# Childhood Obesity Brief

## What is Obesity?

Body weight is influenced by a combination of genes, metabolism, behaviors, environment, culture, and socioeconomic status. Overweight and obesity describe body weight conditions that result from an energy imbalance, which involves consuming excess calories and lack of adequate physical activity.[1] Body mass index (BMI) is used to measure childhood overweight and obesity and is calculated using a child's weight and height.[2] A child's weight status is determined using an age- and gender-specific percentile for BMI because children's body composition varies by age and gender.[2] CDC Growth Charts are used to match the age- and gender-specific percentile to a specific BMI.[2]

A child (ages 2-19) is overweight if their weight is at or above the 85$^{th}$ percentile but below the 95$^{th}$ percentile of children or teens of the same age and gender.[2] Obesity is defined as being at or above the 95$^{th}$ percentile for weight among children of the same age and gender.[2] Obesity contributes to the risk for certain diseases and other health complications.

## Risk Factors for Obesity

### Demographic Risk Factors

- *Age*
  - Adolescents are more likely to be obese than preschool-aged children.[3]
- *Gender*
  - In 2009-2010, the prevalence of obesity was higher among boys (18.6%) than among girls (15.0%).[3]
- *Race/Ethnicity*
  - In 2007-2008, Hispanic boys and non-Hispanic black girls had higher prevalence of obesity than non-Hispanic white children.[4]
- *Genetics and Family History*
  - Genes play a role in the development of obesity.[5]
  - Individuals with a family history of obesity may be predisposed to gain weight.[5]

### Social and Behavioral Risk Factors

- *Poor Nutrition or Dietary Habits*
  - Media may contribute to poor nutritional choices and increased snacking among children.[6]
  - In 2011, 11% of high school students drank a can, bottle or glass of soda or pop three or more times per day in the past week.[7]
  - Schools are a critical resource that should be used to promote good nutrition to children.[8]
  - Over 50% of U.S. middle and high schools still offer sugar drinks and less healthy foods for purchase.[9]
  - Almost half of U.S. middle and high schools allow advertising of less healthy foods, affecting students' abilities to make healthy choices.[9]

- *Sedentary Lifestyle*
    - In 2011, 69% of students in grades 9-12 did not attend PE classes daily when they were in school.[7]
    - Studies have shown that television and computer time are associated with an increased likelihood of obesity in children.[10]
- *Poverty or Low Income*
    - 1 of 7 low income, preschool-aged children is obese.[11]
    - Lower-income neighborhoods that have less access to stores and supermarkets that sell healthy, affordable food such as fruits and vegetables can act as barriers to a healthy diet.[12]
    - Access to supermarkets is associated with a reduced risk for obesity.[12]
- *Dysfunctional Home Life*

## Intermediate Conditions

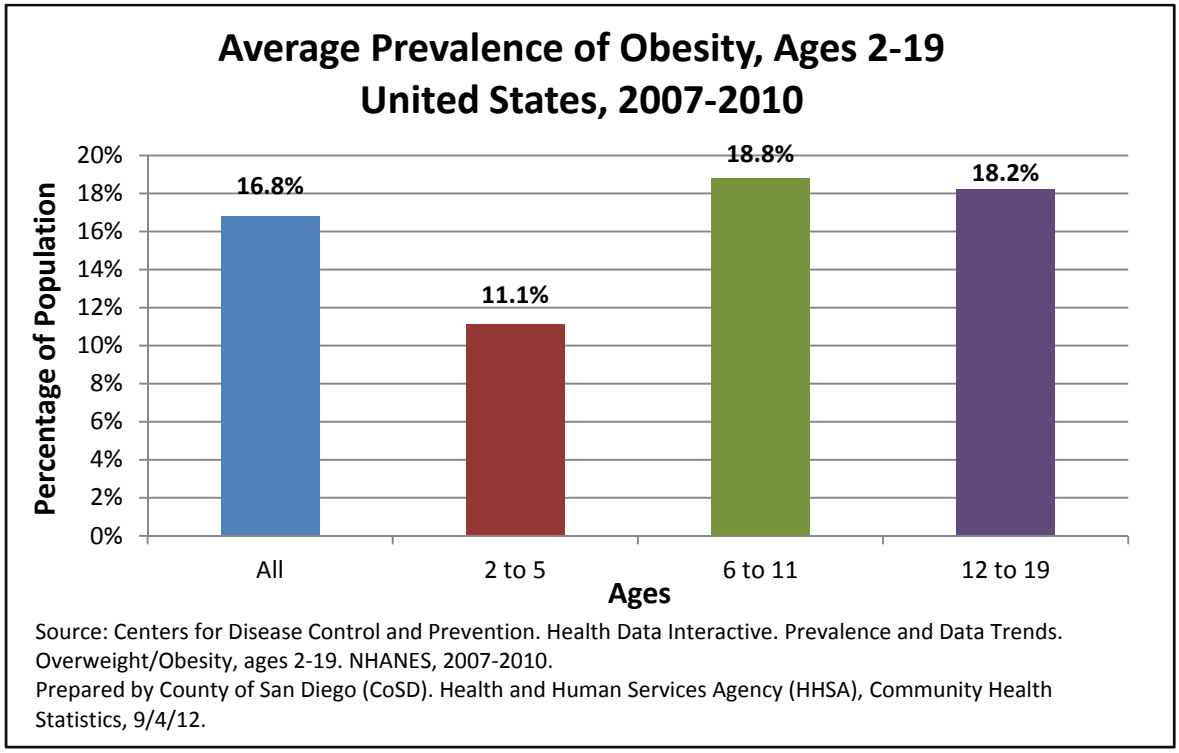
Obesity also increases the risk of other diseases and is accompanied by many complications. Some of these include:

