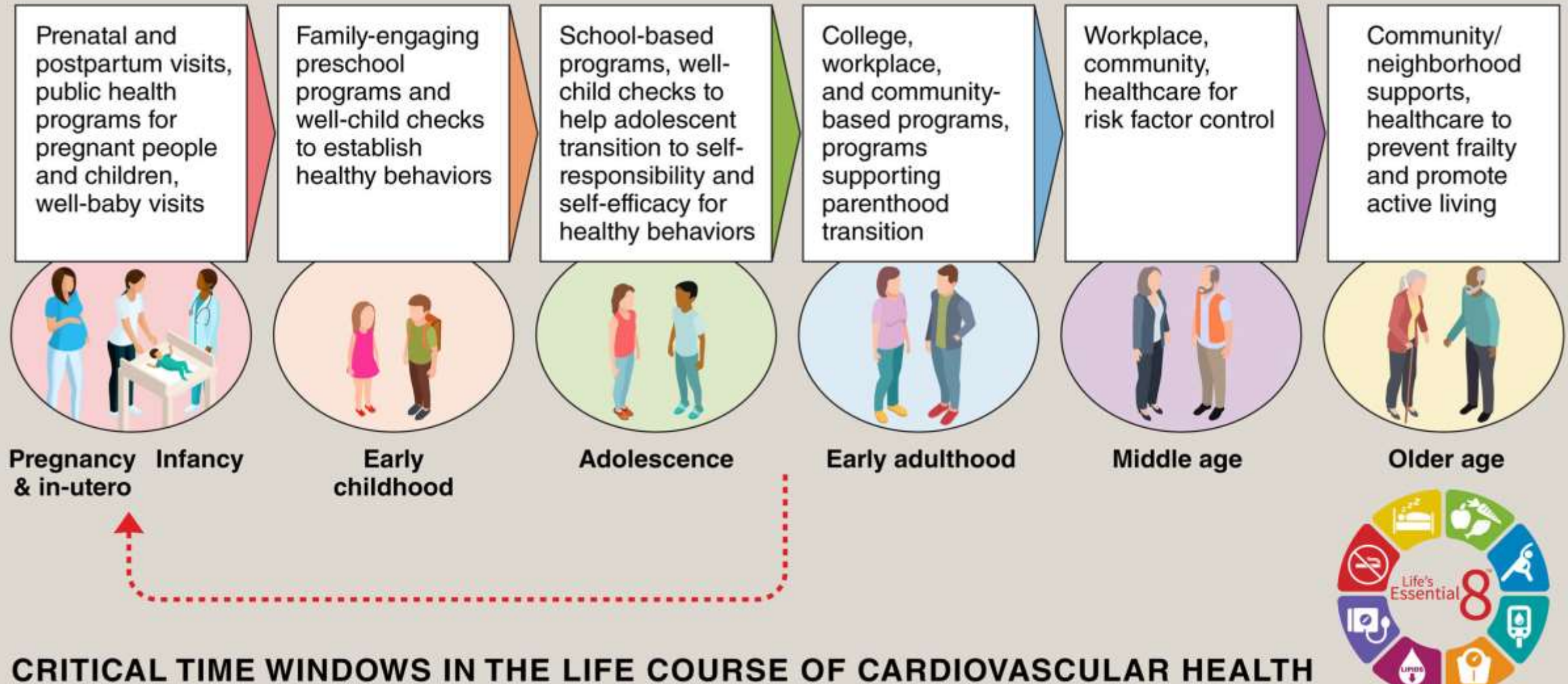


AHA STATISTICS Circulation. 2022;145:e00–e00

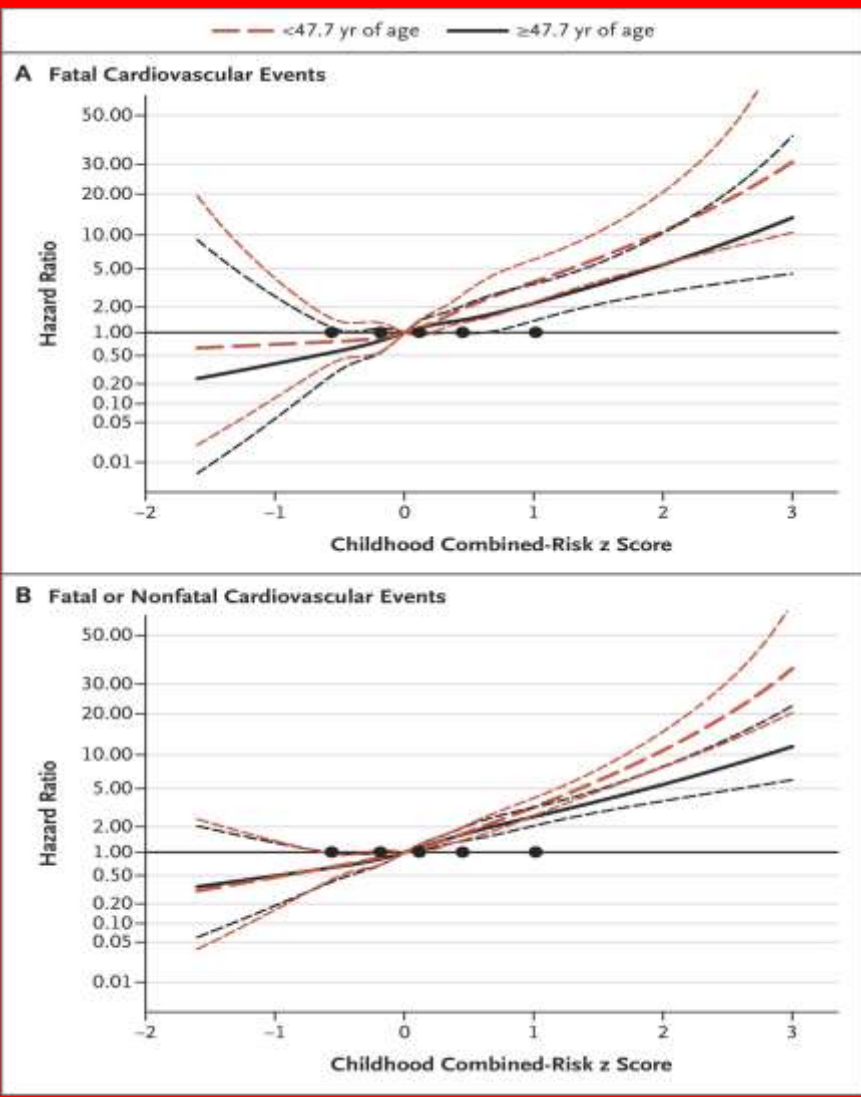
OUR KIDS – A WINDOW OF OPPORTUNITY



HOW EARLY? I SAY WOMB TO TOMB & LUST TO DUST



IF WE MISS THAT WINDOW OF OPPORTUNITY



Childhood Cardiovascular Risk Factors and Adult Cardiovascular Events

David R. Jacobs, Jr., Ph.D., Jessica G. Woo, Ph.D., Alan R. Sinaiko, M.D., Stephen R. Daniels, M.D., Ph.D., Johanna Ikonen, M.S., Markus Juonala, M.D., Ph.D., Noora Kartiosuo, M.S., Terho Lehtimäki, M.D., Ph.D., Costan G. Magnussen, Ph.D., Jorma S.A. Viikari, M.D., Ph.D., Nanhua Zhang, Ph.D., Lydia A. Bazzano, M.D., Ph.D., [et al.](#)

May 19, 2022

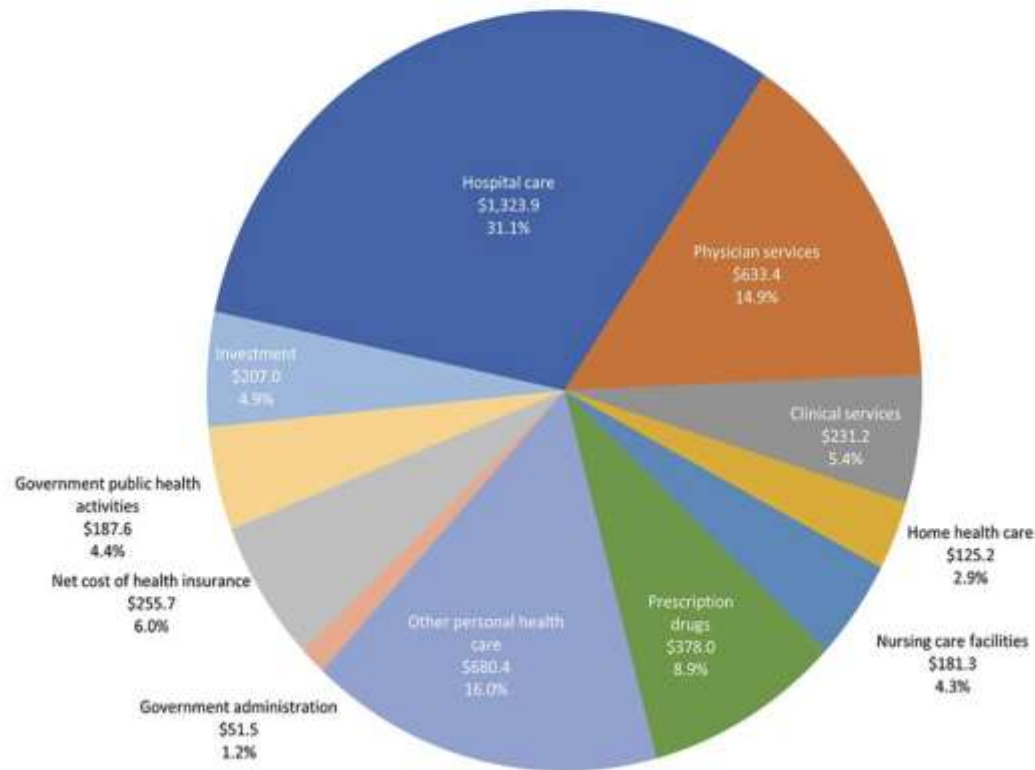
N Engl J Med 2022; 386:1877-1888

WE PAY A PRICE

Health care spending explained

The United States spent \$4,255.1 billion on health care in 2021.

The U.S. spent \$4,255.1 billion on health care in 2021
where did it go?



Can Mount Sinai be serious? The answer is a resounding yes. In fact, we couldn't be more serious.

Mount Sinai's number one mission is to keep people out of the hospital. We're focused on population health management, as opposed to the traditional fee-for-service medicine. So instead of receiving care that's isolated and intermittent, patients receive care that's continuous and coordinated, much of it outside of the traditional hospital setting.

That's the tremendous emphasis on wellness programs designed to help people stop smoking, lose weight and battle obesity, lower their blood pressure and reduce the risk of a heart attack. By being as proactive as possible, patients can better maintain their health and avoid disease.

Our Mobile Acute Care Team will treat at patients at home who would otherwise require a hospital admission for certain conditions. The care team involves physicians, nurse practitioners,

registered nurses, social workers, community paramedics, care coaches, physical therapists, occupational therapists, speech therapists, and home health aides.

Meanwhile, Mount Sinai's Preventable Admission Care Team provides transitional care services to patients at high risk for readmission. After a comprehensive bedside assessment, social workers partner with patients, family caregivers and healthcare providers to identify known risks such as

problems with medication management and provide continuing support after discharge.

It's a sweeping change in the way that health care is delivered. And with the new system comes a new way to measure success. The number of empty beds,

IF OUR BEDS ARE FILLED, IT MEANS WE'VE FAILED.

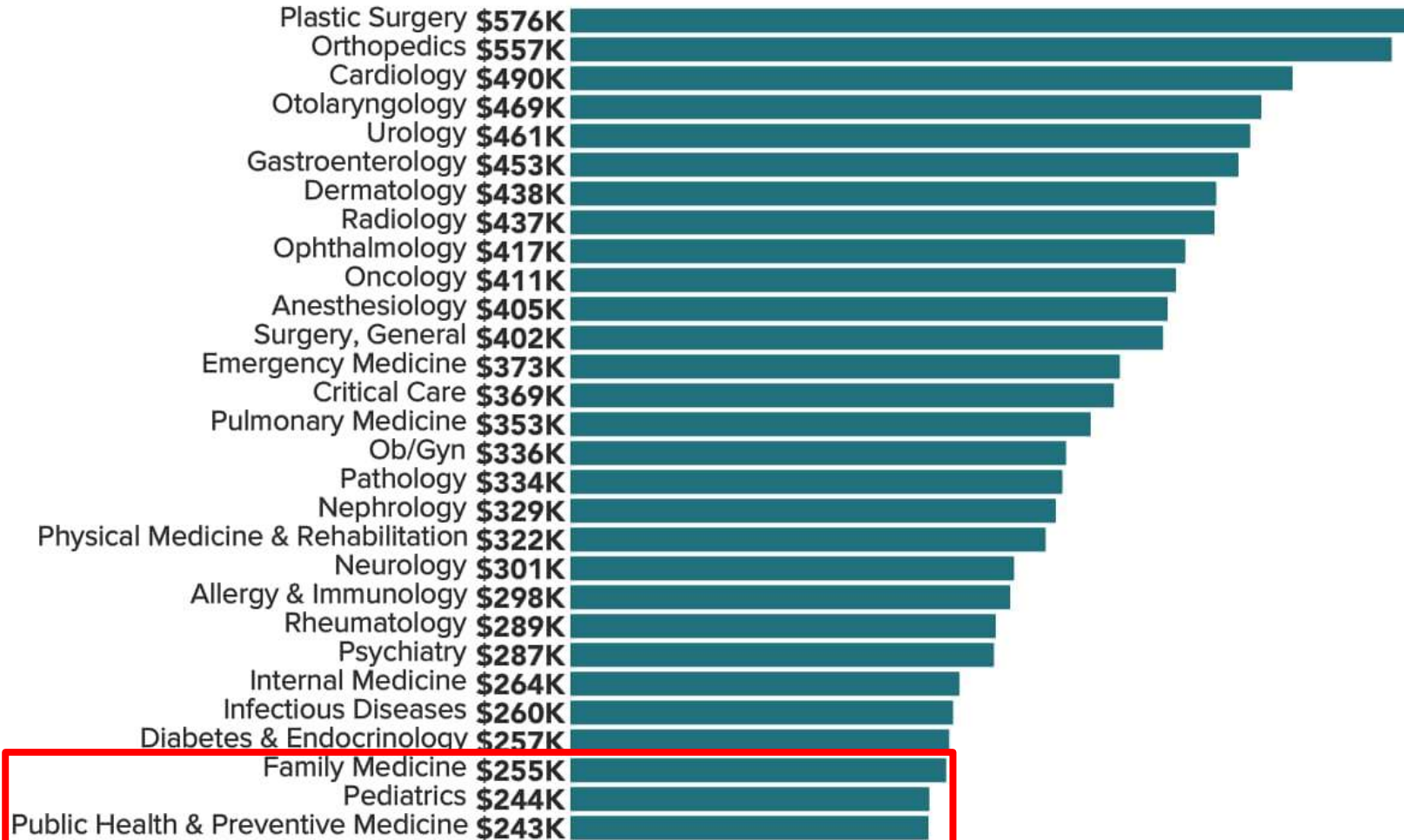


1-800-MOUNT SINAI
mountsinaihealth.org



MEDSCAPE PHYSICIAN COMPENSATION REPORT - 2022

Average Annual Physician Compensation (by Specialty)



ELECTIVE PCI RVU

92928 = 11.21

45X

SMOKING CESSATION RVU

99406: 3-10 min = 0.24

99407: >10min = 0.50

A 43 YEAR SAGA

SPECIAL ARTICLE **ARCHIVE**

The New Medical-Industrial Complex

Arnold S. Relman, M.D.

Article

October 23, 1980

N Engl J Med 1980; 303:963-970

DOI: 10.1056/NEJM198010233031703

10 References 449 Citing Articles

Perspective **FREE PREVIEW**

Alleviating Medical Debt in the United States

Nishant Uppal, M.D., M.B.A., Steffie Woolhandler, M.D., M.P.H., and David U. Himmelstein, M.D.



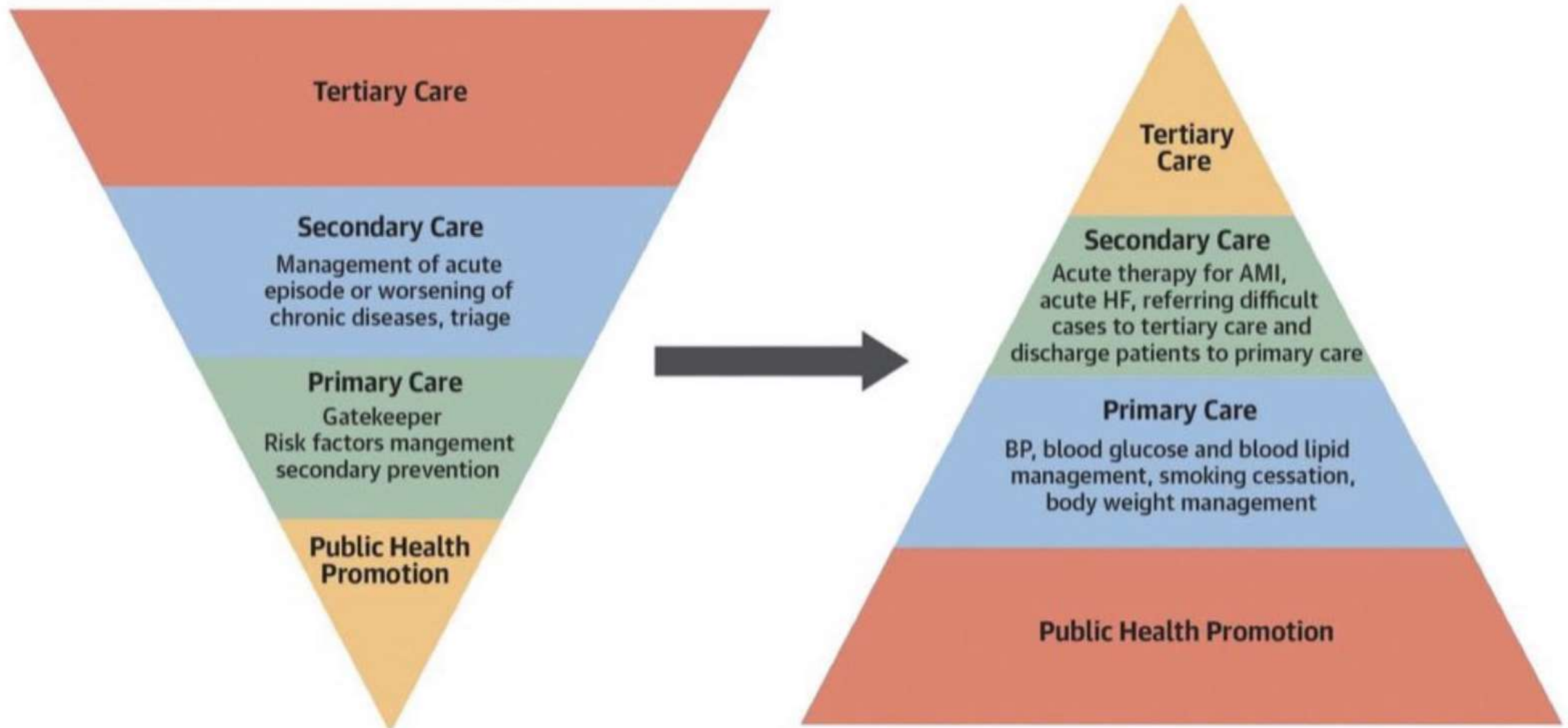
The persistence of medical debt and low levels of charity care at nonprofit hospitals (despite the financial assistance mandate in the Affordable Care Act) indicate that more muscular policies are needed.

September 7, 2023

N Engl J Med 2023; 389:871-873

DOI: 10.1056/NEJMp2306942

TIME TO FLIP THE PYRAMID



HOW TO CHANGE?



NY TIMES - AUG 16, 2023

Aug. 16, 2023

How Do We Fix the Scandal That Is American Health Care?

We can start by expanding access to care, but we also need to look beyond medicine and address harmful behaviors and poverty.

By NICHOLAS KRISTOF and SEPTEMBER DAWN BOTTOMS



WHAT CAN WE DO?



NUTRITION



EXERCISE



**TOBACCO
& ALCOHOL**



**STRESS
MANAGEMENT**



SLEEP



**HEALTHY
RELATIONSHIPS**

THE DEPT. OF VHA – WHOLE HEALTH



U.S. Department
of Veterans Affairs

VETERANS HEALTH ADMINISTRATION

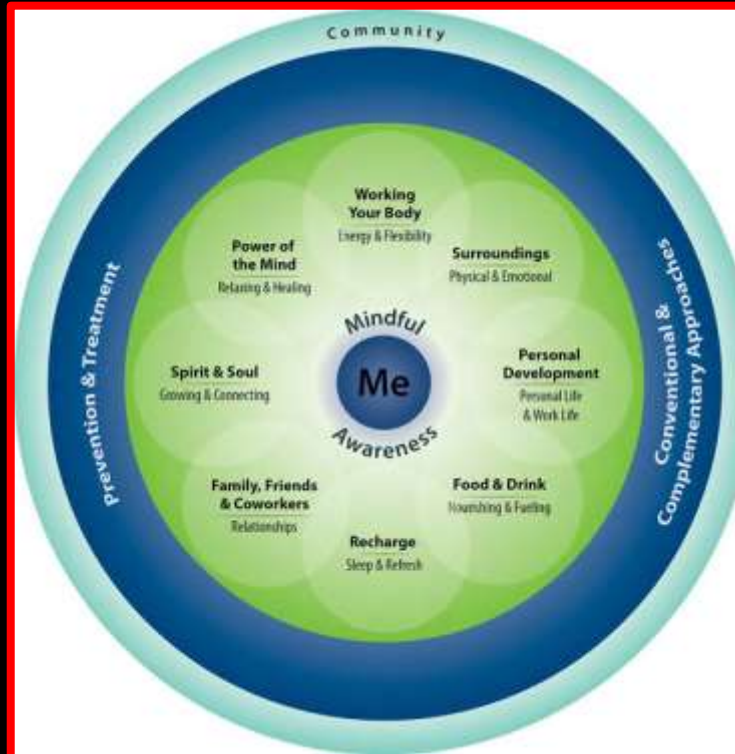
PASSPORT to WHOLE HEALTH



Prepared Under Contract to the VHA by Pacific Institute for Research & Evaluation
with the University of Wisconsin - Madison.

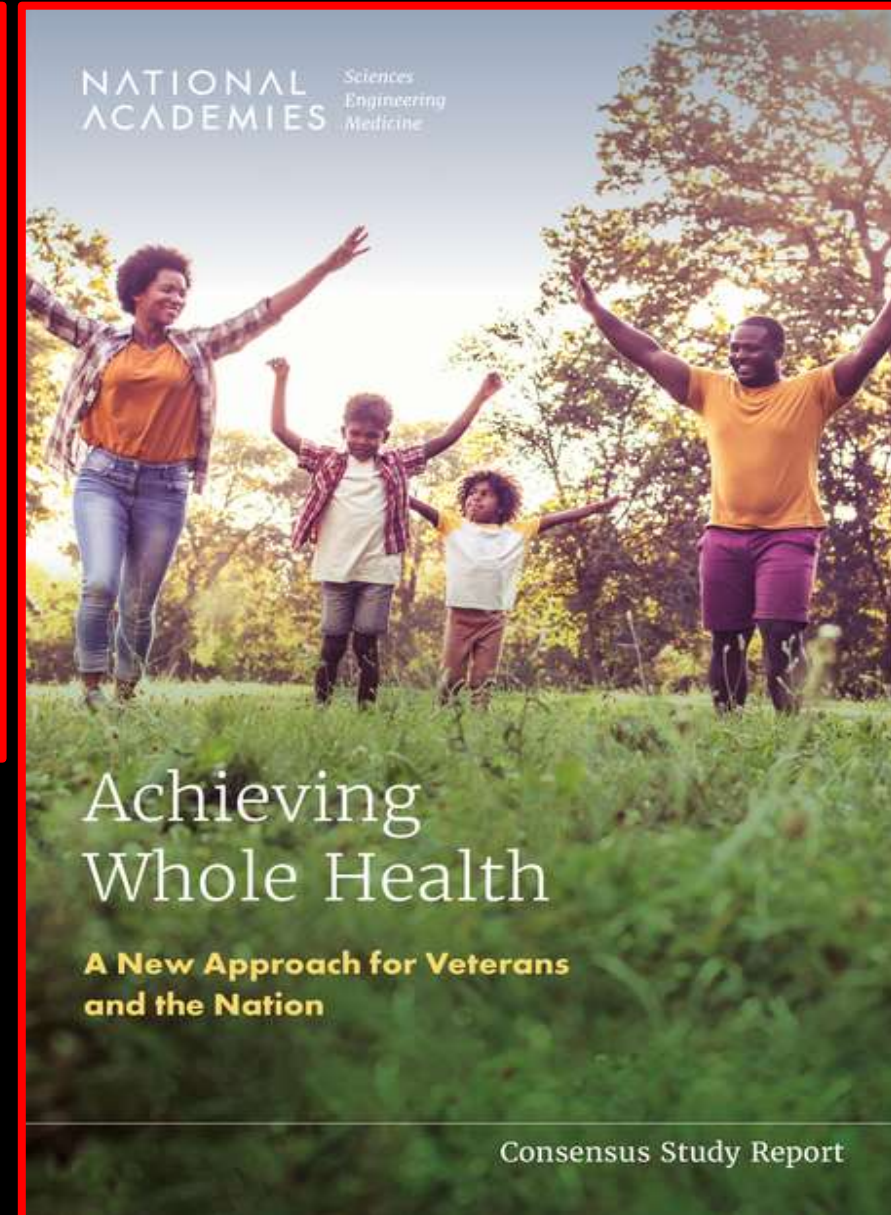
October 1, 2020

IB 10-1127
P96890



MY CLINICS

HEAL CALM



AMERICAN COLLEGE OF LIFESTYLE MEDICINE



LIFESTYLE MEDICINE FOCUSES ON 6 AREAS TO IMPROVE HEALTH



AMERICAN COLLEGE OF
Lifestyle Medicine



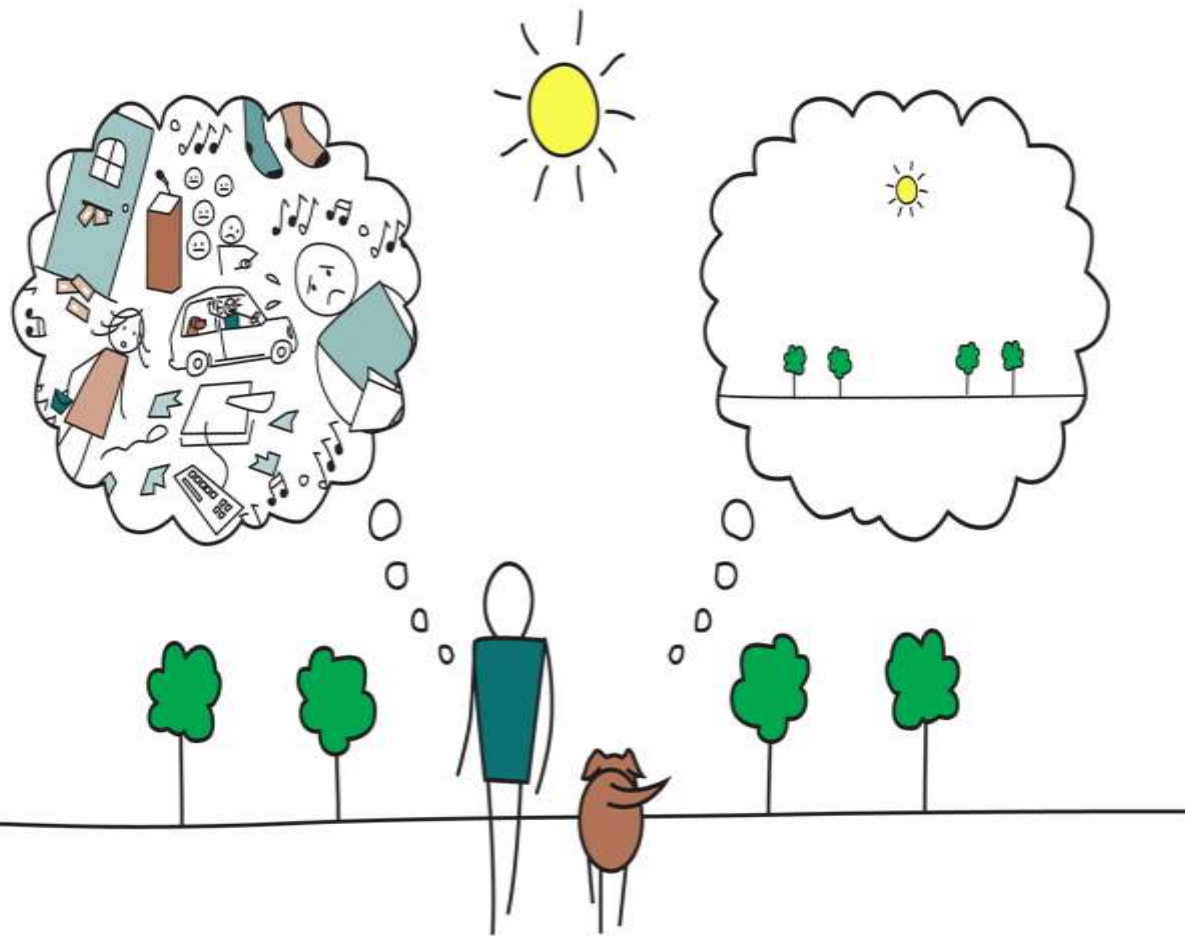
AMERICAN BOARD OF
LIFESTYLE MEDICINE

LIFESTYLEMEDICINE.ORG

ABLM.ORG

FIRST AND FOREMOST - MINDFULNESS

Mindful About What?



Mind Full, or Mindful?



Why Do You Want to be Healthy?

WHAT IS MINDFULNESS?



MAKING CHANGES



THE PILLARS OF LIFESTYLE MEDICINE



NUTRITION



EXERCISE



**TOBACCO
& ALCOHOL**



**STRESS
MANAGEMENT**



SLEEP



**HEALTHY
RELATIONSHIPS**

IS THERE SCIENTIFIC EVIDENCE TO SUPPORT?



