

# Laughter's Link to Health May Be in the Blood

By ROB STEIN  
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According to the Bible, "a merry heart doeth good like a medicine." Now, modern science may be validating that Old Testament proverb — a good laugh may actually help fend off heart attacks and strokes.

"We believe laughing is good for your health," said Michael Miller of the University of Maryland School of Medicine in Baltimore, who led the research. "And we think we have evidence to show why that's the case."

A growing body of other evidence has suggested that negative emotions, particularly depression and stress, can be harmful, making people more prone to illness, more likely to experience suffering from their ailments and less likely to recover as quickly, or at all. One recent study even found sudden emotional shock can trigger life-threatening heart symptoms that many doctors mistake for a classic heart attack. Miller himself, along with his colleagues, had done a study that found people who have a negative reaction to social situations tend to be more prone to heart disease.

But far less has been done to examine whether positive emotions can reduce the risk and complications of illness.

"The focus is always on the negative aspects," he said. "We thought, 'Why not look at the opposite?'"

So they decided to examine the ability of blood vessels to expand — known as vasodilation. Poor vasodilation can increase the risk of heart attacks and strokes by making the passageways prone to being blocked, cutting off vital blood flow.

The researchers asked 20 healthy men and women to watch clips of two movies — either the violent opening battle scene in the 1998 film "Saving Private Ryan" or a humorous scene from a comedy, such as the 1996 "Kingpin."

The researchers tested the subjects' vasodilation, before and after the movie, by constricting and releasing an artery in their arms with a blood pressure cuff and

then using ultrasound to measure how the blood vessels were functioning.

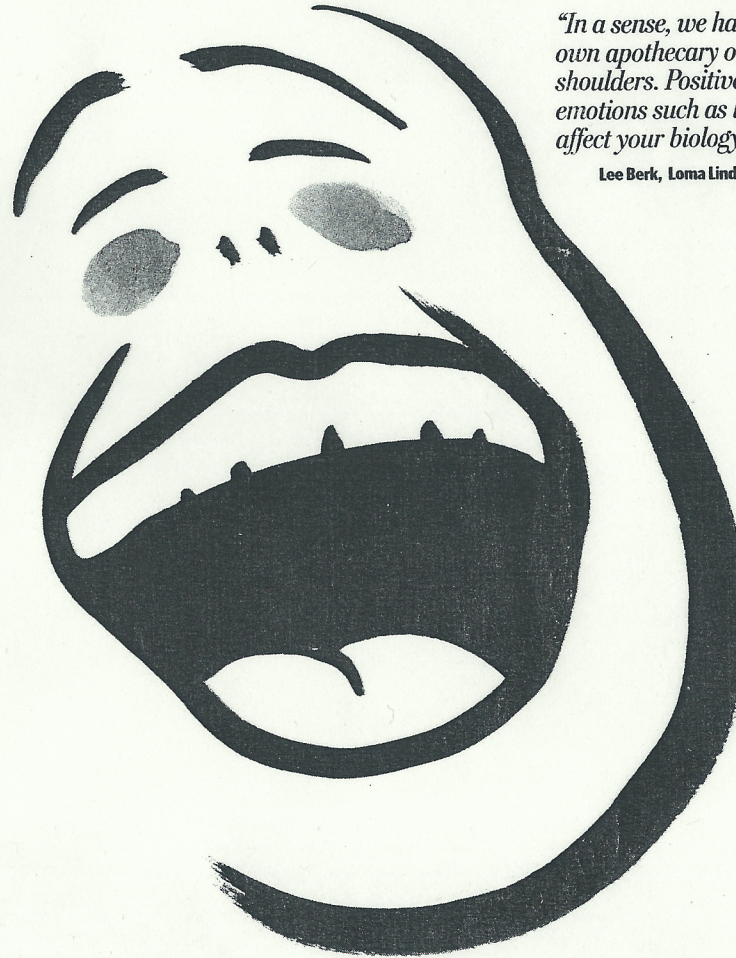
The researchers discovered striking differences depending on which movie the volunteers had watched. Blood flow was significantly reduced in 14 of the 20 volunteers who saw the stressful film. In contrast, blood flow markedly

increased in 19 of the 20 volunteers after watching the funny movie, the researchers reported last week at a meeting of the American College of Cardiology in Orlando.

Overall, blood flow decreased by about 35 percent after experiencing stress but increased 22 percent after laughter — an improve-

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BY PATTERSON CLARK — THE WASHINGTON POST

adrenalin and cortisol. That is designed to prime the body for a fight or a flight, but the hormones can have detrimental effects on the body, including suppressing the immune system and constricting blood vessels.

Miller and his colleagues hypothesize that laughter may have a contrasting effect, causing the body to release other natural chemicals known as endorphins — pleasure-producing agents best known for producing the "runner's high" — that may counteract the effects of stress hormones and cause blood vessels to dilate.

The researchers acknowledge they are still a long way from proving their hypothesis or fully understanding the process, but they say the theory makes sense.

"Conceivably, when you laugh you send a signal to the brain to release these endorphins, and these may activate receptors to release other chemicals, perhaps including nitric oxide, which is known to enhance blood vessel dilation," Miller said.

Laughter may also use similar mechanisms to help boost the immune system and reduce the amount of inflammation in the body, which has been linked to an increased risk of a host of health problems, said Lee Berk, an associate professor of health promotion and education who studies laughter at Loma Linda University in California.

"Laughter is not dissimilar from exercise," Berk said. "It's not going to cure someone from stage three cancer, but in terms of prevention it does make sense. In a sense, we have our own apothecary on our shoulders. Positive emotions such as laughter affect your biology."

Other researchers said the findings add new insight into the interplay of emotions and health.

"This is just the latest example of the importance of the mind-body relationship," said Herbert Benson, who studies emotions and health at Harvard Medical School. "This shows that we have to look not only towards how to reduce stress but how we can elicit positive feelings, as well."

Heart specialists agreed.

"We've known that there's an association between state of mind and cardiovascular health," said Stuart Seides, associate director of cardiology at Washington Hospital Center. "This type of study gives us a peek into the mechanism."

Robert Provine, a University of Maryland psychologist who also studies laughter, was somewhat more cautious. It remains unclear whether the act of laughter was really at work in the movie-watching volunteers, since the researchers did not actually measure how much they laughed, he said.

"The results could be the result of just the act of watching the movie. Or maybe it's just the act of engaging in something interesting that doesn't cause stress," Provine said.

Miller acknowledged he has no way to know for sure that laughing per se produced the effect he measured.

"Is it laughing or just feeling good? We don't know at this time. But clearly laughter is an active process, and probably a good belly laugh will be better than just smiling. I think this active process helps release endorphins," he said.

Provine, despite his doubts about the study, is all for laughter.

"I strongly recommend laughter, based on the fact that a life of laughter is better than one without it," Provine said. "It feels better when you do it."

Miller envisions a time when doctors might recommend that everyone get 15 to 20 minutes of laughter a day in the same way they recommend at least 30 minutes of daily exercise.

"Wouldn't it be ironic if it turns out that laughing 15 to 20 minutes a day would be added as part of overall good health habits, like running?" Miller asked.

He added that he would not recommend that people replace their daily trips to the gym with a Marx Brothers movie, but they could consider adding activities that make them laugh.

"There's no downside that I know of to laughing," Miller said. "Based on these results, I am happy to recommend laughing to my patients."