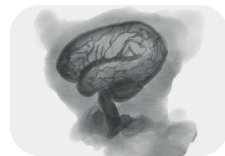


Explore Chapter 3

This chapter examines why tobacco use is so common among people with schizophrenia and how it impacts both the condition and its treatment. It also discusses the challenges of quitting and the resources available to support smoking cessation.



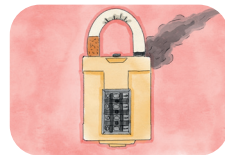
3.1
Why is tobacco use so common among people with schizophrenia?



3.2
How does tobacco use affect schizophrenia?



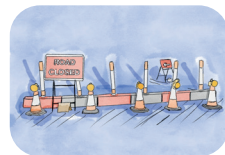
3.3
What are the health risks of tobacco use for someone with schizophrenia?



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Why is quitting smoking harder for people with schizophrenia?



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Can tobacco use interfere with schizophrenia medications?



3.6
What resources are available for quit smoking in schizophrenia?



Fast Facts

High tobacco use rates in schizophrenia and other mental disorders aren't just a coincidence - they are rooted in shared genetic and brain chemistry factors.

Although smoking may seem to provide **temporary relief** in some situations, it **can worsen the course of schizophrenia and damage physical health**, complicating the overall management of schizophrenia.

Both **smoking and quitting smoking can interact with schizophrenia medication** by affecting how the body processes it - smoking speeds up the metabolism of some drugs, making them less effective, while quitting can increase drug levels and the risk of side effects. Therefore, it is **important to talk to the doctor** to ensure proper medication adjustments.

Quitting smoking is a big step for people with schizophrenia and tobacco use disorder. **It lays the basis for gradual improvements in both physical and mental health.**

Given the overlap in meaning among some terms, which can lead to terminological ambiguity, this chapter adopts the following operational definitions to ensure clarity and consistency for readers.

Tobacco use — any consumption of nicotine-containing products derived from tobacco, whether combustible, heated, or smokeless.

Smoking — the inhalation of smoke from combusted tobacco products (e.g., cigarettes, cigars, or pipes).

Tobacco Use Disorder (TUD) — the DSM-5 / ICD-11** diagnosis describing a compulsive, harmful pattern of tobacco consumption.

Comorbid schizophrenia — schizophrenia that co-occurs with at least one additional diagnosable condition, in this chapter specifically TUD.

**DSM-5 and ICD-11 are the shared "rulebooks" doctors use worldwide to label and describe health conditions so everyone speaks the same medical language.

3.1

Why is tobacco use so common among people with schizophrenia?

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If you've noticed that many people with schizophrenia smoke, you're not alone. Individuals with schizophrenia are far more likely to smoke than the general population.

But why? The reasons are complex and interconnected with both biological and psychological factors.

From a scientific standpoint, it is important to understand the difference between simply using tobacco and having Tobacco Use Disorder (TUD). TUD is recognized globally as a mental health disorder by major medical classifications like DSM-5 and ICD-11 (WHO), meaning it's considered a condition that affects the brain.

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People with mental disorders smoke much more than the general population - **between 2 to 4 times as much.**

This trend is even more pronounced among those with severe mental disorders, where **Tobacco Use Disorder (TUD) rates are especially high**

For instance, as many as **70-85%** of people with schizophrenia and **50-70%** of those with bipolar disorder struggle with TUD

Despite their desire to quit for reasons like health and family, individuals with mental disorders face big challenges. They're more likely to relapse, especially when dealing with stress and negative emotions, even after successfully quitting for over a year.

These findings show how closely mental health and smoking are connected, making it clear that people need personalized support to manage both their well-being and tobacco addiction successfully.

A strong link

There is a strong connection between Tobacco Use Disorder (TUD) and other mental health conditions, like schizophrenia, indicating that they may share common brain mechanisms.

In the human brain, there are complex systems and circuits—like the opioid, cannabinoid, and nicotinic cholinergic systems—that evolved to support our survival.

However, when these systems malfunction, as seen in many mental disorders, they can increase the risk of developing addictive behaviors like nicotine addiction.

People smoke primarily for nicotine, which they find in tobacco. Interestingly, variations in a specific brain nicotine receptor can predict severe and compulsive smoking behaviors.

These genetic differences not only make it harder for some individuals to quit smoking, but also increase their likelihood of relapse after attempting to quit.

The theories of tobacco use-schizophrenia connection

Scientists have proposed several ideas to explain why smoking rates are so high among people with schizophrenia.

Theory 1 - Self-Medication

One popular theory suggests that individuals with schizophrenia might use tobacco as a form of **self-medication** to manage their symptoms.

Theory 2 - Shared Genetics

Another theory is that there might be a **shared genetic link**, meaning the same genes could increase the risk for both smoking and developing schizophrenia.

Theory 3 - Smoking as a Contributing Factor

Lastly, some researchers believe that smoking itself could potentially **contribute to the onset of schizophrenia**.

Understanding these factors helps explain why quitting smoking can be especially challenging for individuals with mental health disorders and highlights the importance of personalized approaches to help them overcome nicotine addiction.

