



SNAPSHOT

Snapshot is a publication that demonstrates the uses of Behavioral Risk Factor Surveillance System (BRFSS) data to illustrate various health behaviors among adult Californians. BRFSS is the largest, ongoing, telephone health survey in the world. Established in 1984, the California BRFSS is an annual effort by the California Department of Public Health (CDPH), Chronic Disease Surveillance and Research Branch, in collaboration with the U.S. Centers for Disease Control and Prevention (CDC), to assess the prevalence of and trends in health-related behaviors and to monitor preventable risk factors for chronic diseases and other leading causes of death in the California adult population.

CARDIOVASCULAR DISEASE AMONG CALIFORNIA ADULTS, 2015-2019

Since 2015, cardiovascular disease (CVD) has been the leading cause of death in California¹. CVD is a group of diseases occurring in the heart and circulatory system. Common forms of CVD include stroke, heart failure, hypertension, and coronary heart disease (CHD). CHD is the most common type of CVD that describes the plaque buildup and narrowing of arterial walls supplying blood to the heart. Angina, a common symptom of CHD, refers to chest discomfort when the heart does not receive enough blood. A heart attack or myocardial infarction (MI) occurs when an artery becomes obstructed, resulting in a shortage of blood flow to the heart. A stroke occurs when a clot blocks the supply of blood to the brain or when blood vessels rupture, causing internal bleeding in the brain².

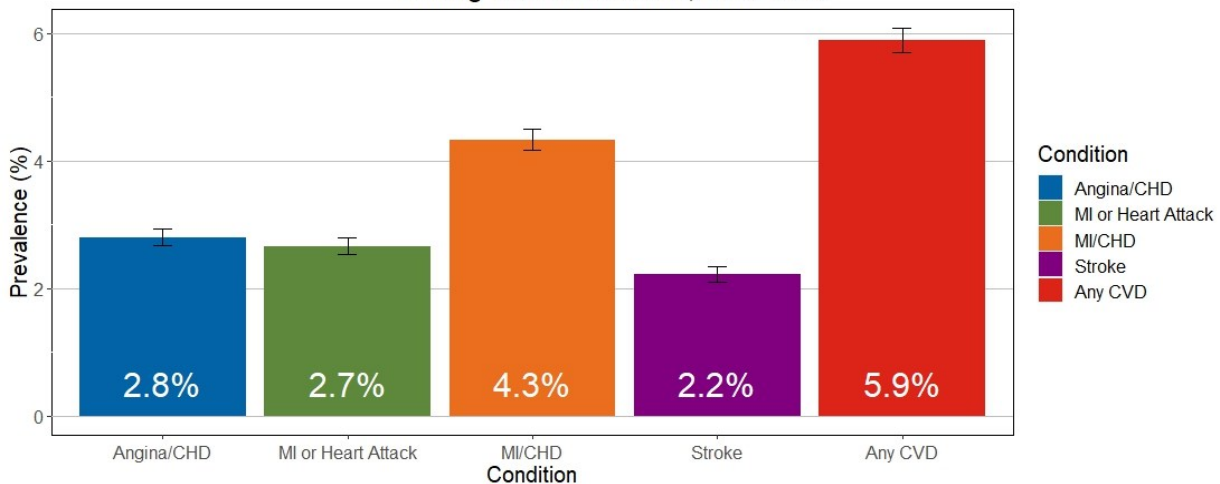
The California BRFSS survey asks the following questions on CVD:

BRFSS Cardiovascular Disease Questions

Has a doctor, nurse, or other health professional ever told you that you had any of the following:

- ① You had angina or coronary heart disease?
- ② You had a heart attack, also called a myocardial infarction?
- ③ You had coronary heart disease and/or myocardial infarction?
- ④ You had a stroke?

Figure 1. Prevalence of Self-Reported Cardiovascular Disease among California Adults, 2015-2019



*Prepared by the California Department of Public Health, Chronic Disease Surveillance and Research Branch
 **Vertical lines represent 95 percent Confidence Intervals

Cardiovascular Disease Prevalence

From 2015-2019, 1.7 million (5.9 percent) of adults in California are estimated to have been told by a health professional that they had some form of CVD that includes angina, CHD, stroke, or a previous heart attack. 2.8 percent were diagnosed with angina or CHD. 2.7 percent had an MI or heart attack. 4.3 percent had an MI and/or CHD. 2.2 percent had a stroke [Figure 1].

