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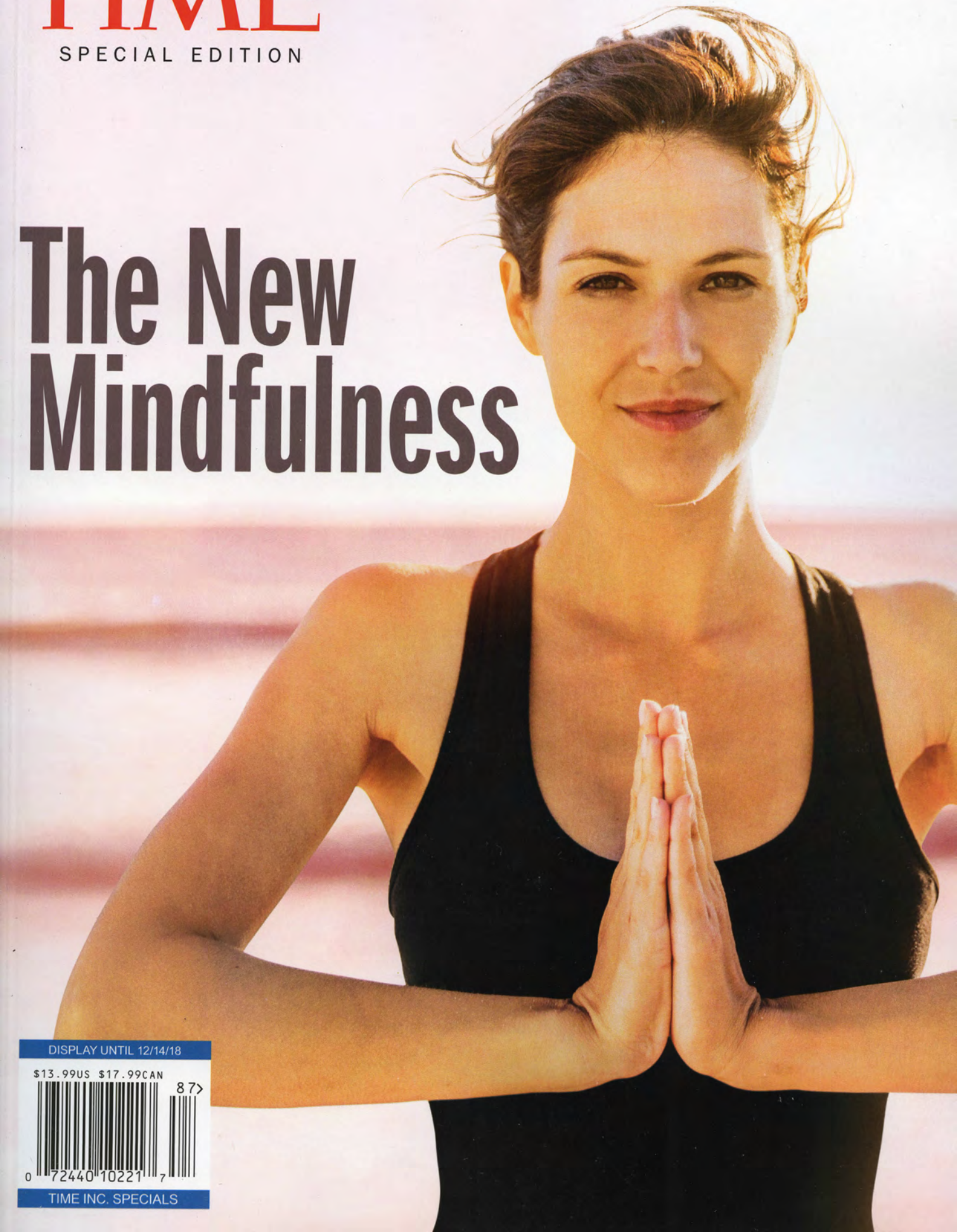
The New Mindfulness