Tobacco as self-medication

One major reason why people with schizophrenia smoke more than the general population is that nicotine can act as a form of **self-medication**, offering **temporary relief** from symptoms such as stress, agitation, and cognitive difficulties.

Some potential benefits of nicotine use in this context include:

- **Improved cognition and mood** – Nicotine interacts with brain receptors that enhance attention, learning, and memory.
- **Reduction of stress and agitation** – Many smokers report that nicotine helps them feel calmer.
- **Possible mitigation of medication side effects** – Some studies suggest that nicotine can reduce the severity of some side effects from antipsychotic drugs.
- **Regulation of appetite and metabolism** – Nicotine influences hormonal control of appetite and energy use, though this is less relevant to schizophrenia.



While nicotine might offer short-term benefits, it is not a safe or sustainable treatment. Long-term smoking leads to serious health risks, making it a problematic coping strategy.

Cognitive deficits and nicotine's effects on the brain

Schizophrenia is often accompanied by **neurocognitive deficits (NCDs)** - problems with reaction time, memory, attention, and sensory processing. These challenges affect up to 80% of **people with schizophrenia** and tend to remain stable throughout life.

Nicotine appears to have a **strong connection to these cognitive issues**:

- Research shows that certain brain chemicals, like **dopamine, glutamate, and GABA, are linked to cognitive impairments in schizophrenia**.
- Nicotine interacts with these brain systems, **temporarily improving cognitive function**.
- Both human and animal studies demonstrate that **nicotine use increases when individuals face cognitive challenges**. This suggests

that smoking may be reinforcing itself - people continue to smoke because it helps them stay sharp.

Importantly, many people with schizophrenia who struggle with cognitive difficulties are also more likely to start and continue smoking. This indicates that the **need to manage cognitive deficits may be a significant reason** why smoking is so common among them.

The cycle of smoking and its risks

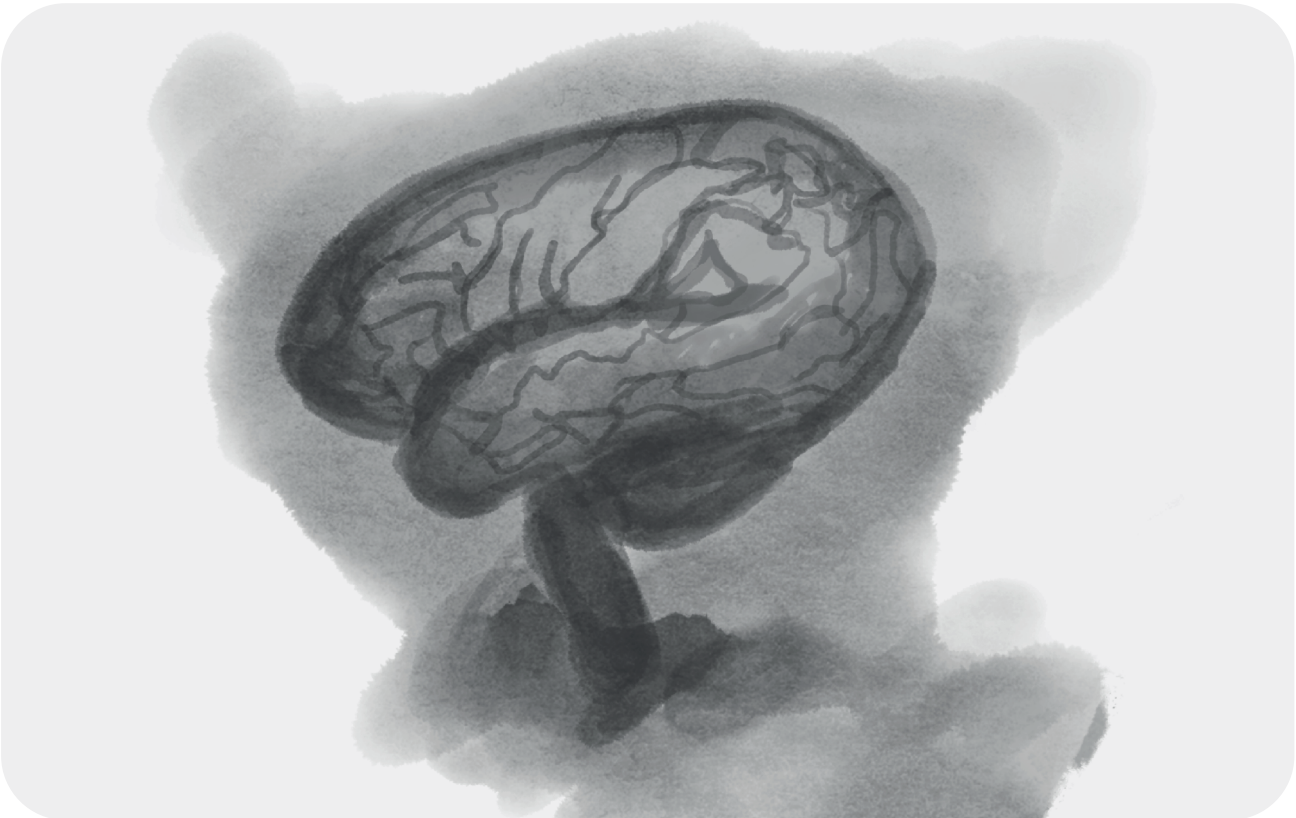
One of the reasons smoking is so **difficult to quit** is because **nicotine creates a cycle of dependence**:

- **Cognitive abilities tend to decline when smokers quit**, leading them to crave another dose of nicotine to restore mental sharpness.
- **This reinforcement loop keeps people smoking**, especially those who **rely** on nicotine for cognitive or emotional relief.
- **The long-term consequences are severe**, including high rates of **smoking-related illnesses** like heart disease and lung conditions, which affect people with schizophrenia at higher rates.

While nicotine might offer temporary benefits, its dangers far outweigh them.

3.2

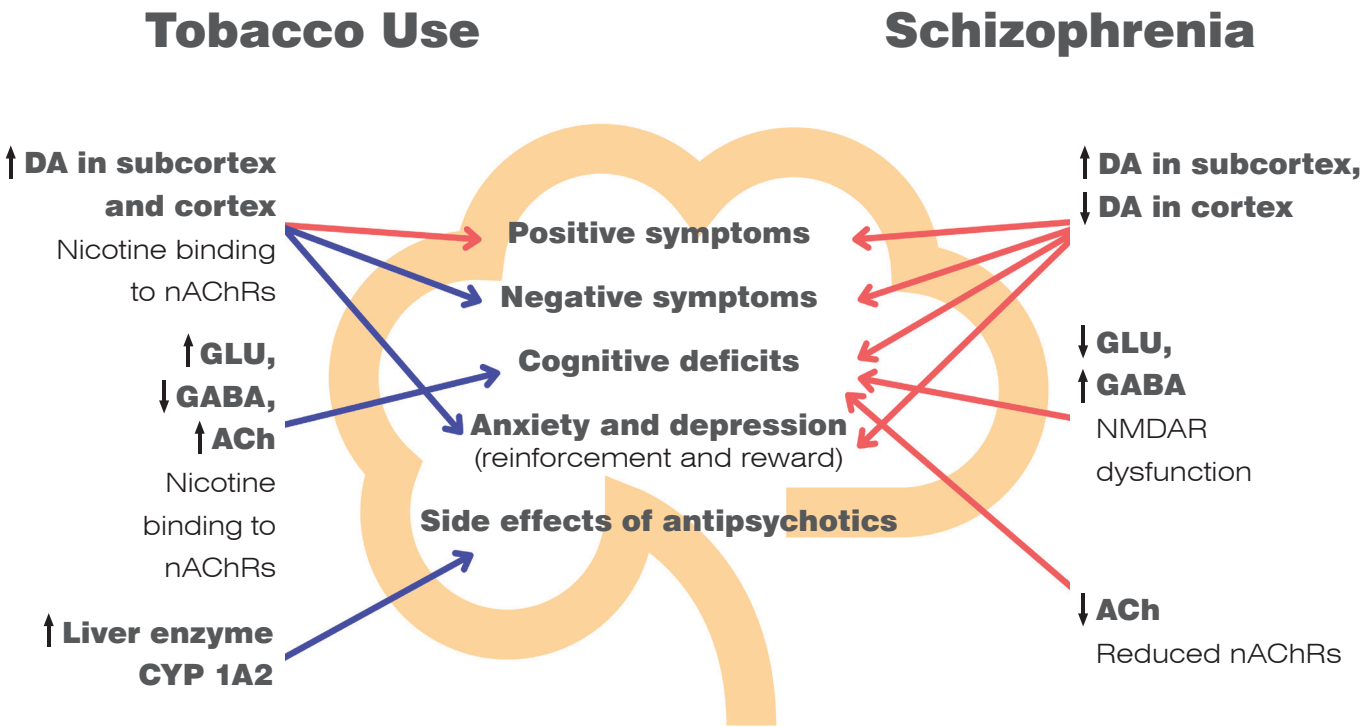
How does tobacco use affect schizophrenia?



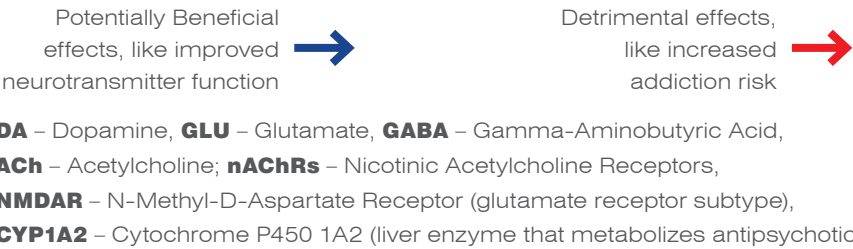
Although smoking may appear to offer temporary relief, it can impact emotions and behavior, complicating the management of schizophrenia.