Table 1. Prevalence of Cardiovascular Disease by Demographic Characteristic in California Adults, 2015-2019*

| | MI or Heart Attack [†] | | Angina/CHD [‡] | | MI/CHD [§] | | Stroke | | Any CVD [¶] | |
|---|---------------------------------|-------------|-------------------------|--------------|---------------------|---------------|----------------------|-------------|----------------------|---------------|
| | Percent (%) | 95% CI | Percent (%) | 95% CI | Percent (%) | 95% CI | Percent (%) | 95% CI | Percent (%) | 95% CI |
| California (N = 56,884) | | | | | | | | | | |
| Gender | | | | | | | | | | |
| <i>Men</i> | 3.3 | (3.1 - 3.5) | 3.2 | (3.0 - 3.4) | 5.1 | (4.8 - 5.3) | 2.4 | (2.2 - 2.6) | 6.6 | (6.3 - 6.9) |
| <i>Women</i> | 2 | (1.8 - 2.2) | 2.4 | (2.2 - 2.6) | 3.6 | (3.4 - 3.8) | 2.1 | (1.9 - 2.3) | 5.2 | (5.0 - 5.5) |
| Age Group | | | | | | | | | | |
| <i>18-24 years</i> | 0.2 | (0.1 - 0.3) | 0.3 | (0.2 - 0.5) | 0.5 | (0.3 - 0.7) | 0.3 | (0.2 - 0.4) | 0.7 | (0.5 - 0.9) |
| <i>25-34 years</i> | 0.3 | (0.2 - 0.5) | 0.3 | (0.2 - 0.4) | 0.6 | (0.4 - 0.7) | 0.4 | (0.2 - 0.5) | 0.9 | (0.7 - 1.1) |
| <i>35-44 years</i> | 0.8 | (0.6 - 1.0) | 0.8 | (0.6 - 1.0) | 1.4 | (1.2 - 1.7) | 1.3 | (1.0 - 1.5) | 2.6 | (2.2 - 2.9) |
| <i>45-54 years</i> | 2.1 | (1.8 - 2.4) | 2 | (1.8 - 2.3) | 3.3 | (2.9 - 3.7) | 2 | (1.7 - 2.2) | 4.8 | (4.3 - 5.2) |
| <i>55-64 years</i> | 4.3 | (3.9 - 4.7) | 4.4 | (4.0 - 4.8) | 6.9 | (6.4 - 7.4) | 3.5 | (3.1 - 3.8) | 9.4 | (8.8 - 9.9) |
| <i>≥65 years</i> | 9 | (8.5 - 9.5) | 10.1 | (9.6 - 10.7) | 14.9 | (14.3 - 15.5) | 6.8 | (6.4 - 7.2) | 19.3 | (18.6 - 19.9) |
| Race/Ethnicity[^] | | | | | | | | | | |
| <i>Asian/Pacific Islander</i> | 1.3 | (0.9 - 1.6) | 1.3 | (1.0 - 1.7) | 1.9 | (1.5 - 2.3) | 0.8 | (0.6 - 1.1) | 2.5 | (2.1 - 3.0) |
| <i>Black</i> | 2.4 | (1.8 - 3.0) | 2.5 | (1.9 - 3.1) | 3.8 | (3.1 - 4.5) | 3.8 | (3.1 - 4.5) | 7 | (6.0 - 7.9) |
| <i>Hispanic or Latino</i> | 1.9 | (1.7 - 2.1) | 1.6 | (1.4 - 1.8) | 3 | (2.7 - 3.2) | 1.7 | (1.5 - 1.9) | 4.2 | (3.9 - 4.4) |
