

BRIEFING PAPER:

Race, Racial Inequality and Health Inequities: Separating Myth from Fact

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Nearly eight million television viewers tune in to *Oprah* each day. So when Oprah Winfrey weighs in on a complex, controversial issue such as racial health differences her words carry weight – even when she’s wrong.

During a May 2007 *Oprah* show, “America’s Doctor” Mehmet Oz asked Oprah, “Do you know why African Americans have high blood pressure?” Oprah promptly replied that Africans who survived the slave trade’s Middle Passage “were those who could hold more salt in their bodies.” To which Oz exclaimed, “That’s perfect!”

In other words, according to Dr. Oz and Oprah, African Americans today are afflicted by hypertension at nearly twice the rate of whites because of the genes passed on by their ancestors, genes that favored salt retention and which in turn can cause high blood pressure.

Sounds reasonable. But the so-called “salt retention slavery hypothesis” has long been discredited.¹ In fact, a growing body of scientific evidence points to social conditions – not genes – as key not just to differences in hypertension rates but to other large and persistent health differences between American racial and ethnic groups.

As anthropologist William Dressler has pointed out, “So many medical conditions are differentially distributed to African Americans – heart disease, diabetes, hypertension, low birth weight babies – are we to believe that Black people were so evolutionarily unlucky that they got all the genes that predisposed them to every malady?”²

This fact sheet briefly explores some of the common myths and misconceptions about race and health, and why a fruitful search for the underlying causes of different racial health outcomes must necessarily begin not inside our bodies but outside, in the larger social, economic and built environments in which we are born, work and live.

What Are Racial Differences in Health?

Oprah was right on one point: there are still large racial and ethnic inequities in health, and not just hypertension. In general, African Americans, Native Americans and Pacific Islanders live shorter lives and have poorer health outcomes – e.g., worse life expectancy, infant mortality, coronary artery disease, diabetes, stroke and HIV/AIDS – than whites and Asian Americans.³ New immigrants have better overall health than their peers at comparable levels of income and education, but their health tends to get worse the longer

they live here. By the second generation they too lag whites by many indicators.⁴ And while Asian Americans as a whole also fare better than whites, that's not true for some Asian American sub-populations.

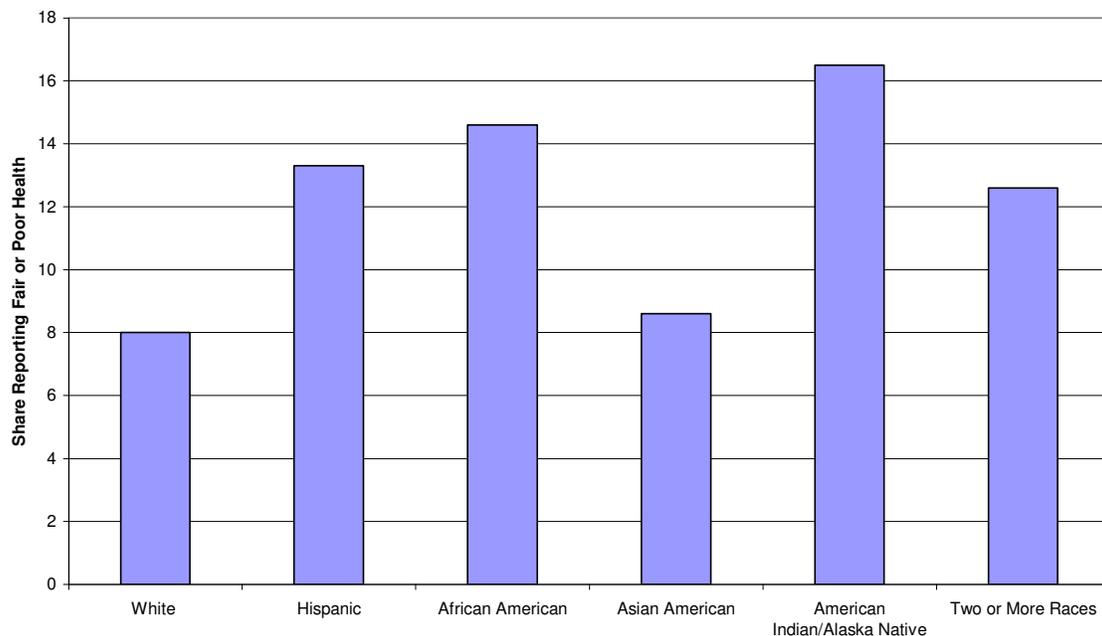
Health inequities between African Americans and whites have been studied the most. According to the Centers for Disease Control, African American men die on average 5.1 years sooner than white men (69.6 vs. 75.7 years) while African American women die 4.3 year sooner than white women (76.5 vs. 80.8 years)⁵ and they face higher rates of illness and mortality^{6 7}.

