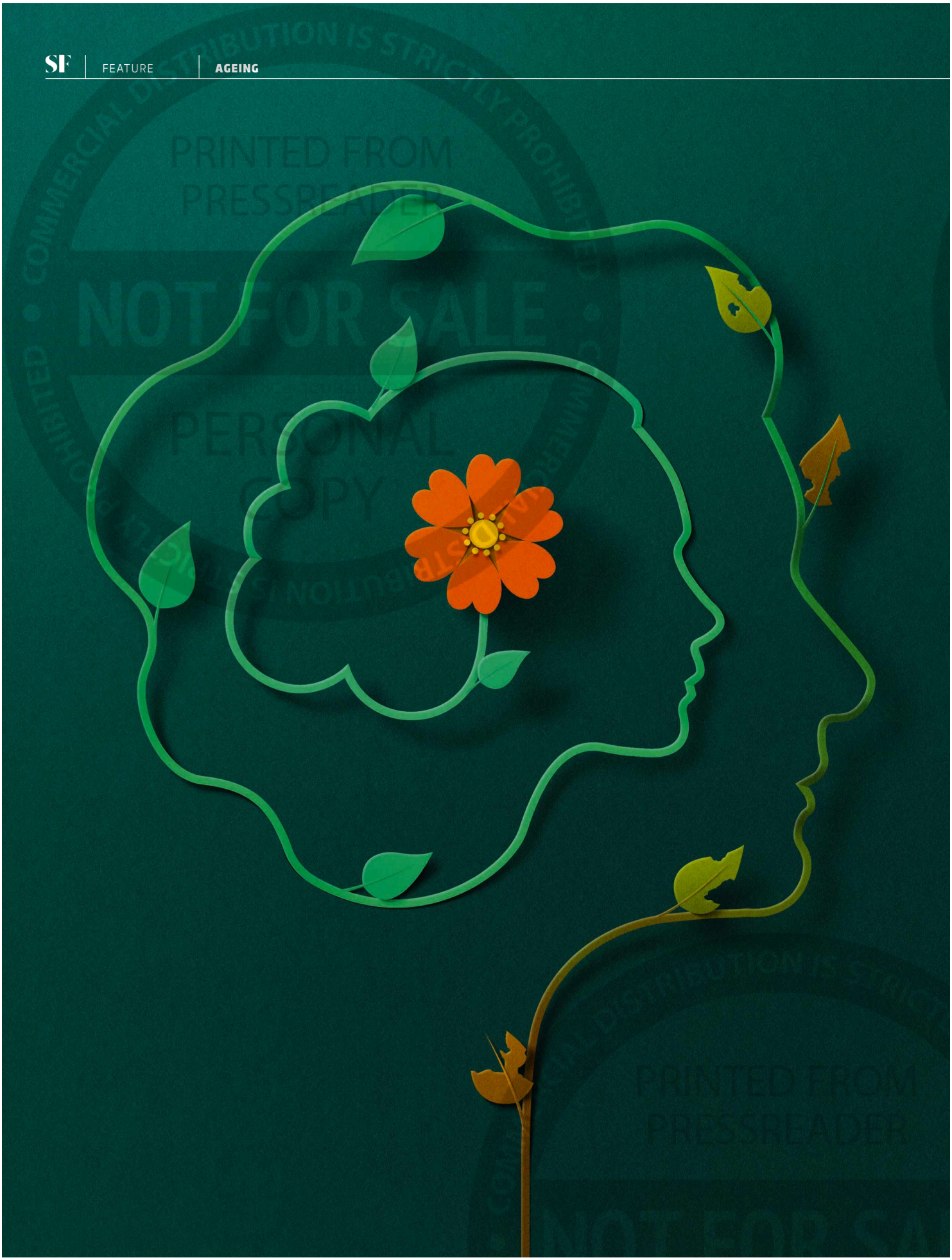
- Attitude / Ageing



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YOU'RE ONLY AS OLD AS YOU THINK

Your attitude towards ageing can reduce the toll time takes on your brain and body. It's a statement that sounds ridiculous, but the science backs it up. The question is: how much could a change of attitude change your life?

by DAVID ROBSON

Think, for a moment, about your hopes and fears for the future. Do you see your 60s, 70s or 80s as a time of growth and opportunity? Will ageing bring wisdom, status and friendship? Or do you see yourself becoming more lonely, helpless and grumpy as you get older?

