

Alcohol Consumption and Consequences in Oregon

Initial Report of Oregon's State Epidemiological Outcomes Workgroup

Prepared by:





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To the reader,

This report is one of three epidemiological profiles on substance use in Oregon. The purpose of the epidemiological profiles is to summarize the nature, magnitude and distribution of alcohol, tobacco, and illicit drug use and related consequences in the State. Each profile is written as a stand-alone document. The appendices include tables that detail trend data for each indicator reviewed by the SEOW.

This report profiles alcohol use and its impact including information on: deaths from alcohol-induced disease and motor vehicle crashes, driving while impaired, underage drinking, binge drinking, heavy alcohol use and use during pregnancy.

The profile reports are the product of collaborative efforts of Oregon's State Epidemiological Outcomes Workgroup (SEOW). The SEOW includes representatives of agencies that supply or use data regarding alcohol, tobacco or other drugs. Members represent federal, state, county and tribal government; research organizations and universities; Governor-appointed committees; and addictions-related professional organizations.

Compilation of the information presented in each profile is one of a series of steps to promote data-driven decision-making for prevention efforts in Oregon. Other epidemiological profiles include:

- Tobacco Consumption & Consequences in Oregon
- Illicit Drug Consumption & Consequences in Oregon
- Alcohol, Tobacco & Illicit Drug Consumption & Consequences, Executive Summary

The Executive Summary highlights findings from all three profiles. All reports can be accessed online at the location noted below.

Information about this publication

Title: Alcohol Consumption and Consequences in Oregon

Publication Date: March 23, 2007

Online Location: This document can be accessed online at
<http://www.oregon.gov/DHS/addiction/resource_center.shtml>

Project Name: Oregon State Epidemiological Outcomes Workgroup

Project Funded by: Substance Abuse & Mental Health Services Administration's Center for Substance Abuse Prevention

Acknowledgments: Many thanks to the workgroup members who provided valuable expertise and data in developing the profiles.

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Introduction

In March 2006, the State of Oregon received funding from the Substance Abuse & Mental Health Services Administration's Center for Substance Abuse Prevention to establish a state epidemiological outcomes workgroup (SEOW). The mission of the SEOW is to facilitate the use of data in policymaking and program decision-making for substance abuse prevention at the state, county, tribal and local community level. The Department of Human Services (DHS) substance abuse prevention programs target people who have not been diagnosed with a substance abuse disorder. Services may target an entire population (Universal Prevention), specific groups of people who are at above-average risk of involvement with alcohol (Selective Prevention), or specific individuals who show signs of involvement with alcohol but who have not been diagnosed with abuse or dependence (Indicated Prevention).

About the profile

The purpose of the alcohol epidemiological profile is to summarize the nature, magnitude and distribution of alcohol use and related consequences in Oregon. Use of alcohol includes use by adults 21 and over, as well as underage alcohol use by adults 18 to 21 years and youth 12 to 17 years.

The information presented in this report is one of a series of steps to promote data-driven decision-making in an ongoing process of assessment, planning, and monitoring at State and community levels. The profile uses statewide data that has been measured consistently for three or more years and is readily available and accessible to the public. This report summarizes state-level findings; future reports will examine demographic and geographic data further.

How the information is organized

In developing the epidemiological profile for alcohol, a selection of indicators about alcohol use and its consequences was examined. These indicators are organized into a set of constructs that provide a picture of alcohol consumption and its impacts across the lifespan. Information about the consequences of alcohol use is presented first, then patterns of alcohol consumption, and finally a summary of what we learned. See Table 1 below.

Appendix A provides additional information about the indicators. State trend data for the alcohol indicators described throughout the report can be found in Appendices B through E.

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Table 1. Alcohol Constructs and Indicators

Construct	Indicator(s)	Data source
Alcohol-related mortality	<ul style="list-style-type: none"> • Number of deaths from chronic liver disease per 100,000 population • Alcohol-induced deaths per 100,000 population • Years of potential life lost, alcohol induced 	Oregon Center for Health Statistics
Motor vehicle crashes	<ul style="list-style-type: none"> • Number of alcohol-related vehicle deaths per 100,000 population • Percent of motor vehicle fatalities involving a drunk driver • Percent of motor vehicle fatalities that were alcohol-related 	Fatality Analysis Reporting System
Dependence or abuse	<ul style="list-style-type: none"> • Persons meeting DSM-IV criteria for alcohol abuse or dependence 	National Survey on Drug Use and Health
Per capita ethanol consumption	<ul style="list-style-type: none"> • Per capita alcohol consumption • Per capita consumption of beer • Per capita consumption of spirits • Per capita consumption of wine 	Alcohol Epidemiologic Data System
Alcohol use, adults and youth	<ul style="list-style-type: none"> • Percent of persons who drank alcohol in the past month • Percent of persons who did binge drinking in the past month • Percent of persons who did heavy drinking in the past month 	National Survey on Drug Use and Health
Drinking and driving	<ul style="list-style-type: none"> • Percent of persons who drove after drinking 	

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Adult alcohol use	<ul style="list-style-type: none"> • Percent of persons who drank alcohol in the past month • Percent of persons who did binge drinking in the past month • Percent of persons who did heavy drinking in the past month 	Oregon Behavioral Risk Factor Surveillance System
Adult drinking and driving	<ul style="list-style-type: none"> • Percent of persons who drove after drinking 	
Age of initial use	<ul style="list-style-type: none"> • Youth who were less than 13 when they drank alcohol for the first time 	Oregon Healthy Teens Survey
Alcohol use by youth	<ul style="list-style-type: none"> • Percent of youth who drank alcohol in the past month • Percent of youth who did binge drinking in the past month 	
Drinking and driving by youth	<ul style="list-style-type: none"> • Youth who drove after drinking • Youth who rode with an adult who had been drinking 	
Alcohol use during pregnancy	<ul style="list-style-type: none"> • Alcohol use during the 3 months before pregnancy • Alcohol use during the last 3 months of pregnancy 	Pregnancy Risk Assessment Monitoring Survey

How the data was assessed

In each profile, the SEOW examines data about preventable consequences first, and then focuses on indicators that have a causal relationship.

Starting with an examination of consequences helps focus the profiles on issues that are meaningful to decision makers and the public. In this way prevention efforts can preferentially target the substance use behaviors that lead to negative consequences.

Whenever indicator data could be disaggregated, the SEOW examined the distribution of substance use and related consequences across the lifespan, and between genders. The profiles use easy to understand approaches in identifying and assessing patterns. Findings are described based on:

- The magnitude or size of the of the problems;
- Changes over time that reveal improving or worsening trends;

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- Comparison of Oregon results to those of the nation and comparison of the direction of Oregon trends to the direction of U.S. trends;
- Differences in the magnitude of consequences and consumption through subgroup analyses based on age and gender; and
- Consequences or consumption patterns that have the potential to more severely impact individuals and society than others.

Alcohol

Alcohol impacts Oregonians of all ages. Although many practice occasional responsible drinking, consumption of alcohol can lead to dependence, abuse, injury and disease.

People who begin to drink at a young age are at much higher risk of developing a problem with alcohol later in life. Researchers found that 45 percent of the people who began drinking before 14 years developed later alcohol dependence, compared with only 10 percent of those who waited until they were 21 or older to start drinking.¹

For those that become dependent on alcohol there is a wide range of recovery, from full abstinence to partial remission. Some people appear to recover from alcoholism without formal treatment. Others may cycle into and out of dependence throughout their lifetime despite repeated attempts to achieve sobriety.²

Alcohol is associated with increased unintentional injuries such as motor-vehicle crashes, falls, drowning, burns and firearm injuries. Alcohol is also known to increase violence and behaviors such as child maltreatment, homicide and suicide.

Excessive drinking in the form of heavy drinking or binge drinking is associated with numerous health problems, including chronic diseases such as liver cirrhosis and various cancers, high blood pressure, and psychological disorders. If a woman drinks while pregnant, it can result in harm to the developing fetus.³

About the consequence indicators

This section examines data for three constructs of the consequences of alcohol use: dependence or abuse, alcohol-related mortality, and motor vehicle crashes. A number of data sources have been used to examine these constructs:

- Abuse and dependence are assessed through the National Survey on Drug Use and Health (NSDUH). NSDUH includes a series of questions to assess the prevalence of alcohol dependence or abuse in the past 12 months. These questions are used to classify persons as dependent on or abusing alcohol based on criteria specified in the

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*Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV).*⁴

- State and national rates of death attributed to alcohol use were obtained using death certificate data. These indicators include deaths from alcohol-related disease. The prevalence of alcohol-related illness is not assessed directly but is much higher than mortality rates.
- The Fatality Analysis Reporting System (FARS) is used to collect information about all motor vehicle crashes that resulted in a death. FARS data allows calculation of alcohol-related vehicle death rates, the percent of motor vehicle fatalities involving a drunk driver, and the percent of fatalities in crashes where alcohol use was involved.

Consequences of Alcohol Use in Oregon

Alcohol dependence or abuse

The National Survey on Drug Use and Health (NSDUH), an annual survey sponsored by the Substance Abuse and Mental Health Services Administration, conducts in-home interviews with civilian, noninstitutionalized persons ages 12 years or older. A respondent was defined with abuse if he or she met one or more of the four criteria for abuse and did not meet the definition for dependence for that substance. A respondent was defined with dependence if he or she met three out of six dependence criteria in DSM-IV.

