

## RACE AS A LIFESAVER

by Erica Lee

*The topic of race has long been controversial and misused, but does it have a role to play in medicine? In the past, corrupt and immoral reigns have often hid behind a veil of science to define the superiority and inferiority of different races. Now, the existence of the concept of race itself is in question, and the most common point of contention remains focused on the question of how to define various ethnicities or races. The use of geographical gradients, or 'clines', has been proposed as a solution to this problem. Many biological differences among racial groups have been shown, ranging from increased risks of genetic diseases to increased risk of dangerous drug side effects. The potential for preventative measures that would compensate for these risks and therefore save lives is drastic. As history has shown, the social implications that could potentially result from legitimizing the existence of racial differences cannot be ignored. However, this past exploitation should not have the result of excluding the potential role of ethnicity in identifying risk variation among different ethnic groups, and personalizing medicine in order to address and overcome these risks and differences.*

Discrimination by the majority against the minority has been a defining feature throughout history. Some of the major factors that in the past have divided – and still divide – mankind are religion, class, and race. The concept of race has been, and most likely always will be, a topic of contention. However, modern society now questions the very existence of race and whether it should be a topic of discussion at all. This debate plays a significant role in the development of laws, social policy, and scientific research. In essence, discovering whether biological differences with regards to race or ethnicity do exist is an important field of research whose investigation should not be impeded to satisfy ideas about political correctness.

A race can be defined as a subset within a species that has come to differ in the frequencies of alleles in the population. It is commonly believed that these differences arose after dispersed settlements about 40,000 years ago underwent natural selection when isolated in different environments. However, this belief is contested by the discovery that for most of those years there were continuous migrations between groups, leading to a continuous gene flow, and very few if any groups remained completely isolated.<sup>1</sup> Ethnic groups, in contrast to racial groups, are considered to share a common origin, and exhibit a continuity in time; that is, a past and a future as a people. There can be clear external differences between people of various races or ethnicities, whether a lighter or darker pigment of skin, a different shape to certain facial features, or a lack of variability in hair color and texture. Some argue that the next logical conclusion is that these differences cannot be only skin deep; that races or ethnicities may differ in deeper physiological and even psychological ways as well.

This debate has reached the point where recent research has led to epidemiological statistics and subsequent drug development and marketing that report the existence of variability between certain disease rates or drug effectiveness in different groups of people. Some are of the opinion that any differ-

ences between 'races' have no basis in biology and "instruction in medical genetics should emphasize the fallacy of race as a scientific concept and the dangers inherent in practicing race-based medicine."<sup>2</sup> The opposing argument is that although other factors may be involved as well, race or ethnicity should play a role in medicine and in treatment; therefore, "current available methods of individualizing care should not be overlooked."<sup>3</sup> Since epidemiological differences do exist, we have a moral obligation to study this difference and determine its cause, in order to provide a benefit to a future society of all ethnic or racial groups. All of this begs the question as to whether or not these differences should be acknowledged or considered when making medical decisions, if they do indeed exist.

The use of race as a category when making medical decisions has important social implications and the major issues should include how to define different groups, whether distinct races even exist in the modern world after, future uses of this knowledge, and, what some believe to be the most important – distinguishing which differences are due to biological factors and which are due to environmental factors, and whether that would lead to a neglect of social disparities in health.

Many studies have established a difference between the rate of certain genetic diseases, drug metabolism, allele frequency, or the prevalence of certain mutations between various racial or ethnic groups. A classic example involves variations in blood types. For example, many studies have concluded that the B allele of the ABO gene for blood type varies in frequency among different racial groups, the highest frequencies concentrating around central Asia, decreasing into Western Europe, and virtually absent from Native Americans and Aboriginal Australians.<sup>4</sup> An example where the difference between two races may affect the preferred course of treatment is the fact that African Americans tend to have a higher rate of salt retention, which can often lead to high blood pressure. Since this condition is more prevalent in them than in Caucasians, African American

patients may tend to benefit more from the use of diuretics to treat high blood pressure than white patients.<sup>5</sup>

The first step in assessing whether differences actually exist between groups is undoubtedly to create clear and accurate definitions of these groups. Because of human migration, it is very hard to define race and to assign individuals to a specific racial group. The fact that humans, by nature, have migrated and interbred over thousands of years means that there are virtually no “pure” races left to study. There are two main factions that come into play when developing racial or ethnic categories. One is known as the “lumpers,” who tend to place people into relatively few classes (generally about three to five). The other group, the “splitters,” recognizes that there are a great many different races that are all distinct in their own ways.<sup>6</sup> A solution to this issue could be to acknowledge a large number of groups based on their geographic origin. The use of “clines” – geographical gradients in certain biological traits – as a method of classification has been proposed as a more meaningful identification. The key reasoning behind the concept of clines is the fact that a gradient exists, and that there are generally no “all-or-none” characteristics.<sup>7</sup> In order to attempt to accurately categorize people, it must be recognized that a great number of people will fall into more than one category and that these classifications are not static. As society shifts and scientific knowledge increases, it should be expected that these ethnic or racial categories shift as well.

Some studies confront the problem of racial classification by asking subjects to self-categorize themselves. However, some people classify themselves as being of a certain group if they were born in what is generally considered that group’s country of origin, even if both of their parents were born elsewhere. Others have a similar identification problem if their parents are of different races or ethnicities. Although interracial marriage rates vary between racial groups, “the number of... ‘mixed race’ births has grown 26 times faster than all U.S. births.”<sup>8</sup> Due to the incredible variability of individual situations, “racial” categories as we know them today are most likely arbitrary and useless.

