To Survive Stress, Keep It Brief

Short Episodes of Stress Can Invigorate. It's the Long-Lasting Ones That Kill.

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Special to The Washington Post
Tuesday, December 13, 2005; HE04

To understand the difference between good stress and bad stress, said neuroscientist Robert Sapolsky, consider the fact that a roller coaster ride lasts for three minutes, not three days.

"There's a reason that we'll pay money to go on a roller coaster and be terrified" for a brief period, said the Stanford University professor.

This kind of stressful episode can be invigorating and empowering, he said. Blood circulates better, senses are heightened, memory sharpens, energy peaks and chemicals producing pleasure increase in the brain.

But if that same stress continues for an extended period, Sapolsky said, the body continues straight downhill.

His Stanford laboratory was among the first to document the way sustained stress can damage the hippocampus, a region of the brain central to learning and memory.

Under continued stress, neurons shrivel in another part of the brain, the prefrontal cortex, the center of emotion and executive function. Meanwhile, the amygdala, which processes fear and anxiety, grows neurons, essentially trapping us in a state of fear. The body stops its repair work, compromising the immune system, and constant pressure on the cardiovascular system eventually leads to high blood pressure and heart disease, Sapolsky said.

Sapolsky, recipient of a MacArthur Foundation "genius" grant for studying stress in groups of baboons, presented his conclusions at a Mind and Life Institute conference in Washington last month, where scientists reported on leading-edge brain research and the effects of meditation on healing and health.

When it comes to stress, Sapolsky said, many of us have it all wrong.

"It's easy to say, 'Aha! The answer is having no stress in my life!' “But the idea that we should -- or could -- live without it, he said, is "nonsense."

The body's reaction to stress can become chronic and pernicious. This doesn't happen because a physical threat to safety continues for a long time, but because humans -- endowed with imagination, memory and language -- have the ability to create psychological stress, even when no physical or emotional threat is present. Sapolsky,

author of the book "Why Zebras Don't Get Ulcers," calls this "adventitious suffering -- the pain of what was, what will be, what could be or what someone else is experiencing."

The body makes no distinction between immediate, in-your-face stressors and chronic, in-your-imagination ones, Sapolsky said. Faced with either kind of threat, the body reacts, and when the threat is sustained psychologically, the physically destructive stress response continues.

An individual's personality or the frame of mind in which one encounters stress also can determine its health effects.

Ronald Glaser, a viral immunologist at Ohio State University (OSU), studies the physical changes induced by everyday stress. He and his wife, Jan Kiecolt-Glaser, a clinical psychologist and researcher at OSU, were among the first to test the effects of stress on the immune system.

In 1991, they took a sampling of college students on the last day of a series of academic exams and inoculated them with the hepatitis B vaccine. They then monitored the antibody response in each. The students had been followed a year and a half before the inoculations. Those who had the least stress in their everyday lives, or who had greater social support, had more-robust immune system reactions to the vaccine than the others.

The lesson: Those who encounter stress from a position of psychological strength and social alliances withstand stress better.

According to Sheldon Cohen, a psychology professor at Carnegie Mellon University, the medical literature demonstrates a link between chronic stress and depression, upper respiratory infections, cardiovascular disease and HIV progression.

But understanding why these deleterious reactions occur, explained Glaser, is "big-time complexity" involving the central nervous, endocrine and immune systems and how they "talk" to each other. Researchers don't completely understand it yet.

What is known is that stress hormones -- cortisol, ACTH, prolactin, growth hormone, epinephrine and norepinephrine -- increase when a person is under stress. They bind to receptors in blood cells and change what the cells do in the body, Glaser says.

To explain how different people respond to chronic stress, Sapolsky used the analogy of living in New York: For someone with good mental health and a strong social support system, he said, the city offers an exciting life and an intense, beneficial sensory experience -- good stress. But if you are someone who has developed a lot of scar tissue putting up with what the city can throw at you, or you live in a place with no running water and drug dealers on the corner, the city and its stressors can be "one more nail in your coffin."

Letting adventitious suffering get the better of you can do the same. It's important to realize that while it feels real and has real effects, it is a creation of humans' ability to empathize and worry.

Simply recognizing that may make it easier to turn stress that results from adventitious suffering into productive stimulation, Sapolsky said.

Meditation, Sapolsky said, can focus the mind and bring the roots of your stress into awareness. For some, merely taking stock can do the same.

Or you might follow the simple advice of Barrie Cassileth, who heads integrative medicine services at Memorial Sloan-Kettering Cancer Center in New York.

"Close your eyes for a minute, take a deep breath, think about people dying in other parts of the world. Refocus, and get back to work."

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