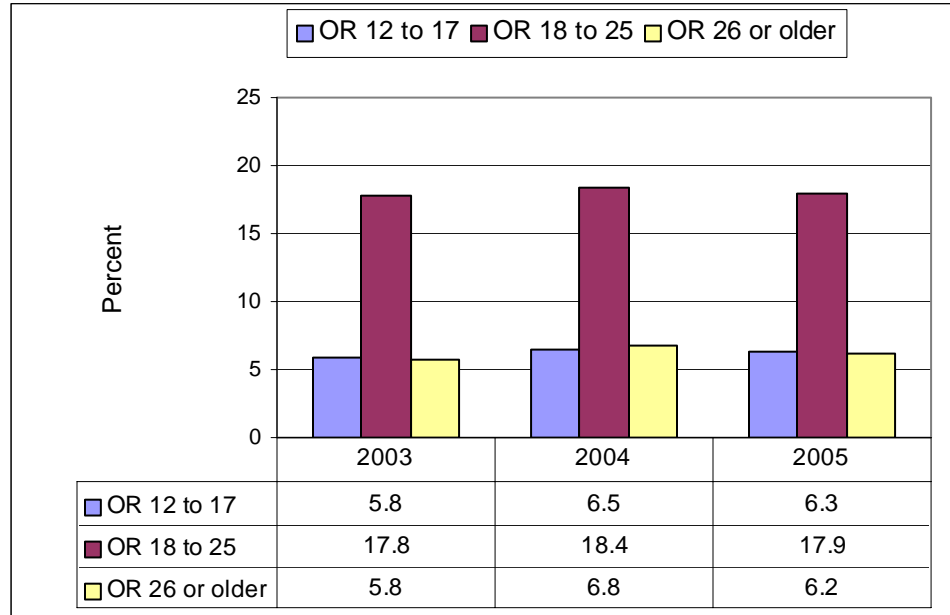
Based on NSDUH results, Oregon's rate of alcohol dependence or abuse for persons 12 or older was 7.7 percent. A look at the rate of past year alcohol abuse or dependence shows 18 to 25 year olds have the highest rates. Based on these estimates:

- More than one out of 20 youth ages 12 to 17 suffers from alcohol abuse or dependence (about 19,000 persons annually);
- For young adults 18 to 25 years old, at least 1 out of 6 meets DSM-IV criteria for alcohol abuse or dependence (about 71,000 persons annually); and
- Approximately 144,000 adults 26 or older abuse or are dependent on alcohol each year. See Figure 1 below.

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Figure 1. Comparison of alcohol abuse or dependence in Oregon, by age – 2003 to 2005



Data Source: National Survey on Drug Use and Health

Alcohol-related mortality

Three key measures were used to assess the overall impact of alcohol on the health of Oregonians, the rate of death due to chronic liver disease, the rate of alcohol-induced death and years of potential life lost due to alcohol-induced deaths.

Deaths due to chronic liver disease

Sustained alcohol consumption is the leading cause of liver cirrhosis, one of the 12 leading causes of death in the United States. The risk of chronic liver disease and cirrhosis is directly related to heavy and long-term consumption of alcohol. Because alcohol-related disease can have a long latency, changes in behavior affecting population mortality might not be apparent for years.⁵

Deaths due to chronic alcoholic liver disease are obtained from death certificates and reported in Oregon's annual mortality reports. See Figure 2 below.

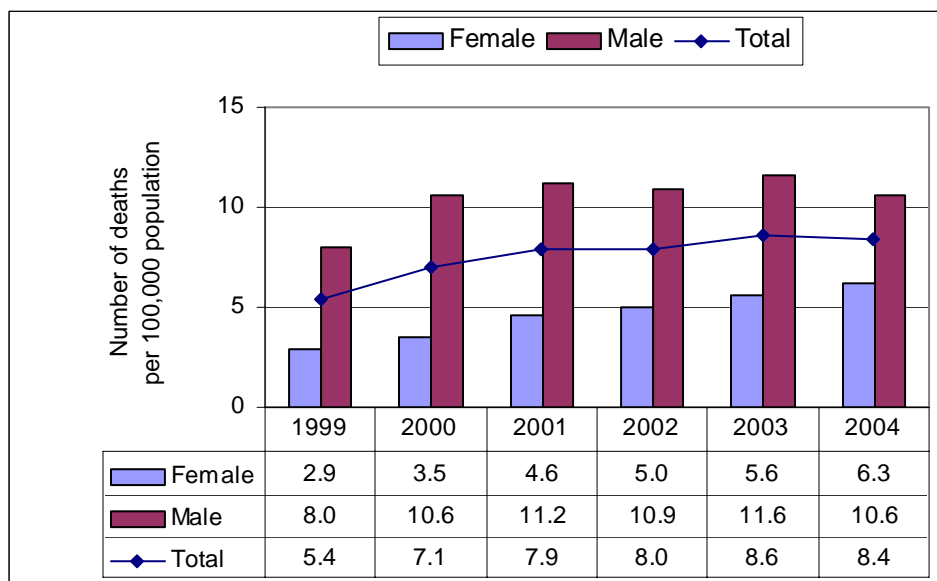
- Since 1999, Oregon's rate of death from chronic alcoholic liver disease has increased 56 percent, from 5.4 deaths per 100,000 in 1999 to 8.4 deaths per 100,000 in 2004.
- The rate of chronic alcoholic liver disease doubled for females (2.9 per 100,000 in 1999; 6.3 per 100,000 in 2004).

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- Males have higher rates of death due to chronic alcoholic liver disease than females. In 2004 the rate for males was 10.6 per 100,000 versus 6.3 per 100,000 for females.

Figure 2. Number of deaths due to chronic alcoholic liver disease per 100,000 population in Oregon - 1999 to 2004



Data Source: Oregon Center for Health Statistics

Alcohol-induced deaths

Rates of alcohol-induced death are reported in Oregon's annual mortality reports. The rate of alcohol-induced deaths includes deaths due to a number of disorders related to alcohol consumption, including, but not limited to: alcoholic mental/behavioral disorders, degeneration of the nervous system, alcoholic cardiomyopathy, gastritis, liver disease, chronic pancreatitis, and accidental or intentional self-poisoning by alcohol.

In 2004, the median age of death for all alcohol-induced deaths was 55 years (53 for women and 56 for men). "Another measure, years of potential life lost (YPLL), helps quantify the social and economic loss owing to death before the age of 65. YPLL is calculated by summing the average time each person would have lived had he or she not died prematurely."⁶

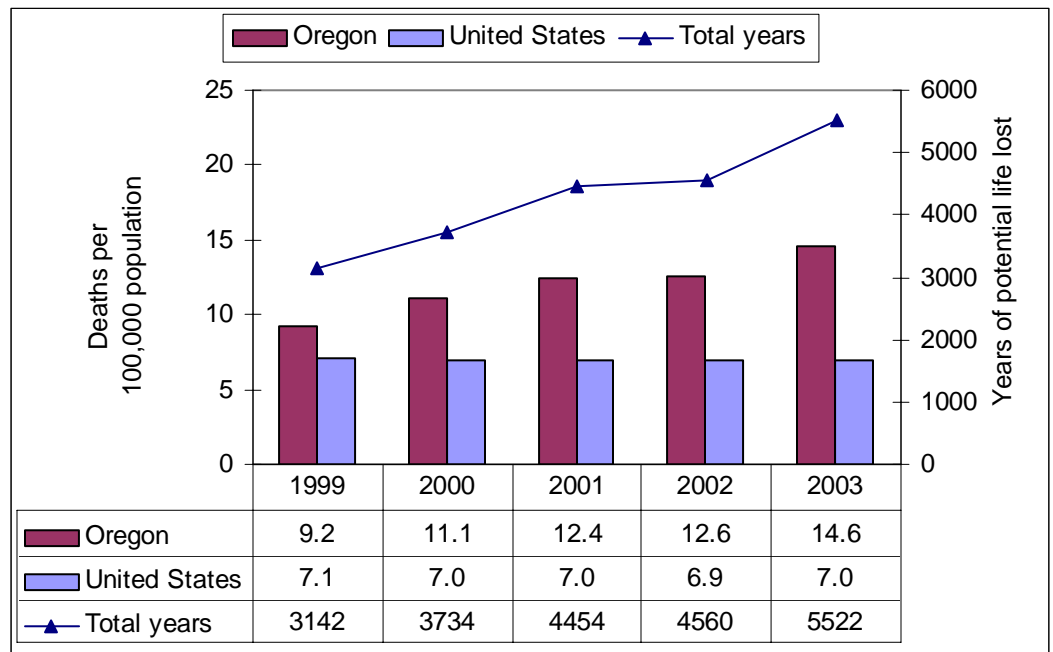
- In a five-year period starting 1999, there was a steadily worsening trend for both the alcohol-induced death rate and YPLL. See Figure 3 below.
- The rate of alcohol-induced deaths climbed more than 50 percent in five years, from 9.2 deaths per 100,000 population in 1999 to 14.2 per 100,000 population in 2004.

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- As the rate of alcohol-induced deaths increased, so did the total years of potential life lost. Since 1999, there was a 75 percent increase in YPLL. In 2004, alcohol-induced deaths resulted in an average loss of 10.4 years of life lost before age 65 per person. Statewide a total of 5,486 years of life before age 65 were lost due to premature deaths from alcohol-induced diseases.⁷
- More than twice as many males die from alcohol-induced deaths as females every year (20.0 versus 8.6 per 100,000 in 2003).
- Based on age-adjusted death rates, Oregon was ranked fourth in the nation for alcohol-induced deaths (7.0 per 100,000 in the U.S. versus 14.6 per 100,000 in Oregon). Alcohol-induced deaths are the:
 - Third leading cause of death for men 55 to 64 years;
 - Fourth leading cause of death for men and women 45 to 54 years; and
 - Fifth leading cause of death for men and women 35 to 44 years and women 55 to 64 years.

