

## Dangerous duo: Hostility plus depression elevates risk for heart disease

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Researchers led by Jesse Stewart, Ph.D., assistant professor of psychology at Indiana University-Purdue University Indianapolis, report that hostility and depression appear to act together in a complex way to elevate inflammatory proteins in the human body, possibly putting hostility plus depression on the list of risk factors for heart disease along with high blood pressure, elevated cholesterol, and smoking.

The findings, that hostility enhances inflammatory processes relevant to heart disease only in the presence of depressive symptoms, are published in the February-March 2008 issue of Psychosomatic Medicine. Dr. Stewart and colleagues examined associations of depressive symptoms and hostility with blood levels of two inflammatory proteins, interleukin-6 and C-reactive protein, that are predictive of future heart disease. Participants in the study were 316 healthy men and women aged 50-70.

Previous studies have found depression to be associated with raised inflammatory protein levels. Other studies have confirmed links between hostility and inflammatory proteins that are predictive of heart disease. But this study is the first to find that, among older adults, the relationship between hostility and these inflammatory proteins depends on the level of depression.

"In our study, we looked at depression and hostility simultaneously, and we found that the relationship of these negative emotions to inflammatory markers is more complex and much stronger than depression or hostility individually," said Dr. Stewart, who notes that depression and hostility tend to co-occur within individuals.

Psychological risk factors for heart disease merit further study. According to Dr. Stewart, the strength of the association of psychological factors with future heart disease is similar to that of

traditional risk factors like smoking, high blood pressure, and elevated cholesterol.

"There are of course mental health reasons to treat depression and hostility. Now we know there is a physical health reason – the link to cardiovascular diseases," said Dr. Stewart, a clinical health psychologist at IUPUI's School of Science, is an IU Center for Aging Research affiliated scientist.

Source: Indiana University

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