



**Call to Action for
Health Equity:
Racial Disparities
in the Care of
Patients with
Cardiometabolic
Disease**

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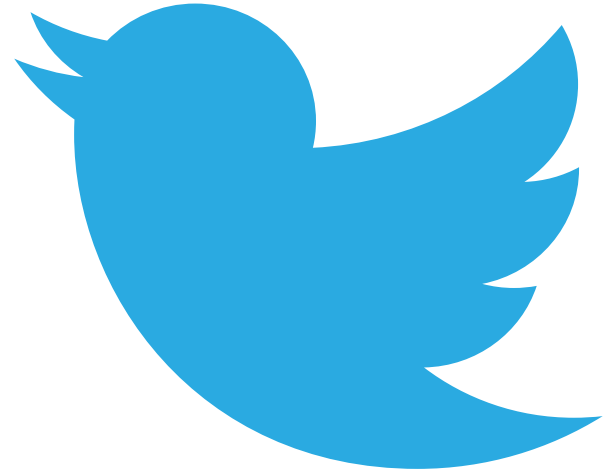
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Learning Objective 1

Identify structural and social determinants of health (SDoH) that place African American/Black, Hispanic, and other minority populations at risk for poor outcomes in cardiovascular disease.



Audience Response

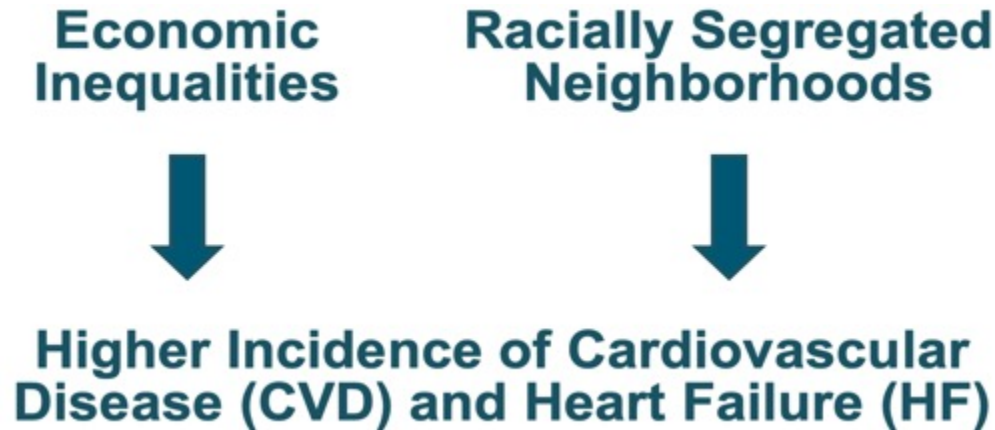


- ▶ How often do you consider social determinants of health (SDoH) when assessing patients with cardiovascular disease (CVD) who are from minority populations?
- a) Never
 - b) Sometimes
 - c) Often
 - d) Always

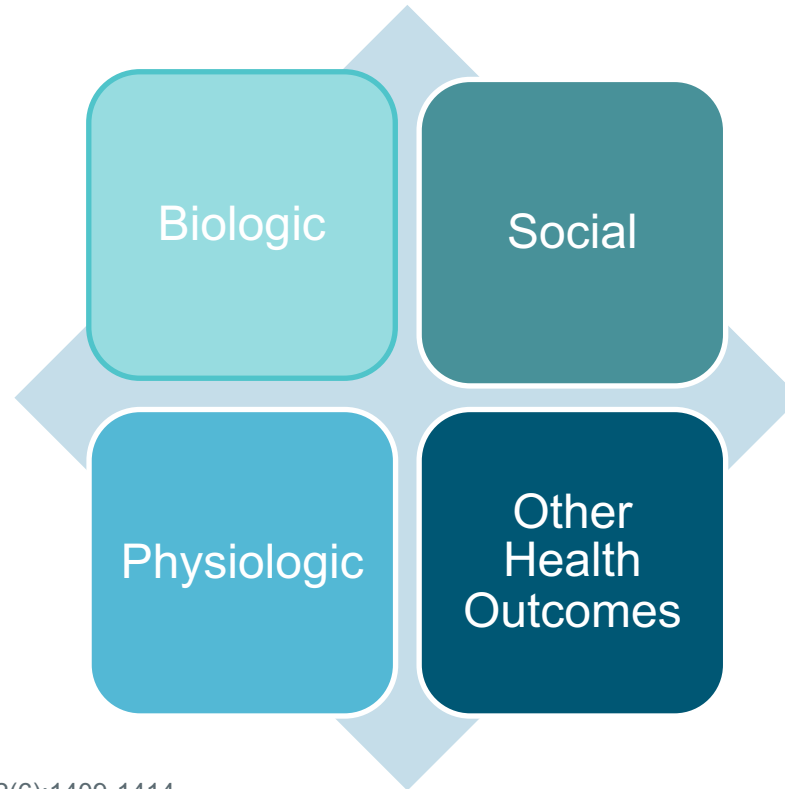
Social Determinants of Susceptibility



- ▶ SDoH not limited to race/ethnicity
- ▶ Racially and classist structured society → inequity across systems, including health care
- ▶ Racial discrimination → economic inequalities