The numbers are staggering. According to a recent study by former Surgeon General Dr. David Satcher and Dr. Adelwale Troutman, 880,000 “excess” deaths could have been averted between 1991 and 2000 had African Americans’ health matched that of whites.⁸ That’s the equivalent of a Boeing 767 shot out of the sky and killing everyone on board every day, 365 days a year, points out David Williams of Harvard’s School of Public Health. And they are all black.

When asked about their health, minorities of all groups are more likely than whites to report being in fair or poor health (Figure 1). American Indians are more than twice as likely as whites to report being in fair or poor health than whites; African Americans and Latinos also have far higher rates of fair or poor health than whites.⁹

Figure 1: Fair or Poor Health Status by Race or Ethnicity, 2004

Source: Health, United States, 2006



The way data are collected obscures even greater differences among sub-groups. For example, Asian Americans have the best overall health. But under that “Asian American” label the government lumps together ethnic groups with different histories, cultures and languages. The healthier groups mask the needs of sub-populations in

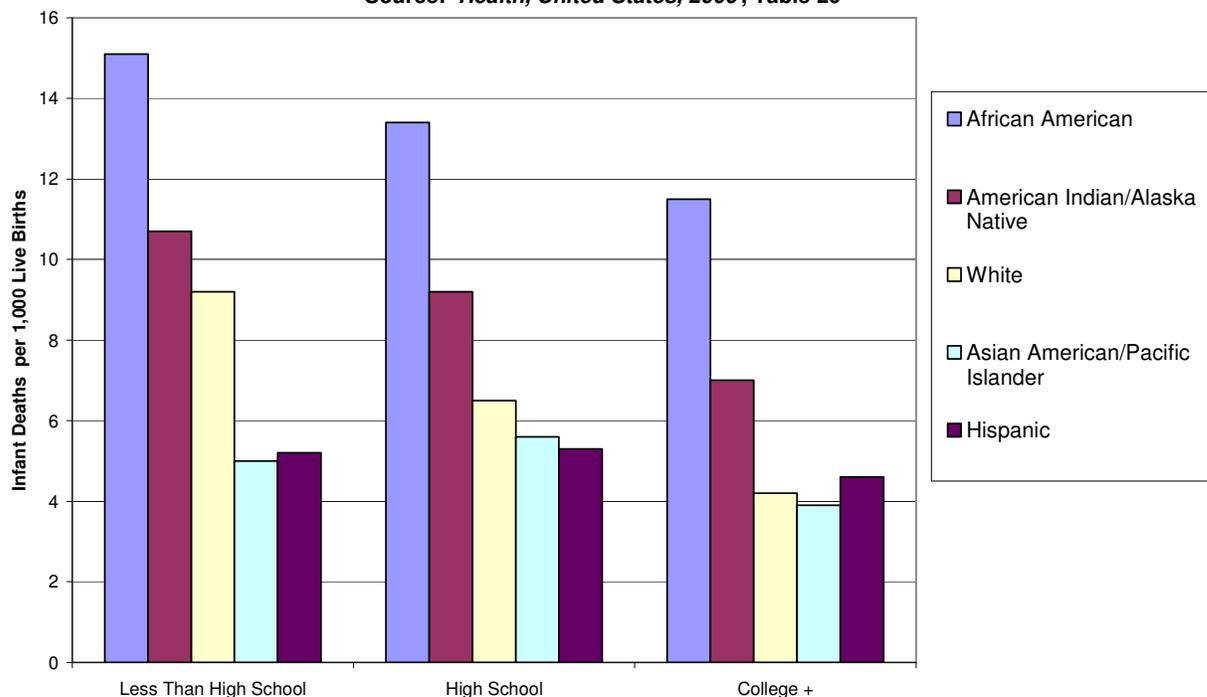
trouble. For example, Vietnamese American and Korean American women suffer some of the highest rates of cervical cancer in the nation; Vietnamese American men die from liver cancer at a rate seven times that of non-Hispanic white men.¹⁰

Can these poorer health outcomes be ascribed to disadvantaged population’s lower economic status? Only in part. Health generally follows a class ladder, or gradient: the greater one’s wealth, the better one’s health. African Americans, Native Americans, Pacific Islanders, Latinos and Southeast Asian immigrant groups are on average poorer, have less education, and work in lower status jobs than white Americans. But racial and ethnic health differences persist even after socioeconomic factors are taken into account.

