



Center for Health Statistics



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HEALTH FACTS No. 04-03

County Health Facts is a series of reports using California Health Interview Survey data to describe the health status of California's counties.

HIGHLIGHTS:

About 15.5 percent of adults in California, more than 3.8 million people, engaged in one or more episodes of binge drinking in 2001.

The Monterey/San Benito region had the lowest rate of binge drinking among adults, 12.6 percent.

Santa Cruz County had the highest rate of binge drinking among adults, 21.9 percent.

Nearly half (47 percent) of all adults engaged in binge drinking in 2001 were under age 35.

Prevalence of Binge Drinking in California Counties, 2001

By Laura E. Lund, M.A.¹

Alcohol abuse is a serious health problem in the United States (U.S.), where each year more than 100,000 deaths are related to alcohol consumption.² In California in 2001, there were 3,596 deaths directly induced by alcohol use.³ In addition, as many as 10,000 more deaths may be related to alcohol consumption each year in the state.⁴ "Binge drinking" in adults, one type of alcohol abuse, refers to having five or more alcoholic drinks on a single occasion.⁵ Binge drinking accounts for a large proportion of all alcohol-related deaths, and is associated with increased mental distress and depression.^{6,7} There is also evidence that binge drinking is increasing in the U.S.⁸

The U.S. Department of Health and Human Services (DHHS) has identified binge drinking as an important public health problem. DHHS *Healthy People 2010* (HP2010) has established national objectives to address the problem of binge drinking of alcohol.⁹ In California, the Centers for Disease Control and Prevention (CDC) provides funding for the California Department of Health Services Binge Drinking Surveillance Project, which monitors the problem of binge drinking in the State.

This report presents data on binge drinking in adults in California's counties. "Binge drinking" refers to having 5 or more drinks on a single occasion within the past month, as defined in HP2010. All data come from the California Health Interview Survey (CHIS 2001).¹⁰ (See "Methods" on page three for a description of the survey and analytic methods used in this report.) Because the information on alcohol consumption is self-reported in CHIS 2001, there may be an undercount of the total number of persons engaged in binge drinking. The terms "rate", "percent", and "proportion" are used interchangeably throughout this report to refer to the prevalence of binge drinking in the adult population.

¹California Department of Health Services, Center for Health Statistics

²National Institutes of Health. Table: Number of deaths and age-adjusted death rates per 100,000 population for categories of alcohol-related (A-R) mortality, United States and States, 1979-96. Available at <http://www.niaaa.nih.gov/databases/armort01.txt>. Last accessed March, 2004.

³State of California, Department of Health Services, Center for Health Statistics. "Alcohol-Induced Deaths in California". December, 2003.

⁴Sutocky, James W. *Alcohol-Related Mortality: California, 1979-1988*. Sacramento: California Department of Health Services. October 1990.

⁵United States Department of Health and Human Services, Substance Abuse and Mental Health Statistics. National Survey on Drug Use and Health 2003 questionnaire. Available at <http://www.samhsa.gov/oas/NHSDA/2k3CAI/2003CAIspecksW.pdf>. Last accessed March, 2004.

⁶Chikritzhs TN, Jonas HA, Stockwell TR, Heale PF, Dietze PM. Mortality and life-years lost due to alcohol: a comparison of acute and chronic causes. *Med J Aust*. 2001 Mar 19;174(6):281-4.

⁷Okoro CA, Brewer RD, Naimi TS, Moriarty DG, Giles WH, Mokdad AH. Binge drinking and health-related quality of life; do popular perceptions match reality? *Am J Prev Med*. 2004 Apr;26(3):230-3.

⁸Naimi TS, Brewer RD, Mokdad A, Denny C, Serdula MK, Marks JS. Binge drinking among US adults. *JAMA*. 2003 Jan 1;289(1):70-5.

⁹United States Department of Health and Human Services. *Healthy People 2010: Understanding and Improving Health*. 2nd Ed. Washington D.C.: U.S. Government Printing Office. November 2000.

¹⁰CHIS 2001 asked respondents: "During the past month, have you had at least one drink of any alcoholic beverage, such as beer, wine, wine coolers, or liquor?" Respondents who answered "yes" to this question were also asked: "Considering all types of alcoholic beverages, how many times during the past month did you have five or more drinks on an occasion?"

Binge Drinking Prevalence

Crude rates: More than 3.8 million Californians, or about 15.5 percent of all persons aged 18 and older, engaged in one or more episodes of binge drinking in 2001 (Table 1, page 4). There was considerable variation in binge drinking rates across counties, from a low of 12.6 percent in the Monterey/San Benito region to a high of 21.9 percent in Santa Cruz County.

