



Test Your Alcohol IQ: What do you Really Know About the #1 Drug Used by Teens?

A PAD Resource Backgrounder

This backgrounder is for professionals who distribute the Test Your Alcohol IQ and/or want to use the information as part of an education program for senior high school students.

Why is this resource important?

Rates of alcohol consumption among teens have not really changed over the years, and the patterns of binge drinking and hazardous drinking are part of that use. However, there is newly emerging research on adolescent brain development and how alcohol has a particular effect on the adolescent brain. While males and females have similar patterns of alcohol use, there are important gender-related differences. Alcohol poisoning remains an all-too-frequent – and very frightening – consequence of teen drinking. There is a particular and complicated effect of combining alcohol with energy drinks. The hazardous potential of combining alcohol and prescription drugs needs to be addressed. There is compelling research to support each of these key items.

As we began the process of developing the resource we looked at narrowing the target audience. We know that many youth in Ontario drink alcohol, some frequently, and many drink in large enough quantities to qualify as “binge drinking”. And we know that many youth don’t drink at all or drink very little, and very rarely. Our audience of interest was those who choose to drink and their friends, although we hope the information and presentation is of interest to all teens – and to their parents and teachers and health promoters who support them. We know that the majority of high school students who drink are in grades 11 and 12, and have some experience with and knowledge of alcohol and its effects. We wanted a friendly, non-authoritarian tone, to invite the reader to the brochure and let them make their own way through it. And we wanted it to be evidence-based – on facts that are meant to inform, not scare.

Of course we checked it all out with youth. We worked with a group of diverse, older students from a downtown high school in Toronto and got an honest appraisal of the information and format and were able to make the changes they recommended. Two years after the publication of the pamphlet, we had it reviewed by another diverse group of senior students from a suburban high school in west Toronto and received acknowledgement of the appropriateness of the content and the appeal of the format.

What is the evidence behind the pamphlet information?

1. Rates of Alcohol Consumption among Teens:

The Ontario Student Drug Use and Health Survey (OSDUHS) published every two years by the Centre for Addiction and Mental Health reports that “by far, the most commonly used drug is alcohol”. Statistics from the 2009 Survey were used to inform the pamphlet; in 2011 there was a slight decrease in most of the categories of drinking. The 2011 statistics are shown here in brackets.

- Almost 60% [55%] of students reported consuming one or more drinks (excluding sips). This means that about 40% [45%] don't.
- By grade 12, 83% [78%] of students report drinking and almost 50% [40%] report binge drinking (consuming 5 or more drinks on a single occasion. 43% [34%] of grade 12 students report drunkenness.
- 42% [30%] of grade 12 students report drinking at a “hazardous drinking” rate (includes hazards, such as the likelihood of accidents, or harmful drinking that is damaging to health).

2. Alcohol and the Teen Brain:

Imaging techniques are showing that the brain undergoes some important changes during adolescence (as it does in infancy) – both before and after puberty. There is the growth of important grey matter, new connections between nerve cells and some connections actually disintegrate. The whole process is designed to increase “executive functioning” – the ability to plan, reason, and control impulses and learn from experience. That functioning starts hitting its stride in early adulthood.

Anything that interferes with the brain's executive functioning – like alcohol or another drug – is going to have the potential for negative consequences when it comes to decision making for a teen.

The other area of information comes from animal studies (primarily on adolescent rats). These studies show that alcohol may have negative consequences particularly on the area of the brain called the hippocampus that is responsible for memory and learning. The effects on memory are more significant on adolescents than adults, and may have lasting effects if the teenagers are heavy drinkers.

See: National Institute on Alcohol Abuse and Alcoholism of the National Institutes of Health www.niaaa.nih.gov

3. Gender Issues:

Although men in general and male high school students consume alcohol at a higher rate than females, for the most part in high school their drinking patterns are much the same: rates of binge drinking, reporting drunkenness and hazardous drinking levels are about the same (OSDUHS). There are some important differences, however, in the vulnerabilities men and women experience as a result of their drinking.

Young Women

Women absorb and metabolize alcohol differently than men, mainly because³ they have less body water than men of equal weight. The result is that the concentration of alcohol in a woman's bloodstream is higher than for a man (even after the same number of drinks) so women feel the effects of drinking (become impaired or drunk) more than men.

