

New Study: Domestic Violence’s Damage Runs Deep

Witnessing beatings, family member suicide or incarceration impacts children’s genes

By Jazelle Hunt
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WASHINGTON (NNPA) – While sticks and stones can break bones, new research indicates that family struggles can hurt children on a molecular level.

The study, published in the July issue of Pediatrics, involved 75 African American families with children age 5 to 15 (out of a sample of 80) in the New Orleans metro area. Researchers found that the more “family instability” a child had experienced over time, the shorter his or her telomeres were.

The “family instabilities” examined in the study were family incarceration, suicide of a family member, and witnessed violence. The study breaks down the effects by “wit-

strands from unwinding. Chromosomes (our inherited strands of DNA) have to replicate to allow a cell to multiply. Telomeres allow a chromosome to copy itself without errors – but every time a chromosome replicates, its telomeres shorten until the chromosome can no longer copy itself properly. When chromosomes can’t copy, a cell can’t either – so it dies.

Shorter telomeres mean shorter cell life. That means the cells of children under chronic stress are aging and dying faster.

“All of [your] biological systems, when you’re stressed, are put on high alert. When you’re on high alert too long you start to speed up the whole aging process, and cells are showing the effects sooner than the rest of the body,” says Drury, who also serves as

that the shorten-
ing of telomeres
can be seen as
the earliest
warning sign of
these outcomes.

The study, cit-
ing other
research, states:
“Exposure to
early adversity
increases risk for
negative health
outcomes across
the life course,
yet it is unclear
whether specific
experience or
cumulative
exposure is the
most biological-
ly toxic. Toxic
stress likely
influences child
health and devel-
opment, particularly risk
for cardiovascu-
lar disease,
obesity, and
mental illness.”



Mori Gabriella Montgomery, a 19 year old aspiring model from Illinois, took to Twitter and Instagram to document her recovery after a brutal beating by her boyfriend during a trip to Las Vegas. The courageous teenager endured more abuse by offended viewers but posted on social media that an even bigger groundswell of support has helped her recover – and that even the critics helped her spread her message. “Domestic violence is such an overlooked crime,” Mori told news.com.au. “Nobody truly understands how often tragedies happen due to spouse mistreatment. I plan to put an end to the silence.”

‘Toxic stress likely influences child health and development, particularly risk for cardiovascular disease, obesity, and mental illness’

nessed violence” alone; “family disruption,” which is the other two instabilities together; and a cumulative measure of any combination of these experiences over time.

Stacy Drury, M.D., author of the study, describes telomeres as “shoelace caps” on the ends of a chromosome that keep the

director of the Behavioral and Neurodevelopmental Genetics Laboratory at Tulane University. “That’s one things that we were surprised to find. We weren’t sure we’d see this effect in kids this young.”

This effect – chronic stress manifesting as cellular burnout – has long been linked to poor health outcomes. Drury explains

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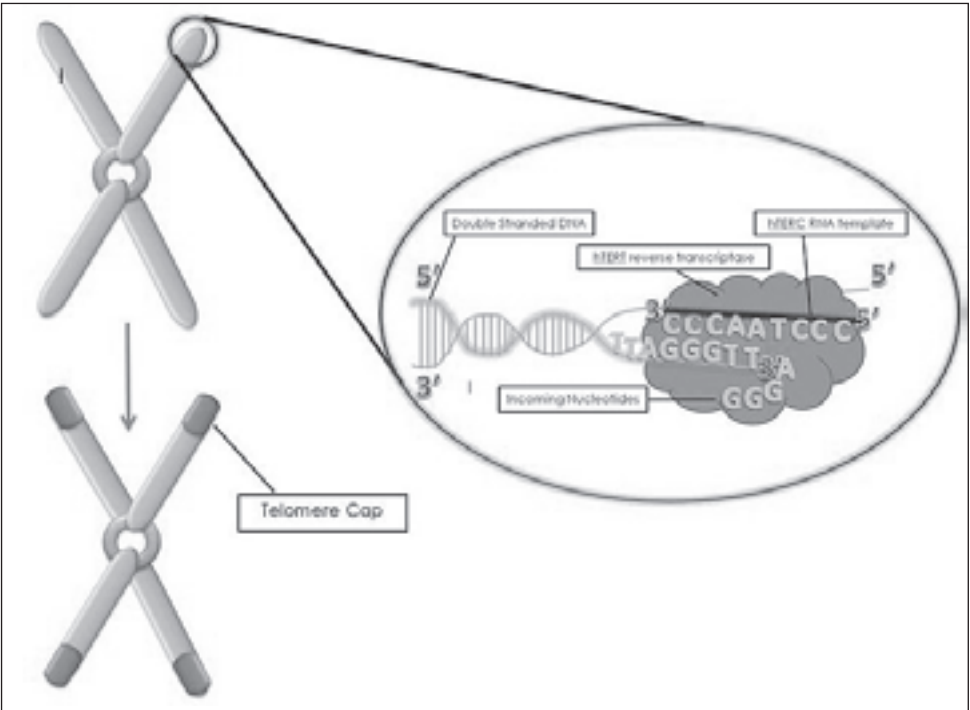
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This chart shows how the ends of genes, known as telomeres, are shortened by aging. New research shows stress speeds that process even in children.

Drury’s team also took into account other factors that could influence a child’s development, such as body mass index, age, maternal education as an indication of socio-economic status, household monthly income, and more. Almost none of these factors had any bearing on telomere length — except for a few peculiarities around gender and age.

Overall, children exposed to instability have shorter telomeres than unexposed children, but this genetic wear-and-tear seems to affect girls more directly than boys. For girls, the link remains strong over time, and is not influenced by other variables, including the type of instability they experience.

For boys, a few factors can influence the severity of the effects. For example, boys who see violence have the most significant likelihood of shorter telomeres, as opposed to other forms of instability. Yet, maternal education seems to provide a buffer for boys 10 years old or younger. Conversely, the older a boy is as he experiences family instability—cumulatively, or individual instances—the shorter his telomeres will be.

“The effects of this family instability...we saw it in all kids, but we really saw it in

girls,” says Drury, adding that the difference persists in adulthood, but there hasn’t yet been enough research to determine how early the difference appears. “One thing that might play a role is the rate of development—whether it’s biological differences, or social interaction, or differences with a child’s place within and outside the family system.”

Another inexplicable tidbit from the study: the children who had experienced the most instability tended to have younger parents and mothers who were more highly educated.

For concerned caregivers who may not be able to control their child’s exposure to life’s hardships, Drury recommends creating a buffer zone with areas that are within your control.

“Telomere length definitely changes, it’s not a static measurement. You have to have early intervention for prevention...better nutrition, talk about holistic health, exercise, and sleep,” she says, adding that communal support helps as well. “If moms and dads with exposure to family struggles are focusing on ways to buffer the impact on their kids, these things become more important.”