SOCIAL SUPPORT & RELATIONS

SOCIAL SUPPORT

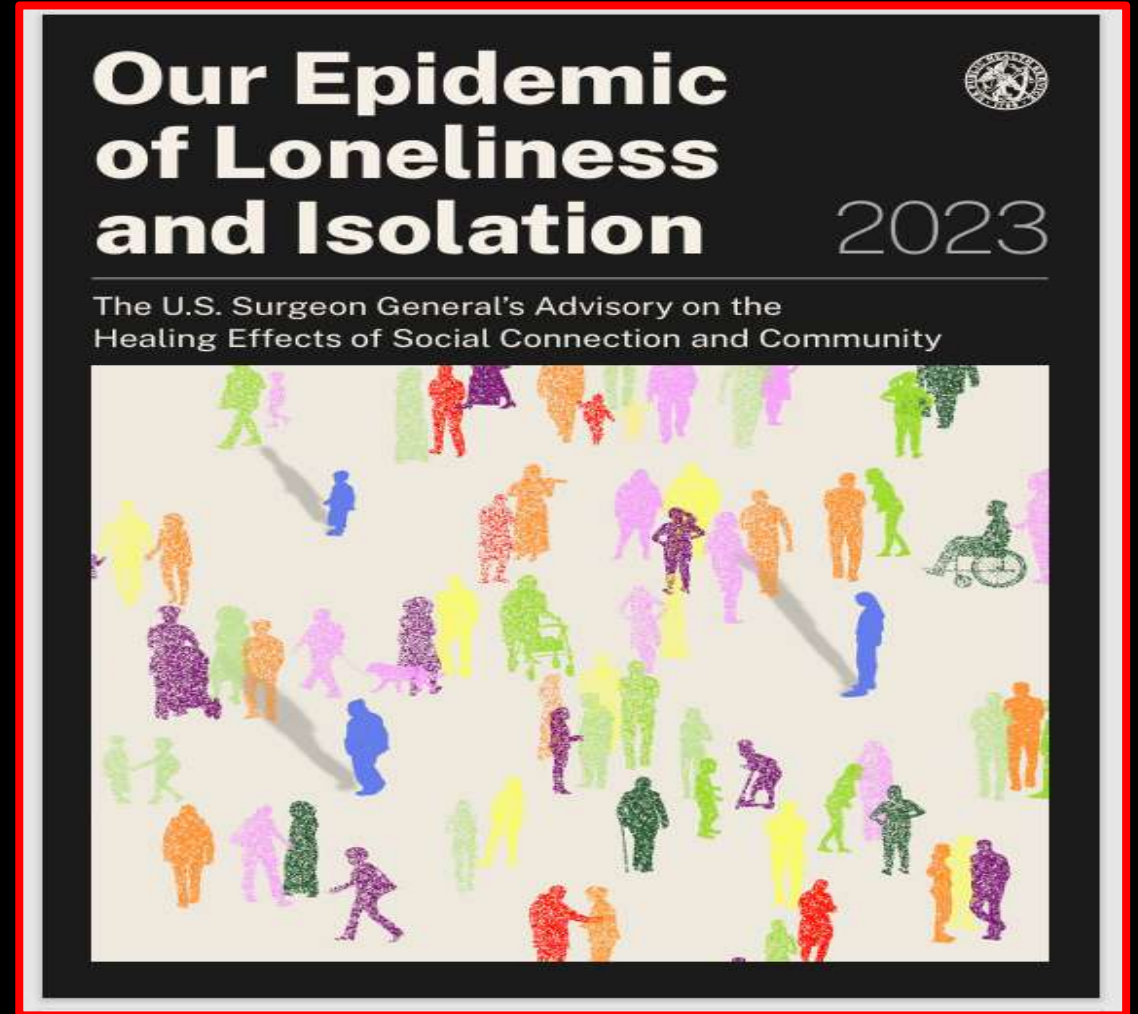
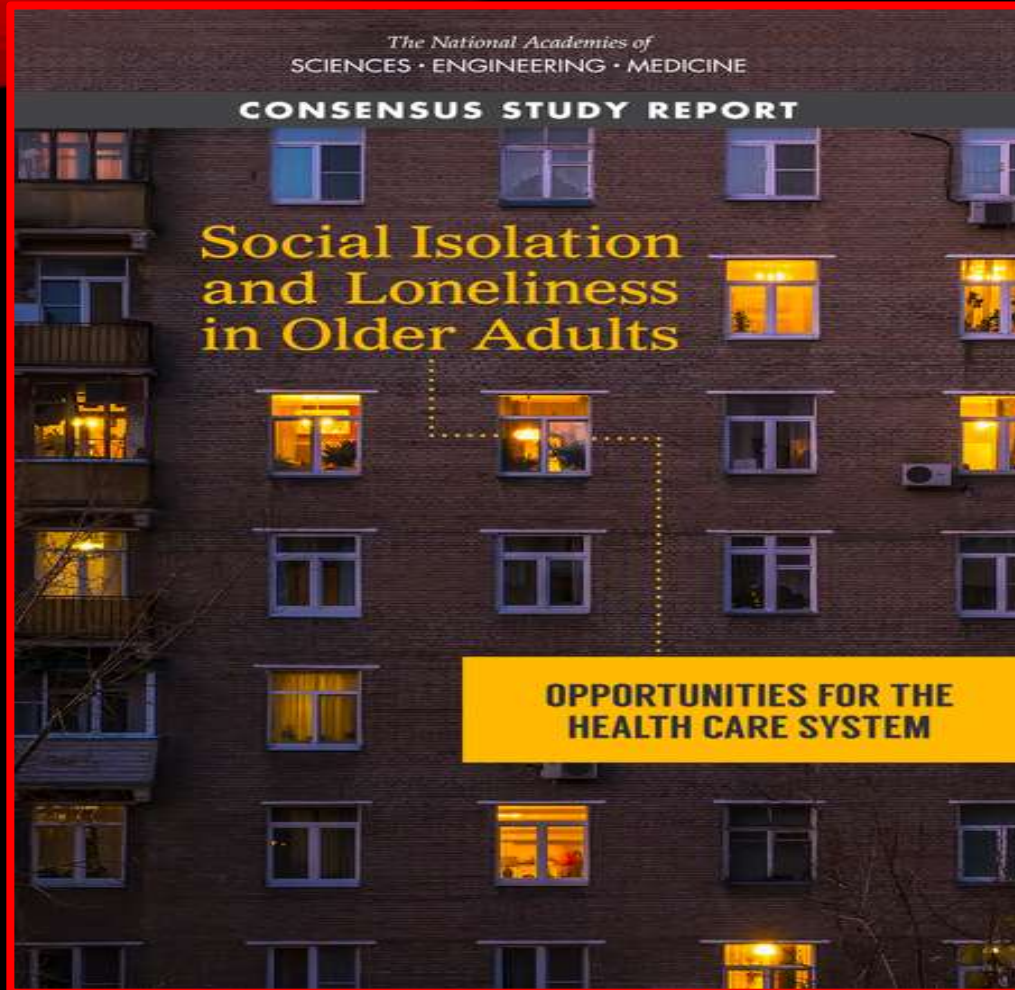
“ Whosoever is delighted in solitude is either a wild beast or a god.” -Aristotle

SOCIAL SUPPORT

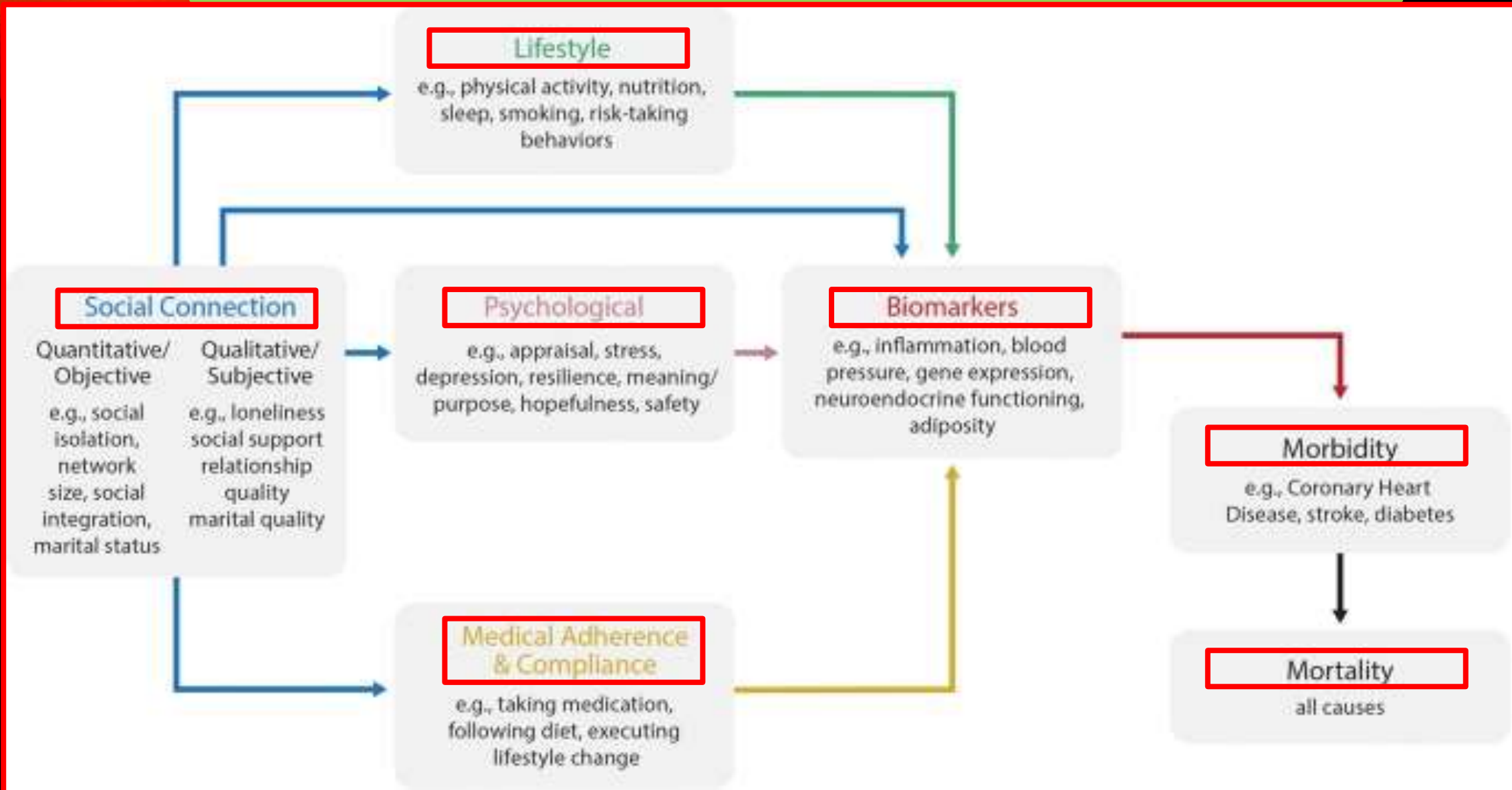
Information leading the subject to believe that he/she is **cared for** and **loved, esteemed**, and a member of a **network** of **mutual obligations**.



SOCIAL RELATIONS



SOCIAL ISOLATION



Heart. 2016;102(13):987-989

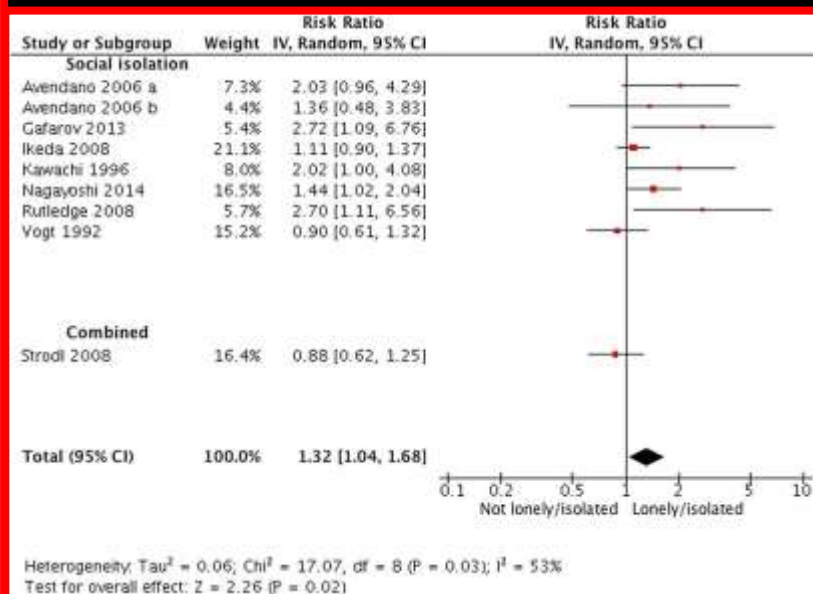
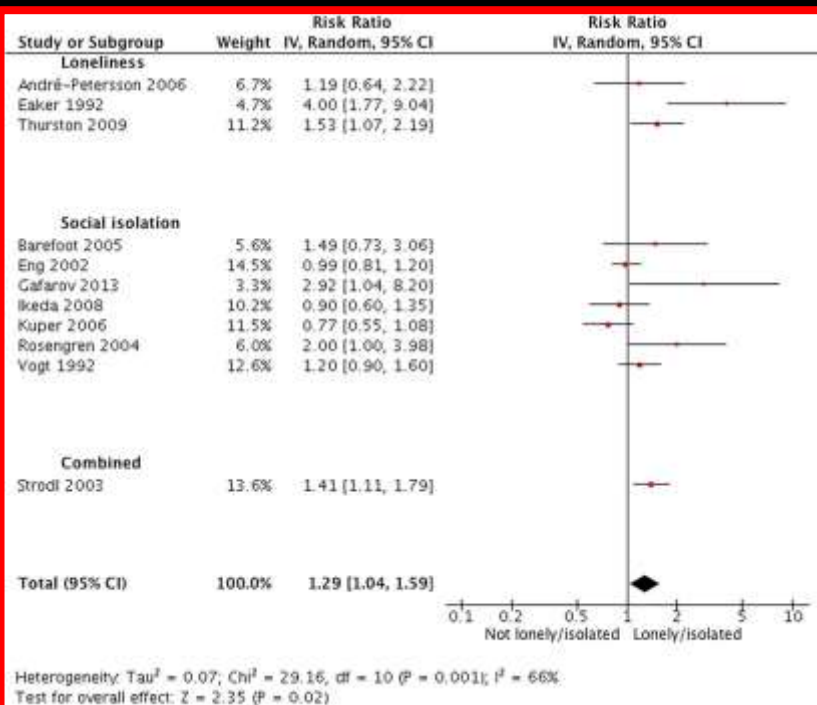
SOCIAL ISOLATION

Cardiac risk factors and prevention
Original article

Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies

 Nicole K Valtorta ¹, Mona Kanaan ², Simon Gilbody ³, Sara Ronzi ⁴, Barbara Hanratty ⁵

Correspondence to Nicole K Valtorta, Department of Health Sciences, University of York, Heslington, York YO10 5DD, UK; nicole.valtorta@york.ac.uk



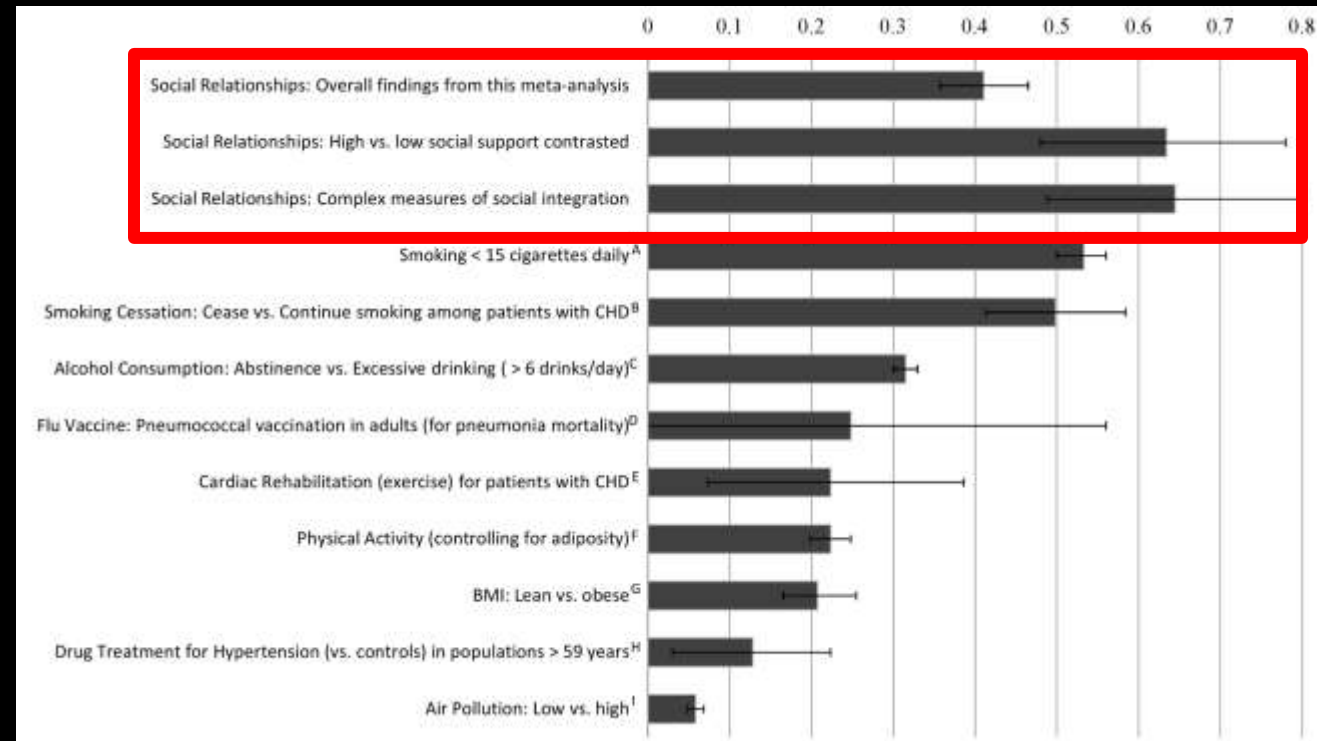
Poor Social Relationships

29% increased risk of CHD

32% increased risk of Stroke

SOCIAL RELATIONS

Across **148 studies** (308,849 participants), the random effects weighted average effect size was $OR=1.50$ (95% CI 1.42 to 1.59), indicating a **50% increased likelihood of survival** for participants with stronger social relationships.



Holt-Lunstad J, Smith TB, Layton JB. Social relationships and mortality risk: a meta-analytic review. **PLoS Med.** 2010 Jul 27;7(7)

SMOKING – DOCTORS' CHOICE IS AMERICA'S CHOICE



• The cigarettes quoted here have been checked and analyzed by the JEROME ROTH GRUBS AND MONROE COMPANY, Baltimore and London.

20,679* Physicians
say **“LUCKIES**
are less irritating”
“It’s toasted”
Your Throat Protection against irritation against cough

According to repeated nationwide surveys,

**More Doctors
Smoke **CAMELS**
than any other
cigarette!**

Doctors in every branch of medicine were asked, “What cigarette do you smoke?” The brand named most was Camels!

You’ll enjoy Camels for the same reasons so many doctors enjoy them. Camels have mild, cool tastiness, pack after pack, and a light, smooth feel by day after cigarette. Make this yourself test. Smoke only Camels for 30 days and see how well Camels please your taste. How well they soothe your throat as you smoke. You’ll see how enjoyable a cigarette can be!

THE DOCTORS’ CHOICE IS AMERICA’S CHOICE!



For 30 days, test Camels in your “T-Zone” (T for Throat, T for Taste).



**TASTE ISN'T THE ONLY
REASON I SMOKE**

“People are always telling me that smoking causes low birth weight. Talk about a win-win-win! An easy labor, a slim baby, and the Full Flavor of Winstons!”

Winston
when you're smoking for two



THORNTON GENERAL'S WARNING: Smoking Causes Lung Cancer, Complicates Pregnancy and May Complicate Fetal Development. Quitting Now Greatly Reduces Serious Risks to Your Health.

SARAH MILOV

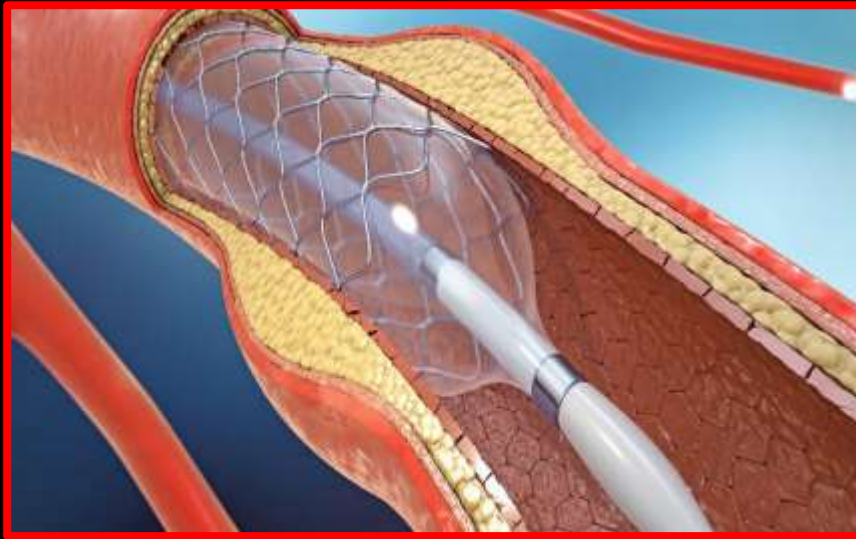


The Cigarette

A POLITICAL HISTORY

WHAT DO I MEAN BY DOCTORS' CHOICE?

BURGERS, BALLOONS, AND BYPASS ON THE SAME FLOOR!



DO WE HAVE THE MORAL AUTHORITY?

ALCOHOL



ALCOHOL – THERE IS NO SAFE LIMIT

March 25, 2022

Association of Habitual Alcohol Intake With Risk of Cardiovascular Disease

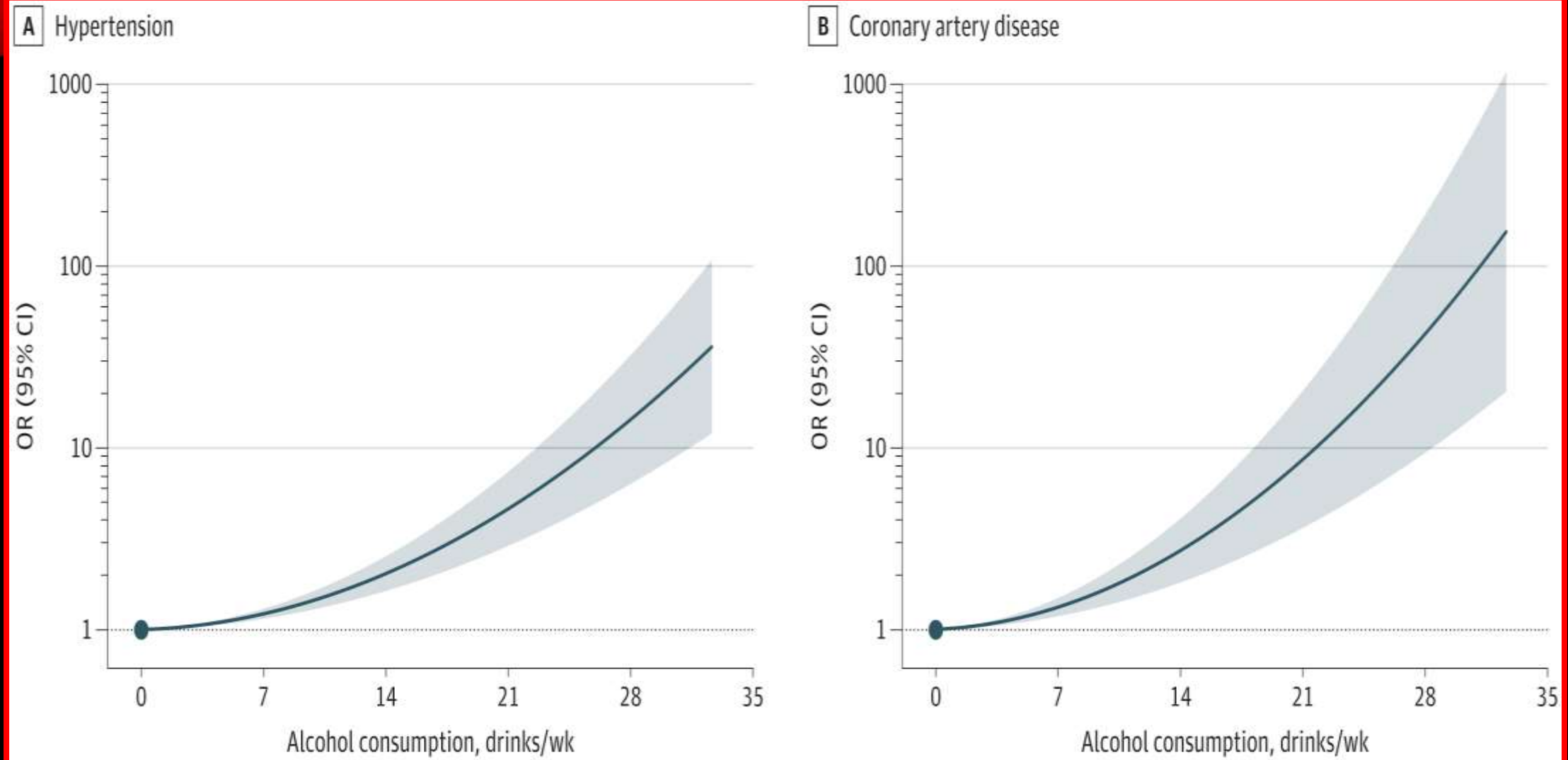
Kiran J. Biddinger^{1,2,3}; Connor A. Emdin, MD, DPhil^{1,2}; Mary E. Haas, PhD^{1,2,4}; [et al](#)

» [Author Affiliations](#) | [Article Information](#)

JAMA Netw Open. 2022;5(3):e223849. doi:10.1001/jamanetworkopen.2022.3849

- ~370 000 UK Biobank Participants – 2006 to 2010 – Followed till 2016
- Linear and Non-Linear Mendelian Randomization

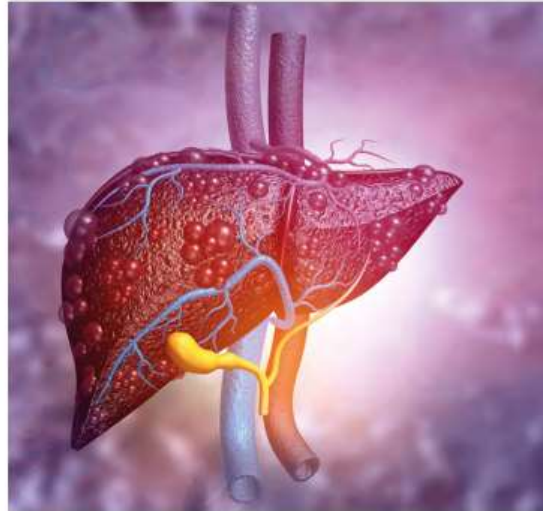
ALCOHOL – THERE IS NO SAFE LIMIT



JAMA Netw Open. 2022;5(3):e223849

ALCOHOL – WORLD HEART FEDERATION - 2022

PATHO-PHYSIOLOGY OF ALCOHOL USE



8

In the Global Action Plan for Prevention and Control of NCDs, the World Health Organization (WHO) calls for a **10% relative reduction** in the per capita use of alcohol between 2013-2030.^[20] Based on recent evidence, it has been concluded that there is “no safe level of alcohol consumption.”^[21]

Alcohol increases the risk for hypertensive heart disease, cardiomyopathy, atrial fibrillation and flutter, and strokes. In moderate drinkers, the risk of stroke is **1.14 times greater** (95% CI, 1.10-1.17); coronary disease (excluding myocardial infarction) is **1.06** (95% CI, 1.00 - 1.11); heart failure is **1.09** (95% CI, 1.03-1.15); fatal hypertensive disease **1.24** (95% CI, 1.15-1.33) and fatal aortic aneurysm is **1.15 times greater** (95% CI, 1.03-1.28).^[22] It has been argued that people with moderate consumption and no binge episodes may appear to have a slightly lower risk of ischaemic heart disease (IHD), but the protective effect of moderate alcohol consumption for CVD has been challenged.^[23]

The myth surrounding the protective behaviour of alcohol has been suggested to be due to their role in increasing high-density lipoprotein (HDL) cholesterol.

However, many studies have not found any effect of high HDL in reducing the risk of myocardial infarction.^{[24][25]} Alcohol has been associated with coronary calcification and increased carotid intima-media thickness, which can depreciate vascular health.^{[26][27]}

Contrary to popular opinion, alcohol is not good for the heart. This directly contradicts the common message over the past three decades from some researchers, the alcohol industry, and the media that alcohol prolongs life, chiefly by reducing the risk of CVD. For example, the use of red wine has been promoted through various diets as a “heart-healthy” beverage for the longest time. The presence of resveratrol in wine has been known for its cardioprotective characteristics in light to moderate drinkers. However, there are multiple reasons that the belief that alcohol is good for cardiovascular health is no longer acceptable:

- Such evidence has been mostly based on observational studies
- No randomized controlled trials (RCTs) have confirmed health benefits of alcohol
- The presence of unaccounted confounding factors further weakens the quality of evidence
- Most evidence is observed only in the Caucasian population
- Some studies that show positive effects are funded by the alcohol industry.*

Research in the latest decade has led to major reversals in the perception of alcohol in relation to health in general and CVD in particular. These developments have prompted health authorities in a number of countries, e.g. the Netherlands^[28], England^[29] and Australia^[30], to lower their recommended amount of alcohol for low-risk drinking.

The alcohol industry has also perpetuated misleading information about the benefits of drinking alcohol. This interference by the alcohol industry closely reflects the universally vilified activities of tobacco companies. Alcohol industries deceptively promote their products under the labels of “healthy” and “safe”. Portrayal of alcohol in print and electronic media as necessary for a vibrant social life has diverted attention from the harms of alcohol use. Youth-targeted advertisement and encouraging alcohol as “heart-healthy” have created a conducive environment for young adults to relate alcohol with “having a good time”. Contrary to this belief, evidence from all around the world exists to link alcohol with a range of non-communicable and infectious diseases.

Alcohol consumption increases the risk of CVD



PSYCHOLOGICAL AND EMOTIONAL STRESS



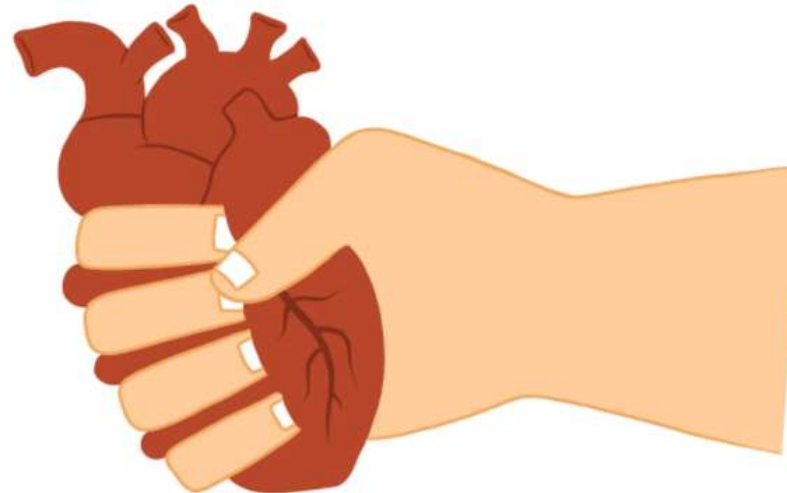
PSYCHOLOGICAL AND EMOTIONAL STRESS

The New York Times

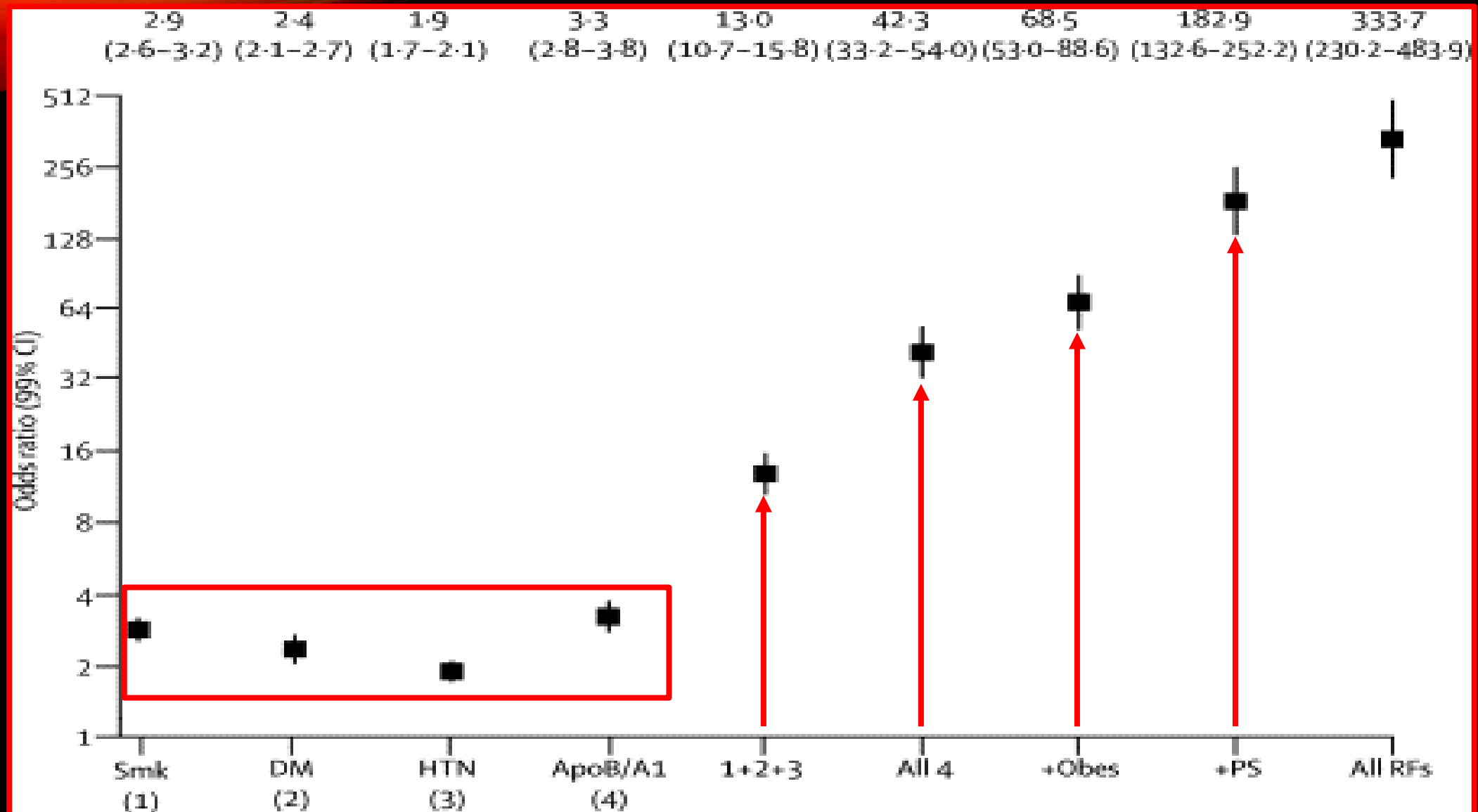
PERSONAL HEALTH

Stress May Be Your Heart's Worst Enemy

Psychological stress activates the fear center in the brain, setting into motion a cascade of reactions that can lead to heart attacks and strokes.