| <i>White</i> | 3.5 | (3.3 - 3.7) | 4 | (3.8 - 4.2) | 5.9 | (5.6 - 6.2) | 2.8 | (2.6 - 3.0) | 7.9 | (7.6 - 8.3) |
| <i>Other^{**}</i> | 3.2 | (2.5 - 3.8) | 4.3 | (3.5 - 5.0) | 6 | (5.1 - 6.9) | 3.1 | (2.4 - 3.8) | 7.6 | (6.6 - 8.6) |
| Annual Household Income | | | | | | | | | | |
| <i>< \$25,000</i> | 3.9 | (3.6 - 4.3) | 3.5 | (3.2 - 3.8) | 5.9 | (5.5 - 6.3) | 3.6 | (3.3 - 3.9) | 8.3 | (7.8 - 8.8) |
| <i>\$25,000-\$49,999</i> | 3 | (2.6 - 3.3) | 3.2 | (2.8 - 3.5) | 5 | (4.5 - 5.4) | 2.3 | (2.0 - 2.6) | 6.5 | (6.0 - 7.0) |
| <i>\$50,000-\$74,999</i> | 3.2 | (2.7 - 3.6) | 2.9 | (2.5 - 3.3) | 4.7 | (4.1 - 5.2) | 2.3 | (1.9 - 2.6) | 6.2 | (5.6 - 6.8) |
| <i>\$75,000-\$99,999</i> | 2 | (1.7 - 2.4) | 2.6 | (2.2 - 3.0) | 3.6 | (3.2 - 4.1) | 1.6 | (1.3 - 2.0) | 5 | (4.4 - 5.5) |
| <i>\$100,000-\$124,999</i> | 1.7 | (1.3 - 2.2) | 2.7 | (2.1 - 3.3) | 3.5 | (2.9 - 4.1) | 2 | (1.5 - 2.5) | 5.1 | (4.3 - 5.9) |
| <i>≥\$125,000</i> | 1.2 | (1.0 - 1.5) | 2 | (1.7 - 2.4) | 2.7 | (2.3 - 3.1) | 1.1 | (0.8 - 1.3) | 3.6 | (3.2 - 4.0) |
| Educational Level | | | | | | | | | | |
| <i>Less than High School</i> | 3 | (2.5 - 3.5) | 2.9 | (2.4 - 3.4) | 4.8 | (4.2 - 5.5) | 1.7 | (1.3 - 2.1) | 5.8 | (5.1 - 6.5) |
| <i>High School or GED</i> | 2.9 | (2.6 - 3.1) | 2.4 | (2.1 - 2.6) | 4.2 | (3.9 - 4.5) | 2.3 | (2.1 - 2.6) | 5.9 | (5.5 - 6.3) |
| <i>Some College or Technical School</i> | 3.3 | (3.0 - 3.6) | 3.5 | (3.2 - 3.8) | 5.3 | (4.9 - 5.7) | 3.2 | (2.9 - 3.5) | 7.4 | (7.0 - 7.9) |
| <i>College or Post Graduate</i> | 2.1 | (1.9 - 2.3) | 2.8 | (2.6 - 3.0) | 3.9 | (3.7 - 4.2) | 1.8 | (1.6 - 2.0) | 5.3 | (5.0 - 5.6) |
| Health Insurance | | | | | | | | | | |
| <i>Have Insurance</i> | 2.8 | (2.6 - 2.9) | 3 | (2.8 - 3.1) | 4.6 | (4.4 - 4.7) | 2.3 | (2.2 - 2.5) | 6.2 | (6.0 - 6.4) |
| <i>No Insurance</i> | 1.1 | (0.8 - 1.4) | 1 | (0.7 - 1.3) | 1.9 | (1.5 - 2.3) | 1.1 | (0.8 - 1.4) | 2.9 | (2.4 - 3.4) |

