CHAPTER **5**

Cannabis use in Schizophrenia

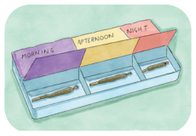
Explore Chapter **5**

This chapter provides insights into the impact of Cannabis Use on schizophrenia symptoms and treatment, and strategies for managing both conditions. By understanding cannabis use in schizophrenia, caregivers can better support and help improve outcomes for their loved ones.

5.1
Cannabis use and schizophrenia

5.2
Recognizing cannabis use disorder

5.3
How does cannabis use impact schizophrenia?



5.4
How does cannabis use disorder impact schizophrenia treatment?

Fast Facts

Cannabis use is common among people with schizophrenia, often as a way to cope with symptoms, despite its risks of triggering psychotic episodes and interfering with treatment.

Cannabis Use Disorder goes beyond occasional use, leading to withdrawal symptoms and making it hard to quit, which further complicates schizophrenia management.

Gradually reducing or eliminating cannabis use can help prevent or even improve the symptoms of schizophrenia.

Managing together. Effective treatment requires psychiatric care, gradual cannabis reduction, and strict medication adherence. Family support is essential for better outcomes and improved quality of life.

About Cannabis

Cannabis, derived from the **Cannabis sativa** and **Cannabis indica** plants, has been used for thousands of years both as a material and as a psychoactive drug.

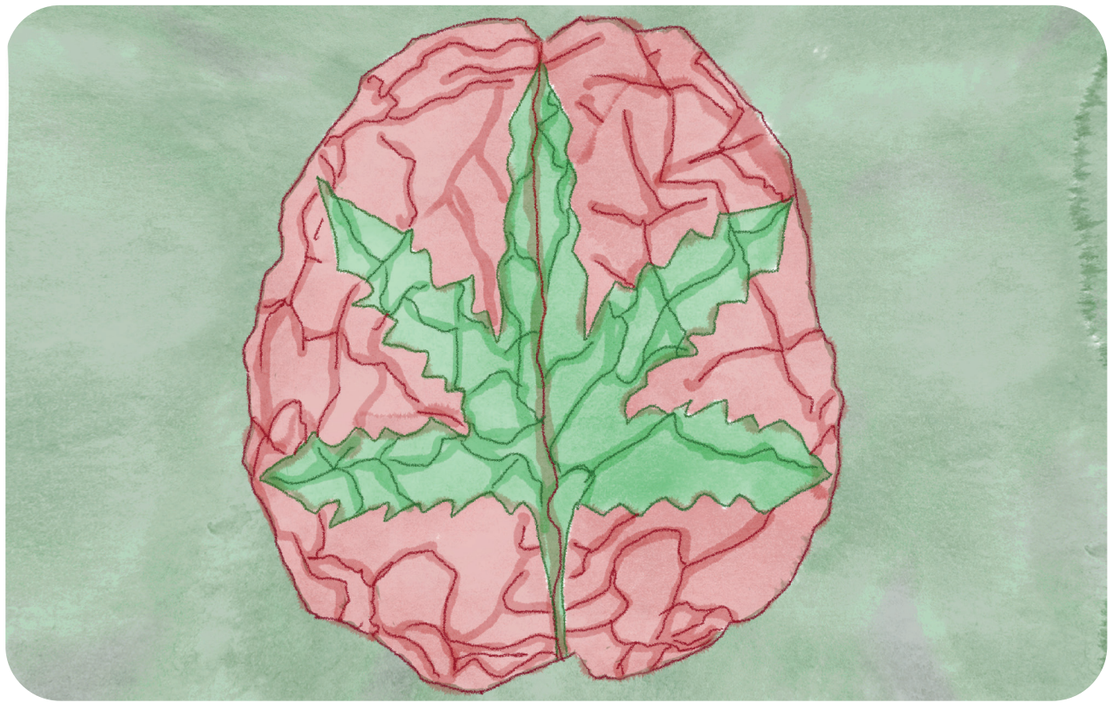
Cannabinoids are a group of substances found in the cannabis plant. The main cannabinoids are **delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD)**. Besides THC and CBD, more than 100 other cannabinoids have been identified.

