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The Link Between Anger and Brain Structure

People who are easily angered exhibit a stronger connection between three areas of the brain and certain brain networks related to action.

October 21, 2021 By Jeanette L. Pinnace

Many studies show that anger can affect both your physical and mental health. Now, new study findings published in the journal Clinical Psychological Science show that there's an association between certain areas of the brain and trait anger, a predisposition for becoming annoyed, frustrated or furious about almost anything, reports PsyPost.com.

For the inquiry, researchers from Sungkyunkwan University in Seoul and Duke University evaluated data on 1,048 undergraduate college students who took part in the Duke Neurogenetics Study, which used functional magnetic resonance imaging (fMRI) to assess the interplay between genes, the brain and the environment, trait anger and how this corresponds to mental illness in young adults.

The data showed that elevated levels of trait anger were linked with an excessive number of cell connections between three areas of the brain that control action-related functions, including the execution of movement and the management of large or small movements of the body.

"Our analyses highlighted a possible role for action-related brain regions in the expression of trait anger, patterns not previously detected in studies with fewer participants," said Justin Minue Kim, PhD, an assistant professor at Sungkyunkwan University and the lead author of the study. "Our findings suggest a novel interpretation of higher trait anger as possibly reflecting a greater propensity to provoked action. In other words, people who are more likely to experience frustration and anger exhibit altered connectivity patterns in certain action-related brain networks."

Higher levels of trait anger are associated with people having a greater tendency for being more aggressive and violent, which in turn is linked to negative health outcomes.

"We were interested in how such individual differences in trait anger are reflected in patterns of functional connectivity across the whole brain," Kim explained. "In doing so, we hoped to deepen our understanding of possible brain mechanisms giving rise to trait anger and, subsequently, representing possible targets for modification or intervention."

To learn more about brain function and anger, read “Steaming Mad?”

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