“The momentary ease nicotine can bring often hides the truth that it’s fueling the addiction, complicating efforts to quit.”

Understanding how nicotine affects the brain in schizophrenia can help to determine whether it truly helps or harms.



How tobacco use affects the brain in schizophrenia



Smoking negatively impacts the schizophrenia course.

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Quitting matters!

While some studies suggest that smoking may help alleviate the symptoms of schizophrenia and improve cognitive functions like attention and memory, these potential **benefits are overshadowed** by the significant negative impact of tobacco use, making the management of schizophrenia even more challenging.

Smoking in people with schizophrenia has been associated with:

- **increased anxiety, agitation,**
- and **worsening symptoms of psychosis**, like hallucinations or delusions,
- as well as **reduced cognitive abilities**.

Furthermore, smoking has been linked to higher rates of **suicidal behavior** among those with schizophrenia.

On the flip side, **quitting tobacco has been shown to improve both mental clarity and psychosis symptoms, as well as lower the risk of other health problems**.

Despite these benefits, people with schizophrenia often receive less support to quit smoking compared to those without the condition.

The true cost of smoking for people with schizophrenia

Aside from the health risks associated with tobacco use, there are additional challenges for people with mental disorders:

- **Financially**, spending on tobacco can be a significant portion of their income,
- **Socially**, tobacco use can also increase discrimination and stigma in their lives.

These factors compound the difficulties faced by individuals with mental health conditions who smoke.

Financial impact of tobacco use in schizophrenia

Tobacco smoking isn't just a health issue for people with schizophrenia - it also has serious financial consequences.

A study in the U.S. found that individuals with schizophrenia or schizoaffective disorder who rely on public assistance **spend nearly 27% of their monthly funds on cigarettes**.

This shows just how much of a **financial burden smoking** can be for those already facing significant challenges.

Social impact of Tobacco Use Disorder in schizophrenia

Stigma and discrimination significantly impact people dealing with tobacco use disorder and schizophrenia.

Even though modern neuroscience and psychiatry reveal that these conditions are linked to structural and functional brain problems, many still view TUD as rather a result of poor decisions or bad behavior than a true medical condition. This misconception lowers effective prevention and treatment.

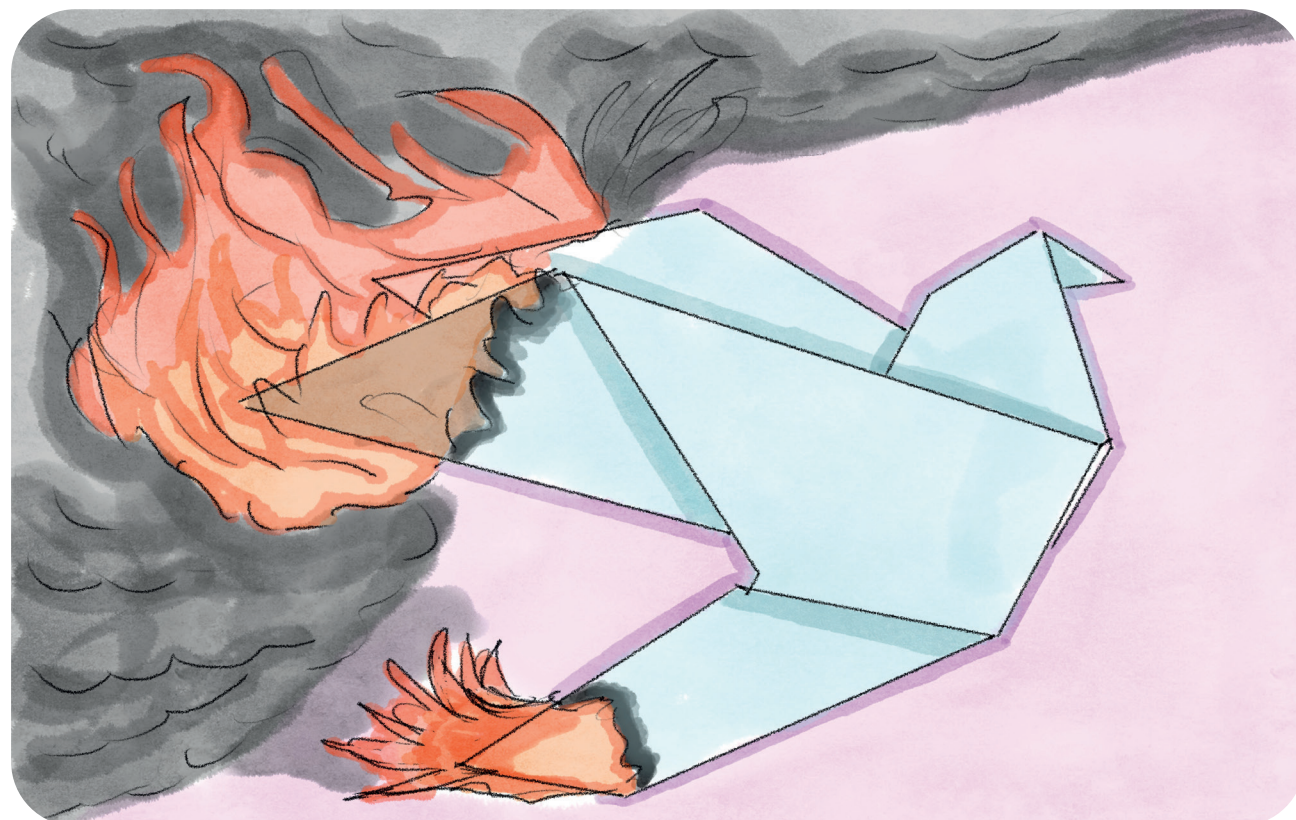
“Overcoming stigma is essential to ensure the patient receives the right care and support.”