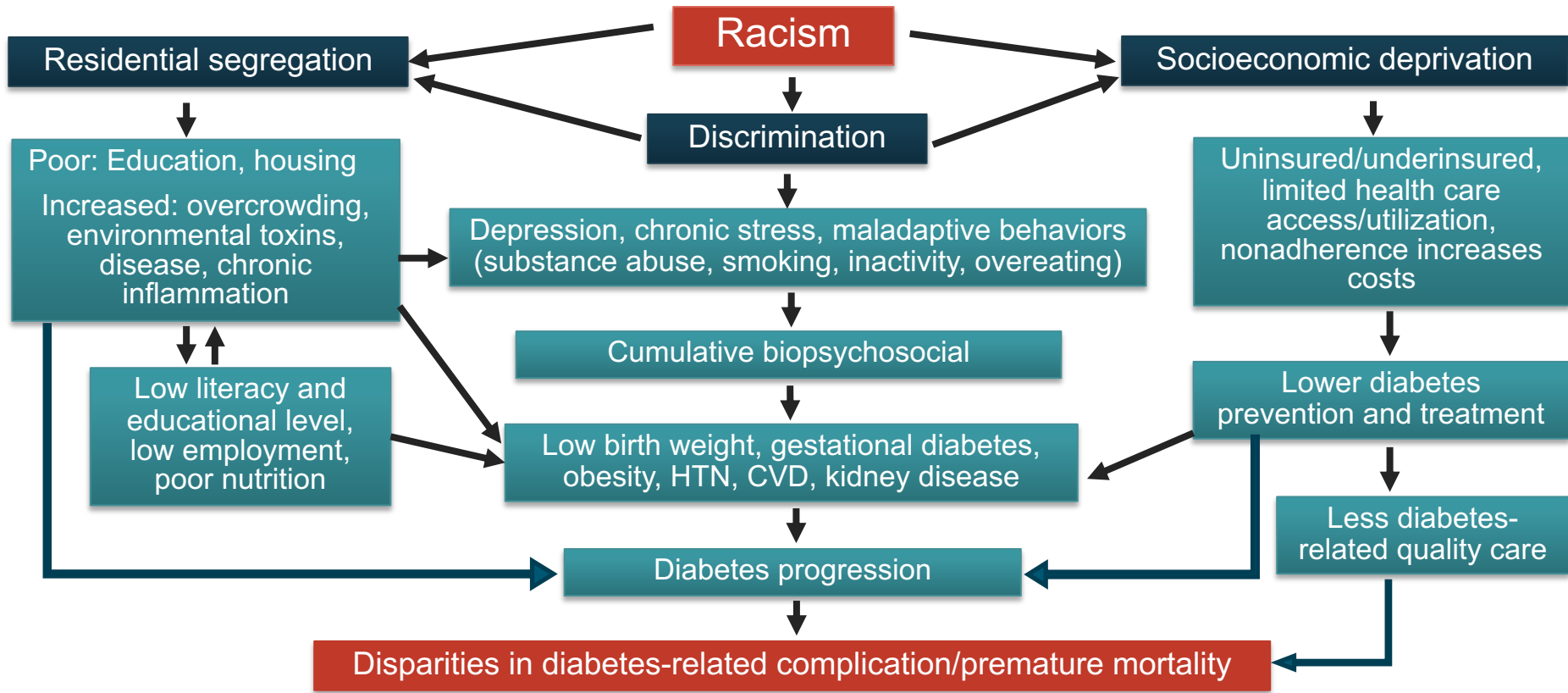


Racism and Its Link to Health



Duggan CP, et al. *Am J Clin Nutr.* 2020;112(6):1409-1414.

Racism and Diabetes Disparities



Discrimination and Diabetes



- ▶ Perceived discrimination leads to¹
 - ▶ Worse diabetes care
 - ▶ More diabetes complications
- ▶ Influences patient/clinician interactions²
 - ▶ Reduced information sharing
 - ▶ Increased distrust
 - ▶ Less shared decision-making (SDM)
 - ▶ Increased non-adherence
- ▶ Racial disparities persist when controlling for socioeconomic status (SES)³
- ▶ Children with Type 1 diabetes whose parents had college or graduate degrees, and who received insulin pumps:
 - ▶ 68% White
 - ▶ 34% Black

Racism and Obesity Link



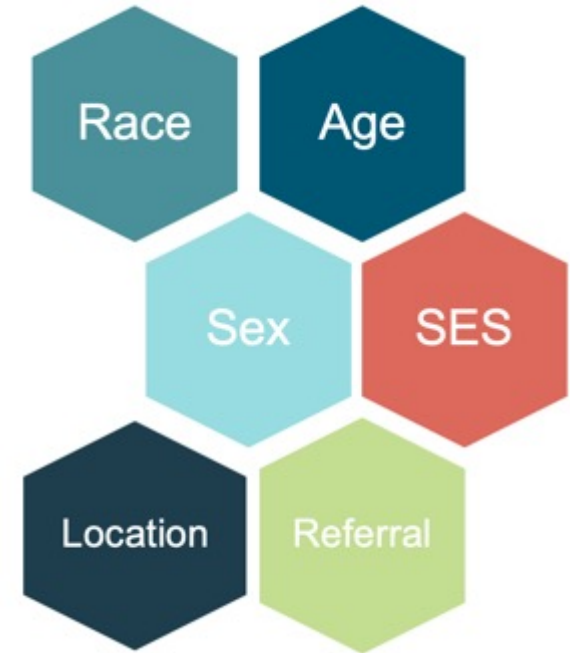
- ▶ Black Women's Health Study (BWHS) (2014 follow-up)
 - ▶ 59,000 participants, 20-year range
 - ▶ Racism scores derived from 8 frequency questions on:
 - ▶ "Everyday" racism
 - ▶ "Lifetime" racism
- ▶ 4,315 incident cases of obesity identified (1997-2009)
- ▶ Regular and persistent racism
→ increased incidence of obesity



Obesity Treatment Access



- ▶ Biases, false assumptions, and knowledge gaps → disparate cardiometabolic care
- ▶ Link obesity to “willpower”/chronic excess caloric intake, not comorbidities, medications, lack of time, psychological stress, fatigue, genomic predisposition, chronic caloric “retention”, chronic pain¹
- ▶ Assume patient not “intelligent” and won’t adhere to regimen
- ▶ Assume patient not good candidate for weight loss treatment or surgery²
- ▶ Lack of risk counselling and follow-up care



Obesity: Epidemic Amidst a Pandemic



- ▶ Highest rates: Black and Hispanic women
 - ▶ Self-reported adult obesity¹
 - ▶ Black 39.8%
 - ▶ Hispanic 33.8%
 - ▶ White 29.9%
- ▶ More than 25% of patients with obesity have diabetes²
 - ▶ Diabetes raises CVD risk 2x-4x (even if controlled)³
 - ▶ Black/Hispanic populations highest rates diabetes and HTN
- ▶ Obesity triples risk of hospitalization from COVID-19
 - ▶ 30.2% attributed to obesity
 - ▶ Decreases lung capacity

