

*Alcohol and other Drug Use*  
*by Manitoba Students*

**David Patton, Ph.D.,**  
**Terri-Lynn Mackay, M.A.,**  
**&**  
**Brian Broszeit, B.Sc.**

**May 2005**

**AFM Research**

**Accredited by the Canadian Council on Health Services Accreditation**

## **Addictions Foundation of Manitoba**

The Addictions Foundation of Manitoba is responsible for providing rehabilitation and prevention services for Manitoba citizens relating to substance use and problem gambling. *The aim of our research is to better inform rehabilitation practice, public education, and health policy.* Research fostered by the foundation contributes to a better understanding of how individuals, families, and communities can most effectively respond to harm associated with substance use and problem gambling.

### **VISION:**

*Leading the way to an addiction free society*

### **MISSION:**

*To contribute to the health and well being of Manitobans by reducing the harm associated with alcohol, other drugs and gambling through education, prevention, rehabilitation and research.*

### **VALUES:**

- *We respect the dignity of each individual*
- *We are guided by ethical standards and integrity*
- *We are client centred in our service*
- *We endorse relationships with the self help community*
- *We contribute to the development and sustainability of healthy communities*
- *We encourage partnerships with other organizations*
- *We promote continuous improvement, life long learning, research and best practice*
- *We support early intervention and harm reduction*

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## Executive Summary

As part of our mandate to inform the public about the use of potentially harmful substances, the Addictions Foundation of Manitoba regularly conducts prevalence surveys into the patterns of substance use and abuse in Manitoba. These surveys provide the type of information that is useful for policy makers and service planners. The present report is a summary of a recently completed survey of alcohol use, other drug use, and gambling activity in Manitoba students. This report focuses on the substance use aspect of that survey; additional reports will focus on gambling, impaired driving and the impacts of addictions.

In the fall and winter of 2004, 6673 randomly selected students provided information about their use of various substances, in addition to information about access and availability of drugs, concern about their parent's and friend's use, and a variety of risk and protective factors.

Table 1 shows the percent of male and female students who used alcohol, cannabis or other drugs, either in their lifetime or in the past year. The percentages are reported separately for males and females, and by each grade.

**Table 1. The percent of males and females in each grade who report using alcohol, cannabis and other drugs.**

	Alcohol		Cannabis		Other drugs
	Lifetime	Past Year	Lifetime	Past Year	Past Year
<b>Males</b>					
Grade 7	38.8	27.5	6.2	4.4	8.5
Grade 8	52.2	36.9	9.4	8.2	7.8
Senior 1	71.6	59.2	27.4	22.7	14.1
Senior 2	81.2	72.5	36.9	31.1	18.0
Senior 3	81.9	77.2	42.1	35.4	21.3
Senior 4	89.0	84.3	49.6	43.4	26.5
<b>Females</b>					
Grade 7	27.9	17.5	5.7	3.6	5.7
Grade 8	44.1	35.6	12.0	9.9	10.4
Senior 1	70.1	60.6	27.3	21.6	17.3
Senior 2	79.3	71.7	37.1	31.6	18.5
Senior 3	84.2	78.9	48.6	40.3	20.5
Senior 4	88.0	83.0	48.7	38.7	23.0

Overall, almost 3/4 of all students consumed alcohol at some point in their lives. The rates are much lower in the earlier grades, with about 39% of males and 28% of females in grade 7 reporting alcohol use. The rates of alcohol use climb quite steeply, until Senior 2, where about 80% of students have tried alcohol. By the end of high school

about 90% of students have tried alcohol. Although the rates for current drinking (i.e., having used alcohol in the past year) are somewhat lower than lifetime prevalence, the majority of students in high schools are current drinkers.

Next to alcohol use, cannabis is the most frequently used drug in most population surveys. The recent Canadian Addiction Survey highlighted the relatively high levels of cannabis use (compared with previous national surveys) in young Canadians. The present survey found results consistent with these recent national findings. Although cannabis use is less common than underage drinking, by Senior 1, over ¼ of all students have tried cannabis. By Senior 3 over a third have tried cannabis, and by the end of high school almost ½ of the students have tried cannabis. Again, the rates of current users are somewhat lower, however, almost 40% of all 17 – 18 year old students have used cannabis in the past year, and a proportion of these (14% of all 17 and 18 year old students) are using cannabis at least once a week.

### **Changes in alcohol and cannabis use over time.**

Comparisons of the prevalence of use over time are often used to evaluate whether awareness and prevention programs are having a positive effect. However, these comparisons are often difficult to make due to differences among surveys in terms of methodology. In addition to improvements in how questions are asked, there are often changes in the order of questions, changes in the response options, and changes in administrative procedures.

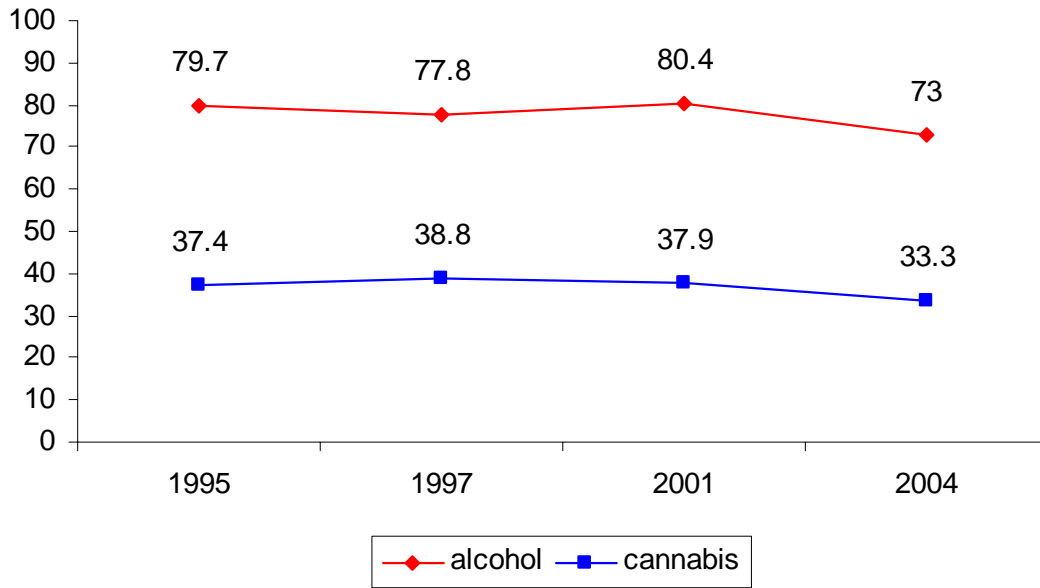
In 2004, the school survey differed in three important ways from previous school surveys conducted in Manitoba. First, two classes were randomly selected from each grade from randomly selected schools. Previously, schools that volunteered (and usually had a link to AFM) were selected, and were not a random selection of the population. Second, prior surveys were conducted in the spring term. AFM counselors indicated that many students who are having difficulty with alcohol and drug use may have already dropped out at this point in the school year; therefore the 2004 survey was conducted in the fall term. Third, younger students were surveyed for the first time. Students in grade 7 and grade 8 were included in the sample frame.

The Manitoba High School Survey conducted in 2001 showed that about 1/3 of senior 1 students had smoked cannabis, and over half were regular users of alcohol. It seems prudent to measure the development of the use of these substances in the grade at which they may begin experimenting with substances. Together, these changes will also make it possible to have more valid comparisons with other provinces, in addition to some national and international comparisons.

In spite of the methodological differences, we can still make comparisons with previous Manitoba surveys. Figure 1 shows the percent of students who have ever used alcohol or cannabis over the past three school surveys. The present analysis does not include information from grade 7 and 8 students, as they were not sampled in previous years. The figure clearly shows the lack of variation in the prevalence of alcohol use over the

years, with about 73% of students in the four high school grades classified as current drinkers in 2004.

**Figure 1. Percent of students using alcohol and cannabis in the previous year over the past four Manitoba school surveys.**





## **Introduction**

The AFM research department regularly conducts school surveys in order to provide information to managers and policy makers that can be used to inform decisions about the location and types of programming that are needed in Manitoba. The survey builds on a history of such surveys, which originally began in 1993 to measure the prevalence of substance use in schools that were part of the Rural and Northern Youth Intervention Strategy (RNYIS). At that time 18 schools participated, based on the need to evaluate the early intervention and prevention education activities that were previously introduced in communities in rural Manitoba. In 1995, the third year of the RNYIS, similar measures of alcohol and other drug use were taken. In 1997 the survey was replicated, this time with the addition of 5 Winnipeg schools. In 2001 nine new schools were added, thus that survey involved a total of 32 schools. Although they represented a cross section of Manitoba high schools, the sample was not random. Interested schools participated, and sometimes the entire school was sampled. Although the results often parallel national and other provincial trends in substance use, comparisons with other data were difficult, due to the lack of representativeness of the sample. Thus, in 2004 the decision was made to switch to a more representative sample by using randomly selected schools, and randomly selecting classes within those schools.

An additional modification to the present process was the addition of students/classes from grade 7 and 8. In the 2001 survey it was noted that many students in grade nine had already tried alcohol and many had also tried cannabis. Although this information helped to identify the need for early intervention and prevention activities at this age group, we had never asked for the participation of younger individuals in previous school surveys. This information will be useful for identifying precursors of substance use, with the goal of developing more relevant prevention and awareness programs designed to help kids to identify some of the risks associated with using drugs at this age.

There are also other improvements to the survey methodology in 2004. In order to try to be as comprehensive as possible, private schools were included in the sample. Two were selected and both agreed to participate. Furthermore, schools in the French school division were also included in the sampling frame and 7 were selected and agreed to participate. These schools were provided with surveys in French, in order to facilitate responding for these students. These processes have helped to ensure that the final results are as representative of students in the province as possible, and we think this has been achieved.

## Method

A total of 640 schools, from both the public and private systems were included in the sampling framework. Three hundred and seventy-seven schools were removed from the sampling frame because they had less than 100 students in total. We were concerned about the lack of anonymity in schools with fewer than 10 students per grade. Prior to school selection, all school division administrators and school principals were sent a letter indicating that this survey was being conducted, and that they might be contacted in the future to request their participation. Sixty three randomly selected schools were initially selected. Of these, one school was deleted from the sample as it no longer existed, and four declined to participate. Of these four, one was an independent school whose principal was concerned about asking alcohol and drug use questions of its students, three were schools that only included grade 7 and 8 students and the school board or superintendent did not feel the questions were appropriate for this age group. The final sample included schools within the French immersion program, francophone schools, independent schools (i.e., from the catholic school system), and private schools. French immersion schools were offered the opportunity to have the survey in French (one selected this option), and the francophone schools all received their surveys in French.

For each school selected a list of classrooms in each grade was requested. If there were less than three classes per grade all of the students in that grade were tested. If there were more than two classes in a grade AFM research randomly selected the classes that were asked to participate. The number of students in each grade was noted, and the appropriate number of surveys with instructions for administration, were couriered to the general office of the school.

### **Questionnaire development.**

The questionnaire that was developed was based on questions from previous surveys, additional concepts from the literature, and screening tools that have been used in other provinces and countries. One of the more important additions was the use of screening instruments to identify risk levels for alcohol and drug-related problems, and gambling pathology. The usual quantity and frequency of consumption were also measured. In addition to direct measures of use and abuse, we were interested in risk and protective factors, as these have been identified in the literature as influencing the level of involvement in addictive behaviors.

**Alcohol dependence.** A variety of forms of drinking can cause harm. These include both heavy daily drinking and repeated intoxication. In addition, there are a variety of symptoms and problems related to drinking that can cause problems in an individual's social network. The Alcohol Use Disorders Identification Test (AUDIT) was recently developed by the World Health Organization (Babor et al., 2001) to identify people with hazardous and harmful patterns of alcohol consumption and/or alcohol dependence.

**Cannabis dependence.** Cannabis dependence was measured using three indicators from the Ontario Student Drug Use Survey (Adlaf & Paglia, 2003). These refer to sustained daily use, uncontrolled use and unsuccessful efforts to cut down use.

**Delinquent behavior.** In order to determine whether substance use (including alcohol) is a general indicator of children in trouble, we also asked about a variety of delinquent behaviors. A measure of delinquency was developed based on the work of Richard Jessor (Jessor, Donovan & Costa, 1991; Jessor & Jessor, 1977), which suggests that underage alcohol use and other drug use may be part of an overall pattern of delinquent behavior that includes other anti-social activities such as stealing, vandalism and other illegal acts. A total of 14 questions related to delinquent activities in the past year were asked. These included questions about participating in physical fights, shoplifting, in addition to more serious activities such as stealing cars or starting fires. Students were asked to indicate how often they had been involved in these activities, ranging from “never” to “often”. A scale score was constructed by summing the frequency across the different items. Another version of the scale was obtained by summing any indication of having been involved in the activity in the past year.

Specific details about the data collection process are included in Appendix A. In brief, the sample schools were sent explanatory letters, with instructions for the administration of the questionnaires, and enough copies for the students that were listed in the selected classrooms. One large school division required parental consent; therefore the appropriate forms were prepared and sent to the schools in that division. Instructions that reinforced the confidential and anonymous aspect of the survey were included for staff to read prior to administration of the actual instrument.

### **Description of the sample schools.**

A total of 58 schools participated in the 2004 survey. In contrast with previous high school surveys in Manitoba, a larger proportion of the schools were from urban areas, reflecting the nature of the population distribution in the province. Table 2 shows the distribution of the schools and the proportion of the sample in various categories. Almost 58% of the students came from urban schools, either in Winnipeg or Brandon. Although there are fewer urban than rural schools, these schools are larger and also tended to have more grade levels in them.