Figure 3. Number of alcohol-related deaths and years of productive life lost in Oregon– 1999 to 2003



Data Source: Oregon Center for Health Statistics

Motor vehicle crashes

Oregon reports information about all fatal motor vehicle crashes in the Fatal Accident Reporting System (FARS). Three measures are used to examine alcohol involvement in motor vehicle fatalities based on FARS

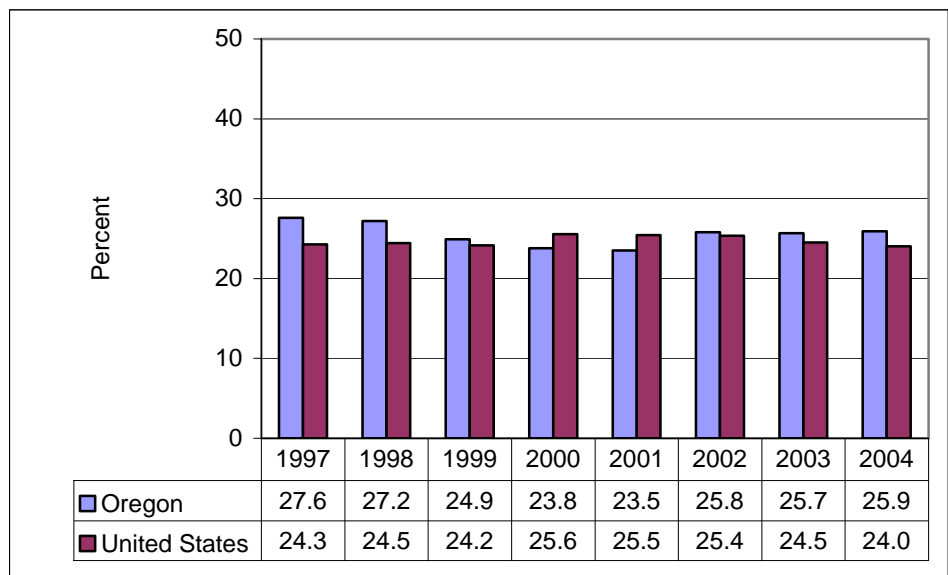
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data: the number of alcohol-related motor vehicle fatalities per 100,000 population; the percent of motor vehicle fatalities that involved a drunk driver; and the percent of motor vehicle fatalities in which at least one driver, pedestrian, or cyclist had been drinking alcohol.

- From 1997 to 2005 the number of alcohol-related motor vehicle fatalities decreased from 7.0 to 4.5 per 100,000 population. This is consistent with a decline in total motor vehicle fatalities during the same time period.
- The percent of motor vehicle fatalities that involve drunk drivers has changed little over the past decade. About one of every four motor vehicle fatalities in Oregon involved a drunk driver, that is the driver's blood alcohol concentration was .08 or greater. Oregon's rate of motor vehicle fatalities involving drunk drivers has been slightly higher than that of the United State since 2002. See Figure 4 below.

Figure 4. Percent of motor vehicle fatalities that involved a drunk driver in Oregon and the United States – 1997 to 2004



Data Source: Fatal Accident Reporting System

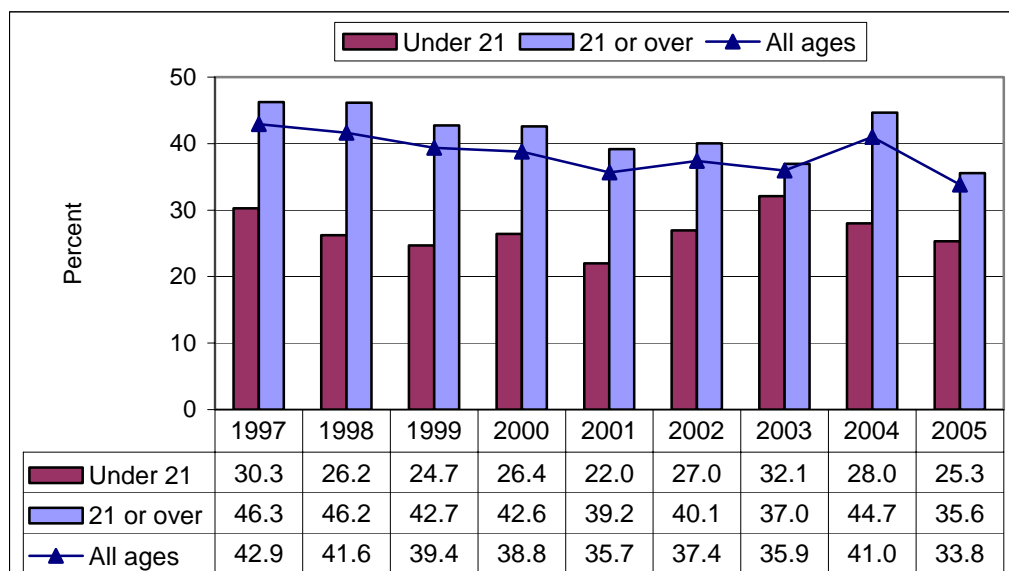
- A look at the percent of motor vehicle fatalities that involved at least one driver, pedestrian, or cyclist who had been drinking shows alcohol is involved in a greater portion of fatalities. In 2005, 33.8 percent of all motor vehicle fatalities were alcohol-involved, versus 25.9 percent of the motor vehicle fatalities that involved a driver who was legally drunk.
- The percent of alcohol-involved motor vehicle fatalities decreased 21 percent, from 42.9 percent in 1997 to 33.8 percent in 2005. See Figure 5 below.

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- In 2005 the percent of alcohol-involved motor vehicle fatalities was 41 percent higher for adults 21 and over than for persons under 21.

Figure 5. Percent of motor vehicle fatalities that were alcohol-involved in Oregon, by age – 1997 to 2005



Data Source: Fatal Accident Reporting System

Alcohol Consumption in Oregon

Multiple data sources were used to examine alcohol use in Oregon. The measures that are presented examine alcohol use by adults 21 or older, underage adults (18 to 20 years), youth, males, females and females during pregnancy.

- The National Survey on Drug Use and Health conducts annual in home interviews with civilian, noninstitutionalized persons 12 years or older. The results provide prevalence of any drinking in the past month, binge drinking and heavy drinking
- Oregon’s Behavioral Risk Factor Surveillance System collects information from adults 18 or older through phone interviews. This information is used to estimate the percent of adults who participate in different levels of alcohol consumption and driving while impaired.
- The Oregon Healthy Teens Survey is a voluntary pencil and paper survey administered to 8th and 11th grade students in schools across the state. This survey provides information about past month alcohol use, age of initial use of alcohol, and driving while impaired.
- The Pregnancy Risk Assessment Monitoring Survey provides information about the percent of women who drank alcohol in the

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three months before pregnancy and during the last three months of pregnancy.

Per capita alcohol consumption

Alcohol is the most widely used addictive substance in Oregon. Compared to the United States, Oregonians consume slightly more alcohol per capita. In 2003 approximately 77,369 gallons of beer; 10,558 gallons of wine; and 4,832 gallons of spirits were sold.⁸

Alcohol use, 12 years or older

The National Survey on Drug Use and Health (NSDUH) collects information regarding alcohol use for individuals 12 years and older. In 2005, Oregon's rate of current alcohol use was higher than the nation's. However, rates of binge drinking and heavy drinking were comparable to those of the United States. See Table 2 below.

Table 2. Percent of persons 12 or older who were current users, binge drinkers, or heavy users of alcohol, in Oregon and the United States – 2005

	Current Use	Binge Drinking	Heavy Users
United States	51.1%	20.7%	3.4%
Oregon (95% confidence interval)	56.6% (53.4-59.8)	22.7% (18.5-23.1)	3.7% (3.0-4.5)

Data Source: National Survey on Drug Use and Health

Based on the NSDUH survey estimates from 2003 to 2005:

- Each year, the rate of current alcohol use has risen in Oregon. More than half of Oregon's adults report drinking alcohol on one or more occasions in the past month.
- At least one of five Oregonians 12 or older, reports binge drinking in the past month. These individuals had five or more drinks on one occasion, that is, at the same time or within a couple of hours of each other.
- Heavy users of alcohol include persons who had five or more drinks on the same occasion on five or more days in the past month. The rate of heavy alcohol use has remained steady from 2003 to 2005, at 3.3 to 3.4 percent.

Adult alcohol use

The Oregon Behavioral Risk Factor Survey (BRFSS) contains a series of questions regarding alcohol use. This section reviews data on four indicators:

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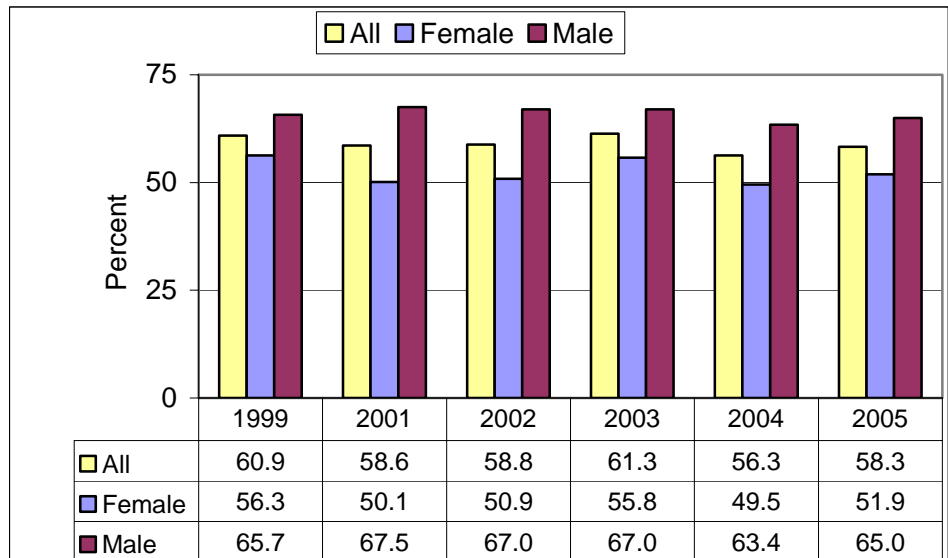
- Current (past month) alcohol use;
- Current binge drinking;
- Heavy alcohol use; and
- Driving while impaired.

