Facts About Alcohol and Adolescent Health

We now recognize that underage drinking must be addressed, not as an isolated phenomenon, but as one fully embedded in the context of child and adolescent development. From birth through adolescence, a complex cascade of biological, psychological and social development interacts with dynamic environmental influences, leading to behavior that may either move individuals toward or away from underage drinking.

- **The Adolescent Brain May be Particularly Vulnerable to the Effects of Alcohol:** Important developmental changes in the adolescent brain may make teenagers particularly vulnerable to the effects of alcohol:[1]

  Risk-taking in General **-** The limbic areas of the brain, which are thought to regulate emotions and are associated with an adolescent's lowered sensitivity to risk and propensity for novelty and sensation seeking, mature earlier than the frontal lobes, which are thought to be responsible for self regulation, judgment, reasoning, problem solving, and impulse control. This difference in maturational timing across the brain can result in impulsive decisions or actions, a disregard for consequences, and emotional reactions that can put teenagers at serious risk.[2]

  Reactions to Alcohol - Studies conducted with animals provide important information that may shed light on human developmental processes. For example, adolescent animals are less sensitive than adults to some of the aversive effects of acute alcohol intoxication, such as sedation, hangovers, and loss of coordination. At the same time, they are more sensitive to alcohol's effects on social facilitation. These studies suggest that adolescents who drink may enjoy the

positive sensations more than adults. They may also experience fewer of the immediate negative effects, such as sleepiness and hangovers, which often serve as protective factors for older drinkers.

- **A Variety of Developmental Factors Influence Underage Drinking:** Risk and protective factors for alcohol use shift throughout adolescence.[3]

  Transitions: Transitions, such as moving from elementary school to middle school, and from middle school to high school, may present increased risk for alcohol use, but also opportunities for intervention.

  Stress: Increased stress may lead to alcohol use

  Unique Circumstances or Personality Traits: Youth with the following characteristics are more likely to consume alcohol than are other young people:

  - Unusually strong desire for new experiences and sensations
  - History of behavior problems
  - Presence of family conflict and/or alcohol problems

- **Binge Drinking Among Adolescents is a Global Problem:**
  - The prevalence of alcohol use and binge drinking is high in many countries around the world
  - In Europe, large numbers of youth are drinking, and drinking to excess - The percentage of 15-16 year old students in most European countries who report drinking to intoxication is higher than in the U.S.[4] Italy, France, and Greece are among European countries in which a smaller proportion of students report having been drunk 10 times or more during the past 12 months, compared with students in the U.S.

Notes/Additional Resources

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[1] Dahl, R.E. Adolescent brain development: A period of vulnerabilities and opportunities. Keynote address. Annals of the New York Academy of Sciences 1021:1–22, 2004.

[2] Dahl, R., and Hariri, A. "Frontiers of Research on Adolescent Decision Making—Contributions from the Biological, Behavioral, and Social Sciences." Background paper prepared for the Planning Meeting on Adolescent Decision Making and Positive Youth Development: Applying Research to Youth Programs and Prevention Strategies, April 2004. National Research Council/Institute of Medicine Board on Children, Youth, and Families, Committee on Adolescent Health and Development.

[3] Masten, A.S. Regulatory processes, risk, and resilience in adolescent development. Annals of the New York Academy of Sciences 1021:310–319, 2004.

[4] The European School Survey Project on Alcohol and Drugs Report 2003: Alcohol and Other Drug Use Among Students in 35 European Countries available online at http://www.monitoringthefuture.org/pubs/espadusa2003.pdf