IMPACT OF PSYCHOSOCIAL FACTORS

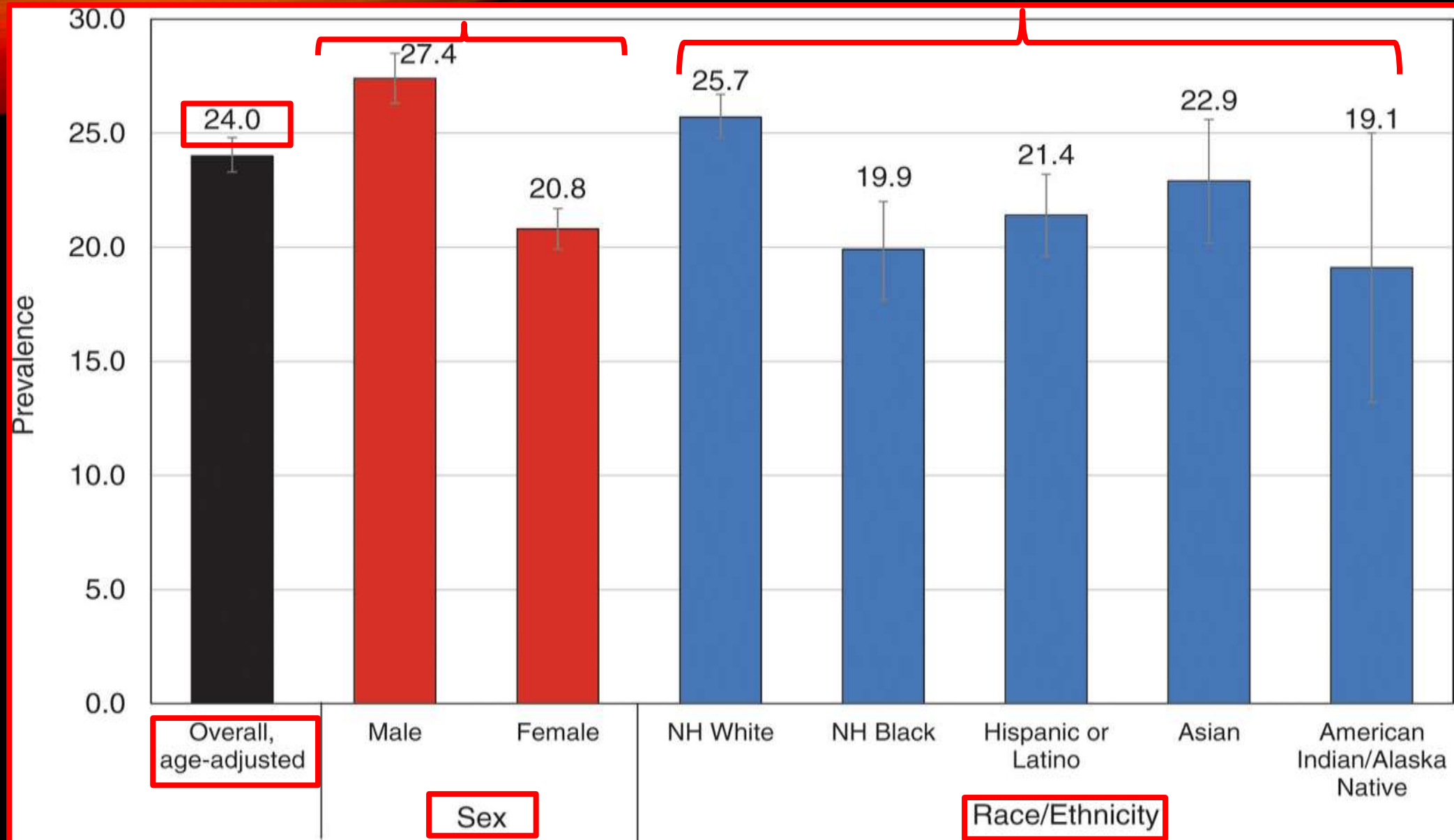


Lancet. 2004 Sep 11-17;364(9438):937-52

PHYSICAL ACTIVITY



PHYSICAL ACTIVITY—MEETING CARDIO AND STRENGTH



AHA STATS: Circulation. 2022;145:e153–e639

PHYSICAL ACTIVITY



The American Heart Association Recommendations for Physical Activity in Adults

At least **30** minutes of moderate-intensity aerobic activity At least **5** days per week for a total of **150** minutes



OR

At least **25** minutes of vigorous aerobic activity At least **3** days per week for a total of **75** minutes



or a combination of the two

AND

Moderate to **HIGH INTENSITY** muscle-strengthening activity At least **2** days per week for additional health benefits



PHYSICAL ACTIVITY - CAD

Cardioprotective Mechanisms of Physical Activity

Psychologic

↑ Social Interactions
↓ Psychosocial Stress
↓ Depression

Anti-Arrhythmic

↑ Heart Rate Variability
↓ Adrenergic Activity
↑ Vagal Tone

Anti-Thrombotic

↑ Fibrinolysis
↓ Platelet Adhesion
↓ Fibrinogen
↓ Blood Viscosity

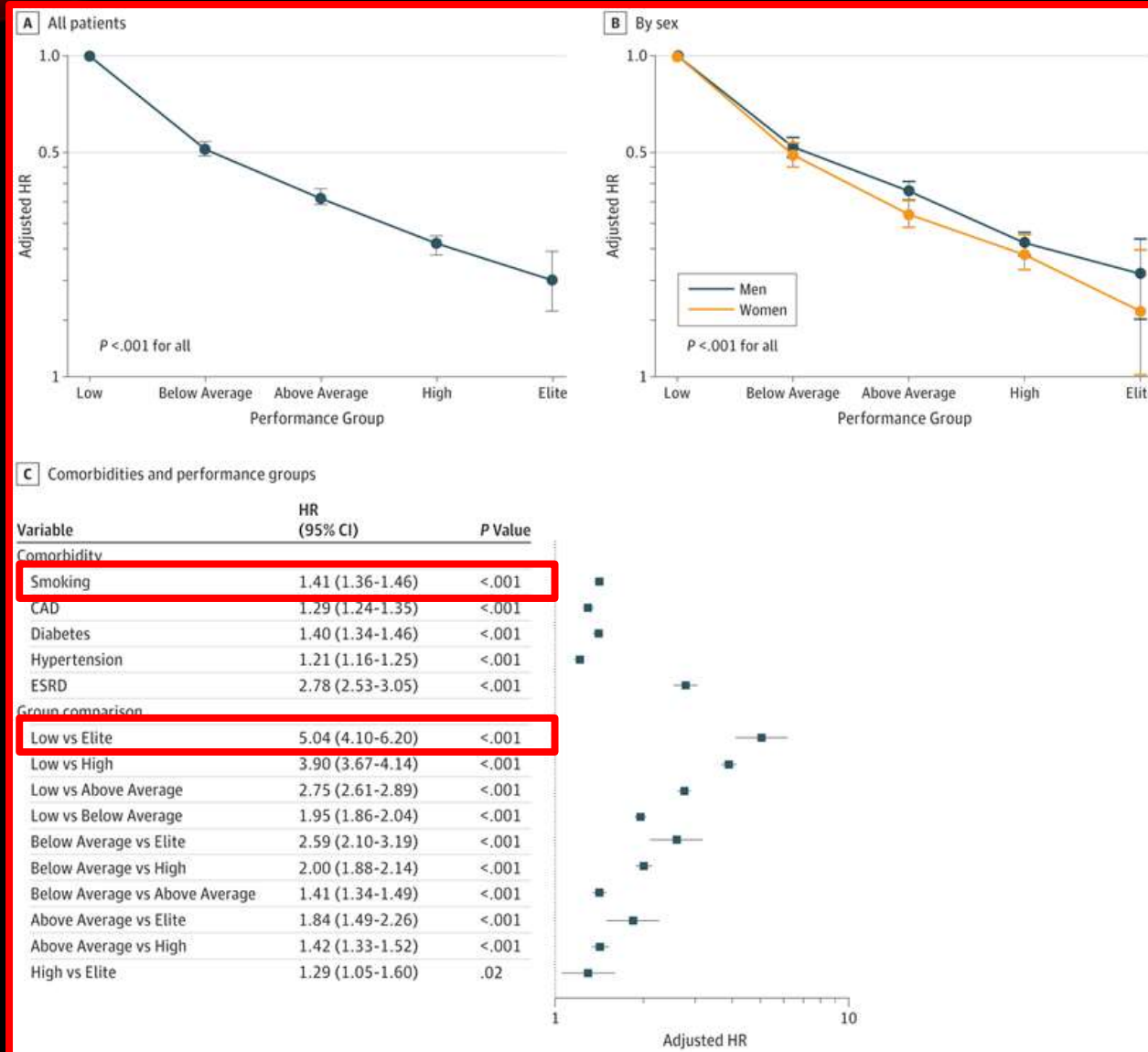
Anti-atherosclerotic

↑ Insulin Sensitivity
↑ HDL / ↓ LDL
↓ Triglycerides
↓ Blood Pressure
↓ Adiposity
↓ Inflammation

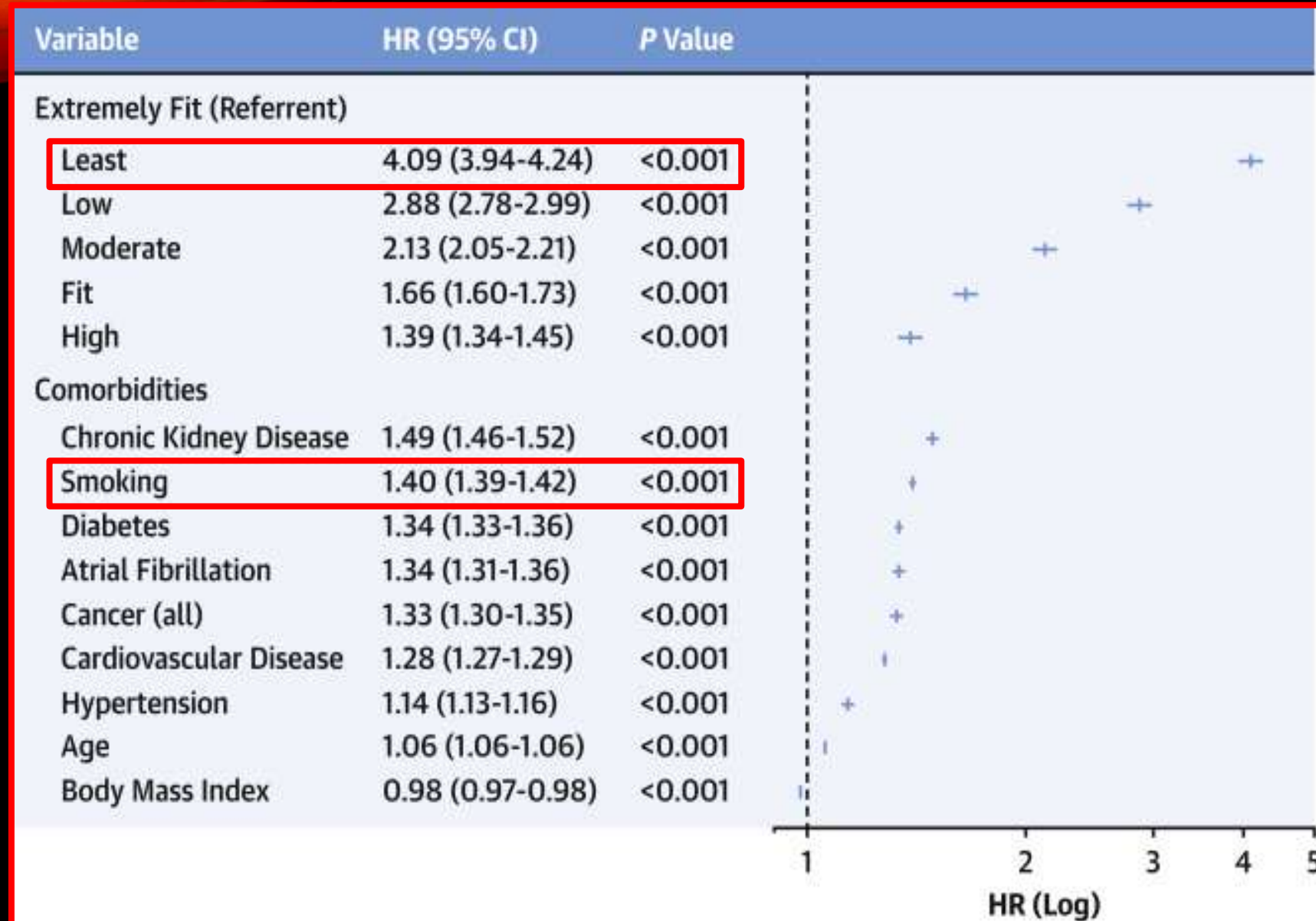
Hemodynamics

Cardiac Remodeling
↑ Coronary Flow
↑ EPCs and CACs
↓ Myocardial O₂ Demand
↓ Endothelial Dysfunction
↑ Nitric Oxide

EXERCISE IS MEDICINE



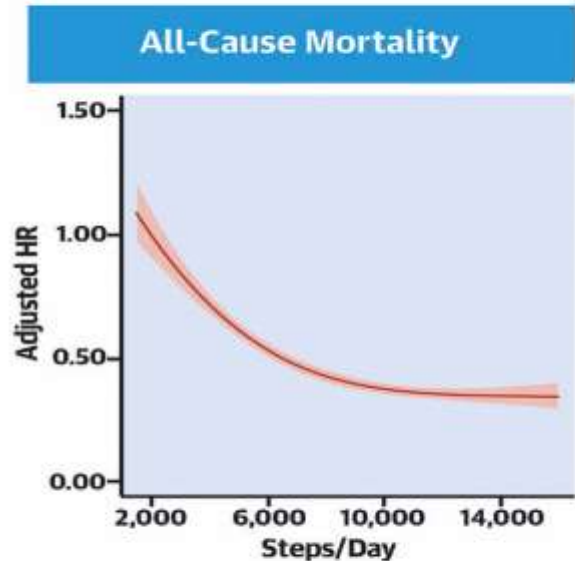
EXERCISE IS MEDICINE



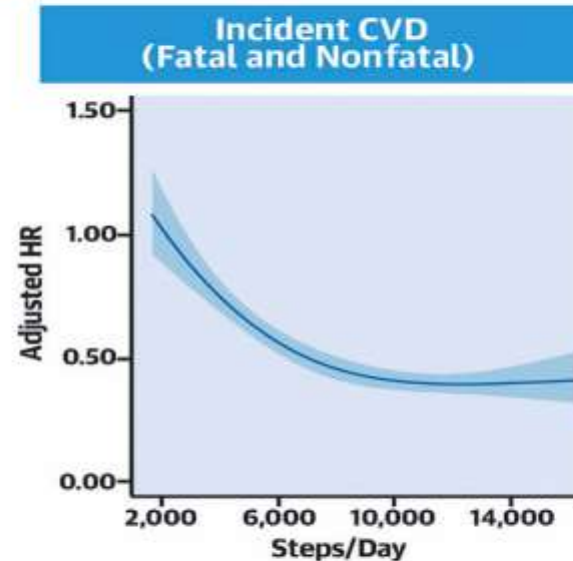
STEPS PER DAY AND MORTALITY

CENTRAL ILLUSTRATION: Dose-Response Associations of Daily Step Count With Clinical Outcomes

This systemic review and meta-analysis of 12 cohorts including 111,309 individuals from the general population identified minimal and optimum step count targets for reducing adverse health outcomes.



	Steps/day	Adjusted HR (95% CI)
Minimum dose	2,517	0.92 (0.84-0.99)
Optimum dose	8,763	0.40 (0.38-0.43)
Risk reduction at 16,000 steps	16,000	0.35 (0.30-0.40)



	Steps/day	Adjusted HR (95% CI)
Minimum dose	2,735	0.89 (0.79-0.99)
Optimum dose	7,126	0.49 (0.45-0.55)
Risk reduction at 16,000 steps	16,000	0.42 (0.33-0.53)

Step count targets were independent of:



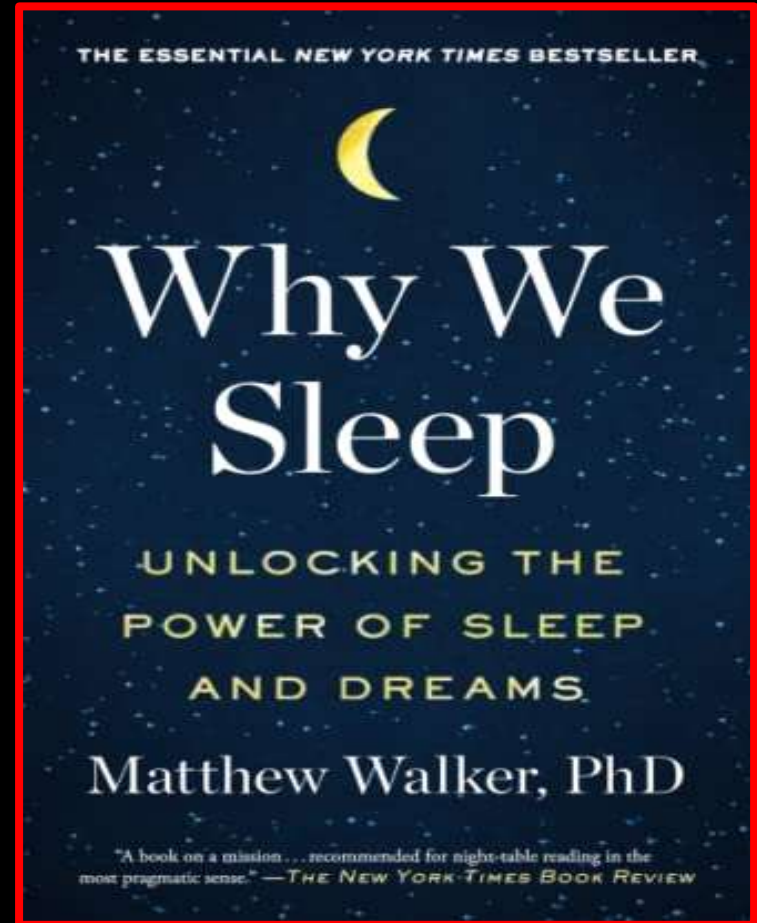
Device wear location (wrist vs hip)



Additional health benefits with higher step cadence, irrespective of total step count

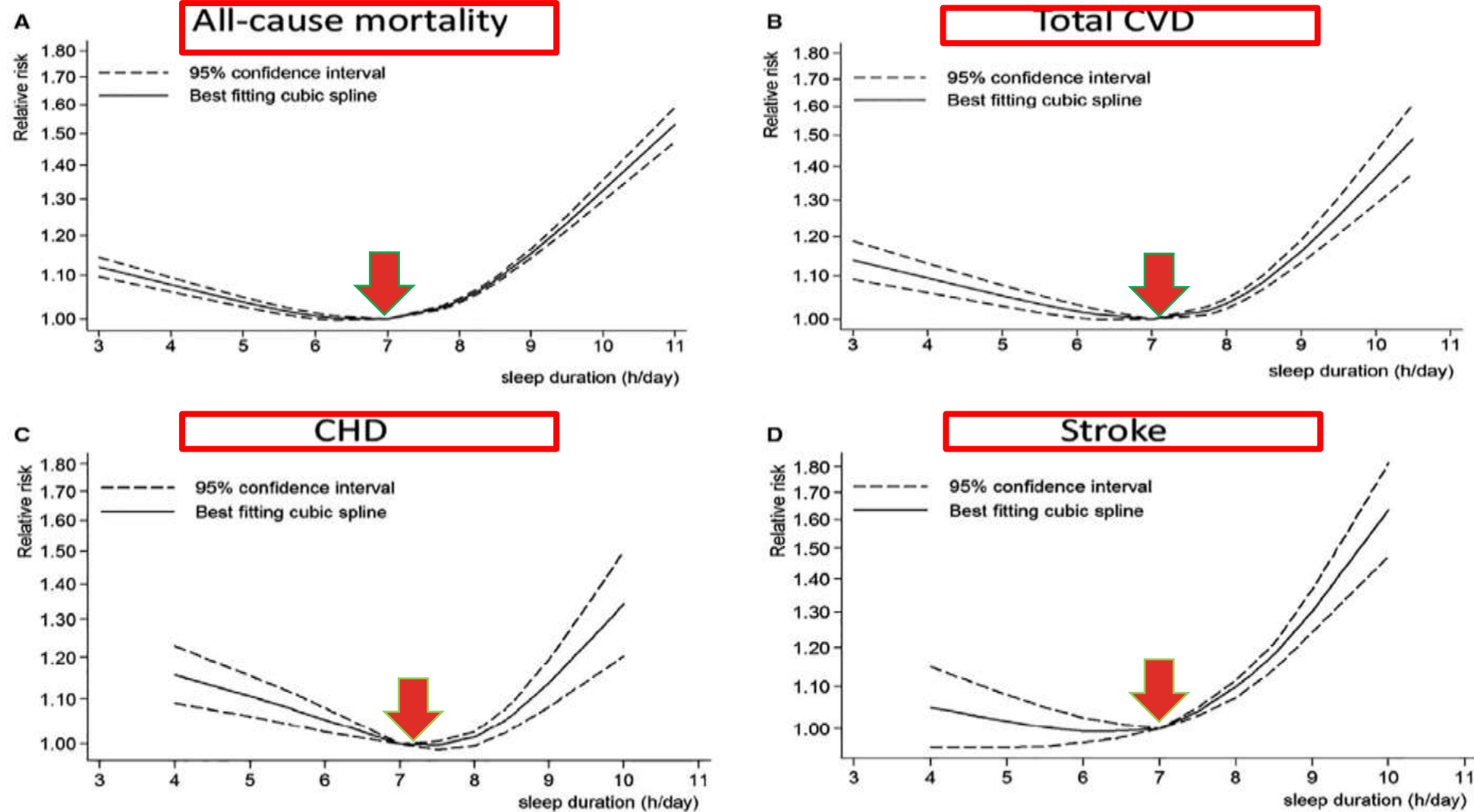


SLEEP



Each night, when I go to sleep, I die. And the next morning, when I wake up, I am reborn.” -Gandhi

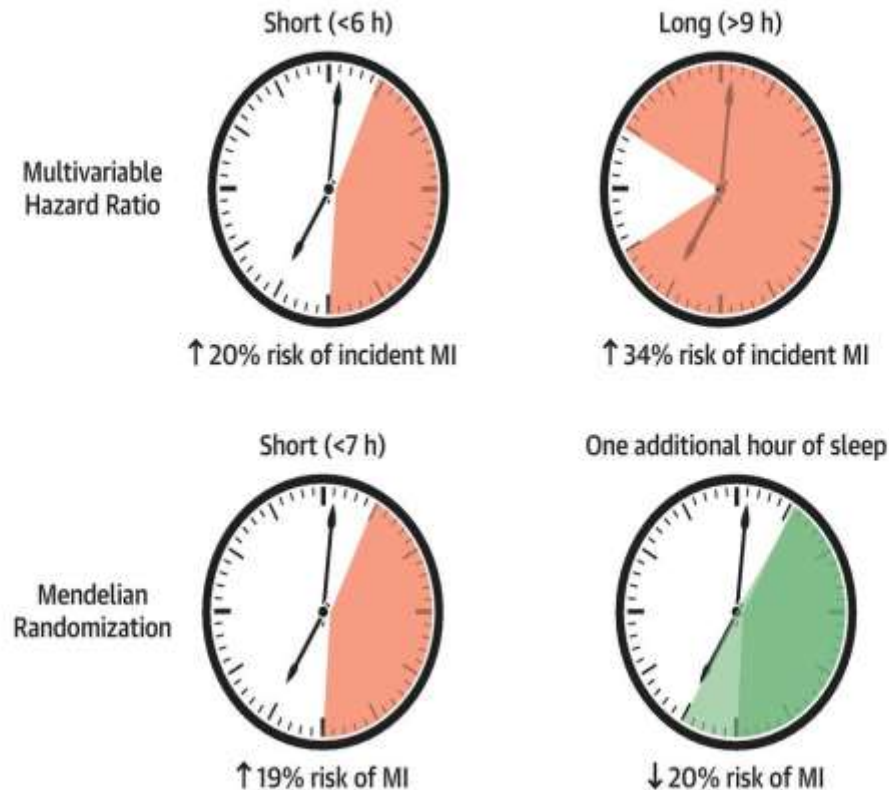
SLEEP AND CVD



Journal of the American Heart Association (2017).

SLEEP AND CVD – CAUSAL LINK?

CENTRAL ILLUSTRATION: Associations of Sleep Duration With Coronary Disease: Observational and 2-Sample Mendelian Randomization



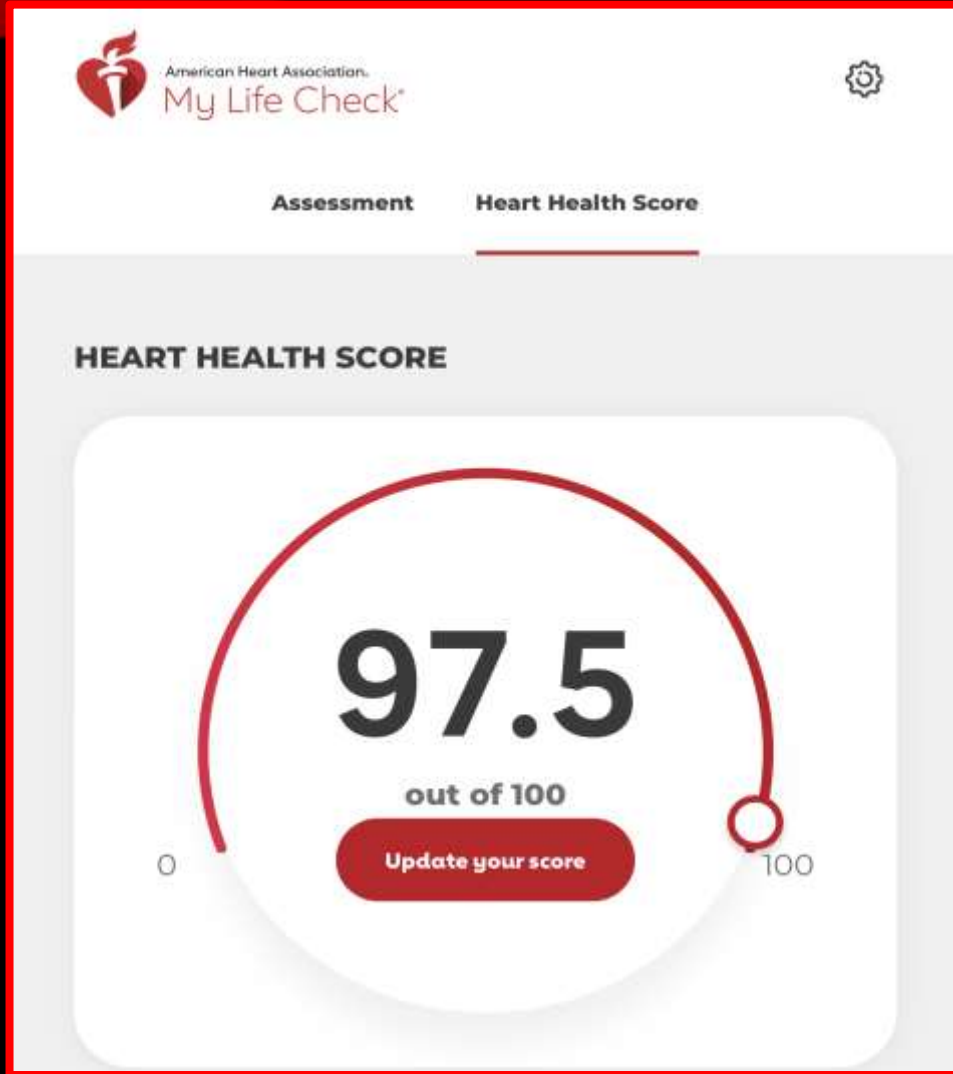
Daghlas, I. et al. J Am Coll Cardiol. 2019;74(10):1304-14.

- **461, 341 UK Biobank** participants **free of CVD**
- Adjusted **Risk of MI**
- **<6H 20%** ↑
 - (HR: 1.20; 95%[CI]: 1.07 to 1.33)
- **>9h 34%** ↑
 - (HR: 1.34; 95% CI: 1.13 to 1.58)
- **Independent of sleep traits**
- **Mendelian Randomization**
 - **Consistent with the causal relationship** between **sleep duration** and **myocardial infraction**

AHA 2022 - LIFE'S ESSENTIAL EIGHT - SLEEP



MY LIFE'S CHECK



TIPS FOR BETTER SLEEP

- Be **consistent**. Go to bed at the same time each night and get up at the same time each morning, including on the weekends
- Make sure your **bedroom is quiet, dark, relaxing**, and at a comfortable **temperature**
- Remove **electronic devices**, such as TVs, computers, and smart phones, from the bedroom
- Avoid **large meals, caffeine, and alcohol** before bedtime
- Get some **exercise**. Being physically active **during the day** can help you fall asleep more easily at night.

SLEEPEDUCATION.ORG

NUTRITION

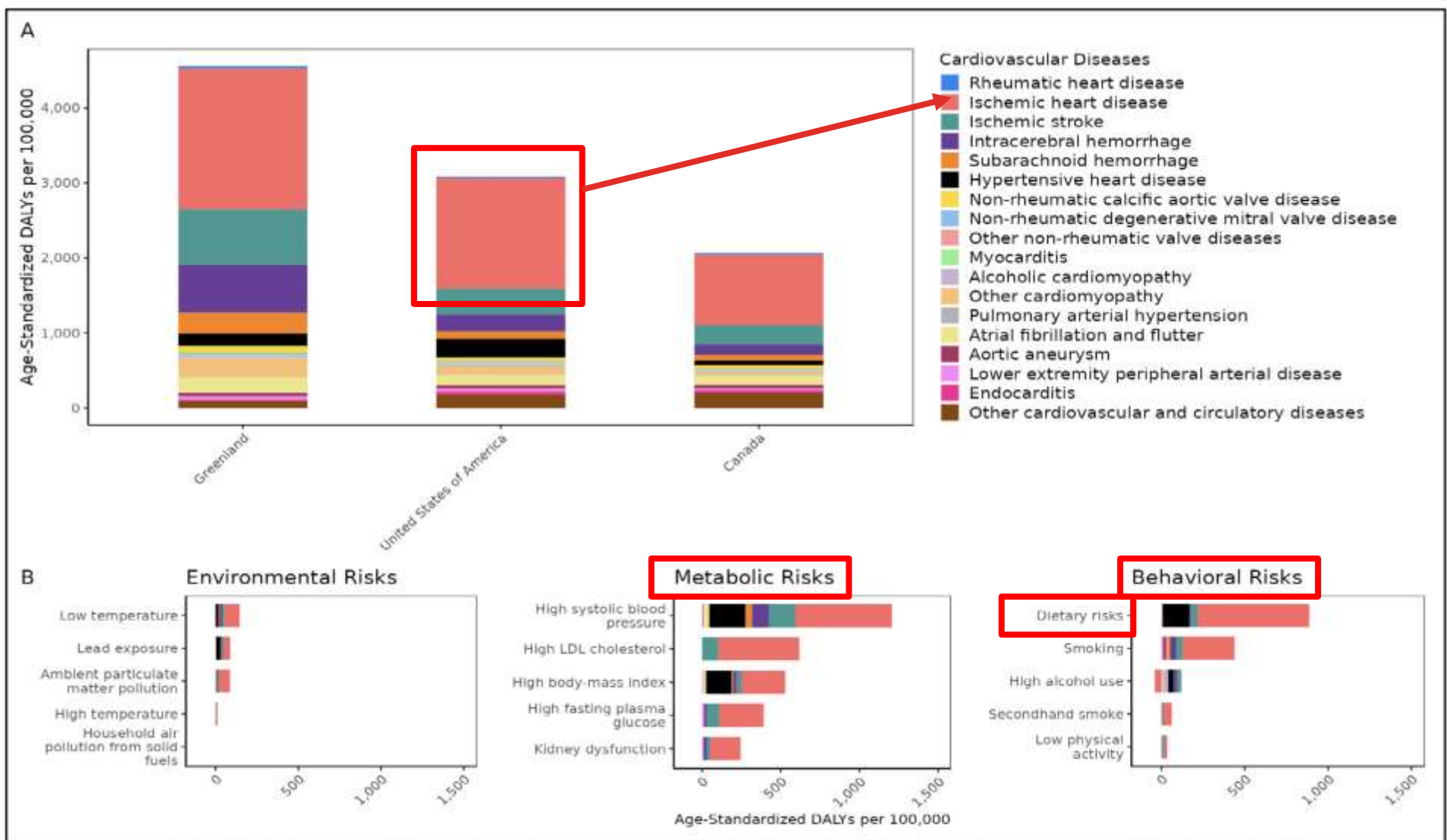


DIET WARS



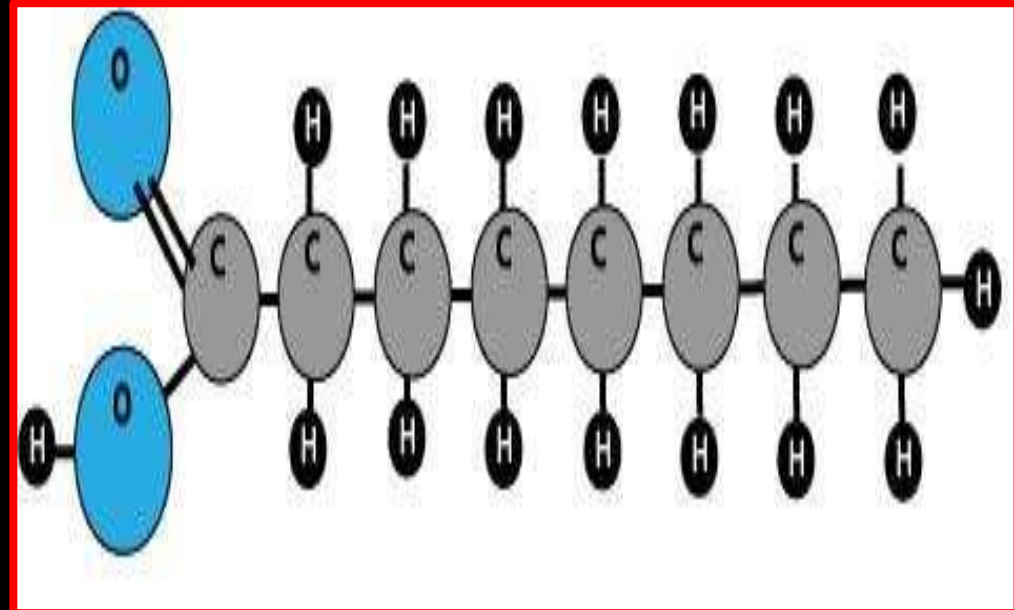
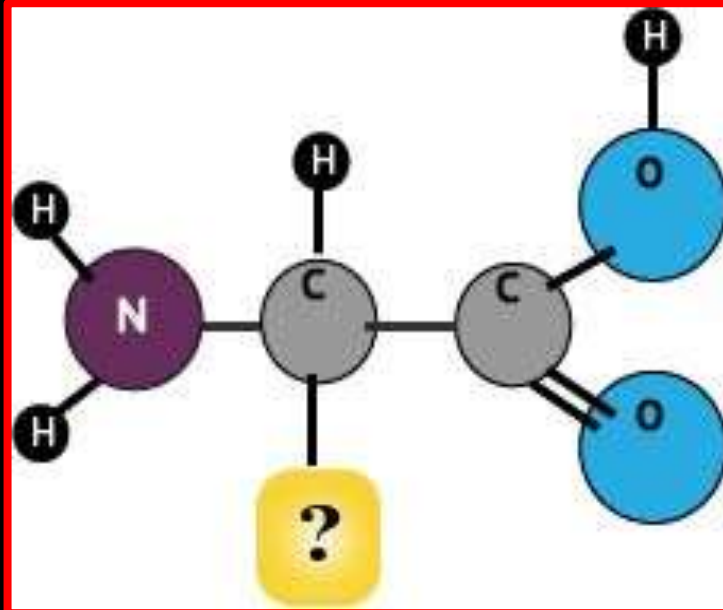
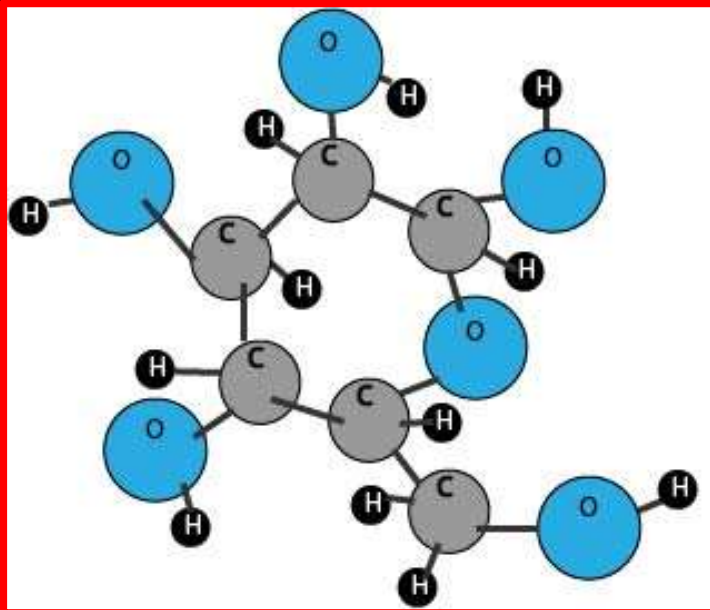
“While the **Keto** and the **Phyto** are fighting the battle, the **Cheeto** is winning the war!”

WHY NUTRITION?



J Am Coll Cardiol. 2022 Dec, 80 (25) 2372–2425

NUTRITION



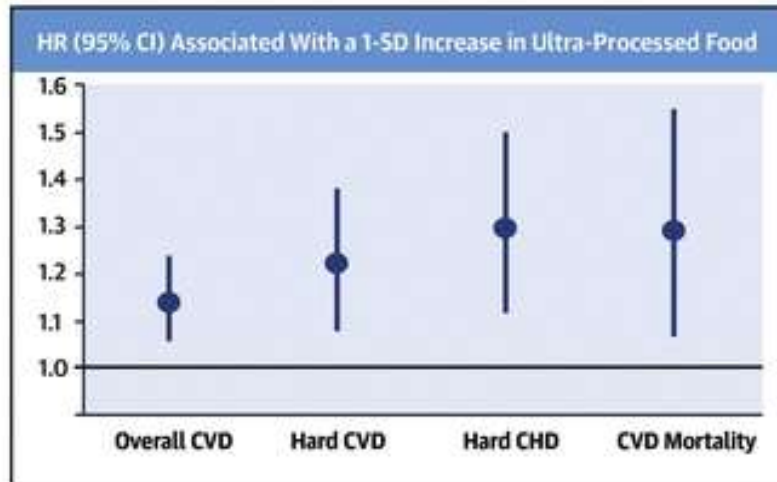
Today I am going to buy 6 carbs, 8 fats, and 9 proteins!!

PROCESSED FOOD AND CVD

CENTRAL ILLUSTRATION: Ultra-Processed Food Intake and Cardiovascular Disease Incidence and Mortality in the Framingham Offspring Study Cohort

Ultra-Processed Foods

Industrial formulations made with no or minimal whole foods and produced with substances extracted from foods or synthesized in laboratories, such as dye, flavorings, and preservatives.



Juul, F. et al. J Am Coll Cardiol. 2021;77(12):1520-31.

58% of Calories
Deadly **A**merican
Diet come from
Processed Foods!