Notably, the words **“cannabis”** and **“marijuana”** are often used interchangeably, but they don’t mean the same thing. “Cannabis” refers to all products from the Cannabis sativa plant, while “marijuana” specifically includes parts with significant THC, the compound responsible for its psychoactive effects.

The **most active compound** in cannabis is delta-9-tetrahydrocannabinol (THC), which is known for producing a euphoric "high”.

It is important to know that **THC can also trigger short-lived psychotic symptoms**, even in individuals without schizophrenia disorder.

5.1 Cannabis use and schizophrenia



Cannabis use is surprisingly common among individuals with psychosis.

Studies show that nearly **36% of people experiencing their first episode of psychosis**, and about **21% of those with established schizophrenia** struggle with cannabis use disorders (CUD).

Can cannabis use increase the risk of schizophrenia?

Cannabis use, especially in large amounts, significantly raises the likelihood of developing schizophrenia, with the risk being particularly high in those who start using it at a younger age. Studies suggest that people who frequently use cannabis are up to **4X MORE LIKELY TO EXPERIENCE SCHIZOPHRENIA.**

Additionally, the severity of risk depends on:

Age of first cannabis use (higher risk if use begins before age 16-18).

Dose and **potency** (heavier use and high-THC cannabis increases risk).

Genetic vulnerability (family history of psychosis plays a role).

Cannabis-induced psychosis: a growing concern

The number of cannabis-induced psychosis cases has dramatically increased over the past two decades:

- From 2000 to 2016, cases of "cannabis-induced psychosis" jumped by 67% in Norway, 115% in Denmark, and 238% in Sweden.
- In Canada, emergency room visits for cannabis-related psychosis doubled between 2015 and 2019.

This is a serious concern, as many of these individuals go on to develop lasting psychotic disorders.

Why do people with schizophrenia use cannabis?

Self-medication: Some patients use cannabis to alleviate distressing psychotic symptoms or counteract the unpleasant side effects of some medications.

Managing negative symptoms: Some believe that cannabis might help improve negative symptoms of schizophrenia, such as social withdrawal, lack of motivation, and emotional flatness.

Coping with anxiety and stress: Studies show that schizophrenia patients are more likely to use cannabis during stressful events, even though it can increase psychotic symptoms.

While some patients turn to cannabis for relief, its use can complicate treatment, exacerbate symptoms, and interfere with medications.

Understanding the reasons behind cannabis use and its potential risks is crucial for caregivers to provide effective support and ensure the best outcomes for their loved ones.'

Cannabis use and schizophrenia: what every caregiver should know

- Recent research highlights the **SIGNIFICANT CONNECTION** between cannabis use and schizophrenia.
- Cannabis use has been **CONSISTENTLY LINKED TO AN INCREASED RISK** of developing psychosis and worsening schizophrenia symptoms.
- Studies show that **REDUCING OR ELIMINATING CANNABIS** intake can help prevent or even improve the symptoms of schizophrenia.
- While other risk factors, like drug use, urban living, or social class, may also play a role, **CANNABIS REMAINS A CLEAR RISK FACTOR**.

5.2 Recognizing cannabis use disorder

Regular cannabis use can sometimes develop into Cannabis Use Disorder (CUD), especially when certain risk factors are involved.

Using cannabis frequently, particularly high-potency strains, significantly increases this risk, with **daily users being the most vulnerable**.

Additionally, **cognitive and behavioral factors**, for example, difficulties with self-control, can lead to stronger cravings and a greater urge to keep using, making it harder to cut back.

What is cannabis use disorder?

Cannabis Use Disorder (CUD) is a mental disorder that can develop with long-term cannabis use. It's characterized by a problematic pattern of use that leads to significant distress or difficulty in daily life.