Abbreviations: CI = Confidence Interval, MI = Myocardial Infarction, CHD = Coronary Heart Disease, CVD = Cardiovascular Disease, GED = General Educational Development Certification

* Respondents with no signs of cardiovascular disease were excluded from analysis

† Respondents were told by a doctor, nurse, or other health professional that they 'had a heart attack, also called MI'

‡ Respondents were told by a doctor, nurse, or other health professional that they 'had angina or CHD'

§ Respondents were told by a doctor, nurse, or other health professional that they 'had either MI or CHD'

|| Respondents were told by a doctor, nurse, or other health professional that they 'had a stroke'

¶ Respondents were told by a doctor, nurse, or other health professional that they 'had a heart attack, angina, CHD, or stroke'

[^] 'Race/Ethnicity' was categorized as: (Asian, Non-Hispanic), (Black, Non-Hispanic), (Hispanic), (White, Non-Hispanic), and (Other, Non-Hispanic).

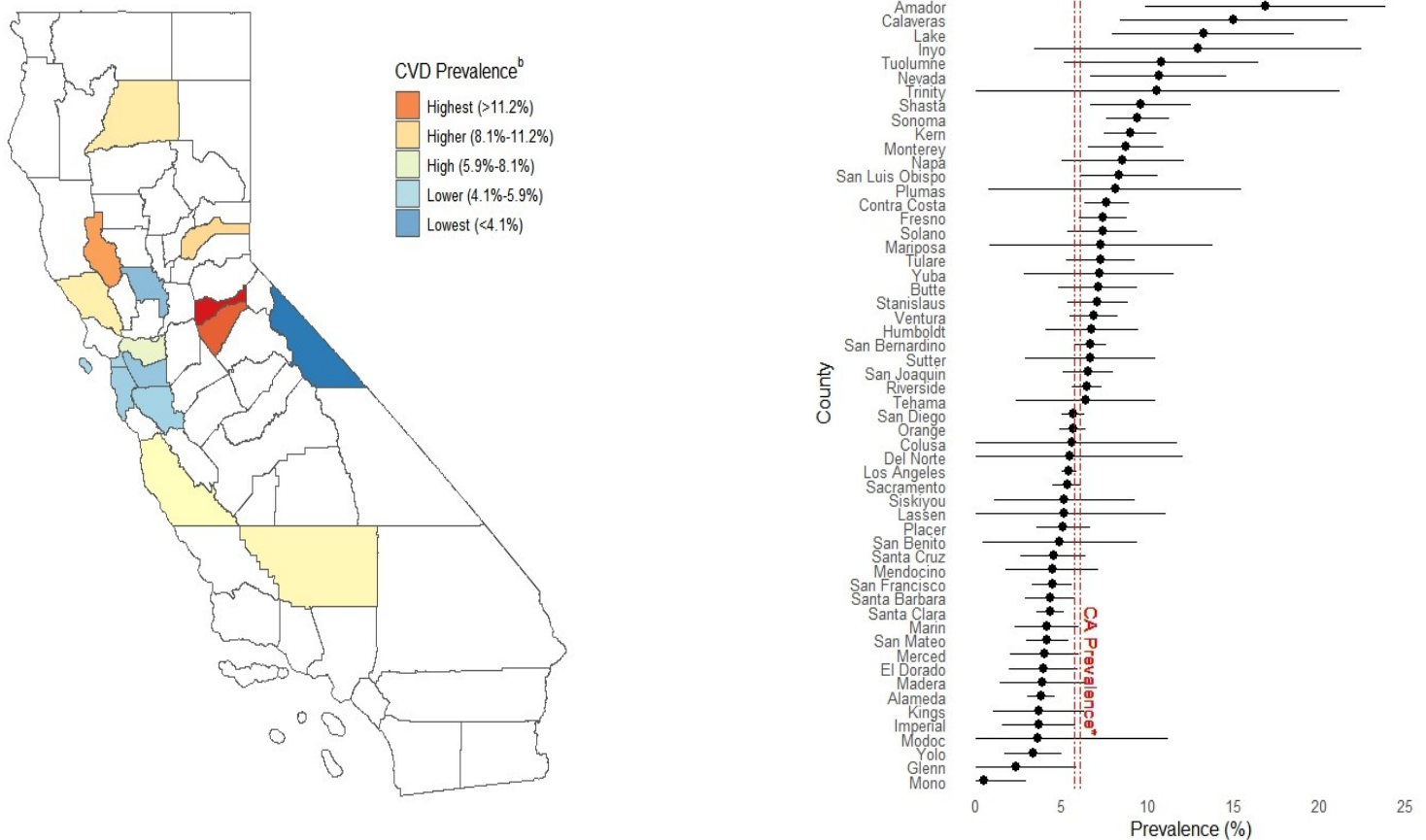
^{**} 'Other' includes (American Indian/Alaska Native, Non-Hispanic) and (Multiple Races, Non-Hispanic)

Prepared by the California Department of Public Health, Chronic Disease Surveillance and Research Branch

