

Chapter 8

Nutrition and Physical Activity

Nutrition and physical activity are important lifestyle factors that contribute substantially to the burden of preventable illnesses and premature deaths in the nation. The 2005 Dietary Guidelines for Americans recommend that to stay healthy, persons over age 2 should aim for fitness and a healthy weight, and should be physically active each day.¹

Highlights of this chapter include:

- ◆ In 2001, almost half of adults in Sonoma County (age 18+) were either overweight or obese, an increase of 75% over four years.
- ◆ From 1999 to 2004, approximately one in four children attending Santa Rosa City Schools was classified as overweight.
- ◆ The rate of iron deficiency anemia among low-income children in Sonoma County has increased significantly since 2001.

For more information on morbidity and mortality related to nutritional factors and physical activity, refer to Chapter 6: Chronic Diseases.



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Nutrition

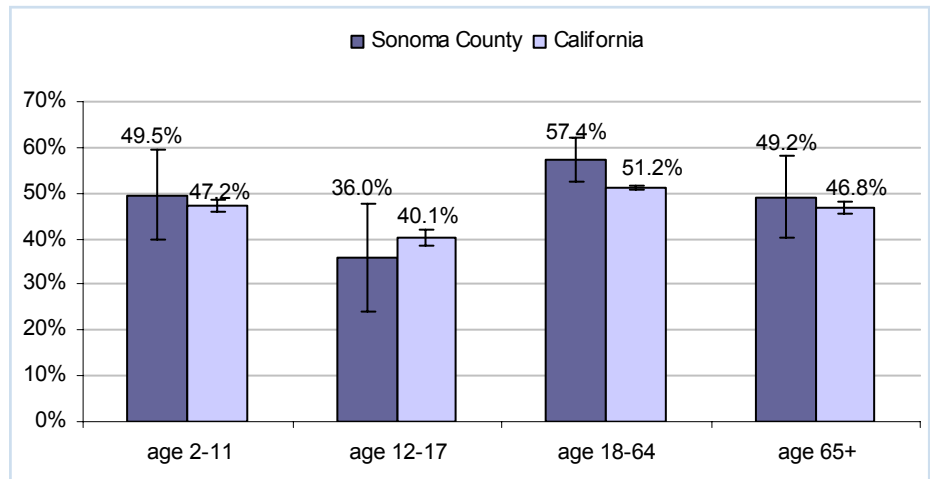
Dietary factors are associated with 4 of the 10 leading causes of death: coronary heart disease, some types of cancer, stroke, and type-2 diabetes. These health conditions are estimated to cost Americans over \$200 billion each year in medical expenses and lost productivity. Dietary factors also are associated with osteoporosis, which affects more than 25 million persons nationally and is the major underlying cause of bone fractures in postmenopausal women and elderly persons.²

The recommendation to consume vegetables and fruits for protection from chronic diseases is based on studies linking higher consumption of vegetables and fruits to lower rates of cancer, cardiovascular diseases, and other chronic diseases.³

Current recommendations are to consume at least five servings of vegetables and fruit per day. Vegetables and fruit are important sources of several essential nutrients, including vitamin C, folate and other B vitamins, pro-vitamin A and other carotenoids, potassium, calcium, and iron. Vegetables and fruit also provide dietary fiber.⁴

Fewer than 50% of Sonoma County residents reported consuming 5 or more servings of fruits and vegetables per day in 2001. Adults age 18-64 had a higher consumption than individuals age 12-17 (56.2% compare to 36%).⁵

Figure 8.1
Percent Who Eat 5+ Servings of Fruits and Vegetables per Day by Age Category, Sonoma County and California 2001



Source: California Health Interview Survey, Sonoma County and California 2001.

Significantly more Sonoma County residents age 18-64 reported eating five or more servings of fruits and vegetables than California residents. Additionally, Sonoma County seniors (age 65+) were just as likely as adults age 18-64 to eat five or more servings of fruit and vegetables per day (Figure 8.1).

