

# Cynical hostility presents a potential pathway to cardiovascular disease

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Baylor University psychologist Alexandra T. Tyra. Credit: Baylor University

Cynical hostility is a potential pathway to cardiovascular disease by preventing a healthy response to stress over time, according to a study led by Baylor University.

Hostility generally is associated with increased risk for [cardiovascular disease](#). But this research explored three types of [hostility](#)—emotional, behavioral and cognitive—to see whether one is more predictive of risk factors. Cynical hostility poses the greatest risk based on [stress](#) responses, according to the study, which was published in the journal *Psychophysiology*.

"Cynical hostility is more cognitive, consisting of negative beliefs, thoughts and attitudes about other people's motives, intentions and trustworthiness," said lead author Alexandra T. Tyra, a doctoral candidate in psychology and neuroscience at Baylor University. "It can be considered suspiciousness, lack of trust or cynical beliefs about others.

"These findings reveal that a greater tendency to engage in cynical hostility—which appears to be extremely relevant in today's political and health climate—can be harmful not only for our short-term stress responses but also our long-term health," Tyra said.

In contrast to cynical hostility, chronic anger is considered emotional hostility, while verbal or physical aggression is considered behavioral hostility.

"The increased risk of hostility is likely due to heightened physiological arousal to [psychological stress](#), which can strain the cardiovascular system over time," Tyra said. "However, there has been a need for research to examine these physiological responses across multiple stress exposures to better resemble real-world conditions and assess adaptation over time."

A healthy cardiovascular response to repeated stress would consist of an increase in arousal to the first stress exposure—sometimes referred to "fight or flight"—which would decrease upon subsequent exposures to that same stressor.

"Essentially, when you're exposed to the same thing multiple times, the novelty of that situation wears off, and you don't have as big of a response as you did the first time," Tyra said. "This is a healthy response. But our study demonstrates that a higher tendency for cynical hostility may prevent or inhibit this decrease in response over time. In other words, the cardiovascular system responds similarly to a second stressor as it did to the first.

"This is unhealthy because it places increased strain on our cardiovascular system over time," Tyra said.

For the study, which consisted of stress tests of 196 participants, researchers analyzed data collected by the Laboratory for the Study of Stress, Immunity, and Disease at Carnegie Mellon University.

Throughout two lab sessions approximately seven weeks apart, each consisting of a 20-minute baseline and a 15-minute psychological stress test, participants' [heart rate](#) and blood pressure were recorded.

Participants also completed a standard psychological scale to measure personality and temperament—specifically degrees of hostility that represent an individual's disposition towards cynicism and chronic hate.

In the psychological stress portion of the study, participants were given five minutes to formulate a speech to defend themselves against a suspected transgression—either a traffic violation or shoplifting—and five minutes to perform the speech. They were told their speech would be videotaped and evaluated.

"These methods of social and self-evaluation are designed to increase the experience of stress and have been validated in prior research," Tyra said.

Participants next were asked to perform a five-minute mental arithmetic test, which varied slightly in each visit. Heart rate and blood pressure were recorded every two minutes during each phase of the stress test—speech preparation, delivery and mental arithmetic.

Participants also responded to a 20-item test to measure the emotional, behavioral and cognitive components of hostility.

An example item of the emotional component—anger or annoyance—is "people often disappoint me." An example item of the behavioral component (aggression) is "I would certainly enjoy beating a crook at his or her own game." Finally, an example item of the cognitive component (cynicism) is "I think most people would lie to get ahead."

In the study, emotional and behavioral hostility were not found to be related to stress responses, Tyra said.

"This does not imply that emotional and behavioral hostility are not bad for you, just that they may affect your health or well-being in other ways," she said.

Future research that would be useful would be to examine cynical hostility and its health implications across the lifespan, "perhaps following individuals as they grow older to see whether a greater tendency to use cynical hostility while young is actually related to poor cardiovascular outcomes at an older age, such as a heart attack," Tyra said.

"I would hope that this research raises awareness about the potential

health implications of cynicism," she said. "Perhaps the next time someone thinks a negative thought about the motives, intentions or trustworthiness of their best friend, a co-worker or even a politician, they will think twice about actively engaging with that thought."

**More information:** *Psychophysiology*, [onlinelibrary.wiley.com/doi/full/10.1111/psyp.13681](https://onlinelibrary.wiley.com/doi/full/10.1111/psyp.13681)

Provided by Baylor University

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