CVD and Glycemic Index



- ▶ High rates of CVD mortality correspond with areas of high food insecurity¹



35.2 million Americans are food insecure²



In 2016, \$52.9 million in health care costs associated with food insecurity³



33.2% of households served by food banks have one member with diabetes³



57.8% of households served by food banks have one member with high blood pressure³



78.7% of households served by food banks selected poor food options to cope with food insecurity³

- ▶ Study of 137,851 participants between 35-70 years had 8,252 major CVD events and 8,780 deaths:⁴
 - ▶ High glycemic index diet associated with increased risk of major CVD event or death

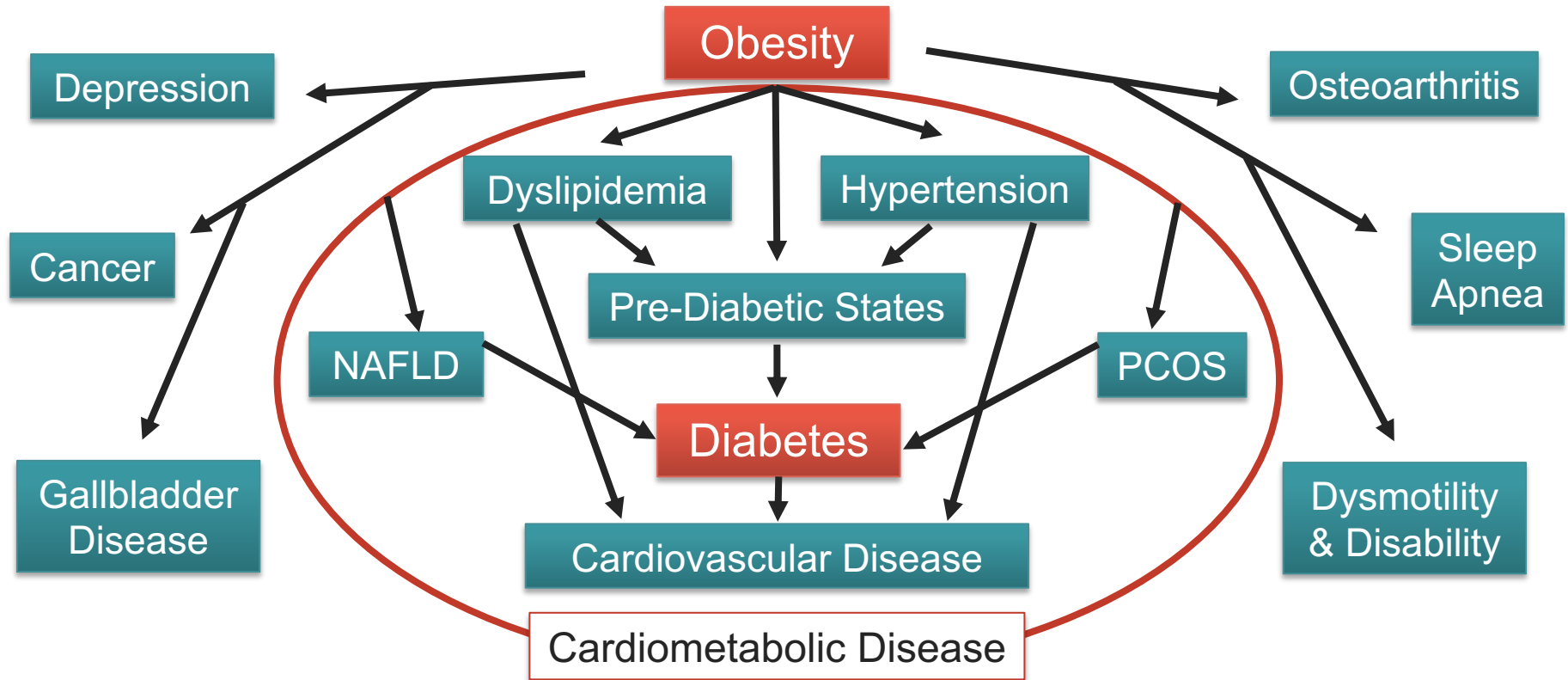
1. Smiley JD. *MedicalNewsToday*. 2021. <https://www.medicalnewstoday.com/articles/structural-racism-reflected-in-regional-cardiovascular-death-rates>. 2. [feedingamerica.org](https://www.feedingamerica.org)
3. Weinfield NS et al. *Hunger In America 2014*. Feeding America. 2014. <https://www.feedingamerica.org/>. 4. Jenkins DJA, et al. *N Engl J Med*. 2021.384(14):1312-1322.

Learning Objective 2

Recognize the impact of bias and health inequity on outcomes of patients with cardiometabolic disorders.



Medical Risk Burden for Minorities



NAFLD = Nonalcoholic fatty liver disease

PCOS = Polycystic ovary syndrome

Hill-Briggs F, et al. *Diabetes Care*. 2021;44(1):258-279. Garvey JF, et al. *J Thorac Dis*. 2015;7(5):920-929.