Current alcohol use

The Oregon Behavioral Risk Factor Survey defines current alcohol use individuals who had one or more drinks of alcohol in the past 30 days (includes binge and heavy use). A drink can be a can or bottle of beer, a glass of wine or a wine cooler, a shot of liquor, or a mixed drink with liquor in it. Examination of data from the BRFSS, show that more than half of the adults in Oregon drink alcohol each month. See Figure 6 below.

- Current alcohol use is consistently higher for males. In 2005, the rate of current alcohol use was 25 percent higher for males than females (65.0% versus 51.9%)

Figure 6. Past month alcohol use in Oregon, by gender - 1999 to 2005



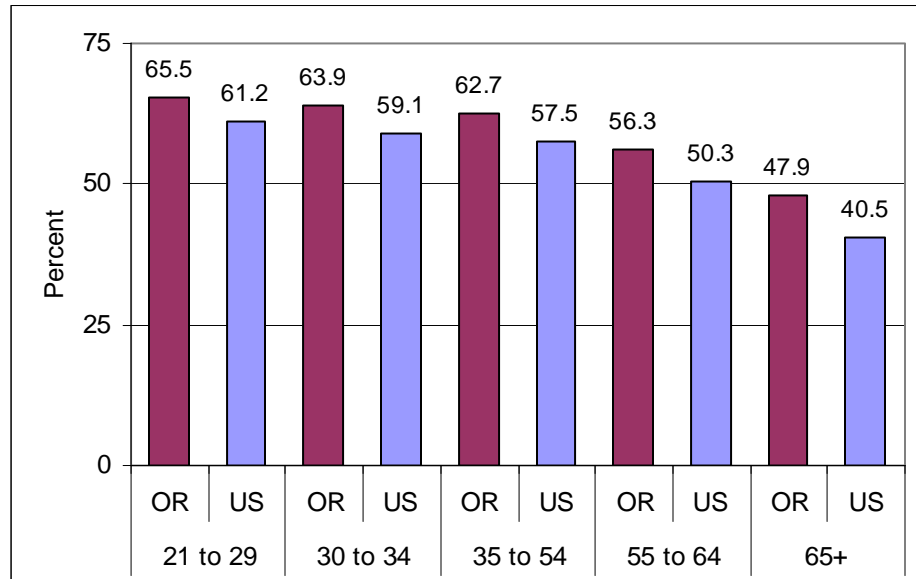
Data Source: Behavioral Risk Factor Surveillance System

- In 2005, Oregonians of all ages had higher rates of current alcohol use than the nation. About two thirds of 21 to 54 year olds drank alcohol on one or more occasions each month. Only adults 65 or older had past month alcohol use rates below 50 percent. See Figure 7 below.

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Figure 7. Past month alcohol use in Oregon and the United States, by age – 2005



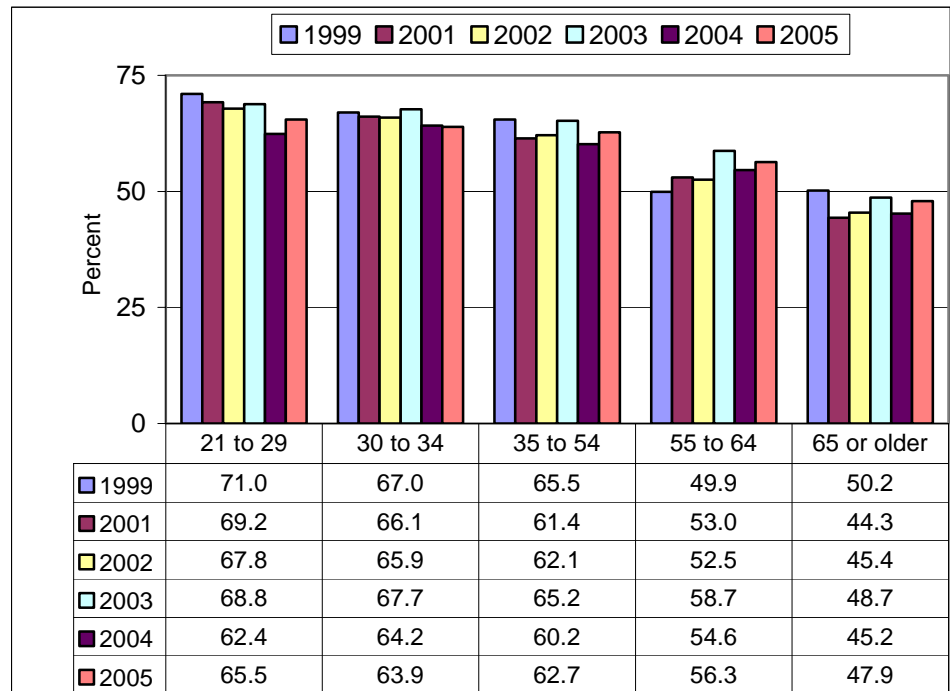
Data Source: Behavioral Risk Factor Surveillance System

- From 1999 through 2005, alcohol use rates remained fairly steady for most age categories. The two exceptions were 21 to 29 year olds and 55 to 64 year olds. See Figure 8 below.
 - Current alcohol use rates for 21 to 29 year olds declined 7.7 percent from 71.0 percent in 1999 to 65.5 percent in 2005.
 - Over the same period, past month alcohol use rates increased 12.8 percent for 55 to 64 year olds, from 49.9 percent in 1999 to 56.3 percent in 2005.

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Figure 8. Past month alcohol use in Oregon, by age - 1999 to 2005



Data Source: Behavioral Risk Factor Surveillance System

Current binge drinking

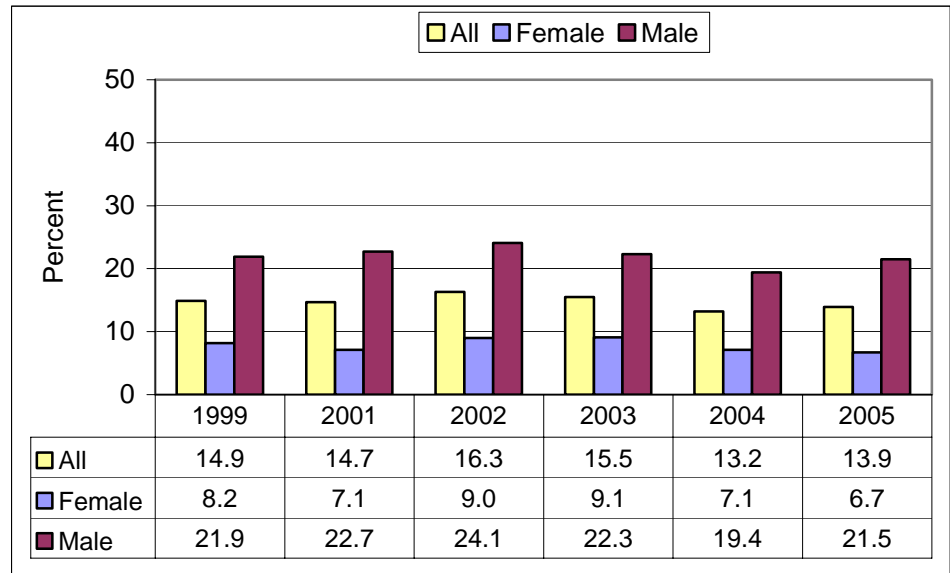
The Oregon Behavioral Risk Factor Survey defines current binge use of alcohol as individuals who drank five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least one day in the past 30 days. BRFSS trend data show binge drinking is strongly correlated with both gender and age.

- One in five adult males report binge drinking at least once each month.
- From 1999 through 2005, adult males were two to three times more likely to report drinking 5 or more drinks on one occasion in the past month than females. In 2005, the rate of binge alcohol use was 21.5 percent for males versus 6.7 percent for females. See Figure 9 below.

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Figure 9. Past month binge alcohol use in Oregon, by gender - 1999 to 2005



Data Source: Behavioral Risk Factor Surveillance System

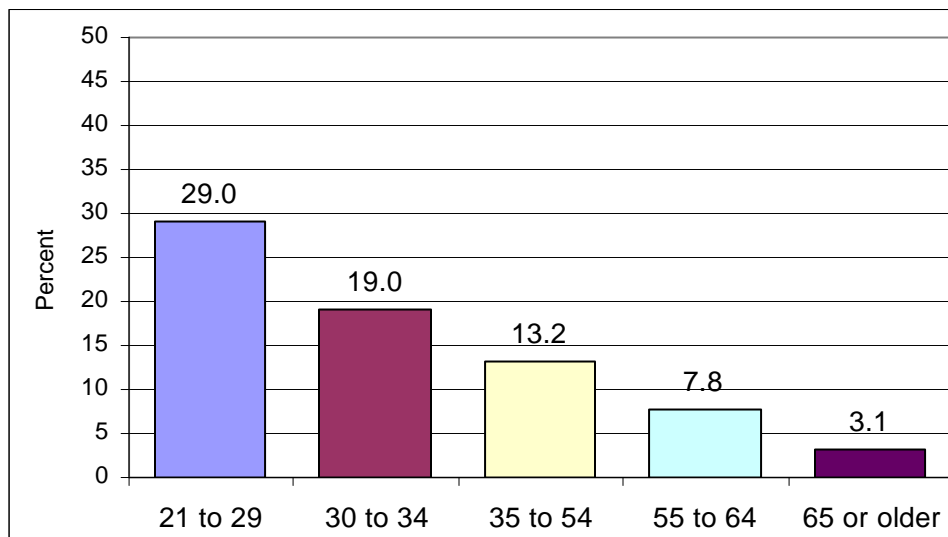
Rates of binge alcohol use decrease steadily with age. See Figure 10 below.