- *Cardiovascular Disease (CVD)*
    - Obese children are more likely to have high blood pressure and high cholesterol, which are risk factors for cardiovascular disease.[2]
    - In one study, 70% of obese children had at least one CVD risk factor and 39% had two or more.[13]
- *Diabetes (Type II)*
    - Childhood obesity can lead to an increased risk of impaired glucose tolerance and insulin resistance.[14]
- *Cancer*
    - Consequences of childhood obesity are associated with several cancers in adulthood.[15]
- *Breathing Problems*
    - Obese children are more likely to have breathing problems, such as sleep apnea and asthma.[16,17]
- *Additional Consequences*
    - Obese children are more likely to have fatty liver disease and gastro-esophageal reflux (i.e. heartburn).[16]
    - Childhood obesity can lead to an increase risk of joint problems and musculoskeletal discomfort.[16,18]
    - Overweight or obese children are at least twice as likely to be iron-deficient as children of normal weight.[16]
    - The risk of obesity in adulthood is greater among obese children.[15]

## National Statistics and Disparities

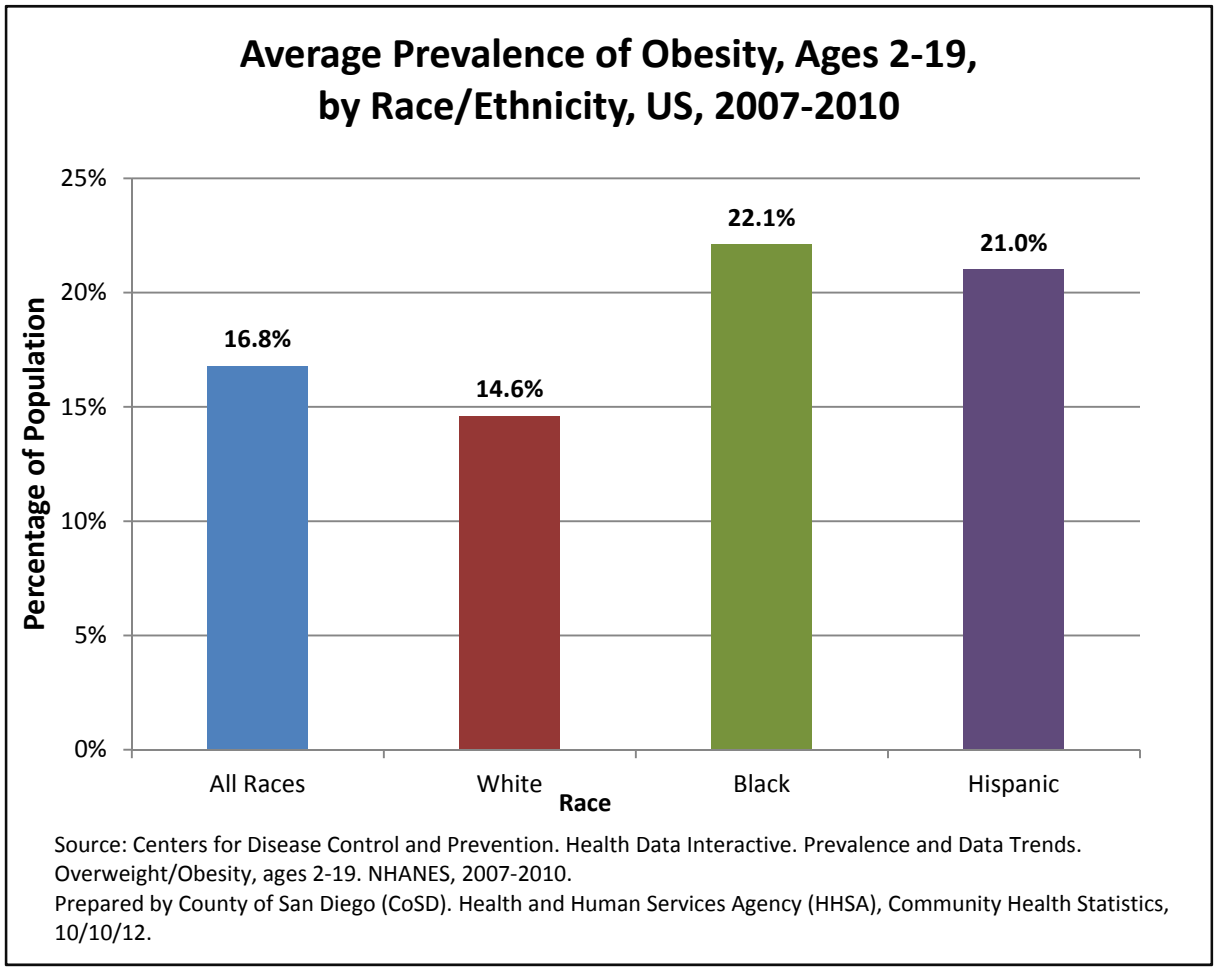
### Statistics

- In 2009-2010, approximately 17% of children and adolescents in the United States were considered obese.[3]
- In 2009, 11.5% of California children, ages 0-11, were overweight for their age.[19]
- In 2009, 11.9% of California teenagers, ages 12-17, were either overweight or obese.[19]
- Less than 3 out of 10 high school students get at least 60 minutes of physical activity each day.[20]




Source: Centers for Disease Control and Prevention. Health Data Interactive. Prevalence and Data Trends. Overweight/Obesity, ages 2-19. NHANES, 2007-2010.
Prepared by County of San Diego (CoSD). Health and Human Services Agency (HHSA), Community Health Statistics, 9/4/12.

- Between the years 2007-2010, 1 in 6 children (aged 2-19 years) was considered obese.

