

Negative Personality Traits Add Up to Increased Coronary Risk

DURHAM, N.C., Nov. 17 -- Patients with a constellation of negative personality traits, such as depression, anxiety, hostility, and anger, are at an increased risk for coronary heart disease, investigators here reported.

Although a combination of these negative traits proved to be the strongest predictor of risk, each was independently associated with an increased risk for heart disease. After adjustment for coronary heart disease risk factors, showed a 15-year follow-up study of more than 2,000 U.S. Air Force veterans.

Anger was the strongest predictor on the individual traits, ranking close to the combination, Edward C. Suarez, Ph.D., of the department of psychiatry and behavioral sciences at Duke, and colleagues, reported in an early online release from the November/December issue of *Psychosomatic Medicine*.

"Angry people may be at greater risk for coronary heart disease because they are also hostile, depressed, and anxious," the investigators wrote. "Similarly, depressed people may be at greater risk for coronary heart disease because they are also angry, anxious, and hostile. It is possible that the co-variation of these attributes represents distinct processes that influence the development of coronary heart disease."

The authors followed 2,105 men who took part in the Air Force Health Study, a 20-year study designed to evaluate the effects of herbicide exposure on various health outcomes in veterans of Operation Ranch Hand. That campaign, initiated at the request of the South Vietnam government in 1962, used Agent Orange and other dioxin-based chemicals to defoliate the jungles that provided cover for the Viet Cong during the Vietnam war.

During the study, which ran from 1982 to 2002, the participants were assessed for psychological attributes with scales constructed from the Minnesota Multiphasic Personality Inventory.

The participants were followed for a mean of 15 years for evidence of ischemic heart disease, as defined by International Classification of Diseases codes 410-414, 428.4, or 36.

Over the course of the study participants underwent six follow-up examinations that included medical histories, blood pressure, lipid profiles, diabetes status, and blood chemistry.

In the current study, the authors examined the association between psychological attributes -- hostility, anxiety, depression, and anger -- and coronary heart disease using Cox proportional hazard models.

The trait components were also considered in combination to derive a psychological risk factor score.

In both age-adjusted models and models adjusted for all variables, all four psychological attributes were significantly associated with risk of developing coronary heart disease, the authors found.

The hazard ratio for coronary heart disease and trait anger was 1.23 (95% confidence interval, 1.09-1.38, $P<0.0006$), for coronary heart disease and depression was 1.16, (95% CI 1.06-1.27, $P<0.002$), for coronary heart disease and anxiety was 1.15 (95% CI ,1.05-1.25, $P<0.003$), and for coronary heart disease and hostility was 1.19 (95% CI, 1.03-1.36, $P<0.0008$).

The investigators also found that the factor-analytically derived psychological risk factor score was a better predictor of incident coronary heart disease than either the hostility, depression, or anxiety scales alone, and statistically similar to the anger scale.

"Thus, the psychological risk factor score appears to be as good a predictor of incident coronary heart disease than any individual scale and a significantly better predictor than some of the individual scales," the investigators wrote.

They also found that when they reanalyzed that data by including the Operation Ranch Hand comparison group, whose members were not exposed to herbicide, the results were essentially the same, and there was no evidence of interactions between any of the four psychological variables and herbicide exposure group, or between psychological risk factor and exposure group, they noted.

"These results suggest that the co-variation of hostility, anger, depression, and anxiety accounts for the increased risk of coronary heart disease associated with each individual factor," the investigators wrote. "The results of this study challenge the conventional approach of examining these psychological attributes in isolation."

They acknowledged that their findings are limited by the homogeneity of their study sample, which was composed of mostly non-black men, making it difficult to extrapolate the findings to women or other racial/ethnic groups.

"It is important to note, however, that hostility, anger, and symptoms of depression and anxiety have been associated with increased risk of coronary heart disease in ethnically diverse samples of men and women," they added.

Action Points

Explain to patients who ask that this and other studies have found a link between certain negative personality traits such as anxiety, hostility, anger, and depression and elevated risk of coronary heart disease.

Offer patients advice on stress and anger management techniques, and consider referrals to psychological, psychiatric, or social support services as necessary.

By Neil Osterweil, Senior Associate Editor, MedPage Today

Reviewed by [Zalman S. Agus, MD; Emeritus Professor at the University of Pennsylvania School of Medicine.](#)

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