- In 2005, more than one of every four 21 to 29 year olds reports binge drinking in the past month.
- The rate of binge alcohol use for 30 to 34 year olds was two thirds that of 21 to 29 year olds (19.0 percent versus 29.0 percent).
- The rate for 35 to 54 year olds was less than half the 21 to 29 year old rate (13.2 percent versus 29.0 percent).
- For 55 to 64 year olds, the binge rate was less than one third the rate for 21 to 29 year olds (7.8 percent versus 29.0 percent).
- Those 65 or older had binge use rates that were about a tenth the rate of 21 to 29 year olds (3.1 percent versus 29.0 percent).

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Figure 10. Past month binge alcohol use in Oregon and the United States, by age - 2005



Data Source: Behavioral Risk Factor Surveillance System

- Despite the fact that 21 to 29 year olds were most likely to report binge drinking in the past month, in the six-year period from 1999 to 2005, the rates of binge drinking for this age group decreased nearly 15 percent. Binge drinking rates also declined for 35 to 54 year olds. However rates of binge alcohol use increased 13 to 19 percent for all other age categories. See Table 3 below.

Table 3. Changes in rates of binge alcohol use, by age category – 1999 to 2005

Age category	1999	2005	Net change	Percent change
21 to 29 years	34.2%	29.0%	-5.2	-14.8%
30 to 34 years	17.1%	20.0%	+2.9	+17.0%
35 to 54 years	14.2%	13.2%	-1.0	-7.0%
55 to 64 years	6.9%	7.8%	+0.9	+13.0%
65 or older	2.6%	3.1%	+0.5	+19.2%

Data Source: Behavioral Risk Factor Surveillance System

Heavy alcohol use

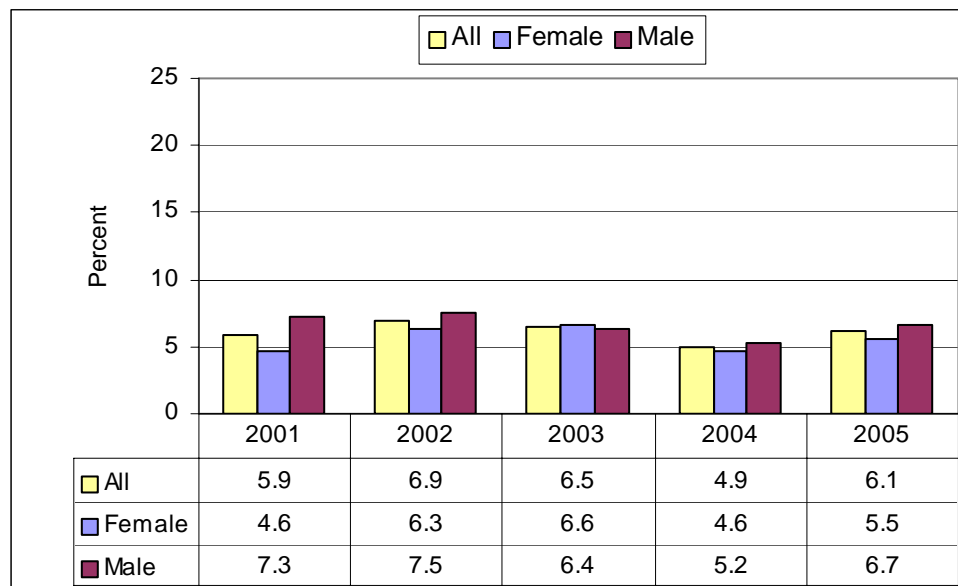
The Oregon Behavioral Risk Factor Survey defines heavy alcohol based on gender. Males who averaged more than two drinks per day in the past month, and females who averaged more than one drink per day in the past month are considered heavy drinkers.

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- More than one of every 20 Oregon adults is a heavy drinker. Data on heavy alcohol use in Oregon shows that males and adults 21 to 29 years old are more likely to be heavy users of alcohol.
- From 2001 through 2005, heavy alcohol use rates for adult males were about 20 percent higher than the rate for females. In 2005, the rate of heavy alcohol use was 6.7 percent for males and 5.5 percent for females. See Figure 11 below.

Figure 11. Comparison of heavy alcohol use in Oregon, by gender - 2001 to 2005



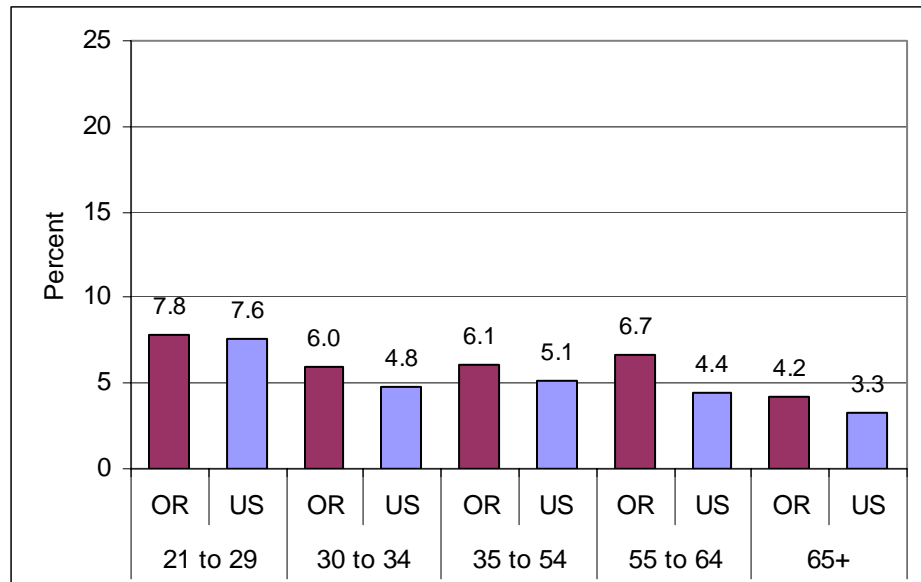
Data Source: Behavioral Risk Factor Surveillance System

- In 2005, Oregon adults of all ages reported higher rates of heavy alcohol use than the nation. See Figure 12 below.
 - Rates of heavy alcohol use are highest for 21 to 29 year olds, 7.8 percent in 2005.
 - The rate for 35 to 64 year olds is somewhat lower, ranging from 6.0 to 6.7 percent.
 - Heavy alcohol use for those 65 or older was lower than the rate of adults less than 65. In 2005, 4.2 percent of those 65 or older reported heavy alcohol use in the past month.

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Figure 12. Heavy alcohol use in Oregon and the United States – 2005



Data Source: Behavioral Risk Factor Surveillance System

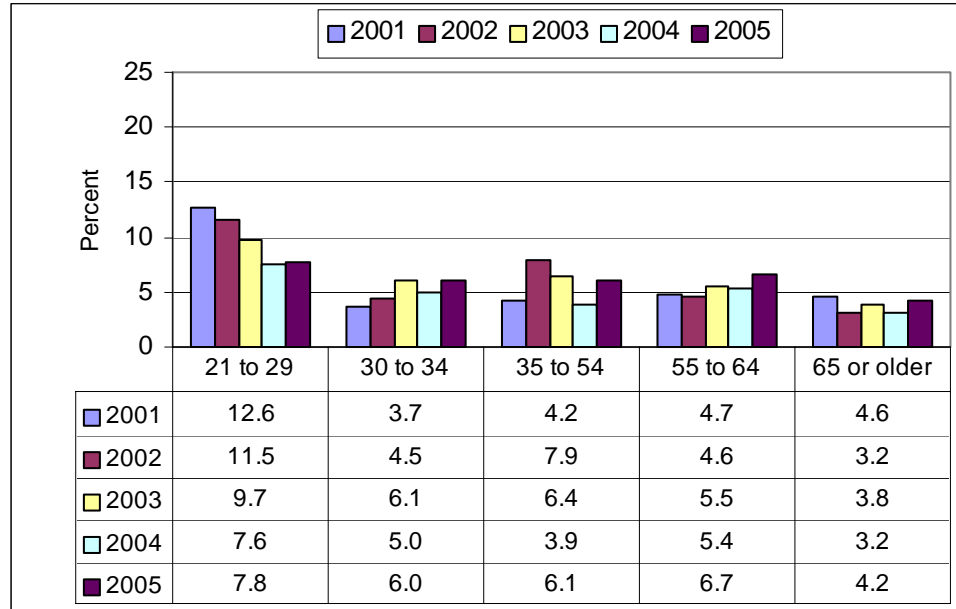
From 2001 through 2005, adult rates of heavy drinking have changed little overall. However there have been distinct trends among specific age categories. See Figure 13 below.

- The rate of heavy drinking among 21 to 29 year olds decreased 38 percent from 12.6 percent in 2001 to 7.8 percent in 2005.
- There was a steady increase in past month heavy alcohol use for 30 to 34 year olds and 55 to 64 year olds.
 - The rate of heavy alcohol use increased 63 percent for 30 to 34 year olds, from 3.7 percent in 2001 to 6.0 percent in 2005.
 - Heavy alcohol use increased 43 percent for 55 to 64 year olds, from 4.7 percent in 2001 to 6.7 percent in 2005.

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Figure 13. Comparison of past month heavy alcohol use in Oregon, by age - 2001 to 2005



Data Source: Behavioral Risk Factor Surveillance System

Driving while impaired

The Oregon Behavioral Risk Factor Survey assesses the percent of adults who drove while impaired by asking how many days in the past month the person drove after perhaps having too much to drink. Patterns of driving while impaired have changed little since 1999.

- In 2004, 2.0 percent of the adults surveyed reported that sometime in the past month they drove after perhaps drinking too much. Males were three times more likely to report driving while impaired than females (3.0% versus 1.0%).
- Based on 2004 results, the likelihood of driving while impaired decreased with increasing age, from a high of 4.7 percent for 21 to 29 year olds, to a low of 0.3 percent for adults 65 or older.

