



How to recognize the long-standing and emerging challenges in adolescent substance use

Adolescence is a critical period for physical, social, and emotional growth – but it is also a time of increased risk-taking behaviors like substance use. Engaging in these behaviors during this crucial stage of neurological and psychological development [may make teens who use substances more vulnerable to substance abuse](#) in the long term and can have significant effects on a teen’s health and well-being.

Opioid and prescription drug abuse among teens is on the rise, and with the growing prevalence and availability of new substance-using technologies like cannabis vapes and e-cigarettes, it’s more important now than ever for pediatric clinicians to be familiar with the risk factors and challenges common to treating [adolescent substance use](#) disorders (SUDs).



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Long-standing challenges in preventing substance-related adolescent deaths

The three leading causes of death for adolescents in the United States are motor vehicle accidents, suicide, and homicide. Alcohol and other substances are involved in a sizable number of these largely accidental deaths.

Despite decades of efforts to stem adolescent substance use, the issue remains a significant public health concern. The persisting stigma that is associated with substance use and addiction can prevent adolescents from seeking help and hinder efforts to provide effective prevention and treatment programs. Countering this stigma requires a multi-faceted approach that includes public education, awareness campaigns, and advocacy efforts promoting greater understanding and acceptance of substance use disorders.

Maintaining ongoing monitoring, evaluation, and adaptation of prevention programs is crucial to ensure that they remain relevant and effective in addressing the evolving challenges of substance use among adolescents.

Teens may lack access to effective prevention and treatment programs due to financial, geographic, or social barriers — which can not only prevent adolescents from receiving the care they need but can also exacerbate the risks associated with substance use. Addressing these barriers requires a concerted effort to increase access to prevention and treatment programs, including increasing funding for community-based programs and promoting an overall greater awareness of available resources including harm reduction programs.



Identifying risk and protective factors for substance abuse in teens

Many factors contribute to adolescent substance use, including social and environmental influences, family dynamics, peer pressure, and underlying mental health issues. To address these challenges, it is important for clinicians in pediatric and adolescent medicine to understand the root causes of substance use and to build effective prevention strategies informed by these risk factors.

Individual risk factors include early age of initiation of substance use, peer influence (e.g., associating with substance-using peers), and low academic achievement. Pre-existing mental health conditions such as depressive and anxiety disorders also put teens at risk for substance use, as does having experienced child sexual abuse.

Family risk factors for substance abuse disorders among teens include a family or parental history of substance use, family conflict, and poor family management. The [CDC cites other family risk factors](#), such as:

- Poor parental monitoring
- Favorable parental attitudes toward substance use
- Family rejection, such as of sexual orientation or gender identity

Environmental risk factors include poverty, exposure to violence, “lack of school connectedness,” and community disorganization.

Understanding and encouraging the presence of protective factors against adolescent substance use is also important. The CDC created a research-based list of “factors that help buffer youth from a variety of risky behaviors, including substance use,” such as:

- Parental and/or familial engagement
- Family support
- Parental disapproval of substance abuse
- Responsible parental monitoring
- School connectedness

Health risks associated with adolescent vaping, e-cigarette, and cannabis use

Cannabis and nicotine vaporizers, also known as e-cigarettes or vapes, present new challenges in the quest to limit teen substance use. These are battery-powered devices that heat a wax or liquid solution to create an aerosol, which is then inhaled. The solution, also known as “vape juice,” in e-cigarettes often contains nicotine, which is highly addictive and can [harm brain development in adolescents](#). As the CDC explains, “Using nicotine in adolescence may also increase risk for future addiction to other drugs” and has been associated with causing depression in teens.

Nicotine alone is not the only concerning substance in vapes. The aerosol from e-cigarettes contains harmful chemicals that can affect the lungs and respiratory system, including heavy metals, volatile organic compounds (VOCs), and ultrafine particles.

The prevalence of [adulterants such as vitamin E in vapes](#) has been suggested as a cause for electronic vape-associated lung injury (EVALI): “Among the patients with EVALI, vitamin E acetate was detected in BAL fluid samples from 48 of 51 (94%).” Flavored vapes have [been shown to put teens at risk](#) of lung damage even when they do not contain nicotine or THC.