**Table 2. Types of schools and their location, and the percent of the students that went to these schools.**

	Schools	Percent of sample
<b>Location</b>		
Rural	35	42.1
Urban	23	57.9
<b>School Type</b>		
Regular	44	76.4
Francophone	5	6.9
Immersion	6	12.2
Independent	3	4.4
<b>AFM Region</b>		
Winnipeg	46	82.7
Western	9	14.2
Northern	3	3.1

### Validity check.

A major concern when sampling illegal and potentially delinquent behavior is the accuracy (and therefore reliability) of the data that is provided. To encourage accurate responding each student was provided with an envelope to put their own survey into prior to returning it to the administrator. Thus instructions, both on the cover of the survey and those provided by the individual administering the survey, emphasized the confidential nature of the information, and that they would never be able to be identified from the information provided. However, we also recognize that teenagers may not always provide this information reliably, thus a fictitious drug use item was included to help identify those who were fabricating responses. Quabaline (“quabs”, zappers”) was the name of the fictitious substance included in the list of drugs. A total of 62 students reported using quabaline, and their survey responses are not used in this report.

A total of 6673 students participated in the survey and provided useful data. A detailed breakdown of their grade, usual marks, age and gender is shown on Table 3<sup>1</sup>. There are roughly an equal number of males and females, and the sample was stratified by grade to ensure equal representation of each grade level.

<sup>1</sup> One hundred and nine students did not report either their gender or their grade level, therefore most analysis are conducted on the 6564 students who provided this information.

**Table 3. Number of males and females in the sample, the percent of students in each grade level and their usual marks.**

	<b>Males</b>	<b>Females</b>	<b>Total</b>
	<b>N = 3153</b>	<b>N = 3411</b>	<b>N = 6564</b>
<b>Grade level</b>			
Grade 7	14.2	14.1	14.2
Grade 8	16.9	14.9	15.9
Senior 1	17.1	15.9	16.5
Senior 2	18.4	18.4	18.4
Senior 3	17.2	18.9	18.1
Senior 4	16.2	17.8	17.0
<b>Usual Marks</b>			
A (80% - 100%)	37.4	48.5	43.0
B (70% - 79%)	32.7	30.3	31.5
C (60% - 69%)	20.7	14.8	17.8
D (50% - 59%)	7.7	5.5	6.6
F (below 50%)	1.5	0.8	1.2

There are roughly the same numbers of students in each grade in the sample, ranging from about 14% of the sample in grade 7 to just over 18% of the sample in Senior 2. The sample was stratified by grade level; however, some of the grade 7 and 8 classes may have been smaller in size. Most of the students report doing quite well in school, with almost  $\frac{3}{4}$  scoring As and Bs on most of their courses. Females are more likely to score As than males, with almost 50% of females in the sample reporting that As are their usual marks.

## Results

### Alcohol use

Students were asked if they had ever consumed alcohol. Table 4 shows the percentage of males and females in each grade that had ever consumed alcohol. Consistent with previous surveys alcohol is the most common drug used. Almost 70% of the sample stated that they had consumed alcohol, and 59% of the total sample reported that they had consumed alcohol in the previous year. When we look at the breakdown by gender and grade we find that males are more likely to drink than females, however, the size of the difference is negligible (70% vs. 68%). Students in the more senior grades are more likely to drink than those in the younger grades, almost 90%, compared with about 1/3 of the younger students. However, there are also some interesting differences by grade. In the earlier grades (7 and 8), males were more likely to drink than females, with about 45% having consumed alcohol (compared with about 35% for females). However, in high school (senior 1 through senior 4), females were just as likely as males to have consumed alcohol, ranging from about 70% in Senior 1 to about 88% in Senior 4. The overall average for the four high school grades is about 80% for both males and females

**Table 4. Percent of males and females in each grade who have ever consumed alcohol.**

	Males	Females	Total
<b>Grade level</b>			
Grade 7	38.8	27.9	33.1
Grade 8	52.2	44.1	48.2
Senior 1	71.6	70.1	70.8
Senior 2	81.2	79.3	80.0
Senior 3	81.9	84.2	83.1
Senior 4	89.0	88.0	88.5
<b>Total</b>	69.9	67.8	68.9

### Current drinkers.

Probably of greater interest is the percent of males and females in each grade who currently drink alcohol. The definition of a current drinker is consistent with other provincial surveys and surveys conducted in other jurisdictions, which is consuming alcohol in the previous year. Table 5 shows the percentage of male and female students by each grade who drank in the past year.

**Table 5. Percent of males and females in each grade who consumed alcohol in the previous 12 months.**

	Males	Females	Total
<b>Grade level</b>			
Grade 7	27.5	17.5	22.6
Grade 8	36.9	35.6	36.3
Senior 1	59.2	60.6	59.9
Senior 2	72.5	71.7	72.1
Senior 3	77.2	78.9	78.1
Senior 4	84.3	83.0	83.7
<b>Total</b>	59.6	58.0	58.8

Almost 25% of the students in grade 7 were current drinkers, compared with over 80% of the students in Senior 4. There is also a small gender difference in the percent of current drinkers over the grades. In the earliest grade sampled, males are much more likely to be current drinkers than females, 28% vs. 18%. However, from grade 8 through Senior 4 there the prevalence of male and female drinking is almost identical, increasing from 60% in Senior 1, just over 70% in Senior 2, just fewer than 80% in Senior 3, and about 84% in Senior 4.

### **Underage drinking.**

We should note that for many of the students in Senior 4 drinking alcohol is not illegal, that is, many of them are already 18 years of age. Table 6 shows how many of the students who are over 17 years of age have consumed alcohol in the past year, and the percentage of those under 18 who have consumed alcohol (and are doing so illegally). Almost all of the older students consumed alcohol at some point, with less than 3% of 19 year olds being lifetime abstainers.

**Table 6. Percent of males and females who are 18 and over who drink, and those who are underage drinkers.**

	Males	Females	Total
<b>Age</b>			
18 or older	92.8	92.3	92.5
17	87.4	87.7	87.5
16	82.0	84.7	83.5
15	79.7	78.1	78.9
14 or younger	43.1	47.3	45.2

From the data it would appear that a legal drinking age has little impact on current drinking prevalence. Almost 90% of the 17 year olds drink alcohol, and about 80% of 15

and 16 year olds drink. Perhaps an awareness or education program needs to be implemented to help younger students understand the dangers associated with drinking, especially the levels of drinking that we will identify later in this report.

**Frequency of drinking.**

The students who had consumed alcohol also indicated how often they drank in the past year. These results are summarized on Table 7. The percentages shown are the percentage of all of the students in the sample.

**Table 7. Percent of students and the frequency of drinking in the past year.**

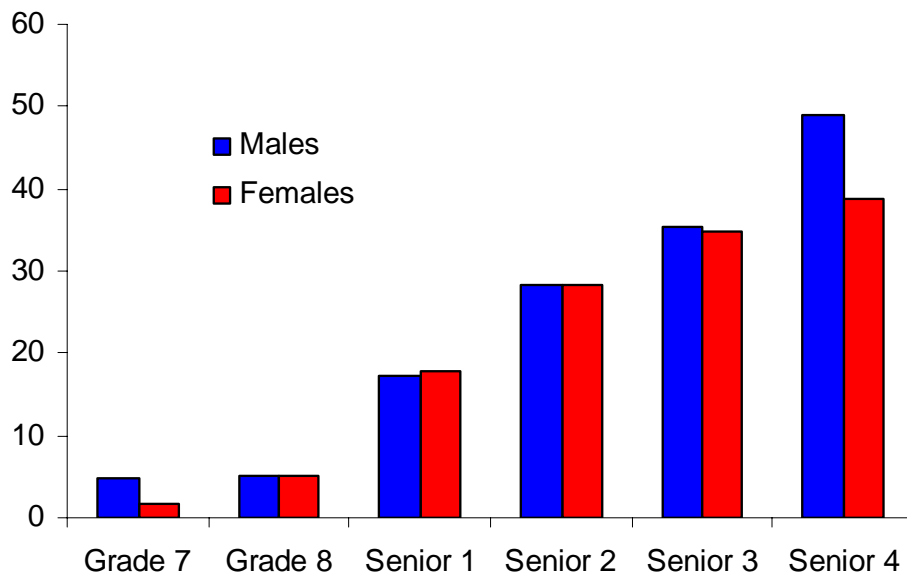
	Males	Females	Total
Never drank alcohol	30.3	32.6	31.5
Tried drinking once only	9.0	6.9	8.0
Drank only 2 or 3 times	11.3	12.2	11.8
A few times a year	15.6	14.8	15.2
About once a month	10.0	11.1	10.6
Two – three times a month	11.7	12.4	12.1
About once a week	8.0	6.7	7.4
Two – three times a week	3.6	3.2	3.4
Everyday	0.4	0.1	0.2
More than once a day	0.2	0.1	0.1

Fortunately, very few students drink daily (less than 1%). Unfortunately, over 10% are drinking once a week or more and this percentage is increased substantially if we exclude the students from grade 7 and grade 8. About 17% of males and 13% of females in Senior 1 through Senior 4 drink at least once a week. Less than 2% of males and females in grade 7 and 8 drink at this level.

As mentioned, most of the students are not drinking frequently, especially in the younger grades. Figure 2 shows the percent of students in each grade who are drinking more than once a month. This figure highlights the low level of drinking in the younger students and the extent of more frequent drinking in the older students. Less than 10% of the students in grade 7 or 8 drink this frequently. Almost 50% of the males and about 40% of the females in Senior 4 drink more than once a month.



**Figure 2. Percent of students in each grade who are drinking more than once a month.**



In addition to asking students about how often they drink, we asked the students how much they usually consume when they do drink. Table 8 shows the percent of students and the amount that they usually drink at a sitting.

**Table 8. Percent of students and the amount that they usually drink at a sitting.**

	Males	Females	Total
Never drank alcohol	30.3	32.6	31.5
Did not drink in the past year	9.3	7.3	8.3
1 - 2 drinks	18.8	18.9	18.9
3 - 4 drinks	10.0	15.3	12.7
5 - 6 drinks	10.4	14.0	12.2
7 - 9 drinks	10.0	7.8	8.9
10 or more drinks	11.2	4.2	7.6

This table suggests that there are clearly a group of adolescents who drink at a level beyond the suggested guidelines for safe drinking. About 30% of males and 25% of females usually drink five or more drinks when they consume alcohol. Recall from Table 7 that over 20% of the students are drinking at least twice a month, thus we are looking at high volumes of alcohol consumption in this group. On the other hand, almost 40% of the students did not drink in the past year; however, these are mostly students in grade 7 or 8. About 73% of the grade 7 students and 63% of the grade 8 students did not consume any alcohol in the past year.

### Frequency of heavy drinking.

We explored the frequency at which students drink at hazardous levels by asking how often in the past year they had five or more drinks at a sitting, and how often they had eight or more drinks at a sitting. The frequency of having five or more drinks at a sitting is often referred to as “binge drinking” and is used as a measure of heavy drinking. Having eight or more drinks is a level of hazardous drinking that contributes to more extreme intoxication and exposes the user to higher risk of the dangers of being very intoxicated (e.g., violence, injury, sexual assault, etc.). These data are summarized separately for males and females in Table 9.

**Table 9. The frequency that students consume five or more, or eight or more, drinks at a sitting.**

	More than 5 drinks			More than 8 drinks		
	Males	Females	Total	Males	Females	Total
Never drank alcohol	30.3	32.5	31.4	30.3	32.5	31.4
Did not drink in past year	9.3	7.3	8.3	9.3	7.3	8.3
Never drank that much	20.0	20.4	20.2	29.5	34.3	31.9
Less than once a month	15.4	18.0	16.7	12.8	13.6	13.2
About once a month	14.6	14.1	14.4	11.3	8.1	9.7
About once a week	9.7	7.4	8.6	6.3	4.0	5.1
Daily or almost daily	0.6	0.3	0.5	0.4	0.2	0.3

Less than 10% of all students are getting drunk on a weekly basis. In fact, more than half of the students surveyed have never had more than 5 drinks at a sitting. However, there are a significant number of students that are drinking quite heavily on a regular basis. Almost ¼ of the students drink more than 5 drinks about once a month or more frequently. They are equally likely to be male or female. About 15% drink 8 or more drinks about once a month or more frequently, and they are more likely to be male.

The frequency and volume data provide an insight into the general extent of alcohol use in adolescents. However, these percentages represent alcohol by the total population of students from grade 7 through Senior 4. The rates of heavy drinking in the various grades are shown in the following figures. Figure 3 shows the rapid increase in drinking five or more drinks at a time after grade 8, especially males. About 1/5 of the males in Senior 1 consume five or more drinks at a sitting, and about 30% of the males in Senior 2 drink this much. Not quite as many females drink this heavily. Less than 14% of Senior 1 females drink this much at a sitting, and about 27% of Senior 2 females drink this heavily. In Senior 4 over half of the males (53%) drink five or more at a sitting, whereas less than 40% of the females drink this much.