To be diagnosed, at **LEAST TWO OF THE FOLLOWING SIGNS MUST OCCUR WITHIN A YEAR**:

- **USING MORE** cannabis than intended, or for longer periods.
- Struggling to cut back or **CONTROL USAGE**.
- **SPENDING** a lot of time obtaining, using, or recovering from cannabis.
- Strong **CRAVINGS** to use cannabis.
- **NEGLECTING** work, school, or home responsibilities due to use.
- Continuing use despite **SOCIAL OR RELATIONSHIP PROBLEMS** caused by cannabis.
- **GIVING UP** important activities because of cannabis use.
- Using cannabis in physically **RISKY SITUATIONS**.
- Persisting in use despite knowing it's causing **PHYSICAL OR MENTAL HARM**.
- Building **TOLERANCE**, needing more cannabis to feel the effects.
- Experiencing **WITHDRAWAL SYMPTOMS** when not using cannabis.

CUD severity is classified as **mild**, **moderate**, or **severe**, based on how many of these signs are present.

Early Remission: A person is considered in early remission if they have abstained from cannabis for 3 to 12 months after previously meeting the criteria for CUD, although craving may persist.

How does cannabis use disorder vary between genders?

The evidence suggests a significant link between cannabis use disorder (CUD) and schizophrenia, showing that **the risk is notably higher in males**, especially those **aged 16-25**.

> **Up to 15% of male schizophrenia cases could be avoided by preventing CUD.**

How is cannabis use detected in laboratory tests?

Laboratory tests can identify cannabis use, but results should always be interpreted alongside clinical assessments.

Common ***lab tests*** *analyze urine, blood, saliva, or hair for* ***THC****, the psychoactive component of cannabis.*

A ***positive test*** *confirms that cannabis has been used, but it doesn't necessarily mean someone has a CUD or is currently intoxicated.*

Heavy or frequent users ***take longer to clear THC*** *from their system compared to occasional users.*

In some cases, additional tests like ***brain scans*** *or* ***blood tests*** *may be needed to rule out other health conditions.*

5.3 How does cannabis use impact schizophrenia?

While cannabis is often seen as a harmless or even therapeutic substance, its use in individuals with schizophrenia poses significant risks.

For people with schizophrenia, cannabis use can:

WORSEN PSYCHOTIC SYMPTOMS (hallucinations, delusions, paranoia).

Increase relapse risk and hospitalizations.

Reduce treatment adherence, making medications less effective.

Lead to **more aggressive behavior** and **lower quality of life**.

Cannabis use increases the risk of relapse in schizophrenia patients

Individuals with schizophrenia who use cannabis are at a significantly higher risk of relapse.

Skipping doses or not closely following treatment plans can weaken symptom control, and **cannabis may directly increase** vulnerability to psychotic episodes, making it harder to prevent a relapse even with proper care.

THC vs CBD: contrasting effects on schizophrenia

Cannabis, commonly known for its psychoactive properties, is increasingly legalized across many countries. This trend is associated with a higher likelihood of cannabis use among both youths and adults.

The relationship between THC (Δ9-tetrahydrocannabinol) and CBD (cannabidiol) adds complexity to how cannabis affects psychotic symptoms.

THC (Δ9-tetrahydrocannabinol): The main psychoactive component in cannabis that causes a "high."

Research shows that THC can worsen psychotic symptoms, increase relapse risk, and negatively affect cognitive function in schizophrenia patients.

CBD (Cannabidiol): A non-psychoactive compound that may have protective effects.

- Some studies suggest CBD could help reduce some psychotic symptoms, improve cognition, and regulate dopamine activity, potentially offering therapeutic benefits.

- **Cognitive Impact**: Some research indicates that schizophrenia patients who use cannabis may perform better cognitively than non-users, though the reasons for this remain unclear.

Mixed research findings:
While CBD shows some promise, more studies are needed to confirm its benefits and determine the right dosage for schizophrenia patients.

Caregiver considerations:
As cannabis use becomes more widespread, it is essential to understand its risks and benefits.

