Contemporary implications of an African legacy: the lesser red cell mass in black West Indians¹,²

Noel Solomons

Let’s face it! Blacks do have smaller red cell masses than other racial groups and their hemoglobin concentrations are consistently lower. Our Founding Fathers may have concluded that all men (and women) were endowed by their Creator with certain inalienable rights, but they were wrong with respect to the being “created equal” part. For many physical characteristics, comparative research across ethnic categories has shown predictable differences. Body composition is a recent case example (1, 2). Even earlier, the fact that those of African descent living in the Western Hemisphere have a distribution of hemoglobin shifted to the left, has been documented consistently (3–5).

Our enlightened—and tending-toward-politically-correct—academic nutrition community, often has difficulty coming to grips with the reality of intrinsic “racial” differences. The legacy of the pseudoscience of eugenics and its excesses and atrocities in recent world history have put natural scientists on guard. Moreover, we are collectively loath to open any crack for the wedge of those who drive demographic groups apart, leaving some isolated and discriminated against. A resolve that the lid on the Pandora’s box of ethnic differentiation should remain firmly shut can stifle inquiry, however, inquiry that might have importance both for enlightenment and for improvement of human health. The paper by Himes et al (6) in this issue revisits one of these: namely that of black-white differences in normative hemoglobin distribution.

The setting is Jamaica; the data set are hematologic and iron-status indicators for low-income adolescent girls; the question is how best to interpret what they reveal in terms of nutritional status. The Himes et al (6) paper is a virtual textbook on the considerations of frequency distributions and cutoffs in diagnostic assessment, something that we all accept as trivial from the simplified graphic versions of a perfectly symmetrical bell-shaped curve with an arrow at the 2.5% level in the inferior tail. Thus, we can learn much in the elegant and erudite historical discussion and critique of alternatives for assigning cutoff criteria for hematologic diagnosis, presented in the paper before the authors offer their own approach “using the screening efficiencies of potential hemoglobin cutoffs and a statistic to correct for chance agreement and misclassification bias.”

Clearly, as the authors affirm in the title and the text, the cutoffs do not serve well for classification of an individual. The clinical diagnosis of iron deficiency in a Jamaican girl would be constrained by the sensitivity and specificity limitation of the proposed cutoff. The purpose of the approach of Himes et al (6) was to assign a prevalence of iron deficiency anemia to a population, presumably as a guide to public health policy, including that of proposing an iron intervention—be it population-wide or targeted to the subsegment at higher risk. Perhaps surprisingly, the conclusion of the paper is that iron deficiency and ferropenic anemia are not excessively common among poor girls of that Caribbean island, the rates being comparable with those of peers in the National Health and Nutrition Examination Survey in the United States (6).

By opening Pandora’s box and confronting and addressing the delicate issue of ethnic differences, this study from Jamaica—like its predecessors in this genre (3–5)—constitutes an intrinsic service in scientific objectivity. Any practical value of the elegance of refined estimation of anemia prevalences, however, hinges on a question that the authors unfortunately have not yet addressed. A desirable final touch to this masterful work would have been a comparative table listing the respective iron deficiency anemia prevalence estimations for this same population as they would have been computed by the “mixed distribution” approach of Cook et al (7), the “mean shift” method of Dallman et al (8), the simulated “iron supplementation” response as per Leibel et al (9), or simply the application of the age-adjusted WHO hemoglobin cutoff (10).

Had any of these approaches provided such an overestimation of ferropenic anemia prevalence as to evoke a public health concern that might result in costly, unpleasant, and unneeded iron intervention, then they certainly constitute much ado about something. On the other hand, if Jamaican blacks would never—or only exceedingly rarely—be penalized by the application of non-ethnic-specific cutoff points for hemoglobin, the issue is muted (if not totally moot), and the paper stands out best for serving to reinforce our acceptance of the biological issue of human diversity.

¹ From the Center for Studies of Sensory Impairment, Aging, and Metabolism, Hospital de Ojos y Oidos, Guatemala City, Guatemala.
² Reprints not available. Address correspondence to N. Solomons, Center for Studies of Sensory Impairment, Aging, and Metabolism, Hospital de Ojos y Oidos, Diagonal 21 y 19 Calle, Z11, Guatemala City 01011, Guatemala.
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