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<https://forum2018.fens.org/>

PRESS RELEASE

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TREATING ANXIETY AND INFLAMMATION WITH CANNABIS

Post-traumatic stress disorder (PTSD), anxiety and some types of inflammation may be alleviated by cannabis-like drugs. In research to be presented at the 11th FENS Forum of Neuroscience in Berlin today (8 July) teams from Rome and Canada will describe related findings that animal models of PTSD and colitis are regulated by related brain pathways involving naturally occurring cannabis-like compounds, paving the way for new treatment options.

As Dr Patrizia Campolongo at the Sapienza University of Rome explained, "People with trauma-related stress disorders often turn to cannabis for self-medication and as the law is changing around the use of cannabis in many countries, so there has been an upsurge of public interest in its potential therapeutic uses."

Using rat models of PTSD, Dr Campolongo has found that synthetic drugs that augment brain levels of natural cannabinoids can reduce symptoms of trauma while also treating the cognitive dysfunction, and that these effects are long-term. "These drugs work in much more targeted brain areas than street cannabis, and, as long as three months after treatment, they stop reinstatement of anxiety symptoms. This equates to several years in man and is of note because PTSD patients often relapse some time after the end of treatment," she said.

Dr Campolongo believes that synthetic drugs influencing levels of natural cannabinoids may act both to reduce the symptoms of anxiety (much like classical PTSD treatments) and also break the cycle by which sufferers relive the trauma and thus continue excessive recall of it. "These artificial cannabis compounds are very specific, and hence have reduced risk of side effects. We now need clinical trials to test whether what we have found in animals is the same in man, she said."

Her work is supported by the studies of Dr Matthew Hill from the Hotchkiss Brain Institute, University of Calgary in Canada who will present research into links between inflammatory diseases and stress-associated disorders, which often occur together. His work has shown that levels of the brain's natural cannabis-like molecules are reduced in an animal model of colitis (inflammatory bowel syndrome), suggesting that an artificial boost may be necessary and sufficient to alleviate the anxiety associated with this condition.

"We don't know the mechanism by which these conditions are linked but suspect it may be to do with the body's endocannabinoid system. We have found, in a rat model of colitis, that levels of a naturally-occurring cannabis, anandamide, were reduced in several areas of the brain, probably as a result of increased activity of an enzyme which breaks it down," he said.

Dr Hill believes that colitis increases levels of a chemical called CRH, and that this triggers a cycle whereby the enzyme becomes more active, breaking down anandamide and resulting in anxiety. "When we artificially block the activity of CRH, and hence of the enzyme, anandamide levels stay high and the anxiety commonly seen with colitis does not occur."

Together, the work of Drs Campolongo and Hill suggest there would be value in well-controlled human studies to assess the medical benefits of cannabis in a range of linked conditions.

END

Symposium S08 Cannabinoid regulation of stress, emotion and memory: Mechanisms and clinical implications

Abstracts – P. Campolongo: Arousal and stress effects on cannabinoid modulation of memory

M. Hill: Endocannabinoids: a mechanism of comorbidity between inflammatory disease and anxiety

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NOTES TO EDITORS

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Dr Matthew Hill, Hotchkiss Brain Institute, University of Calgary in Canada <http://www.hbi.ucalgary.ca/profiles/dr-matthew-hill>

The 11th FENS Forum of Neuroscience, the largest basic neuroscience meeting in Europe, organised by FENS and hosted by the German Neuroscience Society will attract more than 7,000 international delegates. The Federation of European Neuroscience Societies (FENS) was founded in 1998. With 43 neuroscience member societies across 33 European countries, FENS as an organisation represents 24,000 European neuroscientists with a mission to advance European neuroscience education and research. <https://forum2018.fens.org/>