

April, 2009

***New Orleans, LA - Listening to enjoyable music may be good for cardiovascular health, a new study suggests***

Researchers at the University of Maryland, in Baltimore, showed for the first time that positive emotions aroused by joyful music have a favorable effect on the endothelium.

"We believe that the brain plays a pivotal role in vascular health," lead author **Dr Michael Miller** said. "High cholesterol and high blood pressure are very important, but some individuals lacking these risk factors develop significant heart disease, and that may be partly related to their response to stress."

If music can evoke positive emotions to counteract negative stresses of everyday life, it could have a very important influence on vascular health, he said. ["Music should be incorporated into a healthy lifestyle, just as we might incorporate other healthy habits."](#)



**Positive emotions**

According to Miller, it has been known for some time that mental stress can cause vasoconstriction. Now we know that laughter has a beneficial effect on the endothelium. Could emotions evoked by music have a similar effect?

To determine the effect of music on endothelial function, the researchers conducted a randomized study. The participants included 10 healthy nonsmokers—seven male and three female—with a mean age of 36 years.

The volunteers selected 30 minutes of music they enjoyed. To minimize emotional desensitization, participants were told to avoid listening to this particular music for two weeks prior to the start of the study.

Volunteers were also asked to identify music that made them feel anxious.

On four separate occasions, one week apart, the subjects' endothelial function was assessed by measuring blood flow in the upper arm. Blood flow was measured at baseline and after 30 minutes of one of four test stimuli: enjoyable music, anxiety-provoking music, a humorous video clip, and a relaxation tape.

The researchers found that compared with baseline, the subjects' mean flow-mediated dilation:

- Increased 26% after listening to enjoyable music ( $p=0.0002$ ).
- Decreased 6% after listening to anxiety-provoking music ( $p=0.005$ ).
- Increased 19% after watching a humorous video ( $p=0.08$ ).
- Increased 11% after listening to a relaxation tape (NS).



The magnitude of increased flow-mediated dilation associated with self-selected enjoyable music was the same as that previously observed with aerobic activity or statin therapy.

"We think that the basis for this is due to endorphins or endorphin-like compounds released from the brain that have a direct effect on the vasculature. It comes back to that 'big black box' of mind-heart connection, which is so hard to quantify but is an underdeveloped area that is worth further investigation," he said.