

PRESS RELEASE

Cannabis use may influence treatment mechanisms in first-episode psychosis

- *A recent study from the Hospital del Mar Research Institute shows that cannabis use is associated with increased brain inflammation, which may affect the therapeutic effectiveness of antipsychotic treatments.*
- *The study analysed brain MRI scans from nearly 100 individuals—patients with first-episode psychosis and healthy volunteers—using a novel technique that measures extracellular free water. This is the first study to apply this method to examine the effects of cannabis use in psychosis.*
- *The findings are published in **Molecular Psychiatry** and reinforce recommendations against cannabis use in people with psychotic disorders.*

Barcelona, February 5th, 2026 — People experiencing a **first psychotic episode** who use **cannabis** show **greater brain inflammation** than those with the same disorder who do not use the substance—an effect **opposite to that observed in healthy individuals**. This may explain the **reduced therapeutic effectiveness** of treatments used for this condition in cannabis users, according to the results of a study led by a team from the Hospital del Mar Research Institute, published in *Molecular Psychiatry*.

Cannabis use is one of the best-documented risk factors for psychosis and is known to influence the onset of the disorder. It is estimated that 30–50% of people who experience a first psychotic episode use cannabis. The new study, led by the Hospital del Mar Research Institute, is the first to apply a novel technique that measures extracellular free water—a marker of inflammation—in **diffusion magnetic resonance imaging (MRI) brain scans**, revealing an association between cannabis use and brain inflammation, one of the less well-understood factors in psychosis.

The study included 62 recently diagnosed patients and 38 control participants. The results show differences in brain inflammation among people with first-episode psychosis depending on whether they use cannabis. Differences were also observed in individuals without psychosis who use cannabis. According to Dr. Daniel Bergé, psychiatrist at Hospital del Mar and member of the Neuroimaging in Mental Disorders Research Group at the Hospital del Mar Research Institute, this “**suggests an association between cannabis use and alterations in the inflammatory system in first psychotic episodes.**” At the same time, the findings indicate that cannabis may affect the ability of antipsychotic treatments to reduce inflammation. In this regard, “**the potential association between cannabis use and impaired reduction of brain inflammation achieved by antipsychotic treatments offers insight into one of the possible factors behind the limited treatment success in these patients,**” adds Dr. Bergé.

Researchers also point out that **cannabis use may be linked to various aspects of immune system response**, leading to immune dysfunction, a factor that may represent greater susceptibility to psychosis.

In light of these findings, Dr. Laura Martínez Sadurní, co-author of the study, psychiatrist at Hospital del Mar and researcher with the Mental Health Research Group at the institute, explains: **“In daily clinical practice, we already inform patients that cannabis use can increase psychotic symptoms and worsen prognosis.”** The conclusions of this new study add further evidence. Thus, **“knowing that cannabis interferes with the positive effects of antipsychotics allows us to give stronger guidance that its use is contraindicated after a first psychotic episode.”**

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Reference article

Martínez-Sadurní, L., Barrera-Conde, M., Robledo, P. *et al.* Differential effect of cannabis use and antipsychotic medication on extracellular free-water in the brain of individuals with early psychosis and controls. *Mol Psychiatry* **31**, 362–373 (2026). <https://doi.org/10.1038/s41380-025-03287-4>

More information

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