

Blame common colds on your chromosome 'Caps?'

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Study of young adults suggests DNA 'telomeres' may determine who's vulnerable.

(HealthDay)—Some people seem to catch a cold every few weeks while others appear immune. Now a preliminary study suggests that the protective "caps" on your chromosomes could partly explain the mystery.

The study, reported in the Feb. 20 issue of the *Journal of the American Medical Association*, found that healthy [young adults](#) were more prone to catching a cold when their [immune system cells](#) had relatively short telomeres.

Telomeres are lengths of DNA that sit at the ends of your chromosomes. Think of them like the plastic caps at the ends of a shoelace: Telomeres help keep your [chromosomes](#)—which carry your genes—from fraying and sticking together.

As people age, their telomeres gradually get shorter, and research has linked shorter telomere length to older adults' risks of developing and dying from infections, cancer and heart disease.

"But there's been very little known about telomere length in young people, certainly in relation to health," said Sheldon Cohen, a professor of psychology at Carnegie Mellon University in Pittsburgh who led the new study.

Because colds and other respiratory infections are the most common health woe in younger people, Cohen's team decided to see whether telomere length mattered in their risk of developing a cold.

The researchers recruited 152 healthy 18- to 55-year-olds, and measured telomere length in the volunteers' [T cells](#)—immune system cells that fight off infection. They then exposed the men and women to a [cold virus](#) via nasal drops, and quarantined them in a hotel to be monitored.

Over the next five days, 22 percent of the volunteers developed [cold symptoms](#), and the odds were higher among those with shorter telomeres in a particular subtype of T cell. Of the one-third with the shortest telomeres, 26 percent became sick, versus 13 percent among the one-third with the longest telomeres.

"This is something new and provocative," said Dr. William Schaffner, an infectious disease specialist at Vanderbilt University School of Medicine in Nashville, Tenn., who was not involved in the research.

"All of us know some people who get one cold after another, and others who seem like they're able to be around people with colds but remain robust," said Schaffner, who is also a spokesman for the Infectious Diseases Society of America.

These findings, Schaffner said, raise the possibility that there is some role for the telomeres in our T cells.

"We're not all created equal in terms of our telomeres," he said. "Just like some of us are short, and some are tall."

What does that mean for you during cold and flu season? Nothing right now, according to both Schaffner and Cohen.

For one, nobody knows if they have skimpy telomeres. And even if they did, it's not clear whether there's anything they could do about it.

"There is a lot of research interest right now in whether it's possible to alter telomere length, either through some kind of behavioral change or a medication," Cohen said. "But we're pretty far from that point."

What's more, the current findings do not prove that shorter telomeres, per se, mean more cold misery. The researchers did account for other factors, such people's age, weight and race. But Cohen said there could be other explanations. It's possible, for example, that some genetic factor makes people have shorter T-cell telomeres and renders them more vulnerable to colds.

On the other hand, shorter telomeres may impair T cells' ability to battle cold viruses, Cohen said.

Still, no one knows yet whether these findings could one day have practical use.

"This is really the first evidence that this biomarker of aging may be important for 25-year-olds as well as 65-year-olds, and for acute health conditions as well as chronic," Cohen said.

Of course, you do not need to wait for any telomere-lengthening therapy to curb your risk of catching a cold. "Wash your hands," Schaffner advised. "And try to avoid people who are sneezing and coughing."

More information: Learn more about telomeres and health from the [University of Utah](#).

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