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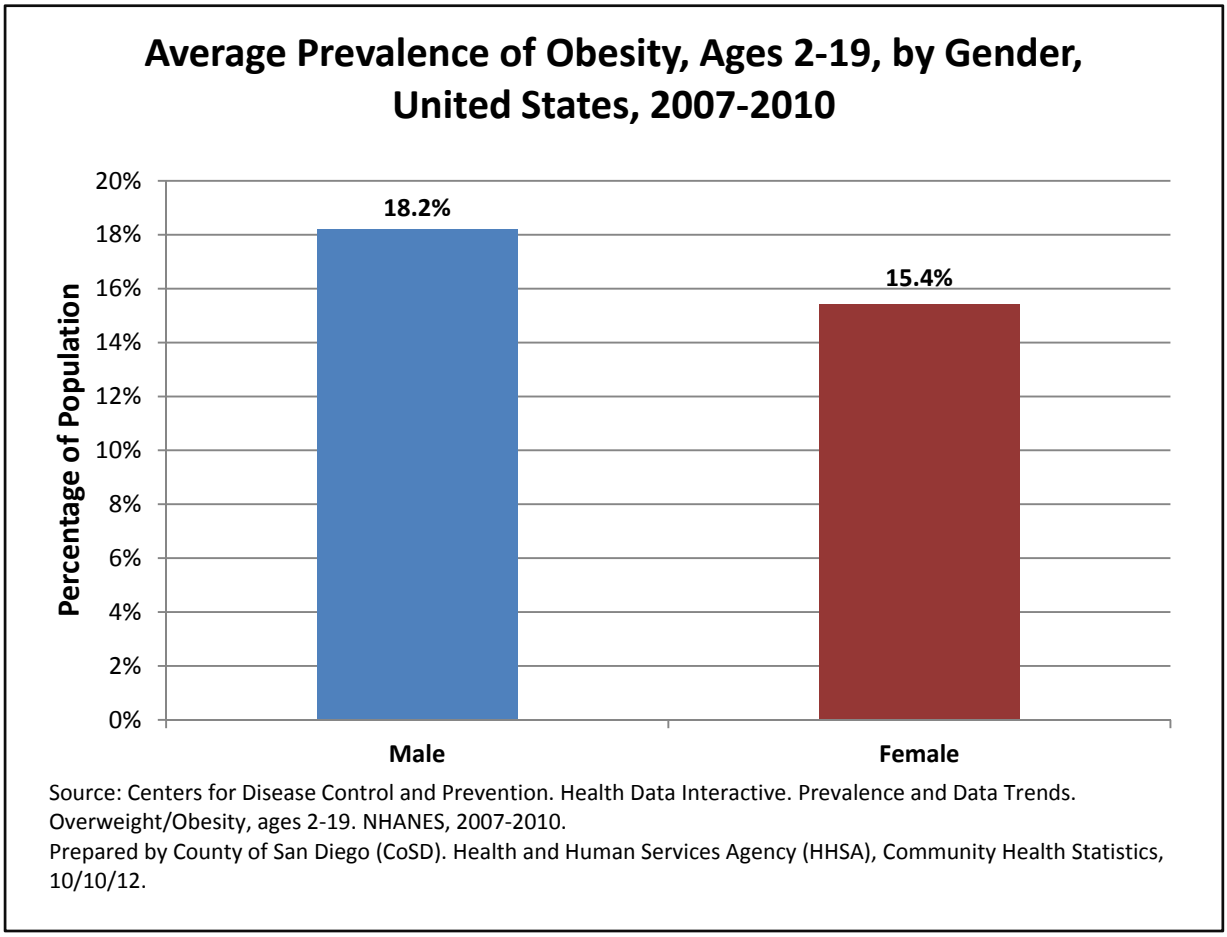
- Between 2007-2010, black and Hispanic children were more likely to be obese than white children.




Source: Centers for Disease Control and Prevention. Health Data Interactive. Prevalence and Data Trends. Overweight/Obesity, ages 2-19. NHANES, 2007-2010.
Prepared by County of San Diego (CoSD). Health and Human Services Agency (HHSA), Community Health Statistics, 10/10/12.

- From 2007-2010, males had higher obesity prevalence on average than females.