Though the legalization of medical and recreational cannabis has not been shown to have an impact on adolescent use of the substance — and has even been shown to have had a [depressive effect on its rate of use among teens](#) — there is a health risk for teens who still do choose to use cannabis. Teen use of cannabis, vaporized or otherwise, has been [associated by researchers with](#) adverse effects, “the most probable [of which includes] a dependence syndrome, increased risk



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of motor vehicle crashes, impaired respiratory function, cardiovascular disease, and adverse effects of regular use on adolescent psychosocial development and mental health.”

Most recently there is increasing evidence that teen cannabis use is associated with an [increased risk of developing schizophrenia](#) and related psychotic disorders. Because research on the impact of cannabis was [restricted in the United States for decades](#), many of the health risks of long-term cannabis use beginning in adolescence are only now being revealed.

As a pediatric clinician, you have a responsibility to understand and be able to talk to adolescent patients about [the risks to teens of e-cigarettes, nicotine](#), and cannabis use. Be prepared to present them with treatment solutions if necessary, including [helping teens build a Quit Plan](#).

Trends in teen opioid overdose deaths and treatments

Overdose deaths rose vastly among teenagers during the COVID-19 pandemic, the [first such recorded exponential rise in the teen drug death rate](#).

Misuse of opioids, a class of drug that includes prescription [pain relievers and anesthetics](#) such as oxycodone, codeine, hydrocodone, and fentanyl as well as Schedule I drugs such as heroin, is a significant contributor to this rise in overdose deaths. [Adolescent and childhood mortality from opioids alone rose over 268%](#) between 1999-2016, and a staggering [14% of students reported misusing prescription opioids](#).

This spike in teen overdose deaths has sharply underscored the urgent, continuing need for expanded access to effective prevention and treatment programs for teens. Prevention efforts should focus on reducing risk factors while also increasing protective factors like supportive relationships with adults and participation in extracurricular activities.

UCLA addiction researcher Joseph Friedman [urges](#) that “increasing adolescent overdose deaths, in the context of increasing availability of illicit fentanyl, highlight the need for accurate harm-reduction education for adolescents and greater access to naloxone and services for mental health and substance use behaviors.”

Treatment, whether inpatient or outpatient, should be evidence-based and tailored to the individual needs of each teen. Treatment options for opioid abuse typically involve a combination of:

- Medication-assisted treatment (MAT) — MAT uses medications like methadone, buprenorphine, and naltrexone to reduce withdrawal symptoms and cravings during recovery
- Behavioral therapy — Ongoing, evidence-based behavioral therapy can help individuals develop coping skills, improve communication, and address comorbid mental health issues

Coursework on caring for adolescent substance abuse patients

There is no shortage of [CME on addiction medicine](#) for clinicians who are interested in learning more about treating patients struggling with substance misuse. Being informed means being better equipped to help adolescent patients who are struggling with substance abuse disorders.

Staying up to date on the latest research-backed health recommendations for preventing teen substance abuse, including how to tackle nicotine and cannabis vaping, is critical to preventing and addressing SUDs in teenagers — as is being able to identify, understand, and address risk factors for substance abuse.

Here is a selection of available continuing medical education courses on caring for teen patients with substance use disorders:

1. [Substance Use Disorders: Clinical Pearls and Common Pitfalls](#) — Improve the management of SUDs, including prescribing methadone and buprenorphine for opioid use disorder
2. [A Trauma-Informed Approach to Substance Use Disorders](#) — Manage SUDs through a trauma-informed approach, exploring the neurobiologic impacts of trauma on addiction
3. [Adolescent Substance Use Disorder: Prevention and Intervention](#) — Optimize screening of young patients with SUDs and address SUDs with brief intervention and referral to treatment (SBIRT) strateg
4. [Substance Use Disorders and Their Treatments, Part 1](#) — Understand the epidemiology of SUDs, define addiction risk factors, and optimize intervention for SUDs
5. [Substance Use Disorders and Their Treatments, Part 2](#) — Determine the appropriate level of care for patients with SUDs, treat SUDs using a chronic disease medical model, and choose appropriate medications for opioid use and alcohol use disorders

Adolescent substance abuse is a significant public health concern in the United States and leads to millions of accidental deaths in America every year. Preventing and treating substance abuse, including the abuse of opioids and prescription medications, involves understanding and being prepared to tackle long-standing and novel challenges on both the individual patient and broader environmental levels.

It's no simple task, but by staying informed you can make a difference with your teenage patients who are at a high risk for substance abuse. Curious to learn how to best manage adolescent patients with SUDs? Explore more CME lectures on understanding and treating substance use disorder.