



MONTANA Fact[or]s

Adult Alcohol Consumption in Montana

2007 BRFSS Results

Alcohol use is common in Montana and our society. Drinking alcohol is a significant contributor to morbidity and mortality in the United States and worldwide. It has immediate effects that can increase the risk of many harmful health conditions.¹ Excessive alcohol consumption is associated with adverse health and social consequences for both individuals and communities and is often a factor in homicide, suicide, and marital violence. Even small amounts of alcohol can

contribute to motor vehicle crashes and death. Long-term heavy drinking increases the risk for high blood pressure, stroke, and certain forms of cancer (e.g., esophageal, oral, throat, and colorectal) and also increases the risk for cirrhosis and other liver disorders.² The information on alcohol consumption among Montana adults in this report is obtained from the 2007 Behavioral Risk Factor Surveillance System (BRFSS) survey.

Alcohol Use

Drank In Past 30 Days

Definition: Respondents who report drinking alcohol in the past 30 days.

A large proportion of the adult population drinks alcohol.³ In 2007, 56 percent of Montana adults had at least one drink of alcohol within the past 30 days. This is about the same as the national median of 55 percent. However, the percent of adults who drink varies considerably from state to state. Utah reported the lowest prevalence of adults who drank in the past 30 days at 28 percent, and Wisconsin had the highest at 68 percent.

2007 Prevalence of Drinking Alcohol in Past 30 Days
Montana 56.4%
 (95% CI = 54.7-58.2)
Nationwide median 54.7%
 (Range 27.5-68.3)

Of Montana adults who drank in the past 30 days, about one in three (36%) drank five drinks or less in that time period. Almost three-fourths (71%) of Montana adults who drank in the past 30 days, drank one to ten days per month, with a monthly average of 9 days. Just over one in ten (13%) adults drank at least one drink of alcoholic beverage on 21 or more days per month, and just fewer than one in ten (8%) adults drank on all 30 days.

Males were significantly more likely than females to report having had at least one drink in the past 30 days (62% vs. 51%, respectively). Forty-four percent of adults reported not having had any alcoholic beverages in the past month.

Quick Stats
Four out of ten (44%) Montana adults did not consume alcoholic beverages in the past 30 days.

Or conversely, **six out of ten (56%) Montana adults consumed alcoholic beverages in the past 30 days.**

Healthy People 2010 Objective There is no Healthy People 2010 Objective for drinking in the past 30 days.

Table 1. Alcohol Consumption Among Montana Adults in 2007
 (with 95% confidence intervals)