Alcohol use during pregnancy

The Pregnancy Risk Assessment Monitoring Survey is distributed annually to a sample of women who had a child in the previous year. Results of two survey measures provide information about alcohol consumption in the three months preceding pregnancy as well as during the last three months of pregnancy. Alcohol use early in pregnancy can lead to fetal alcohol syndrome, the leading known cause of mental retardation in the United States. Although binge alcohol use and heavy

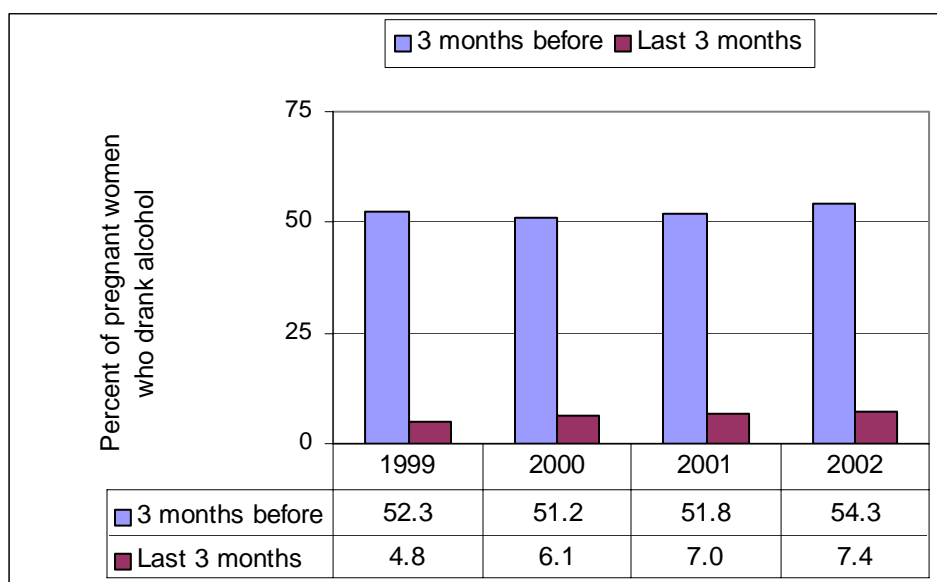
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alcohol use are most often associated with fetal alcohol syndrome, any alcohol use during critical stages of fetal development carries the risk of developing fetal alcohol syndrome.

- From 1999 through 2002, over half of the women surveyed through PRAMS report drinking alcohol in the three months preceding their pregnancy. Women who drink alcohol until they become aware of the pregnancy put the fetus at increased risk of alcohol affects.
- As pregnancies progresses, alcohol use drops. In the last trimester of pregnancy, less than one in ten women reported drinking alcohol. However, the rate of alcohol consumption reported in the last three months increased each year from 1999 through 2002. See Figure 14 below.

Figure 14 Alcohol use in the three months before pregnancy and the during the last three months of pregnancy in Oregon – 1999 to 2002



Data Source: Pregnancy Risk Assessment Monitoring System

Underage drinking

Studies have determined that a delay in drinking until age 21 substantially reduces the risk of experiencing alcohol-related problems.⁹ Despite the fact that the National Minimum Drinking Age Law prohibits persons less than 21 years of age from purchasing alcohol, a substantial portion of Oregon youth and adults 18 to 20 years of age, consume alcohol each month.

Underage drinking was assessed by examining drinking in two steps:

- Alcohol use by underage adults 18 to 20 years was examined using the Behavioral Risk Factor Survey results.

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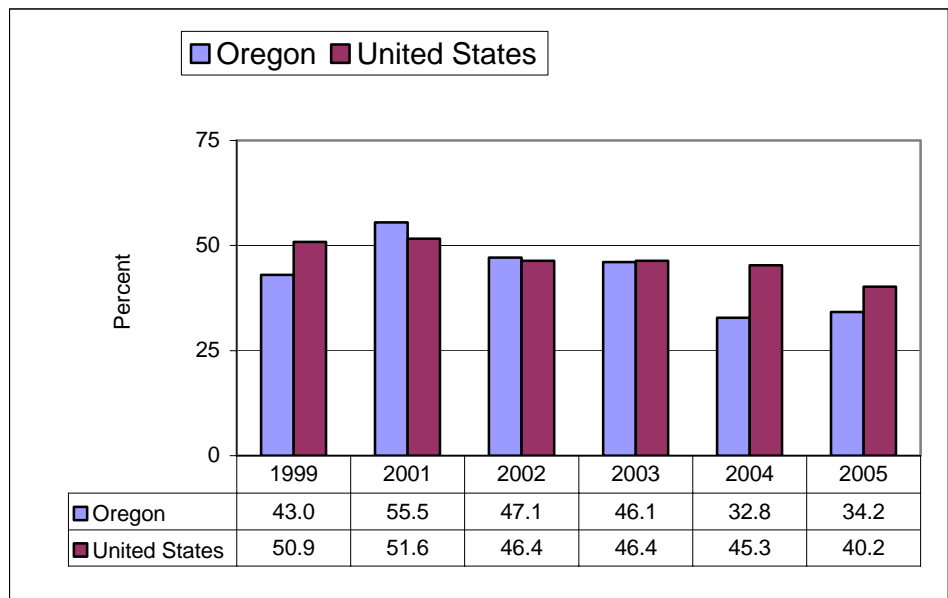
- The Oregon Healthy Teens Survey provides information about alcohol use by 8th and 11th grade youth.

Current alcohol use by 18 to 20 year olds

The Oregon Behavioral Risk Factor Survey defines current alcohol use as individuals who had one or more drinks of alcohol in the past 30 days (includes binge and heavy use). A drink can be a can or bottle of beer, a glass of wine or a wine cooler, a shot of liquor, or a mixed drink with liquor in it.

- Based on Behavioral Risk Factor Survey (BRFSS) data from 1999 to 2005, the rate of past month alcohol use peaked in 2001 at 55.5 percent, then decreased to 32.8 percent in 2004. See Figure 15 below.
- In 2005, one of every three 18 to 20 year olds drank alcohol on at least one occasion in the past 30 days. Oregon’s current alcohol use rate was 15 percent lower than that of the United States (34.2% versus 40.2%).

Figure 15. Current alcohol use by 18 to 20 year olds in Oregon and the United States – 1999 to 2005



Data Source: Behavioral Risk Factor Surveillance System

Current binge drinking by 18 to 20 year olds

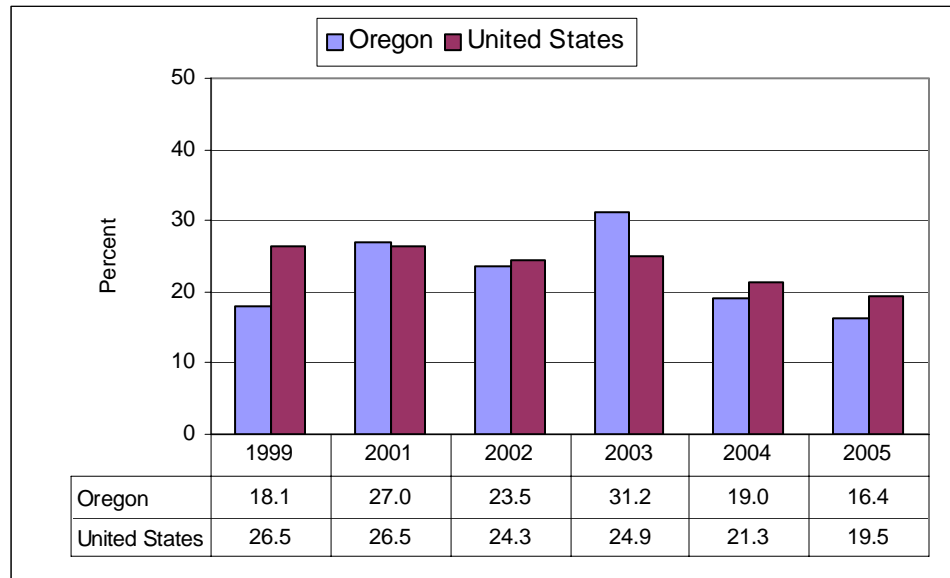
The Oregon Behavioral Risk Factor Survey defines current binge use of alcohol as individuals who drank five or more drinks on the same occasion (i.e., at the same time or within a couple of hours of each other) on at least one day in the past 30 days. BRFSS trend data show binge drinking is strongly correlated with both gender and age.

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- From 2003 to 2005, the past month rates of binge drinking decreased each year. In 2005, Oregon’s rates were the lowest since 1999 and lower than national rates. See Figure 16 below.
- In 2005, the rate of past month binge drinking for 18 to 20 year olds was 16.4 percent in Oregon versus 19.5 percent in the United States.