Food Insecurity

Food insecurity (limited or uncertain availability of nutritionally adequate and sufficient foods) is a contributing factor to the overall health of the population.⁶ A 2002 Redwood Empire Food Bank study reported almost 94% of participants with children reported they sometimes or often ran out of food and did not have enough money to get more. Over 53% of senior citizens reported that they sometimes or often ran out of food.⁷

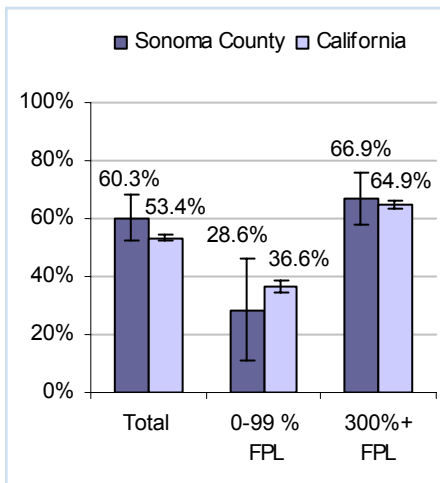
The Healthy People 2010 goal is to increase food security to 94% of all households in the nation.⁸

Vitamin and Supplement Use Among Childbearing Women

Women of childbearing age (age 15-49) are recommended to receive adequate amounts of folic acid in their diets in order to prevent poor birth outcomes. Most grain products (including enriched flour, breads, breakfast cereals, rice, and pasta) are fortified with folic acid. However, the amount of folic acid that some segments of the reproductive-aged population might receive through their diet may not adequately meet the recommended 400 micrograms daily. Thus, women capable of becoming pregnant need to eat a diet that includes folate-rich foods and target consumption of folic acid-fortified food



Figure 8.2
Percent of Women Age 15-49 Who Have Taken a Vitamin/Dietary Supplement in the Past Month, by Federal Poverty Level (FPL), Sonoma County and California 2001



Source: California Health Interview Survey, Sonoma County and California 2001.

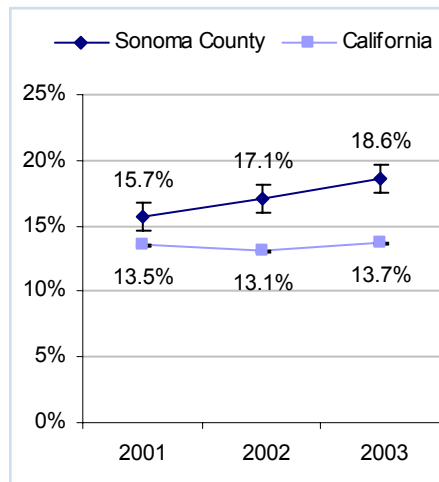
as well as take a folic acid-containing supplement.⁹

In 2001, over 60% of women age 15-49 in Sonoma County reported taking a vitamin or dietary supplement (Figure 8.2). This was somewhat higher than the California rate. However, low-income women (0-99% Federal Poverty Level or FPL) in Sonoma County were significantly less likely than more affluent women (300% and above FPL) to have reported taking a vitamin/dietary supplement in the past month.

Iron Deficiency Anemia

Children often receive inadequate amounts of iron in their diets and

Figure 8.3
Percent of Children Under Age 5 with Anemia, Sonoma County and California 2001-2003



Source: California Pediatric Nutrition Surveillance, Sonoma County and California 2001-2003.

iron deficiency anemia can develop. Long-term consequences of iron deficiency anemia include both cognitive and motor development abnormalities in children. Iron deficiency is most prevalent during the first two years of life when the infant brain is still developing.¹⁰

In 2003, Sonoma County children under age five had significantly higher rates of anemia than comparable California children (Figure 8.3).¹¹ Additionally, iron deficiency anemia has increased significantly in Sonoma County since 2001 with low-income Hispanic children showing the highest rates (18.5% compared to 13.2% for White, non-Hispanics).¹²

