Minorities have long been discriminated against in the United States, and redlining policies pursued in the 1920s-60s prevented African-Americans from moving outside polluted inner city neighborhoods. This resulted in the siting of many environmentally hazardous facilities in these neighborhoods, exposing minorities to increased levels of air pollution that persist today. Exposure to air pollution is associated with low birth weight, asthma, diabetes, heart attacks, strokes, and obesity. Minorities also experience higher levels of perceived discrimination, a reliable predictor of chronic stress. Chronic stress leads to constant output of the stress hormone cortisol, which increases blood pressure, insulin resistance, cholesterol, and weight, and decreases immune function and memory. The effects of a lifetime of increased stress are hypothesized to compound the effects of disproportionate exposure to air pollution and make African-Americans more susceptible to diabetes, heart disease, stroke, obesity, and asthma than whites. These disparate health outcomes culminate in a 10% decrease in life expectancy for African-Americans compared to their white counterparts.

This study sought to explore the effects of stress on the well-established relationship between air pollution and health by analyzing self-reported health and stress data. Overall, stress did not have a strong effect on this relationship. Adverse health outcomes were best predicted by “classical” markers such as BMI and age. However, there is some evidence to support the idea that perceptions of overall health and anxiety are impacted by race and stress, and that the risk of having certain diseases is impacted by race and proximity to industrial facilities.