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3.3

What are the health risks of tobacco use for someone with schizophrenia?

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People with schizophrenia are already at a higher risk for various health problems, and smoking only compounds these risks.

The sad truth is that many of the health problems faced by people with schizophrenia who smoke are avoidable, making the decision to quit smoking even more critical.



Tobacco use is linked to roughly half of all smokers dying prematurely due to complications related to smoking. This results in about 10 years of life lost for those affected.



Tobacco poses a significant health risk, contributing to conditions **like cancer, lung disease, and heart problems.** It also increases the likelihood of various other health issues that affect daily life and well-being, such as **respiratory infections, reduced fertility, osteoporosis, ulcers, and diabetes.**



Many of these problems stem from exposure to harmful gases produced when tobacco is burned – more than 70 of these gases are known to cause cancer.

Specific habits that aggravate the burden in smokers suffering from schizophrenia

- People with schizophrenia often smoke **more intensely and frequently than others**, taking deeper and longer inhales which exposes them to higher levels of harmful chemicals in cigarettes.
- They also tend to **smoke more cigarettes** and are **more nicotine-dependent** compared to those without schizophrenia.
- Factors like lower **education, unemployment, severe symptoms, high caffeine intake**, and **substance use disorders** can contribute to their smoking habits.

But it's not just smokers who are at risk.

Non-smokers who breathe in second-hand smoke are also in danger.

In the United States alone, exposure to tobacco smoke leads to the premature deaths of an estimated 50,000 people each year.

This stresses the far-reaching impact of tobacco use on both smokers and those around them.

Understanding the harmful effects of smoking is crucial to protecting the health and well-being of those living with schizophrenia.

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3.4

Why is quitting smoking harder for people with schizophrenia?

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Quitting smoking is never easy, but for someone with schizophrenia, it can feel like climbing a mountain.

Tobacco addiction is a tough opponent, and schizophrenia adds another **layer of difficulty**. The **withdrawal symptoms** from tobacco, such as irritability, depression, and anxiety, can be especially intense for those already struggling with mental health challenges.

But here's the good news: while it's more difficult, it's not impossible. With the right support and resources, **people with schizophrenia can and do quit smoking**.

What obstacles do people with schizophrenia face when trying to quit smoking?

Several obstacles make quitting smoking particularly challenging for people with schizophrenia:

- **ADDICTION AND CRAVINGS:** While these factors play a significant role, there's also strong evidence that smoking is used as a way to cope with some of the symptoms. These might include stress, feeling down, boredom, and even social isolation. Smoking can become a way to manage these challenging feelings and situations.
- **LIMITED RESOURCES:** Both patients and healthcare providers

often struggle with a shortage of necessary resources. Although some specific programs exist, many patients cannot afford the cost.

- **NEGLECT AND OUTDATED ATTITUDES:** Some responsible persons still hold onto outdated prejudices, overlooking the importance of assisting patients in quitting smoking.
- **STIGMA:** Patients with schizophrenia often face stigma, which can hinder their access to smoking cessation support.

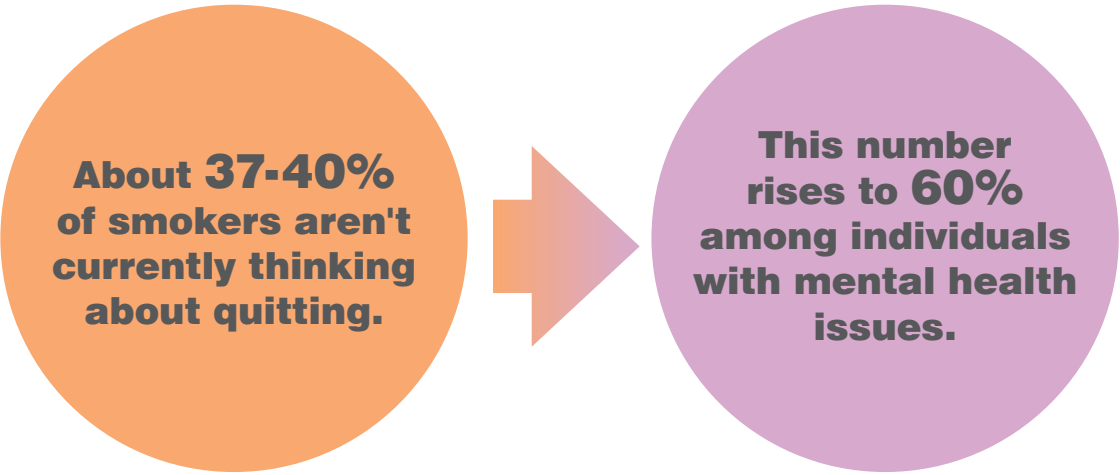
Addressing these barriers is essential to helping people with schizophrenia in their efforts to quit smoking.