Regulation of Food Intake

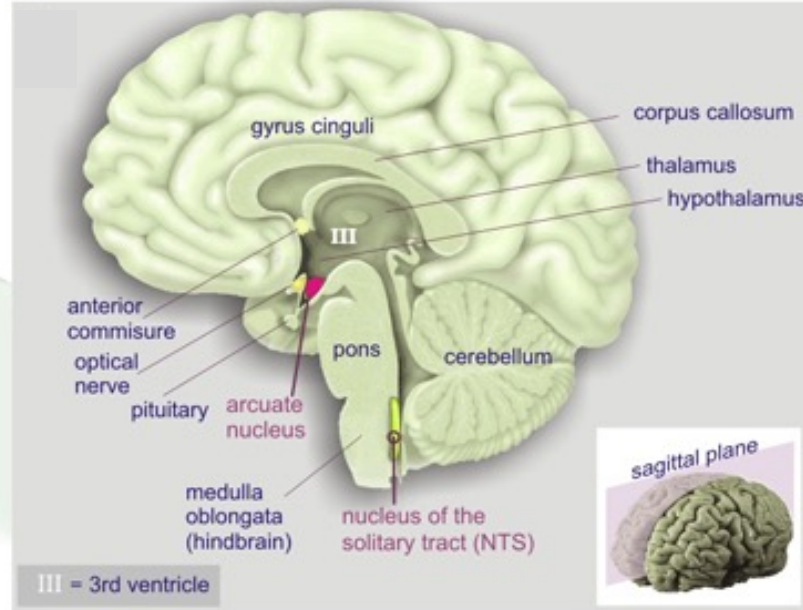
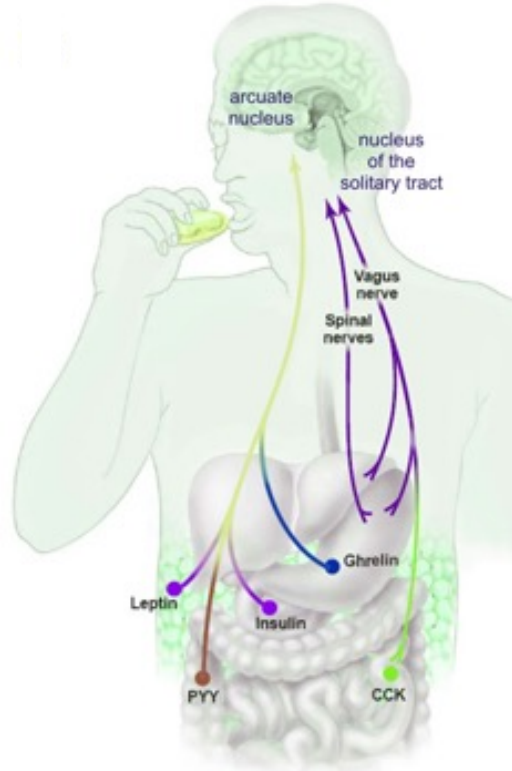


Image: Marx J. *Science* 2003;299:846-849.

Food Intake Signaling Pathway

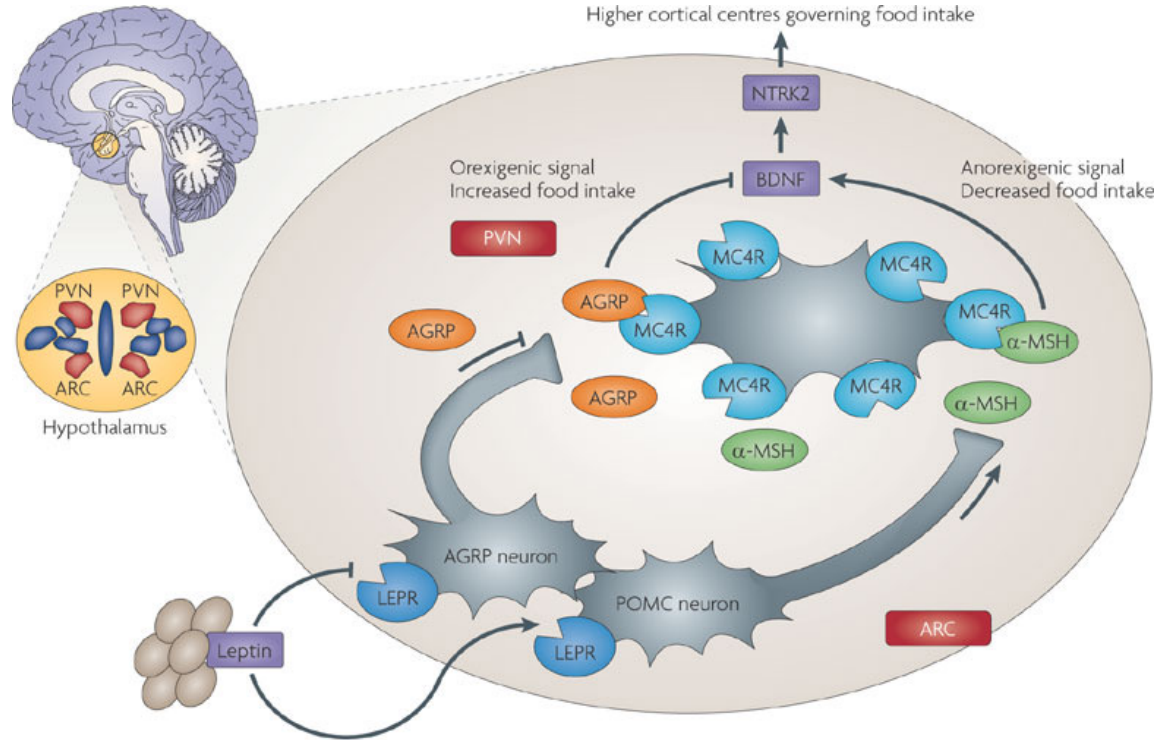
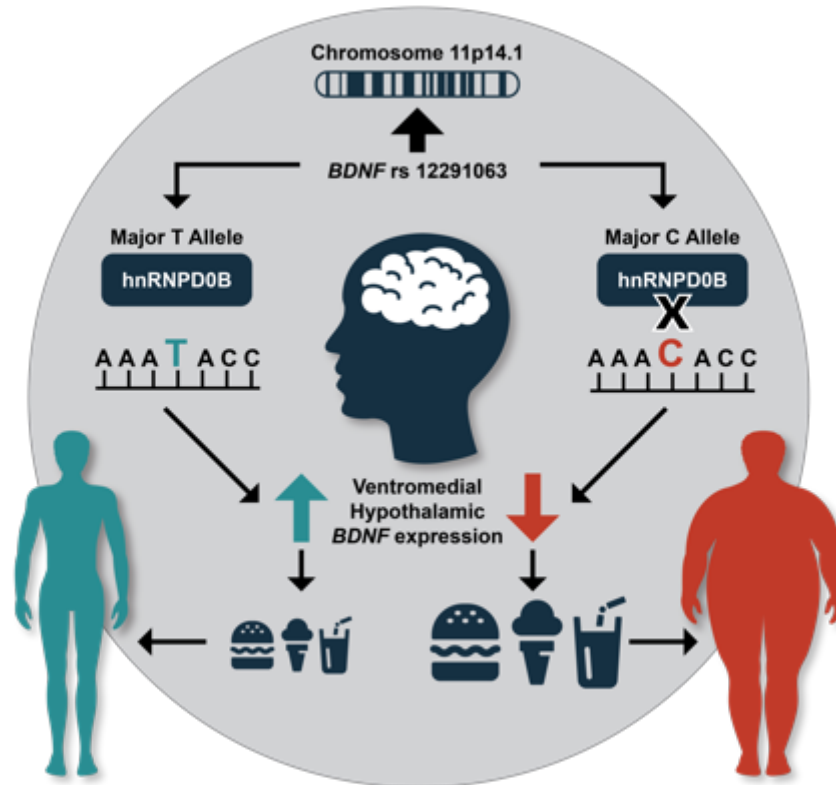


