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# Childhood abuse 'speeds up body's ageing process'

Chromosomes have telomeres at the end of each strand

**Physical or emotional abuse during childhood could speed up the body's ageing process, US research suggests.**

A team from Brown University focused on telomeres, the protective caps on the chromosomes that keep a cell's DNA stable but shorten with age.

They found the telomeres of 31 people who had reported abuse as children tended to shorten more rapidly, speeding up cells' ageing process.

Experts cautioned that the study needed to be replicated on a larger scale.

The study is featured in Biological Psychiatry.

Lead researcher Dr Audrey Tyrka said: "It gives us a hint that early developmental experiences may have profound effects on biology that can influence cellular mechanisms at a very basic level."

Telomeres are relatively short sections of specialised DNA that sit at the ends of all our chromosomes.
They have been compared to the plastic tips at the ends of shoelaces that prevent the laces from unravelling.

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>
> Dr Audrey Tyrka
> Brown University

Each time a cell divides, its telomeres shorten and the cell becomes more susceptible to dying.
Previous research has found that telomeres shorten at an accelerated rate when exposed to toxins such as radiation and cigarette smoke.
There has also been work suggesting that psychiatric problems and stress could have a similar effect.
The latest study suggests psychological trauma early in life could store up similar problems for the future.
The researchers concentrated on people who although reporting abuse in childhood were otherwise healthy and had no signs of current or past psychiatric disorders.
Dr Tyrka said more work was needed to pin down the exact impact of childhood stress on cellular ageing.

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>
> Professor Tim Spector
> King's College London

She said: "We don't know what the full implications of this are yet.
"Shorter telomere lengths are linked to ageing and certain diseases, so it is possible that this is a mechanism of risk for illness following childhood abuse.
"But the precise role of telomeres in this process remains to be determined."
Shorter telomere lengths have been linked to a variety of ageing-related medical conditions, including cardiovascular disease and cancer.
For this study, the scientists looked at 22 women and nine men.
Some subjects reported happy childhoods, while others reported emotional, physical or sexual abuse or neglect.
Professor Tim Spector, an expert on telomeres and ageing based at King's College London, said: "The study and resulting theory is plausible as researchers have found previous telomere links with chronic stress.
"However, many different adverse environments are known to reduce telomeres - such as cigarette smoking, obesity, lack of exercise and social class as well as genes.
"In such a small sample such as this - any of these could actually be responsible rather than the abuse - so it needs replication on a much bigger scale."