Will the last years of your life be – in the words of Shakespeare – "...mere oblivion/Sans teeth, sans eyes, sans taste, sans everything"?

Quite incredibly, those beliefs may predict how you fare in the decades ahead, determining everything from the health of your memory to your risk of cardiovascular disease through a kind of self-fulfilling prophecy. Your views about ageing may even influence your lifespan by as much as 7.5 years.

Extraordinary claims require extraordinary evidence, though, and few are as extraordinary as this. But many scientists from across the world are coming to the same conclusion: your mindset can shape your biology.

"The topic has been studied for the past 20 to 30 years and we now have a lot of consistent evidence," says Dr Serena Sabatini, a post-doctoral fellow at the University of Barcelona in Spain and visiting professor at the University of Surrey in the UK. "It's one study after the other, all showing the same results."

Dr Matthew Hill, an assistant professor of sport and exercise sciences at Coventry University in the UK, agrees. "The evidence base is pretty robust."

Unpicking the mechanisms behind this link between mind and body could offer new strategies to enhance the health of our ageing population. And, if we want to live a long and happy life, it may never be too early to put those principles into practice ourselves.

ILLUSTRATION: EIKO OJALA

LIGHTING THE TOUCHPAPER

Dr Becca Levy, a professor of public health and psychology, lit the touchpaper of this research at the turn of the millennium. As a young graduate student, she had just spent a semester in Japan, thanks to a fellowship from the US National Science Foundation. The country was famous for its population's extraordinary longevity and, immersing herself in its culture, she was struck by how much reverence the Japanese paid to their oldest citizens. Could the two be linked?

"At that point, I suspected culture played a major role in shaping people's age beliefs and I wanted to know if age beliefs, in turn, might have a demonstrable impact on longevity," she wrote in her book *Breaking the Age Code*.

To find out, she turned to an enormous set of data from the Ohio Longitudinal Study on Aging and Retirement, which had tracked the trajectories of more than 1,000 participants since the mid-1970s. To measure attitudes towards ageing, the study's founders had asked their participants to state whether they agreed with a series of statements, such as: Things keep getting worse as I get older; I have as much pep as I did last year; and, as you get older, you're less useful.

When Levy and her colleagues examined the fates of these people, they found that someone's beliefs could predict their overall risk of death over the following years. On average, someone with a rosier view of ageing lived for around 7.5 more years than those who were more pessimistic, even after the researchers had controlled for factors like socioeconomic status, loneliness and their health at the start of the study.

The size of the effect was larger than the other well-established lifestyle factors. Differences in blood pressure and cholesterol, for instance, can only account for around four or so years in someone's longevity.

"HOW ON EARTH COULD THE CONTENTS OF OUR MINDS INFLUENCE OUR BODIES TO SUCH A LARGE DEGREE?"

"If a previously unidentified virus was found to diminish life expectancy by over seven years, considerable effort would probably be devoted to identifying the cause and implementing a remedy," Levy and her co-authors concluded.

FUTURE PROSPECTS

As you might expect, the finding caused something of a media storm and many similarly eye-catching discoveries soon followed. In 2009, for instance, Levy and her colleagues turned to data from the Baltimore Longitudinal Study of Aging, which began in 1958. They found that measures of people's attitudes to ageing, taken before they turned 50, could strongly predict the risk of heart disease up to 38 years later.

