

Addressing Adolescents' and Young Adults' Substance Use Disorders



Nicholas Chadi, MD^{a,*}, Sarah M. Bagley, MD, MSc^{b,c,d,e},
Scott E. Hadland, MD, MPH, MS^{b,c}

KEYWORDS

• Adolescents • Young adults • Substance use disorders • Prevention • Intervention

KEY POINTS

- Adolescents and young adults (AYAs) have unique needs and important biopsychosocial differences when compared with older adults who use substances.
- As their brains continue to develop, youth are especially susceptible to the reinforcing effects of substances in the context of a still-developing capacity for executive control and decision making.
- In this article, the authors highlight key differences in the neurobiologic, epidemiologic, and relational aspects of substance use found in AYA.
- The authors also discuss how best to engage with youth who use substances and how prevention and intervention can be adapted for optimal effectiveness for this distinct and high-risk population.

INTRODUCTION

Most people who use substances start using in their teen and young adult years,¹ and a common misconception is that most do not experience the consequences of substance use until later in adulthood. Although this is true for some people, adolescents and young adults (AYAs) are disproportionately represented in substance-related hospital admissions and are at high risk for injury and acute health problems related to substance use.^{2,3} There has also been an increasing awareness of

^a Adolescent Substance Use and Addiction Program, Division of Developmental Medicine, Department of Pediatrics, Boston Children's Hospital, Harvard Medical School, 300 Longwood Avenue, Boston, MA 02115, USA; ^b Division of General Pediatrics, Department of Pediatrics, Boston University School of Medicine, 88 East Newton Street, Vose Hall Room 322, Boston, MA 02118, USA; ^c Section of General Internal Medicine, Department of Medicine, Boston University School of Medicine, 801 Massachusetts Avenue, 2nd Floor, Boston, MA 02118, USA; ^d Department of Pediatrics, Boston Medical Center, Grayken Center for Addiction, 850 Harrison Avenue, Boston, MA 02118, USA; ^e Department of Medicine, Boston Medical Center, Grayken Center for Addiction, 850 Harrison Avenue, Boston, MA 02118, USA

* Corresponding author.

E-mail address: nicholas.chadi@childrens.harvard.edu

medical complications among AYAs who inject drugs.⁴ Addressing substance use among youth provides both a challenge and an opportunity for health care providers.

AYAs have unique needs and important biopsychosocial differences compared with older adults who use substances.^{5,6} Understanding these differences is essential to tailoring strategies to address substance use disorders and associated harms. Care should be developmentally appropriate and youth-focused and should not only aim to address the substance use itself but also provide an overarching understanding of the biopsychosocial context in which it occurs.⁷ Historically, treatments for substance use disorders have often been punitive in nature; these “traditional” approaches may result in poor treatment engagement and retention in care and represent a lost opportunity to address substance use problems at an earlier stage.⁸ A developmentally appropriate approach that incorporates parents, other caregivers, school support, and for adolescents less than the age of 18, state agencies responsible for child protection when appropriate, requires careful coordination and providers who are aware of the issues specific to this age group.

After describing key differences in the neurobiologic and psychosocial aspects and patterns of substance use among AYAs when compared with older adults, the authors discuss how prevention and intervention can be adapted for optimal effectiveness for AYAs.

UNIQUE CONSIDERATIONS FOR ADOLESCENTS AND YOUNG ADULTS

Neurobiologic and Neuropsychiatric Considerations

Functional neuroimaging provides robust evidence that the adolescent brain continues to develop late into the third decade of life.⁹ In AYAs, the developmental process of synaptic pruning and myelination (responsible for strengthening and improving the efficiency of existing neuronal pathways) is particularly active in the prefrontal cortex, an area of the brain central to decision making and impulse control. The relative immaturity of this executive functioning center contrasts with an already developed dopaminergic system (the “reward pathway,” involving the nucleus accumbens, ventral tegmental area, and other structures), which stems from more primitive areas of the brain. In AYAs, this results in a vulnerability to the reinforcing pleasurable effects of psychoactive substances, combined with potentially limited insight into the harmful consequences of substance use.¹⁰ A well-established body of literature shows that substances like nicotine, alcohol, marijuana, and illicit drugs have long-lasting effects on brain function, suggesting that there is no safe level of substance use during the neural development of adolescence and young adulthood.¹¹

Not only are AYAs more vulnerable to the immediate rewarding effects of drugs and alcohol, but substance use during adolescence can also increase susceptibility to addiction later in life.¹² For instance, youth who start drinking alcohol before age 15 are 6 times more likely to develop an alcohol use disorder in their adult years than youth who start drinking at age 21.¹³ Substance use during critical periods of adolescent brain development may underlie this long-term risk for addiction.¹⁴ There are still many unanswered questions concerning the interplay between inherited and acquired factors and how they can impact a young person’s brain’s response to substances.¹⁵ Nevertheless, AYAs with a family history of substance use disorder should be aware that their vulnerability to addiction may be higher than that of their peers, and that earlier onset of substance use may further amplify this risk.¹²

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