For example, as Figure 2 shows, infant mortality rates for all groups decline as mothers’ education level rises. But education doesn’t erase the racial gap. In fact, African American mothers with college degrees have infant mortality rates *worse* than white mothers with less than a high school education.¹¹

Infant Mortality Rates for Mothers Age 20 and Over by Race/Ethnicity and Education, 2001-2003

Source: *Health, United States, 2006*, Table 20



What is Race?

To track the underlying causes of our racial health disparities, we must first raise a question so basic it’s rarely asked: what is race? Sadly, the Oprah-Oz exchange likely reinforced many viewers’ assumptions that humans come bundled into three or four biologically distinct groups called “races”—and that group differences in health outcomes

can be attributed not to their different lived experiences but to some inborn set of biological differences.

However, most scientists today agree that human biological diversity does not map along what we conventionally think of as racial lines. The approximately 30,000 genes in our DNA are inherited independently, one from another. To take three examples:

Skin color patterns one way. Sub-Saharan Africans, Dravidians and Tamils in South Asia, Aborigines in Australia and Melanesians all share the trait of dark skin yet are conventionally placed in different “races.”

Blood groups cluster differently. For example, the populations of two countries on opposite sides of the globe, Lithuania and Papua New Guinea, have virtually the same proportions of A, B and O blood. Yet they too have conventionally been assigned different “races.”

The lactase enzyme needed to digest milk maps yet a third way. Lactase is common among northern and central Europeans, Arabians, many east Africans and the Fulani of west Africa, and north Indians, while rare among Southern Europeans, most West African, East Asians, and Native Americans.¹²

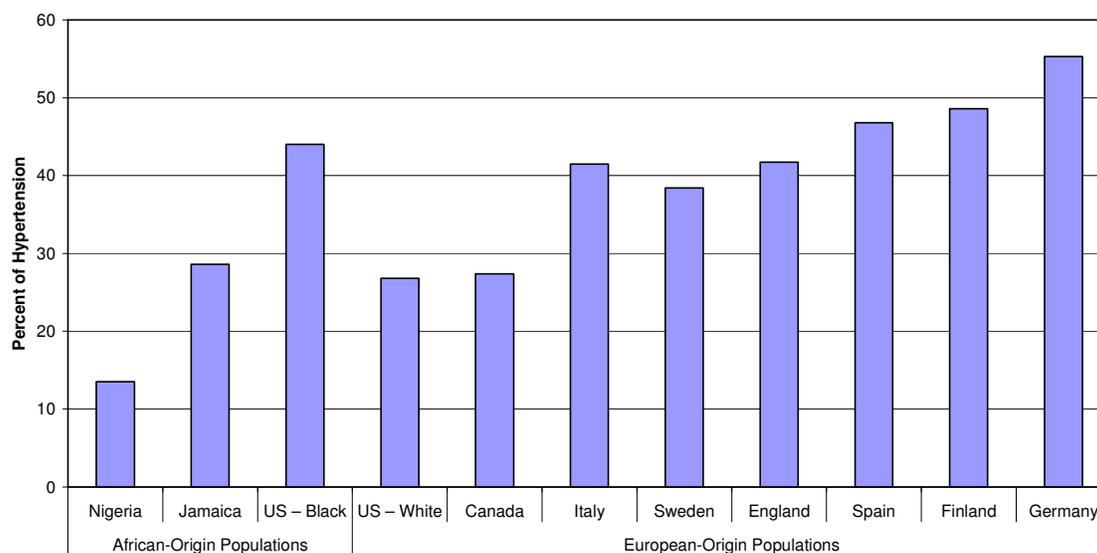
While some gene variants (called ‘alleles’ by geneticists) are more common in some populations than another, there are no characteristics, no traits, not a single gene that are found in all members of one population yet absent in others. Skin color really is only skin deep. (There are ways to deduce the possible birthplace of some--though far from all!--of an individual’s ancestors using DNA markers but that should not be confused with what we call race)

