

# Refuse, Remove, Reasons: Alcohol and the Teen Brain

## On the Video...

What does alcohol do to the developing teenage brain? Here's a remarkable number from the Substance Abuse and Mental Health Services Administration: Nearly 8 percent of Americans over the age of 12 need treatment for alcohol abuse ... and most aren't getting it. And, as the number suggests, some of them are children.

Sixteen-year-old Veronica is taking part in a long-term study. The National Institutes of Health is examining the effects of alcohol on the teenage brain.

"And one important difference we found...was that the kids with the heavy drinking patterns were not able to retain as much information as the kids who were non-drinkers," says Susan Tapert, Ph.D., a clinical psychologist involved in the study.

"The subject on the left is a normal, healthy 15-year-old boy," says Dr. Tapert, as she looks at brain images, "and the subject on the right is a 15-year-old boy who is actually a very heavy drinker. You can see that this is a really important area of the brain for remembering locations of things, and over here – nothing. [The heavy drinker] is not using these important brain areas to do this task, and as a result he actually didn't perform as well on the task."

Teens who drink twice a week consistently scored an average of 10 percent lower on short-term memory tests, compared to non-drinkers. In other words, says Tapert, "the heavy drinker is more likely to get a B, whereas the non-drinker would be able to get an A. So it's kind of that amount of a difference."

Sixteen-year-old K.T. says she's been drinking heavily for four years. Now in rehab, K.T. says the alcohol has affected her memory. "Yeah, my memory changed a lot," she says. "I can't remember anything anymore. I still do good on my tests – it's just more effort than I used to have to put into it."

Has K.T. suffered any long-term damage from drinking? No one knows. But Veronica isn't taking that risk. "I personally have never drunken even an entire drink of alcohol," she says. "A lot of my friends have and I have seen how it affected them. They're slower in school and that's all they think about doing. And they become addicted to it in a way and I don't want to be into that, so I don't do it."

## What We Need to Know...

According to a research study undertaken by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), teens who begin drinking before the age of 15 are four times more likely to suffer from dangerous alcohol side effects like dependency on alcohol than those who begin drinking at 21 years of age or older. Research shows that adolescents may be more vulnerable to brain damage from excessive drinking than older drinkers.

Alcohol impairs brain activity in the receptors responsible for memory and learning, and young people who binge drink could be facing serious brain damage today and increased memory loss in years to come. If one begins drinking at an early age, he/she is more likely to face alcohol addiction.

## Conversation Starters...

- What are some of the messages you see online, in the movies, or on TV about alcohol consumption?
- How accurate are those portrayals in the media? Does that influence teen behavior?
- Is providing teenagers with evidence of alcohol-caused brain damage a good deterrent for them? Why or why not?