

# Virtual Mentor

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## MEDICINE AND SOCIETY

### Race: A Starting Place

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Health status, access to and quality of care, and numerous social factors associated with health vary across racial groups [1, 2]. Many applaud the collection and use of race data to identify and monitor progress in addressing health disparities [3-6]. The National Institutes of Health (NIH) requires and the Food and Drug Administration (FDA) recommends the collection of race data in clinical research [7, 8]; the 2009 Health Information Technology for Economic and Clinical Health (HITECH) Act provided financial incentives for health systems to collect race information through the Medicare and Medicaid Electronic Health Record Incentive Program (i.e., “meaningful use” of electronic health records) [9, 10]; and the 2010 Patient Protection and Affordable Care Act (ACA) mandated that the Department of Health and Human Services establish standards for race and ethnicity data collection [11]. Yet, in the face of increasing amounts of “race data,” we have created few opportunities for discussing “what race measures.” Some journals require authors to explain how race is conceptualized and collected in their studies, but the requirement is not standardized and rarely met [12-14]. Thus, race and racial data are frequently interpreted in conflicting ways. This article seeks to provide an overview of race as a foundation for an improved understanding of the relationship between race and health.

Many challenges await those who wish to consider the role of race in health outcomes critically. Careful consideration of race requires identifying and setting aside much tacit knowledge about race—those ideas that come easily, are taken for granted, and simply seem right. Although “race...appears obvious, intuitive, and in need of no special knowledge to discuss or analyze...[u]sing race in biomedical contexts requires great care and expertise” [15]. Such an approach is difficult because from childhood we learn the ways that racial groups are supposed to differ from one another [16]. Frequently the lesson has been that differences between the races are intrinsic or inherited, and those beliefs have justified discrimination against members of racial minority groups. Finally, it seems that, to many, newer understandings of race that have emerged from the social sciences seem less scientific, less reliable, and more political than the biological or genetic explanations that they seek to unseat [17].

Race has long been a system for classifying human beings according to easily discerned physical traits [18, 19]. There is debate over what race tells us and whether external markers of difference strongly correlate with important biological processes underneath the skin. Those who believe that race is highly informative about

underlying biology clash with those who understand race primarily as a social system of categorization. Members of both camps affirm that race is real. The latter draw on social science and describe race as a “social fact” and a social construct [20].

For social scientists and others, race is a social fact, because racial group membership shapes interpersonal relations and patterns opportunities and outcomes, and it is a social construct because human beings define race and those definitions vary over time and space. Race is contrasted with ethnicity, because the idea of race is grounded in ideas of biological difference, while the idea of ethnicity hinges on culture and differences in practices such as diet, language, and religion. As a system of stratification, in the United States, racial classification has historically shaped access to resources and opportunities to a much greater degree than ethnicity has. In addition, in lay discussions race is commonly considered fixed, while ethnicity seems more flexible and amenable to change [18, 19, 21].

To understand race as a social construct, it is helpful to review American history briefly. The idea of race emerged as justification for New World slavery in the seventeenth century and legitimized a social hierarchy that privileged whites [22]. At first, enslaved Africans “received treatment only marginally different from that afforded other members of the ‘lower ranks’” [23]. In the second half of the seventeenth century, slave laws were passed to secure the labor force for plantations and to prevent coalitions between black slaves and white indentured servants. Status differentials between blacks and whites solidified, and indentured servants from a variety of European nations began to see themselves as a “white race” for the first time [22]. As colonial governments granted privileges to even low-status whites that were withheld from all blacks, racial classification had real consequences. Thus it is not surprising that racial group membership became increasingly important to identity.

Because disparate treatment became custom and law, the government soon assumed the responsibility of tracking groups by race. The US government has collected data on race or color since its first census in 1790 [24, 25]. Since 1960, the gold standard for racial data collection has been self-reporting, after the Census Bureau discovered that, by relying on observation only, enumerators had significantly undercounted “nonwhites” [26]. Given their widespread use, the Office of Management and Budget race categories shape how individuals think about and report race in the United States, even though members of certain groups (e.g., people of Middle Eastern or South Asian descent) have expressed dissatisfaction with the available choices [27, 28].