Genetic explanations for racial and ethnic health differences are also undermined by empirical studies. For example, African Americans, as Oprah pointed out, do suffer the highest hypertension rates of any U.S. population. But Richard Cooper and colleagues found that western Africa, from where many African Americans descended, has among the world’s lowest hypertension rates, one third that of African Americans. Meanwhile they found some of the world’s highest hypertension rates among white European populations, much higher than both white Americans and African Americans (see Figure 3).¹³ If predisposition to hypertension were truly the result of ‘racial’ genes, all recent African-origin peoples would share similar rates of illness, as would the European-origin populations.

Other research bears out Cooper’s finding. Low birth weight, for example, is a large risk factor for infant mortality and health problems through the life course and disproportionately affects African Americans. Richard David and James Collins found that African American newborns weigh on average a half-pound less than white Americans. But the babies of African immigrants to the U.S. weighed the same as the white babies, even after adjusting for factors such as education level.¹⁴

Figure 3: Hypertension Prevalence, African and European Descent Populations; Ages 35-64, Age Adjusted

Source: Cooper et al., 2005



But David and Collins also discovered something else: The daughters of African immigrants delivered babies that weigh on average a half-pound less than the white American babies. In other words, they have become “African American.”¹⁵

“So within one generation, women of African descent are doing poorly,” Collins said in the documentary *Unnatural Causes*. “This to us really suggests that something is driving this that’s related to the social milieu that African American women live in throughout their entire life.”

A few years ago the drug Bidil was widely touted as being the first “racial” drug when the FDA approved its use for African Americans with congestive heart failure. But for patent and marketing reasons, Nitromed, the drug company marketing Bidil, enrolled only African Americans in the Bidil drug trials; they did not study whether Bidil worked better in one population than another. In fact, evidence suggests that Bidil is effective among members of all populations and Nitromed even told Wall Street stock analysts that the company expects to make money from doctors prescribing it “off-label” to other groups.¹⁶

Genes certainly play a role on an individual level in disease susceptibility. But those genes don’t neatly divide up along ‘racial’ lines. The impact of race on disease, explains sociologist Troy Duster, is not biological in *origin* but biological in *effect*.¹⁷ Searching for the source of disease difference inside the body diverts our attention from addressing those sources of disease difference that lurk outside the body.

Racism—A Cause of Disease as Surely as Germs and Viruses

So how does race get under the skin and influence our physiology if it isn't biological? The lived experience of race, or to be more blunt, racism, influences how people are treated, what resources and jobs are available to them, where they are likely to live, how they perceive the world, what environmental exposures they face, and what chances they have to reach their full potential. These, in turn, promote or constrain opportunities for health.

Racism operates both upstream of class and independently of class. Upstream, educational, housing and wealth-accumulating opportunities have been shaped by a long history of racism that confers economic advantage to some groups while disadvantaging others. For example, studies of hiring have consistently found that employers prefer white candidates over African American ones, even when their qualifications are identical. In fact, one study even found that fictitious white applicants with a felony record were preferred over Black applicants with no criminal history.¹⁸ And lower socio-economic status translates into poorer health.

But racism also operates independently of class, helping explain why racial health inequities persist even after controlling for socio-economic status. Segregation and social isolation, the cumulative impact of everyday discrimination on chronic stress levels, the degree of hope and optimism people have, the location of doctors and hospitals, and differential access to and treatment by the health care system all place an extra burden on subordinated racial and ethnic groups.