**Figure 3. Percent of students in each grade who have five or more drinks at a sitting.**

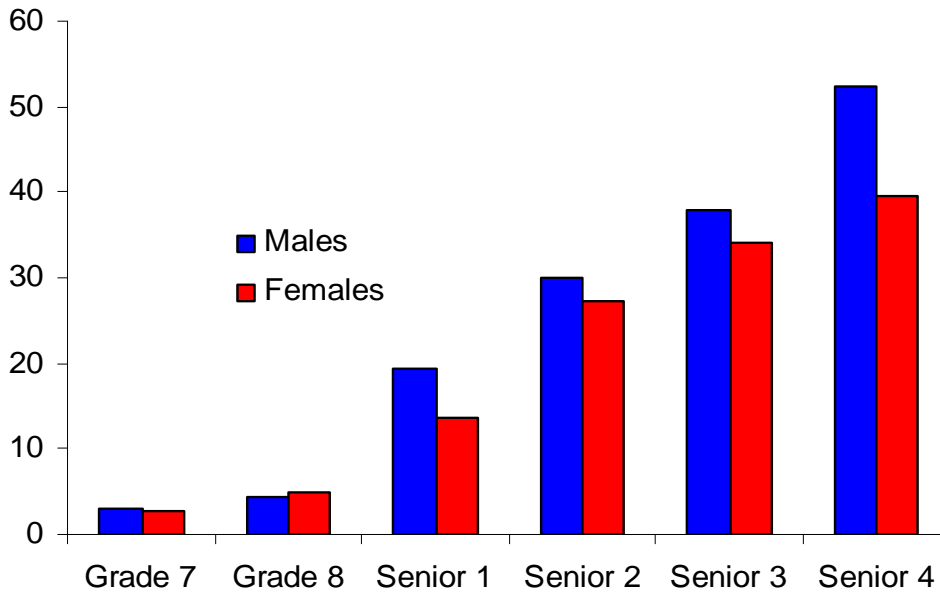
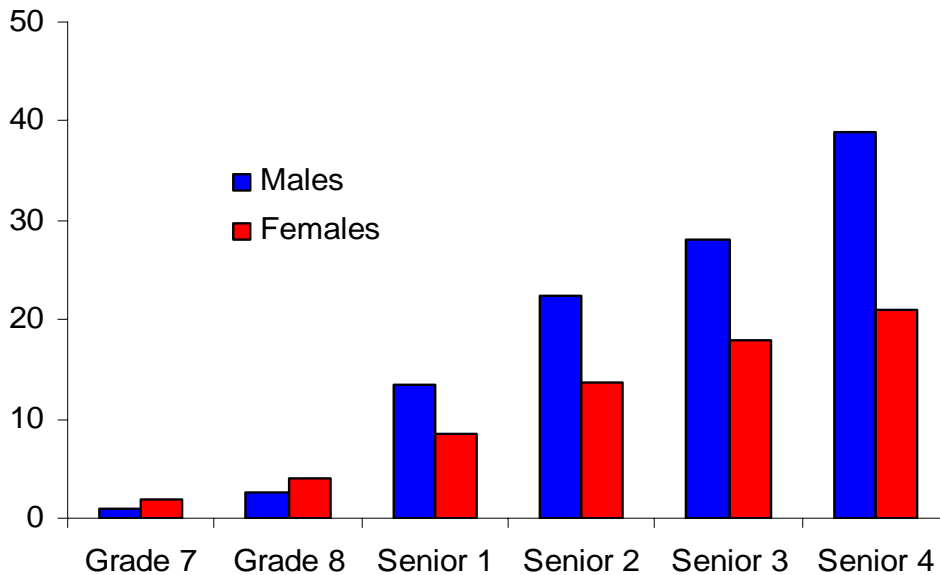


Figure 4 shows the percent of students in each grade who are drinking at an even higher rate than the previous analysis. This shows the rate of males and females in each grade who are drinking eight or more drinks at a sitting.

**Figure 4. Percent of students in each grade who have eight or more drinks at a sitting.**



Again, the rates rise quite sharply after grade 8. Just over 13% of the males and fewer than 8% of the females drink eight or more at a sitting in Senior 1, compared with less than 4% in the earlier grades. By Senior 4 almost 40% of males drink 8 or more at a sitting; the percent for females in this grade is about 21%.

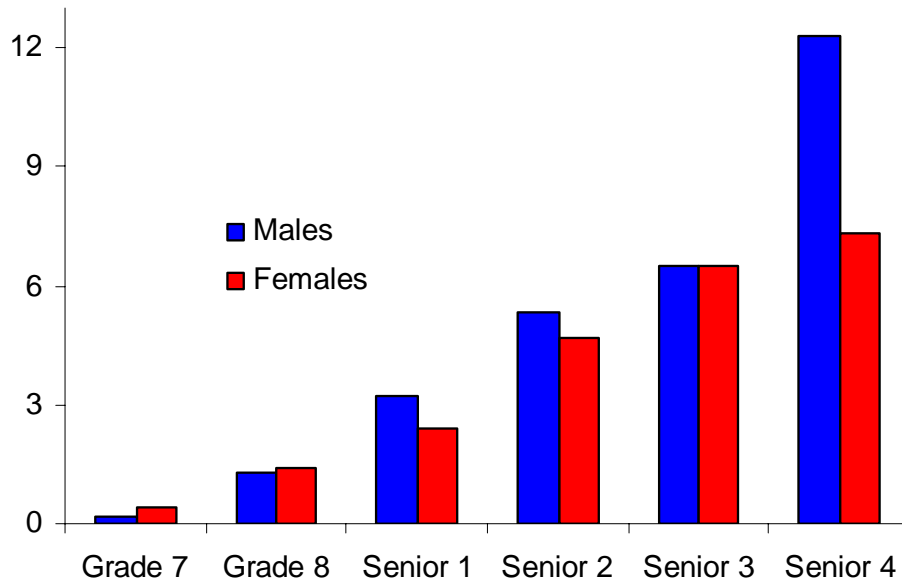
### **Alcohol dependence.**

Thus far we have identified that alcohol use is common in Manitoba students, ranging from about 30% of students in grades 7 and 8 who currently drink, to about 90% of students in Senior 3 and 4. Furthermore, many of the students are drinking quite frequently, and many are also drinking a lot when they do drink (i.e., they are clearly drinking with the intention of getting drunk). Alcohol abuse can result in immediate harmful consequences (e.g., using poor judgment with regards to participating in violent activities, exposing oneself to the risk of unwanted sexual activity, driving or riding in a car with an impaired driver, etc.). This is one of the concerns raised by the high levels of episodic heavy drinking shown in Figure 3. Furthermore, alcohol abuse is often seen as the precursor to dependence. This next section will look at the responses to questions that measure various aspects of alcohol dependence.

One useful aspect of this survey is to identify the extent of problems caused by excessive use (alcohol abuse) or long-term alcohol use (alcohol dependence). There are a variety of negative consequences of alcohol use, including missing important assignments in school, having friends and family express concern over use, and not being able to remember what happened during a drinking episode. To evaluate these consequences, 6 of the 10 items that form the Alcohol Use Disorders Identification Test (AUDIT) were included in the questionnaire. The AUDIT is a measure that has been developed by the World Health Organization, and has been widely used in surveys on alcohol use to indicate alcohol dependence or abuse. Although validated on adult samples it has also been used in other school surveys (e.g., the Alberta Youth Experience Survey, 2003). Responses to the various items are scored and summed. Although we did not use the full scale, responses were prorated in order to be able to use the established cut-off scores. Scores above 20 indicate alcohol-related problems that suggest the need for an assessment or counseling-type of intervention as a result of having some of the signs of alcohol dependence and/or abuse.

Figure 5 shows the percent of males and females in each grade who score above 20 on our version of the AUDIT. Very few of the younger students show any signs of alcohol dependence, with less than 5% of students in the three younger grades reporting symptoms of alcohol dependence. However, about 5% of the students in Senior 2, 7% of both male and female students in Senior 3 and 12% of the males and 7% of the females in Senior 4 have signs of alcohol dependence. On the basis of these results, if these students were to attend an orientation session at AFM, they would be referred for a full assessment and would be required to participate in a program designed to help them to understand the context of their use and the dangers that their level of involvement with alcohol might be placing them in. We have now moved beyond prevention, to the point where we have identified behaviors that require an early intervention.

**Figure 5. Percent of males and females in each grade who have signs of alcohol dependence (AUDIT scores greater than 20).**



Fortunately, very few adolescents in the earlier grades report alcohol-related problems. However, consistent with studies of university-aged students, many of the older adolescents are already beginning to show signs of alcohol dependence. These signs are not just the high levels of frequent heavy drinking reported in the previous tables, but also include concern expressed by others about the students drinking, impaired control over drinking, blackouts and failing to do what was normally expected (e.g., missing commitments and school assignments). Furthermore, a number of students scored above 8 on the AUDIT. On the basis of this type of score an individual would benefit from learning about the consequences of alcohol abuse. It appears that over 65% of the males in Senior 4 and almost 50% of the females in this grade would benefit from an alcohol education program.

### **Types of alcohol-related problems.**

We examined the types of problems with alcohol that these students are getting into. The percentage of males and females in each grade whose alcohol use has caused them to miss school, miss work, miss important commitments or homework deadlines is shown on Table 10. Although this is a large table, the data are presented in this level of detail to identify specific consequences that may be overlooked in a summary table, and to show changes that emerge as the students get older. For example, we can see that as the students enter the later grades they are much more likely to miss important homework deadlines due to drinking. By Senior 2 over 15% of students have missed a homework deadline due to drinking, and this pattern continues through the next few years. Furthermore, the percent of females missing homework is slightly higher in each of these

grades than males. On the other hand, although it increases slightly, missing family commitments remains relatively constant and low over the course of these years.

**Table 10. Percentage of males and females in each grade who reported any problems related to their use of alcohol.**

	<b>Males</b>	<b>Females</b>	<b>Total</b>
<b>Grade 7</b>			
Missing school	0.7	1.6	1.2
Missing important family commitment	2.9	1.4	2.2
Missing important commitment to friend	2.9	2.3	2.6
Missed homework deadline	2.1	2.8	2.5
Missed going to work	0.7	1.0	0.9
<b>Grade 8</b>			
Missing school	1.1	2.0	1.6
Missing important family commitment	2.1	2.0	2.1
Missing important commitment to friend	3.6	4.1	3.9
Missed homework deadline	3.2	6.1	4.7
Missed going to work	0.9	1.6	1.3
<b>Senior 1</b>			
Missing school	4.5	2.4	3.5
Missing important family commitment	4.3	3.9	4.1
Missing important commitment to friend	4.8	7.6	6.2
Missed homework deadline	9.8	11.1	10.5
Missed going to work	2.2	1.7	2.0
<b>Senior 2</b>			
Missing school	5.0	4.1	4.6
Missing important family commitment	4.5	6.3	5.4
Missing important commitment to friend	6.9	8.9	7.9
Missed homework deadline	12.6	18.2	15.4
Missed going to work	3.3	2.8	3.1

**Table 10 (cont.). Percentage of males and females in each grade who reported any problems related to their use of alcohol.**

	Males	Females	Total
<b>Senior 3</b>			
Missing school	5.2	5.0	5.1
Missing important family commitment	4.4	5.4	4.9
Missing important commitment to friend	6.3	7.9	7.1
Missed homework deadline	13.7	17.3	15.5
Missed going to work	6.4	7.1	6.8
<b>Senior 4</b>			
Missing school	7.1	8.6	7.9
Missing important family commitment	5.3	7.6	6.5
Missing important commitment to friend	9.9	9.2	9.6
Missed homework deadline	17.4	19.4	18.4
Missed going to work	9.4	8.5	9.0

Fortunately, most of these consequences are relatively infrequent in the younger students, but we do see the emerging trends as they enter high school. They are more likely to miss school and miss going to work (since it is less likely that the younger students are working). Missing school and missing important homework deadlines are not only bad habits to get into, but have ramifications in terms of getting good grades and being able to graduate from school.

**Relationship between grades and level of drinking.**

One of the unfortunate consequences of abusing alcohol repeatedly is failure to achieve important developmental milestones, such as graduation. Missing school and homework deadlines may result in lower grades and less likelihood of successfully completing school. We compared self-reported grades for those with higher versus lower drinking levels. Drinkers were divided into light drinkers (less than once a month) and heavy drinkers (once a month or more frequently). Since females are more likely to report achieving higher grades than males, comparisons are also made separately for each gender. Table 11 shows that, both males and females who drink more frequently are much more likely to report lower grades. About 44% of the males who drink less than once a month report usually receiving grades of A in school, about 25% of the more frequent drinkers report receiving As. Likewise, 55% of the females who drink less than



once a month report As, whereas only 36% of females who drink more frequently reported that they usually receive As in school.

**Table 11. Percent of males and females who drink more or less than once a month and the usual grades that they receive in school.**

	Males		Females	
	Less than once a month	Once a month or more frequently	Less than once a month	Once a month or more frequently
<b>Usual Grades</b>				
A	43.7	25.3	55.0	36.0
B	33.3	31.3	28.2	34.5
C	16.9	28.0	12.0	20.4
D	5.2	12.7	4.3	8.0
F	0.9	2.7	0.6	1.2

### **Drinking before age 15.**

Data from a variety of sources have suggested that adults who get into trouble with alcohol began drinking at a very early age. Research shows that drinking before age 15 is a risk factor for alcohol dependence (Grant & Dawson, 2004). Individuals who were interviewed for the U.S. National Survey on Drug Use and Health who reported first use of alcohol before age 15 were more than 4 times as likely to have an alcohol problem, either abuse or dependence, compared with people who did not begin drinking until they were over 20 (the legal age limit to purchase alcohol in most U.S. states). The longer one is able to delay the onset of first drinking, the lower the likelihood of the individual experiencing alcohol-related problems or dependence later in life (Warner and White, 2003).

Students who had consumed alcohol were asked how old they were when they first drank. A note to the respondents explained that this did **not** include a sip of a parent's drink or alcohol used for religious purposes. Of those who reported drinking, males were more likely to drink at an earlier age than females. Table 12 compares the percent of males and females on a variety of drinking and academic measures. Only students who were 16 years of age or older were used in this analysis. About 52% of male and 51% of female drinkers in this group began drinking before age 15, and when we look at their consumption level it is much higher than those who did not begin drinking until they were 15 years of age or older.

**Table 12. Comparison of male and female students who began drinking before or after age 15.**

	Males		Females	
	Began drinking before age 15	Began drinking at 15 or older	Began drinking before age 15	Began drinking at 15 or older
<b>Drinking indicators</b>				
Percent drinking more than 5 drinks	55.5	22.5	52.7	24.0
Percent drinking more than 8 drinks	48.2	12.8	39.7	13.0
Percent drinking weekly or more frequently	24.1	5.0	17.8	3.5
Mean AUDIT score	13.8	8.3	12.3	6.7
<b>Academic indicators</b>				
Percent failing school	14.8	5.1	9.5	3.9
Percent skipping class	25.4	11.3	18.0	9.5
<b>Other indicators</b>				
Percent using cannabis	35.7	13.0	36.8	13.6
Average number of delinquency acts	6.6	3.5	4.5	2.2

Although this is a very young age to have an alcohol abuse or dependence diagnosis, we compared students who began drinking before they were 15 with those who were 15 or older when they began drinking on the alcohol dependence measure (AUDIT). Table 12 shows that those who began drinking earlier have more signs of alcohol dependence than those who did not begin drinking until after they were 15 years of age. In addition, both the males and the females who began drinking earlier are more than twice as likely to be drinking five or more drinks at a time. Males are four times more likely to be drinking 8 or more drinks at a sitting, and females are three times more likely to drink this much. Students who begin drinking at an earlier age are much more likely to drink weekly or more frequently, are about three times more likely to use cannabis, and are about twice as likely to be involved in delinquent acts.