In the late 2010s, meanwhile, Levy turned her attention to Alzheimer's disease, showing that people with positive attitudes towards ageing were considerably less likely to develop dementia. The differences were not only visible in their scores on cognitive tests, but could also be seen in physical differences within the brain. Functional magnetic resonance imaging scans, for instance, revealed that they had maintained greater volume in the hippocampus as they aged, while those



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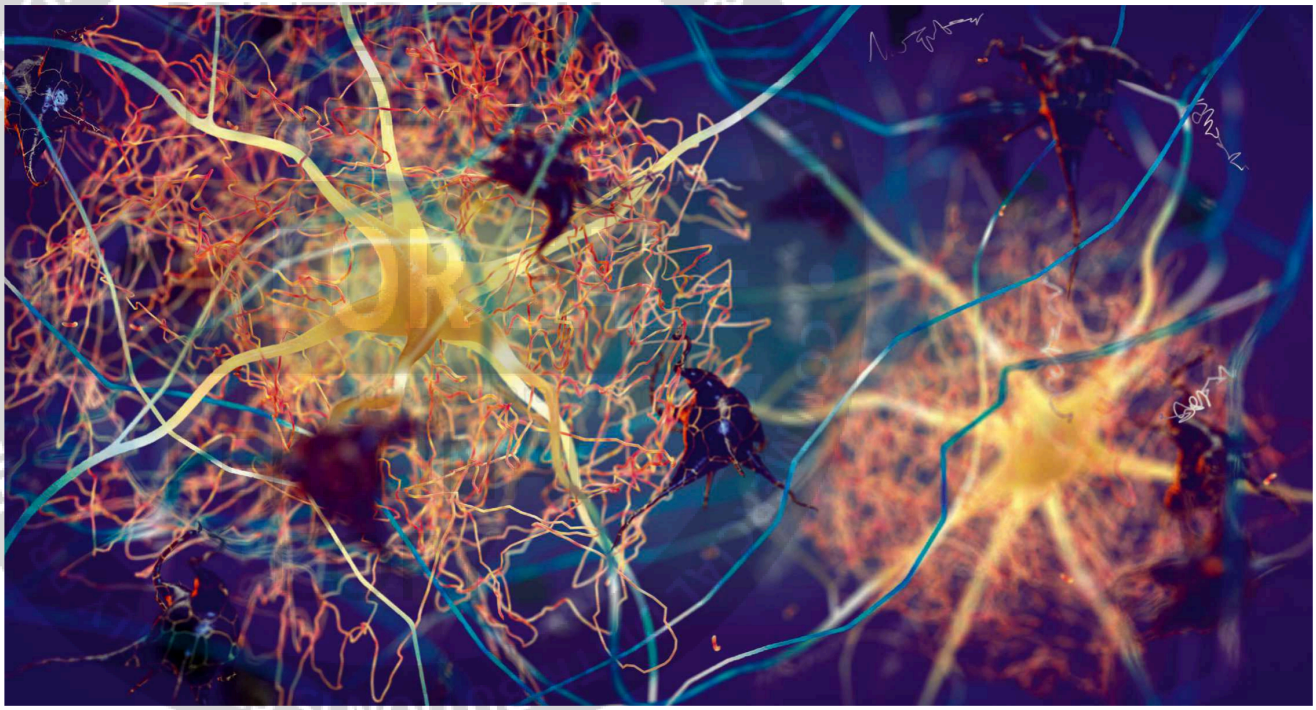

with a dim view of their prospects tended to show greater deterioration in this region, which is essential for the formation and consolidation of memories. The positive thinkers were also less likely to accumulate "amyloid plaques", the toxic clumps of protein that are thought to destroy brain tissue and which have long been considered the hallmark of Alzheimer's disease.

Research on ageing mindsets has now reached a kind of tipping point, with a formal review of the evidence revealing more than 100 papers on the topic. "About 80 per cent show an effect," says Prof Hans-Werner Wahl at Heidelberg University, Germany, who was an author of the paper.

The huge question hanging over all this research is, of course, the mechanism linking our thoughts to our biology. How on earth could the contents of our minds influence the ageing of our bodies to such a large degree?