While **cannabis** can offer **some relief** from pain, anxiety, and other conditions, it also has potential drawbacks. Chronic use may **impair cognitive functions** and **emotional regulation**, and in those with a genetic predisposition, it could **increase the risk of developing psychiatric disorders** like schizophrenia.

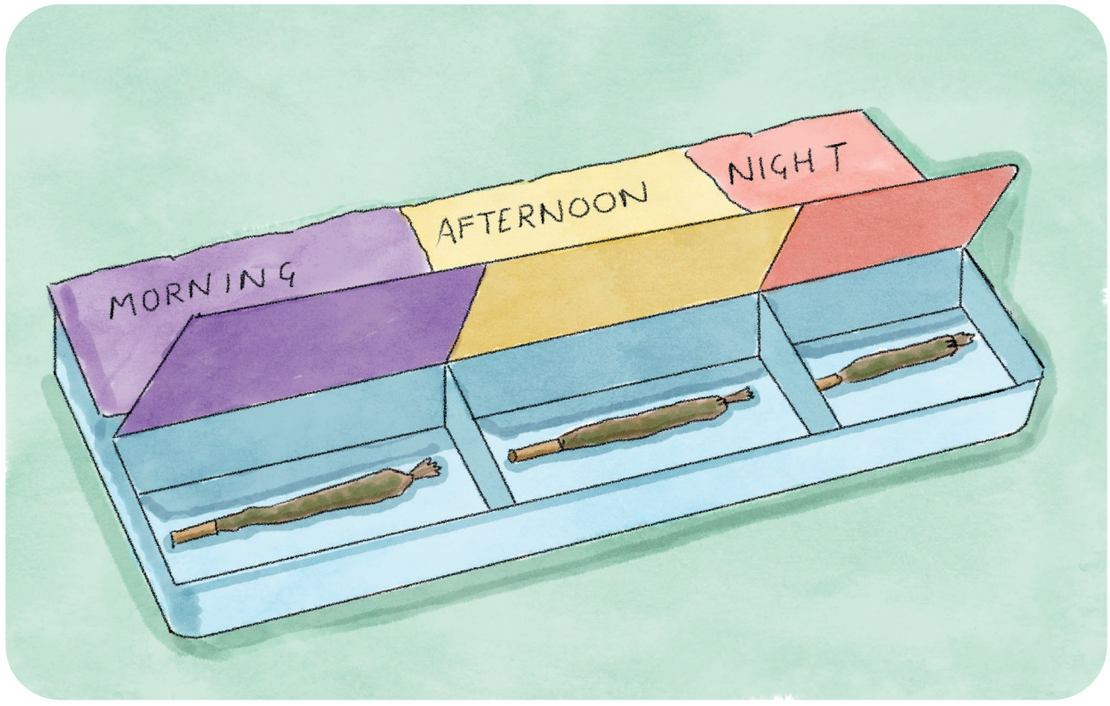
Long-term use can also lead to **structural brain changes** and affect **gene expression**, potentially influencing offspring behavior and mental health.

Cannabis use influences the risk of psychosis, depression, and anxiety

Research shows a clear link between cannabis use and various mental health issues, with heavier use increasing the risk of developing conditions like psychosis, depression, and anxiety.

Heavy cannabis users face a **4X HIGHER RISK OF PSYCHOSIS** compared to non-users and are also more likely to experience symptoms of depression and anxiety.

5.4 How does cannabis use disorder impact schizophrenia treatment?



When schizophrenia and Cannabis Use Disorder coexist, treatment must address both conditions simultaneously, focusing on managing symptoms, reducing cannabis use, and supporting long-term recovery to improve overall well-being.

How to manage CUD effects in people with schizophrenia?

Access to psychiatric care is essential to diagnose and address both conditions effectively. **Psychological counseling** can help individuals develop healthier coping strategies and reduce reliance on cannabis.

For those with **severe CUD**, quitting cannabis entirely is often the best approach. However, a **gradual reduction in use - rather than abrupt cessation - can help ease withdrawal symptoms, improve treatment adherence, and reduce the risk of relapse**.