	Binge Drinking ¹ (past 30 days)		Heavy Drinking ² (past 30 days)	
	%	95% CI	%	95% CI
All Adults	17.1	15.6 - 18.6	5.4	4.6 - 6.2
Sex:				
Male	22.7	20.3 - 25.3	6.0	4.7 - 7.5
Female	11.6	10.2 - 13.2	4.8	4.0 - 5.8
Age:				
18 - 24	25.5	19.1 - 33.2	7.7	4.4 - 13.1
25 - 34	27.9	23.2 - 33.1	5.1	3.3 - 7.9
35 - 44	21.2	18.1 - 24.6	5.8	4.4 - 7.7
45 - 54	17.1	14.8 - 19.8	6.2	4.7 - 8.1
55 - 64	10.2	8.5 - 12.2	4.8	3.6 - 6.3
65+	4.5	3.5 - 5.8	3.3	2.5 - 4.4
Education:				
<High School	21.5	15.6 - 28.9	6.7	3.3 - 12.8
High School	16.5	14.0 - 19.3	5.0	3.8 - 6.6
Some College	17.7	15.0 - 20.7	5.6	4.2 - 7.4
College Degree	16.2	14.0 - 18.7	5.2	4.2 - 6.6
Income:				
<\$15,000	15.2	10.5 - 21.4	5.9	3.6 - 9.3
\$15,000 - \$24,999	17.1	13.6 - 21.1	5.7	4.1 - 7.9
\$25,000 - \$49,999	17.4	14.9 - 20.2	5.1	3.8 - 6.9
\$50,000 - \$74,999	18.3	14.9 - 22.3	6.3	4.6 - 8.6
\$75,000+	20.6	17.2 - 24.5	5.9	4.1 - 8.5
Race/Ethnicity:				
White, non-Hispanic	16.9	15.4 - 18.5	5.4	4.6 - 6.3
non-White or Hispanic:	18.7	14.5 - 23.7	5.2	3.3 - 8.2
AI/AN*	21.2	15.9 - 27.7	7.8	4.5 - 13.0
Other or Hispanic**	16.4	10.6 - 24.5	3.0	1.2 - 6.9
Disability:				
Disability	13.6	10.9 - 16.7	5.4	3.9 - 7.4
No Disability	18.2	16.6 - 20.0	5.4	4.6 - 6.4
Region:				
1- Eastern MT	20.7	16.7 - 25.3	6.5	4.3 - 9.6
2- N Central MT	17.3	14.6 - 20.3	5.5	4.0 - 7.5
3- S Central MT	13.1	10.2 - 16.6	4.6	3.1 - 6.9
4- Southwest MT	17.4	14.5 - 20.7	5.2	3.7 - 7.2
5- Northwest MT	18.3	15.6 - 21.4	5.7	4.3 - 7.4

* American Indian or Alaska Native only
 ** All other non-White (including multiracial) or Hispanic
¹ Consumed five or more alcoholic drinks on an occasion for men; four or more for women
² More than two alcoholic drinks per day for men; more than one alcoholic drink per day for women

Excessive Drinking

Nationally, excessive alcohol consumption is the third leading "actual" cause of preventable death in the United States, resulting in approximately 100,000 deaths each year.⁴ Excessive drinkers include those who reported binge drinking and/or heavy drinking, based on per occasion or average consumption of alcohol, which put individuals at increased risk for alcohol-related health and social problems.

Binge Drinking

Definition: Male respondents who report having five or more alcoholic drinks on one occasion, one or more times in the past month; and female respondents who report having four or more alcoholic drinks on one occasion, one or more times in the past month. The BRFSS survey itself does not use the term binge drinking.

Binge drinking is an especially hazardous pattern of alcohol consumption that causes a substantial proportion of alcohol-related deaths.⁵ Binge drinking often results in acute impairment and is associated with a variety of problems including motor vehicle crash injuries, other unintentional injuries, assaults, domestic violence, rape, unintended pregnancy, vandalism, alcohol poisoning, and alcohol dependence.

2007 Prevalence of Binge Drinking
Montana 17.1%
 (95% CI = 15.6-18.6)
Nationwide median 15.7%
 (Range 8.2-23.4)

Nationally, the 2007 BRFSS indicated that nearly 16 percent of adults reported binge drinking in the past 30 days. Kentucky had the lowest percent of adults who engaged in binge drinking at 8 percent, while Wisconsin had the highest at 23 percent. In Montana, the adult binge drinking rate was 17 percent in 2007. Males (23%) were twice as likely to binge drink as females (12%; Table 1). Conversely, females were statistically more likely than males to report no episodes of binge drinking in the past month.

