

Let it go: Reaction to stress more important than its frequency

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Credit: George Hodan/public domain

How you perceive and react to stressful events is more important to your health than how frequently you encounter stress, according to health researchers from Penn State and Columbia University.

It is known that stress and negative emotions can increase the risk of heart disease, but the reasons why are not well understood. One potential

pathway linking stress to future heart disease is a dysregulation of the autonomic nervous system—a case of a person's normally self-regulated nervous system getting off track.

Nancy L. Sin and colleagues wanted to find out if daily stress and heart rate variability—a measure of autonomic regulation of the heart—are linked. Heart rate variability is the variation in intervals between consecutive heartbeats.

"Higher heart rate variability is better for [health](#) as it reflects the capacity to respond to challenges," said Sin, postdoctoral fellow in the Center for Healthy Aging and in the department of biobehavioral health at Penn State. "People with lower heart rate variability have a greater risk of cardiovascular disease and premature death."

Depression and major stressful events are known to be harmful for health, but less attention has been paid to the health consequences of frustrations and hassles in everyday life. Prior to this research, very few studies have looked at the relationship between heart rate variability and daily stressful events.

Sin and colleagues analyzed data collected from 909 participants, including daily telephone interviews over eight consecutive days and the results from an electrocardiogram. They report their findings online in *Psychosomatic Medicine*. The participants were between the ages of 35 and 85 and were drawn from a national study.

During the daily phone interviews, participants were asked to report the stressful events they had experienced that day, rating how stressful each event was by choosing "not at all," "not very," "somewhat" or "very." They were also asked about their negative emotions that day, such as feeling angry, sad and nervous. On average, participants reported having at least one [stressful experience](#) on 42 percent of the interview days, and

these experiences were generally rated as "somewhat" stressful.

The researchers found that participants who reported a lot of stressful events in their lives were not necessarily those who had lower [heart rate variability](#). No matter how many or how few stressful events a person faces it was those who perceived the events as more stressful or who experienced a greater spike in [negative emotions](#) that had lower [heart rate variability](#)—meaning these people may be at a higher risk for [heart disease](#).

"These results tell us that a person's perceptions and emotional reactions to [stressful events](#) are more important than exposure to stress per se," said Sin. "This adds to the evidence that minor hassles might pile up to influence health. We hope these findings will help inform the development of interventions to improve well-being in daily life and to promote better health."

Provided by Pennsylvania State University

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