Sceptics would argue that it doesn't and that what we're really seeing is reverse correlation. Worse health leads people to form more pessimistic views, while people with greater physical vitality are going to feel more positive. It's a very reasonable concern, but it doesn't reflect the course of events seen in the longitudinal studies, which had attempted to control for this possibility. In general, the attitudes about ageing were measured years before the changes in health had started to emerge. "These ageing mindsets hold as predictors, even when you adjust for things like age, baseline health and depression," explains Hill. "So, we can infer some level of causality."

ABOVE The build-up of amyloid plaque around neurons in the brain is linked to Alzheimer's disease

LEFT Taking steps to maintain physical health can help you keep a positive mindset as you age, and vice versa

Most researchers would argue that the link is bi-directional, which means that someone's mindset can influence their health, but their health can also influence their mindset in a kind of constant feedback loop.

STEREOTYPE EMBODIMENT

At the heart of this lies a process known as 'stereotype embodiment' – how we internalise societal stereotypes – and has three main pathways. The first is psychological: we begin to think, feel and act according to the script that our society assigns to a group, in this case older people. Research suggests that priming people with negative age stereotypes can make them more forgetful, for instance, and leads them to feel less confident in their physical strength.

Levy has observed this kind of self-fulfilling prophecy first-hand. In *Breaking the Age Code*, she recalls her grandmother having an altercation with the owner of a grocery store after she had tripped over a wooden crate. "It's not my fault that old people fall down all the time," he told her, when she complained. "Maybe you shouldn't be walking around."

For the next few days, Levy's grandmother stopped driving and began asking her family for more help around the house. "She seemed to be reliving the grocery owner's words and questioning her competency as an older person in a way she never had before," Levy recalls.

The second pathway concerns our longer-term behaviours. The fatalistic view that we face an inevitable decline can lead someone to take less care of their health. "If you can't influence your chance of getting a disease, then what's the point of following a healthy diet, training at the gym or sleeping for seven or eight hours a night?" says Sabatini.

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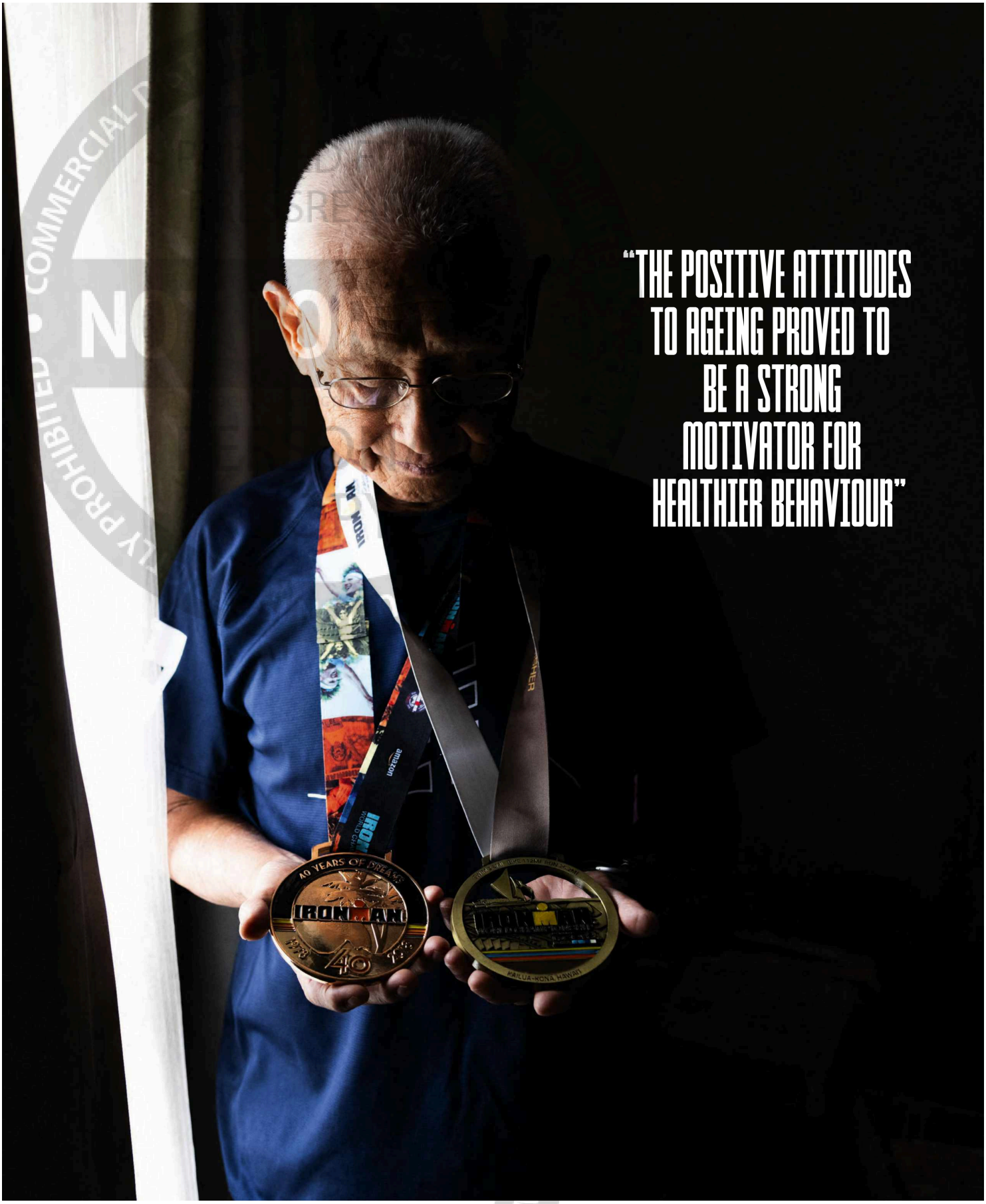