Image: Walley JA, et al. *Nature Reviews Genetics* 2009;10:431-442.

BDNF Regulation and Obesity



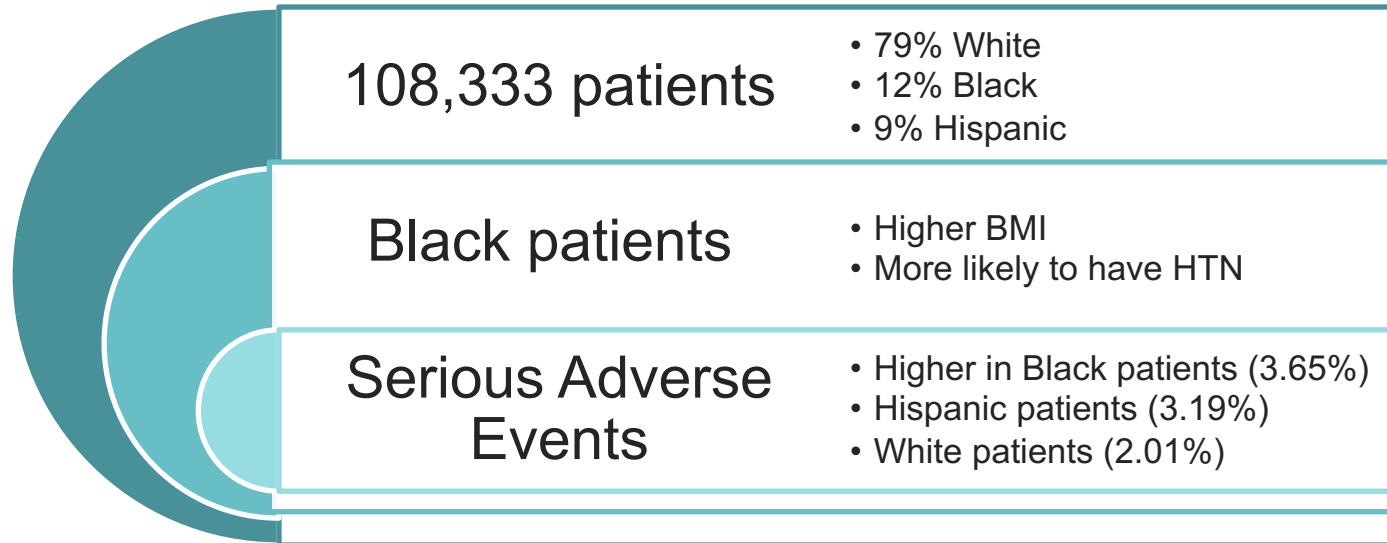
BDNF = Brain-derived neurotrophic factor
Image: Mou Z, et al. *Cell Rep.* 2015;13(6):1073-1080.

Minorities Less Likely to Proceed with Weight Loss Surgery?



- ▶ 651 patients at two academic medical centers in Boston
- ▶ Evaluated whether racial and ethnic minorities were less likely to proceed with weight loss surgery
- ▶ Once referred, racial and ethnic minorities as likely to proceed with surgery as White patients
- ▶ Comorbid illness burden was similar, but there was difference in baseline body mass index (BMI)

Access to RYGB in the United States



Difference in Weight Loss Surgery Response?



Demographics

Clinical (BMI, comorbidities, QOL)

Behavioral (Eating, PA, ETOH intake)

The Disparate Impact of Diabetes



Incidence

- 20.6% of Native Hawaiians and Pacific Islanders > 18
- 18.7% of African Americans ≥ 20
- 11.8% of Hispanic/Latinx ≥ 20
- 7.1% of White Americans



Morbidity

- Kidney failure 3.5x higher in Native Americans
- Diabetic retinopathy 50% more likely in African Americans
- Diabetic complications: blindness, amputation, kidney disease, heart attack, stroke



Mortality

- Native Hawaiians 22% higher rates
- African Americans 2.3x higher
- Hispanic Americans 1.5x more likely

Disparities in CVD Care



- ▶ Black people have highest rates¹ of CVD at 47%
- ▶ ↑ to 50% by 2035
- ▶ 1/3 of lifespan disparity compared to White people²
- ▶ 2x-3x as likely as White people to die from CVD
- ▶ Native American people higher mortality from CVD at younger ages
- ▶ 36% under 65 years compared with 17% for US population overall³



1. Murphy SL, et al. *Natl Health Stat Report*. 2021;69(13):1-83. 2. Wong MD, et al. *N Engl J Med*. 2002;347(20):1585-1593.

