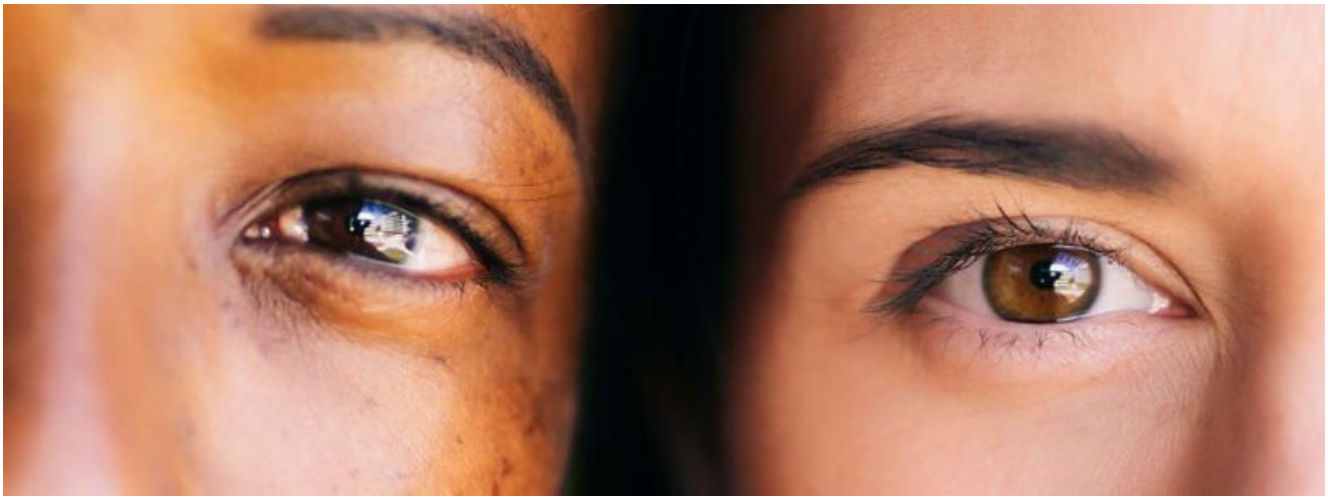
National Academies: We can’t define “race,” so stop using it in science



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With the advent of genomic studies, it’s become ever more clear that humanity’s genetic history is one of churn. Populations migrated, intermingled, and fragmented wherever they went, leaving us with a tangled genetic legacy that we often struggle to understand. The environment—in the form of disease, diet, and technology—also played a critical role in shaping populations.

But this understanding is frequently at odds with the popular understanding, which often views genetics as a determinative factor and, far too often, interprets *genetics* in terms of *race*. Worse still, even though race cannot be defined or quantified scientifically, popular thinking creeps back into scientific thought, shaping the sort of research we do and how

we interpret the results.

Those are some of the conclusions of a new report produced by the National Academies of Science. Done at the request of the National Institutes of Health (NIH), the report calls for scientists and the agencies that fund them to stop thinking of genetics in terms of race, and instead to focus on things that can be determined scientifically.

Racial thinking in science

The report is long overdue. Genetics data has revealed that the popular understanding of race, developed during a time when white supremacy was widely accepted, simply doesn't make any sense. In the popular view, for instance, "Black" represents a single, homogenous group. But genomic data makes clear that populations in Sub-Saharan Africa are the most genetically diverse on Earth.

And, like everywhere else, populations in this region haven't stayed static. While some groups remained isolated from each other, the vast Bantu expansion touched most of the continent. Along the coast of East Africa, the history of interchange with Mideastern traders can be detected in many groups. There's also a tendency to treat African Americans as being equivalent to African, when the former population carries the legacy of genetic mixing with European populations—often not by choice.

Similar things are true for every population we have looked at, no matter where on the globe they reside. Treating any of these populations as a monolithic, uniform group—as a race, in other words—makes no scientific sense.

Yet in countless ways, scientists have done just that. In some cases, the reasons for this have been well-meaning ones, as with the priority to diversify the populations involved in medical studies. In other cases, scientists have carelessly

allowed social views of race to influence research that could otherwise have had a solid empirical foundation. Finally, true believers in racial essentialism have always twisted scientific results to support their views.

