

Heart Disease Prevention: The Stress Factor

The connection of stress to our immune system function has long been understood by anyone who has come down with a cold after a stressful event. But how does stress impact heart disease?

Various stressful factors, including depression, anxiety, hostility, low social support, isolation, occupational and marital stress are related to risk of cardiovascular disease. These adverse conditions combine with traditional biological and behavioral, lifestyle risk factors.¹ Estimated prevalence of major depression in the US is 14%, but up to 30% in cardiac patients. Depression and anxiety stimulates the autonomic nervous system and is pro-inflammatory (associated with increases in C-reactive protein, fibrinogen, IL-6 and other inflammatory markers.)²

This is important information because it tells us how you think about and react to stress, even everyday stressors, is associated with inflammation, an essential building block in cardiovascular disease and many other medical conditions.^{3,4} More studies are establishing the relationship of stress to diabetes (metabolic syndrome) which is also associated with heart disease.⁵

Poor coping strategies also become stress factors that relate to cardiovascular disease risk include pessimism (negative appraisal) which is related to the risk of all-cause mortality.⁶ Conversely, optimism (positive appraisal) showed 30% lower rates of cardiac mortality.⁷ An analysis of 70 studies show positive wellbeing to be associated with lower mortality.⁸ Work stress is associated with a doubled increase in mortality, with higher risks when accompanied by poor emotional and social support.⁹ Furthermore, chronic occupational exposure to stress can influence the rate of depression and PTSD.¹⁰ Type A personality traits, often associated with competitive, achievement-oriented individuals, are strongly linked to heart disease, but when combined with behavior modification (stress management,) these individuals show a reduction in repeated coronary events.¹¹

Previously, there had been no comprehensive stress management-based behavioral intervention program intended to address all of these domains of cardiovascular risk and focus on sustained lifestyle change. Using the results of blood work and bodyscan results, we examined the efficacy of a lifestyle intervention program, The RENEW Program, in a randomized clinical trial. Changes in global health habits, which included nutrition; exercise; type A behavior; perception of stress; decreasing pessimism, depression and anxiety were all significantly improved among intervention group participants. Improvements in perception of stress were highly significant in the intervention vs. control group.¹² The program greatly impacted positive coping strategies and increased measures of resilience. These behavioral changes in turn affected health outcomes for study participants shown in their follow-up bodyscans and blood work, including slowing, stopping or reversing heart plaque progression and more.¹³ Heart disease prevention must include stress management training in addition to behavioral and lifestyle changes to prevent the progression of heart disease.¹⁴

¹ Bennett and Berkman, Preventive Cardiology 2005.

² Lichtman et al. 2014.

- ³ Gender-specific associations of perceived stress and coping strategies with C-reactive protein in middle-aged and older men and women. Shimanoe C1, Otsuka Y, Hara M, Nanri H, Nishida Y, Nakamura K, Higaki Y, Imaizumi T, Taguchi N, Sakamoto T, Horita M, Shinchu K, Tanaka K. 2014.
- ⁴ Professional stress and inflammatory markers in physicians. Poantă L1, Crăciun A, Dumitrașcu DL. 2010.
- ⁵ The Relationship of Metabolic Syndrome with Stress, Coronary Heart Disease and Pulmonary Function--An Occupational Cohort-Based Study. Janczura M1, Bochenek G2, Nowobilski R3, Dropinski J2, Kotula-Horowitz K2, Laskowicz B4, Stanisz A5, Lelakowski J6, Domagala T2. 2015.
- ⁶ In 7,216 subjects, extent of negative appraisal related to the risk of all-cause mortality Grodbardt, 2009.
- ⁷ The Women's Health Initiative showed among 97,253 women that those who were optimistic had 30% lower rates of cardiac mortality. Tindle, 2009.
- ⁸ Meta-analyses involving 70 studies shows positive well-being to be associated with lower mortality. Chida, 2008.
- ⁹ Work stress is associated with a 2-fold increase in mortality, greater risks when accompanied with poor social networks. Falk et al Am J Pub Health 1992.
- ¹⁰ Chronic occupational exposures can influence the rate of PTSD and depressive disorders in first responders and military personnel. Walker et al. 2016.
- ¹¹ The Recurrent Coronary Primary Prevention Study. Friedman et al., Am Heart J 1986.
- ¹² Eisenberg, A., Wong, N.D. et al., (2016). Efficacy of a Cardiovascular Behavioral Intervention Program on Measures of Stress, *The Journal of Heart Disease, Volume 13 (1)*.
- ¹³ Wong, N.D., Eisenberg, A., et al., (2016). Efficacy of a Cardiovascular Behavioral Intervention Program on Progression of Atherosclerosis, *The Journal of Heart Disease, Volume 13*.
- ¹⁴ JAMA and Archives Journals. (2011, January 24). Stress management program helps prevent heart events in patients with heart disease. *ScienceDaily*.

Alisa Eisenberg, MFT is the author of The RENEW Program. To learn how the program may benefit you, call for a free consultation, 949-715-7307. The program may be covered by your insurance.