### **Where do students get alcohol?**

As part of our efforts to understand the social context of alcohol use, we asked students who were current drinkers where they get their alcohol. Almost all of the students who were over 18 years of age bought their alcohol themselves. Interestingly, 9% of the students who were under 18 years of age said that they bought it themselves, either from liquor stores, restaurants or bars. More commonly, friends buy alcohol (42%) for underage students, or friends “get” it for them (51%).

The role of family in the development of alcohol use patterns is also noted. About 25% of males and 20% of females said that their parents get alcohol for them, and 20% have an older (presumably) brother or sister who gets alcohol for them. When we examined in more detail the pattern of access to alcohol by grade and gender a variety of interesting trends emerged.

**Table 13. The percent of male and female students who drank in the past year in each grade and where they get their alcohol from.<sup>2</sup>**

	Buy it themselves	Friends buy for them	Friends get it for them	Parents get it for them	Siblings get it	Steal it from home
<b>Males</b>						
Grade 7	0.0	9.2	26.7	30.0	14.2	20.8
Grade 8	1.6	15.0	29.5	25.4	14.0	26.4
Senior 1	4.4	32.6	45.3	19.3	18.4	28.8
Senior 2	7.5	43.1	51.3	22.9	23.8	20.0
Senior 3	12.8	46.7	50.3	20.3	23.3	12.1
Senior 4	26.9	58.3	48.5	27.2	23.4	10.4
<b>Females</b>						
Grade 7	0	13.3	25.3	18.1	19.3	32.5
Grade 8	1.1	15.2	36.0	21.9	15.7	37.6
Senior 1	0.9	31.9	54.8	18.0	21.4	35.6
Senior 2	2.0	46.5	58.5	20.9	25.9	28.8
Senior 3	9.5	55.6	67.5	22.4	25.1	21.0
Senior 4	20.8	61.7	61.2	27.4	29.6	14.7

Table 13 shows that less than 10% of the students in the early grades purchase their own alcohol. Unfortunately, when we analyzed data from students under the age of 18 we found that over 1/5 of students in Senior 4 are able to purchase alcohol. Clearly the use of false identification or the failure of vendors to check identification is prevalent in Manitoba. As the students get older they are much more likely to have friends buy it for them, presumably older friends. Friends buying it, or getting it for them, are the two most common ways in which all of the students get their alcohol. About 1/4 of the students in the three older grades have siblings who get alcohol for them. Although a little less common in the younger age groups, this is still a significant source of alcohol for teenagers. Furthermore, about 1/4 of all students who drink say that their parents get it for them, and this rate is slightly higher for males than females. There may need to be some public education here, as parents run the risk of condoning illegal behaviors and supporting activity that is quite harmful. On the other hand, parents may have long given

<sup>2</sup> Note: Since students over the age of 18 are legally able to purchase alcohol in Manitoba, they are not included in this analysis.

up the notion that teenage abstinence from alcohol is possible, or may not be willing to run the risk of appearing hypocritical by suggesting that their child cannot engage in behavior that they themselves likely do regularly. Parents have also sometimes indicated that they would prefer to have their teenager drinking at home, due to safety concerns, than away from home.

A number of students, especially the younger ones, report that they steal their alcohol from home, presumably from their parents. This may suggest that their parents do not support the idea of their grade 7 or 8 child using alcohol, but also indicates that many parents of young teenagers may not feel the need to monitor their liquor cabinet. Unfortunately for some their trust may be misplaced.

### **Changes in alcohol use over time.**

Comparisons of changes in the prevalence of drinking are often used to evaluate large-scale awareness projects and the impact of policy decisions on the population. However, these comparisons are often difficult to make accurately because of differences among survey methodologies. For example, changes in question wording can influence prevalence. Changes in the order of questions, changes in response options and changes in administrative procedures can all impact to varying degrees on the quality of data obtained in surveys.

In the 2004 school survey there were a couple of important methodological differences from previous school surveys conducted in Manitoba. Most importantly, all of the students who participated were randomly selected (actually, their class was randomly selected from within randomly selected schools). Thus the potential bias associated with sampling all schools with a working relationship with AFM services is limited. Second, the timing of the survey in 2004 was different from previous surveys. Previously, high school surveys were conducted in the spring: the 2004 survey was conducted in the fall during the first school semester. This was done in an effort to capture information from students who may not be attending school in the spring (i.e., who may have dropped out or been suspended due to their alcohol or other drug use). Consequently, students within a grade will be, on average, about 6 months younger in the 2004 survey than in previous surveys. Third, for the first time, students from grade 7 and 8 were included in the sample. This was done to see what factors are related to the onset of substance use, at a time when first use is becoming a relevant issue. Taken together, these changes may produce differences in rates that cannot be easily compared to previous years.

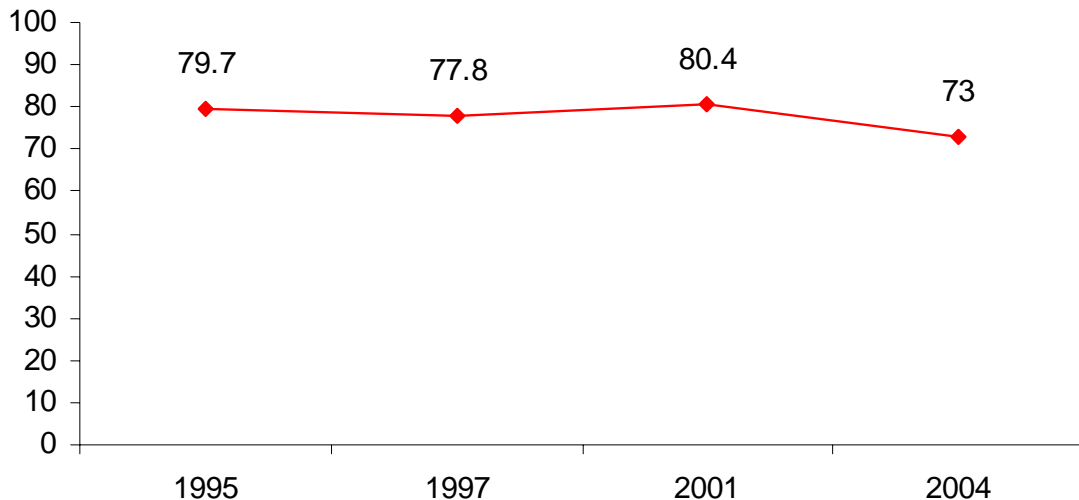
Nevertheless, people want to know if more adolescents are drinking or using other drugs than they were 4, 6, or 10 years ago, and we do have some data to inform this. Figure 6 shows the percent of high school students that were drinking (i.e., had at least one drink of alcohol in the previous year) in the four school surveys that have been conducted in Manitoba over the past decade.<sup>3</sup> This figure shows what appears to be a decline in the

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<sup>3</sup> The percentage in 2004 excludes students in grades 7 and 8 as they were not sampled in the previous surveys and is different from previous tables in this report.

percent of students ever having consumed alcohol, however, the methodological differences already noted likely account for most of this difference.

**Figure 6. Percent of high school students who reported drinking in the past year, 1995 – 2004.**



#### **Comparison of alcohol use in Manitoba students with other students.**

A number of surveys of adolescent drinking have been conducted in Canada and elsewhere. Again, substantial methodological differences exist between these surveys, and this may limit the interpretation of any differences that may be found. However, comparisons across provinces may still be useful for trying to understand the overall picture of alcohol consumption among teenagers. Data from Alberta (The Alberta Youth Experiences Survey, or TAYES) shows that almost 36% of their grade 7 – 9 students had consumed alcohol in the previous year. This compares with approximately 31% of Manitoba students in these grades. The rates for the older students (senior 2 through senior 4) are 75% in Alberta and 78% in Manitoba. The Ontario Student Drug Use Survey (OSDUS) provides more detailed rates, by gender and by grade. In Ontario in 2003, about 68% of male students and 64% of female students in grade 7 through grade 12 had consumed alcohol in the previous year, compared with about 60% and 57% of Manitoba male and female students in these grades. Overall, the percentage of students in the various grades in Manitoba who drank alcohol is similar to Alberta, and slightly lower than the percent in Ontario.

In the U.S. the University of Michigan conducts the Monitoring the Future (MTF, Johnston et al., 2004) study annually. This is a nationally representative sample of American high school students that surveys student alcohol and other drug use. It has been conducted for almost 30 years. In 2003, 17,000 grade 8 students, 16,200 grade 10

students and 15,200 grade 12 students were surveyed. Almost half (46%) of grade 8 students, 66% of grade 10 (senior 2) and 77% of grade 12 (senior 4) students reported lifetime alcohol use. The comparable rates for Manitoba students are 48% in grade 8, 80% in Senior 2 and 88% in Senior 4, respectively. Although the rates in the early years are quite similar, our older students are more likely to have tried alcohol than the American students. This probably reflects differences in the age at which adolescents can buy alcohol, which is much higher in the U.S., making it less accessible.

Furthermore, the MTF study found that 14% of grade 8 students, 35% of grade 10 students and 48% of grade 12 students reported being drunk in the past year. Although we did not ask our students specifically if they had been drunk, using the consumption of five or more drinks at a sitting as a rough index of intoxication, 5% of grade 8 students, 28% of Senior 2 students and 46% of Senior 4 students were drunk in the previous year. In the younger students our rates of intoxication are lower, whereas in the most senior grade the rates are roughly equivalent.

## **Cannabis use.**

In previous school surveys marijuana was the most commonly used illegal drug, thus the decision was made to include more questions about the consumption and consequences of cannabis use in the 2004 survey. Furthermore, concerns regarding legislative changes that have been put forward for review with respect to changes in the criminal code associated with cannabis possession, and the subsequent perception that it may be acceptable to use cannabis, may increase concern that use will increase due to perceived social approval. We will need baseline information about the prevalence and rate of cannabis use in the age group most likely to change their behavior.

We know that there are consequences of frequent or heavy use of cannabis. Short-term effects of cannabis use include memory loss, difficulties with attention and perception, and trouble problem-solving. Unfortunately, these effects can contribute to difficulties learning and retaining new information, therefore, students who are smoking cannabis frequently are at greater risk for academic difficulties. Although the effects may not be permanent, frequent cannabis use, especially during school hours, will impact negatively on the ability to graduate, or complete the necessary course requirements to pursue an additional academic career (i.e., attend university).

Recent national data from the Canadian Addiction Survey have highlighted the prevalence of cannabis use in Canada (CCSA, 2004). This is a national telephone survey that was recently undertaken to understand the extent of alcohol and other drug use in Canada. Almost half of the adult population has tried cannabis at some point in their lives. Of particular concern are the high rates of lifetime and current use in teenagers, with almost 70% in the 18 – 19 year old age range having tried cannabis, and about 50% having smoked it in the previous year. While surprisingly high compared with previous national surveys, the rates should have been expected, as they are consistent with recent reports from a variety of provinces and from the Canadian Community Health Survey (CCHS) conducted in 2002.

Table 14 shows the percent of males and females in each grade who have used cannabis. The increased rates as students get older are expected, and consistent with previous Manitoba student surveys. About 7% of the males and females in grade 7 have tried cannabis, however, as they approach high school the rates increase rather dramatically. Twice as many females in grade 8 have tried cannabis (compared with grade 7), whereas the male rate remains relatively low (9%) By Senior 1 the male and female rates are similar again, with about 27% having tried cannabis. The increase continues, with a 10% jump in Senior 2, and by Senior 3 almost 50% of the females and 42% of the males have used cannabis at some point in their life. By the end of high school almost half of the students have tried cannabis.

**Table 14. Percent of males and females in each grade who have ever used cannabis.**

	Males	Females	Total
<b>Grade level</b>			
Grade 7	6.2	5.7	6.0
Grade 8	9.4	12.0	10.7
Senior 1	27.4	27.3	27.4
Senior 2	36.9	37.1	37.0
Senior 3	42.1	48.6	45.4
Senior 4	49.6	48.7	49.2

The percentage of lifetime users will include many students who have experimented just once or twice with cannabis, probably without any effect, and they are not in any danger from cannabis use. Less than 4% of the students told us that they had smoked cannabis only once, and another 7% said that they had tried it two or three times. Lifetime rates will also include some students who smoked cannabis heavily when they were younger and experienced some unpleasant consequences and stopped using (and, therefore, would not be considered current users). Thus we also looked at the percentage of students who had used cannabis in the past year. These percentages, for males and females in each grade, are shown on Table 15.

**Table 15. Percent of males and females in each grade who have used cannabis in the past year.**

	Males	Females	Total
<b>Grade level</b>			
Grade 7	4.4	3.6	4.0
Grade 8	8.2	9.9	9.1
Senior 1	22.7	21.6	22.2
Senior 2	31.1	31.6	31.4
Senior 3	35.4	40.3	37.9
Senior 4	43.4	39.7	41.6

Again, less than 10% of the students in the two early grades smoke cannabis, and there is a substantial increase as they enter Senior 1. Over 1 in 5 Senior 1 students would be considered a current user, and the rates for males and females are roughly similar. Just over 30% of the Senior 2 students are current users. In Senior 3 there is an odd gender difference, with females more likely to smoke than males, 40% vs. 35%, but in the final year of high school the male rate has increased to the extent that male students are slightly more likely to smoke than female students, 43% compared with just fewer than 40% of the females.