EACH ADDITIONAL SERVING OF
PROCESSED FOOD RISK OF CVD, and
↑ CVD MORTALITY BY 7%



NUTRITION AND CV RISK FACTORS

NUTRITION AND HYPERTENSION

CENTRAL ILLUSTRATION: The BP Effects of the DASH Diet

FDA requirement for new antihypertensive drugs (13)

Angiotensin-converting enzyme inhibitors (12)

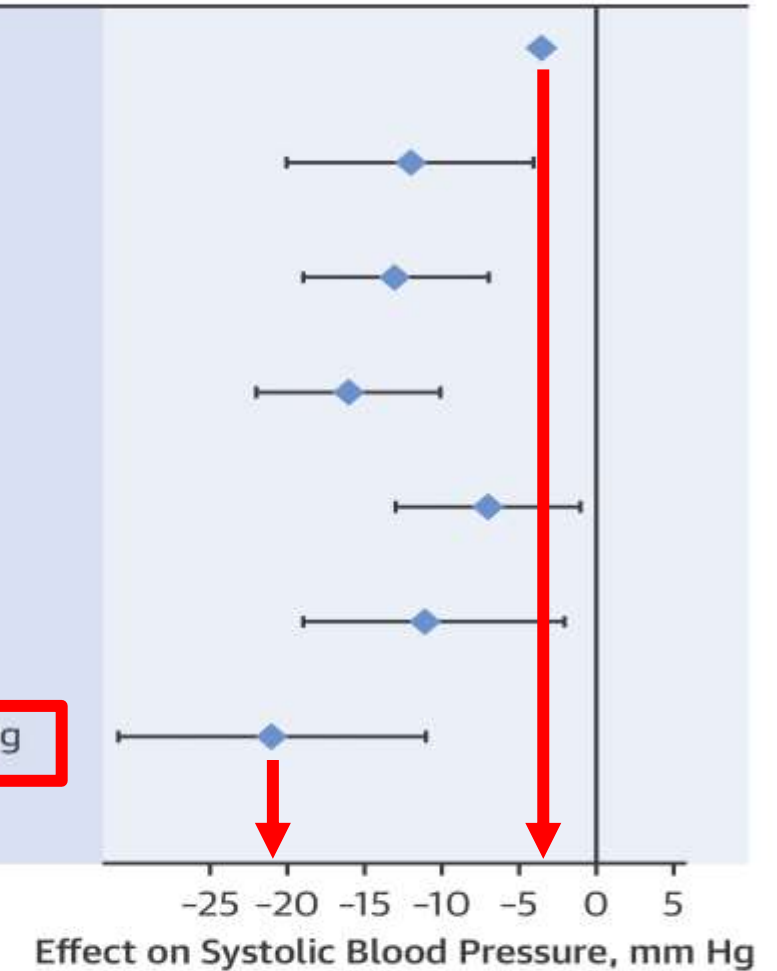
Beta blockers (12)

Calcium-channel blockers (12)

Sodium reduction (on a control diet) in participants with a baseline SBP ≥ 150 mm Hg

DASH versus control (at high sodium) in participants with a baseline SBP ≥ 150 mm Hg

DASH-low sodium (vs control-high sodium) in participants with a baseline SBP ≥ 150 mm Hg



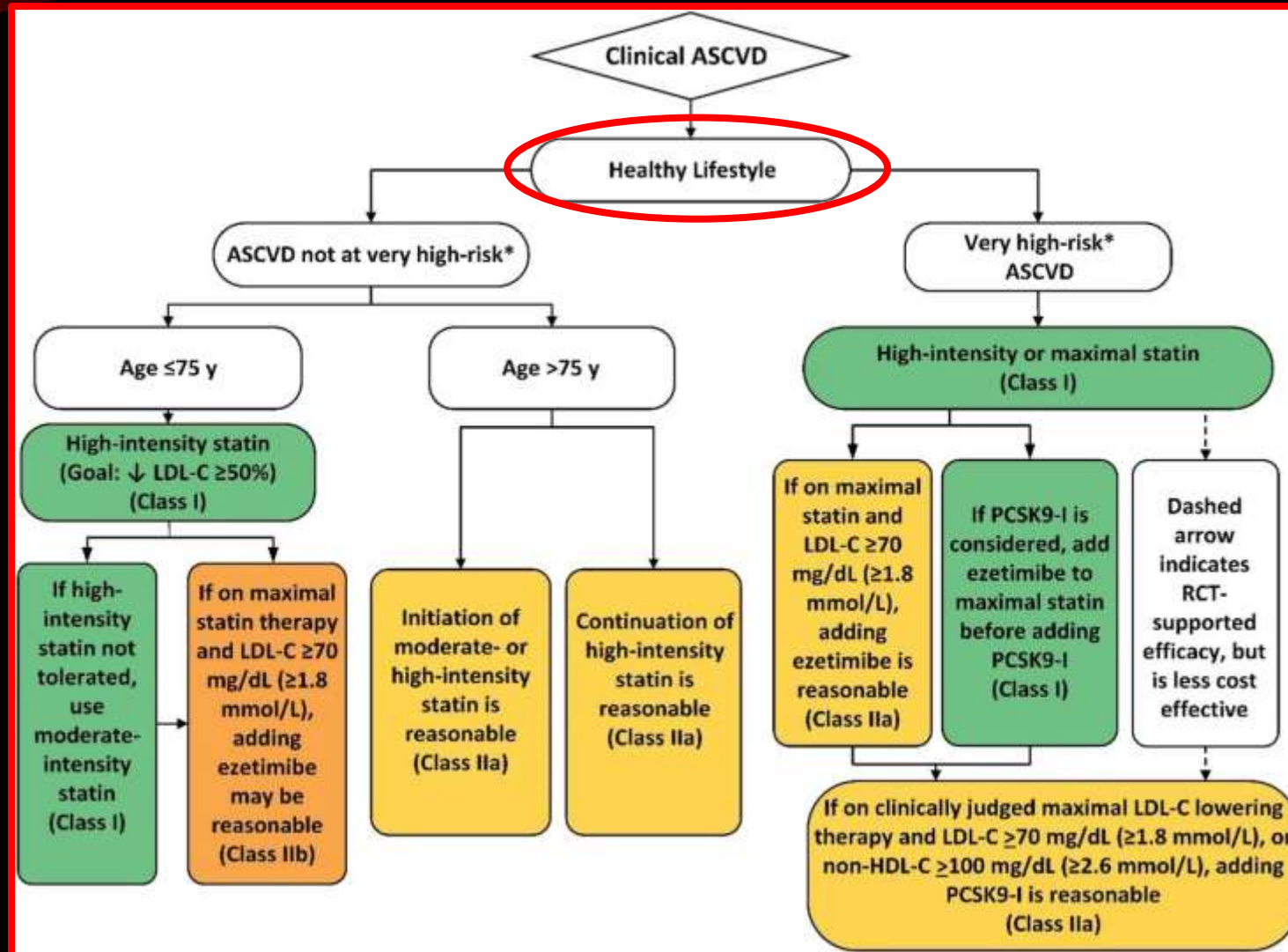
Juraschek, S.P. et al. J Am Coll Cardiol. 2017;70(23):2841-8.

NUTRITION AND HYPERTENSION

- **HYPERTENSION: 2017 GUIDELINES: DIET – CLASS I- LOE A**

- A heart-healthy diet, such as the **DASH** (Dietary Approaches to Stop Hypertension) diet, that facilitates achieving a desirable weight is recommended for adults with elevated BP or hypertension.
- **Sodium reduction** is recommended for adults with elevated BP or hypertension
- **Potassium** supplementation, **preferably in dietary modification**, is recommended for adults with elevated BP or hypertension, unless contraindicated by the presence of CKD or use of drugs that reduce potassium excretion.

NUTRITION - LIPIDS

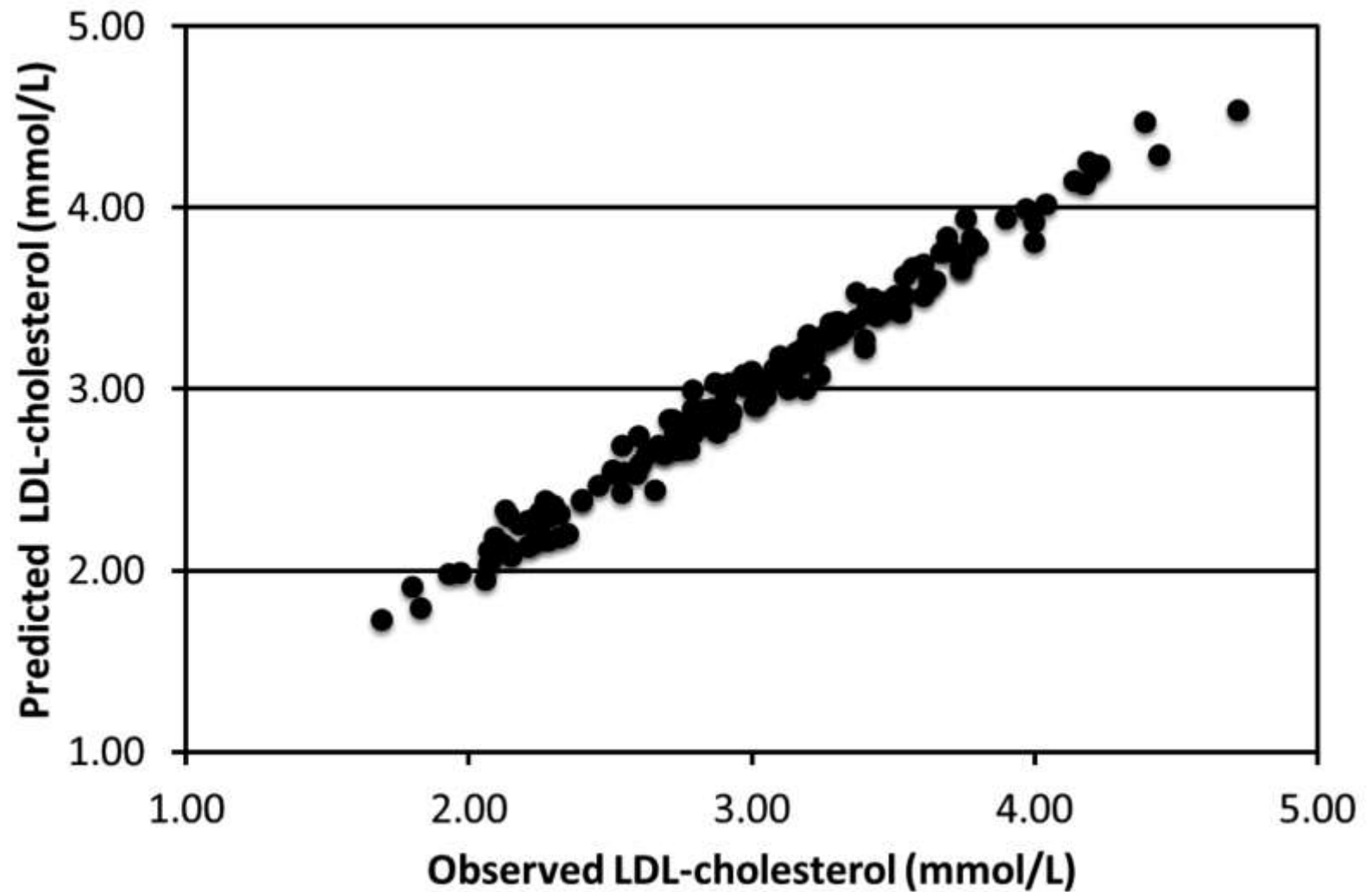


Scott M. Grundy et al. JACC 2019;73:3168-3209

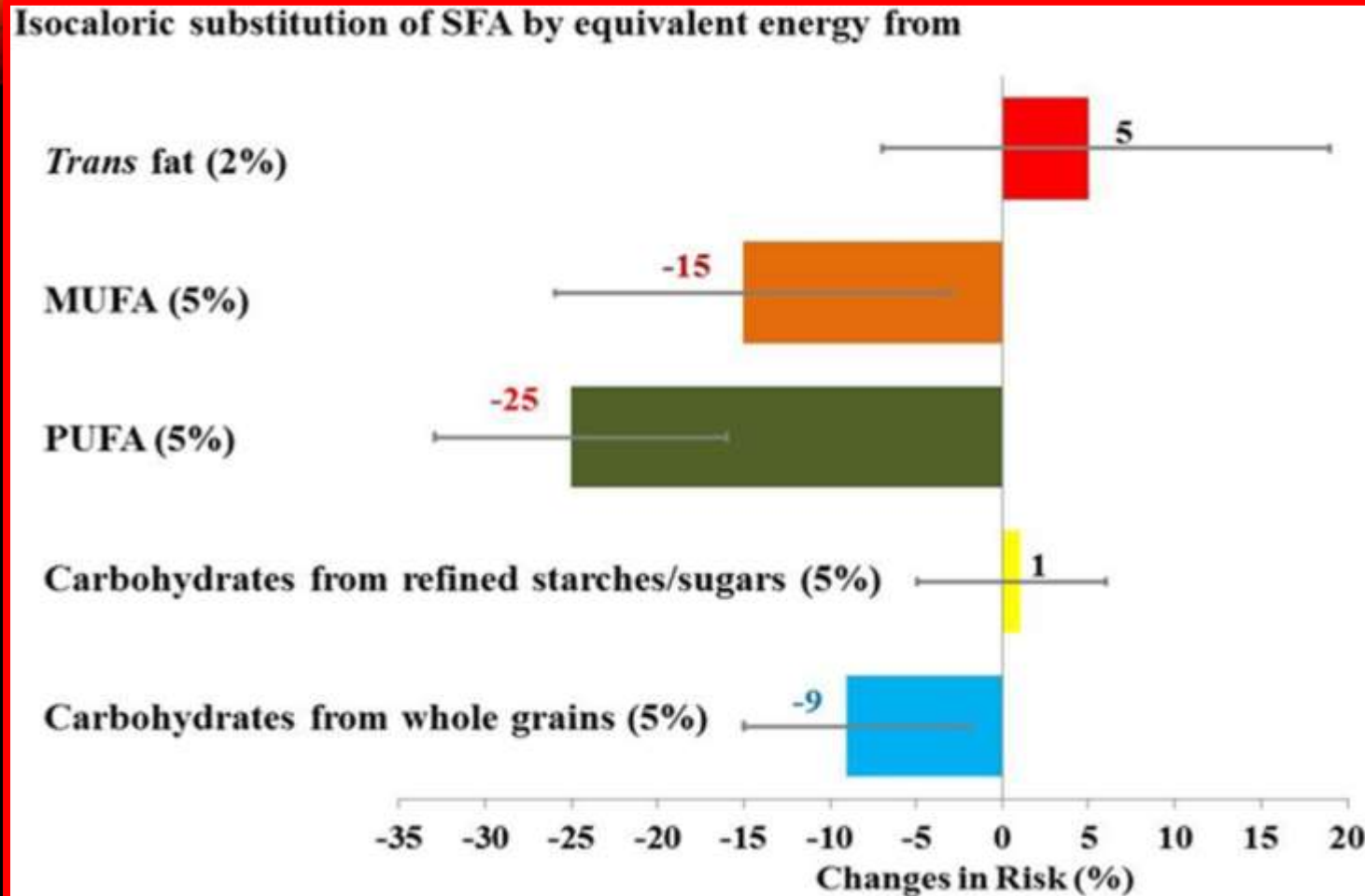
DIETARY SATURATED FAT

Effects of saturated fatty acids on serum lipids and lipoproteins: a systematic review and regression analysis

Ronald P. Mensink



DIETARY SATURATED FAT

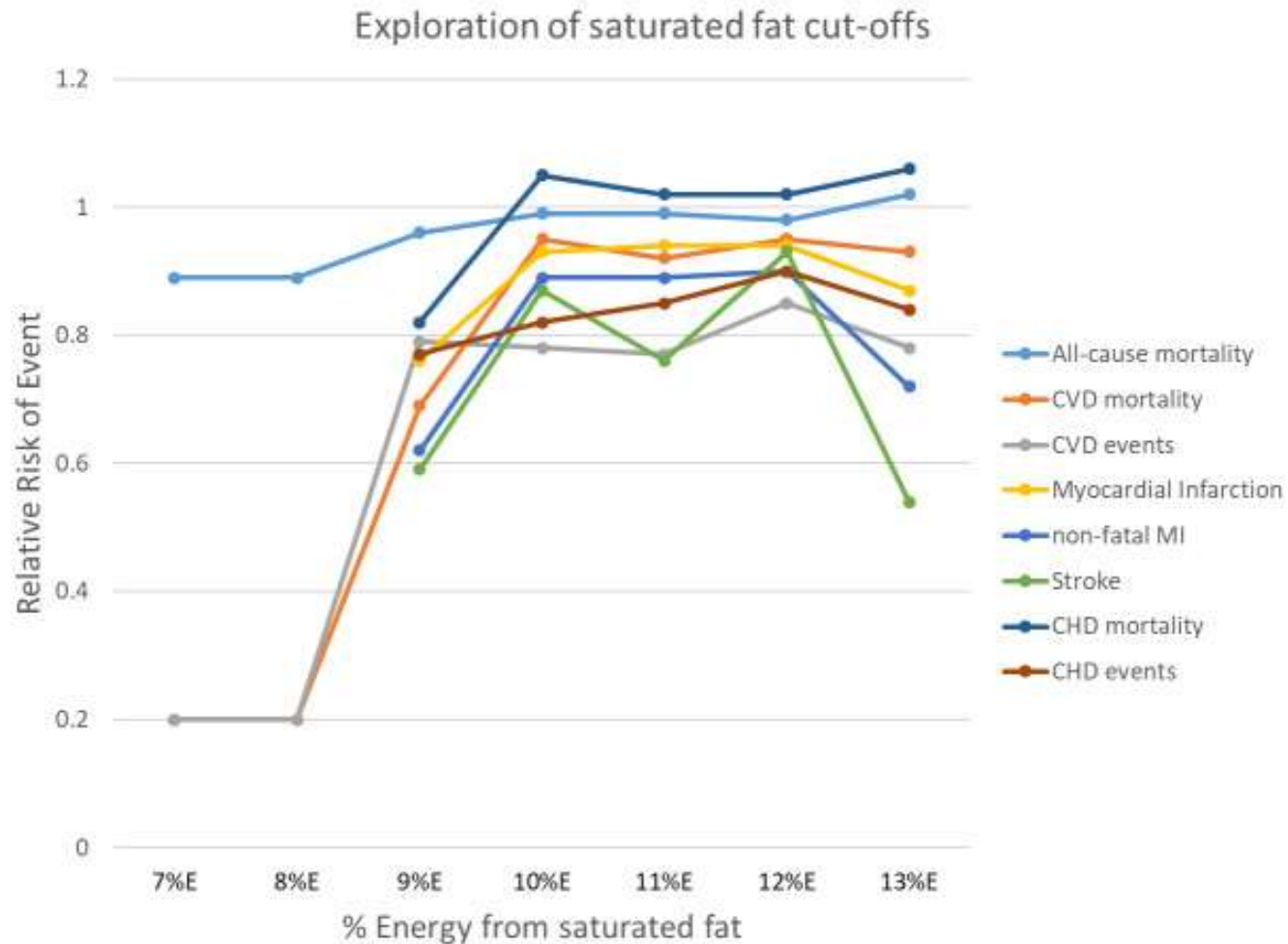


Dietary Fats and Cardiovascular Disease: A Presidential Advisory From the American Heart Association

Frank M. Sacks, Alice H. Lichtenstein, Jason H.Y. Wu, Lawrence J. Appel, Mark A. Creager, Penny M. Kris-Etherton, Michael Miller, Eric B. Rimm, Lawrence L. Rudel, Jennifer G. Robinson, Neil J. Stone and Linda V. Van Horn
and On behalf of the American Heart Association

Originally published 15 Jun 2017 | <https://doi.org/10.1161/CIR.0000000000000510> | Circulation. 2017;136:e1–e23

DIETARY SATURATED FAT



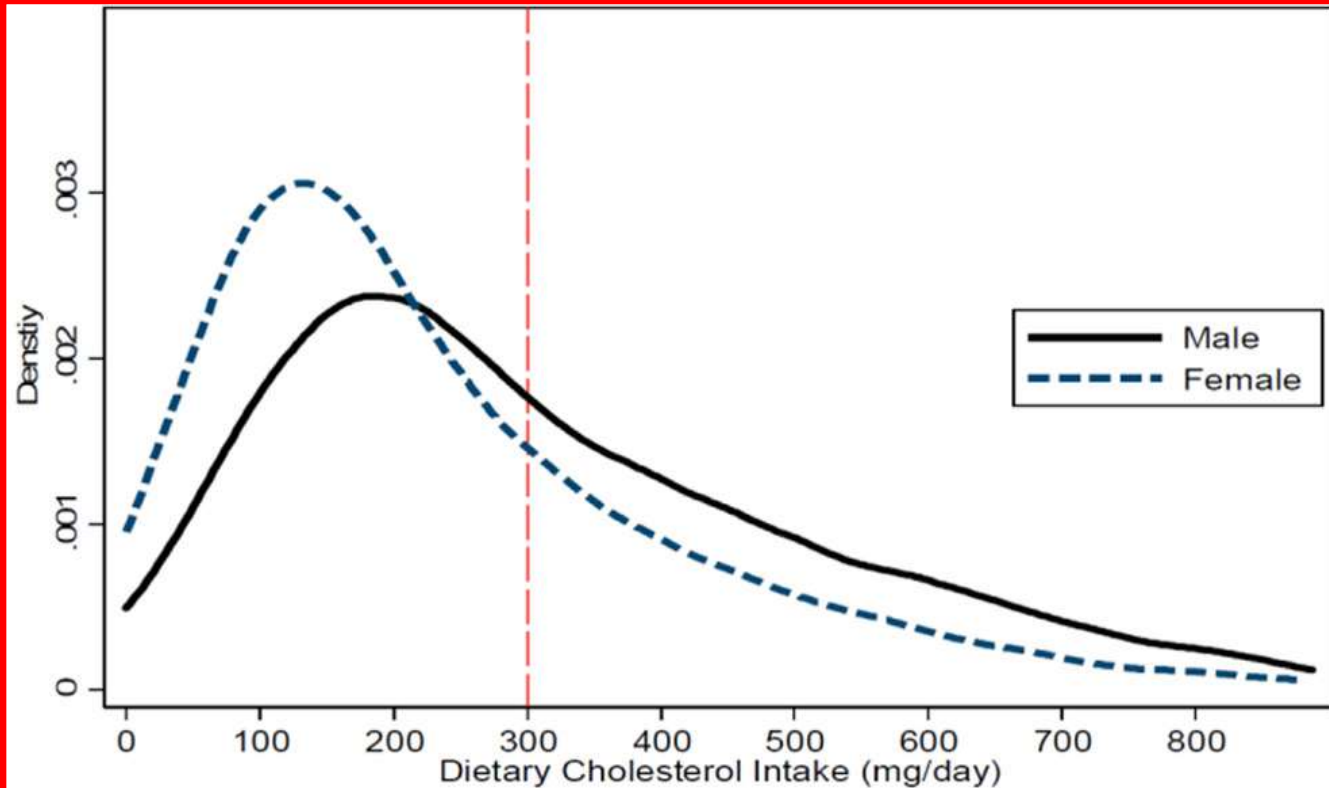
Cochrane Database Syst Rev. 2020; 2020(5): CD011737.
Published online 2020 May 19. doi: [10.1002/14651858.CD011737.pub2](https://doi.org/10.1002/14651858.CD011737.pub2)

PMCID: PMC7388853
PMID: [32428300](https://pubmed.ncbi.nlm.nih.gov/32428300/)

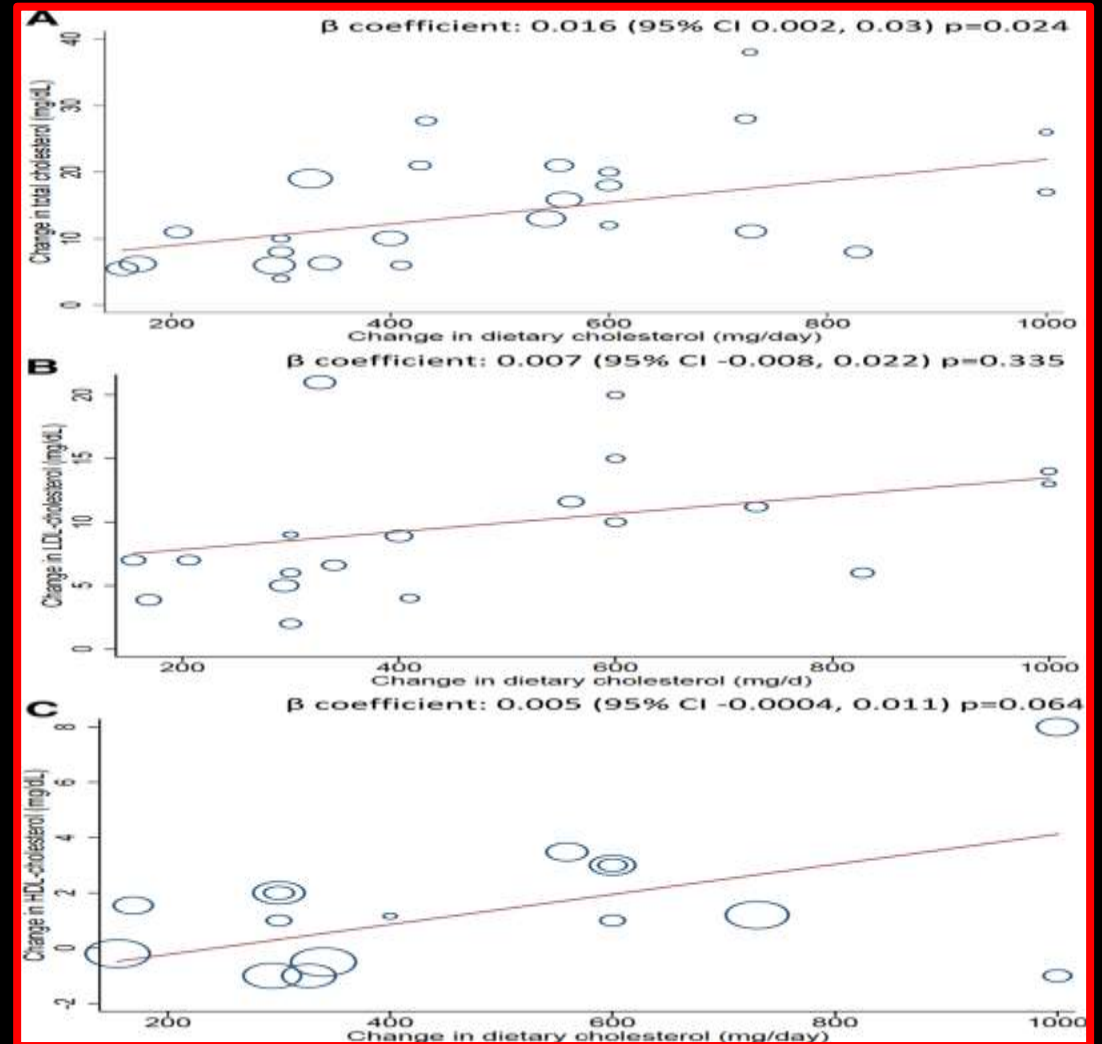
Reduction in saturated fat intake for cardiovascular disease

Monitoring Editor: Cochrane Heart Group, Lee Hooper,^{1a} Nicole Martin, Oluseyi F Jimoh, Christian Kirk, Eve Foster, and Asmaa S Abdelhamid

DIETARY CHOLESTEROL



	Mean (SE)	Percentile of Cholesterol Intake, mg/day					Above 300 mg/day (%)
		10%	25%	50%	75%	90%	
Male	348 (7.7)	97	166	276	456	672	46
Female	242 (3.1)	63	110	184	325	502	28
Overall	293 (4.2)	75	130	227	393	597	39



FREE ACCESS
REVIEW ARTICLE

PDF/EPUB

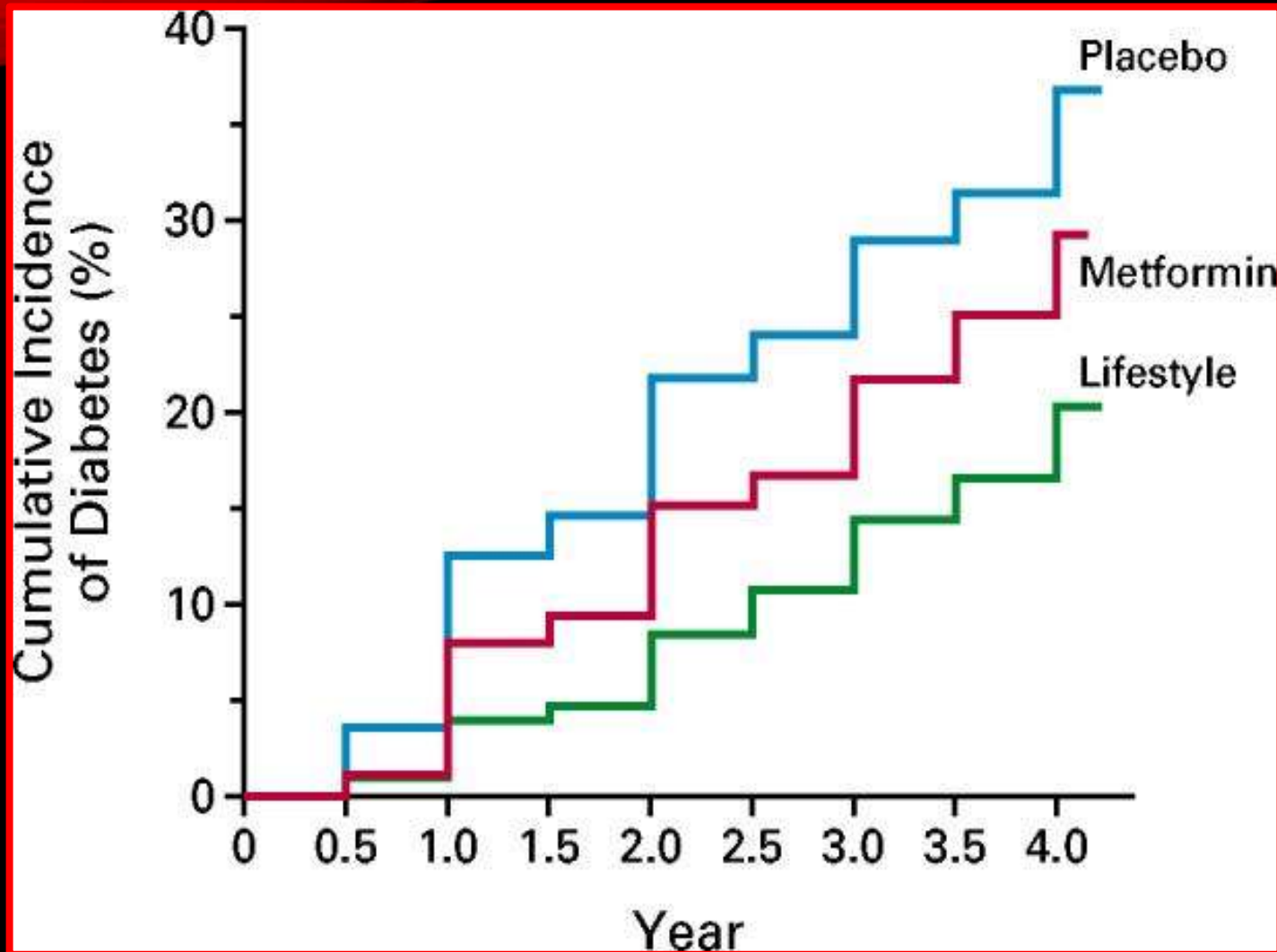
Tools Share

Dietary Cholesterol and Cardiovascular Risk: A Science Advisory From the American Heart Association

Jo Ann S. Carson, Alice H. Lichtenstein, Cheryl A.M. Anderson, Lawrence J. Appel, Penny M. Kris-Etherton, Katie A. Meyer, Kristina Petersen, Tamar Polonsky, ... [See all authors](#)

Originally published 16 Dec 2019 | <https://doi.org/10.1161/CIR.0000000000000743> | Circulation. 2020;141:e39–e53

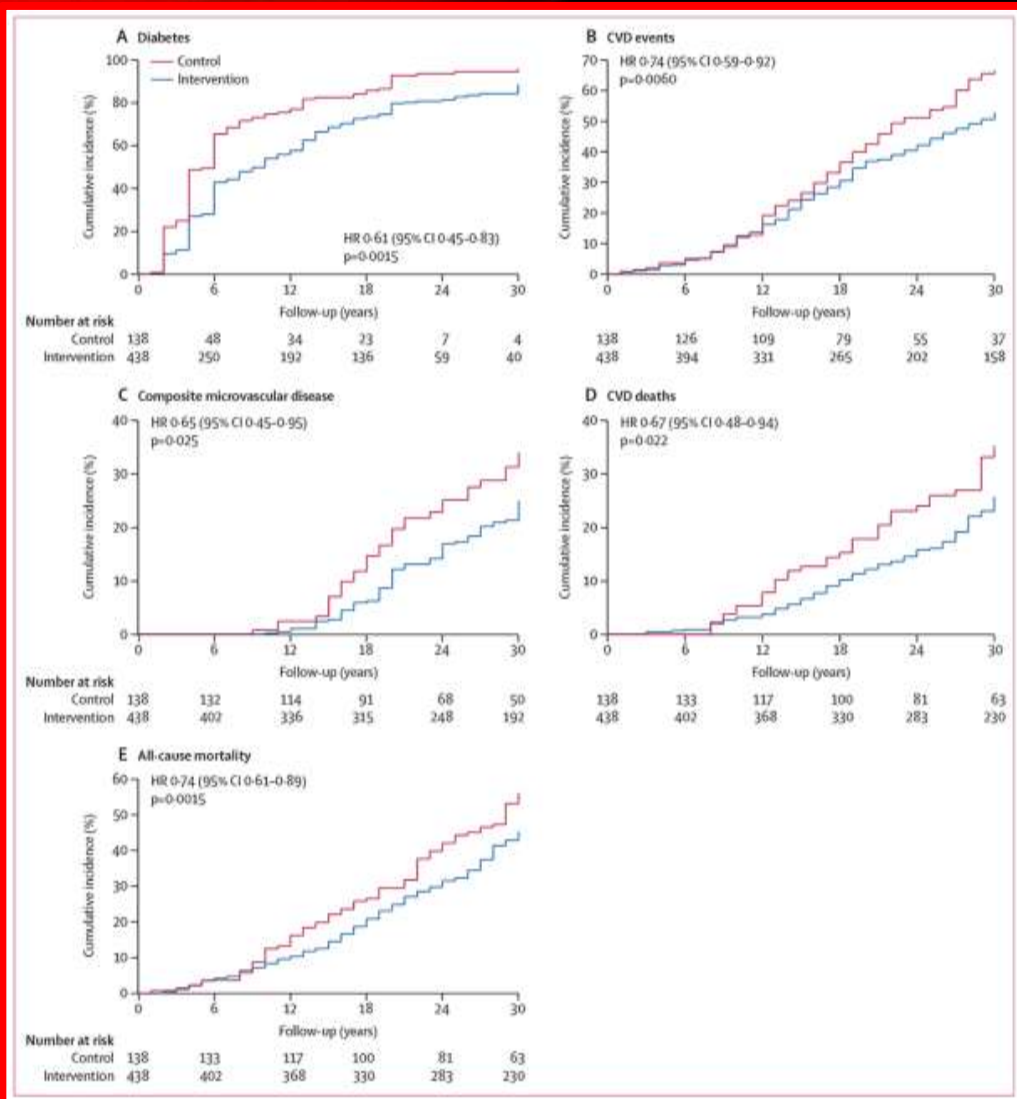
DIABETES – PREVENTION – US DPP



Intensive **Lifestyle Intervention** resulted in a **58%** reduction in developing diabetes at 3 years of follow up.