3. Centers for Disease Control and Prevention. Disparities in premature deaths from heart disease, 2001. *MMWR* 53(6):121-125. Image:

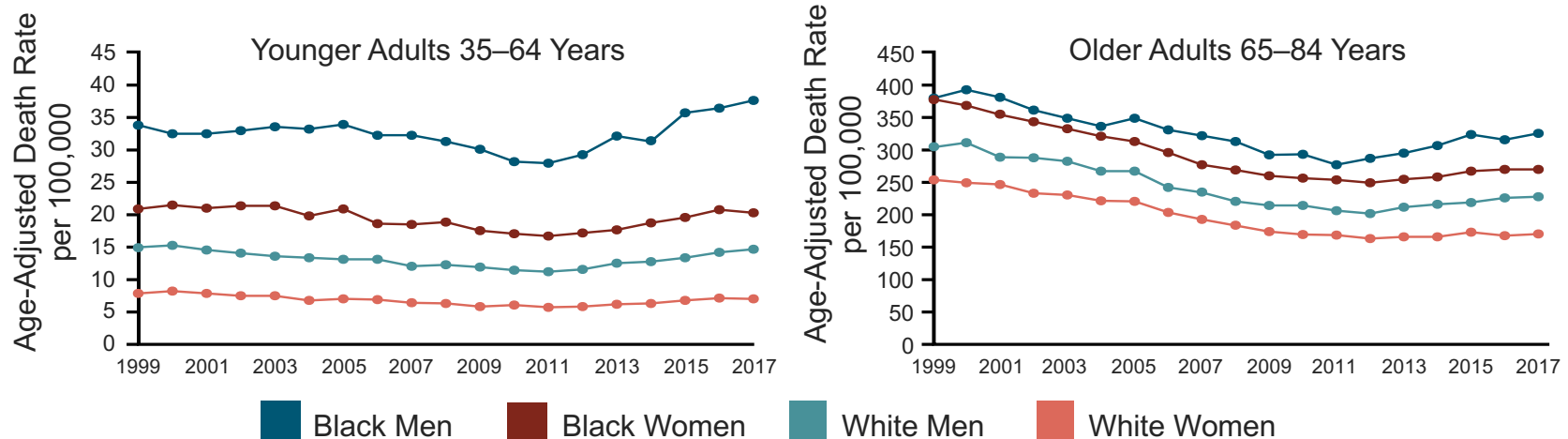
<https://www.acc.org/latest-in-cardiology/articles/2018/10/14/12/42/cover-story-one-size-does-not-fit-all-sex-gender-race-and-ethnicity-in-cardiovascular-medicine>.

Cardiovascular Mortality and Age



HF-related CVD racial mortality disparities primarily in young and middle-aged Black men and women

Age-Adjusted HF-Related CVD Mortality Rates in the United States, 1999 to 2017



Death rates per 100,000 are shown for younger and older adults by sex and race.

Disparities in Cardiovascular Care Access



- ▶ 10-year study 2008-2017¹
- ▶ N = 1967
- ▶ Minority patients less likely to be admitted to Cardiology for HF care
 - ▶ White: 67%
 - ▶ Black: 23%
 - ▶ Latinx: 10%
- ▶ Admission to cardiology service decreased readmission within 30 days, independent of race
- ▶ Inadequate diagnosis of root causes of HTN/HF in some minorities, such as amyloid-related cardiomyopathy²
- ▶ Lack of risk counseling and follow-up care³

HF = heart failure, HTN = hypertension

1. Eberly, et al. *Circ Heart Fail.* 2019;12(11):e006214. 2. Shah KB, et al. *Circ Heart Fail.* 2016;9(6):e002558. 3. Centers for Disease Control and Prevention. Health, United States spotlight: Racial and ethnic disparities in heart disease. Cdc.gov. 2019. <https://www.cdc.gov/nchs/hus/htm>.

Inequities in Interventional Cardiology



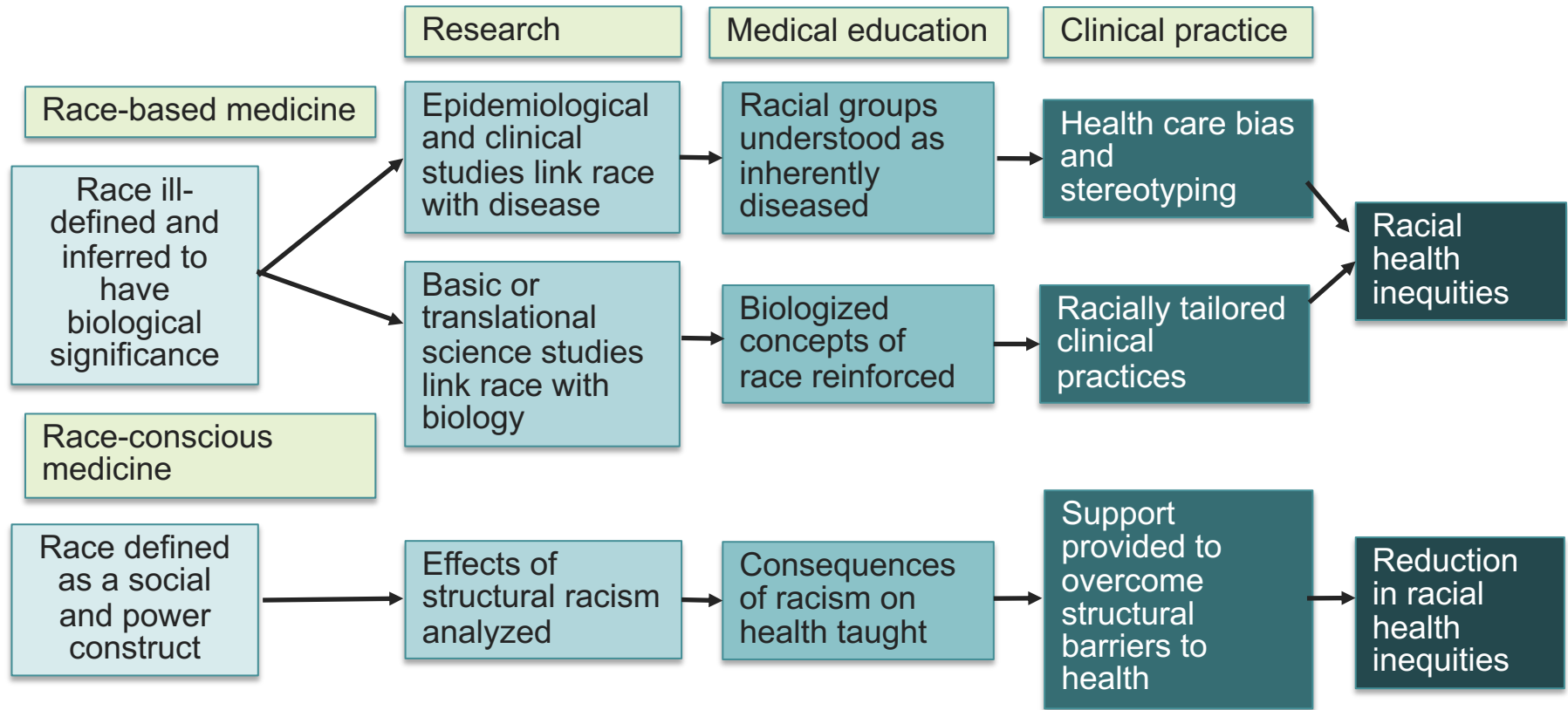
- ▶ Racial disparities in life-saving interventional procedures (2011-2016)¹
 - ▶ Transcatheter Aortic Valve Replacement (TAVR): 91.7% White
 - ▶ Transcatheter Mitral Valve Repair (TMVr): 88.5% White
 - ▶ Left Atrial Appendage Occlusion (LAAO): 92.3% White
 - ▶ Structural heart disease interventions: less than 4% Black or Hispanic
- ▶ Disparities in receipt of cardiac resynchronization therapy (CRT) (2002-2010)²
 - ▶ Non-Hispanic White: 79.6%
 - ▶ Non-Hispanic Black: 9.9%
 - ▶ All other racial groups: 10.4%

