Stress Activity in One Area of the Brain May Predict Risk of Heart Attack and Stroke

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Experts in the medical community recognize that stress can significantly increase a person's risk of heart attack and stroke. But findings from a new study published in The Lancet medical journal show that an area of the brain called the amygdala may unlock the mystery behind this deadly connection, CNN reports.

The amygdala is a region of the brain associated with fear and stress. In this latest study, researchers discovered that this area of the brain could become metabolically active during times of stress, which may directly activate cardiovascular risk factors.

For the report, researchers at Massachusetts General Hospital conducted PET and CT scans on 293 adults who were patients at the Boston facility between 2005 and 2008. The scans recorded brain, bone marrow and spleen activity, as well as inflammation in the arteries of the heart. Next, scientists tracked the health of each patient for two to five years. During that time, 22 of the patients experienced a cardiovascular event, such as a heart attack, stroke or heart failure.

After researchers reviewed the scans and heart health of each patient, they discovered that higher activity in the amygdala reflected an increased risk of cardiovascular illness. Activity in this part of the brain also showed an associated increase in bone marrow activity and inflammation in the arteries. These links remained strong even after scientists took other heart disease risk factors, such as diabetes or hypertension, out of the equation.

"We were surprised at how robustly amygdalar activity predicted hard cardiovascular events, along with providing information on the timing of those events," said Ahmed Tawakol, MD, co-director of the PET/CT program at Massachusetts General Hospital and lead author of the study.

According to Tawakol, the findings suggested a complex chain of events that may help better explain the relationship between stress and heart disease risk. For example, stress may activate the amygdala, leading to increased immune cell production and inflammation in the body, which, in turn, may affect the arteries and cause a cardiovascular event.

But researchers also noted that the associations in this study, while statistically significant did not

prove total causation. For that conclusion, scientists must conduct more research on the connection between heart disease and stress in a much larger sample of patients.

Currently, one in three American adults suffers from at least one type of cardiovascular disease, and heart problems are the leading cause of death in this country. Click here to learn more about cardiovascular disease and the best way to stop this killer.
