Long-term effects of adolescent-onset and persistent use of cannabis

1. Raul Gonzalez\textsuperscript{a} and
2. James M. Swanson\textsuperscript{b,1}

\textbf{Author Affiliations}

1. \textsuperscript{a}Department of Psychology, Florida International University, Miami, FL 33199; and
2. \textsuperscript{b}Department of Pediatrics, University of California, Irvine, CA 92617

Marijuana use has increased over the past 20 y in the United States, and current trends suggest it may continue to rise. Recent polls in the United States suggest that population acceptance is at an all-time high: 56\% support the legalization for recreational use and 70\% for medical use (http://healthland.time.com/2012/06/14). A survey of secondary school students in the United States (Monitoring the Future: http://monitoringthefuture.org) suggests a resurgence of marijuana use (Fig. 1): after a decade or more of decline to 22\% in 1992, the annual prevalence of use in high school senior students climbed to nearly 40\% in 2011, with a parallel decrease in perceived risk of regular use from almost 80\% to approximately 45\% (1). Although short-term trends reveal some temporary decreases (2), the recent trends of increasing use and acceptance of marijuana over the past 5 y (1) heighten the importance of a scientific basis for understanding effects of marijuana (cannabis).

\textbf{Fig. 1.}
Marijuana: trends in annual use (1).

In PNAS, Meier et al. (3) contribute to this with findings from the 38-y follow-up of the Dunedin Longitudinal Study. The study was initiated in New Zealand in 1972–1973 as a birth cohort (\(n = 1037\)) and has generated more than 1,000 publications (http://dunedinstudy.otago.ac.nz/publications) about health and development from infancy to adulthood (with 27 addressing cannabis).

Here Meier et al. report, “…persistent cannabis use was associated with neuropsychological decline broadly across domains of functioning” and “…impairment was concentrated among adolescent-onset cannabis users, with more persistent use associated with greater decline.” This is disquieting because many adolescents are engaging in heavy marijuana use. The principal investigator of Monitoring the Future noted, “… one in every fifteen high school seniors today is smoking pot on a daily or near daily basis” (http://www.sampler.isr.umich.edu/2012/research/marijuana). How much concern does this warrant? To put this in …