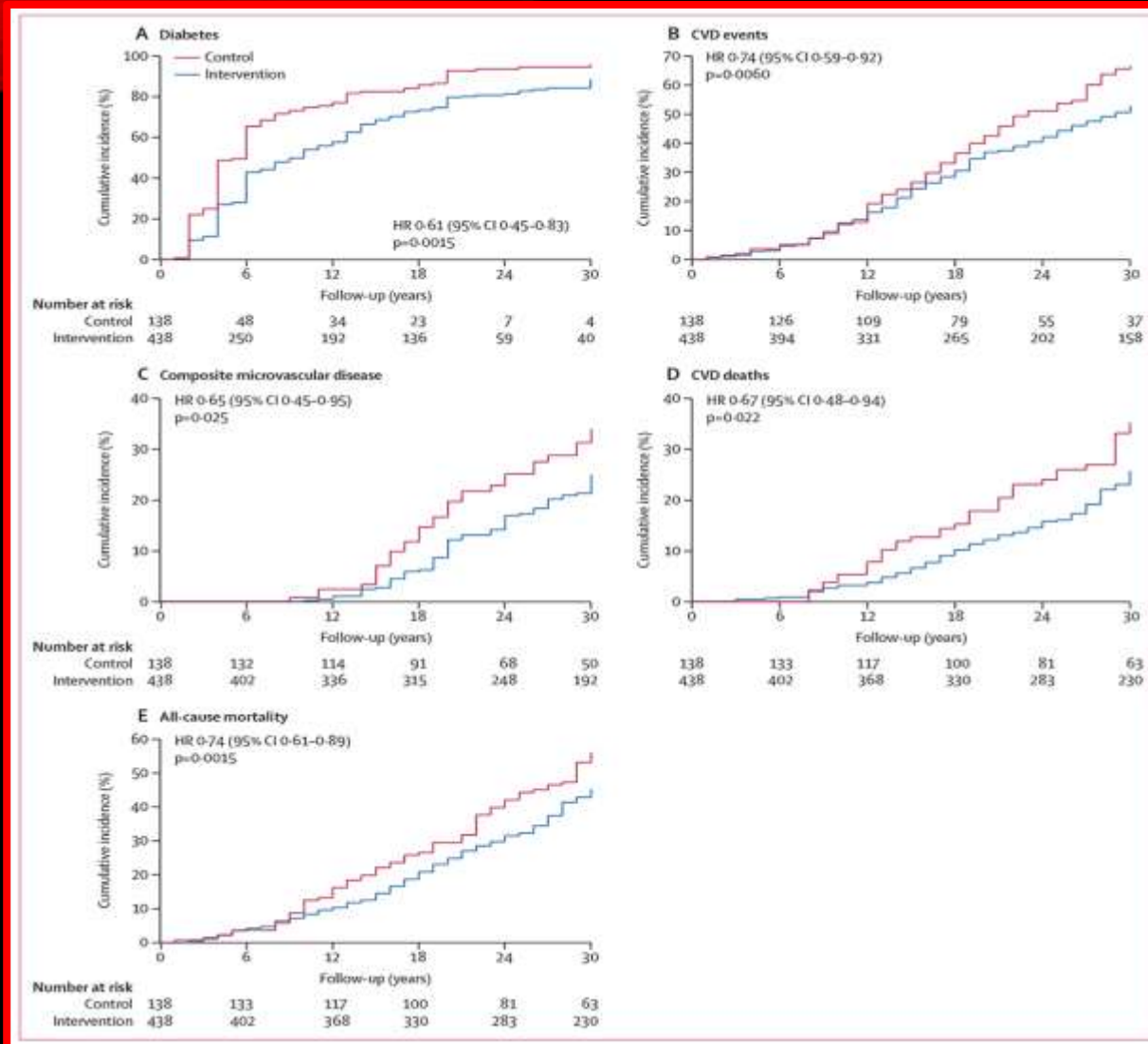
N Engl J Med 2002 ;346:393–403

DIABETES – PREVENTION – DA QING



Intensive **Lifestyle Intervention** resulted in a **39%** reduction in developing diabetes at **30 years** of follow up.

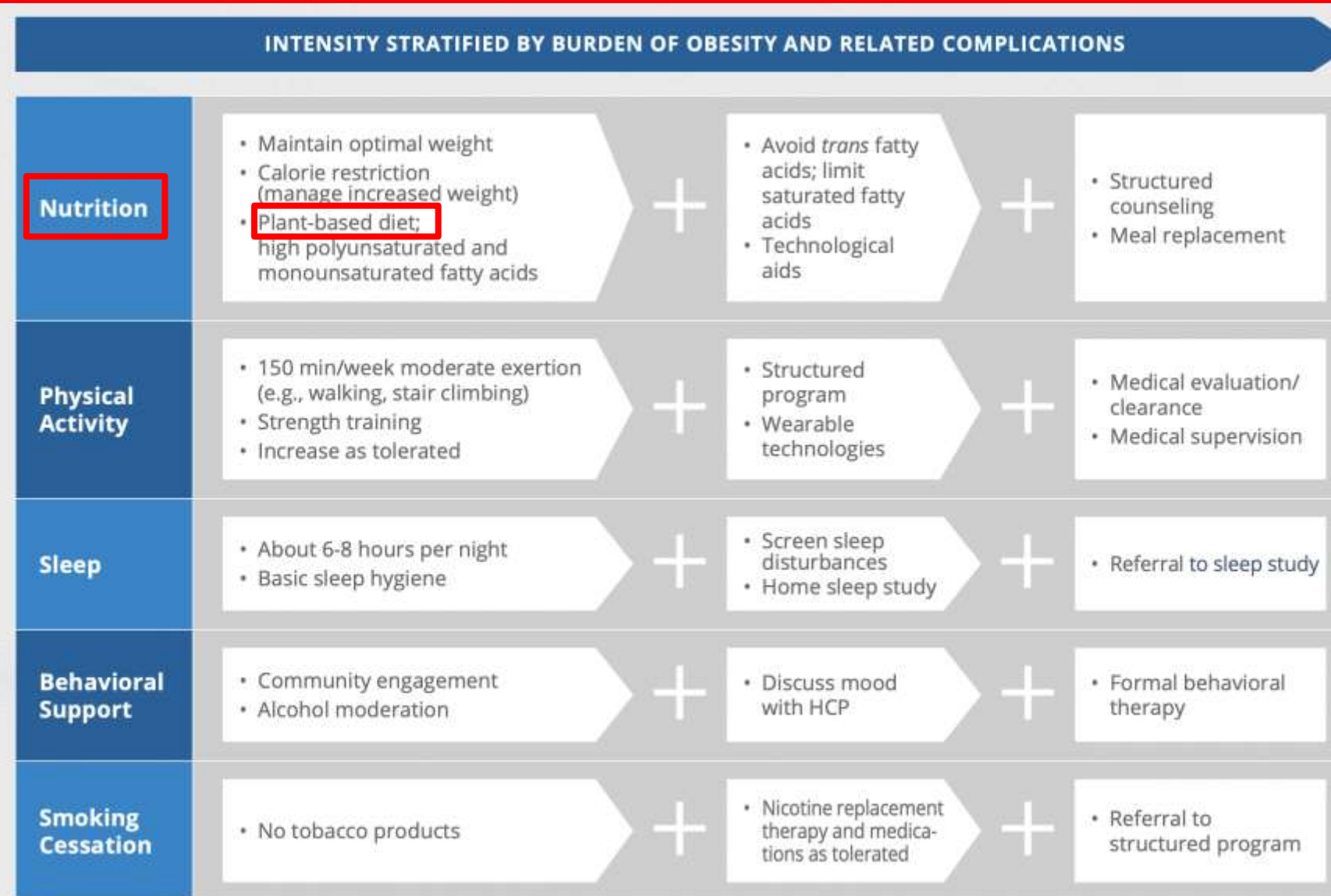
DIABETES – PREVENTION – FINNISH DPS



Intensive **Lifestyle Intervention** resulted in a **34%** reduction in developing diabetes at **10 years** of follow up.

Lancet 2009 ;374:1677–1686

DIABETES – LIFESTYLE INTERVENTION-AACE - 2021



NUTRITION - DIABETES

"Roy Taylor and his team have not only cracked the mystery of what causes type 2 diabetes—the greatest health problem of our time—but [has] shown the world how to get rid of it."

—DR. MICHAEL MOSLEY, *New York Times* bestselling coauthor of *The FastDiet*

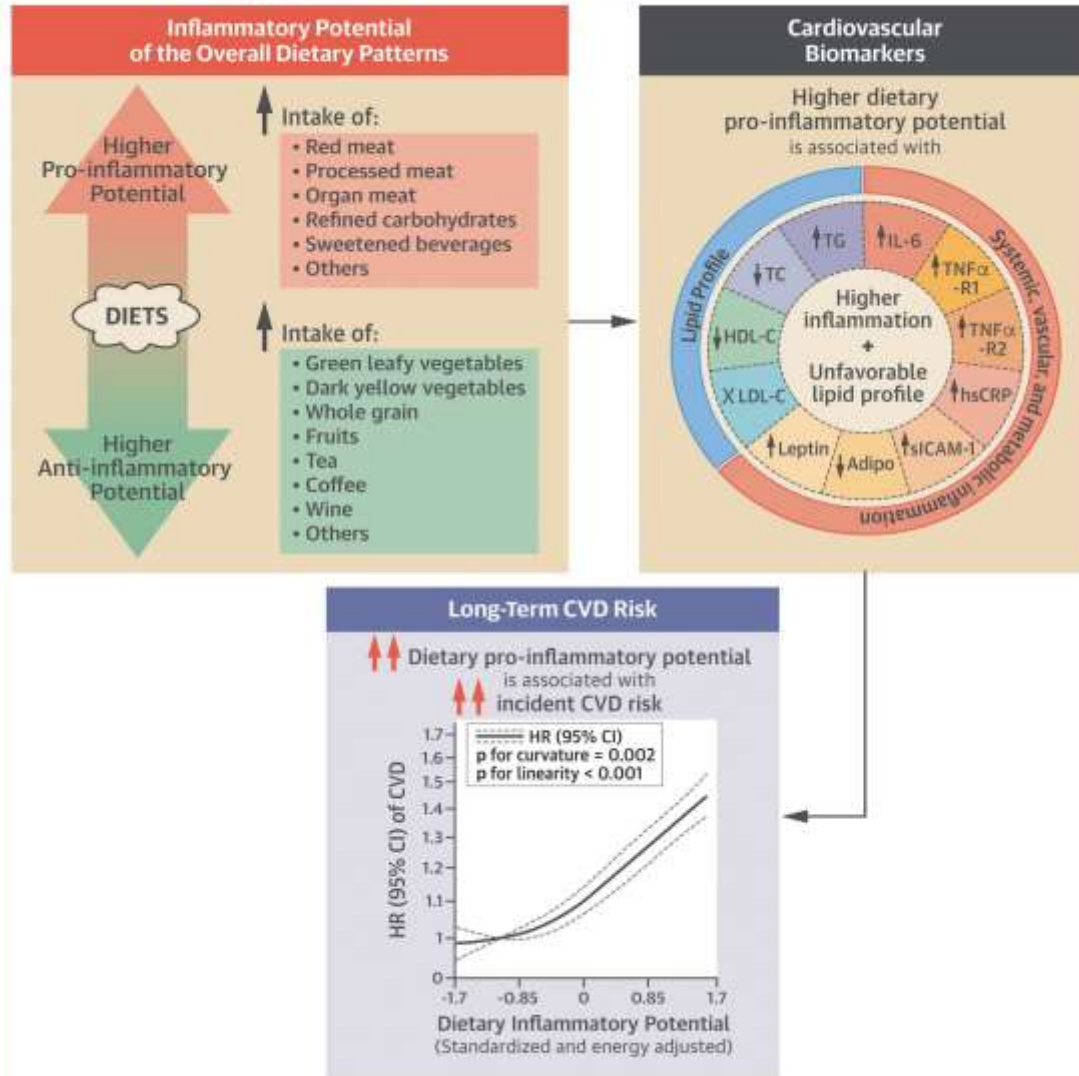
LIFE WITHOUT DIABETES

The Definitive Guide to
Understanding and Reversing
Type 2 Diabetes

ROY TAYLOR, MD

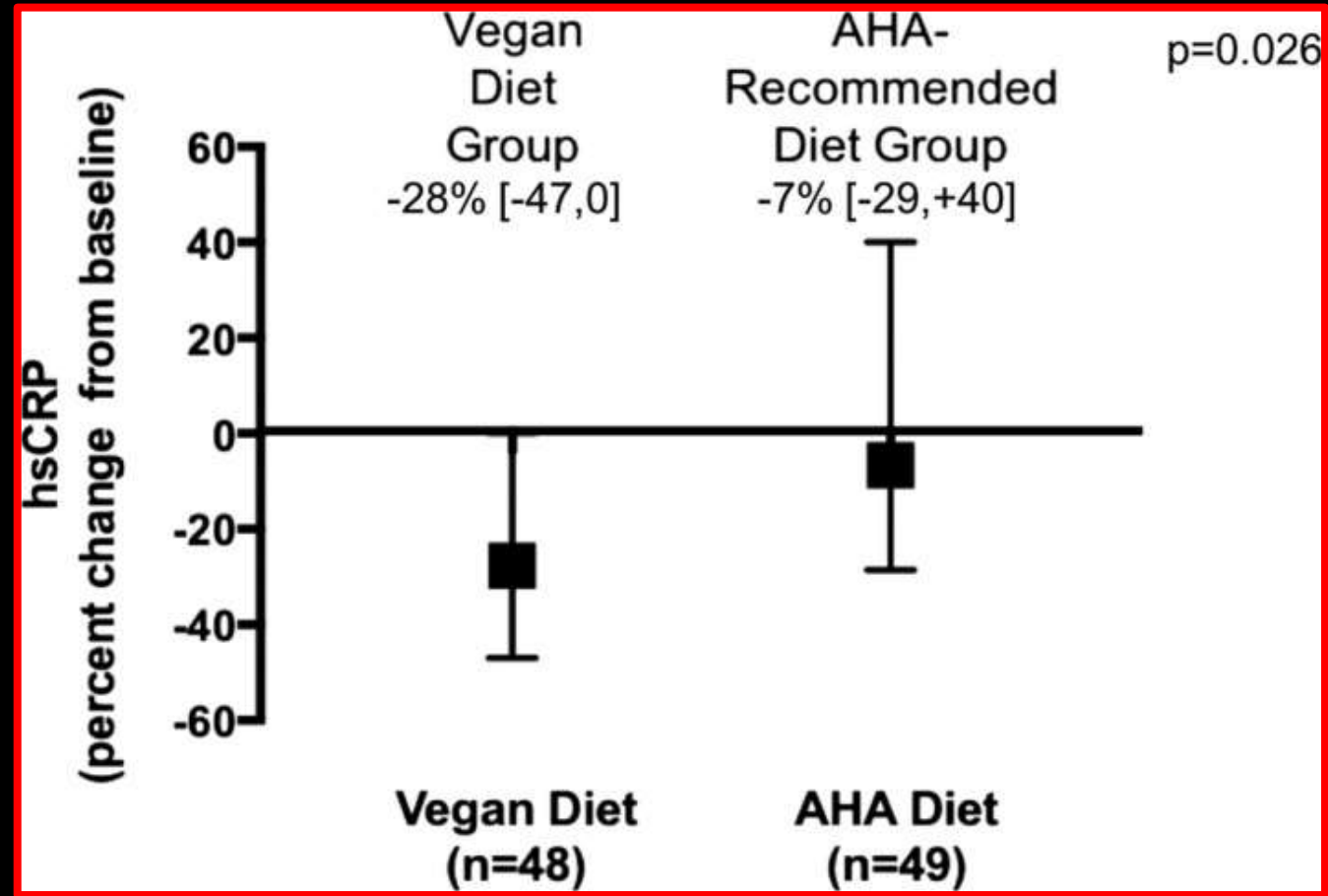
NUTRITION: CV INFLAMMATION

CENTRAL ILLUSTRATION: Adherence to Proinflammatory Dietary Patterns and Cardiovascular Disease Incidence



Li, J. et al. J Am Coll Cardiol. 2020;76(19):2181-93.

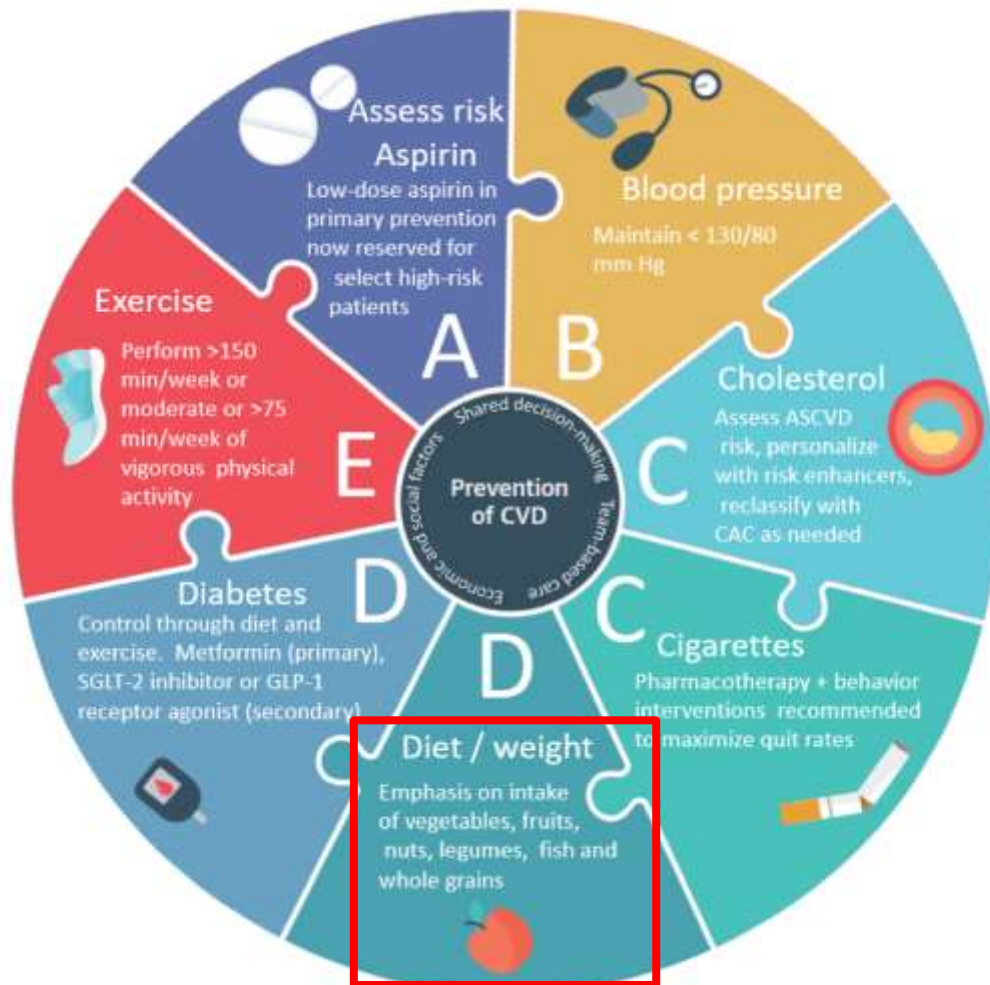
EVADe – CAD TRIAL



J Am Heart Assoc. 2018 Dec 4; 7(23): e011367.

NUTRITION – CV PREVENTION

Figure 1. ABCDE of Primary Prevention: Lifestyle Changes and Team-Based Care



Recommendations for Nutrition and Diet

Referenced studies that support recommendations are summarized in Online Data Supplements 4 and 5.

COR	LOE	Recommendations
I	B-R	1. A diet emphasizing intake of vegetables, fruits, legumes, nuts, whole grains, and fish is recommended to decrease ASCVD risk factors. ^{S3.1-1–S3.1-11}
IIa	B-NR	2. Replacement of saturated fat with dietary monounsaturated and polyunsaturated fats can be beneficial to reduce ASCVD risk. ^{S3.1-12,S3.1-13}
IIa	B-NR	3. A diet containing reduced amounts of cholesterol and sodium can be beneficial to decrease ASCVD risk. ^{S3.1-9,S3.1-14–S3.1-16}
IIa	B-NR	4. As a part of a healthy diet, it is reasonable to minimize the intake of processed meats, refined carbohydrates, and sweetened beverages to reduce ASCVD risk. ^{S3.1-17–S3.1-24}
III: Harm	B-NR	5. As a part of a healthy diet, the intake of <i>trans</i> fats should be avoided to reduce ASCVD risk. ^{S3.1-12,S3.1-17,S3.1-25–S3.1-27}

NUTRITION CV PREVENTION – 2021 ESC

4.3.2. Nutrition and alcohol

Recommendations for nutrition and alcohol

Recommendations	Class ^a	Level ^b
A healthy diet is recommended as a <u>cornerstone</u> of CVD prevention in all individuals. ^{401,402}	I	A
It is recommended to adopt a <u>Mediterranean</u> or similar diet to lower risk of CVD. ^{403,404}	I	A
It is recommended to <u>replace saturated</u> with unsaturated fats to lower the risk of CVD. ^{405–409}	I	A
It is recommended to <u>reduce salt intake</u> to lower BP and risk of CVD. ⁴¹⁰	I	A
It is recommended to choose a more plant-based food pattern, rich in fibre, that includes whole grains, fruits, vegetables, pulses, and nuts. ^{411,412}	I	B
It is recommended to restrict alcohol consumption to a maximum of 100 g per week. ^{413–415}	I	B
It is recommended to <u>eat fish</u> , preferably fatty, at least once a week and restrict (processed) meat. ^{406,416–418}	I	B
It is recommended to <u>restrict free sugar</u> consumption, in particular <u>sugar-sweetened beverages</u> , to a maximum of <u>10% of energy</u> intake. ^{419,420}	I	B

© ESC 2021

NUTRITION AND CV PREVENTION – 2021 AHA

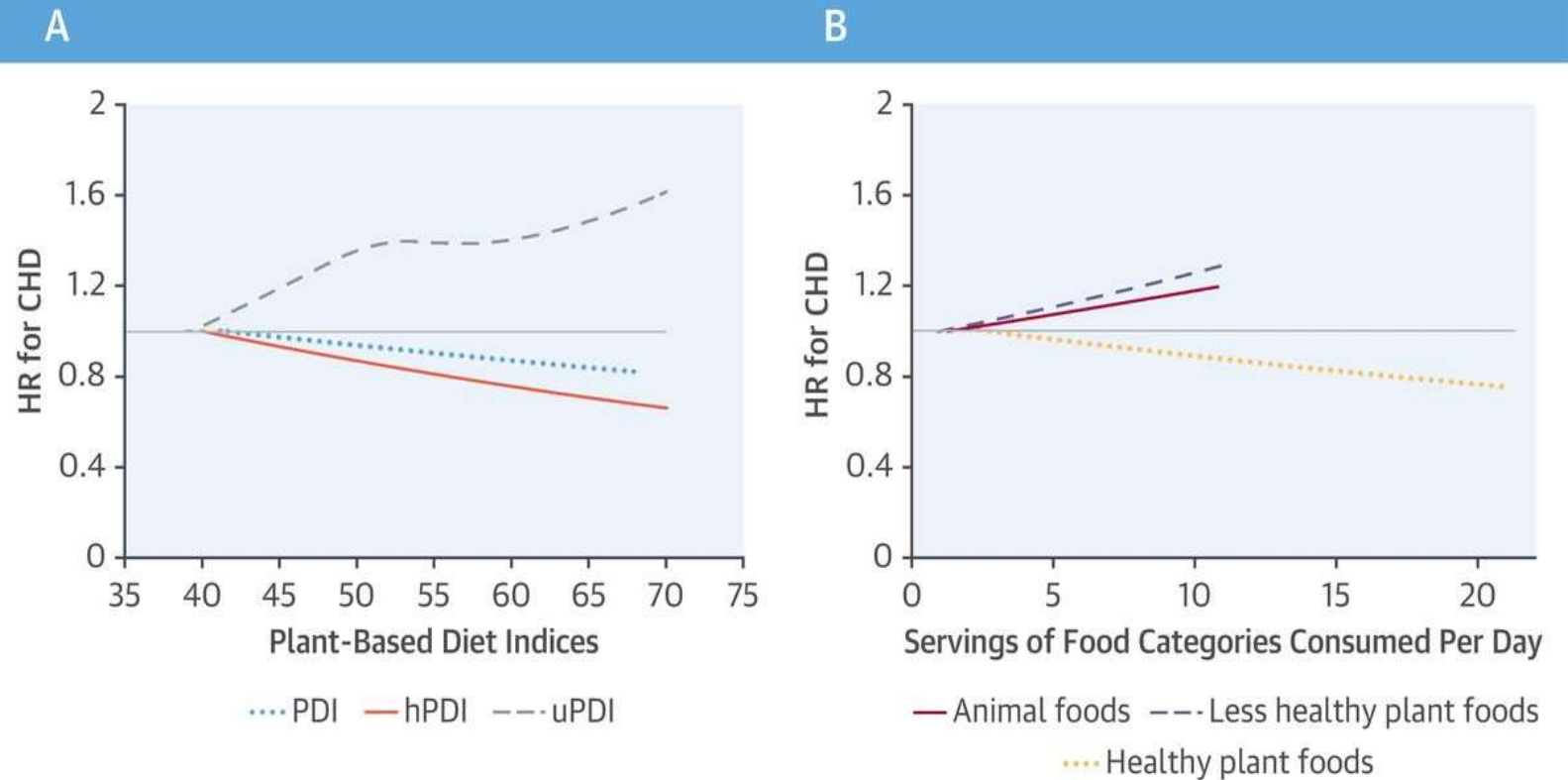


Figure. Dietary patterns to promote cardiovascular health.

NUTRITION: PLANT-BASED DIETS



CENTRAL ILLUSTRATION: Dose-Response Relationship of Plant-Based Diet Indices and Animal, Healthy Plant, and Less Healthy Plant Foods With CHD Incidence



Satija, A. et al. J Am Coll Cardiol. 2017;70(4):411-22.

NUTRITION: PLANT-BASED DIETS – MILLION VETERAN PROGRAM

Degree of adherence to plant-based diet and total and cause-specific mortality: prospective cohort study in the Million Veteran Program

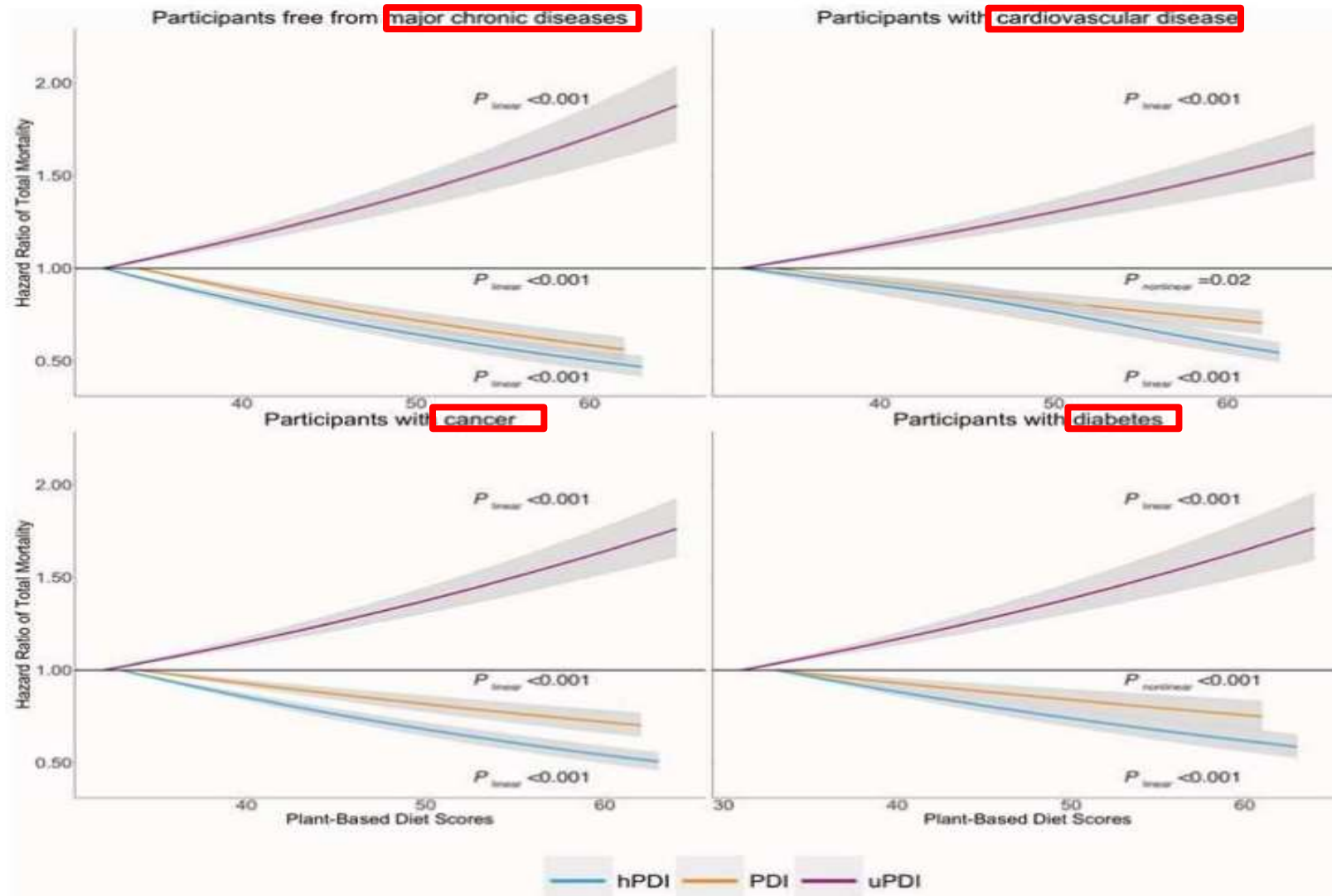
Published online by Cambridge University Press: 21 March 2022

Dong D Wang, Yanping Li , Xuan-Mai T Nguyen, Rebecca J Song, Yuk-Lam Ho, Frank B Hu, Walter C Willett, Peter Wilson, Kelly Cho, J Michael Gaziano and Luc Djoussé

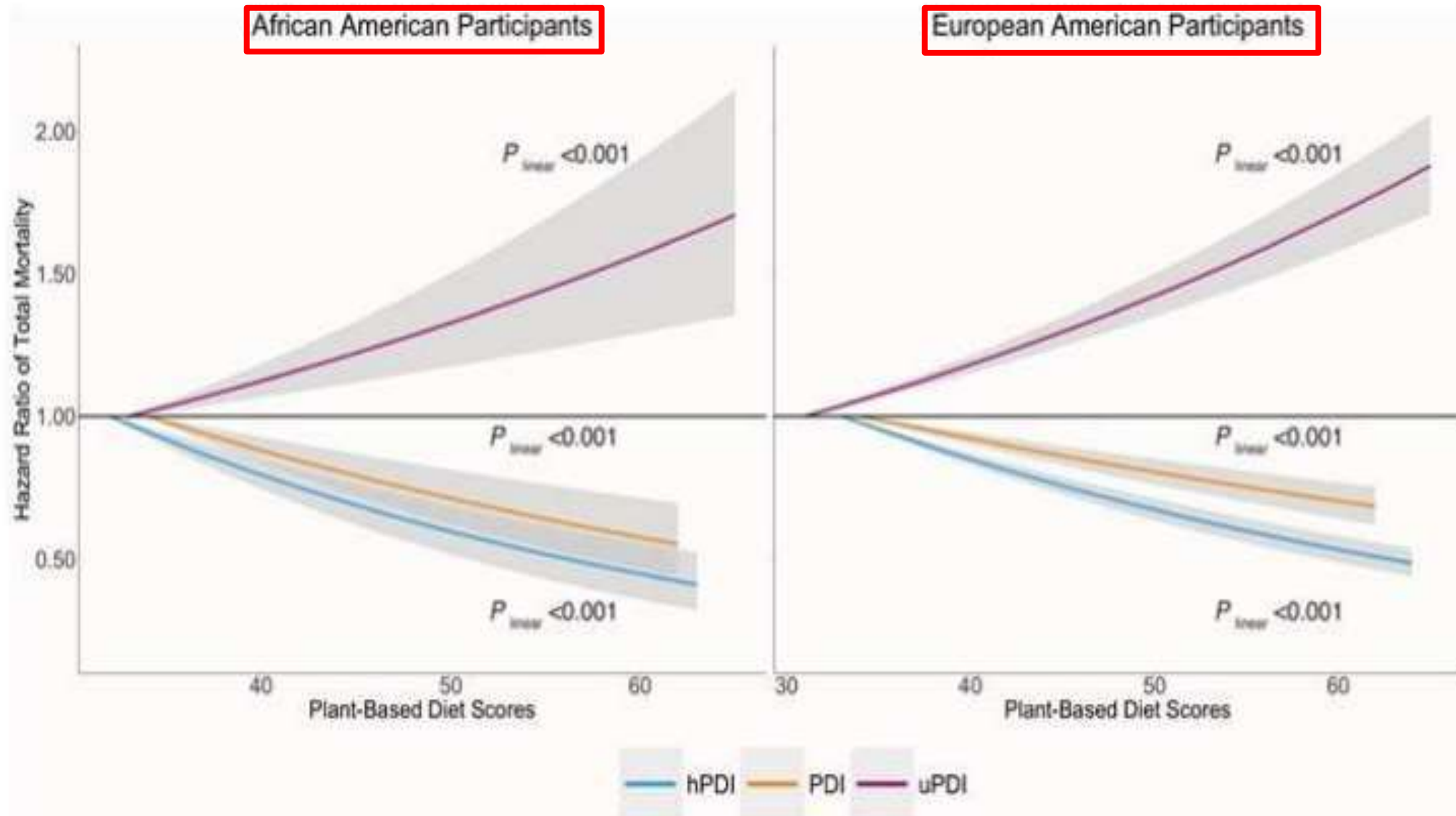
[Show author details](#) ▼

351 892 participants have **completed the baseline diet and lifestyle survey.**

NUTRITION: PLANT-BASED DIETS – MILLION VETERAN PROGRAM



MILLION VETERAN PROGRAM – DIET AND MORTALITY



WHAT DOES THE WORLD THINK WE EAT?



