

For immediate release

Don't worry, be happy! Positive emotions protect against heart disease

People who are usually happy, enthusiastic and content are less likely to develop heart disease than those who tend not to be happy, according to a major new study published today (Thursday 18 February).

The authors believe that the study, published in the Europe's leading cardiology journal, the *European Heart Journal* [1], is the first to show such an independent relationship between positive emotions and coronary heart disease.

Dr Karina Davidson, who led the research, said that although this was an observational study, her study did suggest that it might be possible to help prevent heart disease by enhancing people's positive emotions. However, she cautioned that it would be premature to make clinical recommendations without clinical trials to investigate the findings further.

"We desperately need rigorous clinical trials in this area. If the trials support our findings, then these results will be incredibly important in describing specifically what clinicians and/or patients could do to improve health," said Dr Davidson, who is the Herbert Irving Associate Professor of Medicine & Psychiatry and Director of the Center for Behavioral Cardiovascular Health at Columbia University Medical Center (New York, USA).

Over a period of ten years, Dr Davidson and her colleagues followed 1,739 healthy adults (862 men and 877 women) who were participating in the 1995 Nova Scotia Health Survey. At the start of the study, trained nurses assessed the participants' risk of heart disease and, with both self-reporting and clinical assessment, they measured symptoms of depression, hostility, anxiety and the degree of expression of positive emotions, which is known as "positive affect".

Positive affect is defined as the experience of pleasurable emotions such as joy, happiness, excitement, enthusiasm and contentment. These feelings can be transient, but they are usually stable and trait-like, particularly in adulthood. Positive affect is largely independent of negative affect, so that someone who is generally a happy, contented person can also be occasionally anxious, angry or depressed.

After taking account of age, sex, cardiovascular risk factors and negative emotions, the researchers found that, over the ten-year period, increased positive affect predicted less risk of heart disease by 22% per point on a five-point scale measuring levels of positive affect expression (ranging from "none" to "extreme").

Dr Davidson said: "Participants with no positive affect were at a 22% higher risk of ischaemic heart disease (heart attack or angina) than those with a little positive affect, who were themselves at 22% higher risk than those with moderate positive affect.

"We also found that if someone, who was usually positive, had some depressive symptoms at the time of the survey, this did not affect their overall lower risk of heart disease.

"As far as we know, this is the first prospective study to examine the relationship between clinically-

assessed positive affect and heart disease.”

The researchers speculate about what could be the possible mechanisms by which positive emotions might be responsible for conferring long-term protection from heart disease. These include influence on heart rates, sleeping patterns and smoking cessation.

“We have several possible explanations,” said Dr Davidson. “First, those with positive affect may have longer periods of rest or relaxation physiologically. Baroreflex and parasympathetic regulation may, therefore, be superior in these persons, compared to those with little positive affect. Second, those with positive affect may recover more quickly from stressors, and may not spend as much time 're-living' them, which in turn seems to cause physiological damage. This is speculative, as we are just beginning to explore why positive emotions and happiness have positive health benefits.”

She said that most successful interventions for depression include increasing positive affect as well as decreasing negative affect. If clinical trials supported the findings of this study, then it would be relatively easy to assess positive affect in patients and suggest interventions to improve it to help prevent heart disease. In the meantime, people reading about this research could take some simple steps to increase their positive affect.

“Like the observational finding that moderate wine consumption is healthy (and enjoyable), at this point ordinary people can ensure they have some pleasurable activities in their daily lives,” she said. “Some people wait for their two weeks of vacation to have fun, and that would be analogous to binge drinking (moderation and consistency, not deprivation and binging, is what is needed). If you enjoy reading novels, but never get around to it, commit to getting 15 minutes or so of reading in. If walking or listening to music improves your mood, get those activities in your schedule. Essentially, spending some few minutes each day truly relaxed and enjoying yourself is certainly good for your mental health, and may improve your physical health as well (although this is, as yet, not confirmed).”

In an accompanying editorial by Bertram Pitt, Professor of Internal Medicine, and Patricia Deldin, Associate Professor of Psychology and Psychiatry, both at the University of Michigan School of Medicine (Michigan, USA), the authors pointed out that, currently, no-one knew whether positive affect had a direct or indirect causal role in heart disease, or whether there was a third, underlying factor at work, common to both conditions. Nor was it known for certain whether it was possible to modify and improve positive affect, and to what extent.

“Randomised controlled trials of interventions to increase positive affect in patients with cardiovascular disease are now underway and will help determine the effectiveness of increasing positive affect on cardiovascular outcome and will provide insight into the nature of the relationship between positive affect and cardiovascular disease,” they wrote.

“The ‘vicious cycle’ linking cardiovascular disease to major depression and depression to cardiovascular disease deserves greater attention from both the cardiovascular and psychiatric investigators.....These new treatments [to increase positive affect] could open an exciting potential new approach for treating patients with known cardiovascular disease who develop depression. If Davidson et al.’s observations and hypotheses stimulate further investigation regarding the effect of increased positive affect on physiological abnormalities associated with cardiovascular risk, perhaps it will be time for all of us to smile.”

(ends)

Notes:

[1] "Don't worry, be happy: positive affect and reduced 10-year incident coronary heart disease: The Canadian Nova Scotia Health Survey." *European Heart Journal*. doi:10.1093/eurheartj/ehp603.

[2] "Depression and cardiovascular disease: have a happy day – just smile!". *European Heart Journal*. doi:10.1093/eurheartj/ehq031

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