



## The Link Between Depression & Heart Disease

This month we feature an excellent article from the National Heart, Lung, and Blood Institute, a part of the National Institutes of Health. Their article can be found at this link:

<https://www.nhlbi.nih.gov/news/2017/heart-disease-and-depression-two-way-relationship>

The text of the article is found here as well in its entirety:

### Heart disease and depression: A two-way relationship

For years, scientists have known about the relationship between depression and heart disease. At least a quarter of cardiac patients suffer with depression, and adults with depression often develop heart disease. What researchers now want to know is “why.” So far, they have unearthed a treasure trove of important clues, but a definitive explanation on the curious nature of this relationship has yet to emerge.

It is a puzzle: Is depression a causal risk factor for heart disease? Is it a warning sign because depressed people engage in behaviors that increase the risks for heart disease? Is depression just a secondary event, prompted by the trauma of major medical problems, such as heart surgery? Experts say the urgent need for answers is clear: According to the World Health Organization, **350 million people suffer from depression worldwide**, and 17.3 million die of heart disease each year, making it the number one global cause of death.

The promising news, they say, is that new insights are emerging because of the data researchers continue to amass, scientific innovation, and heightened public awareness. It was in part because of better diagnostic tools and an increased recognition of the prevalence of depression that scientists could establish a connection between depression and heart disease in the first place.

“Thirty years of epidemiological data indicate that depression does predict the development of heart disease,” said Jesse C. Stewart, Ph.D., an associate professor of psychology in the School of Science at Indiana University-Purdue University Indianapolis (IUPUI).

Stewart noted that there is now “an impressive body of evidence” showing that, compared with people without depression, adults with a depressive disorder or symptoms have a 64 percent greater risk of developing coronary artery disease (CAD); and depressed CAD patients are 59 percent more likely to have a future adverse cardiovascular event, such as a heart attack or cardiac death.

But does depression *cause* heart disease? Is it a risk factor on its own?

Many investigators recoil at the use of the word “cause” because almost all evidence connecting heart disease and depression comes from observational studies.

“Those who have elevated depressive symptoms are at increased risk for heart disease, and this association seems to be largely independent of the traditional risk markers for heart disease,” said Karina W. Davidson, Ph.D., professor at Columbia University Medical Center. Indeed, she said, the association between depression and heart disease is similar to the association of factors such as high cholesterol, hypertension, diabetes, smoking, and obesity and heart disease.

To establish a true cause-effect link between depression and heart disease, according to Stewart, scientists need evidence from randomized controlled trials showing that treating depression reduces the



risk of future heart disease. In other words, what needs to be studied is whether treating depression prevents heart disease in the way treating high cholesterol and blood pressure does.

A 2014 [paper](#) by Stewart and his colleagues suggests that early treatment for depression, before the development of symptomatic cardiovascular disease, could decrease the risk of heart attacks and strokes by almost half. Now, with funding from the National Heart, Lung, and Blood Institute (NHLBI), Stewart is currently conducting the [clinical trial](#) he said would help answer this cause-effect question.

In the meantime, the existing evidence prompted the American Heart Association (AHA) to issue a statement in 2015 warning that teens with depression and bipolar disorder stand at increased risk for developing cardiovascular disease earlier in life, and urging doctors to actively monitor these patients and intervene to try to prevent its onset.

Just as concerning, say doctors, is the prognosis for older patients who already have heart disease. Researchers have discovered that depression actually worsens the prognosis—and dramatically. Conversely, people who are diagnosed with heart disease have an increased risk of developing depression. It's two-way relationship.

The prevalence of depression among cardiac patients ranges from 20 to 30 percent. “Even the lower limit of this ranges is more than double the prevalence of this treatable condition in the general population,” wrote Bruce L. Rollman, M.D. and Stewart in their 2014 [study](#).

A recent [study](#) presented at the American College of Cardiology’s 66th Annual Scientific Session shows that patients are twice as likely to die if they develop depression after being diagnosed with heart disease. In fact, depression is the strongest predictor of death in the first decade after a heart disease diagnosis.

“We are confident that depression is an independent risk factor for cardiac morbidity and mortality in patients with established heart disease,” said Robert Carney, Ph.D., professor of psychiatry at Washington University School of Medicine. “However, depression is also associated with other risk factors, including smoking, so it can be difficult to disentangle its effects from those of other risk factors.”

In other words, cardiac patients with depression have worse outcomes, which translate to more deaths and repeated cardiovascular events. But how does depression have such an effect?

Researchers agree that while the pathways are not completely understood, there are many likely explanations. Some point to the biology of depression, such as autonomic nervous system dysfunction, elevated cortisol levels, and elevated markers of inflammation.

“There are also plausible behavioral explanations, such as poor adherence to diet, exercise, and medications, and a higher prevalence of smoking, that have been associated with depression with or without established heart disease,” said Ken Freedland, Ph.D., also from Washington University School of Medicine.

“We think that there are likely to be multiple pathways, and this has been one of the foci of our research over the years,” he said.