Age-adjusted rates: After adjusting for differences in county age distributions, Santa Clara County and the Monterey/San Benito region had the lowest binge drinking rates, 12.5 percent (Table 1), while El Dorado County had the highest rate, 22.4 percent. Comparing county rates with the overall California rate, two counties (Santa Clara and Los Angeles) had binge drinking rates significantly below California's age-adjusted rate of 15.2 percent. Six counties and two regions (Sonoma, Nevada/Plumas/Sierra, Humboldt/Del Norte, San Francisco, San Luis Obispo, Santa Cruz, Napa, and El Dorado) had rates significantly higher than the State rate.

HP2010 Objective 26-11c seeks to reduce binge drinking in the past month among adults aged 18 and older to 6.0 percent. There were no counties achieving this objective.

Binge Drinking Prevalence among Young Adults

According to CHIS 2001, nearly half (47 percent) of all adults reporting one or more episodes of binge drinking were under age 35. Binge drinking declines dramatically with age; fewer than 10 percent of binge drinkers were aged 65 and older. For this reason, Table 2 presents information on age-specific binge drinking rates for adults in the high-risk 18 through 34 year-old age category.

More than 1.9 million Californians aged 18 through 34, or about 23.5 percent of persons in this age group, engaged in one or more episodes of binge drinking in 2001 (Table 2, page 5). There was considerable variation in binge drinking rates for young adults across counties, from a low of 14.4 percent in the Siskiyou/Lassen/Trinity/Modoc region to a high of 39.6 percent in the Humboldt/Del Norte region. Comparing county rates with the overall California rate, one county and two regions (Kings, Siskiyou/Lassen/Trinity/Modoc, and Monterey/San Benito) had binge drinking rates that were significantly below California's rate of 23.4 percent for this age group. Five counties and one region (Santa Cruz, El Dorado, San Francisco, San Luis Obispo, Sonoma, and Humboldt/Del Norte) had binge drinking rates significantly higher than the State rate.

Summary

Binge drinking in California is very common, with 15.5 percent of all adults reporting one or more episodes of binge drinking in 2001, much higher than the HP2010 objective of 6.0 percent. This means that more than 3.8 million Californians may be at risk for alcohol-related mortality and physical health problems, as well as increased mental stress and depression. Young adults in California are at especially high risk; nearly half of all binge drinking occurred in adults under age 35. Binge drinking is a significant public health problem for counties throughout the State, with binge drinking rates ranging from 12.6 percent in the Monterey/San Benito region to 21.9 percent in Santa Cruz County. Rates are much higher for persons under age 35, ranging from 14.4 percent in the Siskiyou/Lassen/Trinity/Modoc region to 39.6 percent in the Humboldt/Del Norte region. For information on alcohol abuse prevention in California contact: Krista Kotz, PhD, MPH, Chronic Disease Epidemiology and Control Section, California Department of Health Services, (925) 253-9285.

Methods

Data: CHIS 2001 is a population-based household telephone survey, representative of the non-institutionalized adult population of California, with more than 55,000 Californians participating. In addition to statewide data, CHIS 2001 provides representative samples for California counties with populations greater than 100,000. For smaller counties, CHIS provides representative data estimates for contiguous county groups, referred to as “regions” in this report. Respondents to the survey were randomly selected California residents aged 18 and older living in households with telephones. CHIS 2001 is a collaboration of the California Department of Health Services, the University of California at Los Angeles Center for Health Policy Research, and the Public Health Institute. More information on the CHIS 2001 sample is available at <http://www.chis.ucla.edu>.

Analysis: In this report, crude rates, age-adjusted rates, and age-specific rates are provided as measures of binge drinking prevalence. Crude rates and age-specific rates reflect the actual number of persons engaging in binge drinking on one or more occasions. However, since binge drinking is much more common among younger persons than in older adults, counties with a larger proportion of younger persons will tend to have higher crude rates of binge drinking than counties with fewer younger persons. Age-adjustment statistically controls for these differences in county age structures. Therefore, age-adjusted rates rather than crude rates should be used for comparing general population prevalence differences between counties or between a county and the State. Age-adjustment was done using the direct method with the 2000 California adult population as the standard. More information on the methods used to calculate rates in this report is available from the author.