## How often do males and females use cannabis?

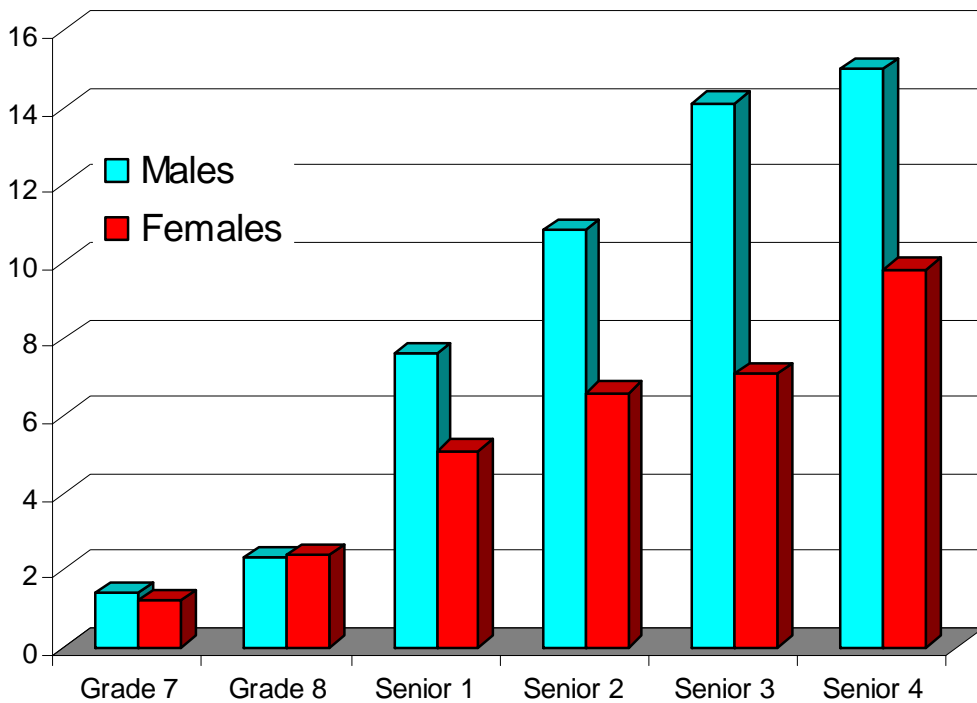
In addition to current cannabis use (defined as any use in the previous year) we are also interested in how often students use cannabis, how much they spend on it, and what kind of quantities they are purchasing. Unlike alcohol there is no straightforward measure of consumption, however, we can get a good picture of consumption levels by looking at these various factors. Table 16 shows the percent of males and females and the frequency with which they smoke cannabis. Consistent with recent data from elsewhere (e.g., the OSDUS from Ontario and TAYES from Alberta) males are more likely to smoke more frequently than females. About 10% of male students smoke about once a week or more frequently, compared with about 7% of females. What may be a greater concern is the number of students who are smoking cannabis daily. Almost 5% of the males and almost 3% of the females smoke at least daily. This type of frequent intoxication likely interferes with their ability to pay attention in class and retain the material that is being taught. This percentage also includes students in the younger grades, who are using infrequently. If we examine differences across grades we find much higher levels of daily use in the older students. Almost 10% of males and almost 6% of females in Senior 4 use cannabis daily.

**Table 16. The frequency of cannabis use.**

	Males	Females	Total
Never tried cannabis	71.0	68.8	69.9
Tried cannabis once only	3.1	4.0	3.6
Tried cannabis 2 or 3 times	6.5	7.6	7.1
A few times a year	4.4	6.0	5.2
About once a month	2.7	2.8	2.8
Two – three times a month	2.2	3.5	2.9
About once a week	2.2	2.1	2.2
Two – three times a week	2.9	2.5	2.7
Everyday	2.3	1.5	1.9
More than once a day	2.5	1.3	1.9

When we examine the amount of money that students typically spend on cannabis and the amount of cannabis that they usually purchase, a couple of interesting factors emerge. Figure 7 shows the percent of students in each grade who are spending \$20 or more monthly on cannabis. Most students are not really spending a lot, but about 14% of the males in Senior 3 and 4 are spending this much monthly. About 9% of females spend this much.

**Figure 7. The percent of students in each grade who spend \$20 or more per month on cannabis.**



As with use and abuse of alcohol, we are interested in possible harmful consequences related to cannabis use in these students. Table 17 shows the percent of male and female students in each grade who reported any problems related to their cannabis use. Overall, the pattern is quite similar to the problems that students report related to their alcohol use. Very few students in the early grades have any problems related to cannabis use, as few of them smoke, and those that do are smoking relatively infrequently. However, by Senior 1 some of them, about 5 or 6%, have missed homework deadlines. This change is consistent with the increase in prevalence, many more students are beginning to use cannabis, and many are beginning to use it more often. The following year (Senior 2) about 6% are starting to miss school because of their cannabis use, and more are starting to miss homework deadlines. However, about twice as many Senior 2 students missed homework deadlines due to drinking, compared with cannabis use. This difference continues in Senior 3 and Senior 4. Nevertheless, about 6 – 7% of students in Senior 3 and Senior 4 miss school and miss important homework assignments due to their cannabis use. Few students in Senior 3 and Senior 4 miss **work** due to cannabis use, especially compared with the percent of students in these grades who missed work due to drinking (about 8%).

**Table 17. Percentage of males and females in each grade who reported any problems related to their cannabis use.**

	<b>Males</b>	<b>Females</b>	<b>Total</b>
<b>Grade 7</b>			
Missing school	0.7	1.2	1.0
Missing important family commitment	0.6	1.0	0.8
Missing important commitment to friend	1.5	1.0	1.3
Missed homework deadline	1.4	1.2	1.3
Missed going to work	0.2	0.4	0.3
<b>Grade 8</b>			
Missing school	1.2	1.6	1.4
Missing important family commitment	1.2	0.8	1.0
Missing important commitment to friend	1.2	1.4	1.3
Missed homework deadline	1.2	3.2	2.2
Missed going to work	0.6	0.8	0.7
<b>Senior 1</b>			
Missing school	3.5	2.2	2.8
Missing important family commitment	1.6	3.2	2.4
Missing important commitment to friend	2.1	4.3	3.2
Missed homework deadline	5.1	6.1	5.6
Missed going to work	1.8	0.6	1.2
<b>Senior 2</b>			
Missing school	5.8	5.7	5.7
Missing important family commitment	2.2	3.2	2.7
Missing important commitment to friend	3.8	4.9	4.5
Missed homework deadline	6.9	7.3	7.1
Missed going to work	1.1	1.1	1.1

**Table 17 (cont.). Percentage of males and females in each grade who reported any problems related to their cannabis use.**

	<b>Males</b>	<b>Females</b>	<b>Total</b>
<b>Senior 3</b>			
Missing school	8.1	6.1	7.1
Missing important family commitment	3.4	2.6	3.0
Missing important commitment to friend	4.2	3.3	3.8
Missed homework deadline	9.0	8.5	8.8
Missed going to work	1.9	1.0	1.5
<b>Senior 4</b>			
Missing school	7.0	7.1	7.0
Missing important family commitment	3.2	2.5	2.9
Missing important commitment to friend	4.0	3.5	3.7
Missed homework deadline	7.2	8.3	7.7
Missed going to work	1.4	1.5	1.4

**Signs of cannabis dependence.**

Although there is considerable debate about the addictive properties of marijuana, students who are smoking more frequently than once a week are putting themselves at risk for dependence. Three indicators of cannabis dependence were used in the present survey; daily use for a month or more, failed efforts to stop using, and unsuccessful attempts to cut down use. A positive response to these questions adds to the dependence score, with positive responses to 2 items suggesting high probability of cannabis dependence. Overall, 90.2% of students did not report any signs of cannabis dependence, which includes most of those who are current users. Approximately, 8% of males and females had one of the three possible signs, and 1.7% of males and 1.6% of females had two or three signs of cannabis dependence. These percentages are comparable with Alberta (5.8% had more than one sign).

**Characteristics of heavy cannabis users.**

There is no formal (i.e., scientifically agreed upon) definition of heavy cannabis use; however, we are still able to evaluate the impact of heavy use by comparing different groups of students. Students were grouped into three categories on the basis of their cannabis use. Lifetime abstainers have never tried cannabis and are therefore not

included in this analysis. Also excluded from this analysis are students who had only tried cannabis once or twice. Infrequent users are defined as students who have used cannabis once or twice in the past year, occasional users use it about once a month (but not more frequently than once a week), and heavy users smoke cannabis about once a week or more often. These three groups were then compared on a variety of measures related to school performance, alcohol dependence and general behavior. Table 18 shows that heavy users are much more likely to have a variety of other difficulties. Well over half of the heavy users have failed a class. They are also twice as likely as the other users to have had to repeat a grade. They show signs of alcohol dependence, and were much more likely to score high on the delinquency measure.

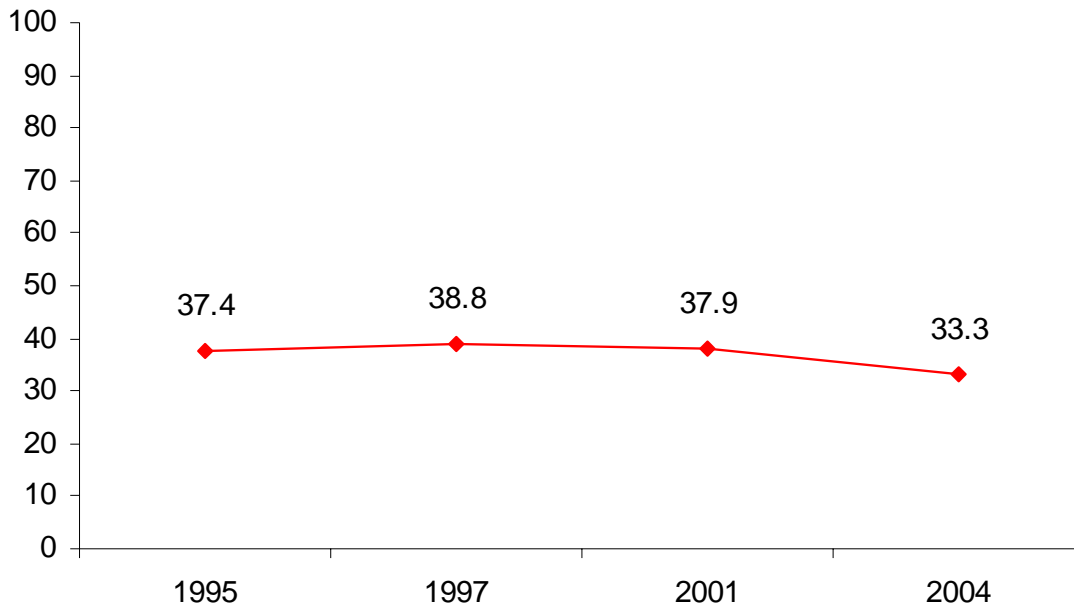
**Table 18. The percent of cannabis users in each group who show other signs of getting into trouble.**

	Infrequent users	Occasional users	Heavy users
	N = 341	N = 368	N = 564
<b>Academic indicators</b>			
Percent who had to repeat a grade	15.5	15.5	32.8
Percent failing a class	34.9	34.5	57.1
Percent skipping class	73.6	71.7	84.4
<b>Other indicators</b>			
Mean AUDIT score	11.9	13.0	15.2
Average score on the delinquency scale	5.5	6.6	9.1

**Changes in the prevalence of cannabis use over time in Manitoba.**

Although we must be careful when comparing prevalence rates across time due to the methodological differences already noted, Figure 8 shows the change in the prevalence of cannabis use. About 1/3 of the high school students surveyed have smoked cannabis in the past year. Only students in Senior 1 through Senior 4 were used in this comparison, for a more valid comparison with the earlier surveys. However, although it looks like there is a decrease in cannabis use in Manitoba students compared with previous surveys, there are number of methodological changes in the 2004 survey that limit the ability to make fair comparisons about changes in cannabis use over the past decade. The 2004 survey should be considered the baseline measure for future studies, comparisons with the past are difficult to make with confidence.

**Figure 8. Percent of high school students using cannabis in the previous year, 1995 – 2004.**



#### **Comparison with students in other provinces and in the U.S..**

It is important to compare rates of cannabis use in Manitoba students with other surveys that have been conducted recently elsewhere. However, the interpretation of any differences must be done with caution, again due to the methodological differences with other surveys that have already been noted. The Canadian Addiction Survey (the national telephone survey conducted in 2004) found that 39% of 15 – 17 year olds had tried cannabis (i.e., were lifetime users), and 29% were current users (i.e., had smoked cannabis in the previous year). In the 18 – 19 year old group, which would correspond most closely to the Senior 4 students in this sample, 70% of the Canadian adolescents surveyed had tried cannabis, and 47% were current users. Rates of use for the 15 – 17 year olds and the 18-19 year olds in the Manitoba student sample were computed for comparison. Almost 47% of the 15 – 17 year olds had tried cannabis at some point, about 36% had tried it in the past year. In the older students, 18 – 19 years of age, almost 67% had tried it, with 55% classified as current users, based on their use in the past year. The rates found in Manitoba students are about the same as those found in the national telephone survey.

The TAYES found that almost 12% of Alberta students in grade 7 through grade 9 (our Senior 1) had used cannabis in the past year, and 42% of the Senior 2 through Senior 4 students were current users. These rates compare with 12% and 37% of Manitoba students in these grades. The rates of cannabis use in Ontario students (all grade 7 through Senior 4) in 2003 were approximately 30% (31% of males and 28% of females). The Adolescent Health Survey (AHS) is a survey conducted in B.C. in 2003 by the McCreary Society. The AHS reported that 37% of B.C. students had tried marijuana, and the rates of use were quite high, for example, 18% of the males who had ever used

cannabis had used it 20 or more times in the previous month. The MTF (U.S.) survey reported that 13% of American grade 8 students had used cannabis in the previous year, and 28% of Senior 2 and 35% of Senior 4 students were current cannabis users. Overall, Manitoba students are using cannabis at a rate that is quite consistent with other Canadian students and the most recent American data.