Structural Racism and Residential Segregation as Vectors of Disease

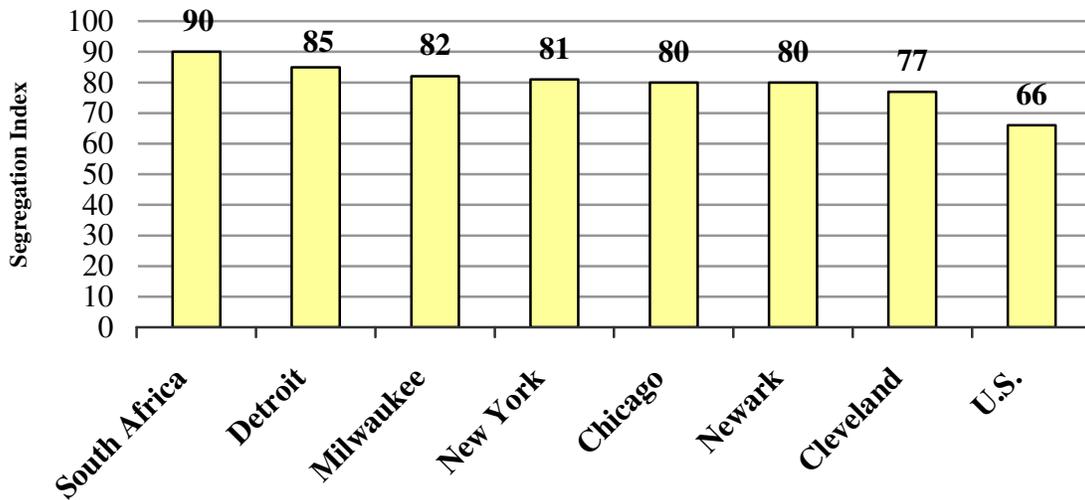
Incredibly, 45 years after the Civil Rights Act, one of the strongest forces shaping opportunity--and health-- is still segregation, particularly for poor African Americans and Latinos. Douglas Massey and Nancy Denton call segregation “the key structural factor for the perpetuation of black poverty in the U.S.”¹⁹

One measure of residential segregation is called the “Dissimilarity Index.” It's the percentage of a group that would have to move in order for that group to be evenly distributed across a metropolitan area. African Americans in New York have a Dissimilarity Index of 81, meaning that 81% of New York's black population would have to move in order to achieve an equal integration rate. How segregated is New York? South Africa's Dissimilarity Index under apartheid in 1991 was 90. Figure Four compares African American segregation in several American cities, South Africa and the U.S. as a whole.

American Apartheid

South African (*de jure*) in 1991 & U.S. (*de facto*) in 2001

Source: Massey 2004, Iceland et al 2002; Glaeser and Vigitor 2001



Segregation didn't just materialize "naturally." David Williams reminds us that segregation was "imposed by legislation, supported by business and banks, enshrined in government housing policies, enforced by the judicial system and vigilant neighborhood organizations, and legitimized by the ideology of white supremacy." Today segregation is maintained by economic inequality, exclusionary real estate practices, unequal spending on schools, and fear.

Residential segregation adversely affects population health directly and indirectly.

Social Exclusion. Racial segregation concentrates poverty and excludes and isolates communities of color from the mainstream resources needed for success. African Americans are more likely to reside in poorer neighborhoods than whites of similar economic status. For example, poor African Americans were 7.3 times as likely to live in high poverty neighborhoods as poor white Americans in 2000; Latinos 5.7 times as likely. Those rates have doubled since 1960.²⁰

Economic Opportunity. Segregation also restricts socio-economic opportunity by channeling non-whites into neighborhoods with poorer public schools, fewer employment opportunities, and smaller returns on real estate. These limits on economic opportunity have a strong, indirect impact on health given the strong and well-documented tie between wealth and health.²¹

Healthy Choices. The behavioral choices people make are constrained by the choices people have. It is more difficult to make healthy choices in segregated neighborhoods.

One study revealed that black Americans are five times less likely to live in census tracts with supermarkets than white Americans. Nationally, 50% of black neighborhoods lack

access to a full service grocery store or supermarket. It's more challenging to eat right in neighborhoods where fast-food joints, liquor stores and convenience stores proliferate while supermarkets and other sources of affordable, nutritious food are hard to find. The fruit and vegetable intake of Black residents increased an average of 32% for each supermarket in their census tract.²²

Black and Latino neighborhoods also have fewer parks and green spaces than white neighborhoods, and fewer safe places to walk, jog, bike or play, including fewer gyms, recreational centers and swimming pools²³ Their neighborhoods are less likely to be walk-able (homes near stores and jobs) and more likely to have streets that are not safe after dark. Cautious parents in poor neighborhoods keep their children indoors after school – where they are more likely to watch TV, play video games and eat – rather than allow them out to play on unsafe streets.