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9/20/25, 8:16 AM BBC Science Focus

LEFT Japan's Hiromu Inada has completed Ironman triathlons in his 80s and 90s

RIGHT Older people should not let their capabilities be determined by society's views

Someone who sees the potential for growth in their golden years will take more steps to preserve their wellbeing, so that they can make the most of those opportunities.

Finally, there's the physiological pathway. When we lose confidence in our abilities, small challenges – such as adapting to new technology or attending a party with people we don't know – can create a lot of anxiety, resulting in chronic stress. Levy has found that people's cortisol levels rise by roughly 40 per cent from their 50th to 80th birthdays if they have negative attitudes to ageing. Those with positive views, in contrast, show a slight decline in cortisol over the same period, as they settle into the next stage of their life. "Over the years, heightened cortisol can have a negative impact on the hippocampus, on the immune system and on our cardiovascular system," says Wahl.

The heightened anxiety that comes from the negative views of ageing can also trigger heightened inflammation. In the short term, this can help us to fight infections, but it can cause bodily wear and tear in the long term, which speeds up our biological ageing.

Stereotype embodiment may be especially important for recovery after an initial injury. Hill, for example, has found that those who view their age as a handicap are considerably less likely to regain their vigour and independence following a fall. "What was striking was that the ageing mindsets were sometimes as strong a predictor as things like their actual age or baseline activity levels," he says.

With this large body of evidence behind them, many scientists are now examining how we can use stereotype embodiment to our advantage.

As I explain in my book *The Expectation Effect*, our mindsets are incredibly malleable. We now know that teaching people about the adaptive benefits of stress can help them cope better with new challenges. Learning that a racing heart – an uncomfortable symptom of anxiety – means more oxygen is reaching the brain helped students deal with their exam nerves, for instance. Not only do they perform better in the moment, they show a healthier physiological response, which puts less strain on their cardiovascular system and allows them to recover more quickly afterwards.