**Disparities**

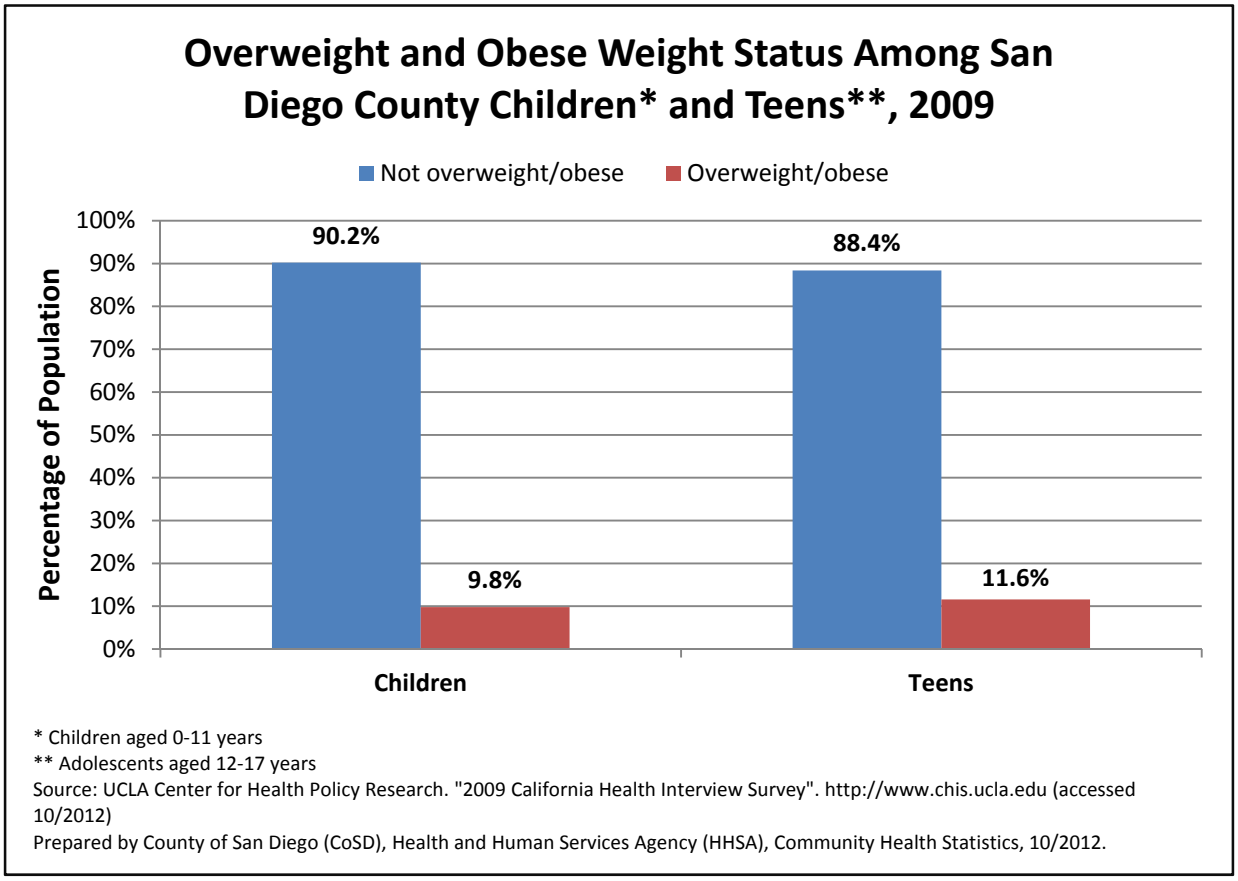
- From 2009-2010, adolescent girls (ages 12-19) had a higher prevalence of obesity (17.1%) than girls aged 2-11. In the same year, boys aged 6-11 had the highest prevalence of obesity (20.1%) than boys aged 2-6 and 12-19.[3]
- Overall, adolescents aged 12-19 had the highest prevalence of obesity (18.4%) than any other age group among children in 2009-2010.[3]
- In 2007-2008, Hispanic boys (aged 2-19) were significantly more likely to be obese than non-Hispanic white boys. That same year, non-Hispanic black girls were more likely to be obese than non-Hispanic white girls.[21]
- 1 in 3 low income children aged 2-4 years are likely to be obese by their 5th birthday.[11]

**Cost**

- Childhood obesity costs the United States about $3 billion dollars annually.[22]

## Local Statistics and Disparities

- According to the 2009 California Health Interview Survey, 9.8% of San Diego children and 11.6% of San Diego teens were considered overweight or obese.[19]
- In 2009, an additional 9.8% of teens were at risk of becoming overweight or obese.[19]




* Children aged 0-11 years
** Adolescents aged 12-17 years
Source: UCLA Center for Health Policy Research. "2009 California Health Interview Survey". http://www.chis.ucla.edu (accessed 10/2012)
Prepared by County of San Diego (CoSD), Health and Human Services Agency (HHSA), Community Health Statistics, 10/2012.

## Obesity and Its Complications: Prevention for Individuals

- *Parents can:*[23]
    - Limit media time for kids to no more than 1 to 2 hours per day, whether it be at home, school or child care.
    - Ensure that child care centers serve healthy food and drinks while limiting television and video game time.
    - Serve their child healthy foods and drinks, as outlined in the 2010 Dietary Guidelines for Americans.
    - Make sure their child gets at least 60 minutes of physical activity each day.
- *States and communities can:*[23]
    - Expand programs that bring local fruits and vegetables to schools.
    - Provide incentives to supermarkets and local farmers markets to sell healthier foods.
    - Create and maintain safe neighborhoods, parks, and playgrounds to encourage physical activity.
    - Support quality physical education classes in schools.

