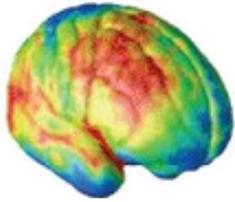


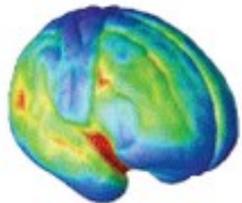
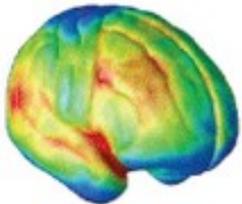


# Marijuana and The Young Brain

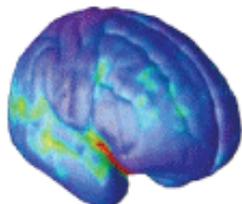
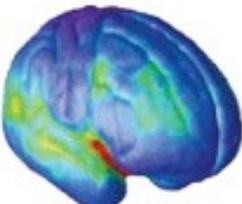
© 2015 CLEAR Alliance



Age: 5



Adolescence



Age: 20

## IS MARIJUANA HARMFUL TO THE DEVELOPING BRAIN? **Yes.**

Structural changes have been found in the brains of young marijuana users.<sup>1</sup>

**WHEN IS THE BRAIN FULLY FORMED?** Scientists used to think the human brain was formed in early childhood, but discovered the brain undergoes radical changes in adolescence and will continue to grow and develop **until approximately age 25.**<sup>1,2</sup>

## CAN MARIJUANA USE LOWER INTELLIGENCE? **Yes.**

In 2012, a significant study on marijuana and intelligence found that marijuana use can permanently reduce IQ by as much as eight points by age 38 among people who started using marijuana regularly before age 18.<sup>3</sup>

## WHAT IS COMPARABLE TO PERMANENT IQ LOSS FROM MARIJUANA USE?

Permanent IQ loss associated with **childhood lead exposure = 7.4 to 9.9 points**  
Permanent IQ loss associated with **childhood marijuana exposure = 8 points U.S.**  
prevalence rates of childhood exposure to lead and marijuana are also similar.<sup>4</sup>

## WHAT ARE THE EFFECTS OF MARIJUANA ON MENTAL HEALTH?

Associations have been found between marijuana use and mental health problems, such as depression, anxiety, suicidal thoughts among adolescents, and personality disturbances, including lack of motivation to engage in typical rewarding activities.<sup>5,6</sup> Marijuana use can increase the risk of developing mental disorders by 40%.<sup>5</sup>

- Young people who use marijuana weekly have **double the risk of depression.**<sup>7</sup>
- Teens who smoke marijuana at least once a month are **three times** more likely than non-users to have suicidal thoughts.<sup>8</sup>
- Those who have tried marijuana by age 18 were **2.4 times** more likely to be diagnosed with schizophrenia than those who had not tried marijuana. The risk increases with the frequency of use.<sup>9</sup>

## WHAT IS THE RISK OF BECOMING ADDICTED TO MARIJUANA?

Research shows **1 in every 6 youth** (and 1 in 11 adults) who try marijuana will become addicted to it.<sup>10</sup>

## ARE YOUTH IN TREATMENT FOR MARIJUANA?

In the U.S., **marijuana abuse or dependence is the #1 reason** youth are in treatment, more than alcohol and any other drugs.<sup>11</sup>

## WHY IS IT IMPORTANT TO PREVENT MARIJUANA USE AMONG YOUTH?

Children and adolescents are at far greater risk of becoming dependent on marijuana, and dependence happens more quickly. Youth are more significantly affected as well, even before dependence starts.<sup>1,12</sup>



Yamhill County Sheriff's Office  
Sheriff Tim Svenson  
[www.co.yamhill.or.us/sheriff](http://www.co.yamhill.or.us/sheriff)

## Citations and References

### **Marijuana and the Young Brain Educational Flyer by Clear Alliance June 30, 2015 (updated April 21, 2016)**

- 1: Impact of Marijuana on Children & Adolescents: CSAM WEBSITE Evidence-Based Info on Cannabis/Marijuana.” California Society of Addiction Medicine, Sep 2009  
[http://www.csam-asam.org/sites/default/files/impact\\_of\\_marijuana\\_on\\_children\\_and\\_adolescents.pdf](http://www.csam-asam.org/sites/default/files/impact_of_marijuana_on_children_and_adolescents.pdf)
- 2: Brain Images:  
Dynamic mapping of human cortical development during childhood through early adulthood  
Nitin Gogtay et al, *Proceedings of the National Academy of Sciences*, May 25, 2004, California Institute of Technology  
[http://www.usnews.com/cmsmedia/50/42c31bc7bb301c8cbfdcb203021dbd/8140GR\\_PR\\_081126BRAIN.png](http://www.usnews.com/cmsmedia/50/42c31bc7bb301c8cbfdcb203021dbd/8140GR_PR_081126BRAIN.png)
- 3: Meier MH, et al. (2012) Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proc Natl Acad Sci USA* 109(40):E2657–E2664.
- 4: Dr. Christian Thurstone, General, Child and Adolescent and Addictions Psychiatrist  
Associate Professor of Psychiatry at University of Colorado Denver  
Why worry about lead, but not weed? August 17, 2013  
<http://drthurstone.com/comparing-lead-marijuana-exposure/>
- 5: Moore TH, Zammit S, Lingford-Hughes A, et al. Cannabis use and risk of psychotic or affective mental health outcomes: A systematic review. *Lancet* 370(9584):319–328, 2007. Also Large, M., Sharma S, Compton M., Slade, T. & O., N. (2011). Cannabis use and earlier onset of psychosis: a systematic meta-analysis. *Archives of General Psychiatry*. 68. Arseneault L, et al. (2002). Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study. *British Medical Journal*. 325, 1212-1213.
- 6: National Institute on Drug Abuse: Drug Facts Marijuana. January 2014.  
<http://www.drugabuse.gov/publications/drugfacts/marijuana>
- 7: Patton, G.C., et. al. 2002.  
Cannabis use and mental health in young people: cohort study. *BMJ* 325, 1195-1198
- 8: Office of National Drug Policy, Executive Office of the President.  
Teen Marijuana Use Worsens Depression: An Analysis of Recent Data shows “Self-Medicating” Could Actually Make Things Worse. May 2008.  
<https://www.hopkinsschools.org/sites/default/files/public/downloads/teen-marijuana-depression-report.pdf>
- 9: Andreasson S, Engstrom A, Allebeck P. Cannabis and schizophrenia: a longitudinal study of Swedish conscripts. *Lancet*. 1987;2:1483–1486.
- 10: Anthony, J.C., Warner, L.A., & Kessler, R.C. (1994).  
Comparative epidemiology of dependence on tobacco, alcohol, controlled substances, and inhalants: Basic findings from the National Comorbidity Survey. *Experiential and Clinical Psychopharmacology*
- 11: SAMHSA, Center for Behavioral Health Statistics and Quality (2010),  
Substance abuse treatment admissions by primary substance of abuse according to sex, age group, race, and ethnicity, United States [Data table from Quick Statistics from the Drug and Alcohol Services Information System].  
<http://www.dasis.samhsa.gov/webt/quicklink/US10.htm>  
<http://www.dasis.samhsa.gov/webt/newmapv1.htm>
- 12: Children Learning through Education and Research Alliance, Inc. (CLEAR Alliance) 2015  
[www.ClearAlliance.org](http://www.ClearAlliance.org)