

## **Teen Brain Development and Substance Abuse References:**

**Development of Brain Structural Connectivity Between Ages 12 and 30: a 4-Tesla Diffusion Imaging Study in 439 Adolescents and Adults.** Dennis EL; *NeuroImage* 2013

**Longitudinal Development of Human Brain Wiring Continues from Childhood into Adolescence.** Lebel C, Beaulieu C; *Journal of Neuroscience*, 2011

**Adolescents' Heightened Risk-seeking in a Probabilistic Gambling Task.** Burnett S et al; *Cognitive Development*, 2010

**Dare to delay? The Impacts of Adolescent Alcohol and Marijuana Use Onset on Cognition, Brain Structure and Function.** Lisdahl KM et al; *Frontiers in Psychology*, 2013

- **Brain imaging studies of regular marijuana users have shown significant changes in their brain structure, particularly among adolescents, ... Abnormalities in ... gray matter, which is associated with intelligence, have been found in 16- to 19-year-olds who increased their marijuana use in the past year....** Lisdahl, 2013

**National Survey of 43,093 Adults, Archives of Pediatrics & Adolescent Medicine, 2009**

- **47 percent of those who begin drinking alcohol before the age of 14 become alcohol dependent some time in their lives,**
- **Compared to only 9 percent of those who wait at least until age 21.**
- **The correlation holds even when genetic risks for alcoholism are taken into account.**

**The Amazing Teen Brain.** Giedd MJ; *Scientific American*, 1 May 2016

**Jay Giedd, M.D. Child and Adolescent Psychiatrist and Chief of Brain Imaging at the Child Psychiatry Branch of the National Institute of Mental Health, 2010:**

**“Teens are capable of learning..., but the parts of their brains related to emotions and decision-making are undergoing rewiring, teenagers are particularly vulnerable to risky behavior, such as drinking and driving too fast.”**