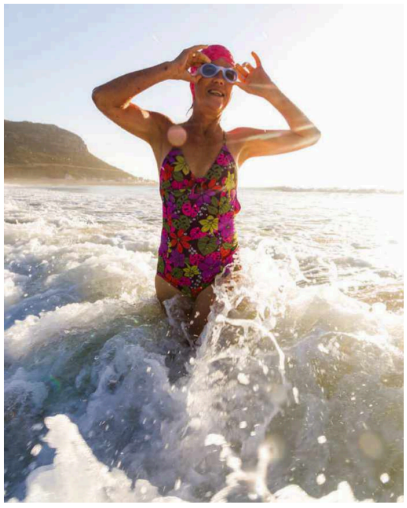
The AgingPlus project at Colorado State University took a similar approach to changing people's attitudes towards ageing. The participants in the intervention, with an average age of 60, were given a four-week course that was designed to increase their physical activity. Unlike other fitness regimes, however, the modules also explained how to identify and question some of the most negative assumptions about ageing, including the common beliefs that senior citizens are frail and absent-minded.

To reinforce these ideas, they were taught concepts such as neuroplasticity – the brain's capacity to adapt and change throughout our lives – alongside practical strategies to adopt new fitness goals. For comparison, a second group of participants was given some general education about general lifestyle changes that could maintain good health into old age.

As hoped, those taking the AgingPlus programme started exercising more than those in the control group – and this coincided with some important changes to their mindsets. By the end of the course, they were less likely to endorse statements such as "It's normal to be depressed when you are old" and "The human body is like a car: when it gets old, it gets worn out". They also felt more empowered to control their trajectory, which was reflected in their responses to statements such as "No matter [what point in life you're at], you can always influence your own ageing."

7.5

THE NUMBER OF YEARS A MORE POSITIVE ATTITUDE TOWARDS AGEING COULD ADD TO YOUR LIFESPAN



Importantly, the degree to which someone's mindset changed could predict how much they exercised over the following weeks: the positive attitudes to ageing proved to be a strong motivator for healthier behaviour. In the future, it'll be interesting to see the long-term health effects of these interventions on people's cortisol levels, inflammation and overall risk of disease.

A CHANGE OF ATTITUDE

If you feel inspired, Levy's book provides many tips on the ways we might change our mindsets. She suggests keeping a portfolio of positive role models from books, documentaries or news items, for instance. You might look to someone like the actor Judi Dench, who won an Oscar at 64 and continued to practice her art into her late 80s; or the Japanese triathlete, Hiromu Inada, who recently completed a 70.3-mile Ironman event in Cairns, Australia, at the age of 92.

You may also learn how to question your assumptions about unpleasant events or challenges. An act of absent-mindedness could be the simple result