Figure 16. Current binge drinking rate by 18 to 20 year olds in Oregon and the United States – 1999-2005



Data Source: Behavioral Risk Factor Surveillance System

Current heavy drinking by 18 to 20 year olds

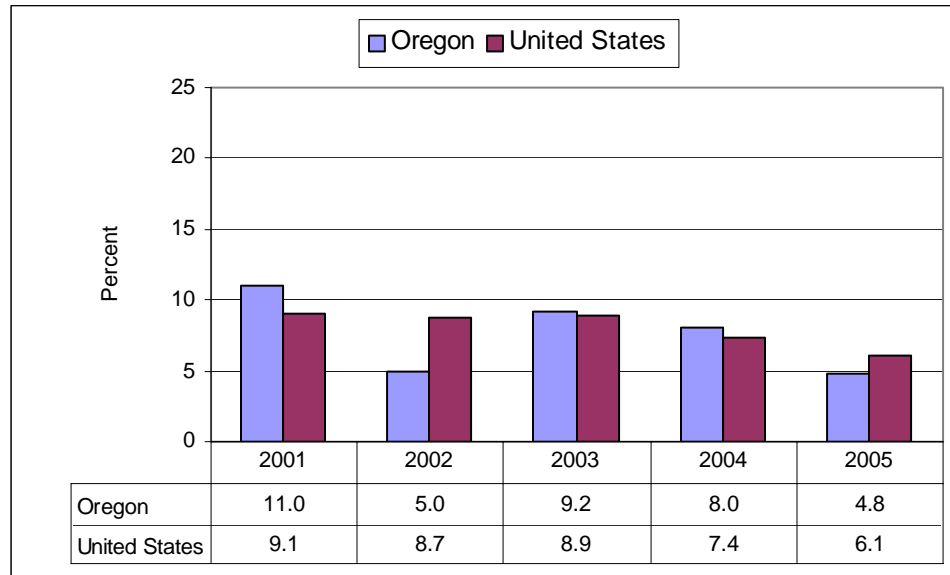
The Oregon Behavioral Risk Factor Survey defines heavy alcohol use based on gender. Males who averaged more than two drinks per day in the past month, and females who averaged more than one drink per day in the past month are considered heavy drinkers.

- From 2003 to 2005, the past month rates of heavy drinking decreased each year. In 2005, Oregon’s rates were the lowest since 1999 and lower than national rates. See Figure 17 below.
- Heavy alcohol use by 18 to 20 year olds was 4.8 percent in Oregon versus 6.1 percent in the United States.

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Figure 17. Current heavy alcohol use by 18 to 20 year olds in Oregon – 1999-2005



Data Source: Behavioral Risk Factor Surveillance System

Alcohol consumption by youth

The Oregon Healthy Teens (OHT) survey contains a series of questions regarding alcohol use. This section presents OHT results about middle school and high school alcohol use including:

- Information about age of initial alcohol consumption;
- Past month alcohol use;
- Past month binge drinking; and
- Driving while impaired.

Middle school students are surveyed in the 8th grade. This report compares Oregon's results to national 8th grade data from the Monitoring the Future Survey. High school students are surveyed in the 11th grade and state results are compared to 11th grade national Youth Risk Behavior Surveillance System results.

Age of initial use

The Oregon Healthy Teens survey reports the percent of 11th grade students who first drank alcohol before 13 years of age as an indicator of very early alcohol use.

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- Between 1999 and 2006 the percent of 11th grade youth who first drank alcohol before 13 years of age declined, from 24.3 percent in 1999 to 20.1 percent in 2006.
- Males were more likely to report alcohol use before 13 than females (24.6% versus 15.4% in 2006).

Current alcohol use by youth

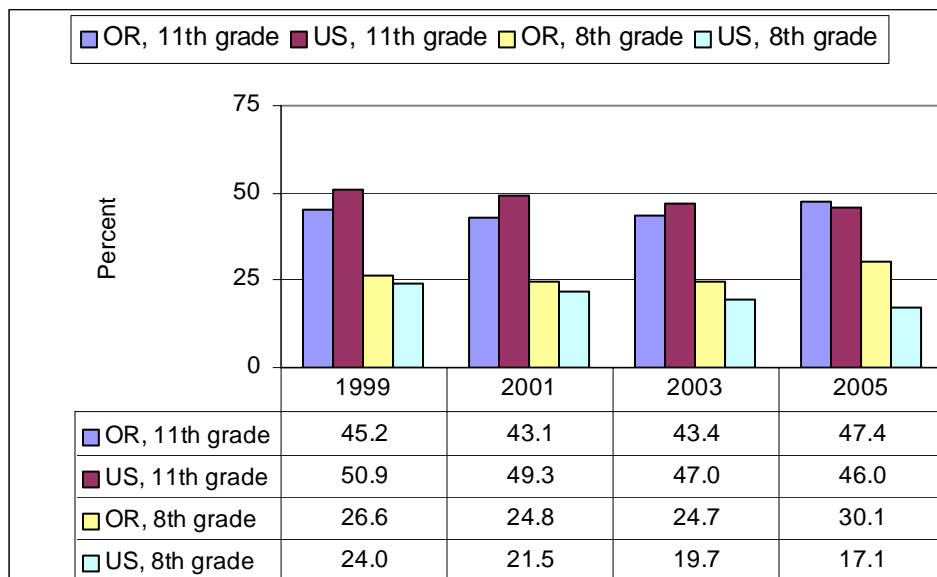
Trends in past month alcohol use in Oregon are not following national trends. Nationally, the Youth Risk Behavior Surveillance System has shown an 8 percent decrease in past month alcohol use by 11th grade students in the six-year period from 1999 to 2005 (50.9% versus 46.0%). The Monitoring the Future Survey reveals a 29 percent decrease in the rate of past month alcohol use by 8th grade students nationwide (24.0% versus 17.1%). See Figure 18 below.

- In Oregon, the percent of 8th grade youth who report drinking alcohol on one or more occasion increased from 26.6 percent in 1999 to 30.1 percent in 2005.
 - In 2005, the rate of past month alcohol use by Oregon's 8th grade youth was 76 percent higher than that of the United States (30.1% versus 17.1%)
 - Results from the 2006 OHT show the increase continuing, 31.9 percent reporting drinking alcohol on one or more occasion in the past month.
 - Females experienced the greatest increase. In 1999 the rate of past month alcohol use was 26.4 percent, in 2006 the rate increased to 33.9 percent.
 - For 8th grade males the rates went from 26.8 percent in 1999 to 29.9 percent in 2006.
- The rate of past month alcohol use by 11th grade students went from 45.2 percent in 1999 to 47.4 percent in 2005. However, in 2006 OHT results showed a decline with 43.9 percent reporting current alcohol use.

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Figure 18. Current alcohol use by youth in Oregon and the United States – 1999 to 2005



Data Source: Oregon Healthy Teens Survey, Youth Risk Behavior Surveillance System, Monitoring the Future

Current binge drinking by youth

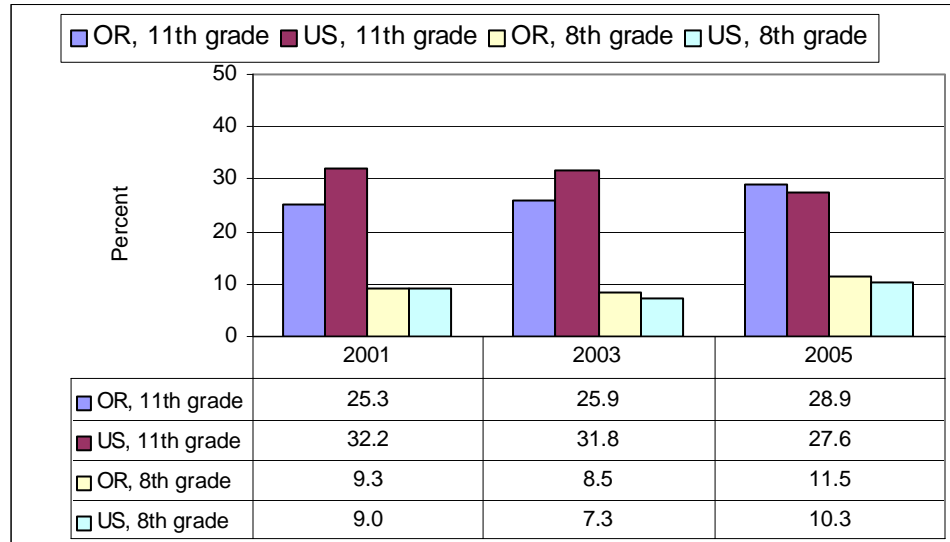
The Oregon Healthy Teen Survey defines current binge drinking as youth who had five or more drinks within a couple hours, on one or more occasions in the past month.

- In 2005, for the first the time, the rate of binge drinking by 11th grade youth in Oregon surpassed the national rate (28.9% versus 27.5%). Binge alcohol use increased from 25.3 percent in 2001 to 28.9 percent in 2005. See Figure 19 below.
- The most recent OHT results show an increase in 8th grade binge drinking from 11.5 percent in 2005 to 13.3 percent in 2006; but a decline in 11th grade binge alcohol use from 28.9 percent in 2005 to 24.9 percent in 2006.
- More than one of every four 11th grade youth and one of every ten 8th grade youth in Oregon report binge alcohol use in 2006.
- From 2004 through 2006, 8th grade females reported higher rates of binge alcohol use. In 2006, 14.0 percent of the females and 12.5 percent of the males reported binge drinking on one or more occasions in the past month.
- In 11th grade males were more likely to binge drink, with 27.1 percent of 11th grade males and 22.8 percent of 11th grade females reporting past month binge drinking in 2006.

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Figure 19. Current binge alcohol use rate by youth in Oregon and the United States – 2001 to 2005



Data Source: Oregon Healthy Teens Survey, Youth Risk Behavior Surveillance System, Monitoring the Future

Driving while impaired

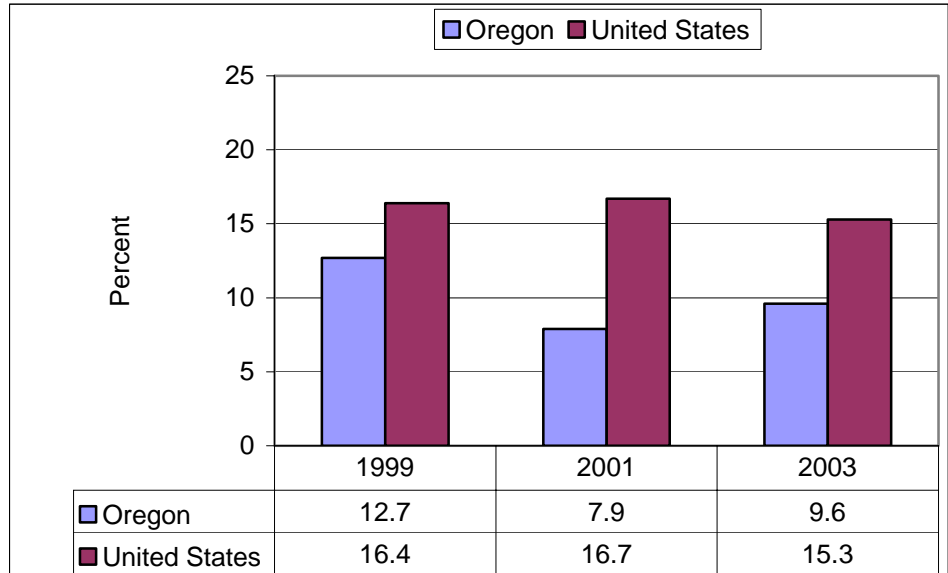
The Oregon Healthy Teen survey asks a series of questions about driving after drinking alcohol. The question about riding with a parent or other adult who had been drinking alcohol is examined for 8th grade students and for 11th grade students the results for the question about driving after drinking alcohol is used.

