

Cannabis extract helps reset brain function in psychosis

KING'S COLLEGE LONDON

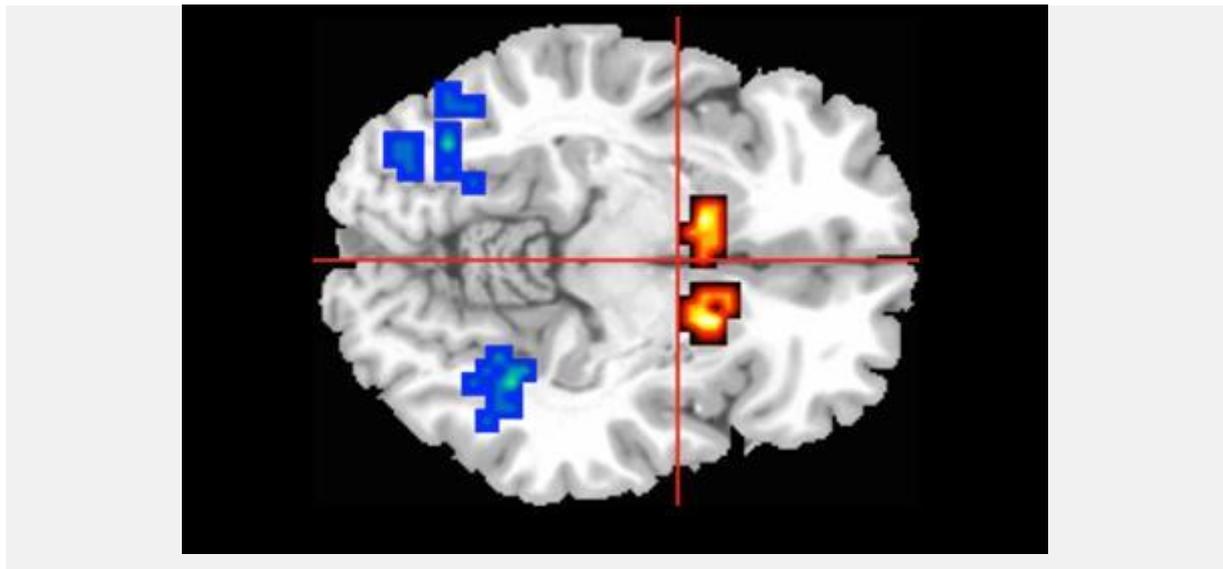


IMAGE: RED/YELLOW AREAS SHOW ACTIVITY IN THE CAUDATE, A BRAIN AREA AFFECTED IN PEOPLE WITH PSYCHOSIS. [view more](#)

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Research from King's College London has found that a single dose of the cannabis extract cannabidiol can help reduce brain function abnormalities seen in people with psychosis. Results from a new MRC-funded trial, published in *JAMA Psychiatry*, provide the first evidence of how cannabidiol acts in the brain to reduce psychotic symptoms.

Cannabidiol, also referred to as CBD, is a non-intoxicating compound found in cannabis. A purified form of cannabidiol has recently been licensed in the USA as a treatment for rare childhood epilepsies, and a [2017 King's College London trial](#) has demonstrated cannabidiol has anti-psychotic properties.

However, exactly how cannabidiol may work in the brain to alleviate psychosis has remained a mystery.

"The mainstay of current treatment for people with psychosis are drugs that were first discovered in the 1950s and unfortunately do not work for everyone," says [Dr Sagnik Bhattacharyya](#), from the Institute of Psychiatry, Psychology & Neuroscience (IoPPN). "Our results have started

unravelling the brain mechanisms of a new drug that works in a completely different way to traditional anti-psychotics."

The researchers studied a group of 33 young people who had not yet been diagnosed with psychosis but who were experiencing distressing psychotic symptoms, along with 19 healthy controls. A single dose of cannabidiol was given to 16 participants while the other 17 received a placebo.

All participants were studied in an MRI scanner while performing a memory task which engages three regions of the brain known to be involved in psychosis.

As expected, the brain activity in the participants at risk of psychosis was abnormal compared to the healthy participants. However, among those who had cannabidiol, the abnormal brain activity was less severe than for those who received a placebo, suggesting cannabidiol can help re-adjust brain activity to normal levels.

The influence of cannabidiol on these three brain regions could underlie its therapeutic effects on psychotic symptoms.

Intriguingly, [previous research from King's College London](#) shows cannabidiol appears to work in opposition to tetrahydrocannabinol (THC); the ingredient in cannabis responsible for getting users high which has been strongly linked to the development of psychosis. THC can be thought of as mimicking some of the effects of psychosis, while cannabidiol has broadly opposite neurological and behavioural effects.

Dr Bhattacharyya and colleagues at IoPPN are now launching the first large scale, multi-centre trial to investigate whether cannabidiol can be used to treat young people at high risk of developing psychosis. The trial is supported by a £1.85 million grant from an NIHR and MRC partnership.

Some estimates suggest that in England alone, over 15,000 people present with early symptoms of psychosis every year. Despite symptoms that can be extremely severe, there are currently no treatments that can be offered to patients at high risk of psychosis because current anti-psychotic drugs can have serious side-effects.

"There is an urgent need for a safe treatment for young people at risk of psychosis," says Dr Bhattacharyya. "One of the main advantages of cannabidiol is that it is safe and seems to be very well tolerated, making it in some ways an ideal treatment. If successful, this trial will provide definitive proof of cannabidiol's role as an antipsychotic treatment and pave the way for use in the clinic."

NOTES TO EDITORS

About King's College London and the Institute of Psychiatry, Psychology & Neuroscience

King's College London is one of the top 25 universities in the world (2017/18 QS World University Rankings) and among the oldest in England. King's has more than 26,500 students (of whom nearly 10,400 are graduate students) from some 150 countries worldwide, and nearly 6,900 staff. The university is in the second phase of a £1 billion redevelopment programme which is transforming its estate. <http://www.kcl.ac.uk>

The Institute of Psychiatry, Psychology & Neuroscience (IoPPN) at King's College London is the premier centre for mental health and related neurosciences research in Europe. It produces more highly cited publications in psychiatry and mental health than any other university in the world (Scopus, 2016), with 12 of the most highly cited scientists in this field. World-leading research from the IoPPN has made, and continues to make, an impact on how we understand, prevent and treat mental illness and other conditions that affect the brain. <http://www.kcl.ac.uk/ioppn>

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About the Medical Research Council

The Medical Research Council is at the forefront of scientific discovery to improve human health. Founded in 1913 to tackle tuberculosis, the MRC now invests taxpayers' money in some of the best medical research in the world across every area of health. Thirty-two MRC-funded researchers have won Nobel prizes in a wide range of disciplines, and MRC scientists have been behind such diverse discoveries as vitamins, the structure of DNA and the link between smoking and cancer, as well as achievements such as pioneering the use of randomised controlled trials, the invention of MRI scanning, and the development of a group of antibodies used in the making of some of the most successful drugs ever developed. Today, MRC-funded scientists tackle some of the greatest health problems facing humanity in the 21st century, from the rising tide of chronic diseases associated with ageing to the threats posed by rapidly mutating micro-organisms. <http://www.mrc.ac.uk>