Don't make that face at me!

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Think back to your last fight with someone you love. How did you feel afterwards? How did you behave? Conflict with a loved one often leaves a person feeling terrible and then behaving badly. So much so that these scenarios have become soap opera clichés. After an argument, one partner may brood, slam the door, and then drive to a local bar to drown their sorrows in alcohol. These dramas rarely have happy endings. Given these stereotypes, how do people control their emotional reactions and prevent emotional storms and their attendant use of intoxicating substances?

A new study published in *Biological Psychiatry,* by Elsevier, suggests that the lateral prefrontal cortex (LPFC) is a brain region that may help people to control their emotional reactions to negative facial expressions from their romantic partners.

Christine Hooker and her colleagues recruited healthy, adult participants in committed relationships. The research subjects viewed positive, negative, and neutral facial expressions of their partners during a brain scan. In an online daily diary, participants reported conflict occurrence, level of negative mood, rumination, and substance use.

They found that LPFC activity in response to the laboratory-based affective challenge predicted self-regulation after an interpersonal conflict in daily life. When there was no interpersonal conflict, LPFC activity was not related to mood or behavior the next day. However, when an interpersonal conflict did occur, LPFC activity predicted mood and behavior the next day, such that lower activity was related to higher

levels of negative mood, rumination, and substance use.

The study findings suggest that low LPFC function may be a risk-factor for mood and behavioral problems after a stressful interpersonal event.

The constructive management of negative emotional states that emerge inevitably within romantic relationships can be a critical facet of coping with the world. These relationships frequently serve as emotional havens from the stresses of the working world. Yet these relationships also may augment rather than reduce life stress. When that happens, problematic behaviors such as over-eating and substance abuse may increase.

Dr. John Krystal, Editor of Biological Psychiatry, commented on the importance of these findings: "When activated in the context of intense emotion, it appears that the LPFC helps us to manage the intensity of negative emotions that emerge in social relationships. When this brain region does not efficiently activate or when the intensity of the conflict is very high, people need to learn behavioral strategies to cope with the emotional response. For some people this strategy can be as simple as counting to 10 before doing something that they might regret later."

This study raises an important question. How can clinicians enhance the function of the LPFC when its function is compromised? Cognitive and behavioral strategies may be important treatment components.

As Dr. Hooker explained, their findings "suggest that imaging can provide potentially useful information about who may be vulnerable to mood and behavioral problems after a stressful event. We hope that future research will build on this idea and explore ways that imaging can be used to inform people about their emotional vulnerabilities."

More information: The article is "Neural Activity to a Partner's Facial Expression Predicts Self-Regulation After Conflict" by Christine I.

Hooker, Anett Gyurak, Sara C. Verosky, Asako Miyakawa, and Özlem Ayduk. Hooker is affiliated with the Psychology Department, Harvard University, Cambridge, Massachusetts. Gyurak and Ayduk are affiliated with the Psychology Department, University of California, Berkeley in Berkeley, California. Verosky and Miyakawa are with the Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, California. The article appears in Biological Psychiatry, Volume 67, Issue 5 (March 1, 2010).

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