- OHT results showed an increase in the percent of 8th grade students who say they rode in a car with a parent or adult who had been drinking alcohol (14.6% in 2001 versus 16.6% in 2005).
- For 11th grade youth, OHT showed lower rates of driving after drinking alcohol than the nation. See Figure 20 below.
- In 2006, 8.2 percent of 11th grade youth reported driving after drinking alcohol. Males reported slightly higher rates of driving while impaired than females (8.7% versus 7.7%).

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Figure 20. Percent of 11th grade youth who report driving after drinking alcohol in Oregon and the United States – 1999 to 2003



Data Source: Oregon Healthy Teens Survey, Youth Risk Behavior Surveillance System

What we learned about alcohol

Alcohol is the most widely used addictive substance in Oregon. Oregonians consume more alcohol per capita than the nation. Adults over 21 also exhibit higher rates of current alcohol use and heavy drinking. Excessive drinking in the form of heavy drinking or binge drinking is associated with numerous health problems, including chronic diseases such as liver cirrhosis and various cancers, high blood pressure, and psychological disorders. Oregonians have higher rates of death from alcohol-related disease.

America's youth had declining rates of alcohol use in the past few years. Unfortunately, Oregon's youth have not experienced these declines in alcohol use. The most troubling trends in Oregon have been the increases in alcohol use by 8th grade youth.

Research has shown that youth who use alcohol before age 15 are four times more likely to become alcohol dependent than adults who begin drinking at age 21. Other consequences of alcohol use by youth include increased risky sexual behaviors, poor school performance, and increased risk of suicide and homicide.

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Consequences of alcohol use in Oregon

Alcohol-induced deaths are one of the top five leading causes of death for adults 35 to 64 years.

- The rate of alcohol-induced deaths climbed more than 50 percent in five years, from 9.2 deaths per 100,000 persons in 1999 to 14.2 deaths per 100,000 persons in 2004.
- More than twice as many males die from alcohol-induced deaths as females every year (8.6 females per 100,000 vs. 20.0 males per 100,000).
- Based on age-adjusted death rates, Oregon ranked fourth in the nation for alcohol-induced deaths (7.0 deaths per 100,000 for the U.S.; 13.5 deaths per 100,000 for Oregon).
- In 2004, the life expectancy for Oregonians was 78 years (80 years for women; 76 years for men). For persons dying of alcohol-induced deaths, the median age of death was 55 years (53 for women; 56 for men).

A look at the rate of past year alcohol abuse or dependence shows:

- More than one out of 20 youth ages 12 to 17 suffers from alcohol abuse or dependence (about 19,000 persons annually);
- For young adults 18 to 25 years old, at least 1 out of 6 meets DSM-IV criteria for alcohol abuse or dependence (about 71,000 persons annually); and
- Approximately 144,000 adults 26 or older abuse or are dependent on alcohol each year.

Data regarding drinking and driving yields mixed results, with the biggest improvements being made by high school students.

- Since 1997 there's been a steady decline in the percent of 11th grade students who report driving a car after they had been drinking alcohol (13.6% in 1997; 8.2% in 2006). The decrease has been largest for boys (15.7% in 1997; 8.7% in 2006).
- In 2006 11th grade students in Oregon had considerably lower rates of driving after drinking alcohol than the US average (8.2% vs. 12.1%).
- Adult patterns of drinking and driving in Oregon have not changed significantly since the mid 90's. In 2004, 3.5 percent of Oregon adults reported that sometime in the past month they drove after perhaps drinking too much. Men were twice as likely to report drinking and driving as women (4.7% vs. 2.1%). Ten percent of adults 18 to 24 years reported they drove after drinking (11.8% for males; 7.1% for females).

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- In the past ten years the fatal motor vehicle crash rate decreased from 7.0 per 100,000 persons in 1997 to 4.5 per 100,000 persons in 2003. Despite these declines, the percent of motor vehicle fatalities that involve drivers who were legally drunk has changed little in the past decade. In 2005, 33.8 percent of Oregon's motor vehicle fatalities involved alcohol.

Alcohol consumption in Oregon

In 2003, approximately 77,369 gallons of beer; 10,558 gallons of wine; and 4,832 gallons of spirits were sold. Per capita alcohol consumption is higher in Oregon than that of the nation.

Trends in alcohol use by youth in Oregon are not following national trends. Nationally there has been a decrease in drinking by 11th grade and 8th grade students. This is not the case in Oregon.

- In 2005, the rate of past month alcohol use by Oregon's 8th grade youth was 76 percent higher than that of the United States (30.1% versus 17.1%). Results from the 2006 OHT show the increase continuing with 31.9 percent reporting drinking alcohol on one or more occasion in the past month.
- Females experienced the greatest increase. In 1999 the rate of past month alcohol use was 26.4 percent, in 2006 the rate increased to 33.9 percent.
- For 8th grade males the rates went from 26.8 percent in 1999 to 29.9 percent in 2006.
- The rate of past month alcohol use by 11th grade students went from 45.2 percent in 1999 to 47.4 percent in 2005. However, in 2006 OHT results showed a decline with 43.9 percent reporting current alcohol use.
- More than one of every four 11th grade youth and one of every ten 8th grade youth in Oregon report binge alcohol use.
- The most recent OHT results show an increase in 8th grade binge drinking from 11.5 percent in 2005 to 13.3 percent in 2006; but a decline in 11th grade binge alcohol use from 28.9 percent in 2005 to 24.9 percent in 2006.
- From 2004 through 2006, 8th grade females reported higher rates of binge alcohol use. In 11th grade, males were more likely to binge drink.
- From 2001 to 2005, alcohol use declined for 18 to 20 year olds. Current alcohol use went from 55.5 percent in 2001 to 34.2 percent in 2005; binge drinking declined from 27.0 percent in 2001 to 16.4

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percent in 2.5; heavy alcohol use went from 11.0 percent in 2001 to 4.8 percent in 2005.

Oregon adults have higher rates of current alcohol use, and heavy drinking than the nation for all age categories over 21 years.

- In 2005, Oregonians of all ages had higher rates of current alcohol use than the nation. About two thirds of 21 to 54 year olds drink alcohol on one or more occasions each month. Only adults 65 or older had past month alcohol use rates below 50 percent.
- Current alcohol use is consistently higher for males. In 2005, the rate of current alcohol use was 25 percent higher for males than females (65.0% versus 51.9%).
- From 1999 through 2005, alcohol use rates remained fairly steady for most age categories. The two exceptions were 21 to 29 year olds and 55 to 64 year olds. Current alcohol use rates for 21 to 29 year olds declined 7.7 percent from 71.0 percent in 1999 to 65.5 percent in 2005. Over the same period, past month alcohol use rates increased 12.8 percent for 55 to 64 year olds from 49.9 percent in 1999 to 56.3 percent in 2005.
- One in five adult males reported binge drinking at least once each month. From 1999 through 2005, adult males were two to three times as likely as females to report drinking 5 or more drinks on one occasion in the past month. In 2005, the rate of binge alcohol use was 21.5 percent for males versus 6.7 percent for females.
- More than one of every twenty Oregon adults is a heavy drinker. Data on heavy alcohol use in Oregon shows that males and adults 21 to 29 years old are more likely to be heavy users of alcohol.
- From 2001 through 2005, adult rates of heavy drinking have changed little overall. However there have been distinct trends among specific age categories. The rate of heavy drinking among 21 to 29 year olds decreased 38 percent from 12.6 percent in 2001 to 7.8 percent in 2005. Among 30 to 34 year olds and 55 to 64 year olds there was a steady increase in past month heavy alcohol. The rate of heavy alcohol use increased 63 percent for 30 to 34 year olds, from 3.7 percent in 2001 to 6.0 percent in 2005. Heavy alcohol use increased 43 percent for 55 to 64 year olds, from 4.7 percent in 2001 to 6.7 percent in 2005.
- From 1999 through 2002, over half of the women surveyed through PRAMS report drinking alcohol in the three months preceding their pregnancy. Alcohol use declines by the last trimester. In the last three months of pregnancy, less than one in ten women reported drinking alcohol. However, the rate of alcohol consumption reported in the last three months increased each year from 4.8 percent in 1999 to 7.4 percent in 2002.

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⁴ Substance Abuse and Mental Health Services Administration (2006). *Results from the 2005 National Survey on Drug Use and Health: National Findings*. Office of Applied Studies. Rockville, MD. Accessed online, October 2006 <<http://www.oas.samhsa.gov/nsduhLatest.htm>>

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⁷ Center for Health Statistics. *Oregon Vital Statistics Annual Reports, Volume 2*. Portland, OR: Oregon Department of Human Services, Office of Disease Prevention and Epidemiology, 1999-2003.

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⁹ *Morbidity and Mortality Weekly Report, Volume 53*. September 10, 2004.