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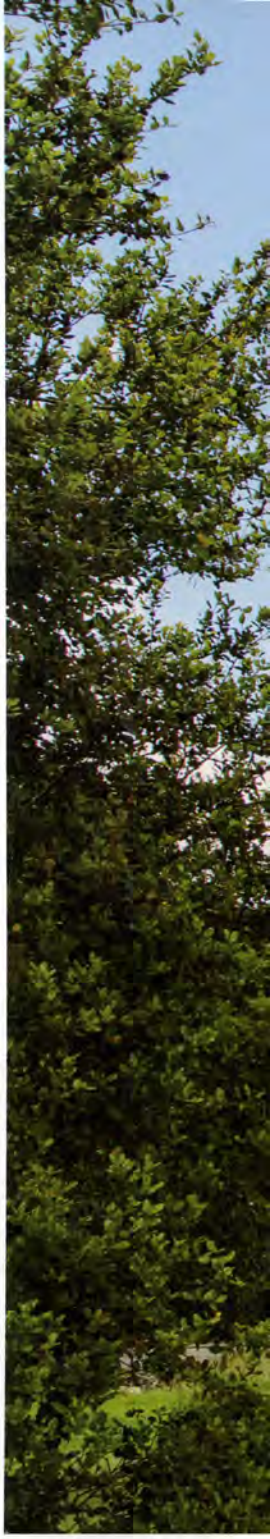

THE ANTIAGING PROMISE OF MINDFULNESS

Breakthrough research out of the Spirit Rock Meditation Center in Northern California suggests that mindfulness practices may lengthen your telomeres. Could that mean a longer, healthier life?

By Katherine Ellison

"YIELD TO THE PRESENT," URGES A TRAFFIC SIGN along the country road leading to the Spirit Rock Meditation Center in Marin County, California.

The challenge is timelier than ever, as evidence piles up that mindfulness may help you be not only calmer and more focused but also physically healthier, right down to the state of your chromosomes.

A drumbeat of findings is raising hope about the benefits of practices such as meditation and yoga, which are designed to curb distraction and cool destructive emotions. Science suggests that slowing down, breathing deeply and letting go of regrets about the past or worries about the future may bring relief from ills ranging from chronic inflammation to hot flashes to irritable bowel syndrome.

In May 2018, some particularly intriguing news came from Spirit Rock, where a team of researchers had studied participants in a monthlong meditation retreat. Their focus was on telomeres, bits of DNA that in recent years have emerged as a key player in biological aging.

Telomeres form protective caps on chromosomes. Scientists compare them to the little plastic coverings on shoelace ends that help prevent the strings from fraying. Under normal circumstances, our telomeres get shorter as we get older, diminishing each time a cell divides. Shorter telomeres may contribute to age-related illnesses such as osteoporosis, dementia, diabetes, high blood pressure and cardiovascular disease. On average, people with shorter telomeres die sooner.

The scientists found that after three weeks on retreat, the telomeres on the participants' immune-system cells had on average lengthened. That didn't

happen in the control group of subjects, matched in age and meditation experience, who were not participating in the retreat. It is the first indication to date of telomere lengths changing so quickly, says one of the authors, Clifford Saron, a neuroscientist at the Center for Mind and Brain at the University of California, Davis.

"We really didn't expect to see this much evidence of change after such a short time," Saron says.

What meditation does for you

Meditation is also heart-healthy, according to a large body of research. In fact, in the fall of 2017, the American Heart Association issued an unprecedented statement, saying that seated meditation may help reduce the risk of heart disease by lowering blood pressure and stress. A task force for the group called meditation a "reasonable intervention" in conjunction with other therapies. Other studies

have found signs that "mind-body therapies" such as yoga, meditation and tai chi may affect genes involved in harmful chronic inflammation and improve immune-system functioning.

The Spirit Rock study is an offshoot of the Shamatha Project, to date the most comprehensive examination of the health benefits of meditation. Among other findings, the 12-year-old study has discovered increased levels of telomerase—the enzyme that can lengthen telomeres—in participants in a three-month-long retreat taught by Buddhist author and teacher Alan Wallace.

The rapidly widening field of telomere research, and its link with mindfulness, are germane for the millions of Americans intent on making changes to live healthier and longer. "We do believe that being more present and focused during your day is a huge part of well-being that leads to lower stress and slower cellular aging," says Elissa Epel, the director of the Aging, Metabolism and Emotions Center at the University of California, San Francisco, and a co-author of the Spirit Rock study.

She has good reason to say so. A landmark study Epel co-authored in 2004 found that women who had suffered chronic stress had shorter telomeres. Abundant evidence shows mindfulness to be a helpful way to combat stress. Many of us aren't even aware of how stressed we are until we try to sit still with our thoughts. But once we do, breathing slowly and trying to attend to the present can help calm us down.

Over time, this simple practice can have profound results. In 2014, a team of researchers in Canada published a breakthrough report based on the telomere lengths measured in three groups of breast-cancer survivors. One of the groups meditated, another took part in a support group, and a third did neither of those things. The scientists found that telomere lengths in the first two groups on average stayed the same, even as they shortened in the other women. Linda E. Carlson, the lead investigator, says that while the actual impact on the women's health is unknown, she is confident that processing difficult emotions, with a support group or by meditating, is good for emotional and physical health.