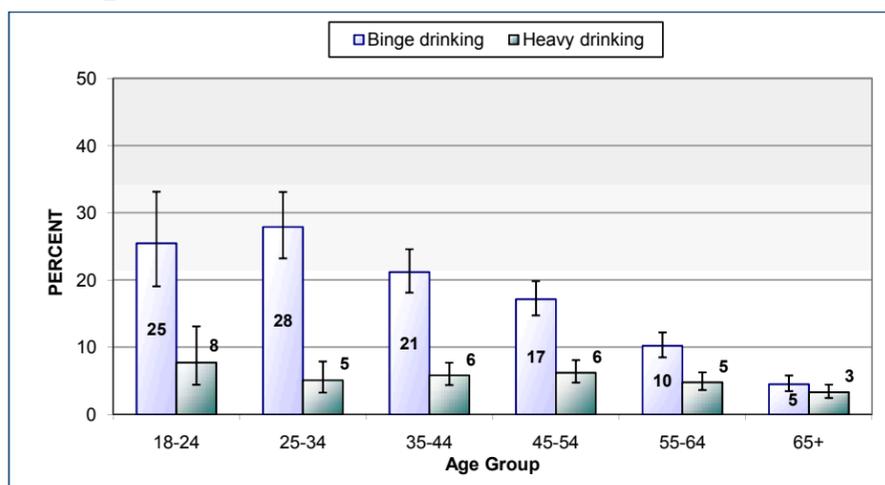
The prevalence of binge drinking decreased as age increased (**Figure 1**). Only 5 percent of adults age 65 and older and 10 percent of adults age 55-64 reported binge drinking in the past 30 days. The prevalence of binge drinking was higher among adults age 18 to 34 ($\geq 26\%$) than adults age 55 and older ($\leq 10\%$). Although efforts to prevent youth access to alcohol and binge drinking are critical, data show they need to be complemented by interventions that will reduce binge drinking among adults of all ages.

In 2007, there were no significant differences in the reported prevalence of binge drinking among race/ethnicity groups, educational levels, and household income levels. Adults with disabilities were somewhat less likely to report binge drinking than adult Montanans without disabilities (14% vs. 18%, respectively; $p < 0.05$). Adults in Eastern Montana (21%) were significantly more likely than adults in the South Central region (13%) to engage in binge drinking.⁶ The reduction of binge drinking among adults is a leading health goal in Healthy People 2010. Montana has not yet met the Healthy People 2010 Objective of 6 percent or less.

Healthy People 2010 Objective Reduce the proportion of adults engaging in binge drinking to **6 percent or less**.

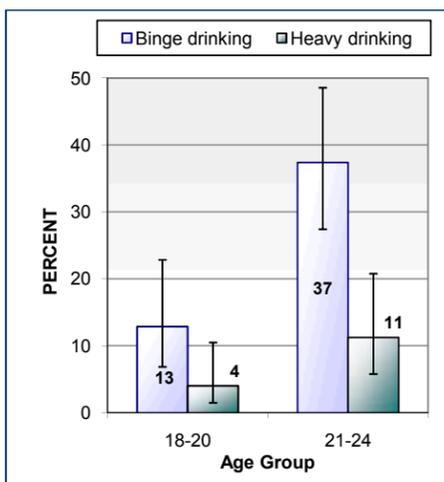
Caveat: Questionnaire wording, sampling, and selection biases may have some effect on BRFSS estimates.⁷ Because people who binge drink may do so repeatedly, the percentage of adults who binge drink likely represents the tip of the iceberg relative to the actual number of binge drinking episodes among US adults. Survey data that rely on self-reports, such as BRFSS, may underestimate the extent of alcohol consumption based on the effects of social desirability and possibly non-coverage, i.e., the inability to reach certain high-risk populations, such as young adults.⁸⁻¹⁰ Persons without telephones, who cannot participate in BRFSS, may have above average rates of binge drinking. For example, college students, who are known to have above average rates of binge drinking, were likely under-sampled because many live in dormitories and are therefore ineligible for inclusion in BRFSS.¹¹

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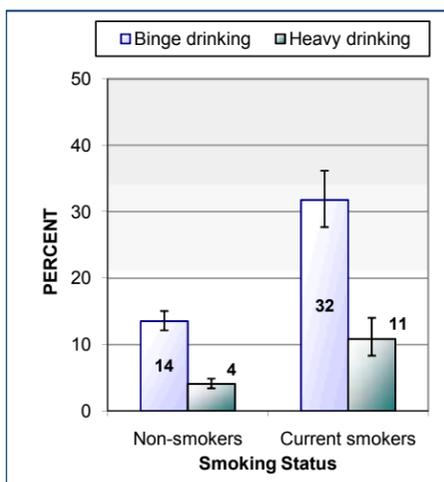
I - indicates 95% confidence interval.

