

## **A Health Issue - Alcohol's adverse effects on the adolescent brain.**

Teens are still growing and maturing—and so are their brains. During adolescence the brain matures, but not uniformly. Some of the areas of the brain mature sooner than others. There is a lot going on that we can't see.

Adolescents are quick! The adolescent brain processes new information so efficiently and quickly. Teens are really good at learning a musical instrument, programming a remote control, quickly mastering all the new features of a computer program, cell phone or ipod. (Now that I no longer have a teen in my house I really miss having that resource—when something is wrong with my computer or when I got a new ipod—I had to figure it out myself.)

Now, the part of the brain that helps with self-regulation, planning and reasoning does not fully develop until early adulthood—early 20s. We tend to blame roller coaster of emotions that teens exhibit on hormones, but part of this can also be attributed uneven timing in development across different regions of the brain.

### **What Happens to an adolescent brain when you add alcohol?**

The quickness and flexibility that characterizes the brain during adolescence—which gives it huge advantages in terms of learning—also makes it very vulnerable to the effects of alcohol and other drugs. Research also indicates that alcohol consumption by teens may affect cognitive functioning (that is the ability to think and reason) and change the developing brain in ways that increase the risk for future alcohol dependence.

Animal studies (rats) indicate that alcohol has a bigger adverse impact on learning and memory-related brain functions in adolescents compared to adults. Another study (humans) showed that a single moderate dose of alcohol will disrupt learning more in a person in their early 20s compared with those in their late 20s.

Studies in humans have detected cognitive impairment (problems with thinking and reasoning) in adolescent alcohol abusers WEEKS after they stopped drinking. They also reacted differently to memory tests.

Research using imaging techniques to study brain structure in humans has found adolescent-onset alcohol abuse to be associated with a reduction in the size of the hippocampus, a part of the brain involved with memory and spatial navigation.

The amount of cognitive impairment in one study was correlated with the number of episodes of heavy drinking and withdrawal during late adolescence.

In animal studies exposure to high levels of alcohol did more damage to adolescent brains than adult brains.

*The studies quoted date from 1995-2005 and were taken from NIAAA publications.*

## **Underage Drinking Is Illegal**

The penalties for providing alcohol to underage parties, or to even “permit or fail to take action to prevent” underage alcohol consumption on premises you own or control are:

- 1<sup>st</sup> violation (within 30 month time period) - \$500 fine
- 2<sup>nd</sup> - \$500 fine and 30 days in jail
- 3<sup>rd</sup> - \$1,000 fine and 90 days in jail
- 4<sup>th</sup> or subsequent - \$10,000 and 9 months in jail

(Exception to the above is if the underage person is accompanied by his/her parent or guardian.)

Additionally, if you give alcohol to a person under 18 (and you know the person is under 18) and they become seriously injured as a result of the alcohol consumption...

If great bodily harm results (loss of consciousness, broken bones, stitches, etc.) the penalty is a 6-year felony offense.

If death results the penalty is a 10-year felony offense.

(Carrie Schneider, District Attorney, Outagamie County)

### **If you host an underage drinking party...**

You are teaching the participants that it is OK to break the law.

You are suggesting that the ONLY way to have fun is to drink.

If you take their keys can you guarantee they are OK to drive the next morning?

Will you be there the next time???

## What Can We Do Combat Underage Drinking

- **Know the Facts**
- **Resist Peer Pressure**
- **Network with Other Parents & Your School**
- **Talk About It With Your Children**

**Let them know you won't tolerate it**  
**Enforce consequences**  
**Be a consistent**  
**Lead by example**

**Resources:** National Institute on Alcohol Abuse and Alcoholism, [www.niaaa.nih.gov](http://www.niaaa.nih.gov)

**WEBMD, [www.WEBMD.com](http://www.WEBMD.com)**

**UW Population Health “Impact of Alcohol and Illicit Drugs in Wisconsin,” [www.pophealth.wisc.edu/uwphi](http://www.pophealth.wisc.edu/uwphi)** *(Put the title of the paper in the search box.)*

**“The State of Drinking,” [www.greenbaypressgazette.com](http://www.greenbaypressgazette.com)**