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Stress-Busting Smiles

A Genuine Grin Can Help the Heart; Is Polite Faking Enough to See Benefits?



By SUMATHI REDDY

Smiling could be good for your health.

Researchers are finding that wearing a smile brings certain benefits, like slowing down the heart and reducing stress. This may even happen when people aren't aware they are forming a smile, according to a recent study. The work follows research that established that the act of smiling can make you feel happier.

Some research suggests only a full and genuine smile affects the body in positive ways. Other studies, though, indicate even a polite smile may be beneficial. Frowning also may have a health effect: Preventing people from frowning, such as with the use of Botox, can help alleviate depression, a recent study found.

"You can influence mental health by what you do with your face, whether you smile more or frown less," says Eric Finzi, a dermatologic surgeon and co-author of the study on frowning.

Kyle Gorjanc, of Brooklyn, N.Y., regularly runs for exercise and long-distance training. After seeing race photos of herself grimacing, Ms. Gorjanc, 32 years old, began about a year ago making a conscious effort to smile when running. "I started by literally forcing myself to smile. Now I think I do it more naturally," she says.

Smiling has helped her feel less stressed and tired while running, she says. Since the biggest challenge in long-distance running isn't physical but mental, smiling "ensures that long-distance running will be much, much easier," says Ms. Gorjanc, a co-founder of an online resource for women runners called Salty Running. "What happens is you actually find things to be happy about instead of just smiling for the sake of doing it," she says. And of course other people smile back, she says.

A study published in the journal *Psychological Science* in November found that people who smiled after engaging in stress-inducing tasks showed a greater reduction in heart rate than people who maintained a neutral facial expression. The study, which involved 170 participants, got people to smile unknowingly by making them hold a pair of chopsticks in three different ways in their mouth. One way forced people to maintain a neutral expression, another prompted a polite smile,

and a third resulted in a full smile that uses the muscles around the mouth and the eyes.

"We saw a steeper decline in heart rate and a faster physiological stress recovery when they were smiling," even though the participants weren't aware they were making facial expressions, says Sarah Pressman, co-author of the study and an assistant psychology professor at University of California, Irvine. Participants making a full smile performed better than the polite-smile group, but the difference wasn't statistically significant and needs to be studied further, she says.

"We smile because we feel not threatened," says Dr. Pressman. Over time that message evolved so the muscle activity involved in a smile sends a message to the brain signaling safety, which could translate into lower heart rate and stress levels. Dr. Pressman is currently researching how smiling affects certain stress hormones, such as cortisol, and oxytocin, which is sometimes called the trust hormone. "We've already seen it with heart rate; we're hoping to see it with these other stress levels in the body," she says.

Some experts believe only a genuine, full smile, confers health benefits. Such a smile, commonly referred to as a Duchenne smile, after the 19th century French neurologist who first described it, activates major muscles around the mouth and the eyes. By contrast, a standard social smile, which is sometimes called a Pan Am smile after the polite expression the former airline's stewardesses used to greet passengers, activates only the muscles around the mouth. A Duchenne smile "generates the physiology of positive emotion and the changes in the brain" associated with spontaneous enjoyment, says Paul Ekman, a professor emeritus of psychology at the University of California, San Francisco.

Studies have found that the intensity of a person's smile can help predict life satisfaction over time and even longevity. What's unclear is whether smiling reflects a person's overall happiness or if the act of smiling contributes to that happiness. Marianne LaFrance, a psychology professor at Yale University, believes it is a bit of both.

"It's probably bidirectional," she says. "People who smile more tend to elicit more positive connections with other people," which in turn help make you happier and healthier.

Patti Wood, a body-language expert in Atlanta, says politicians, business executives and people preparing for job interviews or who are dating come to her to learn how to smile most effectively and project a positive image. Ms. Wood coaches some clients on getting their whole face involved in a smile. She tells them to bring their cheeks up higher and pull their whole face upward, and she makes sure the eyes show the warmth of a sincere Duchenne smile.

"Every time you're in the grocery store, practice that smile," Ms. Wood says she tells clients. "How does that feel? Do I like it? Do I like the results that I get?" Ms. Wood says her rates start at \$1,200 for a 3½-hour body-language-training package.

There are a number of other smiles documented in research, including ones reflecting embarrassment, love, desire, disgust and sadness. Researchers map such smiles to study where our emotions come from, their complexity and the impact they have on social relationships.

In the study of frowning, Dr. Finzi injected Botox into the frown muscles of half of a group of 74 people diagnosed with depression, which prevented these patients from frowning. The other half received placebo injections. After six weeks, 27% of the Botox patients went into remission for their depression. That compares with a 7% remission rate for the patients in the control group. Dr. Finzi says the study was presented at a conference in December and is under review for publication.

Richard J. Davidson, director of the Center for Investigating Healthy Minds at the University of Wisconsin, says he is exploring whether activating the frowning muscle between the eyebrows, known as the corrugator, is associated with activity in the amygdala, the part of the brain that processes emotions such as fear. "What we find is that there's correlated activity but that doesn't mean that the production of the facial expression actually causes these changes in the brain," he says. "That requires much more research."

Some experts caution against suppressing facial emotion, be it good or bad. Dacher Keltner, a psychology professor at University of California, Berkeley, says studies have shown that people who use Botox to hide lines on their face feel less pleasure in response to subtle things around them and aren't able to read other people's emotions as well.

And what effect do people who smile have on others? Experts say there is a real positive impact. Marco Iacoboni, a lab director at the UCLA Brain Mapping Center, says when people see a smile, so-called mirror neurons fire in their brain and evoke a similar neural response as if they were smiling themselves.

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