## How a Bit of Awe Can Improve Your Health

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Experts say wonder is an essential human emotion — and a salve for a turbulent mind.

Awe can mean many things. It can be witnessing a total solar eclipse. Or seeing your child take her first steps. Or hearing Lizzo perform live. But, while many of us know it when we feel it, awe is not easy to define.

"Awe is the feeling of being in the presence of something vast that transcends your understanding of the world," said Dacher Keltner, a psychologist at the University of California, Berkeley.

It's vast, yes. But awe is also simpler than we think — and accessible to everyone, he writes in his book "Awe: The New Science of Everyday Wonder and How It Can Transform Your Life."

While many of us associate awe with dramatic, life-changing events, the truth is that awe can be part of everyday life. Experiencing awe comes from what Dr. Keltner has called a "perceived vastness," as well as something that challenges us to rethink our previously held ideas. Awe can be triggered from moments like seeing the Grand Canyon or witnessing an act of kindness. (About a quarter of awe experiences are "flavored with feeling threatened," he said, and they can arise, for example, by looking at a lion in a zoo or even gruesome videos of genocide).

In his book, Dr. Keltner writes that awe is critical to our well-being — just like joy, contentment and love. His research suggests it has tremendous health benefits that include calming down our nervous system and triggering the release of oxytocin, the "love" hormone that promotes trust and bonding.

"Awe is on the cutting edge" of emotion research, said Judith T. Moskowitz, a professor of medical social sciences at Northwestern University Feinberg School of Medicine in Chicago. Dr. Moskowitz, who has studied how positive emotions help people cope with stress, wrote in an email that "intentional awe experiences, like walks in nature, collective movement, like dance or ceremony, even use of psychedelics improve psychological well-being."

So what is it biologically? Awe wasn't one of the six basic emotions — anger, surprise, disgust, enjoyment, fear and sadness — identified back in 1972, Dr. Keltner said. But new research shows that awe "is its own thing," he said. Our bodies respond differently when we are experiencing awe than when we are feeling joy, contentment or fear. We make a different sound, show a different facial expression. Dr. Keltner found that awe activates the vagal nerves, clusters of neurons in the spinal cord that regulate various bodily functions, and slows our heart rate, relieves digestion and deepens breathing.

It also has psychological benefits. Many of us have a critical voice in our head, telling us we're not smart, beautiful or rich enough. Awe seems to quiet this negative self-talk, Dr. Keltner said, by deactivating the default mode network, the part of the cortex involved in how we perceive ourselves.

But, Dr. Keltner said, even his own lab experiments underestimate the impact of awe on our health and well-being. If we can see these biological responses in experiments, he said, "just imagine what happens when you are watching a baby being born, or you encounter the Dalai Lama."

Sharon Salzberg, a leading mindfulness teacher and author, also sees awe as a vehicle to quiet our inner critic. Awe, she believes, is "the absence of self-preoccupation."

This, Dr. Keltner said, is especially critical in the age of social media. "We are at this cultural moment of narcissism and self-shame and criticism and entitlement; awe gets us out of that," Dr. Keltner said. It does this by helping us get out of our own heads and "realize our place in the larger context, our communities," he explained.

The good news? Awe is something you can develop, with practice. Here's how.

Pay attention.

In 2016, Dr. Keltner visited San Quentin State Prison in California, where he heard inmates speak about finding awe in "the air, light, the imagined sound of a child, reading, spiritual practice." The experience changed the way he thought about awe. So Dr. Keltner teamed up with two other researchers to enlist people across America and China to keep journals about their awe experiences. He found out that people were having two or three of them each week.

"I was like, 'Oh, I can just take a breath and look around.' It doesn't require privilege or wealth; awe is just around us," he said.

When William B. Irvine, a professor of philosophy at Wright State University in Dayton, Ohio, wants to feel a sense of awe, he turns to science. "Science is everywhere, all of the time," he said. An alluring object or part of nature, for example, is a "piece of an incredibly beautiful puzzle." We often just think of the piece instead of the big picture, he said, "and that's a pity."

But once we think about the context, about what went into its creation, awe will follow.

Focus on the 'moral beauty' of others.

One of the most reliable ways to experience awe, Dr. Keltner found, was in the simple act of witnessing the goodness of others. When we see others doing small gestures, like walking an

older person across the street, we start feeling better and are also more likely to perform good deeds.

However, goodness in others is often overlooked, Dr. Keltner noted. "Our public discourse and academic discourse sort of forgets about how much good people can and want to do," he said.

Ms. Salzberg, whose forthcoming book includes a section about awe, also believes in the importance of this interpersonal wonder. She recommended paying attention to your neighborhood bus driver or grocery clerk, looking for those daily moments of kindness. If we notice those around us who are "dedicated to goodness or having a better family life than the one they were raised in or to being good to their neighbors," she said, we can strengthen our sense of awe.

Another tool to experience awe, Dr. Keltner said, is to spend time learning about inspiring people. Research suggests that watching videos of people like Mother Teresa or Mahatma Gandhi, for instance, can trigger awe.

"Remind yourself of what they've written. Have quotes of them, have photos of them," he said. "Make them part of your life."

Practice mindfulness.

Distraction, Dr. Keltner said, is an enemy of awe. It impedes focus, which is essential for achieving awe.

"We cultivate awe through interest and curiosity," Ms. Salzberg said. "And if we're distracted too much, we're not really paying attention."

Mindfulness helps us focus and lessens the power of distractions. "If you work on mindfulness, awe will come." And some studies show that people who are meditating and praying also experience more awe.

"Awe has a lot of the same neurophysiology of deep contemplation," Dr. Keltner said. "Meditating, reflecting, going on a pilgrimage."

So spending time slowing down, breathing deeply and reflecting — on top of their own benefits — have the added advantage of priming us for awe.

Choose the unfamiliar path.

Awe often comes from novelty. So gravitating toward the unexpected can set us up to experience awe. Some people do this more than others, a personality trait that experts have called an "openness to experience," Dr. Keltner said.

We can work on developing this openness through everyday choices. Choose a restaurant you don't usually visit, take a different route to work or check out some music you aren't familiar with.

In his book, Dr. Keltner wrote that people who find awe all around them, "are more open to new ideas. To what is unknown. To what language can't describe."

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