

Study uncovers cost of resiliency in kids

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Children living in poverty who appear to succeed socially may be failing biologically. Students able to overcome the stress of growing up poor are labeled "resilient" because of their ability to overcome adversity, but University of Georgia researchers found this resiliency has health costs that last well into adulthood.

"Exposure to stress over time gets under the skin of children and adolescents, which makes them more vulnerable to disease later in life,"

said Gene Brody, founder and director of the UGA Center for Family Research.

Looking at a sample of 489 African-American youths from working [poor families](#) in south Georgia, Brody evaluated the overall poverty-related risks experienced by children annually at ages 11 to 13 as well as teacher-reported competence. Allostatic load, a measure of wear and tear on the body, was taken for each child at age 19. Allostatic load is a measure of stress hormones, blood pressure and body mass index.

The results, which were published May 30 in the journal *Psychological Science*, found kids 11 to 13 who experienced high [levels of stress](#) and whose teachers evaluated them as performing well emotionally, academically and socially had a high allostatic load at age 19.

"The children who are doing good at school, playing well with friends, have high self-esteem and don't have behavior problems are often thought of as beating the odds or being resilient in the face of adversity," said Brody. "We hypothesized maybe at one level they are resilient, but looking at their biology and asking what is the cost, we find a physiologic toll to attaining behavior [resilience](#)."

The body adapts to [stressful situations](#) through the activation of [neural mechanisms](#), including the release of stress hormones cortisol and epinephrine, which have both protective and damaging effects on the body. Short-term, these hormones are important for adapting to stress, particularly stress associated with [financial hardship](#). When used frequently over time, stress hormones can compromise immune system functions and other bodily systems, potentially speeding up disease processes—meaning that they can end up with chronic diseases at a much younger age.

"We used to assume that cardiovascular disease, stroke, diabetes and

cancer just happen to people as they get older," Brody said. "But, we see the success-oriented, highly active coping style these youth employed in the presence of high risk is associated with cumulative wear and tear on their bodies that increases the risk for these young adults for the chronic diseases of aging."

The findings support the suggestion that poor health and health disparities during adulthood are tied to earlier experiences. Youths who don't cope as well, have low self-esteem and struggle in school and with friends show elevated levels of [stress hormones](#), blood pressure and [body mass index](#), or BMI, as well.

About 10 percent of the population surveyed in Brody's research fell into this category. These health markers are risk factors for early onset diabetes, cardiovascular disease, stroke, hypertension and cancer.

"For kids who are doing well and have outwardly beaten the odds, it is very important for them to be monitored and have yearly checkups so that if they have elevations in these risk factors they can be attended to," he said.

Consistent with the research at the Center for Family Research, Brody is now researching the impact of prevention programs on at-risk youth. Tianyi Yu, Edith Chen, Gregory Miller, Steven Kogan and Steven Beach co-authored this paper.

Provided by University of Georgia

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