Notably, rules for group membership have been inconsistently applied. From Reconstruction onward in custom and in the twentieth century by law, having any perceptible African ancestry led to classification as black through the practice of “hypodescent” [24, 29, 30]. In contrast, the federal government has historically set a minimum threshold for Native American ancestry that one had to meet in order to be

recognized as Native American [26, 31]. In addition, the response categories have changed over time. For example, Asians and Pacific Islanders were collected in one group in 1980; by 2000, they had become two groups. Data collection on multiracial heritage spanned the 1850 through 1910 censuses (e.g., mulatto, quadroon, octoroon) was then abandoned, and then reintroduced in the 2000 Census, which allowed individuals to select more than one race for the first time [25, 26, 29, 32].

Racial categories vary across the world [24]. Thus, identical twins separated and raised in different countries could end up identifying their race differently. Similarly, were we able to send a person back through time, his or her race might change. Social scientists point to this variation in racial categories across time and space to argue that race is a social construct [33]. Further support for the fluidity of race also comes from recent studies that show that some people report membership in different races at different times in their lives. The race that one selects often depends upon one's current social position [34].

These findings suggest that racial data reflect social rather than biological phenomena. However, because members of the same race, in aggregate, appear to be phenotypically more similar to one another than to members of other races, it is difficult to cast aside the idea that there may be important biological differences between groups. In addition, disease incidence, prevalence, and outcomes vary among racial groups. Although most researchers, health care providers, and policymakers acknowledge that differential exposure to social and environmental factors contributes to the variation among groups, many also strongly encourage investigation into underlying biological differences [35]. For them race is not just social; it's also biological, and thus may affect pathophysiology, drug efficacies, and norms for clinical test results.

Physicians have played and continue to play a role in how society thinks about race. During the antebellum period, many physicians' attributed poor health among slaves to their biological inferiority, rather than to their conditions of servitude [36]. Physicians' conclusions were supported by eighteenth-century Enlightenment scientists, such as Carl Linnaeus and Johann Blumenbach, who had extended their interest in taxonomy to rank humans by race [17, 37], and philosophers, such as David Hume and Immanuel Kant, who theorized that there were fundamentally different human types [38]. Until 2004, a Medline search for "race" under medical subject heading (MeSH) brought up "Racial Stocks," defined as "major living subspecies of man differentiated by genetic and physical characteristics" [39]. Today a search for "race" returns "Continental Population Groups," defined as "groups of individuals whose *putative ancestry* [my emphasis] is from native continental populations based on similarities in physical appearance" [40].

When clinical trials find differences in outcomes between racial groups, researchers tend to suggest a variety of possible biological and social mechanisms that may account for these differences. Often genetic differences are proposed, even though there is no genetic evidence for nonoverlapping or genetically homogenous racial

groups. Human genetic variation is *clinal*, which means that variation develops gradually and continuously over spatial gradients [41]. No one gene, pattern of genes, region of DNA, or set of “ancestral informative markers” reliably determines race [42]. Certain variants have been found to be more common in some groups than in others [43]. This occurs for a few reasons: (a) the variant or mutation is new; (b) an environment is conducive for that variant (positive selection); (3) gene flow has been partially restricted by environmental barriers (e.g., ocean, mountain range); or (c) the variant is tied to our common origins in Africa, which has the greatest overall genetic diversity [44].

In the midst of strong debates about biology and race, some researchers have carved out a middle ground. For them, race becomes “embodied” [45]. That is, there are not innate or inherent biological differences between races. Rather biological differences between groups develop over time as members of more disadvantaged or disparaged groups encounter greater stress [46, 47]. Greater exposure to socioeconomic disadvantage, discrimination, and other stressors may lead to greater activation of certain physiological mechanisms, such as the stress response, and different health behaviors. Greater activation of these physiological pathways, for example, may lead to increased cortisol levels, which over time may contribute to insulin resistance, obesity, hyperlipidemia, and hypertension [48, 49]. It is not that the pathways between groups are different; rather that individuals who regularly face greater psychosocial stress are more likely to have these pathways turned on.

In medicine, we create, interpret, and act on “race” data. Race is a complex demographic variable because it operates through multiple pathways to affect outcomes. When it is included in disease models, researchers and clinicians often state that race is a proxy for unmeasured social and biological factors. Part of our task is to develop and include robust measures of those factors for which race currently serves as a “stand-in” in clinical studies. To direct those efforts appropriately, we need to foster a critical and ongoing conversation about race among students, health care professionals and the larger scientific community. Race in medicine is “high-stakes,” and we need to proceed carefully and deliberately forward.

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