This study investigates the association between residential segregation and allostatic load (AL), a measure of cumulative biological risk using the Multi-Ethnic Study of Atherosclerosis. Racial segregation was measured for each racial/ethnic group using the local Gi* statistic, a spatial measure that reflects the level at which racial minorities are clustered together in contiguous neighborhoods. Two measures of AL were utilized, a restricted measure incorporating cardio-metabolic indicators, and a comprehensive measure incorporating neuroendocrine and inflammatory biomarkers. For both scores, standardized scores were calculated to indicate where the individual's value placed them (in standard deviation units) relative to accepted clinical thresholds for higher risk, and summed to create an overall AL score. Analysis consisted of generalized estimating equations, ordinary least squares, and mixed effects models. Higher levels of segregation were associated with better AL scores for whites, but with worse AL scores for non-whites. This analysis concludes that residential segregation is a significant predictor of AL, even after adjustment for individual demographic characteristics, but segregation impacts the AL scores of different racial/ethnic groups in distinct ways.