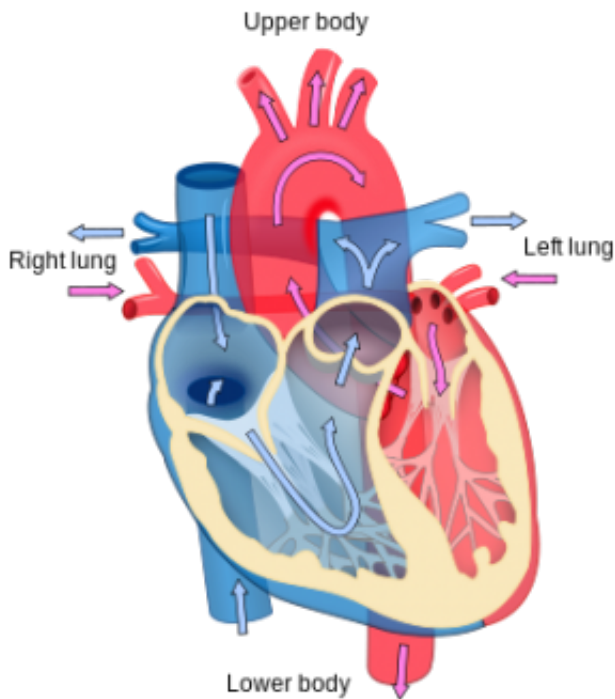


Mentally stressed young women with heart disease more likely to have reduced blood flow to heart

16 November 2014



Heart diagram. Credit: Wikipedia

Young women with stable coronary heart disease are more likely than men to have reduced blood flow to the heart if they're under emotional stress, but not physical stress, according to research presented at the American Heart Association's Scientific Sessions 2014.

Compared to men of the same age, when subjected to a [mental stress](#) test, women:

- age 55 and younger had three times greater reduction in blood flow to the heart;
- age 56-64 had double the reduction in blood flow to the heart; and
- age 65 and older had no difference in blood flow to the heart.

"Women who develop heart disease at a younger age make up a special high-risk group because they are disproportionately vulnerable to [emotional stress](#)," said Viola Vaccarino, M.D., Ph.D., study author and chairwoman of Cardiovascular Research and Epidemiology at Emory University's Rollins School of Public Health in Atlanta, Georgia.

Women generally develop heart disease later in life than men. However, younger women who have premature heart attacks are more likely to die than men of similar age. Risk factors, such as diabetes or high blood pressure, don't explain these mortality differences.

In the study, researchers gave a standardized mental [stress test](#) and, on a separate day, a traditional [physical stress](#) test (exercise treadmill test or pharmacological stress test) to 534 patients with stable [coronary heart disease](#). For the mental stress protocol, patients were asked to imagine a stressful life situation and deliver a speech about this story in front of a small audience.

Researchers used nuclear imaging to take pictures of the heart while undergoing each of the two stress tests and while at rest. They also monitored heart rate and blood pressure during both mental and physical tests. Then, they analyzed the differences in coronary blood flow based on gender and age. In contrast to the large differences in blood flow observed with mental stress, there were no differences in [blood flow](#) with physical stress between women and men.

Young and middle-age women may be more vulnerable to emotional stress because they face considerable burden of stressors in everyday life such as managing kids, marriage, jobs and caring for parents, Vaccarino said. Biology may also play a role—for example, a greater propensity towards

abnormal blood vessel function during emotional stress, such as exaggerated constriction of coronary or peripheral blood vessels.

Healthcare providers should be aware of young and middle-age women's special vulnerability to stress and "ask the questions about psychological stress that often don't get asked," Vaccarino said.

"If they note that their patient is under [psychological stress](#) or is depressed, they should advise the woman to get relevant help or support from mental health providers, stress reduction programs or other means."

Provided by American Heart Association

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