## Prevention Tools for Public Health Professionals: Obesity Critical Pathway

There are many opportunities for public health professionals in the community to help reduce the risk of obesity and to improve the health outcomes of individuals who already have the disease. To assist in community health efforts, an *Obesity Critical Pathway* was developed.

The *Obesity Critical Pathway* is a tool to be used in health promotion and disease prevention efforts. Its purpose is to identify populations at greater risk for obesity, and to identify prevention and early intervention opportunities. The *Obesity Critical Pathway* displays a diagram of the major risk factors and intermediate outcomes or related diseases that have an impact on, or result from, obesity. Risk factors are marked as non-modifiable (black striped bars) such as race/ethnicity or gender and modifiable (solid colored bars) such as physical activity or high blood pressure.

Beneath the risk factors diagram is a data grid describing the San Diego resident population in relation to selected elements of the pathway. The data grid is designed to assist in quick identification of opportunities for interventions that might have a high impact on a particular disease. The data represent all San Diegans, not only those with a particular disease. The left axis (bar) indicates the percent of the population with a known risk factor or intermediate outcome. The right axis (diamond) indicates the rate of a particular medical encounter within the population that is specified. The data are described fully described fully in the complete version of the *Critical Pathways*.[24]

In addition, the Community Health Statistics Unit website (www.SDHealthStatistics.com) provides detailed demographic, health and facility data including maps of geographically formatted health data. Also available are links to other County data sources, state and national sites of interest. For further assistance with data or interpretation, please contact the Community Health Statistics Unit.

*Critical Pathway*

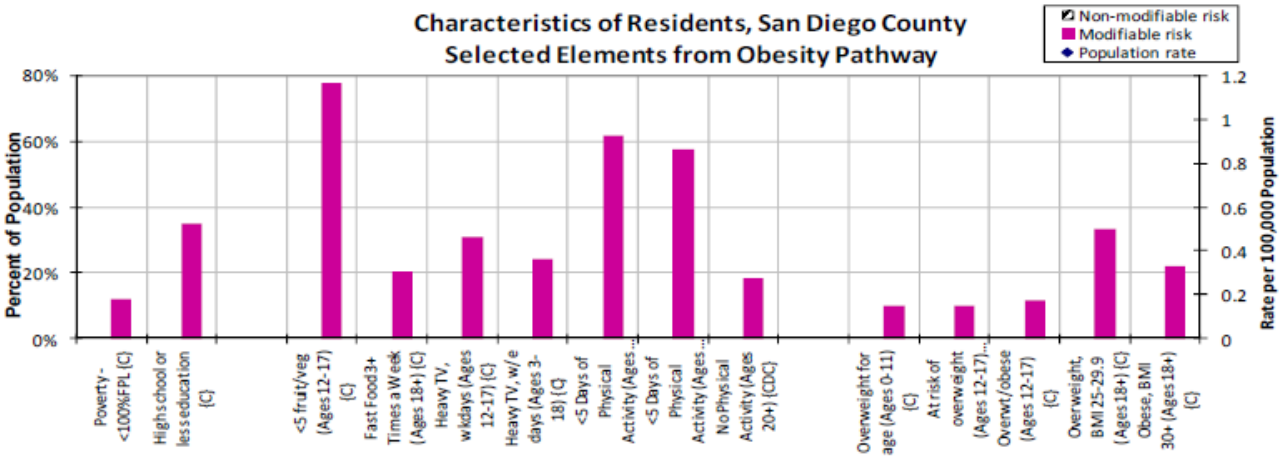
# Obesity

## Opportunities for Prevention

| | Primary | Secondary | Tertiary | |
|---|---|---|---|---|
| Birth | **Demographic Risk Factors*** | **Behavioral & Social Risk Factors*** | **Intermediate Outcomes** | Obesity |
| | Genetics/family history | Lack of physical activity | Eating disorders | |
| | Socioeconomic status | Sedentary lifestyle | Overweight | |
| | Limited education | Excessive screen time | | |
| | Poor family functioning | Poor nutrition | | |
| | | Limited fresh food access | | |

*Social Determinants of Health

## Characteristics of Residents, San Diego County
## Selected Elements from Obesity Pathway




01/12 County of San Diego ■ Health and Human Services Agency ■ Public Health Services ■ Community Health Statistics Unit ■ www.SDHeathStatistics.com ■ (619)285-6479 11

## Data Sources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