Figure 1. Alcohol consumption among Montana adults by age group, 2007.



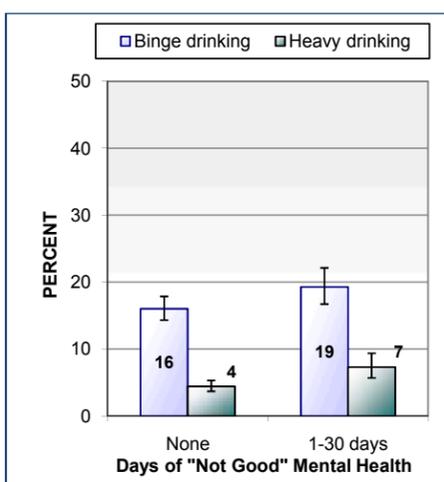
I - indicates 95% confidence interval.

Figure 2. Alcohol consumption among Montana adults age 18-24 years, 2007.



I - indicates 95% confidence interval.

Figure 3. Alcohol consumption among Montana adults by cigarette smoking status, 2007.



I - indicates 95% confidence interval.

Figure 4. Alcohol consumption among Montana adults by reported number of days mental health was "not good" in the past 30 days, 2007.

Heavy Drinking

Definition: Male respondents who report having an average of more than 2 drinks per day, or female respondents who report having more than 1 drink per day.

In 2007, the national median for adults who engaged in heavy drinking was 5 percent. Utah had the lowest percent of adults who engaged in heavy drinking at 3 percent, while Hawaii had the highest at 8 percent. In Montana, 5 percent of adults engaged in heavy drinking.

2007 Prevalence of Heavy Drinking

Montana 5.4%
(95% CI = 4.6-6.2)
Nationwide median 5.2%
(Range 2.5-7.7)

In 2007, there was no significant difference between the sexes in the prevalence of heavy drinking in Montana. Six percent of males and 5 percent of females reported heavy drinking. Heavy drinking was most prevalent among the youngest adults, age 18-24 (8%), and least prevalent among the oldest adults, age 65 and older (3%). Although American Indians/Alaska Natives (8%) reported higher rates of heavy drinking than White adults (5%) in Montana, this difference was not statistically significant. There were no significant differences in the prevalence of heavy drinking among educational and household income levels, disability status, or adults in the five geographic regions of Montana.

Healthy People 2010

Objective There is no Healthy People 2010 Objective for heavy drinking.

Effective Interventions to Reduce Alcohol Consumption

To achieve the Healthy People 2010 objective for binge drinking and improve the health of Montanans, a comprehensive approach must be employed. This will require interventions at both the state and community levels, including policy change, social change, and education and treatment. Effective strategies to reduce binge drinking include multiple administrative and legal interventions, such as increasing alcohol taxes, reducing personal costs for alcohol abuse treatment, and decreasing discount drinking or "happy hours."

Further Analyses

Drinking Among Underage Adults: Underage adults (age 18-20 years) were **significantly less** likely to report binge drinking in the past 30 days (13%) than adults age 21 to 24 years of age (37%). Four percent of underage adults (age 18-20 years) reported heavy drinking during the past month, while 11 percent of 21-24 year olds reported the same behavior (**Figure 2**).

Drinking and Cigarette Smoking

Both binge drinking and heavy drinking were **significantly associated with cigarette smoking**. Thirty-two percent of adults who were current smokers reported binge drinking, compared to 14 percent of adults who did not smoke. Similarly, 11 percent of adults who were current smokers reported heavy drinking, compared to 4 percent of non-smokers (**Figure 3**).