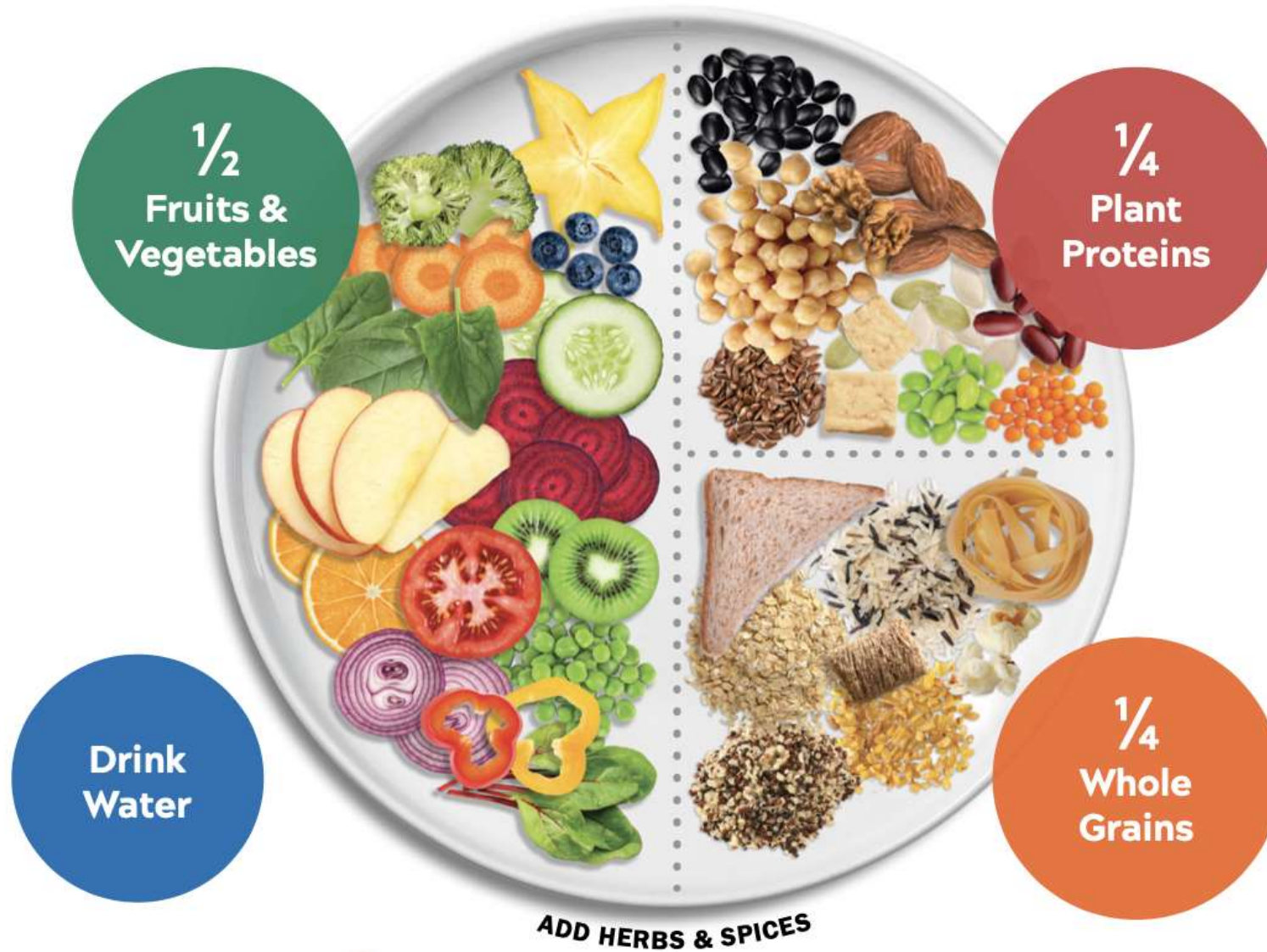
September 9 - IJSV 2023;374:1677–1686

MANY OPTIONS





NUTRITION SUMMARY – ACLM FOOD PLATE





SOME CONTROVERSIES

SOURCE OF PROTEIN

Dietary Protein and Its Associations with Cardiovascular Health

Koushik Reddy, MD, FACC, Andrew M. Freeman, MD, FACC, Robert Ostfeld, MD, FACC, Karen Aspary, MD, FACC, Kathleen Allen, MS, RD, James O'Keefe, MD, Dean Ornish, MD, Travis Batts, MD, Monica Aggarwal, MD, FACC, Elizabeth White, ARNP, Hena Patel, MD, Elizabeth Klodas, MD, FACC, Susan Levin, MS, RD, Dae Hyun Lee, MD, & Kim Allan Williams Sr, MD, MACC

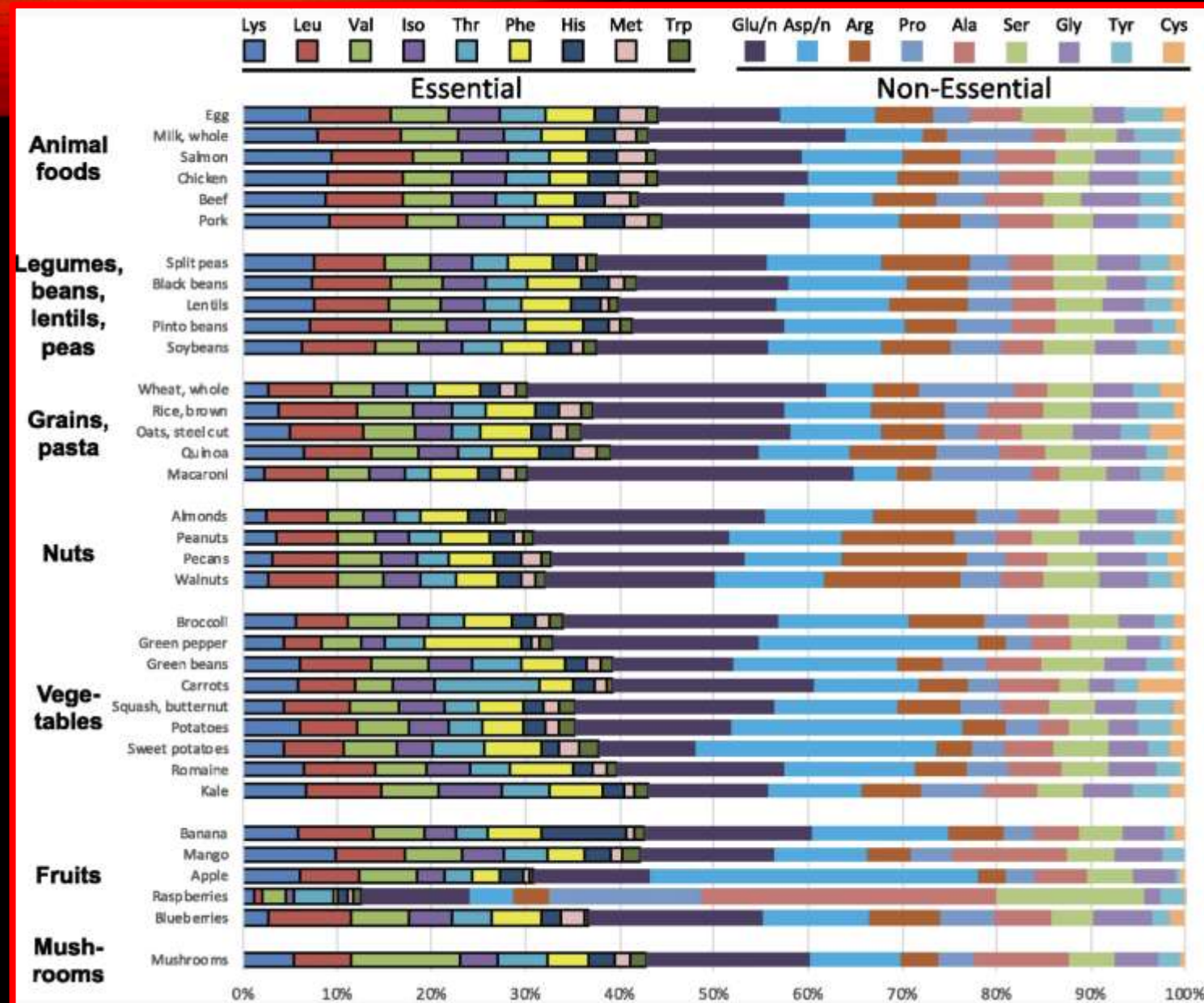
IJDRP



INTERNATIONAL JOURNAL OF
DISEASE REVERSAL
and PREVENTION

Vol. 4 No. 2 (2022)

SOURCE OF PROTEIN



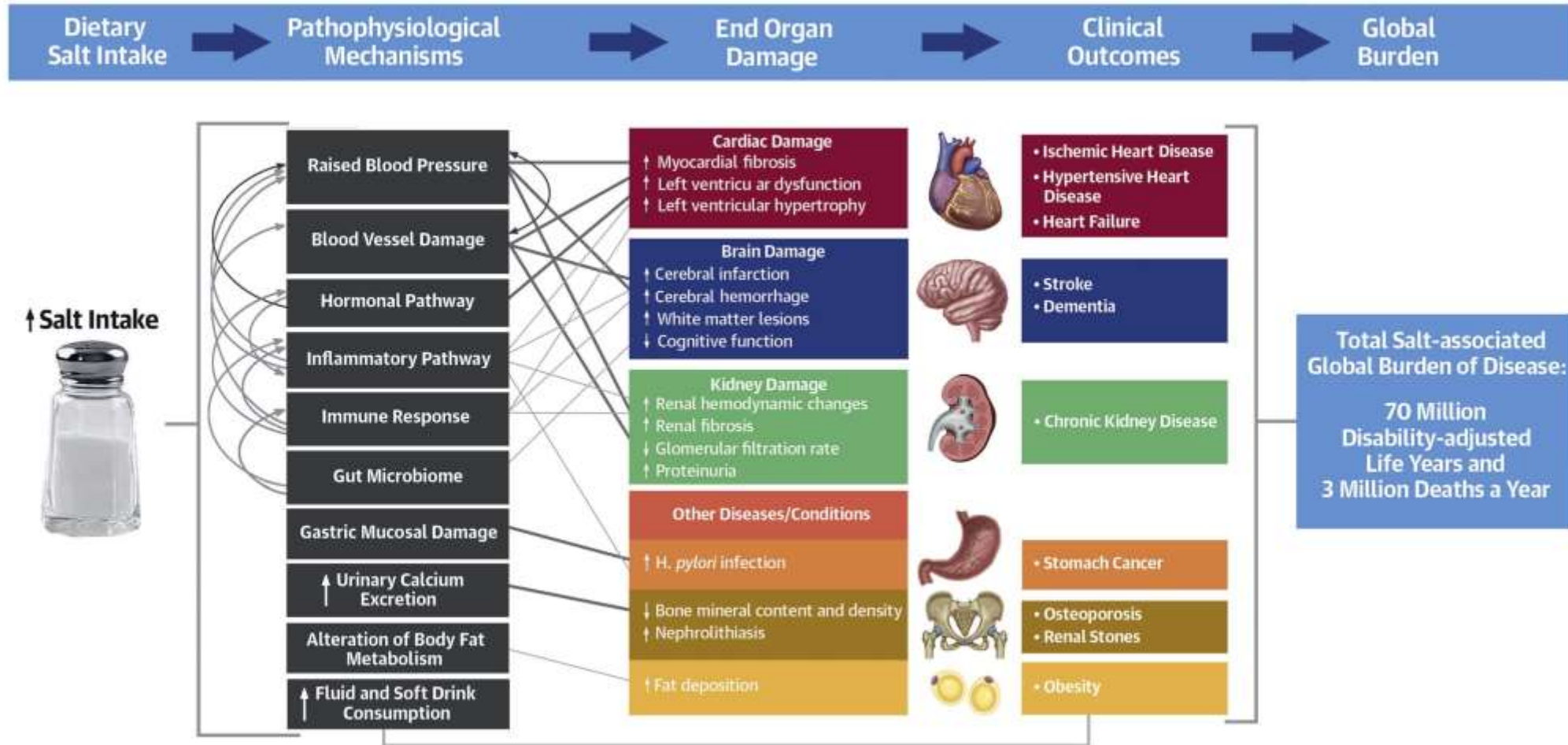
Maximizing the intersection of human health and the health of the environment with regard to the amount and type of protein produced and consumed in the United States 

Christopher D Gardner , Jennifer C Hartle, Rachael D Garrett, Lisa C Offringa, Arlin S Wasserman

Nutrition Reviews, Volume 77, Issue 4, April 2019, Pages 197–215,
<https://doi.org/10.1093/nutrit/nuy073>

SALT: CARDIOVASCULAR DISEASE

CENTRAL ILLUSTRATION: Salt and Health



He, F.J. et al. J Am Coll Cardiol. 2020;75(6):632-47.

EVOO: CARDIOVASCULAR DISEASE

CENTRAL ILLUSTRATION: Potential Mechanisms for Olive Oil Intake and Mortality

CENTRAL ILLUSTRATION: Hazard Ratios for Cardiovascular Disease, Coronary Heart Disease, and Stroke Associated With Olive Oil Substituted for Other Fats

Olive Oil: An Alternative Fuel to Save Lives?

Letters

Günther Silbernagel, Boris Bigalke, Mario Kasner, and Markus Reinthaler

J Am Coll Cardiol. 2022 May, 79 (18) e433

Guasch-Ferré, M. et al. J Am Coll Cardiol. 2022;79(2):101-112.

Hazard Ratio (95% CI)	Hazard Ratio (95% CI)	Hazard Ratio (95% CI)
Guasch-Ferré, M. et al. J Am Coll Cardiol. 2020;75(15):1729-39.		

FISH AND CVD



Trends in Food Science & Technology
Volume 99, May 2020, Pages 273-283



Fish consumption and multiple health outcomes: Umbrella review

Ni Li ^a, Xiaoting Wu ^b, Wen Zhuang ^b, Lin Xia ^b, Yi Chen ^b, Chuncheng Wu ^c, Zhiyong Rao ^d, Liang Du ^e, Rui Zhao ^b, Mengshi Yi ^b, Qianyi Wan ^b, Yong Zhou ^b

Highlights

- Umbrella review of 55 outcomes in 89 systematic reviews and meta-analyses.
- Fish intake reduces all-cause mortality, CVD, cancer and other outcomes.
- Fish intake looks generally safe with largest risk reduction at 2–4 servings/week.
- Every 20 g/d increment could decrease 2%–7% risk of various health outcomes.
- Caution is warranted for potential allergy or contamination.

Cochrane Database of Systematic Reviews | Review - Intervention

New search Conclusions changed

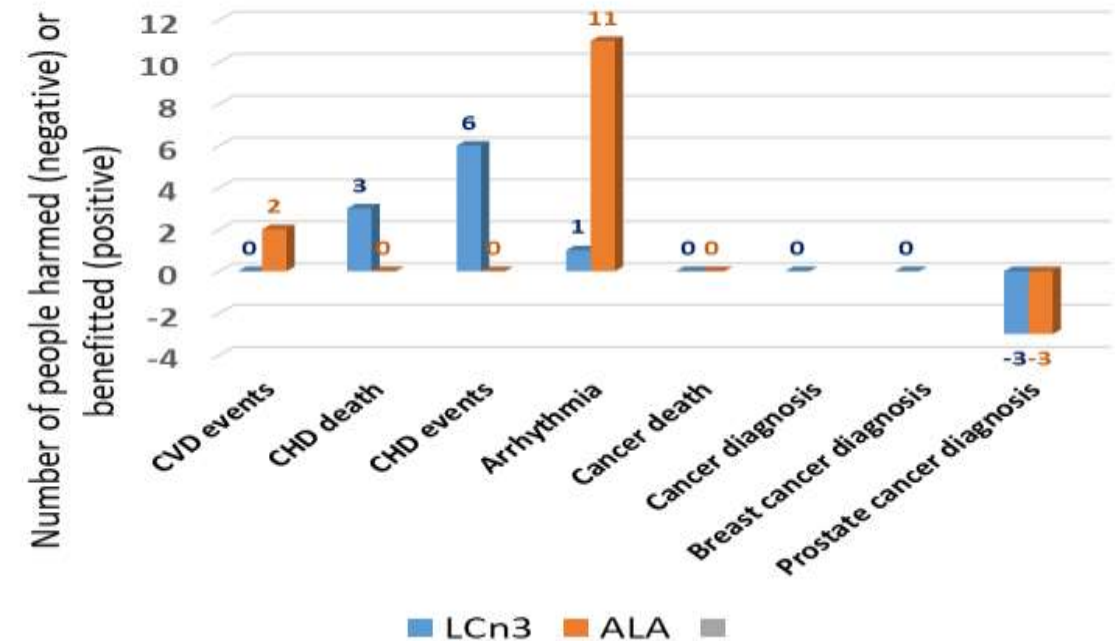
Omega-3 fatty acids for the primary and secondary prevention of cardiovascular disease

Asmaa S Abdelhamid, Tracey J Brown, Julii S Brainard, Priti Biswas, Gabrielle C Thorpe, Helen J Moore, Katherine HO Deane, Carolyn D Summerbell, Helen V Worthington, Fujian Song, Lee Hooper Authors' declarations of interest

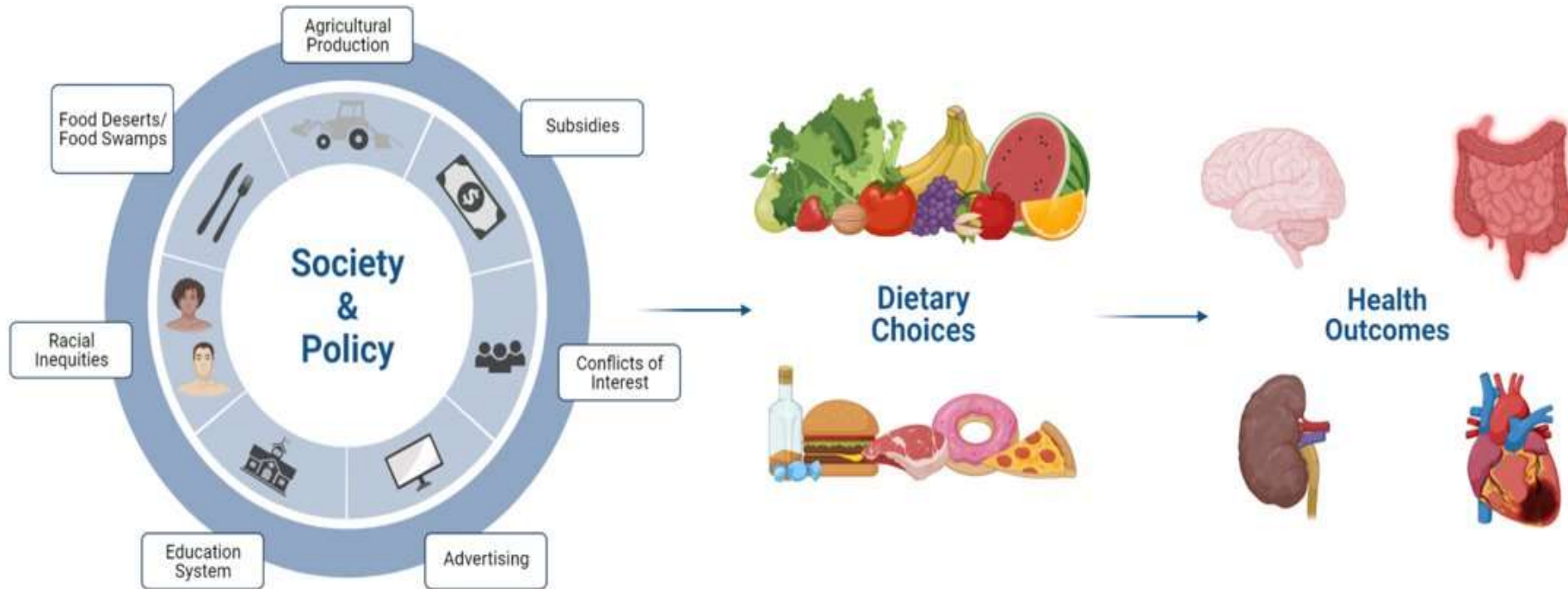
Version published: 29 February 2020 Version history

<https://doi.org/10.1002/14651858.CD003177.pub5>

Health effects of increasing LCn3 and ALA intake in 1000 people...



NUTRITION: WHEN RUBBER HITS THE ROAD



American Journal of Preventive Cardiology

Available online 2 November 2021, 100265
In Press, Journal Pre-proof



Agricultural policy and societal factors influence patients' ability to follow a healthy diet

Gautam Rameesh [✉], Danielle Belardo MD [✉], Martha Gulati MD, MS [✉], Robert J. Ostfeld MD, MSc [✉], Eric D. Michos MD, MHS [✉], [✉]

FOOD INSECURITIES AND CVD IN THE US

Original Investigation

September 28, 2018

Food Insecurity and Cardiovascular Disease Across the US

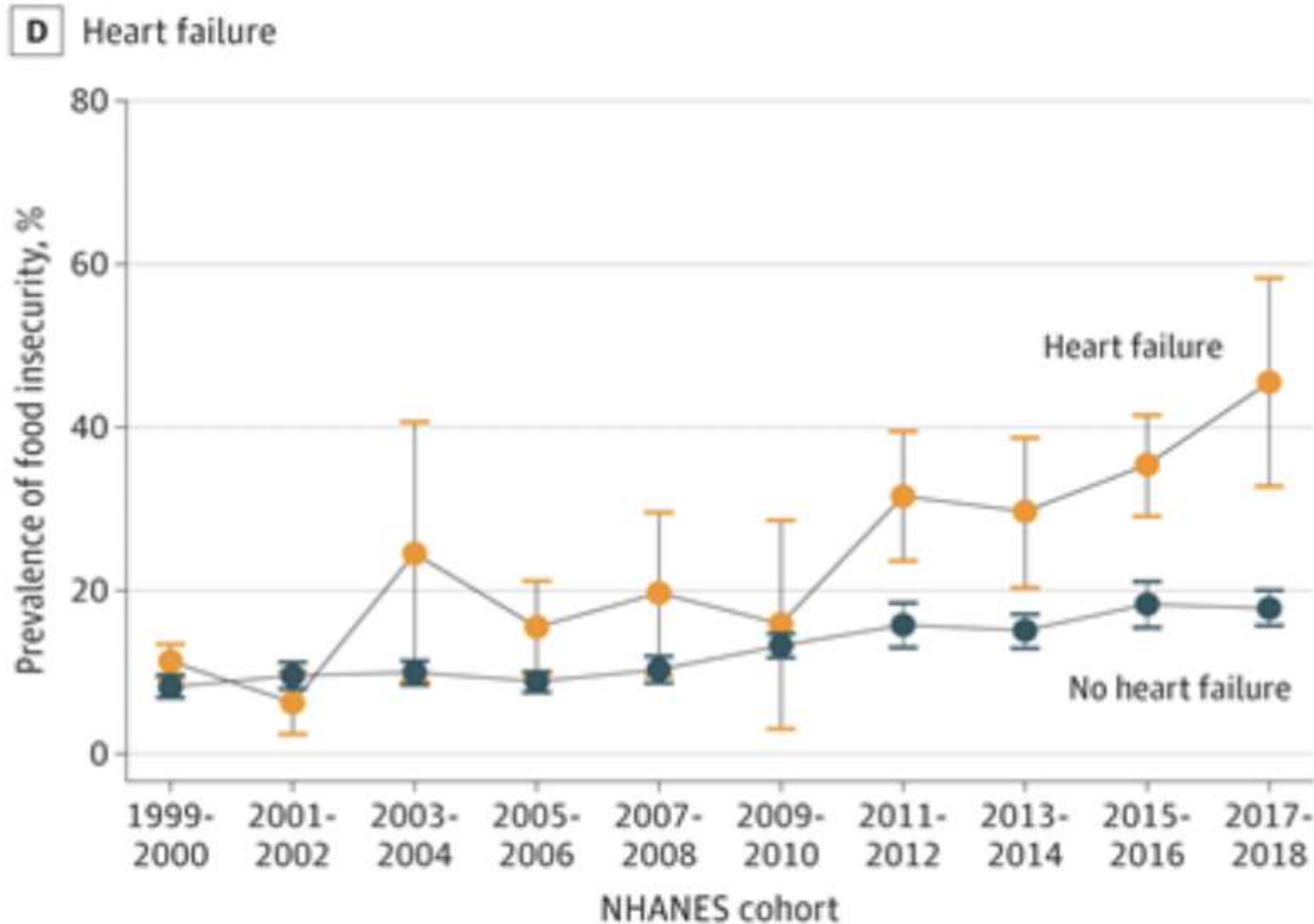
Eric J. Brandt, MD

» Author Affiliations

JAMA Cardiol. Published online September 28, 2018.

ONLINE FIRST

FREE



Cardiovascular Disease

20-year data based on NHANES Survey

NUTRITION: WHEN RUMMBER HITS THE ROAD

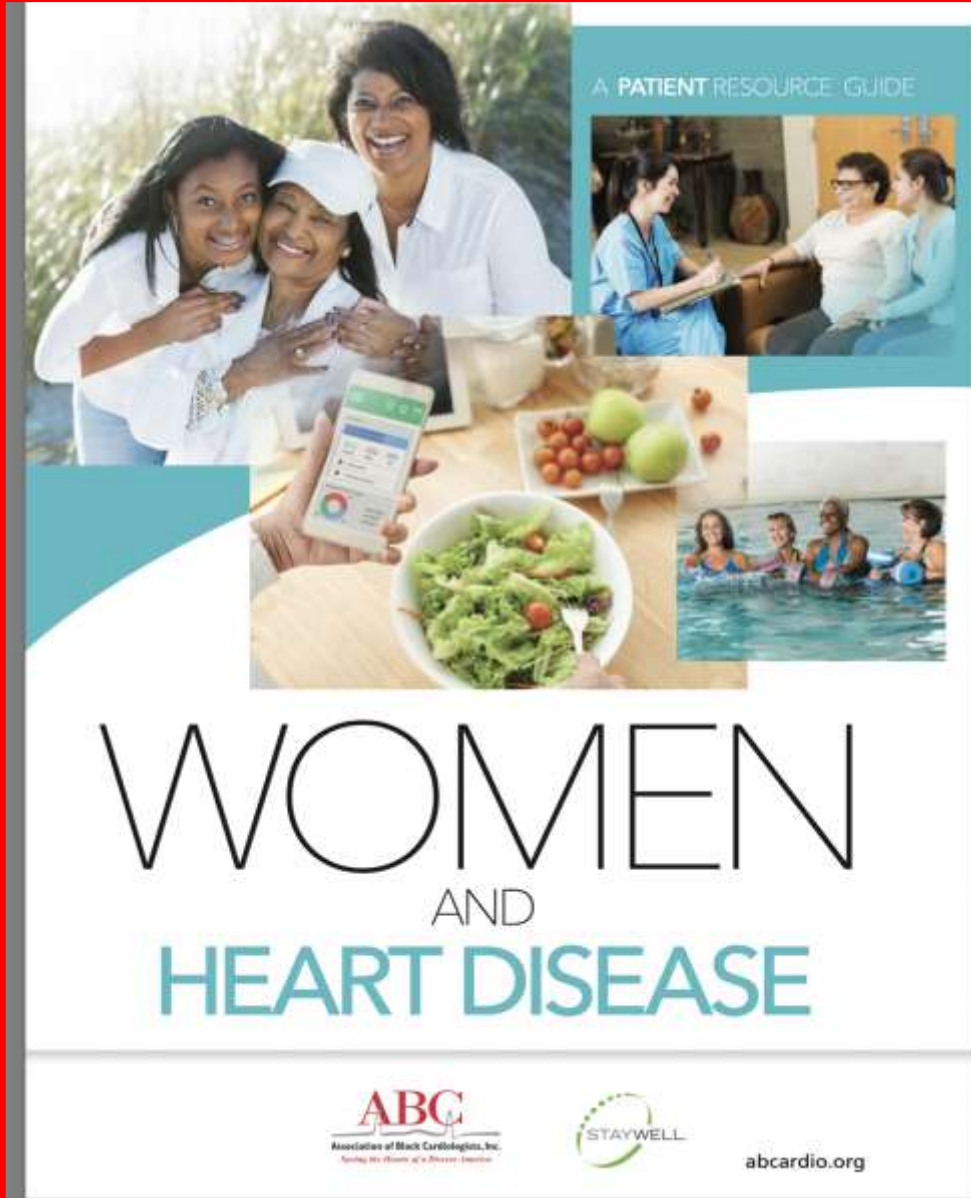
SIMPLE, DELICIOUS RECIPES YOU CAN MAKE
TO HELP KEEP YOUR HEART HEALTHY!

Cooking for Your **HEART AND SOUL**

ABC
Association of Black Cardiologists, Inc.
Serving the Hearts and Minds of a Diverse America

 **KRAMES**

ABCARDIO.ORG



A PATIENT RESOURCE GUIDE

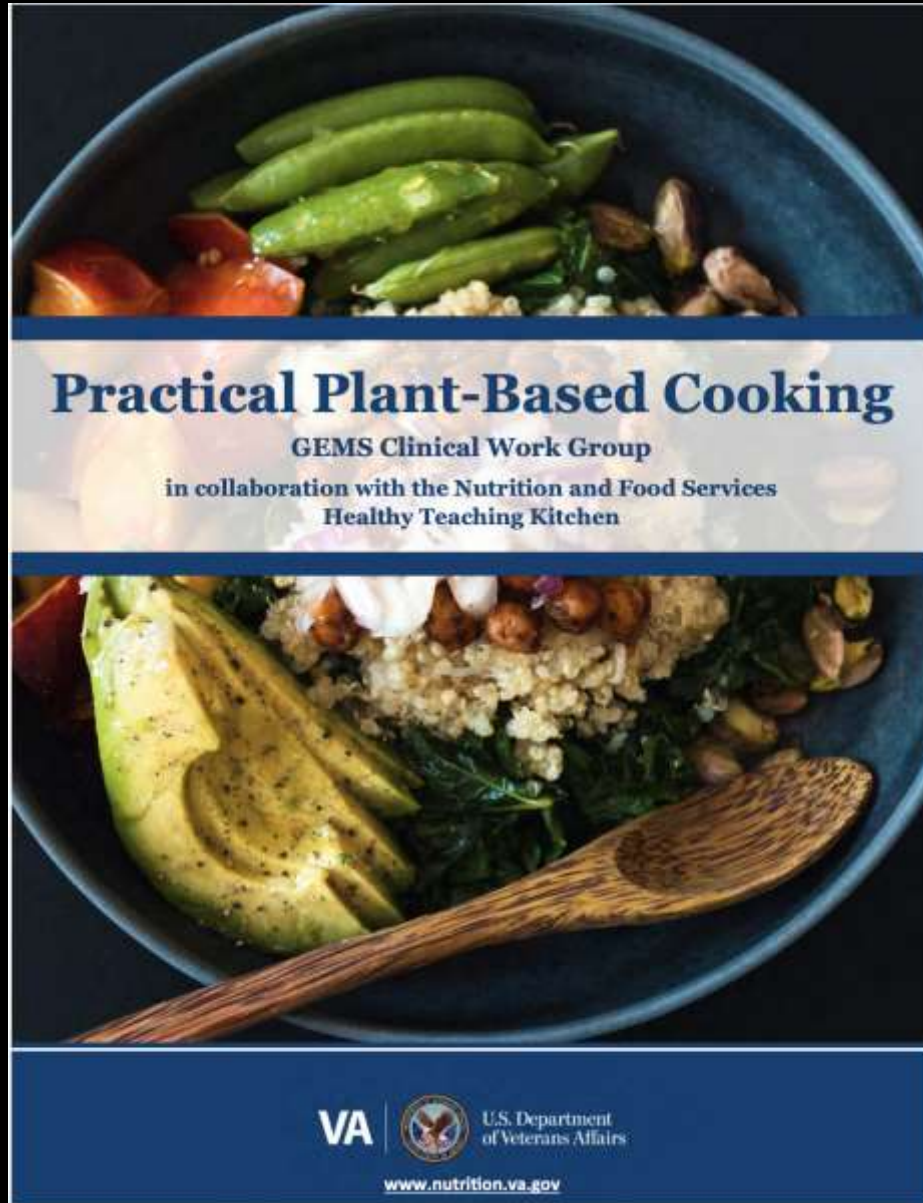
WOMEN AND HEART DISEASE

ABC
Association of Black Cardiologists, Inc.
Serving the Hearts and Minds of a Diverse America

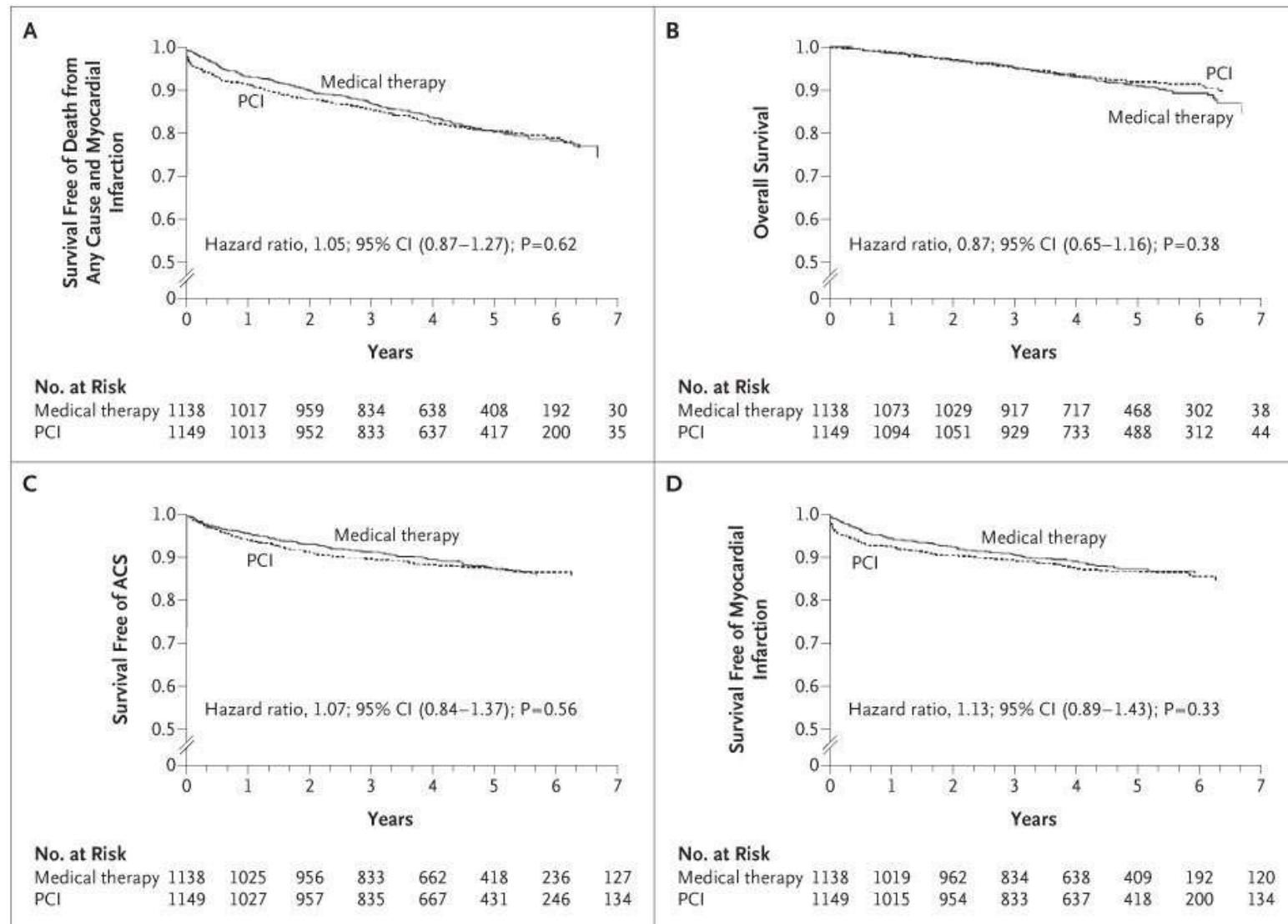
STAYWELL

abcario.org

PRACTICAL PLANT-BASED COOKING



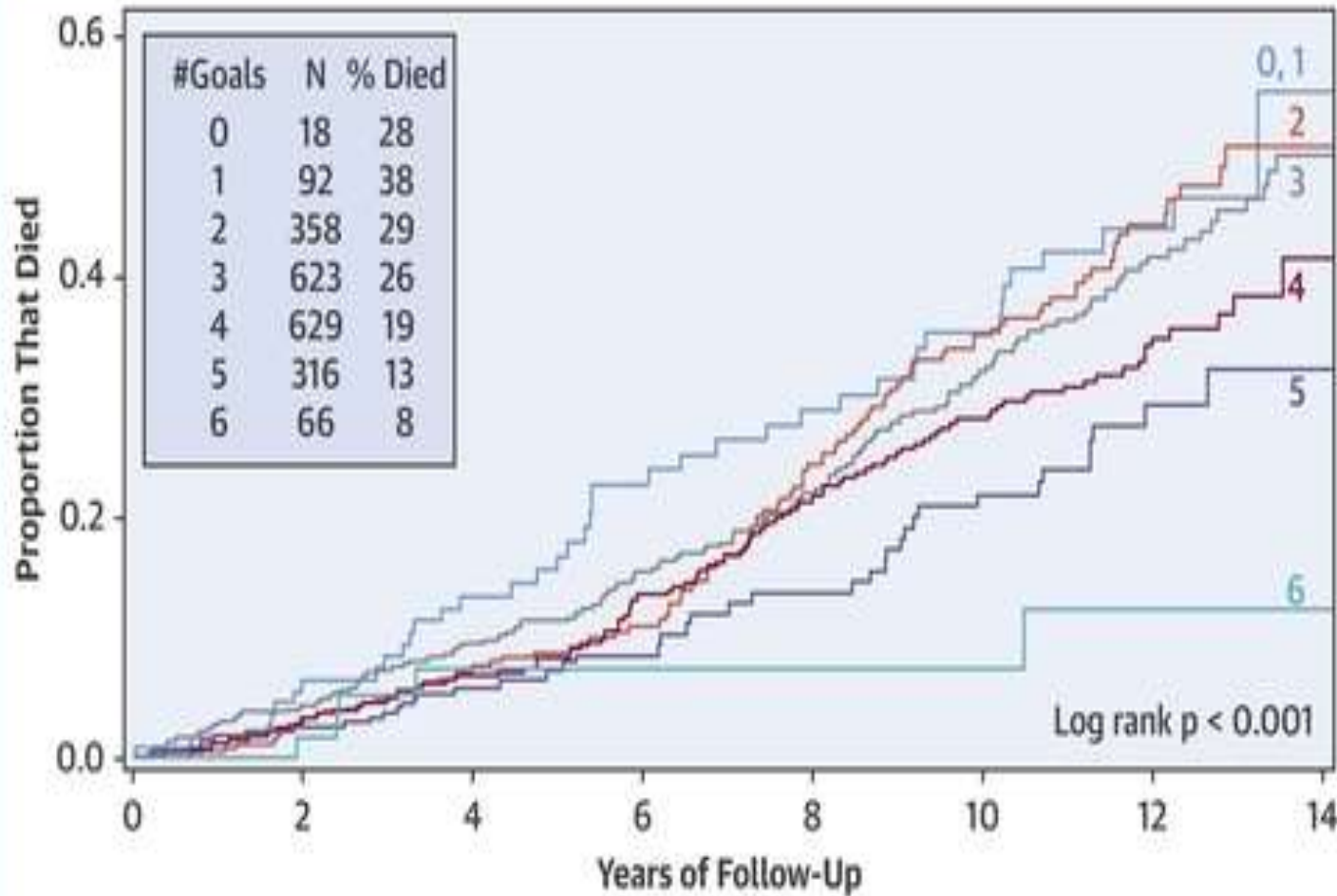
CVD AND LIFESTYLE MEDICINE: IT TAKES "COURAGE"



N Engl J Med 2007; 356:1503-1516

COURAGE 15-YEAR FOLLOW UP

CENTRAL ILLUSTRATION: Multiple Risk Factor Control Predicts Improved Survival: Time to Death by Count of Goals Achieved



Maron, D.J. et al. J Am Coll Cardiol. 2018;72(19):2297-305.