These characteristics of place all contribute to higher obesity, diabetes and cardiovascular disease rates among people of color, especially poor people of color.²⁴

Environmental Hazards – Dozens of empirical studies over the past 40 years have determined that low-income communities and communities of color are more likely to be exposed to environmental hazards.²⁵ For example, 56% of residents in neighborhoods with commercial hazardous waste facilities are people of color even though they comprise less than 30% of our population.²⁶

Housing – Crowded, substandard housing, elevated noise levels, decreased ability to regulate temperature and humidity, and exposure to lead paint and allergens such as mold and dust mites are all more common in poor, segregated communities, as are asthma rates, sleep disorders and lead toxicity.²⁷

Schools – Education correlates very strongly with earning opportunities and with health, even life expectancy. Minority students, however, remain highly concentrated in majority-minority schools, despite five decades of effort since the landmark 1954 *Brown v. Board of Education* decision to desegregate them. Not only do poor and minority school districts receive less funding, have larger class sizes, worse physical infrastructure and more non-credentialed teachers than white districts, but fifty years after the *Brown* decision, the re-segregation of our schools continues throughout the country. According to a 2007 Civil Rights Project study, “The children in United States’ schools are much poorer than they were decades ago and more separated in highly unequal schools. Black and Latino segregation is usually double segregation, both from whites and from middle class students.”²⁸

Crime – Residents of segregated communities are exposed to more crime and violence as a result of concentrated poverty and the collective inability to exert social controls.²⁹ Violence affects health directly, of course, by increasing the risk for injury and death. But as Robert Prentiss, director of the Bay Area Regional Health Inequities Initiative, points out in *UNNATURAL CAUSES*, the specter of community violence has ripple effects that contribute to poor health “by changing the way people live in certain neighborhoods: the

ability of people to go out, to go shopping, to live a normal life, and also indirectly by increasing chronic stress.”

Incarceration – African Americans, Latinos, and American Indians are disproportionately imprisoned and penalized by the criminal justice system. Communities with high arrest and imprisonment rates do not develop the social bonds and networks needed to maintain order. Black people are currently incarcerated at a rate 5.6 times that of whites, while the Hispanic rate of incarceration is 1.8 times that of whites.³⁰ One out of every 14 Black children has at least one parent in prison.³¹ Families torn apart by incarceration have fewer human and financial resources for childrearing, and children in disadvantaged neighborhoods have fewer stewards for healthy socialization.

The ‘Poverty Tax’ - According to a Brookings Institution study, not only do poor neighborhoods have fewer parks, fewer supermarkets, worse schools, more environmental hazards, higher crime and neglected public spaces, residents pay more for the exact same consumer products than those in higher income neighborhoods– more for auto loans, furniture, appliances, bank fees, and even groceries.³² And homeowners get less return on their property investments. Sociologists call this “the poverty tax.” The “tax,” adding up to hundreds, even thousands of dollars, further impoverishes those who are already poor.

Racial Discrimination, Chronic Stress and Disease

Structural racism and segregation aren’t the only barriers to health and well-being faced by people of color. In addition to how discrimination limits economic opportunity, there is increasing evidence that encounters with prejudice take a direct toll on the body. In fact, more than 100 studies now link racial discrimination to physical health.

In one study, Black women who reported they had been victims of racial discrimination were 31% more likely to develop breast cancer than those who did not.³³ Another study showed that Black women who identified racism as a source of stress in their lives had more plaque in their carotid arteries.³⁴ Similarly, studies have tied experiences of discrimination with higher blood pressure levels and more frequent diagnoses of hypertension.³⁵

Experiences of racial discrimination are also associated with poor health among Asian Americans. Researchers who conducted a recent national survey with over 2,000 participants found that everyday discrimination was associated with a variety of health conditions, including chronic cardiovascular, respiratory, and pain-related health issues. Filipinos reported the highest levels of discrimination, followed by Chinese Americans and Vietnamese Americans.³⁶

New research suggests that racial discrimination may be damaging because it triggers the stress response--over and over again. When we perceive a threat, or find ourselves in a

situation that is difficult to manage and control, our body's alarm bells go off. The brain goes on alert and releases cortisol and other stress hormones that trigger a physiological cascade: our senses are heightened, blood pressure and heart rate increase, glucose levels rise, our immune system is primed, all to help us hit harder, or run faster. It's the classic "fight or flight" response taught in high school biology.

