

Study shows stress in early life can lead to overall bodily wear-and-tear on into middle age

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Credit: George Hodan/public domain

(Medical Xpress)—A team of scientists with researchers from several institutions in France has found that multiple stress events that occur early in life can cause an increase in overall wear-and-tear on the body, well into middle age. In their paper published in *Proceedings of the National Academy of Sciences*, the team describes how they conducted a

study of survey data collected over the course of a national child development study in Britain and what it revealed.

Prior research has suggested that emotional trauma during childhood can lead to a shorter lifespan and an increase in disease susceptibility later on—in this new study, the team wanted to know more about the long term impact of childhood stressful events so they obtained data from the National Child Development Study, a program where 7,535 random people born in Britain in 1958 have had their health histories tracked for a variety of research purposes. The team with this new effort filtered for children that had experienced at least two traumatic events while still young and then compared their health records against those that had not experienced such events, over the course of their lives up till now. That showed, the team reports, that those who had experienced the [traumatic events](#) displayed high allostatic load (AL) by age 44 as compared to other people. Allostatic load is a measure of overall wear-and-tear on the body characterized by indirect symptoms such as decision-making that impacts health, degree of wealth, BMI and education level attained.

More specifically, the researchers found that for males in the group, 59 percent of the elevated AL was associated with low education, lack of wealth and unhealthy behaviors in general. For females, 76 percent of the elevated AL was associated with high BMI, smoking, low wealth and low education levels. Such stats suggest, the term claims, stress during childhood can lead to high AL by increasing the likelihood of a person having a low economic status, a high BMI and an increased likelihood of engaging in behaviors that are known to be unhealthy.

What is still not clear is if there is a direct biological link between early [stress events](#) and negative consequences later on in life. More research will have to be done before that question can be answered definitively.

More information: Adverse childhood experiences and physiological

wear-and-tear in midlife: Findings from the 1958 British birth cohort, Cristina Barboza Solís, *PNAS*, [DOI: 10.1073/pnas.1417325112](https://doi.org/10.1073/pnas.1417325112)

Abstract

Allostatic load (AL) is a measure of overall physiological wear-and-tear over the life course, which could partially be the consequence of early life exposures. AL could allow a better understanding of the potential biological pathways playing a role in the construction of the social gradient in adult health. To explore the biological embedding hypothesis, we examined whether adverse childhood experiences (ACEs) are associated with elevated AL in midlife. We used imputed data on 3,782 women and 3,753 men of the National Child Development Study in Britain followed up seven times. ACEs were measured using prospective data collected at ages 7, 11, and 16. AL was operationalized using data from the biomedical survey collected at age 44 on 14 parameters representing four biological systems. We examined the role of adult health behaviors, body mass index (BMI), and socioeconomic status as potential mediators using a path analysis. ACEs were associated with higher AL for both men and women after adjustment for early life factors and childhood pathologies. The path analysis showed that the association between ACEs and AL was largely explained by early adult factors at age 23 and 33. For men, the total mediated effect was 59% (for two or more ACEs) via health behaviors, education level, and wealth. For women, the mediated effect represented 76% (for two or more ACEs) via smoking, BMI, education level, and wealth. Our results indicate that early psychosocial stress has an indirect lasting impact on physiological wear-and-tear via health behaviors, BMI, and socioeconomic factors in adulthood.

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