Tobacco Use Disorder is more than just a personal choice.

Conditions like tobacco use disorder aren't something people choose - they often arise from a **mix of genetic factors and life experiences** that make someone more vulnerable.

Addiction is a type of mental health condition.

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Gender and nicotine: how men and women respond differently

Extensive research has shown that there are gender-related differences in how people respond to smoking.

WOMEN tend to **METABOLIZE NICOTINE AND ITS BYPRODUCT COTININE FASTER** than men, partly because of estrogen levels. This faster metabolism might explain why women often experience more **NEGATIVE EFFECTS FROM NICOTINE** and have **POORER SUCCESS RATES WITH TREATMENTS.**

Studies indicate that **WOMEN** are **MORE REACTIVE TO NICOTINE RELATED CUES AND STRESS,**

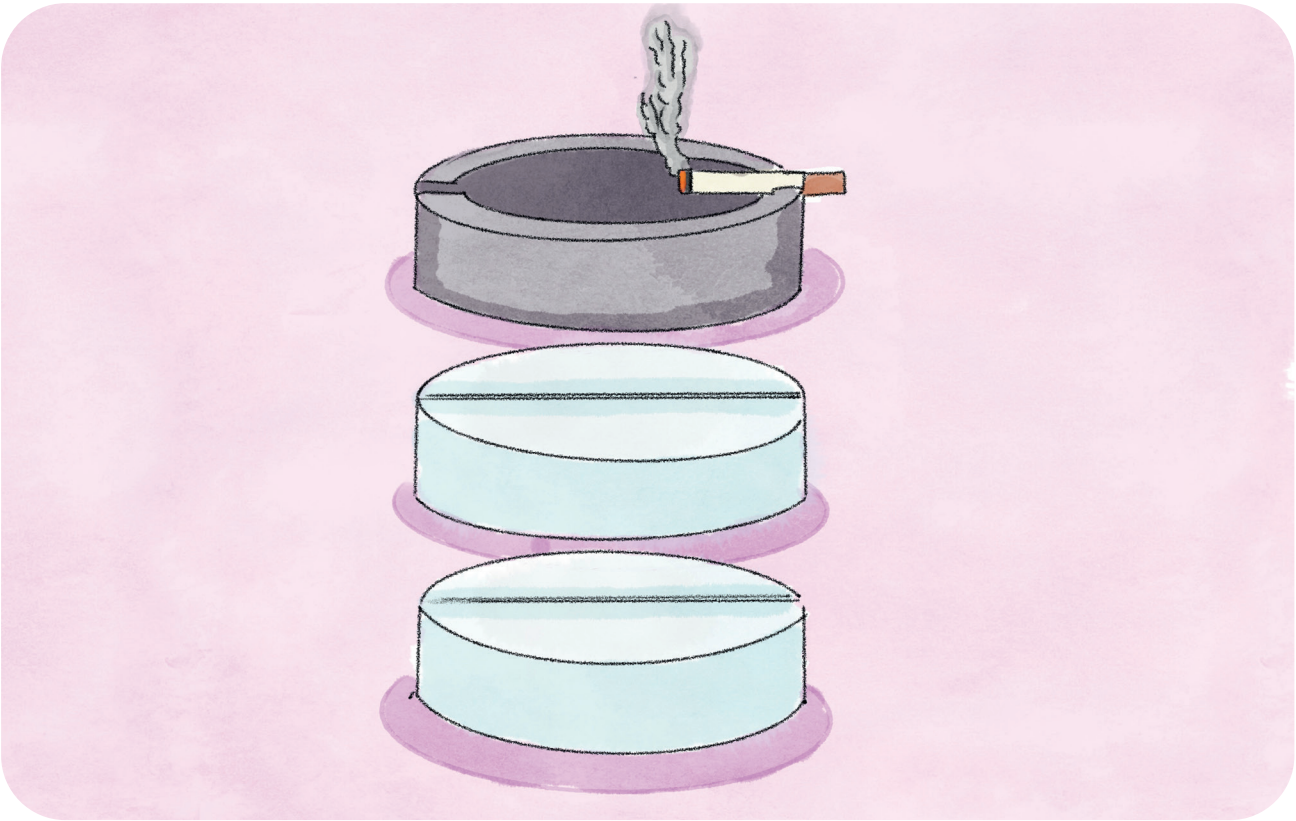
making them more prone to relapse, especially after stressful events.

Additionally, women generally respond **LESS FAVORABLY TO NICOTINE REPLACEMENT THERAPIES** compared to men.