The 95 percent confidence intervals (CIs) are presented for each rate. Because CHIS data are collected through a sampling method, there may be some random error in the rate estimate. The CIs represent the range of values likely to contain the “true” population rate 95 percent of the time. In this report, rates are considered to be significantly different from each other when their confidence intervals do not overlap. When comparing county or State rates to HP2010 Objectives in this report, a rate is not considered significantly different from an HP2010 Objective if the confidence interval of the rate includes the target rate for the HP2010 objective.

Cases with missing information for alcohol consumption in the past month or for binge drinking were excluded from this analysis.

Limitations: The CHIS data are self-reported by respondents to the survey, and may be subject to error, such as respondent failure to recall information about existing health conditions. Only persons living in households with telephones were included in the survey. Participation in CHIS is voluntary; persons who refused to participate may be different than those who were interviewed. Details on response rates, respondent characteristics, and other survey information can be obtained at <http://www.chis.ucla.edu>

For more information on CHIS 2001 contact: Laura E. Lund, CHIS Coordinator, California Department of Health Services, Center for Health Statistics, Office of Health Information and Research, MS 5103, PO Box 997410, Sacramento, CA 95899-7410.

**TABLE 1
BINGE DRINKING PREVALENCE AMONG ADULTS IN CALIFORNIA,
BY COUNTY OR REGION, 2001**

County of Residence	Age-adjusted Rate ¹	95% Confidence Interval		Crude Rate ¹	95% Confidence Interval		Estimated N ²
		Lower	Upper		Lower	Upper	
HP2010 Objective 26-11c	6.0	--	--	--	--	--	--
Santa Clara*	12.5	10.5	14.4	12.7	10.6	14.9	166,000
Monterey/San Benito	12.5	9.8	15.2	12.6	9.5	15.6	40,000
Madera	13.1	10.1	16.1	12.9	9.8	16.1	12,000
Solano	13.6	11.6	15.5	13.8	11.8	15.9	40,000
Placer	13.7	10.8	16.5	12.9	10.2	15.6	23,000
Los Angeles*	13.7	13.0	14.4	14.3	13.5	15.2	996,000
Contra Costa	13.9	11.5	16.3	13.5	11.1	15.9	94,000
Alameda	14.0	12.3	15.6	14.4	12.1	16.8	156,000
Merced	14.6	11.8	17.4	14.8	11.8	17.9	21,000
Fresno	14.6	12.0	17.2	15.2	12.2	18.2	84,000
Sutter/Yuba	14.7	11.8	17.6	14.7	11.5	17.8	15,000
Orange	15.0	13.4	16.7	15.5	13.7	17.3	314,000
San Joaquin	15.1	12.6	17.7	15.5	12.8	18.1	63,000
Shasta	15.2	12.0	18.3	14.2	11.3	17.1	19,000
Siskiyou/Lassen/Trinity/Modoc	15.2	12.1	18.2	14.4	11.5	17.4	12,000
CALIFORNIA	15.2	14.8	15.5	15.5	15.0	15.9	3,849,000
San Diego	15.4	13.8	16.9	15.7	14.0	17.5	335,000
Tulare	15.7	12.7	18.6	15.7	12.6	18.9	40,000
San Bernardino	15.7	13.5	17.9	16.4	14.0	18.8	191,000
Kings	15.8	12.9	18.6	16.3	12.9	19.6	14,000
Ventura	15.9	12.8	19.7	15.7	12.5	19.0	86,000
Santa Barbara	15.9	13.2	18.7	17.1	13.7	20.5	52,000
Stanislaus	16.1	12.9	19.4	16.4	13.0	19.8	52,000
Sacramento	16.4	13.9	19.0	16.5	13.8	19.1	144,000
San Mateo	16.6	13.4	19.7	16.0	12.8	19.1	90,000
Kern	16.6	14.0	19.2	17.0	14.2	19.8	79,000
Riverside	16.9	14.3	19.5	16.5	13.9	19.2	182,000
Imperial	16.9	13.6	20.2	17.0	13.5	20.5	18,000
Butte	17.3	14.1	20.4	17.5	14.2	20.8	27,000
Mendocino/Lake	17.7	14.0	21.4	15.6	12.6	18.7	18,000
Yolo	17.8	14.5	21.0	19.9	15.9	23.9	24,000
Tehama/Glenn/Colusa	17.8	14.4	21.3	16.7	13.4	20.1	13,000
Tuolumne/Calaveras/Amador/Inyo/Mariposa/Mono/Alpine	18.4	14.6	22.2	16.2	13.2	19.3	23,000
Marin	19.1	14.8	23.3	17.2	13.7	20.7	34,000
Napa*	19.3	15.7	23.0	18.3	14.8	21.7	18,000
San Francisco*	19.5	17.5	21.5	20.6	18.4	22.9	132,000
San Luis Obispo*	20.2	16.5	23.9	20.4	16.7	24.2	41,000
Nevada/Plumas/Sierra*	20.4	16.3	24.5	17.2	14.2	20.3	17,000
Humboldt/Del Norte*	21.2	17.7	24.8	21.3	17.6	25.0	26,000
Santa Cruz*	21.4	17.7	25.1	21.9	18.1	25.7	43,000
Sonoma*	22.1	18.1	26.2	21.0	17.2	24.9	73,000
El Dorado*	22.4	18.2	26.7	20.4	16.9	23.9	25,000