Although cannabis intoxication typically resolves without medical intervention, **providing a calm environment** and symptom-specific treatments - such as medication for rapid heartbeat or anxiety - can enhance patient comfort.

Should cannabidiol (CBD) be used in schizophrenia treatment?

Currently, **CBD is not recommended** for treating schizophrenia.

While cannabidiol (CBD) is being researched for its potential therapeutic effects, combining it with **antipsychotic medications** may lead to unwanted side effects due to **drug-drug interactions**.

Both CBD and many antipsychotics are metabolized by the same **liver enzymes**, which can interfere with their effectiveness. This competition can either **increase side effects** or **reduce the effectiveness** of antipsychotic medications.

Until more research confirms its safety and benefits, the usage of CBD in schizophrenia treatment should be taken with caution.

How to reduce cannabis use and improve medication adherence in schizophrenia?

Cannabis use is a major factor that can lead to **medication nonadherence** in psychiatric patients.

For those with both schizophrenia and CUD, the key management strategies include:

Encouraging patients to **gradually reduce cannabis use** by switching to lower-potency strains and decreasing frequency.

Prescribing **antipsychotics** with **partial dopaminergic agonist mechanisms**, rather than first-generation antipsychotics, as they may improve outcomes for individuals with schizophrenia and CUD.

A recent **observational study** found that newer antipsychotic medications not only helped reduce schizophrenia symptoms but also improved self-reported struggles with cannabis use.

Enhancing **medication adherence** through digital reminders and carefully balancing medications to ensure they are effective and well-tolerated.

> **By combining medical support with behavioral strategies, patients with schizophrenia and CUD can experience better symptom management and improved quality of life.**

Key takeaways for caregivers

- Reducing or eliminating cannabis use can help prevent or improve schizophrenia symptoms.
- While some patients believe cannabis helps, research consistently shows it increases the risk of psychosis, relapse, and worsened outcomes.
- Other factors (genetics, urban living, trauma) may contribute to schizophrenia, but cannabis is a major risk factor.
- Understanding why individuals with schizophrenia use cannabis can help caregivers offer better support and interventions.

References:

1. McLoughlin BC, Pushpa-Rajah JA, Gillies D, Rathbone J, Variend H, Kalakouti E, et al. Cannabis and schizophrenia. Cochrane Database of Systematic Reviews [Internet]. 2014 Oct 14;(10). Available from: https://pubmed.ncbi.nlm.nih.gov/25314586/
2. Chesney E, Lawn W, McGuire P. Assessing Cannabis Use in People with Psychosis. Cannabis and cannabinoid research [Internet]. 2023 Nov 16;9(1):49–58. Available from: https://pubmed.ncbi.nlm.nih.gov/37971872/
3. Marconi A, Di Forti M, Lewis CM, Murray RM, Vassos E. Meta-analysis of the Association Between the Level of Cannabis Use and Risk of Psychosis. Schizophrenia Bulletin [Internet]. 2016 Feb 15;42(5):1262–9. Available from: https://pubmed.ncbi.nlm.nih.gov/26884547/
4. Di Forti M, Quattrone D, Freeman T, Tripoli G, Gayer-Anderson C, Quigley H. The contribution of cannabis use to variation in the incidence of psychotic disorder across Europe (EU-GEI): A multicentre case-control study. The Lancet Psychiatry [Internet]. 2019 May;6(5):427–36. Available from: https://www.thelancet.com/article/S2215-0366(19)30048-3/fulltext
5. Swendsen J, Ben-Zeev D, Granholm E. Real-Time Electronic Ambulatory Monitoring of Substance Use and Symptom Expression in Schizophrenia. American Journal of Psychiatry [Internet]. 2011 Feb;168(2):202–9. Available from: https://pubmed.ncbi.nlm.nih.gov/21078705/
6. Kosty DB, Seeley JR, Farmer RF, Stevens JJ, Lewinsohn PM. Trajectories of cannabis use disorder: risk factors, clinical characteristics and outcomes. Addiction [Internet]. 2016 Sep 22;112(2):279–87. Available from: https://pubmed.ncbi.nlm.nih.gov/27515021/
7. Hasin DS, O'Brien CP, Auriacombe M, Borges G, Bucholz K, Budney A, et al. DSM-5 criteria for substance use disorders: Recommendations and rationale. American Journal of Psychiatry [Internet]. 2013;170(8):834–51. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3767415/
8. Hjorthøj C, Compton W, Starzer M, Nordholm D, Einstein E, Erlangsen A, et al. Association between cannabis use disorder and schizophrenia stronger in young males than in females. Psychological Medicine [Internet]. 2023 May 4;53(15):1–7. Available from: https://pubmed.ncbi.nlm.nih.gov/37140715/
9. Dinis-Oliveira RJ. Metabolomics of Δ9-tetrahydrocannabinol: implications in toxicity. Drug Metabolism Reviews [Internet]. 2016 Jan 2;48(1):80–7. Available from: https://pubmed.ncbi.nlm.nih.gov/26828228/
10. Scheffler F, Phahladira L, Luckhoff H, du Plessis S, Asmal L, Kilian S, et al. Cannabis use and clinical outcome in people with first-episode schizophrenia spectrum disorders over 24 months of treatment. Psychiatry Research [Internet]. 2021 Aug;302:114022. Available from: https://pubmed.ncbi.nlm.nih.gov/34052461/
11. Ahmed S, Roth RM, Stanciu CN, Brunette MF. The Impact of THC and CBD in Schizophrenia: A Systematic Review. Frontiers in Psychiatry [Internet]. 2021 Jul 23;12. Available from: https://pubmed.ncbi.nlm.nih.gov/34366924/
12. Kayir H, Ruffolo J, McCunn P, Khokhar JY. The Relationship Between Cannabis, Cognition, and Schizophrenia: It's Complicated. Cognitive Functioning in Schizophrenia: Leveraging the RDoC Framework [Internet]. 2022;437–61. Available from: https://pubmed.ncbi.nlm.nih.gov/36318403/
13. Johnson K, Weldon AJ, Burmeister MA. Differential effects of cannabis constituents on schizophrenia-related psychosis: a rationale for incorporating cannabidiol into a schizophrenia therapeutic regimen. Frontiers in psychiatry [Internet]. 2024 Apr 23;15. Available from: https://www.frontiersin.org/journals/psychiatry/articles/10.3389/fpsyt.2024.1386263/full
14. Christoph Felix Mosandl, Baltes-Flückiger L, Kronschnabel J, Meyer M, Guessoum A, Herrmann O, et al. Cannabis use and its association with psychopathological symptoms in a Swiss adult population: a cross-sectional analysis. Frontiers in Public Health [Internet]. 2024 May 22 [cited 2024 Aug 8];12. Available from: https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2024.1356988/full
15. Hall W, Manthey J, Stjepanović D. Cannabis use and cannabis use disorders and their treatment in the Europe. European Archives of Psychiatry and Clinical Neuroscience [Internet]. 2024 Mar 15;275:307–13. Available from: https://link.springer.com/article/10.1007/s00406-024-01776-1
16. Hjorthoj C, Baker A, Fohlmann A, Nordentoft M. Intervention Efficacy in Trials Targeting Cannabis Use Disorders in Patients with Comorbid Psychosis Systematic Review and Meta-analysis. Current Pharmaceutical Design [Internet]. 2014 May 31 [cited 2019 Jun 8];20(13):2205–11. Available from: https://pubmed.ncbi.nlm.nih.gov/23829367/
17. Szerman N, Vega P, Roncero C, Peris L, Grau-López L, Basurte-Villamor I. Cariprazine as a maintenance treatment in dual schizophrenia: a 6-month observational study in patients with schizophrenia and cannabis use disorder. International Clinical Psychopharmacology [Internet]. 2024 Sep 25 [cited 2025 Jul 11];40(3):167–75. Available from: https://pubmed.ncbi.nlm.nih.gov/39319529/