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Link between racial discrimination and stress described in new study

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The consequences of psychological stress, resulting from racial discrimination, may contribute to racial health disparities in conditions such as cardiovascular disease, diabetes and other age-associated diseases. This is according to analyses of data from the epidemiologic study Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS)[1], conducted by the National Institute on Aging (NIA), National Institutes of Health.

Dr. Sarah Szanton from Johns Hopkins University, who collaborated with scientists from the NIA and University of California, San Francisco, in the US, put forward a new hypothesis to elucidate racial differences in disease prevalence: African-Americans who suffer psychologically from racial discrimination have higher levels of oxidative stress in their bodies. Their study[2] is published online in Springer's *International* Journal of Behavioral Medicine.

The psychological stress of racial discrimination is thought to be one of the factors that explain racial health disparities, for conditions such as high blood pressure, obesity, cardiovascular problems, poor self-reported health and premature disease-related disability. There is some evidence that psychological stress increases oxidative stress.

Szanton and NIH investigators hypothesized that if oxidative stress is causally associated with a psychological stressor such as racial discrimination, then disparities in psychological stress might help explain some of these health disparities.

To test their hypothesis, the authors looked, for the first time, at whether there was a link between reports of racial discrimination and red blood cell oxidative stress among 629 participants enrolled in HANDLS. Researchers measured oxidative stress by determining the level of degradation products in red blood cells and assessed racial discrimination by asking participants how much prejudice, or discrimination, they had experienced because of their race.

Overall, African Americans reported more racial discrimination than Whites and more oxidative stress originating from their red blood cells as measured by a novel marker. In addition, African Americans who reported suffering from racial discrimination had higher levels of oxidative stress than those who had not experienced prejudice. Discrimination was not linked to levels of oxidative stress in Whites.

The authors conclude: "This is a preliminary report of an association between racial discrimination and oxidative stress. It is a first step to understanding whether there is a relationship between the two. Our findings suggest that there may be identifiable cellular pathways by which racial discrimination amplifies cardiovascular and other age-related disease risks. If increased red blood cell oxidative stress is associated with experiencing racial discrimination in African Americans, this could be one reason that many age-associated chronic disease have a higher prevalence in this group."

*Oxidative stress is the process by which free radicals, or reactive oxygen species, damage cellular components including DNA, proteins and lipids.

More information: 1. Conducted by the National Institute on Aging Intramural Research Program, HANDLS is a prospective epidemiological study of a socioeconomically diverse cohort of 3721 Whites and African Americans aged 30 to 64 years.

2. Szanton SL et al (2011). Racial discrimination is associated with a measure of red blood cell oxidative stress: a potential pathway for racial disparities. *International Journal of Behavioral Medicine*. DOI 10.1007/s12529-011-9188-z

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