When the threat passes, our body returns to its normal state. But if stress is chronic, constant, unremitting, even at a low level, the body doesn't return to normal. The body's stress responses remain turned out, wearing on the body over time.³⁷ Chronic stress has been found to increase risk for coronary artery disease, stroke, cognitive impairment, substance abuse, anxiety, depression and mood disorders, even increased aging and cancer.³⁸ Camara Jones, MD, of the federal Centers for Disease Control, likens it to "gunning the engine of a car, without ever letting up. Just wearing it out, wearing it out without rest. And I think that the stresses of everyday racism are doing that."³⁹

Such exposures to discrimination seem to impose an added stress burden onto peoples of color in addition to those already associated with their lower socio-economic status. In other words, they get a double dose.

It is also well-known that exposures to chronic stress can further threaten health as a result of maladaptive coping behaviors such as eating, smoking, drinking, drug-taking, even violence.⁴⁰

Young children are especially vulnerable to stress. Early exposure to "toxic stress" can even change the hard wiring of the brain. According to Harvard's Center for the Developing Child, poverty, racism, social exclusion, violence, physical deprivation and failure at school are among the factors that undercut the brain's ability to construct circuits that build "resilience." Instead, these children are primed to be highly reactive and extra-sensitive to stressors throughout their lives. The consequences of these childhood exposures can even carry over to the next generation, with the pregnant mother's stress hormones affecting fetal development in the womb.⁴¹

What Can Be Done?

We've seen how inequities in various arenas of our lives—in our neighborhoods, schools, jobs, housing and income—along with discrimination and internalized racism, can produce inequities in health outcomes. But research suggests many public policies that can improve the status and thus the health and well-being of peoples of color while advancing us further down the road to a non-racial society. Importantly, these policies don't assume that U.S. society is "color-blind;" rather, they acknowledge that race, while not a biological reality, too often shapes life opportunities and health because of the lived experience of race.

How, then, can policy ameliorate the effects of racism on health? The nation has made great progress in improving race relations and attitudes toward racial diversity in the

four-plus decades since landmark federal civil rights and voting rights legislation. But laws alone have not created equal opportunity for all, nor have they eliminated implicit racial bias and stereotyping. Below are just a few examples of innovative policies that can expand opportunity for all, while creating structures that root out implicit bias and more subtle forms of discrimination.

Because one of the fundamental determinants of racial and ethnic health disparities is segregation and unequal living conditions in majority-white and majority-minority neighborhoods, *housing mobility* strategies are a promising approach to reducing health inequities and expanding opportunity. Research suggests that helping poor people of color relocate to lower poverty neighborhoods can improve health outcomes, although more research is needed to understand how and under what conditions programs work best.⁴² Portable rent vouchers and tenant-based assistance are the most common housing mobility strategies, but legal efforts that challenge residential and school segregation have also produced results. Rigorous enforcement of antidiscrimination and equal opportunity laws remains critical to prevent redlining and ensure fair lending practices, including protection from sub-prime home loans. One obstacle, however, remains white flight from middle class destination communities.⁴³

While increasing housing options for people of color is one important strategy, policies should not ignore the needs of majority-minority communities. Many such communities, as noted above, are *segregated from opportunity* in ways that ultimately harm the health of their residents. To address these problems, policies should be examined that reduce geographic barriers to opportunity. For example, new job creation is increasingly taking place in suburban and exurban communities, far from segregated communities of color in urban cores and inner-ring suburbs; many of the residents in these communities don't have cars or other opportunities to get to these jobs. A range of public policies – including public transportation, economic empowerment zones, housing mobility, and zoning – can reduce the distance between people and employment opportunities. Most of these policies require regional planning and coordination across local jurisdictions, and can be supported by state and federal incentives.

Communities of color can also benefit from improving community resources for health and reducing environmental risks. Several strategies can improve the health of communities, such as improving coordination of key federal and state agencies involved in arenas that affect health (e.g., education, housing, and employment), creating incentives for better food resources in underserved communities (e.g., major grocery chains, farmer's markets), developing community-level interventions for the promotion of healthy behavior (e.g., smoking cessation, exercise), and addressing environmental health threats (e.g., aggressive monitoring and enforcement of environmental laws).

