Diet quality significantly impacts C-reactive protein levels in an African American and white urban Population

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Health and nutritional status tend to be worse for US populations with limited resources and for African Americans compared to Whites. Inflammation is influenced by sociodemographic factors and lifestyle. Socioeconomic disparities in dietary patterns are well established, with populations having higher incomes and education consuming more healthful diets. Yet the influence of micronutrient profiles associated with dietary patterns on inflammatory markers is not well studied. The objectives of this research were to determine diet quality based on micronutrient intakes of African American (AA) and White participants examined in the Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS) study and to determine the influence of diet quality on C-reactive protein (CRP), a marker of systemic inflammation and independent predictor of cardiovascular disease risk. HANDLS study is an urban community-based, prospective longitudinal epidemiological study designed to examine the influence of race and socioeconomic status on health disparities. The sample consisted of 2176 individuals (553 AA men, 708 AA women, 392 White men, 523 White women) who completed two days of dietary recalls. Mean adequacy ratio (MAR), a truncated index of the percent of daily recommended intakes for 15 key nutrients (thiamin, riboflavin, niacin, Vitamins A, C, E, B_6, and B_{12}, folate, phosphorous, magnesium, iron, zinc, copper, calcium) was used as the measure of diet quality (maximal score=100). The overall MAR score ranged from 74 for AA women to 82 for White men. Ordinary least squares regression and generalized linear modeling both found MAR significantly impacted CRP levels, controlling for demographics, adiposity, and blood values. Although mechanisms are still unclear, a diet inadequate in micronutrients was inversely associated with CRP. Nutrition-based interventions which assist populations in making better food choices, namely fruits, vegetables and whole grains, may improve both diet quality and diminish levels of systemic inflammation associated chronic illnesses.