

# Laughter and Therapy Could Go a Long Way for the Heart

Michael O'Riordan

August 29, 2011 (**Paris, France**) — A series of studies presented this week here at the [European Society of Cardiology \(ESC\) 2011 Congress](#) highlight the role of laughter, positive thinking, anger, and job stress on developing cardiovascular events. Presenting results during a press conference entitled "Don't worry, be happy," the research had a serious side to it, stressing that anger and job stress are linked to higher cardiovascular event rates, while laughter and cognitive behavior therapy can lower the risk.

**Dr Michael Miller** (University of Maryland Medical School, Baltimore), the lead investigator of a study examining the link between endothelial function and laughter, said the purpose of his study was to examine the link between positive emotional health achieved through laughter and the subsequent effect on the vasculature.

"We want to maintain good vascular health, and we do that by maintaining a good diet and good regular physical activity, but it turns out that emotions also play an important role here," Miller told the media during a morning press conference. "What we've done in our study is to really promote laughter by showing movies, or segments from *Saturday Night Live* and other things, to really make people laugh. We appreciate that when we get a good sustained belly laugh, we feel good. That's the point of this--if we feel good, and not just go, 'ha ha,' but get a good belly laugh, does this translate into changes in vascular function?"

In their study, the researchers tested the effects of humorous and stressful movies on endothelial function. Subjects were shown the opening scene of [Saving Private Ryan](#), an intense 15-minute segment that takes place June 6, 1944 and shows Allied forces storming the beach of Normandy. Researchers were also shown segments of [There's Something about Mary](#), [Shallow Hal](#), and [Kingpin](#), all comedies.

After each movie, endothelial function was measured. After watching the scene from *Saving Private Ryan*, blood vessels constricted by as much as 30% to 50%, whereas vasodilation occurred when investigators measured vascular function in subjects watching the comedies. They also observed that vasoconstriction and vasodilation can occur quickly, with the funny movies reversing blood-vessel contraction that occurred after watching the stressful D-Day scene.

Miller said the vasoconstrictive and vasodilative effects lasted for about an hour, although other researchers have seen the benefits of laughter on vascular function extended to 24 hours. He added that the magnitude of change in the blood vessel is similar to the effects observed with statins and physical activity. "We think the effect is fairly long lasting, considering you're only laughing for about 10 or 15 minutes," said Miller.

## Anger, Job Stress, and Depression

Two other studies presented at the ESC meeting this week showed the adverse effects of anger and stress. In the first, **Dr Tea Lallukka** (University of Helsinki, Finland) observed that public-sector individuals who work more than three hours overtime per day were at an increased risk of coronary heart disease compared with those who worked no overtime.

In the second study, **Dr Franco Bonaguidi** (Institute of Clinical Physiology in Pisa, Italy) recruited

228 patients with MI, 200 of whom were men, and assessed the long-term effects of anger on recurrent cardiovascular outcomes. Over the course of 10 years, 78.5% of patients without an angry-personality profile were free from a recurrent infarction compared with 57.4% of patients with angry personalities assessed by psychological inventory testing ( $p=0.0025$ ).

In multivariable analyses, only anger and stress-related disturbances were significant predictors of cardiac events, with patients with high scores on the anger and stress-related disturbances scale approximately two times more likely to have a recurrent event compared with less angry MI patients. To the media, Bonaguidi said that anger is useful only to a certain extent, and once past a certain threshold it might trigger unfavorable hemodynamic, neural, and endocrine changes through excessive sympathetic activation. It can also lead to lifestyles that worsen cardiovascular health, such as eating too much to curb stress or alcoholism.

In positive news, **Dr Barbara Murphy** (Royal Melbourne Hospital, Australia) presented data from the "Beating heart problems" program in Australia, showing that an eight-session intervention that focuses on cognitive behavior therapy and motivational interviewing can reduce depression in acute-MI patients who previously had undergone CABG surgery or PCI. At four months, cognitive therapy reduced depression and reduced waist girth, increased HDL cholesterol levels and physical activity (trend toward improvement), and patients were better at managing their anger and anxiety. At one year, the reduction in depression was maintained, and there were significant improvements in self-rated health.

"Anxiety and depression are associated with higher morbidity and mortality after a cardiac event, similar to anger, and depressed patients particularly need lots of help with making behavior changes and managing their mood after a cardiac event," said Murphy. "Depressed individuals tend not to do so well after an event; they don't take their medication, they don't do their physical activity, and they often smoke and have poor lifestyle behaviors."

Heartwire © 2011 Medscape, LLC