## Cigarette use.

Although smoking cessation is currently not one of AFM’s mandated targets, a variety of prevention projects directed at reducing smoking in school-aged children have been developed recently. It is important to establish baseline indicators, in order to help determine target levels of prevalence for future evaluations. Furthermore, smoking cigarettes is a useful marker for substance use, since we found in the High School Survey in 2001 that almost all of the adolescents who smoke also either drink alcohol or use other (illicit) drugs. As a result, the 2004 school prevalence survey looked at the prevalence of smoking and the amount that adolescents smoke.

National data are collected annually on the use of tobacco (Canadian Tobacco Use Monitoring Survey, or CTUMS). According to the latest results, there is a decline in smoking in youth between the ages of 15 – 19, with 7% reporting occasional smoking and 12% reporting daily smoking. Although slightly more females smoke than males (20% vs. 17%), males are more likely to smoke more cigarettes per day than females (13 vs. 12).

Table 19 shows the percent of students in each grade who have ever smoked. This percent is clearly quite high, reflecting the count of any student who may have only had one or two cigarettes. Probably of more interest is the next table, which shows the percent of students who had smoked in the past year.

**Table 19. Percent of males and females in each grade who have ever smoked cigarettes.**

	Males	Females	Total
<b>Grade level</b>			
Grade 7	11.3	11.1	11.2
Grade 8	16.1	18.8	17.5
Senior 1	27.5	32.3	29.9
Senior 2	32.9	38.5	35.7
Senior 3	39.3	45.4	42.4
Senior 4	38.7	50.8	44.8

Table 20 shows the percent of students in each grade who had smoked cigarettes in the past year. Less than 8% of the grade 7 students have smoked in this time frame, and about 13% of the grade 8 students. The rates for females in high school are much higher than for males, with almost 38% of the females in Senior 2 through Senior 4 smoking in the past year. The rate for males in these grades was less than 30%.

When we examined the daily smoking rates, we find that they are much lower, and this may more accurately reflect the number of students smoking. The previous analysis could include students who have an occasional cigarette, or who may share a cigarette



when they are drinking or at parties. As with previous analysis, the females are more likely to be daily smokers. In each grade beyond grade 8, about 3% more females than males smoke daily. Fortunately, very few of the students in grade 7 and grade 8 smoke daily.

**Table 20. Percent of males and females in each grade who smoked in the past year and who smoked daily in the past month.**

	Males		Females		Total	
	past year	past month	past year	past month	past year	past month
<b>Grade level</b>						
Grade 7	6.6	1.4	8.8	1.9	7.7	1.7
Grade 8	10.0	1.1	16.3	3.6	13.2	2.3
Senior 1	20.0	4.5	26.9	8.7	23.4	6.6
Senior 2	24.6	9.0	33.3	12.6	28.9	10.8
Senior 3	30.4	10.9	38.8	13.4	34.6	12.1
Senior 4	32.0	12.5	40.9	14.4	36.4	13.5

In addition to asking about student’s status as a smoker or not, we were interested in how many cigarettes they usually smoked in a week. Table 21 shows the level of smoking for male and female students. Fortunately very few students are smoking heavily. About 3% smoke a pack per week, less than 2% smoke about two or three packs per week, and about 2% smoke more than 3 packs per week. Unfortunately, females are smoking more heavily than males.

**Table 21. Level of smoking of current smokers, by gender.**

	Males	Females
<b>Number of cigarettes</b>		
Less than 1	4.0	5.1
1 to 4	2.8	4.6
5 to 9	1.6	1.9
10 to 19	1.5	2.7
20 to 39	2.3	3.0
40 to 59	1.6	1.7
60 or more	1.8	2.2

Many of the smokers may be smoking at low levels, and this may reflect their age (i.e., 25% of the smokers are under 15 years of age). When we asked how old they were when they had their first cigarette we found that the average age at which they began smoking was just over 12 years old.

## **What other drugs do students use?**

Although alcohol and cannabis are the most popular drugs of choice for most young people, we are also interested in the student's use of other substances. Students in the Manitoba survey were given a list of 15 drugs, some legal and some illegal, and asked to indicate how often in the past year they had used these. A small number of students who answered "yes" to all drugs were removed from the analysis due to suspicions about their honesty. Table 22 shows the percentage of males and females in each grade, and the frequency of their use of a wide variety of substances. Although many of the percentages are quite low, there are some important numbers to note since the consequences of habitual use of these drugs can be quite severe.

The most commonly used drug on this list is magic mushrooms (psilocybin). As with other hallucinogens, very few of the younger students used mushrooms, however, by the time they near graduation about 20% of the males and 15% of the females have tried them in the previous year. This pattern, with mushrooms being the third most commonly used drug behind alcohol and cannabis use, is consistent with the 2001 survey findings. However, there appears to be much less public concern about the prevalence of the use of this drug (and other hallucinogens) for a number of reasons. Hallucinogens are not addictive, and their use seems to be limited to special occasions such as parties and to enhance the musical experience at concerts. Furthermore, their appearance as an organic substance, rather than a chemical, may lead to the impression that their use is less dangerous than ingesting man-made substances.

The use of "hard" drugs in this sample is very rare. For example, only a few students in each grade report any use of heroin. Concern about the spread of use of OxyContin, a powerful painkiller that is often diverted from legitimate users, may be premature. These findings are encouraging, since these drugs are highly addictive and have severe physical consequences, even for occasional users.

Methamphetamine use is also quite uncommon, although about 3% of all high school students had used it in the past year. The use of inhalants is also uncommon, with again about 3% of all high school students using them in the past year. The physical effects of these drugs on the body is a cause for concern, therefore it is a positive finding that so few students have been using them. Nevertheless, the ones that are using these drugs are placing themselves at great risk for developing severe physical consequences in the future. Overall, very few of the students in the two early grades use these drugs; however, there is an odd "spike", with 4% of the Senior 1 females using inhalants. We also asked about the spray deodorant AXE, as there were some reports of clients using this as a method of intoxication. Only the youngest males (i.e., in grade 7) were doing this, with just over 2% inhaling AXE in the past year.

Club drug use is also a concern for adolescents, although many of the students in this sample would be too young to gain ready access to most dance clubs. The rave scene in Manitoba is relatively small as enforcement and regulation tend to discourage young entrepreneurs from benefiting from the sale of these substances during dance/club events.

Ecstasy and other club drugs are rarely used by the students. Only about 3% of the older students used any club drugs in the past year.

There is some use of crack, with about 4% of the older students using it in the past year. However, cocaine use seems to be a little more common. Although only about 1% of the grade 7 and 8 students have tried cocaine, about 3 – 4% of the Senior 1 to Senior 3 students have tried it, and over 8% of the Senior 4 students have used cocaine in the past year. This is a pattern that needs to be carefully monitored, as cocaine distribution is closely linked with criminal gangs, and there may be some concern that students involved with cocaine may be entering a world that can have a number of unexpected outcomes. Stimulants and steroids were also rarely used, with about 3% of the older students using them in the past year.

Another substance that was asked about for the first time in this survey was Salvia. This is a plant from Mexico that contains a powerful psychoactive chemical that has been used traditionally for healing and in religious ceremonies. When smoked, the effects occur quickly and last for about an hour. There have been reports of Salvia being used by some of our young clients, thus we were interested in determining the extent of its using in the general population of adolescents. Although not used widely in the younger age groups, almost 8% of the Senior 4 males and over 3% of Senior 4 females have used Salvia in the past year. Little is known about the long-term consequences of using this drug, therefore additional research will be needed.

Overall, the patterns of use of the various illegal drugs are quite similar for males and females. In most cases the male rate is a little higher, especially in the older grades. A notable exception is in the use of other people's prescriptions. The prevalence of the use of other people's prescriptions ranges from about 2% in grade 7 students to just over 5% in the older grades. The grade 7 females also have a rate of use of about 2% which increases to about 8% in grade 8 and 9% in Senior 1 females. Subsequent work will need to be undertaken to determine which specific medications are being used and if they are being used in combination with alcohol and other drugs, as has been reported in the U.S.

One other notable trend from the data is the significant increase in most rates between grade 8 and Senior 1. Although the magnitude of the difference varies by substance, where there is an increase in use as students get older, the size of the increase is greatest at this point. There may be a variety of explanations for this effect, including changes in access and availability as students enter schools with older students, greater interest in using substances as they mature and attempt to take on adult roles and behavior, etc. Again, more research would be needed to clarify what is happening at this juncture.

**Table 22. Percent of male and female students in each grade who used various drugs in the past year.**

	Grade 7	Grade 8	Senior 1	Senior 2	Senior 3	Senior 4
<b>Males</b>						
<b>Drug name</b>						
Magic Mushrooms	1.8	1.9	7.3	10.5	13.3	19.5
Cocaine	1.4	1.2	3.4	4.1	5.5	8.6
Crack	2.1	1.5	3.7	3.9	2.9	3.8
Ecstasy	0.2	0.2	1.4	3.0	3.1	3.4
Other club drugs	0.2	0.2	0.4	1.4	1.0	1.8
Hallucinogens	0.2	0.4	1.9	2.7	4.1	4.0
Steroids	1.4	0.8	1.4	1.6	1.2	1.6
Stimulants	0.2	0.2	1.2	2.4	1.9	3.4
Methamphetamine	0.9	0.4	2.7	2.3	1.7	3.4
Inhalants	2.1	1.2	3.1	2.9	3.6	3.0
Other people's prescriptions	2.1	2.4	2.9	4.5	5.1	5.4
Heroin	1.4	0.8	2.2	0.4	1.4	1.6
AXE	2.4	1.2	1.8	0.4	0.6	0.6
OxyContin	0.4	0.0	1.2	0.2	0.4	0.8
Salvia	0.5	0.2	2.2	2.6	3.7	7.6
<b>Females</b>						
<b>Drug name</b>						
Magic Mushrooms	1.6	2.8	4.9	9.2	12.3	15.2
Cocaine	1.4	1.4	3.2	3.7	5.5	8.1
Crack	1.4	2.0	3.2	3.1	4.0	2.5
Ecstasy	1.3	1.2	1.5	2.5	2.6	3.3
Other club drugs	0.6	0.6	1.1	1.2	0.6	0.9
Hallucinogens	0.8	1.0	1.9	3.3	3.4	2.5
Steroids	0.6	0.6	0.8	1.3	1.1	0.3
Stimulants	1.0	0.6	2.4	2.0	2.7	2.5
Methamphetamine	1.0	1.2	3.1	3.6	2.9	3.2
Inhalants	1.0	1.0	4.4	1.7	2.4	2.7
Other people's prescriptions	1.9	6.1	9.0	7.0	6.9	7.7
Heroin	0.8	1.4	1.0	1.1	0.5	0.3
AXE	0.6	0.8	0.4	0.2	0.0	0.0
OxyContin	0.4	0.0	0.4	0.3	0.3	0.0
Salvia	0.4	0.2	1.1	1.7	1.9	3.4

## **Impaired driving.**

Although there will be a separate impaired driving report produced from these data that will detail some of the correlates and characteristics of students who drive impaired and ride with impaired drivers, the present section summarizes the percentage of students who drive impaired or have ridden with an impaired driver in the previous year. Manitoba has among the most punitive drunk driving laws in Canada. Furthermore, there is a consistent media campaign designed to remind people about the penalties and consequences of driving under the influence of alcohol. Although the numbers of individuals being charged and convicted of drunk driving has remained fairly constant over the past few years, there has been a general concern about the perceptions of adolescents around the issue of impaired driving (i.e., driving under the influence of drugs other than alcohol). Anecdotally, we hear that the designated driver at adolescent parties may not drink any alcohol, but does use cannabis. Some adolescents are under the mistaken assumption that they cannot get caught driving while impaired by cannabis because there is no breathalyzer or test for level of impairment. Many are also under the mistaken impression that they are better drivers while under the influence of marijuana because their senses are heightened and they drive more slowly.

There were four questions asked in the 2004 survey that refer to substance use and driving. All of the questions are framed to reflect the past 12 months. Two questions ask about alcohol use: “Have you driven within an hour of drinking two or more drinks of alcohol?”, and “Have you ridden in a car with a driver who had been drinking?”; two ask about cannabis use, “Have you driven after using cannabis?” and “Have you ridden in a car with a driver who had been using cannabis?”.

## **Alcohol use and driving.**

About half of the students have driver’s licenses. However, students can still drive without a license; therefore we asked them all if they had ever driven after drinking. Almost 19% of male students and almost 14% of female students who had a driver’s license said that they had driven within an hour of drinking two or more drinks in the past year. These percentages are very similar to the National Survey on Drug Use and Health conducted annually in the U.S. Seventeen percent of adolescents between the ages of 16 and 20 reported driving under the influence of alcohol (NSDUH, 2004). The response summaries are shown on Table 23 for each grade for students who reported that they have a driver’s license. In addition to the students who had been driving legally, there were 214 students who reported driving after drinking, but also told us that they did **not** have a valid driver’s license. This represents about 5% of the students who are old enough to drive but do not have a license.

**Table 23. Percent of male and female students with driver’s licenses who have driven within an hour of drinking.**

	Males	Females
<b>Grade level</b>		
Grade 7	2.3	2.7
Grade 8	3.2	2.0
Senior 1	6.4	3.0
Senior 2	7.7	4.8
Senior 3	11.1	7.4
Senior 4	22.6	18.1

Many of the younger students do not drive and would not have access to cars, thus the rates are quite low. Of the students who are 16 years of age or older, 17% of the males and 13% of the females have driven with an hour of drinking. By Senior 4 over 1/5 of the students have driven after drinking.

Table 24 paints an even more alarming picture. Almost ¼ of the grade 7 students had ridden in the past year in a car with a driver who had been drinking, and almost half of the Senior 4 students had done this. However, it is possible that some of the students may be including their parents in this figure, as many of them may have been out for dinner, at which time the student observed their parent consume alcohol with a meal, and then drive home. More likely it reflects that fact that many students drive after drinking, with friends in their car.