Learning Objective 3

Implement health care practices targeted at improving outcomes for minority patients with metabolic syndrome and cardiovascular disease.



Race-Based to Race-Conscious Medicine



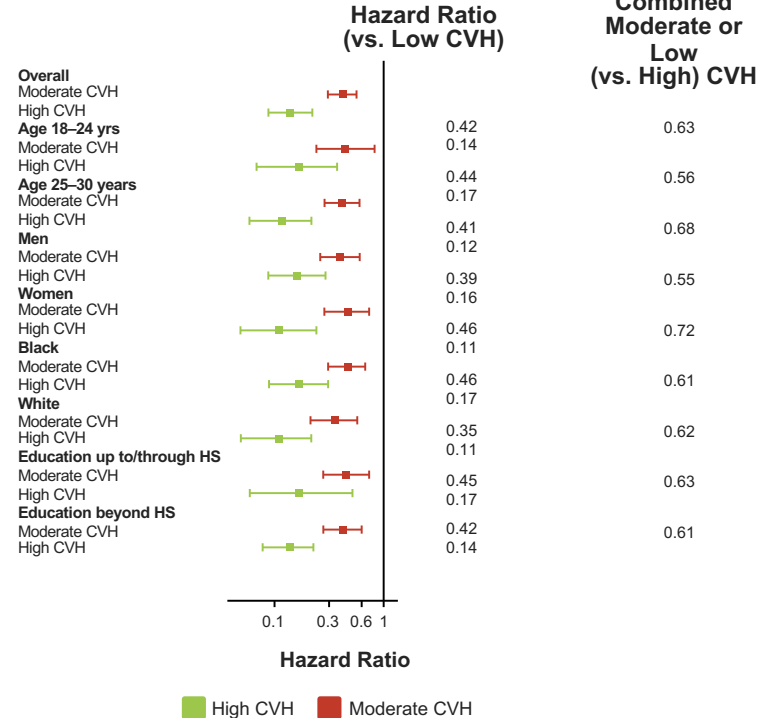
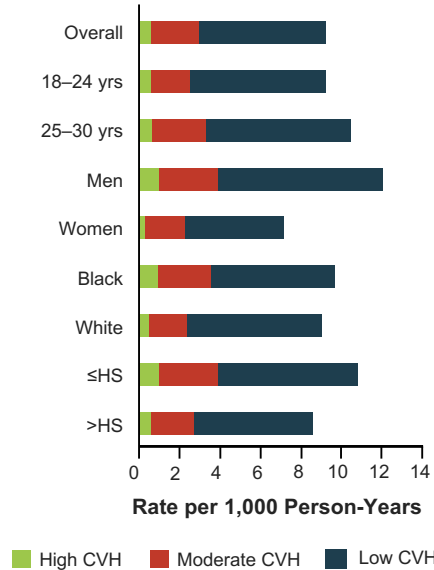
Call to Action: Race-Conscious Medicine

	How race is used	Rationale for race-based management	Potential harm	Race-conscious approach
<u>Estimated GFR</u>	eGFR: Black patients = x1.16–x1.21 the eGFR for White patients, depending on equation	Black patients presumed to have higher muscle mass and creatinine generation rate than patients of other races	Black patients might experience delayed dialysis and transplant referral	Use eGFR equations that do not adjust for race (eg, CKD-EPI Cystatin C)
<u>JNC 8 HTN Guidelines</u>	Treatment algorithm: Alternate pathways for Black and non-Black patients	ACE-inhibitor linked to higher risk of stroke and poorer BP control in Black patients than in patients of other races	Black patients less likely to achieve BP control and require multiple anti-HTN agents	Consider anti-HTN options for BP control in Black patients; adjust to achieve goals and manage adverse effects

Early Onset of Cardiovascular Health



Late adolescent or young adult cardiovascular health correlation with premature cardiovascular disease and mortality



CVH = Cardiovascular health. HS = High school. PAF = Population attributable fraction. Perak AM, et al. *J Am Coll Cardiol.* 2020;76(23):2695-2707.

