

精神的ストレスは血管機能に悪影響を及ぼす

笑いは血管機能に好影響を及ぼし精神的ストレスは血管収縮を引き起こす

Laughter has a positive impact on vascular function while mental stress causes vasoconstriction

面白い映画やホームコメディーを見ることは血管機能に好影響を及ぼし、精神的ストレスを引き起こす映画を見た後には逆の影響が認められたと2011年European Society of Cardiology学会で発表された。笑いなどのポジティブな感情を研究しようという案は、いくつかのスタディにより精神的ストレスにより血管収縮が引き起こされることが示されたことにより生じた。今回のスタディではボランティアがある日は面白い映画の一部を観、別の日にストレスフルな映画の始まり部分を観た。ストレスフルな映画を観ると彼らの血管は、血流を減少させる不健康な反応の可能性のある血管収縮を起こした。この結果により、精神ストレスと血管狭窄に関連があることを示唆した過去のスタディの結果が再確認された。しかし、面白い映画を観た後に血管は拡張した。全体として、300の計測がなされ、笑い期（血管拡張）と精神的ストレス期（血管収縮）とで血管内径は30~50%異なっていた。笑った後の血管内径の変化は一貫しており、運動やスタチン使用で認められる有益性に類似していると筆者らは述べている。

Full Text

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 research was presented at the European Society of Cardiology 2011 conference.

"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 myocardial infarction), 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.

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