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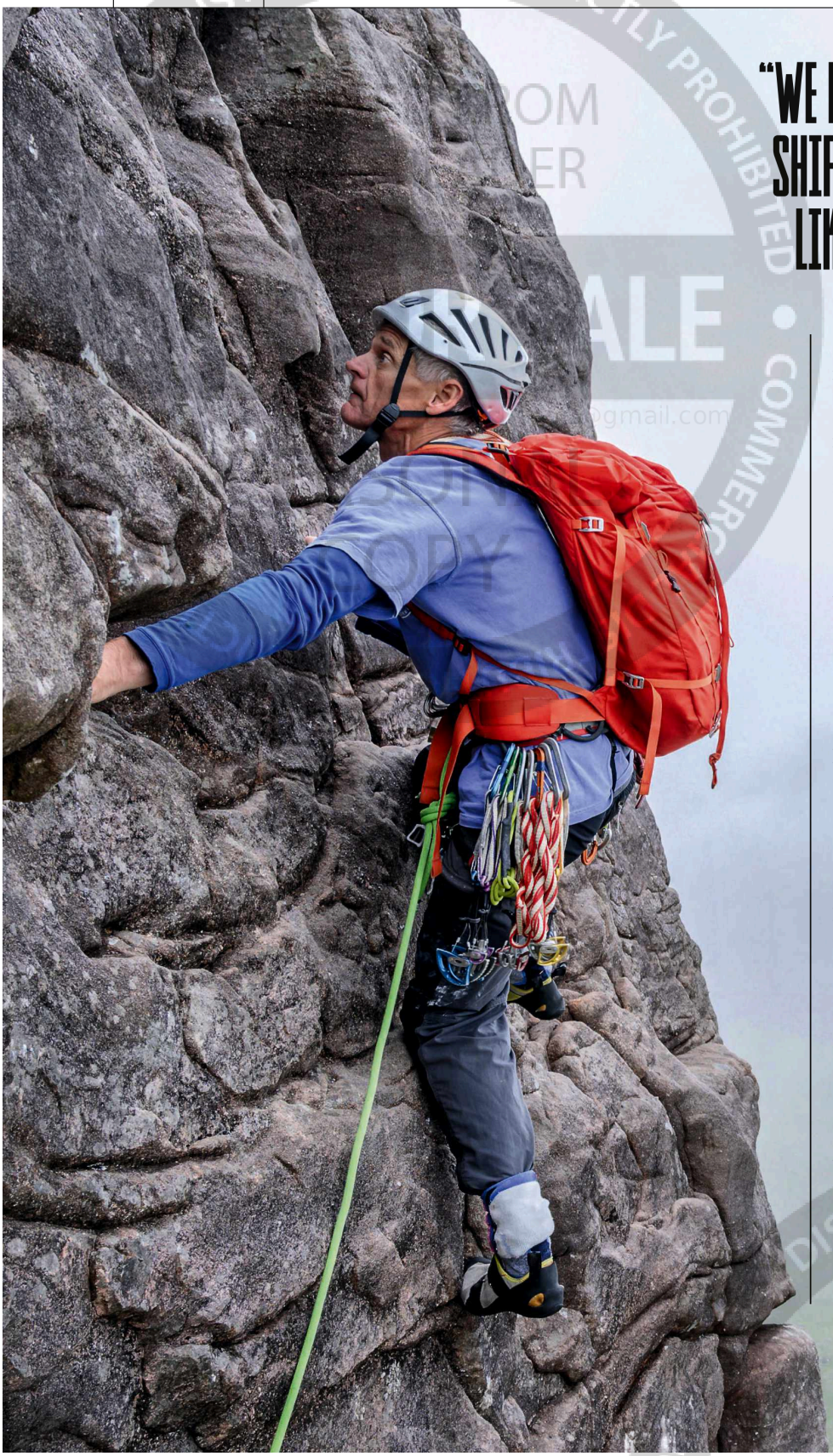

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"WE NEED A LARGER CULTURAL SHIFT THAT TREATS AGEISM LIKE ANY OTHER PREJUDICE"

of distraction in a busy life. Similarly, many aches or pains may be a natural consequence of physical activity that could occur to anyone. The true cause may have nothing to do with age, Levy says – and we can make a habit of looking for those other explanations.

Changing our attitudes will not only prepare us for a happier, healthier view of ageing; it may also help the people around us. We should be careful about the way we talk to our friends and relatives, for example. "Ageism is the last socially acceptable form of discrimination," says Hill. He points out that one can still buy many greetings cards with 'jokes' that simply reinforce negative age stereotypes, for instance – and this humour is common in many everyday conversations.

Even well-meaning attempts to help could backfire if they undermine someone's independence or agency. "We can focus on what people can do – such as walking, gardening and socialising," Hill says. "That could boost confidence and a sense of control."

Ultimately, we need a larger cultural shift that treats ageism like any other prejudice. "We can target individuals, and we can help specific groups of individuals who may be at greater risk," says Sabatini. "But we also need to change the narrative at the societal level." Whether you're 40, 60 or 80, your future health and happiness may come to depend on it. **SF**

by **DAVID ROBSON**

David is an award-winning science writer and author of The Intelligence Trap, The Expectation Effect *and* The Laws of Connection.

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