¹Rate is per 100 county or State population.
²Estimated by multiplying the crude rate times the county or State population, rounded to the nearest thousand.

*Age-adjusted county rate is significantly different from the State rate.

Sources: University of California at Los Angeles Center for Health Policy Research and State of California, Department of Health Services. 2001 California Health Interview Survey.
State of California, Department of Finance. Race/Ethnic Population with Age and Sex Detail, 2000.

Prepared by: Department of Health Services, Center for Health Statistics.

**TABLE 2
BINGE DRINKING PREVALENCE IN CALIFORNIA AMONG PERSONS AGED 18 THROUGH 34,
BY COUNTY OR REGION, 2001**

County of Residence	Age-Specific Rate ¹	95% Confidence Interval		Estimated N ²
		Lower	Upper	
Siskiyou/Lassen/Trinity/Modoc*	14.4	8.0	20.8	4,000
Monterey/San Benito*	15.7	9.2	22.2	17,000
Kings*	15.8	10.0	21.7	6,000
Madera	18.0	10.8	25.3	6,000
Placer	18.3	11.9	24.8	9,000
Santa Clara	18.5	13.6	23.3	75,000
Contra Costa	19.1	13.1	25.0	38,000
Merced	19.3	13.1	25.6	10,000
Solano	19.9	15.3	24.5	18,000
Shasta	20.0	12.0	27.9	8,000
Tulare	20.4	13.7	27.1	19,000
Los Angeles	21.5	19.8	23.2	495,000
Orange	21.9	17.8	26.0	143,000
Alameda	22.9	17.6	28.2	77,000
San Diego	23.2	19.3	27.0	197,000
Sacramento	23.3	17.3	29.2	63,000
CALIFORNIA	23.4	22.4	24.5	1,921,000
Fresno	23.7	17.2	30.1	47,000
Imperial	23.7	16.1	31.3	11,000
San Bernardino	23.9	18.8	29.1	98,000
Sutter/Yuba	24.1	16.8	31.4	8,000
Napa	24.8	16.5	33.1	7,000
Stanislaus	25.4	17.5	33.2	27,000
Tuolumne/Calaveras/Amador/Inyo/ Mariposa/Mono/Alpine	25.6	16.3	35.0	10,000
Kern	25.9	19.7	32.1	42,000
San Joaquin	26.1	19.7	32.4	36,000
Riverside	26.2	20.1	32.2	91,000
Yolo	26.2	19.3	33.2	14,000
Ventura	27.2	19.1	35.4	47,000
Tehama/Glenn/Colusa	27.8	19.0	27.8	7,000
Marin	29.3	18.4	40.2	17,000
Mendocino/Lake	29.4	19.8	39.0	9,000
San Mateo	30.0	21.8	38.2	47,000
Santa Barbara	30.3	22.7	37.8	31,000
Nevada/Plumas/Sierra	31.5	21.1	41.8	7,000
Butte	31.6	24.0	39.3	15,000
Santa Cruz*	33.3	25.0	41.5	20,000
El Dorado*	35.0	24.8	45.2	12,000
San Francisco*	35.6	30.7	40.4	58,000
San Luis Obispo*	36.0	27.3	44.7	27,000
Sonoma*	36.8	27.1	46.4	36,000
Humboldt/Del Norte*	39.6	30.9	48.2	16,000

¹Rate is per 100 county or State population aged 18 through 34 years.

²Estimated by multiplying the age-specific rate times the county or State population aged 18 through 34 years, rounded to the nearest thousand.

*Age-specific county rate is significantly different from the State rate.

Sources: University of California at Los Angeles Center for Health Policy Research and State of California, Department of Health Services. 2001 California Health Interview Survey.
State of California, Department of Finance. Race/Ethnic Population with Age and Sex Detail, 2000.
Prepared by: Department of Health Services, Center for Health Statistics.