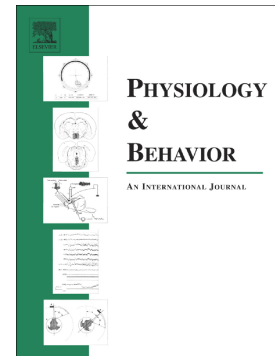


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## Early Life Socioeconomic Status Associates with Interleukin-6 Responses to Acute Laboratory Stress in Adulthood

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### Abstract

It is proposed that environmental exposures in early life influence immune programming. Specifically, socioeconomic disadvantage is thought to program an immune phenotype that is prone to inflammation and associated with increased risk for inflammatory disease later in life. Existing literature shows an inverse association of early childhood socioeconomic status (SES) with adult levels of systemic inflammation. Here, we extend that literature to examine whether early childhood SES also relates to the magnitude of inflammatory response to acute psychological stress in adulthood. Healthy volunteers (N=110; 40-58 years; 59% female; 90% white) performed a laboratory stress protocol, with blood samples drawn at the end of a 30-min baseline, a 5-min speech task, and a 30-min recovery to assess interleukin (IL)-6 stress responses. An early childhood SES index was derived from reports of parental home and vehicle ownership, and number of bedrooms per child in the home across ages 1-2, 3-4, and 5-6. Regressions adjusted for current age, sex, race, and BMI showed that lower SES at age 1-2 was associated with larger IL-6 stress responses in adulthood ( $\Delta R^2 = .05$ ,  $\beta = -.24$ ,  $p = .03$ ). This association was independent of adult SES and task-evoked affective responses. No association was found between SES at ages 3-4 or 5-6 and IL-6 responses. These results provide initial evidence for a link between

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