

# Probing Question: Do emotions influence heart health?

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(PhysOrg.com) -- Heart-shaped chocolates and red balloons are everywhere, all colorful reminders that Valentine's Day is approaching. Try not to get too stressed out planning a special day with your Valentine though -- keeping your emotions positive is an investment in your real heart.

Heart health is a complicated matter involving many factors that thread between genetics, lifestyle choices and, yes, even your emotions, said Barb McDanel, a registered nurse and director of the Penn State Beaver Health Center. Some emotions, such as anger, depression and anxiety, are just plain bad for your [heart](#) if they become chronic emotional states.

Most people are aware that anger is known to elevate blood pressure which can worsen [heart health](#), said McDanel, but scientists now know that depression and anxiety also are found in strong association with patients who suffer heart failure and [chronic obstructive pulmonary disease](#). In a recent study published in the [International Journal of Geriatric Psychiatry](#), researchers found prevalence rates of depression in up to 60 percent of [chronic heart failure](#) cases studied. Anxiety prevalence rates were slightly lower, topping out at about 45 percent. And they found that suffering from both depression and anxiety increased the risk of death.

A second study, published in December 2009 in *Current Opinion in Cardiology*, describes the mechanism linking anger with ventricular arrhythmias, a condition of unusual rhythm in the heart's two lower

chambers, the ventricles. The study reports that feeling angry can cause a change in the electrical properties of the cells that make up the thick, contractile tissue of the heart wall, the myocardium. This altered electrical pulse can trigger changes in what scientists call a T-wave alternans, or the beat-to-beat variation that shows up as waves and spikes on an electrocardiogram. Large spikes, or sudden changes in the T-wave, give doctors a visual graph of the ventricular arrhythmia.

If sustained, these unusual rhythms can lead to a dangerous condition called ventricular tachycardia, in which the heart races at 100 or more beats per minute. If untreated, this can degenerate further into ventricular fibrillation, or completely disorganized electrical activity, resulting in the heart failing to pump blood.

So, is love the antidote? Can positive emotions like love, friendship and social connectedness improve health? It seems that way, suggests McDanel. Many studies have shown that patients who have caring support networks during health crises have better outcomes than those who do not, she said. A [decade-long study](#) on elderly Australians found that those with larger networks of friends were found to be 22 percent less likely to die during the study period than those with fewer friends.

"Friendships and supportive social networks can definitely help people through times of sickness or emotional hardship," McDanel said. "We have to treat people with a holistic approach, treating their physical maladies, improving their diet and exercise, but also working on their emotions and giving them the tools to manage them better."

Reducing stress, anger and loneliness, she said, is a recipe for good health on Valentine's Day and every other day of the year.

Provided by Pennsylvania State University

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