Demographics of California Adults with Cardiovascular Disease

Among California adults 18 years of age or older, men were more likely than women to have CVD (6.6 percent vs. 5.2 percent). However, CVD continues to be the leading factor to all-cause mortality in both genders³. A greater proportion of older age groups reported having a CVD condition. Individuals 65 years of age or older reported the highest prevalence of CVD (19.3 percent) compared to other age groups. Prevalence varies by race and ethnicity with White individuals reporting the highest prevalence of CVD (7.9 percent), well above the lowest prevalence reported by Asian and Pacific Islander individuals (2.5 percent). CVD was also more common in homes that reported lower annual incomes [Table 1].

Figure 2. Prevalence of Cardiovascular Disease Among California Adults by County, 2015-2019



a. Prepared by the California Department of Public Health, Chronic Disease Surveillance and Research Branch
 b. Highlighted Counties have prevalence estimates significantly higher or lower than overall California prevalence with categories selected by quintile ranges

c. Counties with statistically unstable prevalence measures are suppressed
 d. Horizontal lines represent 95 percent Confidence Intervals
 *California Prevalence: 5.9% (5.7-6.1% 95 percent Confidence Interval)

Cardiovascular Disease across California Counties

Exploring prevalence of self-reported CVD across all 53 counties in California, the range entails a 33-fold difference between counties with the lowest and highest prevalence for any CVD. For county-level estimates of CVD, Amador County has a prevalence of 16.8 percent followed by Calaveras County at 15.3 percent. In contrast, Mono County has a statistically lower prevalence of CVD at 0.5 percent followed by Yolo County at 3.4 percent. These county prevalence vary largely from the California prevalence estimate of 5.9 percent, overall [Figure 2]. Nationwide geographic studies have suggested the roles of a combination of state and individual-level factors that contribute to this variation⁴.

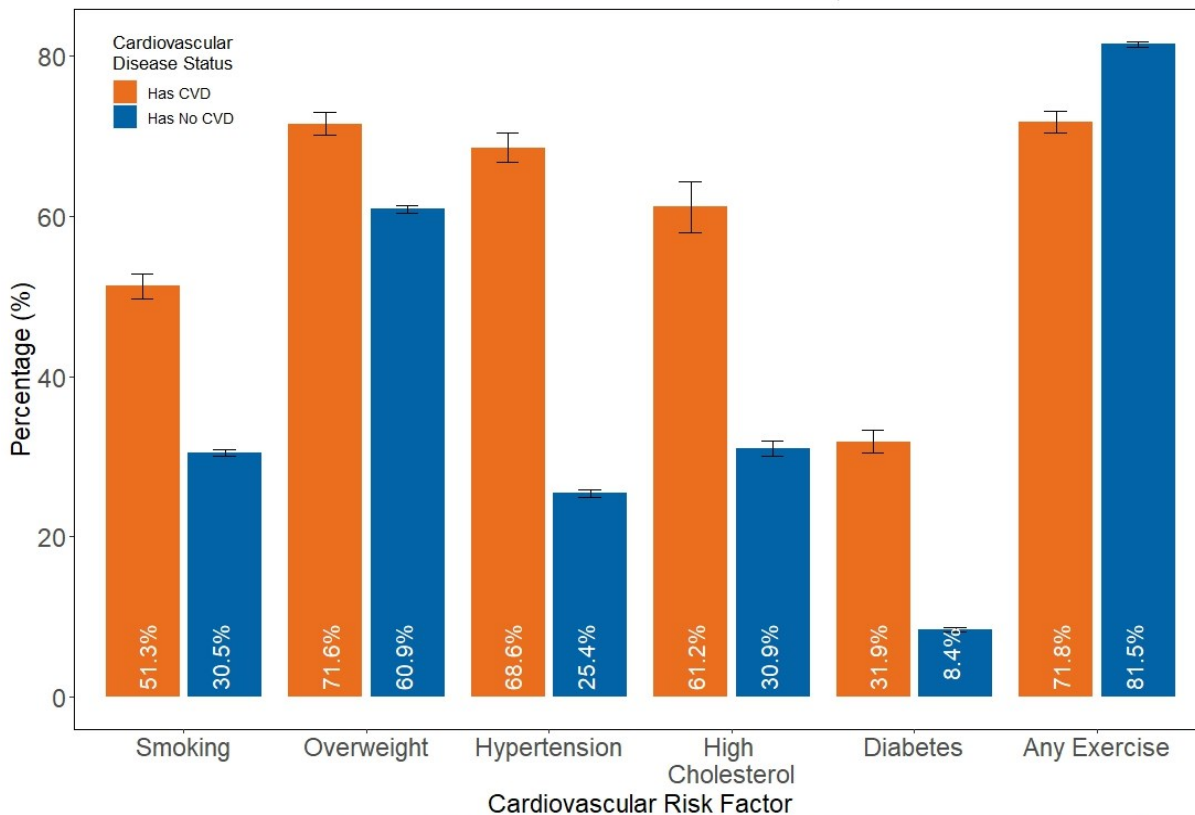
Controllable Risk Factors for Cardiovascular Disease