Young people, guys and girls, report the connection between having sex with someone they didn't know very well, sex they regret and sex without the use of contraception and their own and their partner's drinking. Of particular concern is the estimate that 25% of women experience sexual assault and about one-half of these cases involve alcohol.

Finally, there are concerns about young women who establish and keep up a pattern of frequent and/or binge drinking in their later teens and early twenties because this increases their vulnerability to the long term physical health impacts of alcohol. An important piece of information for young women is that increased alcohol consumption increases their risk for developing breast cancer later in life.

Young Men

Impaired driving continues to be an issue – “about 12% of drivers in grades 10 to 12 drove within an hour after consuming two or more alcoholic drinks at least one time during the past 12 months” (OSDUHS). About twice as many of these drivers are males (15%) than females (8%). But because both males and females (almost a quarter of all students) had been a passenger in a vehicle at least once in the past year with a driver who had been drinking, both males and females still need information about the dangers of impaired driving.

A recent review of research examining gender differences in alcohol use among adolescents considers how biological and psychosocial risk factors influence gender differences, including the different expectancies around male and female drinking patterns, present in such things as socialization practices and alcohol promotion and advertising. Overall, the article concludes that “while girls and boys may be facing similar vulnerabilities for problems with alcohol, boys begin to carry more risks as they move forward towards young adulthood”.

See: Schulte, Marya T., Ramo, Danielle and Brown, Sandra A. Gender differences in factors influencing alcohol use and drinking progression among adolescents. *Clinical Psychology Review* 29 (2009) 535-547. Elsevier Ltd.

4. Alcohol Poisoning: More and more youth are aware of the concerns about alcohol poisoning – the result of drinking too much (which can vary from person to person) too quickly. But because the “treatment” for alcohol poisoning is to get medical help, it is important to continue to increase awareness about the signs and symptoms of alcohol poisoning. For a really clear explanation on how alcohol poisons the body can be found at: www.intoxikon.com.

For a slide presentation explaining the effects, signs and responses to alcohol poisoning for youth audiences, see PAD youth resource *More than a Hangover*.

5. Alcohol and Energy Drinks:

In a News Release in 2007, MADD Canada noted their concern about the increasing consumption of energy drinks in combination with alcohol by young people. The Release states: “These drinks, such as Red Bull, Venom and Adrenalin Rush, typically contain large quantities of caffeine and other stimulants, such as ephedrine and ginseng.”

The concern about the combination is the masked or double impairment all these drugs combined provide and “encourage even more dangerous levels of intoxication”. Large doses of the stimulants can boost heart rate and blood pressure and combined with the depressant effects of alcohol send a complicated mixed message to your nervous system.

6. Alcohol and Prescription or OTC Drug Use

Many Over the Counter (OTC) drugs, such as cough and cold remedies) contain very explicit warnings about how they can interact with alcohol - increase drowsiness is a common warning.

The non-medical use of prescription opioid pain relievers, such as codeine, Percocet, Percodan, Demerol, or Tylenol #3, ranks third in overall student drug use at 17.8% [14%]. The concern is that these very potent drugs are being used recreationally by youth. And recreational use, particularly in party settings, is often combined with alcohol. While more research needs to be done on how prevalent this combination is among students, there is sufficient concern among the interactions between the drugs to highlight how disastrous the combination could be.

Youth make their own decisions about drinking.

Deciding not to drink is a decision many teens make – some all the time, and some on certain occasions. The key was to word this option in a way that doesn’t put down someone who chooses to drink – our focus group was very clear that this was important.

We often say to youth “Drink in control” – but because of how alcohol works on the brain that can be hard to do. So our final message is to increase personal safety by avoiding some of the riskiest drinking behaviours. There are many other important ways to decrease personal risk when drinking that have been discussed with youth, such as staying with a buddy, alternating with non-alcoholic drinks, eating beforehand, bringing a limited number of drinks for personal consumption. These are all important safety strategies. We wanted to add to the list those strategies that connect with the specific information provided in the pamphlet.

Acknowledgement of support for this resource

The support of the LCBO in the development and printing of this resource is gratefully acknowledged. The LCBO approached PAD to discuss if there was something that we – in our work with parents, youth and communities – identified as a gap in alcohol education. The ability of the LCBO to support the resource design, translate the materials into French, print large quantities of the brochure and assist in the distribution was a tremendous asset and we responded with enthusiasm to their offer.