

COPD patients with sense of humor feel better, but laughter may be bad for lungs

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Having a sense of humor is associated with improved emotional functioning and an enhanced quality of life among patients with a chronic lung illness, but the actual act of laughing out loud can reduce lung function, at least in the short term, research suggests.

The study evaluated humor and laughter in patients with [chronic obstructive pulmonary disease](#), or COPD. Participants who exhibited a greater sense of humor were more likely to report fewer [symptoms of depression](#) and anxiety and better quality of life, and tended to report that they had experienced fewer respiratory illnesses in the month before the study.

But patients who watched a 30-minute comedy video and laughed during the viewing had lower pulmonary function afterward than did patients who watched a home-repair video that did not prompt laughter.

COPD is a chronic, progressive disorder characterized by difficulty breathing, and especially in expelling air from the lungs. It is the fourth-leading cause of death in the United States, affecting more than 12 million people, according to the Centers for Disease Control and Prevention. COPD patients are at increased risk of experiencing depression, anxiety, a diminished quality of life and frequent [respiratory illnesses](#).

The pattern of findings in this research suggests that appreciating and perceiving humor may have a different effect than laughing aloud for

patients with moderate to severe COPD, researchers say.

"This study shows that humor is really more complex than people make it out to be," said Charles Emery, professor of psychology at Ohio State University and senior author of the study. "Yes, humor definitely has benefits, but the behaviors associated with humor in fact may not be good for all people all the time – which is a useful thing to know.

"Because these patients are at risk for depression and anxiety, one implication of this study would be that encouraging or even teaching people to use humor as a way of coping may actually be a novel way of enhancing their well-being."

The research is published in the current issue of the journal *Heart & Lung*.

Kim Lebowitz Feingold, lead author of the study, performed the research for her psychology Ph.D. dissertation at Ohio State. Now director of Cardiac Behavioral Medicine at the Bluhm Cardiovascular Institute of Northwestern Memorial Hospital, Lebowitz Feingold said the project grew from her interest in the field of positive psychology.

"We wanted to look at positive attributes or traits associated with improved physical or emotional health. I've long been fascinated with the idea that laughter and a sense of humor can be positive for well-being," she said.

Previous research had suggested that humor is beneficial to healthy adults because it can improve mood and strengthen immune function. Laughter also had been characterized as a behavior that may help expel stale air from the lungs. The researchers sought to determine whether the benefits of humor and laughter could extend to people who suffer from COPD.

"We know the negative emotional consequences of COPD. So I thought it was an ideal condition to serve as the focus of an examination of the potential benefits of humor and laughter," said Lebowitz Feingold, also an assistant professor of psychiatry and surgery at Northwestern University.

Forty-six COPD patients participated in the sense of humor portion of the study, and of those, 22 participated in the portion of the study that the researchers called "laughter induction."

All participating patients completed a number of questionnaires to assess their sense of humor, psychological functioning and health-related quality of life, as well as a brief interview about recent infectious illnesses. The assessments included the Coping Humor Scale, which measures the degree to which someone uses humor to cope with stress, and the Situational Humor Response Questionnaire, which counts the frequency of smiles, laughter and other so-called mirthful behaviors in a variety of situations. Measures of depression and anxiety symptoms were used to evaluate psychological functioning.

In the laughter induction, patients completed pulmonary function tests, and reported their mood and the severity of their shortness of breath symptoms immediately before and after watching a 30-minute video. After being randomly assigned to either a neutral or humor condition, participants watched either a neutral instructional video or their selection of one of three comedy options: Abbott and Costello, Bill Cosby or a segment of funny home videos.

As expected, the COPD patients reported more impaired psychological functioning, lower quality of life and above-average anxiety in their daily lives compared to national data on these symptoms in healthy adults. Patients also had reported an average of five sick days on which they experienced infectious illness symptoms in the previous four weeks.

But on average, the patients also reported that they used a sense of humor in their daily lives. Out of a possible score of 24 on the Coping Humor Scale, this patient sample's average score was 19.3. As a group, they were less likely to report use of mirthful behaviors to express humor, scoring 56.6 out of a possible 105 on the Situational Humor Response Questionnaire.

An analysis of association between the patients' sense of humor and well-being measures suggested that the higher their score on the sense of humor scales, the lower were their symptoms of depression and anxiety. A sense of humor was significantly associated with enhanced psychological functioning and better quality of life. And though the relationship was not as strong, a higher sense of humor score also was linked to fewer recent sick days.

Emery noted that because of the nature of the study, the researchers can't be certain which came first – the sense of humor or the better well-being.

"Is it that people with a greater use of humor have better well-being or is it that better well-being is leading to a better sense of humor? There are limitations to the data," said Emery, also an investigator in Ohio State's Institute for Behavioral Medicine Research. "But we know that the humor and higher quality of life are associated in those people."

When it came to laughter, however, the results were a surprise. Patients watching comedy videos did laugh more than patients who watched instructional videos, as expected. But follow-up pulmonary tests showed that those participants who laughed also had more air trapped in their lungs afterwards, a sign of reduced lung function.

"During laughter, we're expiring more air than we're inhaling so it's a potential way of ridding our lungs of stale air. COPD is characterized by

this increased air trapping, so our hypothesis was that laughter would reduce some of that trapped air," Lebowitz Feingold said. "But in hindsight, the findings make sense. With laughter, people also are introducing an increased amount of air into their lungs compared with a normal breath. These patients have trouble getting the air out, so they are taking in more air with laughter, but they cannot easily expire that air, leaving them with increased trapped air following laughter."

She noted, too, that the study measured only the acute response to laughter.

"We can't tell if this effect is cumulative, how long it might last, or whether it has any impact on physical health or [pulmonary function](#) long-term," she said.

Provided by The Ohio State University

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