There are manageable risk factors contributing to CVD that can lead to improved health outcomes. These risk factors include behaviors regarding smoking, body weight, hypertension, cholesterol levels, diabetes, and physical activity⁵. For the selection of risk factors examined in California, there is higher prevalence of adults with CVD who report smoking compared to those without CVD who report smoking (51.3 percent vs. 30.5 percent). A greater prevalence of overweight individuals are observed with CVD compared to those without CVD (71.6 percent vs. 60.9 percent). Adults with CVD more frequently report being told by a health professional that they have high cholesterol levels compared to those without CVD (61.2 percent vs. 30.9 percent). The prevalence of diabetes is much higher in adults with CVD than those without CVD

[Continued on next page]

(31.9 percent vs. 8.4 percent). Moreover, hypertension is common in adults with CVD compared to those adults without CVD (68.6 percent vs. 25.4 percent). Conversely, those who reported any form of physical activity are found to have reduced occurrence of CVD (81.5 percent vs 71.8 percent) [Figure 3].

Figure 3. Prevalence of Risk Factors by Cardiovascular Disease Status in California Adults, 2015-2019



*Prepared by the California Department of Public Health, Chronic Disease Surveillance and Research Branch
Vertical lines represent 95 percent Confidence Intervals

Summary

This snapshot uses California BRFSS data weighted to the California population which allows for accurate estimation of the prevalence of underlying CVD conditions in adults, provides information for planning policies, and may have implications for health care resource utilization based on sociodemographic and county needs for additional resources to address CVD. Furthermore, this document helps highlight broader interventions with consideration for certain risk factors such as smoking, obesity, poor diet, hypertension, and lack of physical activity that can be managed to help mitigate the occurrence of CVD. Using BRFSS data ensures health departments and local communities the opportunity to assess progress and support CVD health promotion.

¹ *Leading Causes of Death, California*. National Center for Health Statistics. 2019 December. Available from: <https://www.cdc.gov/nchs/pressroom/states/california/ca.htm>

² Mozaffarian D, Benjamin EJ, Go AS, et al.; American Heart Association Statistics Committee; Stroke Statistics Subcommittee. *Heart disease and stroke statistics—2016 update: a report from the American Heart Association*. *Circulation* 2016; 133:e38-360.

³ *Leading Causes of Death and Injury*. Center for Disease Control and Prevention. Available from: <https://cdc.gov/injury/wisqars/index.html>.

⁴ Gebreab SY, Davis SK, Symanzik J, Mensah GA, Gibbons GH, Diez-Roux AV. *Geographic variations in cardiovascular health in the United States: contributions of state- and individual-level factors*. *J Am Heart Assoc*. 2015 May 27;4(6):e001673.

⁵ Adams ML, Grandpre J, Katz DL, Shenson D. *The impact of key modifiable risk factors on leading chronic conditions*. *Prev Med*. 2019 Mar;120:113-118.

California Department of Public Health Resources:

Chronic Disease Control Branch: <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/Pages/ChronicDiseaseControlBranch.aspx>

Stroke, Heart Disease & Diabetes: <https://www.cdph.ca.gov/Programs/CCDPHP/DCDIC/CDCB/Pages/HeartDiabetesResources4LHDs.aspx>

FOR ADDITIONAL INFORMATION

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