Another major issue arises when considering group variations. Countless statistical studies have found that groups do not differ as much as it is commonly believed. That is, the amount of variability found within a group of people always far exceeds the differences found between different groups of people. For example, in a 1970 study that measured the heights of Japanese and American young adult male populations, the variability within each group is over 40 cm, but the difference between the average height of each group is a mere 10 cm.<sup>9</sup> This is an extremely important issue because two individuals of different races can easily have the same height, blood type,

or salt retention rate. However, using race in medicine would certainly not be the sole reason for a physician’s diagnosis or selected course of treatment; it would simply be used as an aid with which to acquire as much information about the patient as possible, in order to achieve the most individualized care.

As racial issues have been the cause of a great number of catastrophic social events, a substantial fear is that, given our past and the tendency of humans to find others inferior, investigating differences between racial groups would legitimize racism. This is not a far-fetched concept, and is clearly demonstrated by the actions of Nazi-Germany. There, ‘scientific’ articles and publications were often just propaganda that supported the government’s political agenda. Prestigious professors and scientists routinely advocated eugenics, compulsory sterilization, or limited reproductive rights to ‘inferior’ races in order to create a better society. Using these supportive works to promote his ideas, Hitler opposed abortion for healthy German women yet advocated it for “those of ‘inferior’ races or in cases where the infant would likely have a congenital illness.”<sup>10</sup> Due to the terrible misuse of scientific acknowledgement of race differences in the past, it is reasonable to have certain reservations about misuse in the future. Frequently, a political agenda holds influence over some studies in this field and, regardless of governmental legitimization or scientific investigation, racism and racial discrimination does exist. Avoiding research into this field will by no means eliminate racism. However, I believe that the positive implications of individualized healthcare outweighs the the past misuse of science in the racial arena.

Another very important possible negative implication of potential research conclusions in this field is that in finding racial differences, the tendency might arise to blame social discrepancies on these differences. For example, if diabetes rates are found to be higher in African Americans, it might be generally assumed that this is due to a physiological difference. However, diabetes could result from diet or the environment. By attributing this disease to biological differences between races, social and environmental differences will be overlooked. African Americans routinely get worse health care than white Americans and tend to have a lower socioeconomic status, which could lead to poorer nutrition, and poorer education about better nutritional options.<sup>11</sup> If the health care system were to reach out to African Americans to make them aware of better food choices or help them to afford better food, perhaps the diabetes rate would not show such a discrepancy.

Socioeconomic factors could, and undoubtedly do, lead to varied disease prevalence among certain ethnic groups. If the cause is placed solely on biological differences, a result could be a loss of interest or funding for programs that would better serve those parts of society through education, health care

reform, or social outreach. Therefore, it is very important that even though medical research may find the existence of differences between ethnic groups, the possible social contributions to these differences cannot be ignored.

A major question with regards to researching differences between ethnicities is how would it benefit society if major biological differences were found? One answer is that results from this research would provide additional information that would aid in diagnosis. It is doubtful that any reasonable physician would diagnose a patient solely based on his or her race or ethnicity. Rather, statistical information on tendencies of certain groups could act as the family history information acts now. It would provide background information that would aid the doctor in arriving at a more informed decision on the patient's case, whether a diagnostic or a prescription decision. Individualized medical care is a future goal of medical research, and race or ethnicity could serve as one consideration in determining which medication, or even which dosage to prescribe.

Certain side-effects of some pharmaceuticals are more common in particular ethnic groups. For example, a side effect of clozapine, a drug used to treat schizophrenia, is agranulocytosis, a potentially life threatening blood disorder. This disorder is significantly more common in Ashkenazi Jews who take the drug; the genes associated with this increased susceptibility are found in 10-12% of Israeli Jews, but only in 1% of Caucasian Americans.<sup>12,13</sup> To ignore ethnicity when prescribing this drug could result in a patient with this life threatening side effect, but if the information about his or her heritage were used, this increased risk would be avoided. Thus, "ignoring race and ethnic background would be detrimental to the very populations and persons that this approach allegedly seeks to protect."<sup>14</sup>

The consideration of race would also have beneficial effects for other diseases, as is the case with rickets, a debilitating bone disease caused by a lack of Vitamin D and calcium. Rickets in the U.S. is almost exclusively found in darker-skinned children, and the occurrence is rising. Though these darker-skinned children do not produce vitamin D when their skin is exposed to UV light, rickets is being attributed solely to lack of nutrition. This is an indication of how "public health policies underestimated biological differences among races."<sup>15</sup> If darker skinned families were educated about the fact that their children have an increased susceptibility to this disease and how to prevent it, perhaps there would not be this greater prevalence at all. Rickets would be able to be prevented by acknowledging the fact that racial differences do occur, and then by educating those who are affected about the effects of these differences and how to prevent them.

Despite the limitations and possible drawbacks to the study of racial differences, it remains a curious, tempting

and potentially beneficial field. The concept of biological race may prove to have significant value in improved, personalized healthcare for individuals. By avoiding research on this topic and its use in medicines and diagnostics, and by completely disregarding the theory, society would lose out on this potentially lifesaving opportunity. If we let fear of past exploitation or political correctness stand in the way of progress, society would miss out on vital research and developments that humankind has been striving for since the beginning of civilization. Human societies set themselves apart by their continual quest for advancement, knowledge, and explanation of their surroundings and the world as they see it. With the caveats understood, advancements in this field have the potential to save lives and greatly increase the effectiveness and personalization of medical care.

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