



PRESS RELEASE

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Do Deficits in Brain Cannabinoids Contribute to Eating Disorders?

A new report in *Biological Psychiatry* suggests that deficits in endocannabinoid function may contribute to anorexia nervosa and bulimia.

Endocannabinoids are substances made by the brain that affect brain function and chemistry in ways that resemble the effects of cannabis derivatives, including marijuana and hashish. These commonly abused drugs are well known to increase appetite, i.e. to cause the “munchies”. Thus, it makes sense that deficits in this brain system would be associated with reduced appetite.

Researchers measured the status of the endocannabinoid system indirectly by determining whether there was an increase or decrease in the density of endocannabinoid receptors, called the CB1 receptor, in several brain regions using positron emission tomography, or PET, imaging. They compared these densities in women with anorexia or bulimia and healthy women.

They found global increases in ligand binding to CB1 receptors in the brains of women with anorexia nervosa. This finding is consistent with a compensatory process engaged by deficits in endocannabinoid levels or reduced CB1 receptor function.

CB1R availability was also increased in the insula in both anorexia and bulimia patients. The insula “is a region that integrates body perception, gustatory information, reward and emotion, functions known to be disturbed in these patients,” explained Dr. Koen Van Laere, the study’s lead author.

“The role of endocannabinoids in appetite control is clearly important. These new data point to important connections between this system and eating disorders,” added Dr. John Krystal, Editor of *Biological Psychiatry*.

Additional research is now needed to establish whether the observed changes are caused by the disease or whether these are neurochemical alterations that serve as risk factors for developing an eating disorder.

Furthermore, since very few effective treatments exist for these disorders, these data indicate that the endocannabinoid system may be a potential new target for developing drugs to treat eating disorders. Such new therapies are currently being investigated in animal models.

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Notes to Editors:

The article is "Brain Type 1 Cannabinoid Receptor Availability in Patients with Anorexia and Bulimia Nervosa" by Nathalie Gérard, Guido Pieters, Karolien Goffin, Guy Bormans, and Koen Van Laere. Gérard, Goffin, and Van Laere are affiliated with Division of Nuclear Medicine, University Hospital and Katholieke Universiteit Leuven, Leuven, Belgium. Pieters is affiliated with University Psychiatric Centre, Katholieke Universiteit Leuven, Eating Disorder Clinic Kortenberg, Kortenberg, Belgium. Bormans is with the Laboratory for Radiopharmacy, Katholieke Universiteit Leuven, Leuven, Belgium. The article appears in *Biological Psychiatry*, Volume 70, Number 8 (October 15, 2011), published by Elsevier.

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

John H. Krystal, M.D., is Chairman of the Department of Psychiatry at the Yale University School of Medicine and a research psychiatrist at the VA Connecticut Healthcare System. His disclosures of financial and conflicts of interests are available [here](#).

Full text of the article mentioned above is available upon request. Contact Chris J. Pfister at d.santaromita@elsevier.com to obtain a copy or to schedule an interview.

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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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