Buffering the aging brain

Mindfulness may also help keep you sharper as you age. In an unprecedented study published in March 2018 in the *Journal of Cognitive Enhancement*, Anthony Zanesco and other Shamatha Project researchers from Saron's lab followed a group of devoted meditators over seven years and found "enduring improvements in sustained attention and response inhibition, with the potential to alter longitudinal trajectories of cognitive change across the lifespan."

The key word is "devoted": the participants had made mindfulness a huge part of their lives. But the finding was still stunning, offering the first evidence that making a lifestyle change could pay tremendous dividends. And, as the Spirit Rock study researchers note, you may not need to go off the grid to benefit. "While a monthlong retreat is out of reach for most people, our findings may help to change the conversation around cultural attitudes that keep people from taking serious time out for the activities they find most meaningful and restorative," says Quinn Conklin, a doctoral student at UC-Davis and the lead study author.

THE FIELD OF TELOMERE RESEARCH IS GERMANE FOR AMERICANS INTENT ON MAKING CHANGES TO LIVE HEALTHIER AND LONGER.

Many of the scientists studying mindfulness are dedicated meditators. Take the neuroscientist Richard Davidson, who more than anyone else has helped draw research attention to the practice. (In 2016, TIME named him one of the "100 Most Influential People in the World.") Davidson, based at the University of Wisconsin–Madison, has told interviewers that he kept his meditation practice a secret and separate from his research until the early 1990s, when the Dalai Lama challenged him to see what he might learn from the brains of people who spent years cultivating their own well-being. Davidson began bringing Buddhist monks into his lab and studying their brains with MRIs; he has found "systematic changes in the brain" associated with a mindfulness practice.

Saron, the scientific director of the Spirit Rock study, is also a long-term meditator who has participated in several retreats and has shared his lab's

meditation-research findings with the Dalai Lama, who has been an adviser to the Shamatha Project.

The study of mindfulness, while exploding, is still young; more work is needed. In 1990, only three articles in academic journals mentioned "mindfulness." In 2017, there were 692. Major findings are rarely replicated, partly because researchers have focused on different interventions. The Spirit Rock study is eclectic in its own way. Saron said he couldn't say for sure how much of the changes in telomere length were due to the mindfulness practice per se or any of the other healthy components of the retreat. The meditation center sits in a picturesque valley, surrounded by rolling hills and woodlands. Participants leave their jobs and smartphones behind. They eat granola and kale and study Buddhist principles of compassion and equanimity. The researchers can't tease out, precisely, what's making a difference, but they do have some strong clues.

Help for the extra-stressed

For one thing, the study found a correlation between how diligently the participants reported they had practiced, compared with their peers, and the changes in their telomeres. The scientists also found that the ones who initially measured highest in neuroticism—irritability and a tendency to make mountains out of molehills—and thus arguably were most in need of stress reduction had the most growth in telomere length.

This last finding echoes a 2013 study by Epel and peers that found that telomeres were generally shorter in women who said they experienced high degrees of distractibility, or mind-wandering. It could be that the more you need to focus your thoughts, the more meditation can help you.

Mindfulness researchers are eager to find answers to practical questions, such as: Can meditation truly improve age-related problems such as poor memory or hearing? How long do benefits last? Do your telomeres stay long after a retreat or shorten once you're back in the real world? And how does mindfulness compare with other healthy habits, such as exercise and good nutrition? Where should you put most of your effort when making healthy changes?

Radiating peace

In the short term, the Shamatha Project researchers want to zero in more on the relationship between personality and long-term telomere length. They also plan to take a more rigorous look at just how long you need to meditate to lengthen chromosomal caps. "There are huge takeaways from all this just in terms of the value of finding some kind of refuge in your daily life," says Saron. "With the right kind of awareness, you can practice mindfulness even while tooling down the corridors of Home Depot."

One thing is becoming increasingly clear: there are all sorts of potential benefits of a peaceful mind. One 2017 study that didn't look at mindfulness per se found that when women looked at 223 photos of healthy men, ages 40 to 75, they rated the ones who reported feeling the most optimistic and mentally healthy as looking younger than peers. Could that mean a heavy dose of mindfulness might be a better investment than Botox? You can bet some researcher has already thought about looking into it. ■

A sign at Spirit Rock reminds people to attune their senses to the moment.