One reason for the similar smoking rates among adult men and women could be tobacco marketing **STRATEGIES AIMED AT WOMEN,** emphasizing appetite suppression, weight loss, and independence.

3.5

Can tobacco use interfere with schizophrenia medication?



The short answer is “Yes, it can” - and this is something many people aren’t aware of.

Smoking doesn’t just affect the lungs; it can interfere with the way the body processes medications for schizophrenia.

Nicotine can speed up the metabolism of certain antipsychotic drugs, making them less effective.

76 This means that someone who smokes might need higher doses of their medication to get the same therapeutic effect, which can increase the risk of side effects.

"Quitting smoking, on the other hand, can lead to better control of symptoms and may allow for lower medication doses, ultimately improving overall health."

How smoking and quitting impact on psychotropic and other medications (useful to know)

Cigarette smoke contains about **3,000 different chemicals**. Some of these chemicals can interact with the medications, and **a few of these interactions can be quite significant**.

The main responsible are chemicals called **polycyclic aromatic hydrocarbons (PAHs)**. These PAHs can change the way the body processes certain drugs.

Here's how it works:

PAHs activate liver enzymes. When these enzymes are activated, they can speed up the metabolism of drugs that use these pathways, lowering the drug levels in the blood.

Heavy smokers and those who smoke unfiltered cigarettes have higher levels of enzyme activation. The more you inhale, the more PAHs get into your system, leading to greater enzyme induction.

When you quit smoking, these enzyme levels quickly return to normal. The activity of **some enzymes drops to steady levels within a week after quitting**. As a result, drug levels in the blood can increase when one stops smoking, which might lead to higher chances of side effects or toxicity.

Even though we know this, there aren't clear guidelines for how to manage medications when you quit smoking because specific studies on these interactions are still lacking.

So, **if a person you're caring for is a smoker or planning to quit, it's essential to talk to the doctor about the medications and how to avoid potential issues.**

What to know about medications when stopping smoking?

When somebody is quitting smoking, the doctor needs to consider several factors related to the medications

Amount of tobacco smoked:
Heavy smokers are at the highest risk for drug interactions.

Enzyme changes:
It takes at least one week for changes in enzyme activity to take place after stopping smoking.

Drug metabolism:
The impact is greatest for medications that rely heavily on some enzymes and the doctor will advise and inform you regarding the medication.

Medication Dosage:
High doses of antipsychotic medications may lead to unpredictable increases in drug levels.

Method of quitting:
Whether quitting abruptly or gradually, it can sometimes influence the medications.

Liver function:
The baseline liver health can affect how drugs are processed.

Age: The ability of your body to induce some enzymes decreases as you get older.

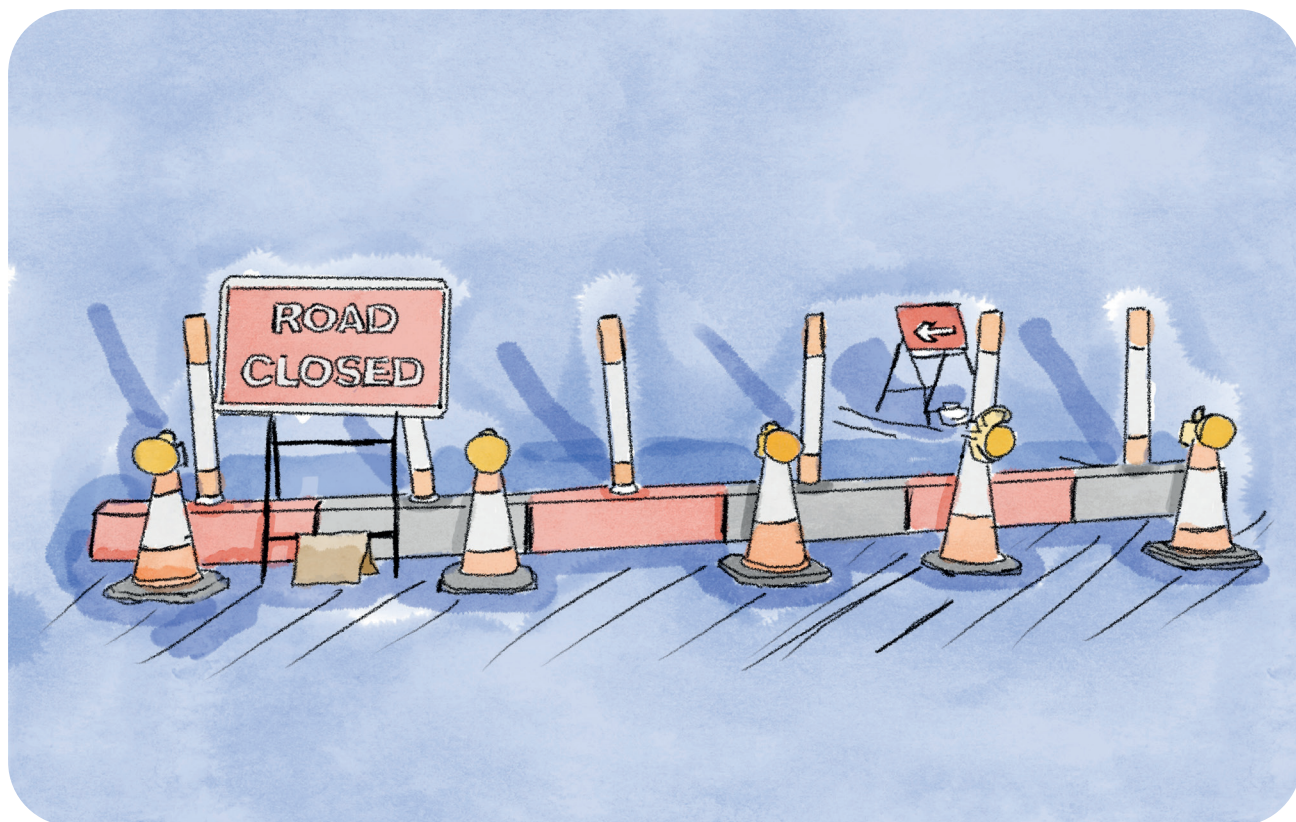
Considering these factors can help manage the medications more effectively during smoking cessation.

