

Laughter has positive impact on vascular function

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Watching a funny movie or sitcom that produces laughter has a positive effect on vascular function and is opposite to that observed after watching a movie that causes mental stress according to research conducted at the University of Maryland School of Medicine in Baltimore, Maryland.

"The idea to study positive emotions, such as laughter came about after studies had shown that [mental stress](#) caused blood vessels to constrict", says Dr. Michael Miller, Professor of Medicine and lead investigator.

In their initial study more than 10 years ago, 300 men and women with or without [heart disease](#) completed a questionnaire related to situational-humor. For example, if you went to a party and saw someone wearing the same clothes as you, on a scale of 1 to 5 (ranging from not funny at all to very funny) how would you respond? The volunteers with heart disease were 40% less likely to find these situations funny. Even though this study was unable to prove whether a humorous response to situations in daily life may protect against heart disease, (or the lack of such a response is more common after a [heart attack](#)), it led to the next series of studies testing whether laughter may directly affect vessel function.

In this manner, volunteers watched segments of a funny movie, such as "There's something about Mary" on one day and on another day watched the opening segment of the stressful movie "Saving Private Ryan". Each volunteer served as his or her own control.

When study volunteers watched the stressful movie, their blood vessel lining developed a potentially unhealthy response called vasoconstriction, reducing blood flow. This finding confirms previous studies, which suggested there was a link between mental stress and the narrowing of [blood vessels](#). However, after watching the funny movie, the blood vessel lining expanded.

Overall, more than 300 measurements were made with a 30-50% difference in blood vessel diameter between the laughter (blood vessel expansion) and mental stress (blood vessel constriction) phases. "The magnitude of change we saw in the endothelium after laughing was consistent and similar to the benefit we might see with aerobic exercise or statin use" says Dr. Miller.

The endothelium has a powerful effect on blood vessel tone and regulates blood flow, adjusts coagulation and blood thickening, and produces chemicals in response to injury and inflammation. It also plays an important role in the development of cardiovascular disease.

"The endothelium is the first line in the development of atherosclerosis or hardening of the arteries, so it is very possible that laughing on a regular basis may be useful to incorporate as part of an overall healthy lifestyle to prevent heart disease. In other words, eat your veggies, exercise and get a good belly laugh every day" says Dr. Miller.

Although the results of the brachial artery [blood flow](#) measurements appear to make a connection between laughter and vascular health, more studies are needed. "What we really need is a randomized clinical trial to determine whether positive emotions reduce cardiovascular events above and beyond today's standard of care therapies", concluded Dr. Miller.

Provided by European Society of Cardiology

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