Drinking and Mental Health

Both binge drinking and heavy drinking were **significantly associated with self-reported mental health**. Nineteen percent of adults who indicated their mental health was "not good" on one or more of the past 30 days reported binge drinking, compared to 16 percent of adults with no days of poor mental health ($p < 0.05$). Similarly, 7 percent of adults with one or more days of poor mental health reported heavy drinking, compared to 4 percent of those with no days of poor mental health (**Figure 4**).

Survey Limitations:

The BRFSS relies on self-reported data. This type of survey has certain limitations that should be understood when interpreting the data. Respondents may have the tendency to under report some behaviors that may be considered socially unacceptable (e.g., smoking, heavy alcohol use). Conversely, respondents may over report behaviors that are desirable (e.g., physical activity, nutrition).

Background:

The Montana Behavioral Risk Factor Surveillance System (BRFSS) has been collecting and reporting state-specific, population-based estimates of health-related data since 1984. The purpose of this statewide telephone survey of Montana residents aged 18 and older is to gather information regarding personal health risk behaviors, selected medical conditions, and the prevalence of preventive health care practices among Montana adults. These BRFSS results have been used by public health agencies, academic institutions, non-profit organizations, and others to develop programs that promote the health of Montana adults and reduce risks that contribute to the leading causes of death in the state. A full set of Montana yearly questionnaires and health indicators can be found on the Department of Public Health and Human Services (DPHHS) BRFSS query system website at www.brfss.mt.gov. The CDC website also provides national, state, and some local area prevalence estimates of health indicators, as well as access to downloadable datasets for further analyses: www.cdc.gov/brfss.

Acknowledgements:

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Footnotes

- 1 Alcohol and Public Health accessed May 15, 2008 at <http://www.cdc.gov/alcohol/index.htm>.
- 2 National Center for Health Statistics accessed May 15, 2008 at <http://www.cdc.gov/nchs/>.
- 3 One drink is equal to a 12-ounce beer, a 5-ounce glass of wine, or a drink with one shot of liquor.
- 4 Mokdad AH, Stroup D, Marks JS, Gerberding J. Actual causes of death in the United States, 2000. [Published erratum in: JAMA 2005; 293:293-294] JAMA 2004; 291:1238-45.
- 5 Naimi TS, Brewer RD, Mokdad AH, et al. Binge drinking among US adults. JAMA, 2003;289(1):70-75.
- 6 For an explanation of the five health planning regions in Montana, see www.brfss.mt.gov.
- 7 Nelson DE, Holtzman D, Bolen J, Stanwyck CA, Mack KA. Reliability and validity of measures from the Behavioral Risk Factor Surveillance System (BRFSS). Soc Prev Med. 2001; 46 (Suppl 1):S3-S42.
- 8 Midanik LT. Validity of self-reported alcohol use: a literature review and assessment. Br J Addict. 1988; 83:1019-1029.
- 9 Thornberry OT, Massey JT. Trends in United States telephone coverage across time and subgroups. In Groves RM, Biemer PP, Lyberg LE, Massey JT, Nichols WI, eds. Telephone Survey Methodology. New York, NY: Wiley; 1988:25-49.
- 10 Blumberg SJ, Luke JV. Coverage bias in traditional telephone surveys of low-income and young adults. Public Opinion Quarterly, 71:734-749. 2007.
- 11 Nelson TF, Naimi TS, Brewer RD, Wechsler H. The State sets the rate: the relationship among state-specific college binge drinking, state binge drinking rates, and selected state alcohol control policies. Amer J Pub Health. 2005; 95:441-446.
- 12 Town M, Naimi TS, Mokdad AH, Brewer RD. Health care access among US adults who drink alcohol excessively: missed opportunities for prevention. Prev Chronic Dis [serial online] 2006 Apr [accessed May 15, 2007]. Available from: URL: http://www.cdc.gov/pcd/issues/2006/apr/05_0182.htm.