



Laughter May Indeed Be the Best Medicine

Study Shows Laughing Changes Blood Chemistry, Helps Protect Against Disease, Depression

May 10, 2006 -- Let that belly laugh out. New research shows that it can literally change your blood chemistry and help protect you from disease and depression.

For several years now, scientists have suspected that "mirthful" laughter, as distinguished from nervous or self-conscious chuckles, can help the immune system and even fight heart disease, but serious data have been lacking.

Now, researchers at Loma Linda University in Southern California say they have found a physiological change that occurs when people laugh, and it lasts long after the laughter subsides.

Laughter, according to the scientists, stimulates the production of beta-endorphins, also known as the body's own morphine, and human growth hormone, which helps tune up the immune system.

It's a small study, and not likely to be embraced by everyone, but lead researcher Lee Berk says it's very convincing, and the changes take place "at the chemical level." The rewards, including the "feel good" attitude resulting from the increased supply of endorphins, can last up to 24 hours, he adds.

The research, which was presented at a recent meeting of the American Physiological Society called Experimental Biology 2006, is consistent with findings at a number of other institutions.

Cardiologists at the University of Maryland Medical Center reported a few years ago, for example, that their research showed that an active sense of humor could help prevent heart disease, but the reason why was not yet clear. Last year, they expanded on their earlier findings and reported that laughter has a direct impact on the function of blood vessels, allowing an increase in the flow of blood.

Some of the current research, oddly enough, grew out of efforts to understand why exercise is so important. Berk, for example, got into the field more than three decades ago while studying the impact of exercise on stress. He found that people who exercised regularly released endorphins at a different rate than those who didn't.

"I thought, how interesting, here's a behavior that actually produced an effect on the human brain," he says. That led to another question. If exercise can do it, can other positive activities have a similar impact? To find out, he needed some kind of universal, positive experience.

"So I thought, what's universal? Laughter is universal. And mirthful, happy laughter is a very positive emotional experience," he says.

He set out to find out if laughter could be as effective as exercise, but funding was hard to get, and experiments were costly because they required so much medical supervision. While he was "stumbling around without any money," as he puts it, he got a surprise phone call from novelist Norman Cousins.

"I don't know how he found out about what we were trying to do, but he said he wanted to come to Loma Linda and see me," Berk says.

Cousins had nearly died from ankylosing spondylitis, a painful rheumatic disease, but made a remarkable recovery that he attributed to changing from a negative to a positive attitude, partly by watching funny movies.

"He asked what it would take to do the research," Berk recalls. "I said money. He said how much. So I gave him a figure and he said who do I make the check out to."

Berk was off and running and published his first findings in 1985. But some of his most important research was revealed in 2001 when he and several colleagues reported on a study of heart patients at Loma Linda University. The 48 patients were divided into two groups, one of which watched 30 minutes of comedy every day, in addition to their regular cardiac care program. The other group didn't see the movies.

The patients were followed for one year, and the results were dramatic.

"Heart attacks diminished drastically in the group that watched the comedies," Berk says. Other symptoms improved to the point that medications were reduced. Only two of the patients who watched the movies had heart attacks during the experiment, compared to 10 who did not see the movies.

"It blew my mind," Berk says.

Cousins, who had made it possible for Berk to continue his inquiries, wasn't around for the latest result. The two talked for the last time in 1990, when Berk brought Cousins up to date on his work.

"Norman died two weeks later," Berk says.

Berk and several colleagues continued the line of research, resulting in the most recent findings. They recruited 16 healthy males and divided them into two groups. Blood was drawn from all the subjects before the experiment, four times during the hour-long video, and three times afterward. Members of one group watched a funny movie of their choice, but the second group didn't get to see the film.

The results, Berk says, were dramatic.

Even before the movie began, and long after it ended, the blood chemistry in the group watching the movie changed. Beta-endorphins, the so called body's own morphine, rose by 27 percent, and human growth hormone rose by 87 percent compared to the group that didn't see the movie.

That's significant, Berk says, because of the role both those substances play.

"Endorphins are the stuff that make you feel good," he says. "It's the stuff that's related to orgasmic response. It's the runner's high."

It also slows down the heart rate, reduces blood pressure and opens air passages.

Human growth hormone "cranks up at night, when you and I are asleep," Berk says. "It's one of the hormones that helps re-tune a lot of things. And it tunes up and optimizes the immune system."

Thus, his findings indicate there is a physiological basis for the good things that come from laughing. Small studies, to be sure, and much more research needs to be done, but funding will continue to be tight.

That's partly because you can't put laughter in a bottle, patent it and sell it for a profit. It's enough to make you cry.

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