In addition to providing housing mobility options and improving health and life opportunity conditions in communities of color, it's important to consider all aspects of opportunity when fashioning new policies and programs that will affect Americans' life chances. To that end, government can use a new policy tools, such as an "Opportunity Impact Statement" (OIS) as a requirement for publicly funded or authorized projects like

school, hospital, or highway construction, or the expansion of the telecommunications infrastructure. Like an environmental impact report, an OIS would predict, based on available data, how a given effort would expand or contract opportunity in terms of equitable treatment, economic security and mobility, and shared responsibility, and it would require public input and participation. Government can also make expanding opportunity a condition of its partnerships with private industry by requiring, for example, public contractors to pay a living wage tied to families' actual cost of living, insisting on employment practices that promote diversity and inclusion, and ensuring that new technologies using the public electromagnetic spectrum include public interest obligations and extend service to all communities.

Importantly, however, government policies should also restore a commitment to human and civil rights in ways that acknowledge how bias and discrimination play out at interpersonal levels, often in subtle ways that neither party may recognize. Some of the greatest strides in advancing American opportunity emerged from the twentieth century movements for racial equality, women's rights, and workers' rights, and new policies are needed to build upon these. This work is not yet complete; what is needed is both vigorous enforcement of existing anti-discrimination protections and a new generation of human rights laws that address evolving forms of bias and exclusion. These include:

- Increasing the staffing and resources that federal, state, and local agencies devote to enforcing anti-discrimination laws in voting, employment, housing, education, lending, criminal justice and other spheres. This includes using data more effectively to better detect potential bias, for instance, by comparing workforce diversity with the composition of an area's qualified workforce.
- Assisting employers and other institutions committed to providing a fair and diverse environment, for example, by promoting model performance evaluation practices, greater cultural fluency, and other tools to counter bias and exclusion.
- Crafting new human rights laws that complement existing civil rights protections by addressing subconscious and institutional biases more effectively, protecting economic and social rights like the right to education, and correcting exclusion based on socioeconomic status and other characteristics not fully covered by current laws.

CONCLUSION

Racial and ethnic health disparities are real and persistent. Although today's problems may be deeply rooted in the past, what's important is that they threaten our future health and well-being. Simply put, many people of color live shorter lives and suffer poorer health than white Americans. *But this is not inevitable. We have the power to change health outcomes.* The bad news is that our health problems cannot be solved overnight, with better health care or newer drugs. The good news is that the solutions have been

with us all along: evidence suggests that if we work towards social justice, people's health, everyone's -- not just for those on the bottom - will improve as a result.

The Opportunity Agenda (www.opportunityagenda.org) is a communications, research and policy organization whose mission is to build the national will to expand opportunity for all. Its health opportunity program seeks to 1) translate scientific research and uplift policy solutions that promote health equity 2) develop communications strategies and messages that will measurably build support for equitable health policies, and 3) develop new communications tools – particularly Web 2.0 and New Media tools – to support the work of partner groups advocating for health equity.



The **Opportunity** Agenda



**CALIFORNIA
NEWSREEL**

California Newsreel (www.newsreel.org) produces and distributes cutting edge, social justice films that inspire, educate, and engage audiences. In 2003, Newsreel produced the PBS series “RACE: The Power of an Illusion,” and its new series “UNNATURAL CAUSES: Is Inequality Making Us Sick?” will broadcast on PBS nationwide in spring of 2008. Founded in 1968, Newsreel is the oldest non-profit, social issue documentary film center in the country, and a leading resource center for the advancement of racial justice and diversity and the study of African American life and history, African culture and politics, and the Global Economy.

A Glossary

Racial health inequities are significantly shaped by the many ways in which race remains relevant in America, from interpersonal levels through institutional and larger social, economic and political structures. The terms that social scientists use to describe these effects sometimes differ from common social definitions. The following definitions are derived from David Williams:

Race – a social category that historically and currently captures differential access to power and resources in society.

Racism – an organized system, based on an ideology of inferiority that categorizes, ranks, and differentially allocates desirable societal resources to socially defined “races.”

Racism can persist in institutional structures and policies in the absence of racial prejudice at the level of individuals.

Prejudice – negative attitudes and beliefs toward racial outgroups.

Discrimination – differential treatment of members of these groups by both individuals and social institutions.

Source: DR Williams, Racism and Health, KE Whitfield (ed.), Closing the Gap: Improving the Health of Minority Elders in the New Millennium, Washington DC: Gerontological Society of America, 2004.

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