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The NIH, as the largest funder of biomedical research on the planet, has been forced to navigate our growing understanding of genetics while trying to diversify both the researchers it funds and the participants who volunteer to be part of these studies. NIH thus commissioned the National Academies to generate this report, presumably in the hope it would provide evidence-based guidelines on how to manage the sometimes competing pressures.

Time to go

The resulting report makes clear why racial thinking needs to go. A summary of the mismatch between *race* and *science* offers welcome clarity on the problem:

> *In humans, race is a socially constructed designation, a misleading and harmful surrogate for population genetic differences, and has a long history of being incorrectly identified as the major genetic reason for phenotypic differences between groups. Rather, human genetic variation is the result of many forces—historical, social, biological—and no single variable fully represents this complexity. The structure of genetic variation results from repeated human population mixing and movements across time, yet the misconception that human beings can be naturally divided into biologically distinguishable races has been extremely resilient and has become embedded in scientific research, medical practice and technologies, and formal education.*

The results of racial thinking are problematic in a variety of

ways. Historically, we've treated race as conveying some essential properties, and thinking of populations in terms of race tends to evoke that essentialist perspective—even though it's clear that any population has a complicated mixture of genetic, social, and environmental exposures. Essentialist thinking also tends to undermine recognition of the important role played by those environmental and social factors in shaping the population.

The report also notes that science's racial baggage leads to sloppy thinking. Scientists will often write in broad racial terms when they're working with far more specific populations, and they'll mention racial groups even when it's not clear that the information is even relevant to their results. These tendencies have grown increasingly untenable as we've gotten far better at directly measuring the things that race was meant to be a proxy for, such as genetic distance between individuals.

Where to go from here

The report offers over a dozen suggestions for what the research community should do to place itself on firmer scientific footing when doing genetic and genomic studies. These are based on three key principles: avoiding essentialist thinking, including environmental influences, and engaging the communities that participate in genetic research.

Some of the key recommendations focus on getting rid of the use of race and instead focusing on what the report terms "population descriptors." These can be things like ethnicity, region of residence, and so on. These descriptors, however, should be used very differently from how we use race. For one, researchers should be willing to use multiple descriptors rather than a single, overly broad category in order to encompass everyone. The descriptors themselves should be limited to information that's relevant to the scientific

question being asked. In other words, even if a descriptor applies, it’s not worth mentioning if it isn’t relevant.

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In addition, researchers should use these descriptors at the individual level rather than picking ones that apply to entire study populations. This will better capture the fact that even populations chosen *not* to be diverse (such as indigenous inhabitants of islands) will almost certainly contain diversity.

Finally, researchers should explain why they chose the descriptors that they used, as well as the criteria used to assign them to individual participants. In general, these recommendations are structured to force researchers to think about why and how these factors are relevant to their studies rather than allowing them to unthinkingly import societal ideas on race.

In addition, the report calls for restoring a recognition of the importance of environmental factors. Geneticists have definitely tended to focus on genetic factors for obvious reasons, but that focus has led to a tendency to pay lip service to the importance of environmental influences. The report recommends that researchers directly measure environmental influences as part of their study designs, ensuring that these are properly considered.

Finally, the report recognizes that researchers probably won’t end up adopting these recommendations on their own. So it offers a series of recommendations for funding bodies and journal publishers meant to enforce best practices. And it recommends greater communication between the research community and the populations being studied in order to limit the casual adoption of society’s prejudices.

A juggling act

The report provides an excellent framework that will allow the NIH to change the way it does business in terms of the sorts of research it supports and the methods it finds acceptable. But the NIH will undoubtedly face a number of challenges in doing so. For instance, it is a part of the US government, and that government operates in a society where race very much still matters, even if it has no scientific foundation. As such, the government is almost certain to set priorities with race in mind that the NIH will have to implement—and may also need to compel researchers to implement.

Most government agencies, for example, have adopted the five categories devised by the Office of Management and Budget: White; Black or African American; American Indian or Alaska Native; Asian; and Native Hawaiian or Other Pacific Islander. And it’s very difficult to square those with the sort of minimalist descriptors that this report calls for.

But even if the government struggles to manage some of the report’s recommendations, the scientific community and the journals it publishes in don’t have any reason to avoid them. The report makes it obvious that a failure to change is simply bad science.

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