Do Not Smoke, Eat Healthy, and Exercise*

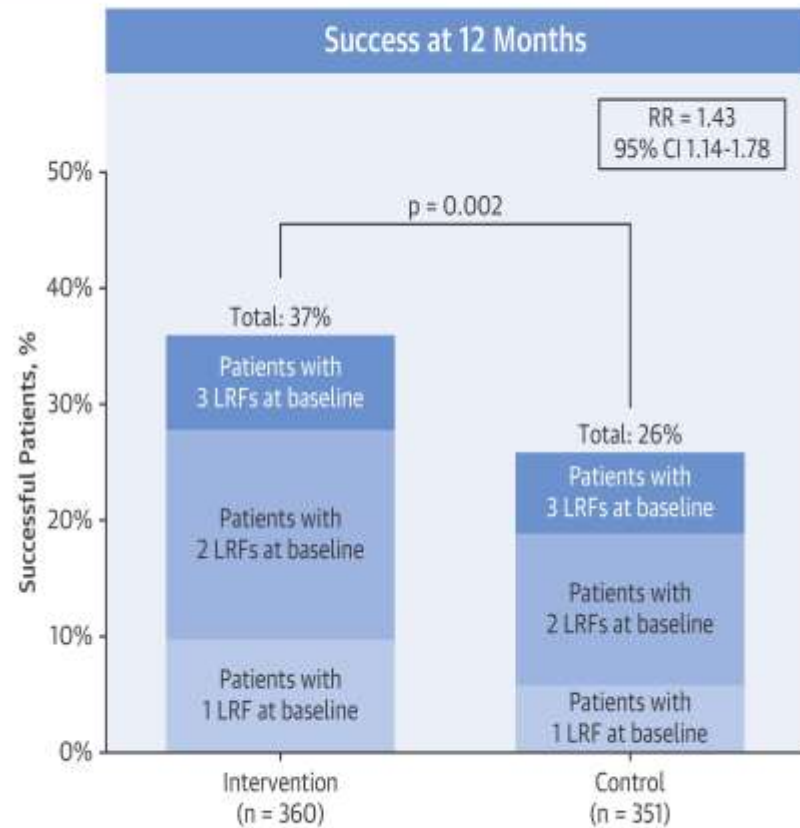
Editorial Comment

Vera Bittner

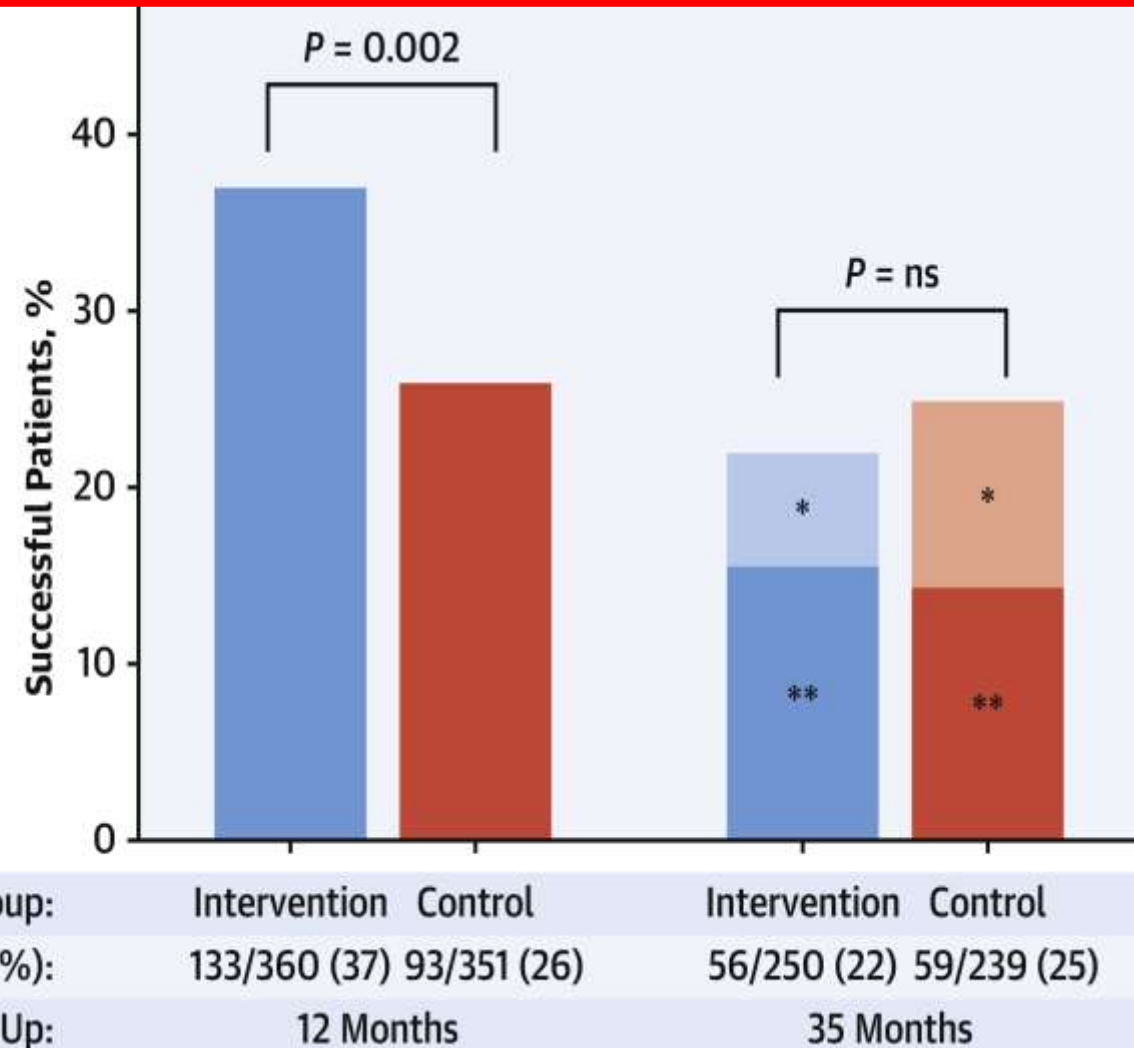
J Am Coll Cardiol. 2018 Nov, 72 (19) 2306–2308

LIFESTYLE INTERVENTION IN ESTABLISHED CAD

CENTRAL ILLUSTRATION: Community-Based Lifestyle Intervention: Primary Outcome



Minneboo, M. et al. J Am Coll Cardiol. 2017;70(3):318-27.



J Am Coll Cardiol. 2022 Feb, 79 (5) 511-512

J Am Coll Cardiol. 2017 Jul, 70 (3) 318-327

LIFESTYLE INTERVENTION IN ESTABLISHED CAD


[Glob J Health Sci.](#) 2015 Dec; 7(7): 6–16.

Published online 2015 Mar 26. doi: [10.5539/gjhs.v7n7p6](https://doi.org/10.5539/gjhs.v7n7p6)

Influence of Comprehensive Life Style Intervention in Patients of CHD

[Ali Dehghani](#),^{1,2} [Sanjiv Kumar Bhasin](#),² [Shridhar Dwivedi](#),³ and [Rajeev Kumar Malhotra](#)⁴

► [Author information](#) ► [Article notes](#) ► [Copyright and License information](#) [Disclaimer](#)

- RCT – 640 patients.
- Followed at 3 and 6 months.
- Significant  hypertension, smoking, obesity, and lipids

LIFESTYLE INTERVENTION IN ESTABLISHED CAD

[Perm J.](#) 2019; 23: 18.196.

PMCID: PMC6836566

Published online 2019 Sep 19. doi: [10.7812/TPP/18.196](https://doi.org/10.7812/TPP/18.196)

PMID: [31634108](https://pubmed.ncbi.nlm.nih.gov/31634108/)

Lifestyle Interventions and Carotid Plaque Burden: A Comparative Analysis of Two Lifestyle Intervention Programs in Patients with Coronary Artery Disease

[Rachid A Elkoustaf](#), MD, MPH,¹ [Omar M Aldaas](#), MD,² [Colombus D Batiste](#), MD,¹ [Adina Mercer](#), MD,³
[Mario Robinson](#), MD,⁴ [Darlene Newton](#), DrPH,⁵ [Raoul Burchett](#), MA, MS,⁵ [Cynthia Cornelius](#), RVT,⁶ [Heidi Patterson](#),
MPH,¹ and [Mohamed H Ismail](#), MD, MPH⁵

CHIP Program – **9 months**.

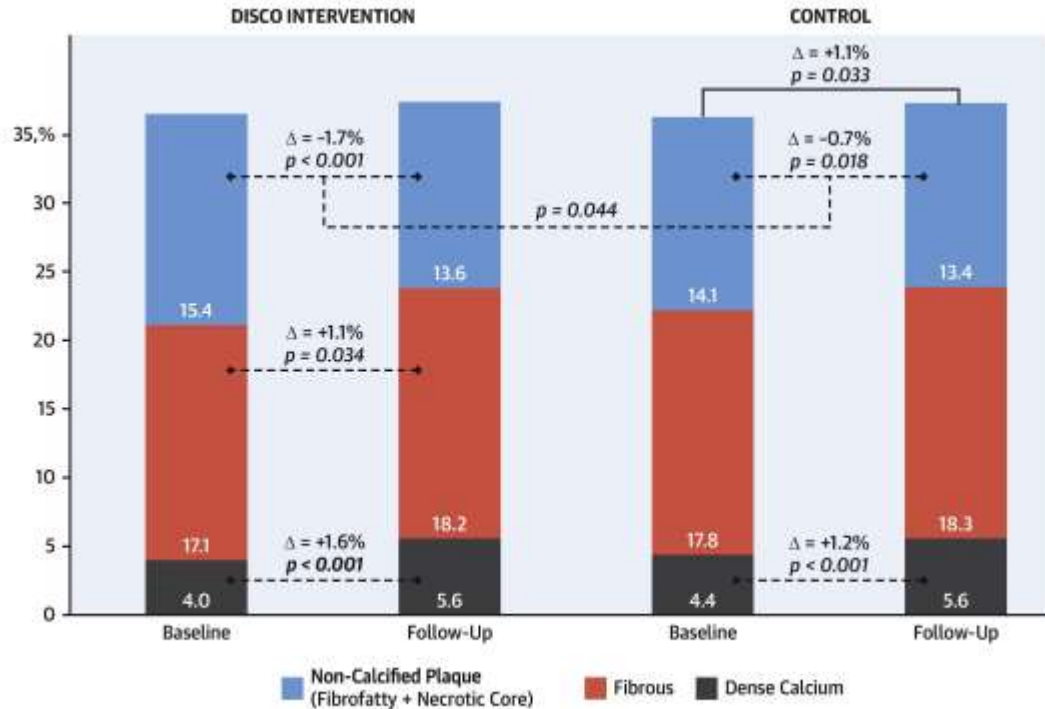
79 patients analyzed – **68 completed** the study.

Significant reduction in CAD risk profile.

No change in **atheroma volume**.

LIFESTYLE INTERVENTION IN ESTABLISHED CAD

CENTRAL ILLUSTRATION: Coronary Atheroma Dynamics



Henzel, J. et al. J Am Coll Cardiol Img. 2021;14(6):1192-202.

Controlled diet and lifestyle intervention together with OMT may slow the progression of atherosclerosis and reduce noncalcified plaque volume compared to OMT alone.

High-Risk Coronary Plaque Regression After Intensive Lifestyle Intervention in Nonobstructive Coronary Disease: A Randomized Study

Original Research

Jan Henzel, Cezary Kępka, Mariusz Kruk, Magdalena Makarewicz-Wujec, Łukasz Wardziak, Piotr Trochimiuk, Zofia Dzielińska, and Marcin Demkow

J Am Coll Cardiol Img. 2021 Jun, 14 (6) 1192–1202

LIFESTYLE INTERVENTION IN ESTABLISHED CAD

Original Contribution

FREE

December 16, 1998

Intensive Lifestyle Changes for Reversal of Coronary Heart Disease

Dean Ornish, MD; Larry W. Scherwitz, PhD; James H. Billings, PhD, MPH; [et al](#)

» [Author Affiliations](#)

JAMA. 1998;280(23):2001-2007. doi:10.1001/jama.280.23.2001

> [Indian Heart J](#). 2011 Sep-Oct;63(5):461-9.

Regression of coronary atherosclerosis through healthy lifestyle in coronary artery disease patients—Mount Abu Open Heart Trial

Satish K Gupta ¹, Ramesh C Sawhney, Lajpat Rai, V D Chavan, Sameer Dani, Ramesh C Arora, W Selvamurthy, H K Chopra, Navin C Nanda

THIS IS NOT NEW

Prognosis of Medically Treated Patients with Coronary-Artery Disease with Profound ST-Segment Depression during Exercise Testing

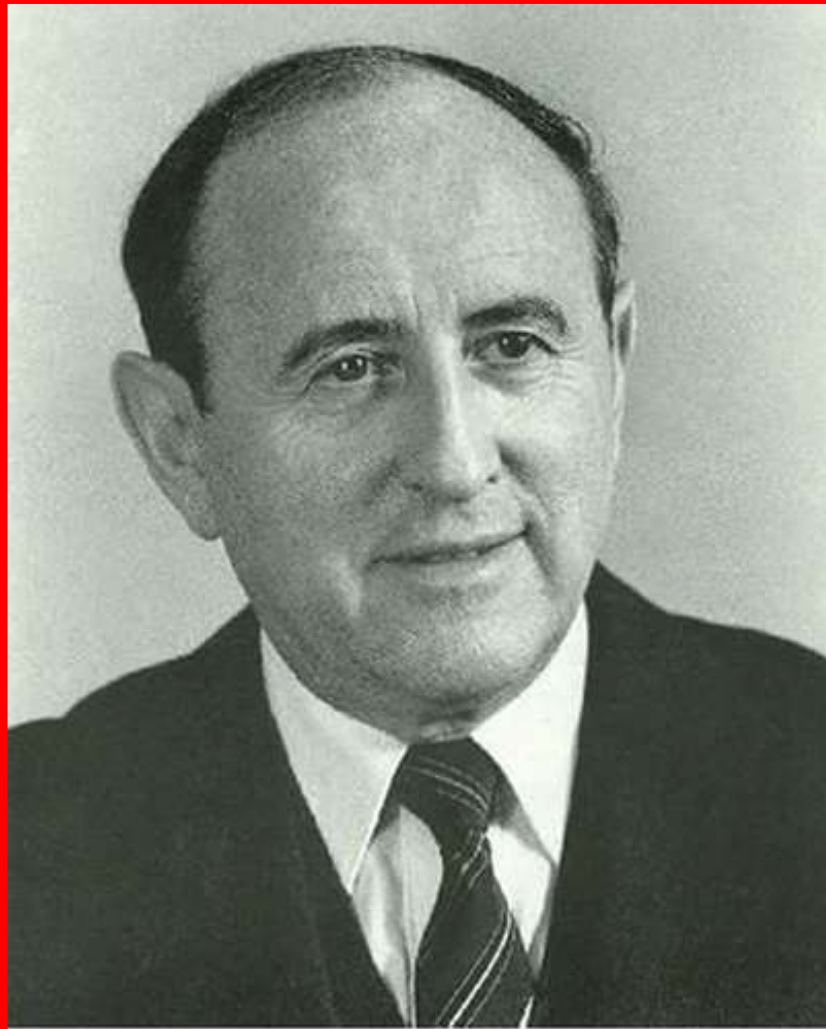
Philip J. Podrid, M.D., Thomas B. Graboys, M.D., and Bernard Lown, M.D.

We conclude that such **ST-segment depression** is **not associated with a poor prognosis**. There is **rarely a need to resort to cardiac surgery; medical management** is highly successful and associated with a **low mortality**.

N Engl J Med 1981; 305:1111-1116

For having the “**COURAGE**” and the “**FREEDOM**” to write these words about “**ISCHEMIA**”, in 1981, Bernard Lown is my HERO!

PROF. BERNARD LOWN, MD



"I have made this thoughtful book by Dr. Lown required reading for physicians in the Program in Integrative Medicine at the University of Arizona. It conveys the wisdom about the doctor-patient relationship that has indeed been lost in the noise of high-tech, profit-driven medicine."
—ANDREW WEIL, M.D.

THE LOST ART OF HEALING

PRACTICING
COMPASSION IN MEDICINE

"BERNARD LOWN...WRITES POWERFULLY
OF THE MYSTERY AND MAJESTY
OF MEDICINE."

—*The New York Times Book Review*



BERNARD LOWN, M.D.
WINNER OF THE NOBEL PEACE PRIZE

Professor Bernard Lown: An Inventor Who Saved Lives, a Man Who Fought Against Nuclear War

Guest Editors' Page

Antoni Bayes-Genis and Antoni Bayes de Luna

J Am Coll Cardiol. 2021 Apr; 77 (13) 1689–1690



BUT...

DOC, THE DISEASE RUNS IN MY FAMILY!

- “There are **no old men in my family**. All branches of my family tree have been **cut short by cardiovascular disease**.”
- “I believe the **people in this room** have the **power and even the duty to change that**.” -John Warner, MD
(President AHA)

**A day before suffering a heart attack and cardiac arrest,
while attending the annual AHA meeting in 2017**

-<https://news.heart.org/aha-presidents-heart-stopped-for-several-minutes-now-back-at-work/>

-<https://news.heart.org/scrambling-to-restart-stopped-heart-patient-president-american-heart-association/>

SO, WHEN SHOULD I GET MY HOME GENETIC TESTING KIT?

New Online

Views **751** | Citations **0** | Altmetric **1**

JAMA Internal Medicine Patient Page

ONLINE FIRST

FREE

April 4, 2022

What Can At-home Genetic Tests Tell Me About My Health?

Anna L. Parks, MD¹; Michael A. Incze, MD, MEd²

» Author Affiliations | Article Information

JAMA Intern Med. Published online April 4, 2022. doi:10.1001/jamainternmed.2022.0529

LIFESTYLE > POLYGENIC RISK

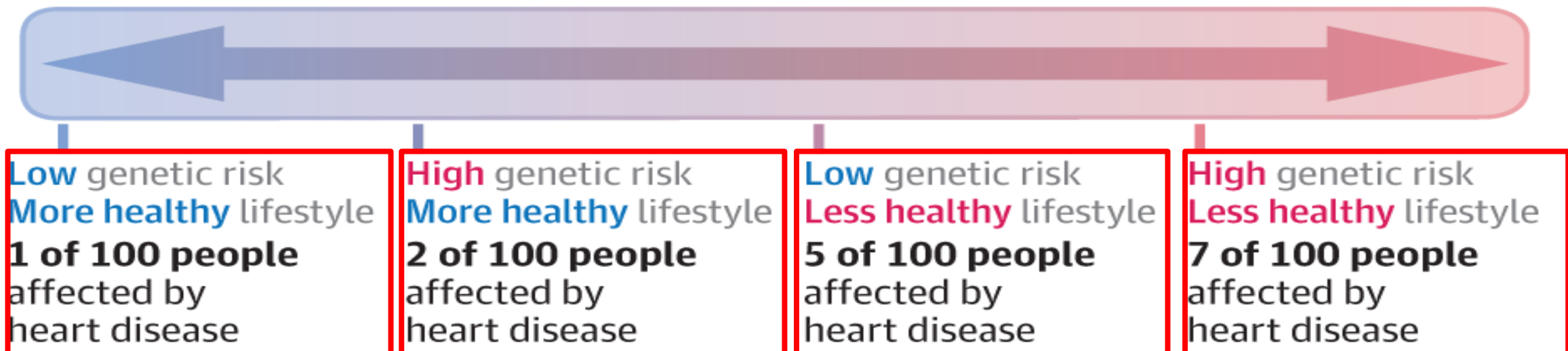
Genetic risk vs lifestyle risk: the example of heart disease

In general, the risk of heart disease is more strongly affected by lifestyle than genetics. A healthy lifestyle that includes avoiding tobacco, maintaining a healthy weight, regular physical activity, and a balanced diet including fruits, vegetables, and fresh foods reduces heart disease risk for everyone regardless of genetic risk.

One study that observed patients with different genetic risks over 10 y found

**Lower risk for
heart disease**

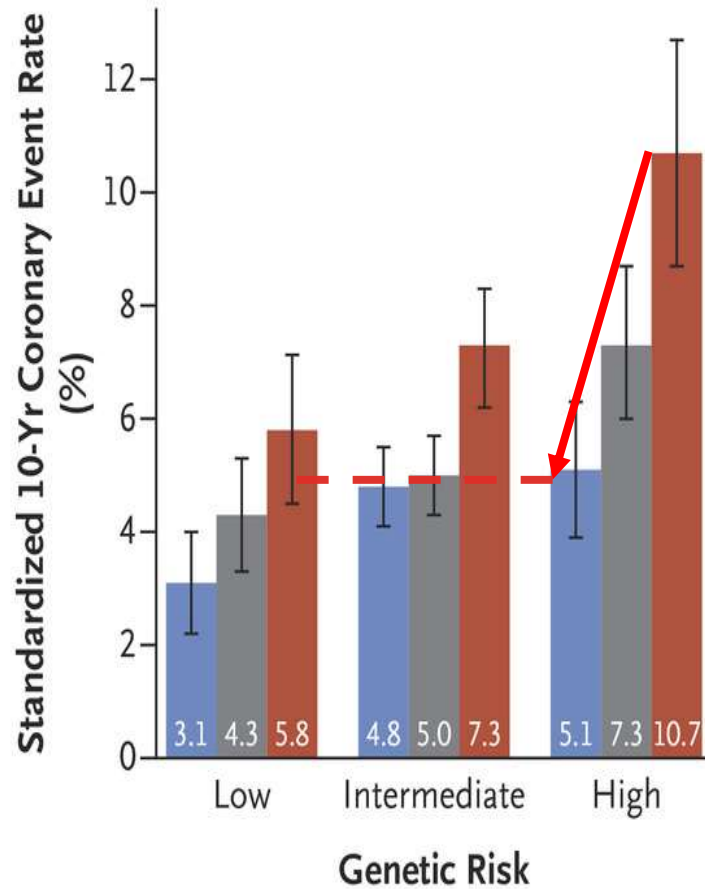
**Higher risk for
heart disease**



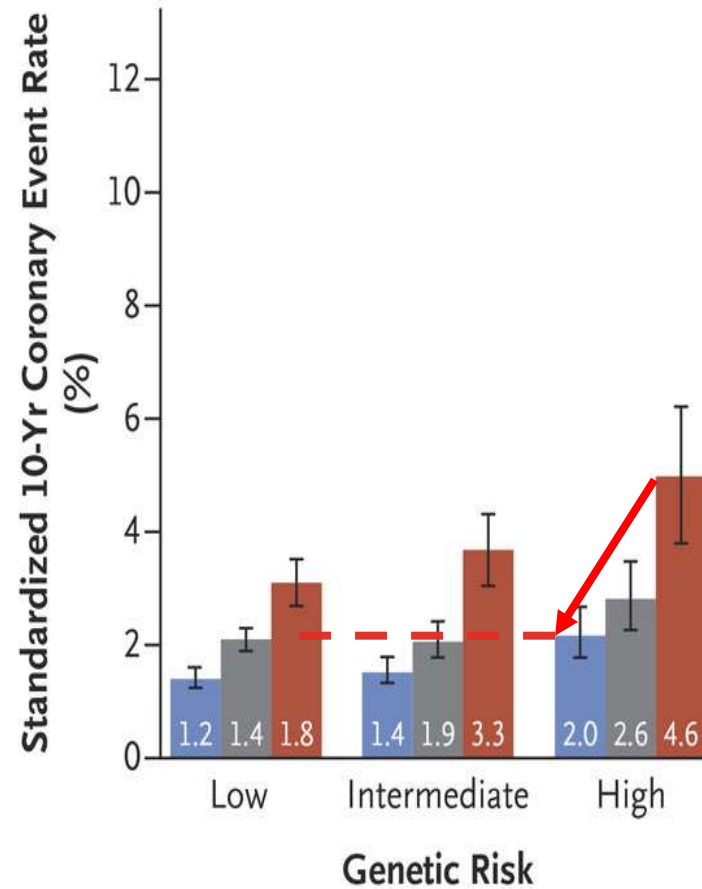
GENETIC RISK OF CVD AND LIFESTYLE

■ Favorable lifestyle ■ Intermediate lifestyle ■ Unfavorable lifestyle

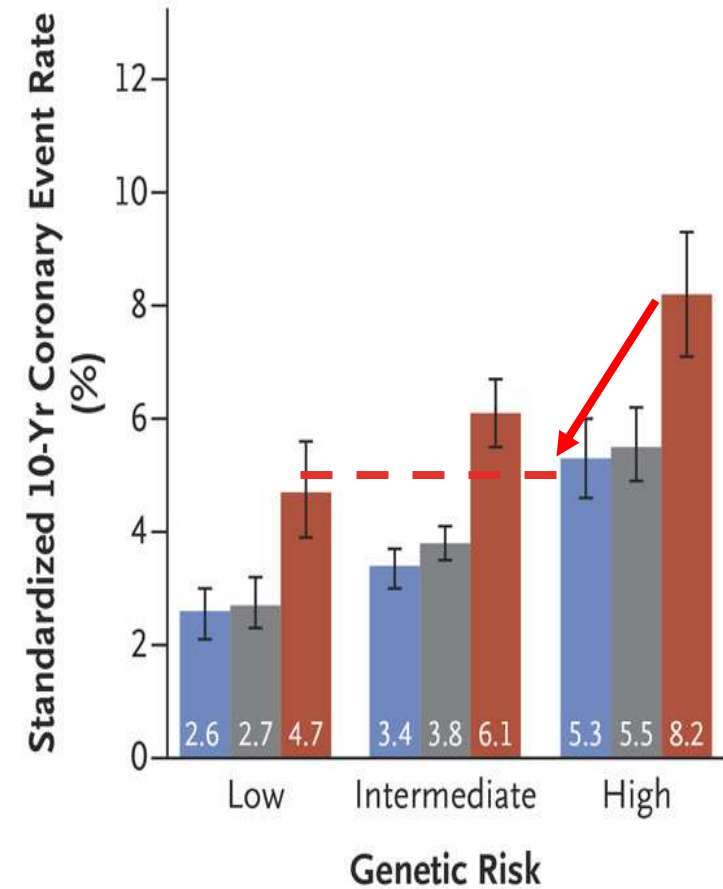
A Atherosclerosis Risk in Communities



B Women's Genome Health Study



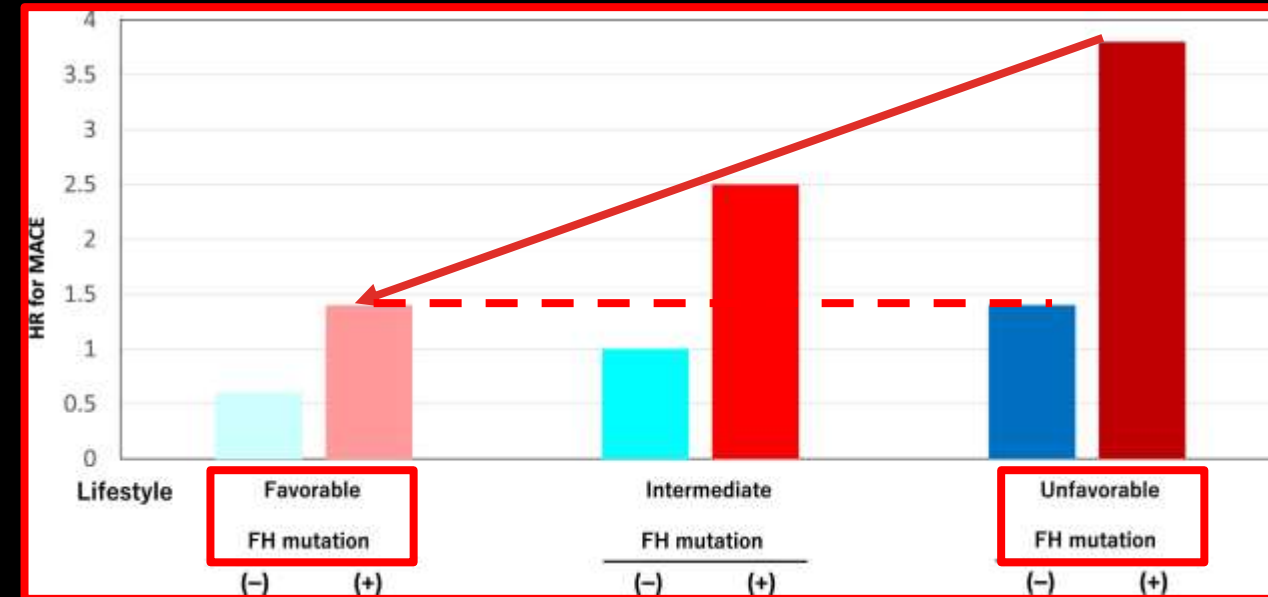
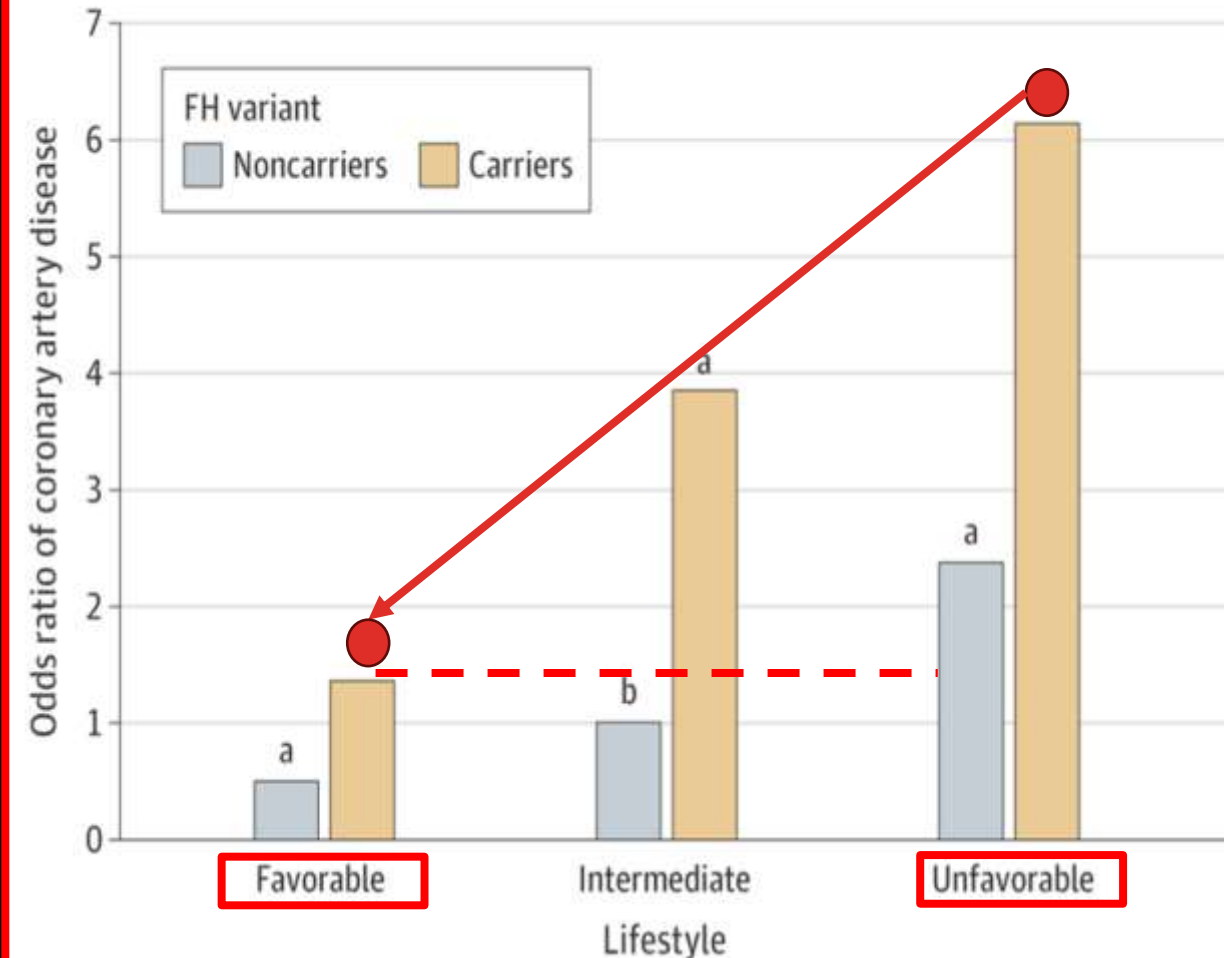
C Malmö Diet and Cancer Study