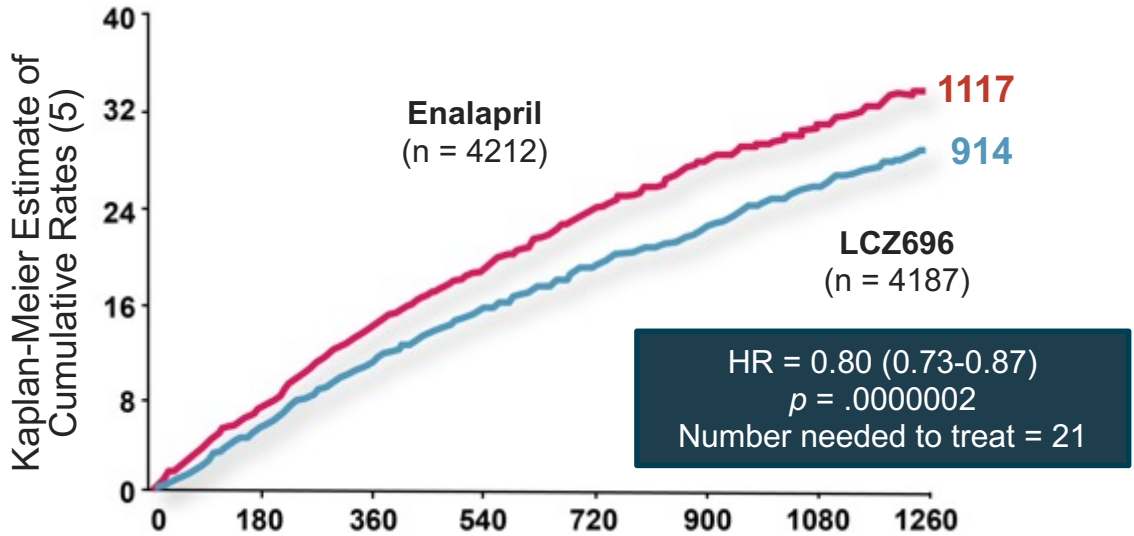
Increase Minority Patients in Clinical Trials



- ▶ Individuals by race/ethnic group:
 - ▶ White: 66.0%
 - ▶ Black: 5.1%
 - ▶ Asian: 18.1%
 - ▶ Other: 10.8%

- ▶ Women:
 - ▶ Female sex: 21.0%

PARADIGM-HF: Cardiovascular Death or HF Hospitalization (Primary Endpoint)



Days After Randomization

Patients at Risk

	0	180	360	540	720	900	1080	1260
LCZ696	4187	3922	3663	3018	2257	1544	896	249
Enalapril	4212	3883	3579	2922	2123	1488	853	236

HR = Hazard ratio.
McMurray JJV, et al. *N Engl J Med.* 2014;371:993-1004.

Addressing the Obesity Epidemic



- ▶ Obesity is a multi-factorial disease process
- ▶ Food intake regulation is complex
- ▶ Increased prevalence of obesity in ethnic minorities¹
- ▶ Take steps to ascertain etiology of higher prevalence of obesity in minorities²
- ▶ Ethnic minorities have less pronounced response to weight loss surgery and pharmacotherapy³
- ▶ Increase vigilance of appropriate diagnosis of overweight/obesity in minorities
- ▶ Employ strategies to address disparities in prevention and treatment of obesity in minorities

1. Chow EA et al. *Clin Diab.* 2012;30(3):130-133. 2. Wee CC, et al. *Obes Surg.* 2017;27(11):2873-2884. 3. Osei-Assibey et al. *Diabetes Obes Metab* 2011;13:385-393.

Call to Action: Patient-Centered Care

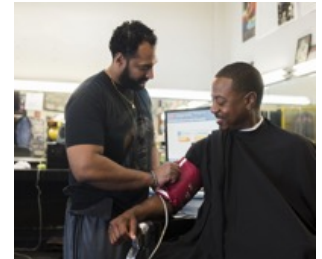


- ▶ Recognize and address implicit bias, discrimination, and structural racism¹⁻⁴
 - ▶ SDM: practice empathy, respect, and equality, particularly with patients with obesity
 - ▶ Highlight how race used in literature might reflect or promote systemic racism
 - ▶ Diversify HCPs at all levels
- ▶ Improve access to health insurance and dedicated PCPs, address delays in care and specialist referral
- ▶ Increase minorities in clinical trials and examine how race used in medical research²⁻⁴
- ▶ Race and genetics are poor references²⁻⁴
 - ▶ Avoid generalizing populations along limited racial categories
 - ▶ Commit to not conflating race with biology

Call to Action: Community Outreach



- ▶ Patient engagement programs¹
 - ▶ Partnerships with community-based organizations
- ▶ Health system comparison study
 - ▶ Black and uninsured patients: highest rates of uncontrolled HTN
 - ▶ Health system safety net initiatives for low-income, uninsured patients had lowest rates of patients with uncontrolled HTN²
- ▶ Mobile Care and Education
 - ▶ Barbershop HTN and diabetes screening, virtual pharmacist consultations, medication delivery programs³
 - ▶ Hair salons, places of worship partnerships for education and behavioral interventions⁴



1. Cieri-Hutcherson, N. Goodrx.com 2020. <https://www.goodrx.com/blog/pharmacist-role-addressing-disparities-in-womens-health/>.
2. Selby et al. 3. Victor, et al. *Circulation*. 2019;139(1):10–19. Image: <https://www.cedars-sinai.org/newsroom/new-data-show-barbershop-blood-pressure-checks-remain-highly-effective/>. 4. Ferdinand D, et al. *Prog Cardiovasc Dis*. 2019;63(1):40-45.

SMART Goals

Specific, Measurable, Attainable, Relevant, Timely



- ▶ Identify inequitable processes and pathways in the prevalence, treatment, and pathophysiology of obesity, diabetes, and CVD in minority populations
- ▶ Incorporate solutions to address racial and ethnic disparities in obesity diagnosis and management
- ▶ Integrate best practices to account for differences in prevention, care, and treatment response of minority populations with cardiometabolic disease

Audience Response



- ▶ How often will you now consider SDoH when assessing minority patients with cardiometabolic disease?
- a) Never
 - b) Sometimes
 - c) Often
 - d) Always

To Ask a Question

Please click on the *Ask Question* tab and type your question. Please include the faculty member's name if the question is specifically for him/her.



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