**Table 24. Percent of male and female students in each grade who have ridden in a car with a driver who had been drinking.**

	Males	Females
<b>Grade level</b>		
Grade 7	21.4	23.3
Grade 8	32.5	35.1
Senior 1	34.9	39.9
Senior 2	39.4	44.2
Senior 3	38.7	47.6
Senior 4	46.9	52.8

**Cannabis use and driving.**

One of the most obvious dangers of smoking marijuana is the misguided perception that it is acceptable and safe. Unfortunately, today’s teenagers have received the message that cannabis is a benign drug. More students think that “planning to drive” is a good reason

to not drink, whereas fewer think that “planning to drive” is a good reason not to smoke cannabis. Table 25 shows the percent of male and female students in each grade who have driven in the past year after smoking cannabis. Of course these numbers will be a conservative estimate, since many of the students in the earlier grades will not have access to cars, and it is highly unlikely that many of them will have ever driven. Nevertheless, there are a few students in grade 7 through Senior 2 who have driven after using cannabis. In the two older grades, when students are much more likely to have driving licenses and access to cars, the percentage of males and females who are driving after using cannabis is much higher. About 20% of the males and 15% of the females over 16 years of age had driven after using cannabis in the past year.

**Table 25. Percent of male and female students who have driven in the past year after smoking cannabis.**

	Males	Females
<b>Grade level</b>		
Grade 7	1.1	0.6
Grade 8	1.1	1.6
Senior 1	3.6	3.0
Senior 2	7.5	4.3
Senior 3	15.1	10.6
Senior 4	22.9	18.3

In addition to driving under the influence of alcohol or other drugs, there is also a risk inherent with driving in a vehicle with a driver who is under the influence. Previously, we have shown that a large proportion of students ride in a car with a driver who has been drinking. Table 26 shows the percentage of males and females in each grade who have ridden in a car in the past year with a driver who had been smoking cannabis. Almost half of the students in the oldest grade have done so.

**Table 26. Percent of male and female students in each grade who had ridden in a car in the past year with a driver who had been using cannabis.**

	Males	Females
<b>Grade level</b>		
Grade 7	7.2	7.1
Grade 8	8.4	13.4
Senior 1	19.8	24.1
Senior 2	26.2	33.1
Senior 3	33.4	41.1
Senior 4	47.3	46.8

## Affected youth.

As with the impaired driving, there is an intention to produce a short report on the impact of substance use by others, on the student. However, a brief summary will be provided here. Questions were asked about whether students were worried about their parents' substance use and use by their friends. The percent of male and female students in each grade who indicated that they were worried about someone's use is shown on Table 27.

**Table 27. Percent of male and female students who are worried about their mother's, father's and friend's use of alcohol or other drugs.**

	Males	Females	Total
Mother's drinking	4.6	6.3	5.5
Mother's drug use	2.2	2.8	2.5
Father's drinking	8.7	12.1	10.4
Father's drug use	3.0	4.0	3.5
Close friend's drinking	16.2	32.7	24.8
Close friend's drug use	17.6	31.8	25.0

The most obvious findings is that females are more worried about their friend's drinking and other drug use than males. About twice as many females as males thought that their friend's drinking or drug use was a concern. Both males and females seem much less concerned about their parent's drinking and drug use, although, around 10% reported being concerned about their father's drinking



## **Summary and Conclusions**

### **Initiation of Alcohol and Other Drug Use.**

Alcohol and cannabis use are very common in adolescents between the ages of 13 and 18. Alcohol use begins earlier than cannabis use. By grade 7, 22% of the students have tried alcohol. Within two years well over half are considered current drinkers. Although many of the younger ones may not drink to the point of intoxication, there is evidence that most of the students in high school are drinking at least once a month, and many of them are drinking more than five drinks at a time.

Cannabis use in grade 7 is relatively rare; about 4% of the students used cannabis in the previous year. The percent of students using cannabis more than doubles from grade 8 to Senior 1. However, most students in these grades are not using very much, that is, very few smoke cannabis weekly or more often. However, in the older grades males are more likely to use heavily, compared with females. About 10% of Senior 4 males smoke cannabis daily, compared with about 6% of females. This level of cannabis use is a concern for those who try to cope with the consequences of teenagers continually under the influence of drugs.

### **Other drug use.**

Although the use of other drugs increased as the students got older, the prevalence of use is much lower than for alcohol and cannabis. Most of the other drugs that we asked about were not used that frequently, with the possible exception of magic mushrooms. Almost all of the other illegal drugs, steroids and other people's prescriptions were used by less than 5% of the students in any grade. The highest levels of use are seen in the oldest students. For example, about 8% of the students in Senior 4 have used cocaine in the previous year. This trend is a concern, as there are links between cocaine distribution and gang involvement. Methamphetamine use is not prevalent in students, with about 3% of the oldest students using it in the previous year. However, we know the addictive strength of this drug and the severe consequences it has for users. Many drop out of school, and would not be sampled in this type of survey. School surveys miss evaluating substance use in street involved individuals.

### **Heavy episodic drinking.**

An additional concern from the present data is the rate of heavy episodic drinking, especially in the older male students. Over 1/3 of the students in the three older grades usually drink at least five drinks at a sitting. About 1/3 of the males in the older grades also report drinking 8 or more drinks at a time. Although they are not drinking as heavily as the males at this age, the females in the three older grades are also placing themselves at substantial risk for significant consequences of heavy drinking, as about 1 in 5 are drinking this much. The concern is that with this amount of alcohol consumption these students may be at risk for unwanted and unplanned sexual activity, placing themselves in physical danger of the consequences of acute alcohol intoxication and risking injury

through potential exposure to violent situations that often accompany excessive alcohol use.

### **Consequences of alcohol and cannabis use.**

Few students in the younger grades experience many of the consequences of alcohol or cannabis use. This reflects the overall low prevalence of use (i.e., few are smoking cannabis), and the low rate of use (i.e., few are drinking heavily). However, once they begin to attend high school the rates of use of alcohol and cannabis increase, and the amount that they consume also increases. More students begin to miss school and important assignments due to excessive drinking and cannabis use. Furthermore, there are other consequences of heavy drinking and cannabis use that may not be identified in surveys of this type. Missing school and not completing homework will impact on grades and the ability to graduate (we have noted this correlation in the data). It is likely that many students are not able to achieve their full potential due to the distractions of being involved in substance use and abuse.

Although responsible adults usually do not think that young people should use cannabis, many efforts to dispel youthful misperceptions often sound patronizing, and are not effective for changing adolescent substance use. Furthermore, many parents of these teenagers will have had experience or exposure to individuals who have used alcohol and cannabis heavily in their youth, and many have not suffered severe adverse consequences. Many of them are still heavy episodic drinkers. For example, according to recent national data about 1 in 5 Canadians between the ages of 35 – 54 is a heavy monthly drinker and about 10% of the adults in this age range have used cannabis in the previous year. Many of these individuals are parents who may have concerns about appearing hypocritical to their teenagers regarding censure towards drinking and cannabis use.

### **Impaired driving.**

Some of the most disturbing findings in this survey are the high rates of impaired driving and number of students riding in cars with drivers who have been drinking or using cannabis. One in five Senior 4 students with a driver's license has driven with an hour of drinking. This is a group for which there is zero tolerance with respect to drinking and driving. Furthermore, about half of the students in Senior 4 have been a passenger in a car with a driver who had been drinking, and almost as many have been a passenger in a car with a driver who had been smoking cannabis.

In spite of warnings to the contrary, many teenagers still think that it is acceptable to drive after drinking or smoking cannabis, and (like many adults) may maintain that they are still good drivers, even under the influence. We know that the teenage years are characterized by high risk taking behavior (especially among young males) and it may be that this is another example of a risk that adolescents take.

Adolescents are also under the mistaken assumption that driving under the influence of cannabis is safer than driving under the influence of alcohol. Many (mistakenly) think that they are safer drivers because they drive more slowly. Unfortunately, there is a lack of good empirical data to evaluate the impact of cannabis on driving, due to the ethical and legal issues around testing cannabis-using drivers. In addition, adolescents are often under the mistaken assumption that they cannot be charged with a criminal offense if they are stopped while driving under the influence of cannabis. They equate impaired driving with drunk driving, and think that there is no road-side test for cannabis impairment. We also hear from focus groups with adolescents that often the designated driver at parties is allowed to use cannabis, and will often do so in the extreme in order to not feel left out of the fun. All of these factors may have come together to produce the high rates of impaired driving that we now see.

Overall we have found that alcohol and cannabis use are quite common in students. Heavy episodic drinking and frequent cannabis use are more common in the older students, as is driving impaired. These use patterns will continue as students enter university. Furthermore, the pattern of heavy use continues into adulthood, as there is evidence from elsewhere that younger binge drinkers are likely to become adult binge drinkers. We have also identified some of the difficulties that young heavy drinkers and cannabis user can encounter, due to their difficulties in school and other delinquent acts. Together the data suggests the need for awareness and early intervention programs that highlight the risk of heavy drinking and cannabis use, and driving while impaired, with a focus on the potential lifetime implications and consequences of these behaviors.

## References

- Adlaf, E.M., & Paglia, A. (2003). Drug Use among Ontario Students 1977 – 2003 OSDUS Highlights. Toronto, On: Centre for Addiction and Mental Health.
- Patton, D., Brown, D., Broszeit, B., & Dhaliwal, J. (2001). Substance Use among Manitoba High School Students. Winnipeg, MB: Addictions Foundation of Manitoba.
- Alberta Alcohol and Drug Abuse Commission (2003). The Alberta youth experience survey 2002 (TAYES): Technical Report, AADAC, Edmonton, Canada.
- Babor, T.F., Higgins-Biddle, J.C., Saunders, J.B., & Monteiro, M.G. (2001). The Alcohol Use Disorders Identification Test: Guidelines for Use in Primary Care (2<sup>nd</sup> ed.). Geneva, Switzerland: World Health Organization.
- Canadian Community Health Survey (2002), Statistics Canada, Share File, Health Planning Branch, Ontario MOHLTC.
- Canadian Addiction Survey: A national survey of Canadians' use of alcohol and other drugs. Canadian Centre on Substance Abuse, 2004 (<http://www.ccsa.ca/pdf/ccsa-004804-2004.pdf>).
- Canadian Tobacco Use Monitoring Survey (CTUMS), 2001-2004, Ottawa, ON: Health Canada.
- Driving under the influence (DUI) among young persons. The NSDUH Report, December 31, 2004 (<http://oas.samhsa.gov/2k4/youthDUI/youthDUI.cfm>).
- Grant, B.F. & Dawson, D.A. (2004). Age at onset of alcohol use and its association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Epidemiological Survey. *Journal of Substance Abuse*, 9, 103- 110.
- Healthy Youth Development. Highlights from the 2003 Adolescent Health Survey. The McCreary Centre Society, 2003.
- Jessor, R., Donovan, J.E., & Costa, F.M. (1991). *Beyond Adolescence: Problem behavior and young adult development*. New York: Cambridge University Press.
- Jessor, R., & Jessor, S. L. (1977). *Problem behavior and psychological development: A longitudinal study of youth*. New York: Academic Press.
- Johnston, L.D., O'Malley, P.M., Bachman, J.G., & Schulenberg, J.E. (2004). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2003*. Bethesda MD: National Institute on Drug Abuse.
- Warner, L.A., & White, H.R. (2003). Longitudinal effects of age of onset and first drinking situations on problem drinking. *Substance Use and Misuse*, 38 (14), 1983 – 2003.

## **Appendix A**

### **Data Collection Process**

## Data Collection Process.

After the sample schools had been selected a letter was sent to both the school principal and the school division, usually the superintendent. A previous letter had been sent to all superintendents within the province, indicating that this work was underway and requesting their participation in the event that a school from the division was selected. At that time many positive responses were received, often with suggestions as to how to facilitate the process within specific school divisions (e.g., by providing the name of the chair of the ethics review committee who would need to review the request prior to allowing contact with students). Schools were then contacted by a research assistant and asked to provide a list of classes and the number of students in each grade. At that time the entire grade was selected (if there were less than two classes in a grade), or classes were randomly selected from the lists that were provided by the school administration. Additional contact with the schools enabled us to determine how many surveys to send, and these were couriered with return instructions. Almost all of the data was collected in October and November 2004, with some (n = 10) schools providing data in January 2005, usually because they required some extra steps to allow parental consent.

In most cases the school counselor administered the survey. In addition to providing instructions via telephone, written instructions were included as follows:

“The students are to answer the survey by filling in the bubble that corresponds to their answer. They can use a pen or pencil, although a pencil is preferred, in case they need to change an answer. There are 9 pages to the survey, they should try to work quickly and not think too much about each answer. Once they have completed the survey they should put it in the envelope that has been provided, and seal it.

Please ask the students to not talk with each other and not to look at each other’s survey. This is an anonymous survey, and the information is confidential. If they have any questions about the meaning of a question, the teacher/counselor may help, although we would prefer that teachers not circulate in the classroom, again to promote honest responding and maintain confidentiality.

If a student does not wish to complete the survey they can do some other quiet activity, such as read.

The teacher should read the following script out loud to the students to help explain why we are conducting this research:

*“Every few years the Addictions Foundation of Manitoba conducts surveys of schools to see what students are doing. Your class has been selected for the 2004 year. This survey has a lot of questions about alcohol, drug use and gambling. The information that you provide will be used to help AFM plan services in the future. If you do not wish to answer the survey could you please*

*indicate this at the top of the survey and sit quietly until the rest of the class is finished.*

*All of your responses and those of your classmates will be entered into a computer by machine, and summarized with all of the other schools that are participating in this survey. There are over 60 participating schools and over 5,000 students providing AFM with information. NO ONE will see your individual data, and no information about any student could ever be shared with your teachers or the school principal. Please be truthful in your responses.*

*You are asked to use a pencil or pen to complete the questionnaire. Please make your marks on the survey clear. Once you have completed the survey put it in the envelope provided and seal it. Your teacher will return all of the school data to the Addictions Foundation.*

*Thank you very much for helping us.”*

Similar instructions to the students were also included on the cover of the survey:

“This survey is designed to measure student alcohol, drug and gambling behavior. There are no right or wrong answers. You are to complete the survey by filling in the bubble next to the choice in PENCIL. If you do not wish to answer any question just leave it blank. If you do not wish to answer all of the questions please read quietly until everyone else is finished. This survey is confidential. No one will see your individual responses.

