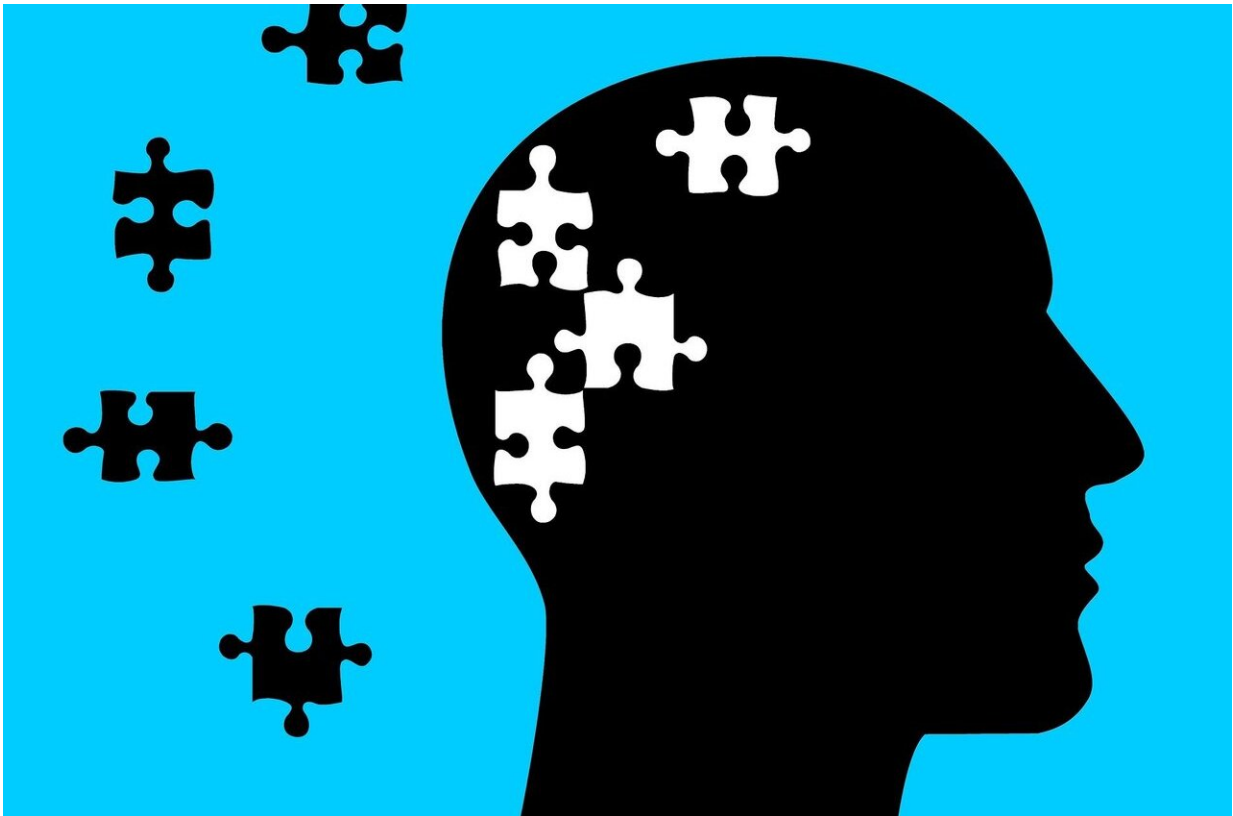


# Could childhood inflammation or infection be a cause of depression and psychosis?

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A growing body of research suggests that early-life infection, inflammation, and metabolic changes could contribute to psychiatric disorders—perhaps via effects during critical periods of brain

development. New evidence on how "immunometabolic" risk factors in childhood may affect the development of depression and psychotic disorders in adulthood is presented in the January/February special issue of *Harvard Review of Psychiatry*.

If confirmed, this line of research might lead to new approaches to treating depression and psychosis in adults—and possibly efforts to prevent these disorders by targeting early-life immunometabolic risk factors in childhood, according to the report by Nils Kappelmann, Ph.D., of Max-Planck-Institute of Psychiatry, Munich, and colleagues. The study is one of seven special issue papers exploring possible links between inflammation and mental health disorders.

## **Complex connections between early-life stress, inflammation, and brain development**

Previous research has suggested that maternal and childhood infections may be related to the later development of psychiatric diagnoses—particularly [psychotic disorders](#) such as schizophrenia. Other studies have linked markers of [inflammation](#) during childhood and adolescence to increased rates of depression and psychosis in adulthood. However, these associations appear highly complex, with specific inflammatory markers linked to later development of specific types of symptoms.

Research has also suggested links between metabolic alterations and psychiatric [disorders](#). In particular, increased [body mass index](#) (BMI) and body fat seem to be associated with an increased risk of depression, while lower BMI may be linked to increased risk of psychotic disorders. Other studies suggest that young people with disrupted glucose-insulin balance may be at increased risk of later psychosis, whereas depression may lead to later glucose-insulin dysregulation.

Inflammatory and [metabolic changes](#) might interact with other factors affecting the development of psychiatric disorders—particularly genetic predispositions and adverse experiences or maltreatment during early life. "Together, these findings suggest that higher levels of infection, inflammation, and metabolic alterations commonly seen in people with depression and psychosis could be a cause for, rather than simply a consequence of, these disorders," Dr. Kappelmann and coauthors write.

They call for innovative research approaches to evaluate the causal nature and mechanisms of these associations. "Interventional studies are also needed to test the potential usefulness of targeting early-life immuno-metabolic alterations for preventing adult [depression](#) and psychosis," the researchers add. Some groups of patients might benefit from treatment with [anti-inflammatory drugs](#)—although so far, clinical trials of this approach have yielded mixed results.

"This special issue of the *Harvard Review of Psychiatry* tackles this intriguing topic of psychoimmunology from various perspectives reflecting the interdisciplinary nature of the problem at hand," according to an introduction by guest editor Paulo Lizano, MD, Ph.D., of Harvard Medical School and Beth Israel Deaconess Medical Center. The topics "summarize the complexity of the inflammatory-brain connection while establishing that inflammation can be causal in a subset of psychiatric disorders and does not follow categorization outlined in the Diagnostic and Statistical Manual of Mental Disorders."

Dr. Lizano adds, "Despite these many advances, much still remains unknown, and further research is needed to enhance the clinical applicability of these findings." Key topics for future research include identifying different "inflammatory subtypes" of [psychiatric disorders](#) to help in developing specific treatment strategies, and potentially using early recognition and treatment to prevent low-grade brain inflammation during development.

Nils Kappelmann et al, Prenatal and Childhood Immuno-Metabolic Risk Factors for Adult Depression and Psychosis *Harvard Review of Psychiatry* (2022). DOI: 10.1097/HRP.0000000000000322

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