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Inflammation in Depression: Chicken or Egg?

New study in Biological Psychiatry attempts to answer the question

Philadelphia, PA, January 5, 2012 – An important ongoing debate in the field of psychiatry is whether inflammation in the body is a consequence of or contributor to major depression. A new study in *Biological Psychiatry* has attempted to resolve the issue.

Inflammation in the body is common to many diseases, including high blood pressure, coronary artery disease, and diabetes. Depression has also been linked to an inflammation marker in blood called C-reactive protein (CRP).

Dr. William Copeland at Duke University Medical Center and his colleagues tested the direction of association between depression and CRP in a large sample of adolescent and young adult volunteers. By following the children into young adulthood, they were able to assess the changes over time in both their CRP levels and any depressive symptoms or episodes.

They found that elevated levels of CRP did not predict later depression, but the number of cumulative depressive episodes was associated with increased levels of CRP.

“Our results support a pathway from childhood depression to increased levels of CRP, even after accounting for other health-related behaviors that are known to influence inflammation. We found no support for the pathway from CRP to increased risk for depression,” said Copeland.

These findings suggest that, by this measure, depression is more likely to contribute to inflammation in the body as opposed to arise as a consequence of inflammation in the body.

The highest levels of CRP were found in those who had endured the wear and tear of multiple depressive episodes. This suggests the possibility that long-term emotional distress, beginning in childhood, may lay the foundation for inflammatory processes that lead, in middle age, to cardiovascular disease and diabetes, added Copeland.

“Depression is a recurring disorder for many people. Thus the finding that repeated episodes of depression contribute to inflammation in the body highlights a potentially important role for untreated depression as a contributor to a range of serious medical problems,” commented Dr. John Krystal, Editor of *Biological Psychiatry*. “These data add to growing evidence of the medical importance of effectively treating depression.”

The article is “Cumulative Depression Episodes Predict Later C-Reactive Protein Levels: A Prospective Analysis” by William E. Copeland, Lilly Shanahan, Carol Worthman, Adrian Angold, and E. Jane Costello (doi:10.1016/j.biopsych.2011.09.023). The article appears in *Biological Psychiatry*, Volume 71, Issue 1 (January 1, 2012), published by Elsevier.

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Notes for editors

Full text of the article is available to credentialed journalists upon request; contact Sacha Boucherie at +31 20 485 3564 or s.boucherie@elsevier.com, or Rhiannon Bugno at +1 214 648 0880 or Biol.Psych@utsouthwestern.edu. Journalists wishing to interview the authors may contact William Copeland, Ph.D., at 919-687-4686, ext. 294 or william.copeland@duke.edu.

The authors' affiliations, and disclosures of financial and conflicts of interests are available in the article.

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About *Biological Psychiatry*

Biological Psychiatry is the official journal of the [Society of Biological Psychiatry](#), whose purpose is to promote excellence in scientific research and education in fields that investigate the nature, causes, mechanisms and treatments of disorders of thought, emotion, or behavior. In accord with this mission, this peer-reviewed, rapid-publication, international journal publishes both basic and clinical contributions from all disciplines and research areas relevant to the pathophysiology and treatment of major psychiatric disorders.

The journal publishes novel results of original research which represent an important new lead or significant impact on the field, particularly those addressing genetic and environmental risk factors, neural circuitry and neurochemistry, and important new therapeutic approaches. Reviews and commentaries that focus on topics of current research and interest are also encouraged.

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