

Social adversity early in life may affect the expression of stress-related genes

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New research suggests that early severe social deprivation may impact DNA modifications that affect the expression of stress-related genes. These nongenetic (or epigenetic) modifications occur when molecules called methyl groups are added to components of DNA.

For the study, investigators analyzed the genes of 208 children who were

12 years old. Some children were raised in institutional settings, others were transferred to foster care, and others had no history of institutionalized caregiving. The researchers found that more time spent in institutional care was associated with lower DNA methylation at specific sites within stress-related genes.

"Our results are consistent with an increasing body of research in both human and preclinical animal models that suggests that these early experiences, particularly related to early caregiving, leave molecular traces, visible across the life course, that likely influence a range of biological, physiological, and behavioral processes," said Dr. Stacy Drury, senior author of the *American Journal of Physical Anthropology* study.

"Targeted neurobiologically informed epigenetic studies can provide invaluable information about the impact of these early critical experiences, ideally guiding the development of innovative approaches to re-setting negative developmental trajectories at the earliest possible time points."

More information: Amy L. Non et al, DNA methylation at stress-related genes is associated with exposure to early life institutionalization, *American Journal of Physical Anthropology* (2016). [DOI: 10.1002/ajpa.23010](https://doi.org/10.1002/ajpa.23010)

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