

Link between antibodies and schizophrenia may offer hope for a cure in some patients

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Credit: Peter Steele from Pexels

For the first time specific antibodies have been found to be associated with the onset of schizophrenia. A study published in *The Lancet Psychiatry*, reveals that certain kinds of antibodies appear in the blood of a significant percentage of people presenting with a first episode of psychosis. These antibodies, including those against the 'NMDA receptor', have previously been shown to cause encephalitis, a life

threatening inflammation of the brain. This study now shows for the first time, that these same antibodies are also found in people with early presentations of schizophrenia.

Professor Belinda Lennox from the Department of Psychiatry, University of Oxford and Oxford Health NHS Foundation Trust, who led the study, says: 'We have shown that 8.8% of people with a first episode of psychosis have an antibody in their blood that may be responsible for their illness. The only way to detect these [antibodies](#) is through doing a blood test, as patients with antibodies do not have different symptoms from other people with psychosis.'

The discovery offers fresh hope in terms of new treatment possibilities for people experiencing psychosis. This is because the rapid identification and removal of the same antibodies associated with encephalitis leads to a dramatic improvement, and often complete a cure from the illness. Professor Lennox and her team have successfully treated a number of patients experiencing psychosis, who have these antibodies, using this pioneering form of immunotherapy.

'It began with a devastating psychotic episode and subsequent issues with my memory, sleep, temperature and emotional control,' says Sarah, a patient of Professor Lennox. 'My mood was in total flux, swinging from hallucinations and insomnia to sleeping all day and getting severely depressed. It took over a year before the autoimmune side of my illness was picked up on through a fortunate research trial. Three years following my episode I have finally responded after two infusions of immune drugs. I am regaining nearly all of my previous function. It has been like a miracle cure. It is terrifying to imagine that without the correct treatment my symptoms might never have improved. Psychosis, caused by NMDA antibodies, could have dominated and even claimed my life.'

Professor Lennox adds: 'The next important step for this study is to work out whether removing the antibodies will treat psychosis in the same established way as is now used for encephalitis. To do this the research team are starting a randomised controlled trial of immune treatment in people with psychosis and antibodies, starting in 2017.'

This study, funded by the Medical Research Council, recruited 228 people with psychosis from Early Intervention in Psychosis services from across England, including Oxford Health NHS Foundation Trust. People were tested within the first six weeks of treatment. The study also tested a comparison group of healthy controls. They found NMDAR antibodies as well as other antibodies, in patients with [psychosis](#). They did not find any NMDAR antibodies in healthy control subjects. When the patients with antibodies were compared with those patients without antibodies there were no differences in their symptoms or illness course.

Antibodies are produced by the immune system to fight infection and protect the body. Sometimes, however, the antibodies cause more problems than they solve – in so-called auto-immune disorders, such as diabetes, multiple sclerosis and rheumatoid arthritis. Psychosis – which is a term for the symptoms seen in [schizophrenia](#) – is where a person may experience hallucinations, delusions and confused and disturbed thoughts.

The story of first-hand experience of NMDAR encephalitis was eloquently described by Susannah Cahalan, the *New York Post* journalist in her book 'Brain on Fire', which has since been made into a feature film released this year.

More information: Belinda R Lennox et al. Prevalence and clinical characteristics of serum neuronal cell surface antibodies in first-episode psychosis: a case-control study, *The Lancet Psychiatry* (2016). [DOI: 10.1016/S2215-0366\(16\)30375-3](https://doi.org/10.1016/S2215-0366(16)30375-3)

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