’Harsh’ Upbringing Makes Kids’ Chromosomes Age Faster

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Children who grow up disadvantaged can experience drastic chromosome aging when compared with their more privileged peers, according to a study published in the journal Proceedings of the National Academy of Sciences and reported by New Scientist.

For the study, researchers divided a group of 40 boys, all age 9, into two groups: Kids who came from what were considered “harsh” backgrounds, and boys who came from a more “privileged” upbringing.

To determine what group children fit into, scientists looked at factors such as how often a mother had changed partners during her child’s life, her age, whether or not she had received a college education, and how tough her parenting methods were.

Next, researchers measured each child’s telomeres—the protective caps on the end of chromosomes that shorten every time a cell divides. (This genetic shortening is thought to be responsible for many of the negative effects of aging.)

The results? Scientists found that children who fit into the “harsh” group had telomeres that were 35 percent to 40 percent shorter than those of the “privileged” kids. By comparison, this difference made those kids with the shorter telomeres genetically decades older than their same-age counterparts, researchers suggested.

“The social environment really conditions the way that these children are living, and their health,” said Daniel Notterman, MD, the associate vice president of research at Penn State and lead author of the study. “The fact that these people have early telomere shortening by the age of 9 could be an argument for some people who want to intervene earlier in the lives of children, by getting them in school, for example.”
But before findings can generate interventions, further research needs to be done. In fact, an extended study will include 1,000 children then follow up with them at age 15.

Overweight kids who eat a lot of salt also seem to have faster rates of telomere degeneration and aging. Could the two factors be related? Click here for more information.