N Engl J Med 2016; 375:2349-2358

GENETIC RISK OF HETEROGYGOUS FH: LIFESTYLE

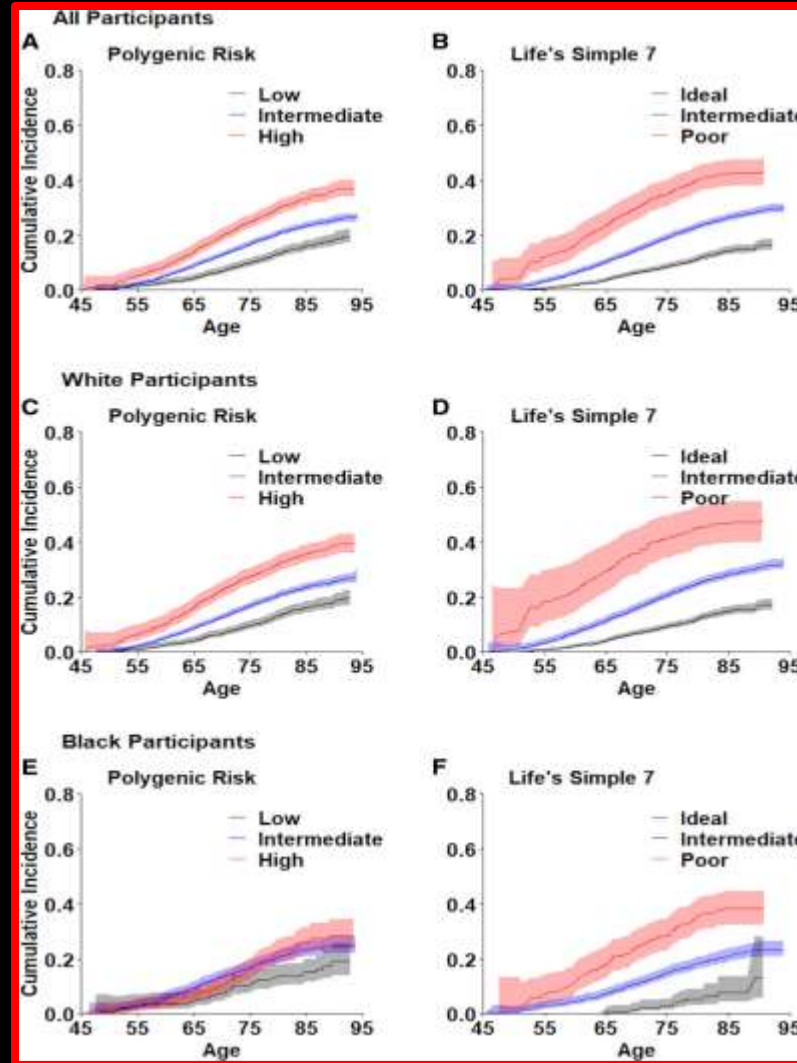
Figure 2. Risk of Coronary Artery Disease by Familial Hypercholesterolemia (FH) Variant Carrier Status and Adherence to Healthy Lifestyle in the Case-Control Study (N=10175)



JACC: Asia. 2023 Feb, 3 (1) 152–160

JAMA Netw Open. 2022;5(3):e222687

LIFE'S SIMPLE SEVEN AND POLYGENIC RISK



In the **high-PRS** group, **ideal LS7** was associated with **20.2 more CHD-free years** compared with poor LS7

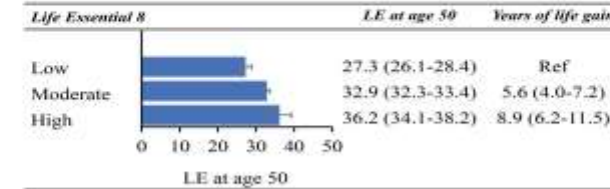
LIFE'S ESSENTIAL 8 – LIFE EXPECTANCY



Total Cohort

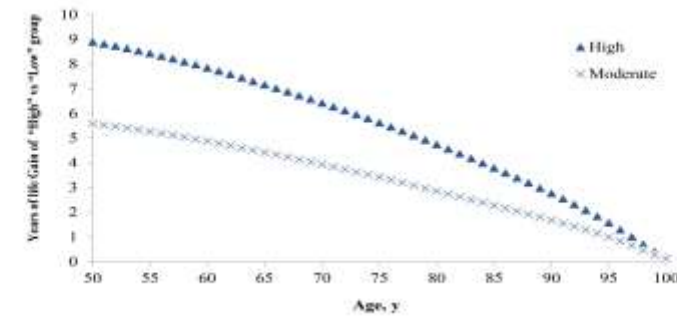
Life expectancy at age 50 according to CVH levels

A



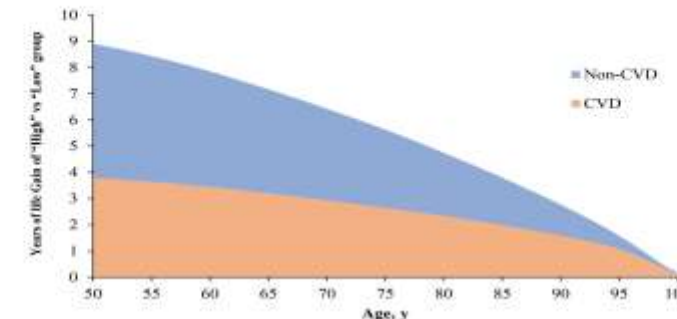
Life-years gain from moderate and high VS low CVH group from 50 to 100 years of age

B

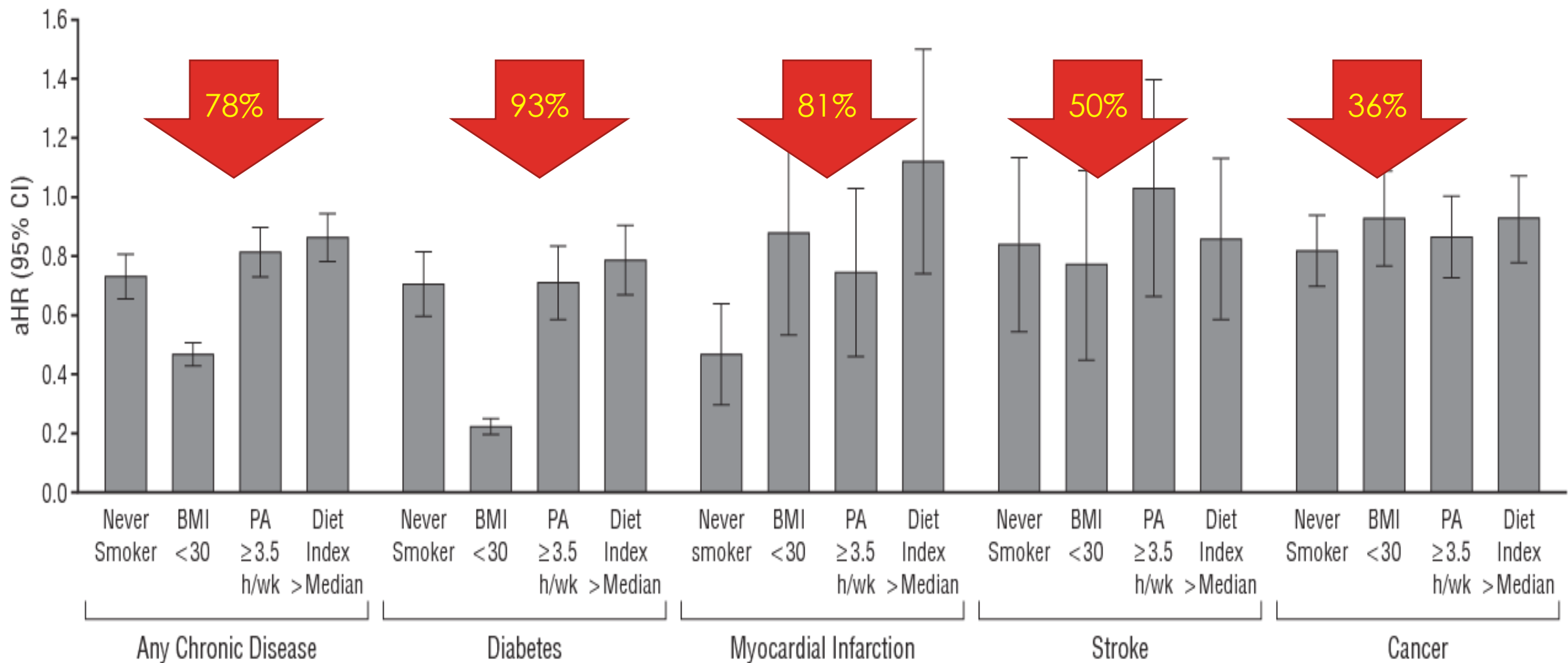


Estimated years of life gained from high VS low CVH attributable to reduced death from CVD and other causes

C



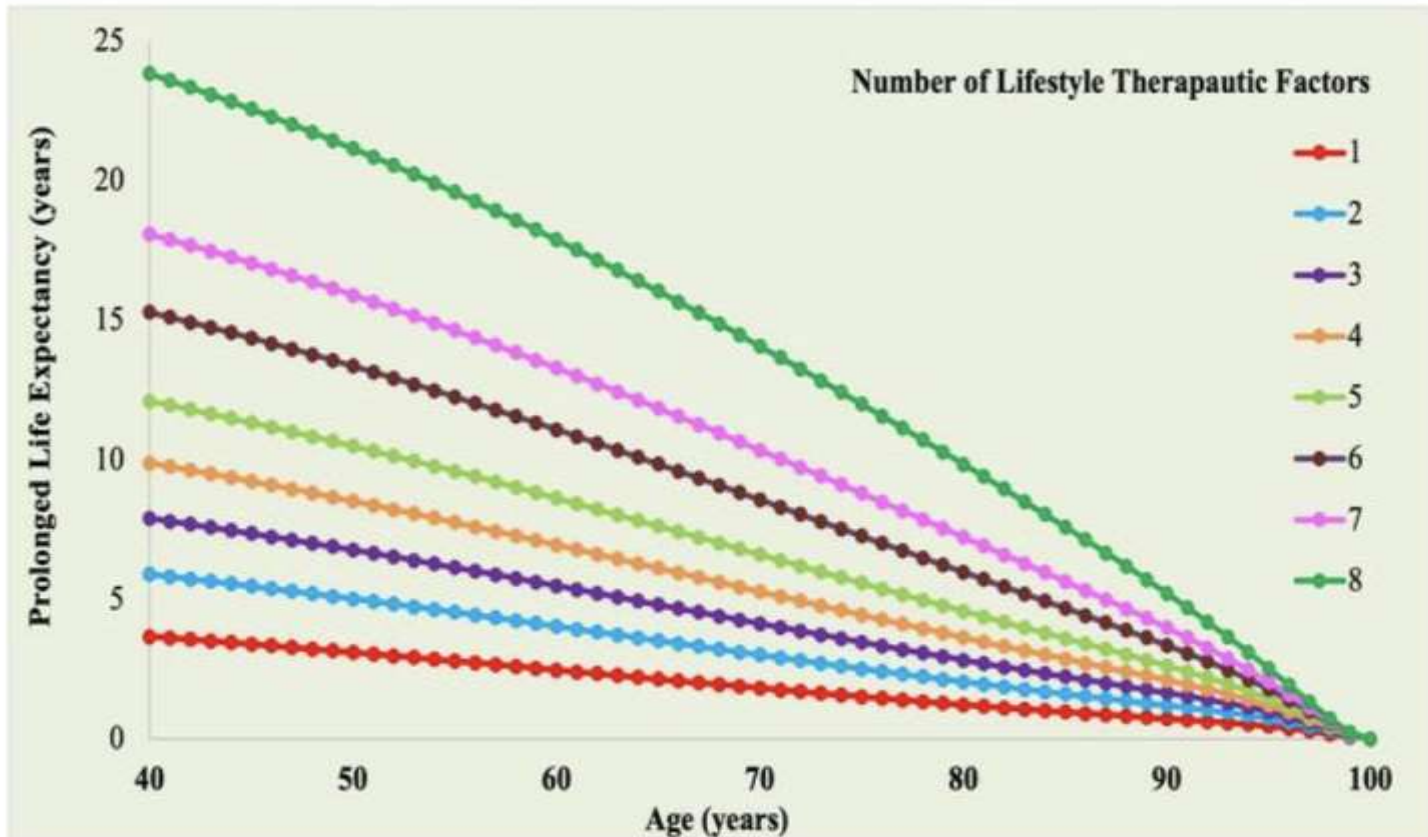
"HEALTHY LIVING IS THE BEST REVENGE"



Arch Intern Med. 2009;169(15):1355-1362

LIFESTYLE MEDICINE: MILLION VETERAN PROGRAM

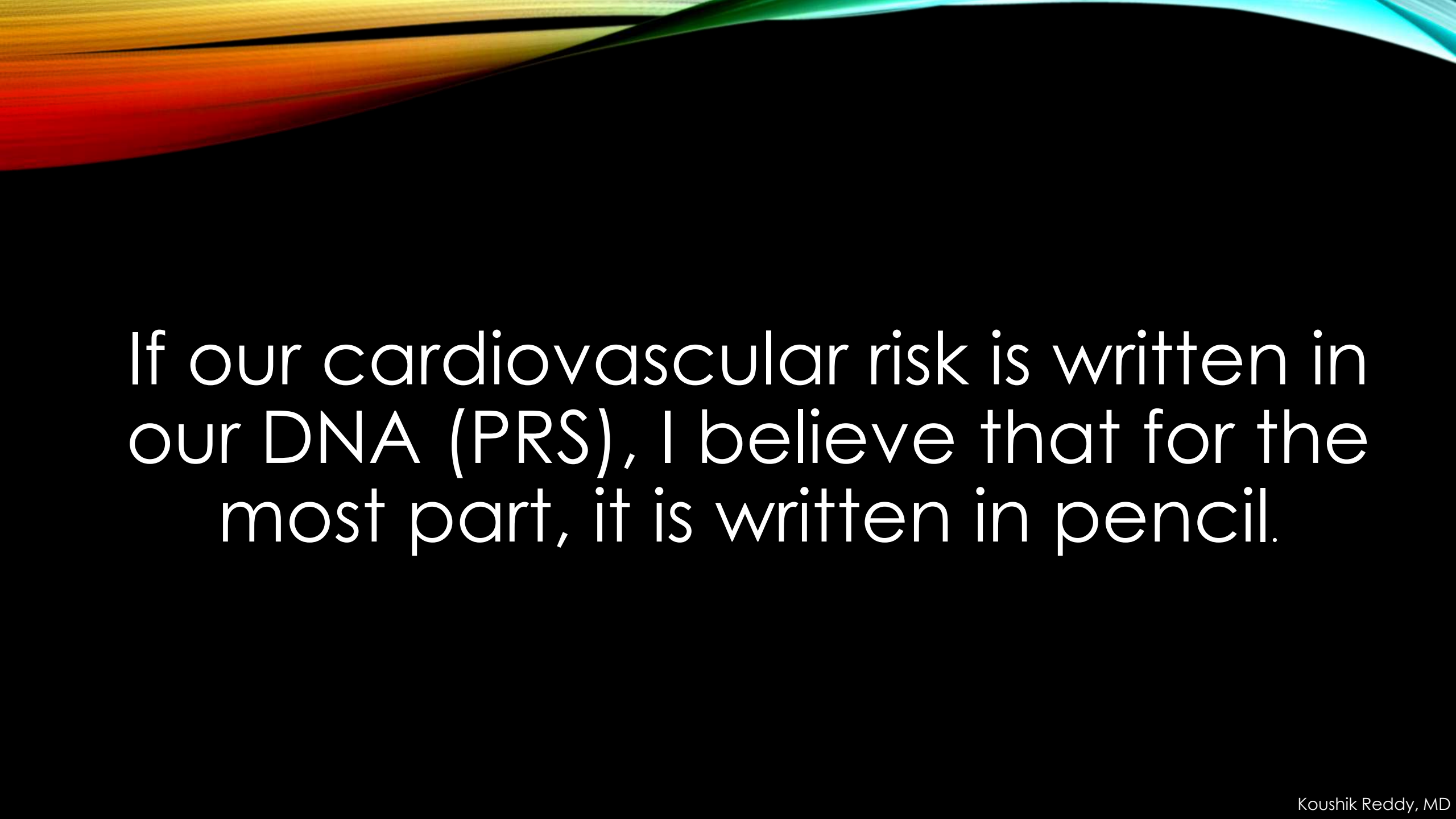
Male: Estimated prolonged life expectancy at different ages by applying lifestyle therapies



- Physically Active
- Opioid Addiction
- Smoking
- Managing Stress
- Good Diet
- Binge Drinking
- Sleep Hygiene
- Positive Social Relationships

PRESENTED AT: NUTRITION 2023

Average of 24 years to a man's life
and 21 years to a woman's life.



If our cardiovascular risk is written in our DNA (PRS), I believe that for the most part, it is written in pencil.



BUT...

MORAL AND SOCIAL DETERMINANTS OF HEALTH

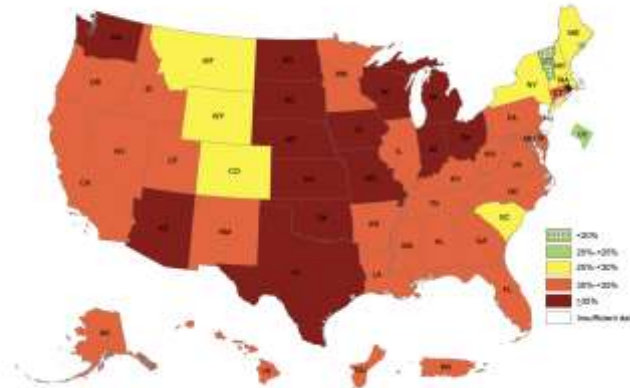
Non-Hispanic White Adults

Prevalence of Self-Reported Obesity Among Non-Hispanic White Adults by State and Territory, BRFSS, 2017-2019



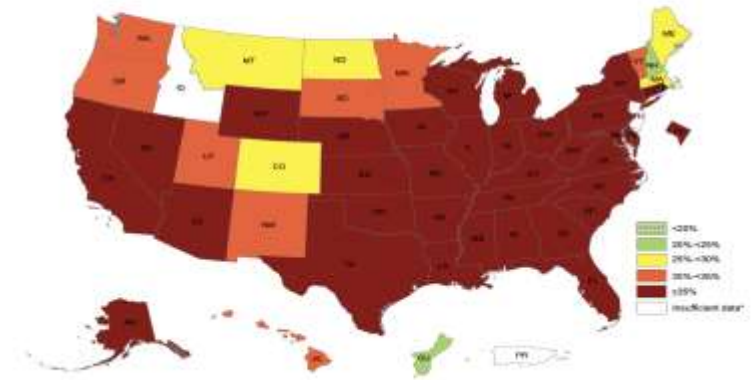
Hispanic Adults

Prevalence of Self-Reported Obesity Among Hispanic Adults by State and Territory, BRFSS, 2017-2019



Non-Hispanic Black Adults

Prevalence of Self-Reported Obesity Among Non-Hispanic Black Adults by State and Territory, BRFSS, 2017-2019



MORAL & SOCIAL DETERMINANTS OF HEALTH

Viewpoint

June 12, 2020

The Moral Determinants of Health

Donald M. Berwick, MD, MPP¹

» Author Affiliations | Article Information

JAMA. 2020;324(3):225-226. doi:10.1001/jama.2020.11129

MORAL & SOCIAL DETERMINANTS OF HEALTH

Except for a few clinical preventive services, **most hospitals and physician offices are repair shops, trying to correct** the damage of causes collectively denoted “**social determinants of health.**”

SOCIAL DETERMINANTS OF HEALTH

SOCIAL DETERMINANTS

Conditions of Birth and Early Childhood

Education

Work

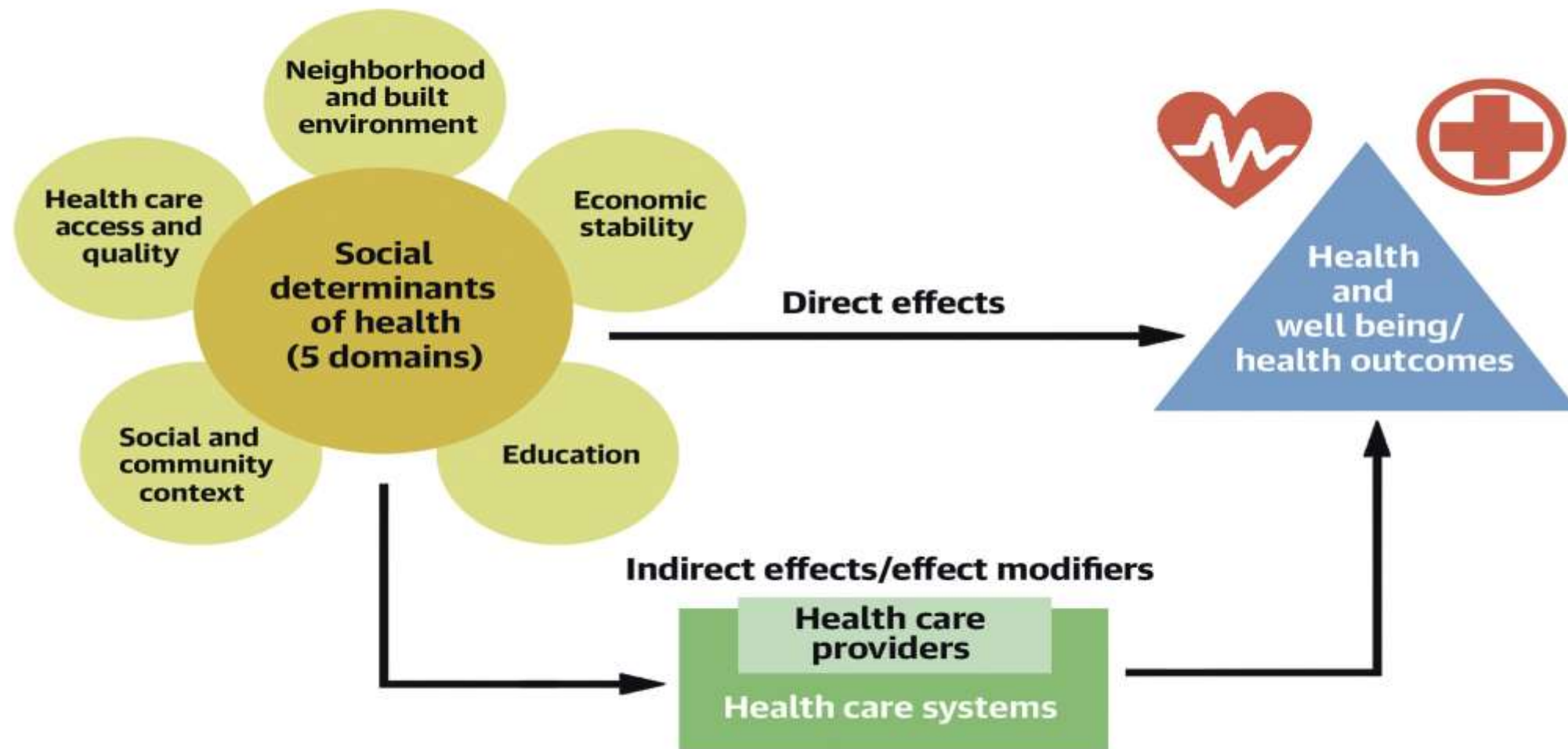
Social Circumstance of Elders

Community Resilience

Fairness

SOCIAL DETERMINANTS OF HEALTH

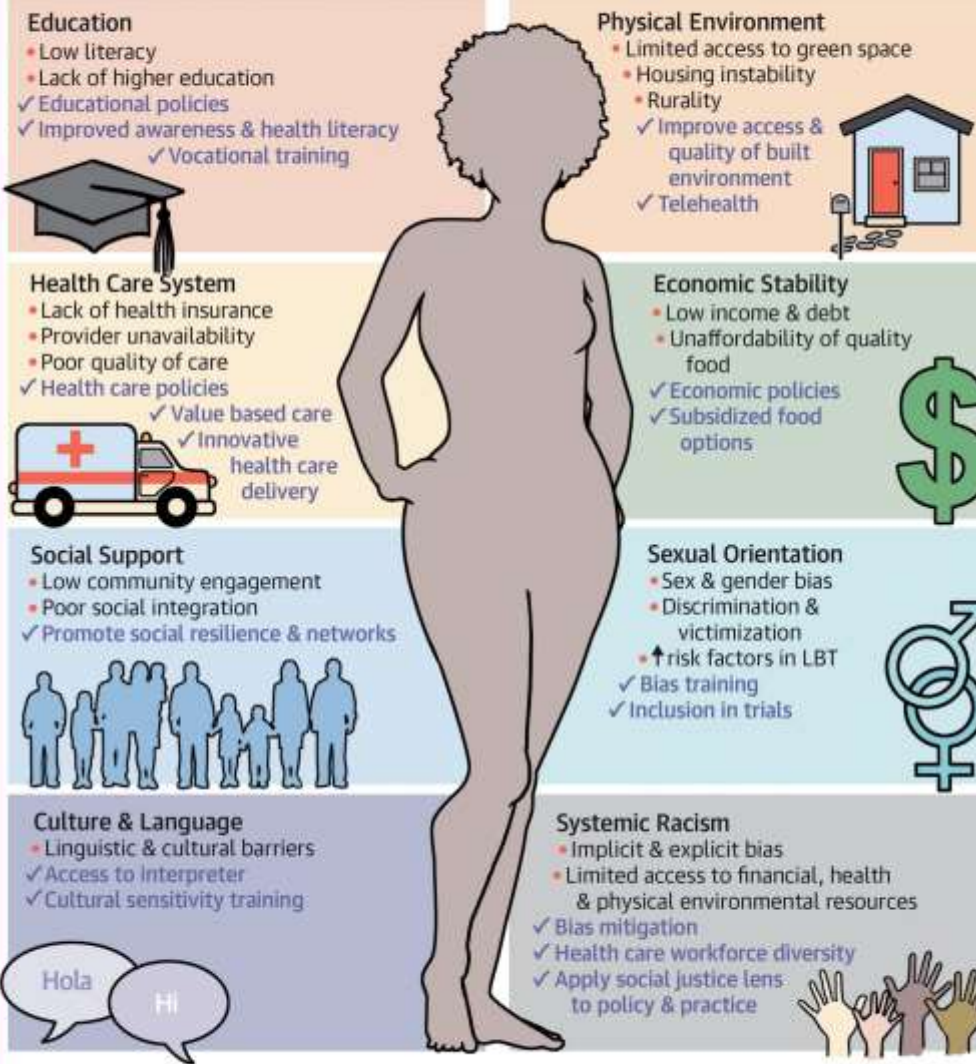
CENTRAL ILLUSTRATION: Impact of Social Determinants of Health on Health Through Health Care Providers and Systems



Brandt EJ, et al. J Am Coll Cardiol. 2023;81(14):1368-1385.

SOCIAL DETERMINANTS OF HEALTH

CENTRAL ILLUSTRATION: Social Determinants of Health and Cardiovascular Disparities in Women



Lindley, K.J. et al. J Am Coll Cardiol. 2021;78(19):1919-1929.

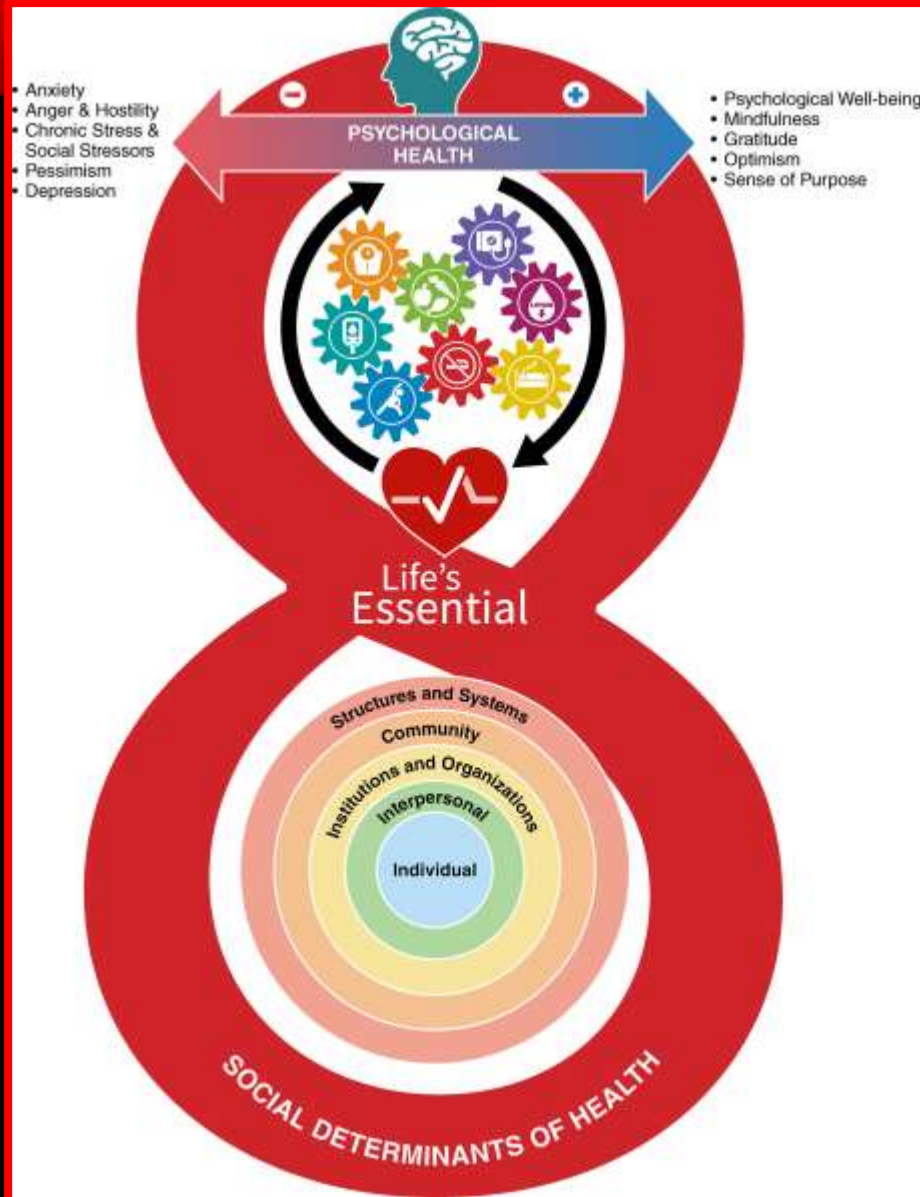
THE MORAL AND SOCIAL DETERMINANTS OF HEALTH

From **midtown
Manhattan** to the **South
Bronx** in New York City,
life expectancy
declines by **10 years.**

**6 months for every
minute on the subway.**



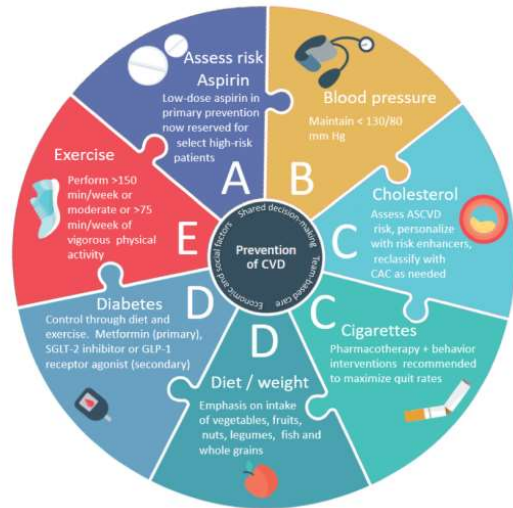
PUTTING IT ALL TOGETHER



Health within the confines of the tightly wound loops of Social Determinants & Psychological Wellbeing. Unless we address the pillars of healthy living in the context of these loops, we are doing our patients a great deal of injustice

LET'S SPIN THESE WHEELS LIKE IT'S OUR LAST RIDE

Figure 1. ABCDE of Primary Prevention: Lifestyle Changes and Team-Based Care



ACC



ACLM



AHA



VHA

WHAT IS THE FUTURE?

“What are the biggest research gaps in cardiology to improve care?”

The living legend...

“I think the most important thing is that we get rid of cardiologists. What do I mean by that is, the next challenge is prevention. Prevention, prevention, prevention”

-Eugene Braunwald

Masterclass on Achievement in the Face of Adversity with Dr Eugene Braunwald

Published: 18 Jun 2021 Views: 1771 Likes: 3

MASTERCLASS

with Dr Harriette Van Spall,
MD MPH FRCPC

ACHIEVEMENT IN THE FACE OF ADVERSITY:
THE LIFE & TIMES OF DR BRAUNWALD WITH ADVICE
FOR THE EARLY CAREER PHYSICIAN

Dr Eugene Braunwald,
MD MACC

A video thumbnail for a Masterclass. The background is dark with a network of white lines and dots. At the top, the word 'MASTERCLASS' is written in a serif font. Below it is a small heart icon. The text 'with Dr Harriette Van Spall, MD MPH FRCPC' is centered. Below that, the title 'ACHIEVEMENT IN THE FACE OF ADVERSITY: THE LIFE & TIMES OF DR BRAUNWALD WITH ADVICE FOR THE EARLY CAREER PHYSICIAN' is displayed. At the bottom, there are two portraits: Dr. Eugene Braunwald on the right and Dr. Harriette Van Spall on the left. The text 'Dr Eugene Braunwald, MD MACC' is positioned between the two portraits.

HEALTH PROMOTION AND DISEASE PREVENTION

An Issue That Can No Longer Wait

“Regaining the momentum toward positive cardiovascular **health** will not occur spontaneously. It will require the engagement of **every physician** and every **public health policy** with **action** at 3 levels—**personal, clinical, and community.**”

J Am Coll Cardiol. 2022 Jul, 80 (2) 152–154



THANK YOU

X @koushikreddymd
koushik.reddy@va.gov
koushik@usf.edu