



## Response to Invited Commentary

### Three of the Authors Respond to “Discrimination and Cardiovascular Disease”

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We appreciate the thoughtful and insightful commentary by Albert and Williams (1) in response to our findings linking self-reported experiences of everyday discrimination to visceral fat (2). We agree with the points raised by these authors about the emerging importance of discrimination as a potential risk factor for cardiovascular disease, and we read with interest their suggestions for future research.

We were particularly intrigued by Albert and Williams' (1) emphasis on the importance of examining the role of other psychosocial stressors in addition to experiences of everyday discrimination. We have looked at the association between negative affect and visceral fat in this cohort (3, 4) and adjusted for depressive symptoms in our analyses (2); however, we did not address the role of additional psychosocial stressors. Consequently, because we have data on additional psychosocial stressors in the Study of Women's Health Across the Nation Fat Patterning Study, we conducted supplemental analyses to examine the associations between visceral fat and psychosocial stressors in the form of negative life events, perceived stress, and financial strain.

In separate models adjusted for race, age, and total percentage of fat, neither negative life events ( $P = 0.39$ ), perceived stress ( $P = 0.16$ ), nor financial strain ( $P = 0.58$ ) was significantly associated with visceral fat, despite the fact that all of these psychosocial stressors were significantly correlated with everyday discrimination ( $P < 0.0001$ ). Thus, in our cohort, the stress associated with everyday experiences of discrimination—compared with other types of stressors—seems to matter most for the development of visceral fat.

Findings above are consistent with those from a prior study of a subsample of women in the Study of Women's Health Across the Nation from the Pittsburgh, Pennsylvania, site (5), where everyday discrimination emerged as the only psychosocial stress measure associated with carotid artery atherosclerosis in African-American women, although other measures of stress (negative life events, ongoing stressors,

and financial strain) were also considered. Furthermore, it is noteworthy that, whereas both sets of findings are from the Study of Women's Health Across the Nation, they are based on women living in different cities and arguably different contexts (the Chicago, Illinois, women are of higher socioeconomic status compared with the Pittsburgh women). Nonetheless, the pattern of results is similar.

These findings suggest that there may be something particularly deleterious about the stress of everyday discrimination in relation to cardiovascular risk. Researchers have argued that social status stressors are threats to the “social self” that, compared with other types of stressors, result in enhanced physiologic responses that may render individuals more susceptible to disease (6, 7). It is also possible that the coping skills that individuals use to deal with psychosocial stressors more broadly are not sufficient to cope with discriminatory stressors. There has been some work on coping with discrimination and health (8, 9); however, to date, this work has not compared coping with psychosocial stressors more generally with coping with discriminatory stressors in particular. Future studies should examine this issue.

As suggested by Albert and Williams (1), it will also be important for future studies to determine the extent to which discrimination contributes to racial disparities in cardiovascular risk. We were unable to address this issue in our analyses because, for reasons that remain unknown, for visceral fat, the “difference,” or disparity, is actually in the opposite direction (i.e., African-American women have less visceral fat than Caucasian women do (2)).

In sum, we agree with Albert and Williams (1) that everyday discrimination matters for cardiovascular health (1), but there is reason to believe that it may actually matter *more* than other psychosocial stressors traditionally considered in stress and health research (10). Additional research in this area is greatly needed. However, preliminary findings further underscore the importance of discrimination as an emerging risk factor for cardiovascular disease.

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