It is recommended to always discuss any changes in the smoking habits of the patient with the healthcare provider to ensure safe and effective treatment.

3.6

What resources are available for quit smoking in schizophrenia?

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Fortunately, there are specialized resources and programs designed to help people with schizophrenia quit smoking.

There are **SEVERAL MEDICATIONS** available (approved by the FDA/EMA) to support people in their journey to quit smoking. The primary goal of these medications is to help individuals cut back or completely stop their tobacco use.

NICOTINE REPLACEMENT (like patches, gum, and lozenges) offers a safer alternative by gradually reducing dependence on harmful tobacco products through substitution, making it an efficient tool in harm reduction efforts.

There's also a newer treatment called **DEEP TRANSCRANIAL MAGNETIC STIMULATION** (TMS), which is approved to help people stop smoking for short periods.

While these treatments work for many people initially, studies show that **MANY PEOPLE START SMOKING AGAIN WITHIN A YEAR**. For those with serious mental health conditions, these treatments are often less effective, and many don't respond to them.

How effective are “nicotine replacement drugs” and nicotine e-cigarettes in helping smokers quit?

A study conducted in northern Finland, involved participants aged 25 to 75 who smoked daily and wanted to

quit. They were randomly assigned to different treatment groups, receiving either nicotine-containing e-cigarettes (ECs) with placebo tablets, a “nicotine replacement drug” with nicotine-free ECs, or placebo tablets with nicotine-free ECs.

All participants also received motivational support during a 12-week intervention.

The trial showed that both nicotine replacement drug and nicotine-containing e-cigarettes were effective in helping people quit smoking for up to six months.

E-cigarette and schizophrenia: what is important to know?

Electronic cigarettes (e-cigarettes) entered the market around 2006, offering a way to get nicotine without using traditional tobacco.

Since then, their popularity has soared, especially among young adults. A recent study found that **9.2% of university students** had used e-cigarettes in the past year, and these devices have also been **linked to mental health issues and impulsive behavior**.

E-cigarette use is also significant among people with schizophrenia.

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In one study, **7%** of individuals with schizophrenia were current users, **37%** had tried them in the past, and **24%** of non-users were open to giving them a try.

Many users turned to e-cigarettes to help quit smoking traditional tobacco

It's important to note that traditional cigarette smoke, rather than nicotine itself, is thought to alter some enzymes, which affects the metabolism of some antipsychotic drugs.

Since e-cigarettes don't produce the same smoke, the current data isn't enough to recommend any medication dose adjustments for e-cigarette users with schizophrenia.

E-cigarettes can be the key to Pandora's box!

Researchers looked into how e-cigarette use might affect the risk of developing addictions to other substances, like marijuana, alcohol, and prescription medications.

It was found that **using e-cigarettes could make it easier for people to become more addicted to these other substances.**

Breaking the habit: success in reducing and quitting smoking in schizophrenia patients is realistic

Individuals with mental disorders who receive treatment are more likely to reduce their tobacco use compared to those without treatment.

THERE IS HOPE!

Key takeaways for caregivers

- **People with schizophrenia smoke at much higher rates due to shared genetic and brain chemistry factors, and as a way to cope with symptoms like stress and cognitive difficulties.**
- **Smoking can worsen schizophrenia symptoms, increase health risks and interfere with medications. Quitting can improve mental clarity and physical wellbeing but may require medication adjustment.**
- **Nicotine may feel helpful short-term but creates a cycle of dependence that harms long-term recovery.**
- **Quitting smoking is harder for those with schizophrenia, but it is possible. Personalized support, understanding withdrawal challenges and working closely with healthcare providers are key.**
- **Caregivers can play a crucial role by encouraging smoke-free goals, monitoring medical changes and reducing stigma around tobacco addiction.**

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