**DO NOT WRITE YOUR NAME IN THE BOOKLET**

**Please make sure that the bubbles are filled in completely,** and place the finished survey in the envelope provided. Seal it and return it to the person administering the survey.”

### **Consent.**

As the instructions for both administration of the survey by school counselors and to the individual students emphasized the private and confidential nature of their responses, we felt that parental consent was not required. All of the school divisions except one agreed, and for the one school division a consent form and letter explaining the nature of the survey to the parents was prepared. Consistent with our concerns, only about half of these students participated with parental consent. However, comparison of the responses of students with this school division with others did not reveal any systematic differences.

### **Accuracy of the results.**

To help ensure that the results are accurate, attention was paid to the following:

1. Sample size – almost 10% of all of the students in the province were surveyed.

2. School selection – schools were randomly selected from the pool of schools in the province, including for the first time, private schools, independent schools, francophone schools (provided with the survey in French) and French immersion schools (who were provided with the survey in the language of their choice).
3. Anonymity – procedures were put into place to emphasize confidentiality and anonymity of individual responses.
4. Standardized administration – procedures were consistent across schools, with written instructions provided to school administrators and staff.
5. Validity – random responding was identified and data from students that were suspicious (e.g., daily use of a variety of substances, use of a fictitious substance) were not included in the analysis.



## **Appendix B**

### **Substance profiles**

The following profiles of selected substances have been adapted from the Health Canada publication: Straight Facts About Drugs and Drug Abuse (2000). We provide this information here for the benefit of those readers less familiar with one or more of the substances discussed in the report.

## **Alcohol**

Alcohol affects the central nervous system in proportion to the amount of alcohol in bloodstream. Usual effects of small doses are euphoria, drowsiness, dizziness, flushing, release of inhibitions and tensions. Larger doses produce slurred speech, staggering, double vision, stupor. Alcohol, even in fairly low doses, impairs driving or the operation of complex machinery. In combination with other drugs, small doses of alcohol may produce exaggerated effects. A “hangover” with headache, nausea, shakiness and vomiting may begin 8 to 12 hours after a period of excessive drinking. Very large doses can cause death by blocking the brain’s control over respiration.

Regular consumption of more than two drinks a day may gradually bring about liver damage, brain damage, heart disease, certain types of cancer, blackouts (loss of memory), impotence, reproductive problems, ulcers, and disorders of the pancreas. Chronic heavy use may result in disruptions of the drinker’s social, family and working life. Consumption of alcohol during pregnancy may result in babies with alcohol-related pre- and postnatal developmental and growth delays, learning and behavioural disorders, and other CNS problems and physical abnormalities. Since there is no definite information regarding a safe quantity of alcohol use during pregnancy, the prudent choice for women who are or may become pregnant is to abstain from alcohol.

Regular use induces tolerance, making increased doses necessary to produce desired effect. In the case of chronic use, people may drink steadily without appearing to get drunk. Their condition may go unrecognized, even by themselves for some time. Chronic drinkers are likely to become physically and psychologically dependent. Withdrawal symptoms may range from jumpiness, sleeplessness, sweating, nausea and vomiting, to tremors, seizures, hallucinations and even death.

**Cannabis (also Hashish and Hash Oil)** *marijuana, marihuana pot, grass, weed, reefer, ganja, joint*

Effects of smoking are felt within a few minutes and last two to four hours. Effects from ingestion (e.g., eaten in baked or cooked foods) appear more gradually and last longer, and the person may feel dull and sluggish for some time afterwards. The person feels calm, relaxed, talkative and sometimes drowsy. Concentration and short-term memory are markedly impaired, and sensory perception seems enhanced, colours are brighter, sounds are more distinct, and the sense of time and space is distorted. Appetite increases, especially for sweets. Some people withdraw, or experience fearfulness, anxiety, depression; a few experience panic, terror or paranoia, particularly with larger doses. Some experience hallucinations

with larger doses and symptoms worsen in persons with psychiatric disorders, particularly schizophrenia.

Physical effects include impaired coordination and balance, rapid heartbeat, red eyes, dry mouth and throat. Usual doses impair motor skills; especially when used in combination with alcohol; cannabis use before driving is particularly dangerous. THC, the active ingredient, has been detected in many bodies of fatally-injured drivers and pedestrians in Canada and the United States.

Signs of chronic, heavy use may include decreased motivation and interest, as well as difficulties with memory and concentration. These problems tend to clear when regular use stops. However, there is increasing research evidence of lasting harmful effects on mental function in some people. The respiratory system is damaged by smoking; a single joint of marijuana yields much more tar than a strong cigarette. Tar in cannabis smoke contains higher amounts of cancer-producing agents than tar in tobacco smoke. Studies suggest that developmental delays may occur in children whose mothers used drugs heavily during pregnancy.

There is some evidence that tolerance develops in regular high-dose users. Psychological and physical dependence on cannabis can occur in people who use heavily or regularly. Withdrawal symptoms include anxiety, irritability, sleeping problems, sweating and loss of appetite.

## **Club Drugs**

### **Flunitrazepam, Rohypnol® *roofies, rope, the forget pill***

Rohypnol is an extremely potent benzodiazepine, which produces drowsiness, dizziness, memory loss, muscle relaxation, impaired thinking and motor coordination. It can also produce aggressive behaviour. It is absorbed very rapidly after oral administration with effects occurring after about 20 to 30 minutes. It has been associated with date rape cases because it produces sedation and memory loss. Since it is odourless and tasteless, the victim may have no idea that anything has been added to his/her drink. The amnesia produced by Rohypnol (“the forget pill”) means a rape victim may not remember the circumstances of the sexual assault or how the drug was taken. Combined with alcohol or other CNS depressants, the effects of Rohypnol can be dangerously increased.

Like other benzodiazepines, regular use can induce tolerance making increased doses necessary to produce the desired effect.

Rohypnol have been seized by the police in Canada. Its use has been associated with “date rape” when it is added to the victim’s drink to lower inhibitions and reduce memory of the sexual assault.

**GHB**, (gamma-hydroxybutyrate) *liquid ecstasy, liquid X, grievous bodily harm, Scoop*

Effects of lower doses may include lowered inhibitions, euphoria, calmness progressing to drowsiness, dizziness and amnesia. Higher doses may produce confusion, hallucinations, nausea, vomiting, diarrhea, tremors, combative and self-injurious behaviours, seizures, shortness of breath, loss of consciousness and coma. GHB is currently circulating at dances and raves, and is often used in conjunction with alcohol, which increases the degree of disinhibition and the risk of central nervous system and respiratory depression. GHB has been used to aid sexual assaults on women.

Withdrawal symptoms have been reported after chronic high-dose use.

**Cocaine** *C, coke, snow, nose candy, crack*

Effects resemble those of amphetamines with a shorter duration. The person feels euphoric, energetic, alert; has a rapid heart beat and breathing, dilated pupils, sweating, pallor, and decreased appetite. Large doses can cause severe agitation, paranoid thinking, erratic or violent behaviour, tremors, uncoordination, twitching, hallucinations, headache, pain or pressure in the chest, nausea, blurred vision, fever, muscle spasms, convulsions and death. Impurities in street cocaine may produce a fatal allergic reaction. People may experience depression, extreme tiredness and stuffy nose as a “hangover” from cocaine. The use of “crack” produces immediate and very intense effects.

High-dose, chronic users, who alternate cocaine “binges” with crashes (periods of abstinence) may show mood swings, restlessness, extreme excitability, restlessness, sleep disorders, suspiciousness, hallucinations and delusions, eating disorders, weight loss, constipation and impotence. Characteristic signs of chronic cocaine sniffing are stuffiness and runny nose, chapped nostrils, perforation of nasal septum. Cocaine abuse is also associated with cardiac arrhythmias, myocardial infarctions, strokes, seizures and sudden deaths. People who inject cocaine are at risk for HIV and hepatitis. Heavy use of cocaine by pregnant women is associated with reduced fetal weight and an increased risk of miscarriage, stillbirth, premature birth and malformation. Newborns exposed to cocaine in the uterus may also experience abnormal sleep patterns, poor feeding and irritability for several days or weeks after birth.

Chronic use results in tolerance. Cocaine can produce very powerful psychological dependence leading to extremely compulsive patterns of use. In

particular, the dependency-producing properties of cocaine are believed to be more powerful than any other psychoactive drug. Physical dependence may also develop. Withdrawal symptoms may include fatigue, long but disturbed sleep, strong hunger, irritability, depression, violence.

**Crystal (methamphetamine) and Stimulants** *speed, meth, ice, crank*

Effects include increased alertness and energy, a feeling of well-being, decreased appetite, rapid heart beat and breathing, increased blood pressure, sweating, dilated pupils, and dry mouth. A person may become talkative, restless, excited, feel powerful, superior, aggressive, hostile or behave in a bizarre, repetitive fashion. Very large doses produce flushing, pallor, very rapid or irregular heart beat, tremors, severe paranoia, frightening hallucinations. Death can result from use as a consequence of burst blood vessels in brain, heart failure, very high fever. Other secondary effects include increase in violent behaviour, accidental or otherwise, is the leading cause of amphetamine-related deaths.

Chronic heavy users may develop malnutrition and amphetamine psychosis, a mental illness similar to paranoid schizophrenia. They may be prone to violence. Impurities injected with the drug can block or weaken small blood vessels. Kidney damage, lung problems, stroke or other tissue injury can result. Instances of withdrawal symptoms among newborn infants of mothers using amphetamines have been reported.

Although chronic use results in tolerance to the mood-elevating effects of amphetamines, tolerance does not appear to develop to the beneficial effects in treatment of attention-deficit hyperactivity disorder or narcolepsy. Like cocaine, amphetamines can produce very powerful psychological dependence leading to compulsive patterns of use.

Although major physical signs of withdrawal do not occur after chronic high-dose users abruptly discontinue amphetamine use, they may experience extreme fatigue and prolonged but disturbed sleep, and subsequently, irritability, tiredness and depression.

**Ecstasy (MDMA)** (3,4-methylenedioxy-N-methylamphet-amine) (3,4-methylenedioxy-methamphetamine), *Euphoria, X, XTC, Adam*

A hallucinogen with stimulant properties which can produce feelings of euphoria, pleasure, empathy and sociability, as well as confusion, depression, sleep problems, anxiety, panic attacks, blurred vision, nausea, muscle tension, teeth-clenching, faintness, chills, sweating and increased heart rate and blood pressure. Higher doses produce distortions in perception, thinking and memory, hallucinations and, in some people, anxiety and depression.

Deaths as a result of kidney and/or heart failure due to dehydration or hyperthermia have occurred in the context of raves or dances.

Some animal research indicates repeated use can cause brain damage. Although insufficient research has been carried out, it seems that tolerance to MDA does not develop. Chronic users may become psychologically dependent. MDA is not known to cause physical dependence.

### **Inhalants** (volatile solvents) *sniff*

Effects include feelings of euphoria, light-headedness, exhilaration, vivid fantasies, and sometimes recklessness and feelings of invincibility. Depending on the type of inhalant and method of use, possibly irritation and watering of the eyes, sneezing, coughing and nasal inflammation may occur. Inhalants enter the bloodstream from the lungs and then go to other organs, particularly the brain and liver. Breathing, heart beat and other body functions are slowed down. If the person passes out with a plastic bag over the nose and mouth, death from suffocation can occur. Death can also occur if the person is startled or engages in strenuous activity while intoxicated. There are also situational hazards such as explosions, burns and aspiration of foreign particles or objects into the lungs.

Effects include pallor, fatigue, forgetfulness, inability to think clearly, tremors, poor coordination and difficulty walking, thirst, weight loss, depression, irritability, hostility, and paranoia. Kidney, liver and brain damage may occur. It is not known to what extent the damage is reversible. Simultaneous alcohol consumption may compound the damage. Elevated blood-lead levels and consequent brain damage have been found as a result of chronic sniffing of leaded gasoline.

Regular use induces tolerance, making increased doses necessary to produce the desired effect. Psychological and physical dependence can develop. Withdrawal symptoms include anxiety, depression, irritability, dizziness, tremors, nausea, abdominal pains and headaches.

**LSD**, (Lysergic acid diethylamide) *acid, blotter*

Effects are felt within an hour, and last 2 to 12 hours. Perception intensifies, colours appear brighter, objects more sharply defined or distorted. Possible changes in the perception of time and distance. A person may feel the body as light, heavy or distorted. Thinking and concentration are difficult and short-term memory is impaired. Extreme mood swings, including joy, inspiration, depression, anxiety, terror, aggression can occur. There are no known deaths directly caused by overdose, but drug-induced confusion has caused accidental deaths.

Decreased motivation and interest, or prolonged depression and anxiety. LSD high may spontaneously recur days, weeks or even months later (called "flashback"). Use during pregnancy may be related to increased incidence of spontaneous abortion or fetal abnormality.

After using LSD, user must abstain for several days to regain sensitivity. This tolerance crosses over to mescaline and psilocybin. Chronic users may become psychologically dependent. LSD does not cause physical dependence.

**Psilocybin**, *magic mushrooms, shrooms*

Effects are felt after about half an hour, last several hours, and include sensations of relaxation or fatigue, separation from surroundings, heaviness or lightness. Larger doses produce perceptual distortions, dizziness, abdominal discomfort, numbness of the mouth, nausea, shivering, yawning, flushing and sweating. There are no known deaths directly caused by overdose, but drug-induced hazardous behaviours have occurred in some individuals.

These drugs may precipitate psychosis in vulnerable users.

After using mescaline or psilocybin, user must abstain from both for several days to regain sensitivity. This tolerance crosses over to LSD. Chronic users may become psychologically dependent. Mescaline and psilocybin are not known to cause physical dependence.