The Healthy People 2010 goal is to reduce iron deficiency anemia in

Table 8.1
Percent of Women Age 50+ Who Had a Bone Density Test, and Percent with Bone Condition* Diagnoses, Sonoma County and California 2001

	Sonoma County	California
Had a bone density test	43.5%	35.1%
Diagnosed with a bone condition	39.0%	58.3%

*Bone condition is defined as bone loss, osteopenia, or osteoporosis. Source: California Health Interview Survey, Sonoma County and California 2001.

children age 1-2 to 5% and age 3-4 to 1%. Sonoma County has not met this goal.¹³

Osteoporosis

Results from the nation's largest study of osteoporosis, the National Osteoporosis Risk Assessment (NORA) indicate that nearly one in two women tested had low bone-mineral density.¹⁴

Building strong bones, especially before the age of 30, can be the best defense against osteoporosis. Early detection of osteoporosis is important for reducing the risk of debilitating fractures and successful treatment of the disease. A bone density test should be considered for postmenopausal women and those at high risk for osteoporosis. High risk factors include family history of osteoporosis, cigarette smoking and/or heavy alcohol use, thin stature, trouble with vitamin D

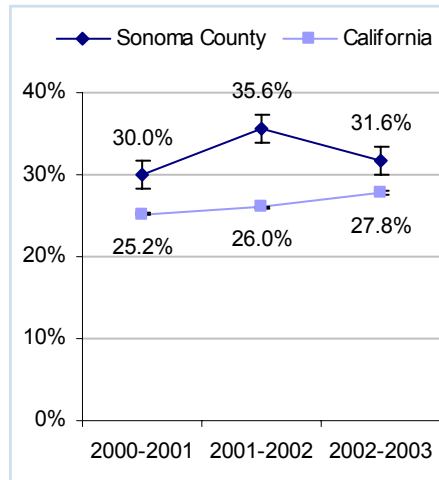
absorption, and Asian or Northern European decent.¹⁵

In 2001, Sonoma County women age 50+ were more likely to report having had a bone density test than California women of the same age (Table 8.1). Of those women who reported having a bone density test, fewer Sonoma County women were diagnosed with bone loss, osteopenia, or osteoporosis than among California women of similar age who were tested.

Physical Activity

Physical inactivity is associated with an increased risk for coronary heart disease, high blood pressure, obesity, diabetes and certain types of cancer.¹⁶ The 2005 U.S. Dietary Guidelines recommend adults engage in at least 30 minutes of moderate intensity physical activity on most days of the week to reduce the risk of chronic disease. Greater health benefits can be obtained by engaging in physical activity of more vigorous intensity. Physical activity is any bodily movement produced by skeletal muscles resulting in energy expenditure and is classified into two main categories, moderate and vigorous. Moderate physical activity is anything that makes you breathe as hard as you do during a brisk walk, performed five times a week for at least 30 minutes. Vigorous activity is performed at higher intensities for 20 minutes three times per week.¹⁷

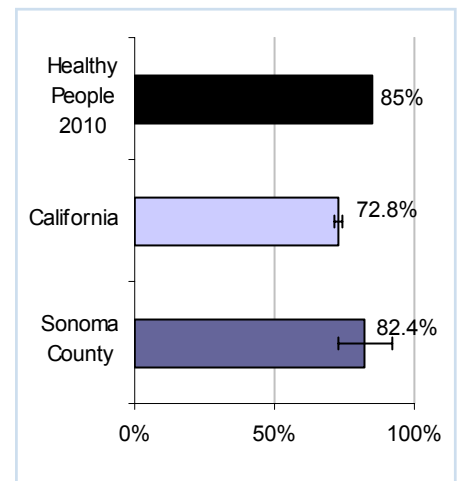
Figure 8.4
Percent of 7th Grade Students Meeting Basic Fitness Standards, Sonoma County 2000-2001 and 2002-2003



Source: California Department of Education, Standards and Assessment Division, California Physical Fitness Report, Sonoma County and California 2000-2001 and 2002-2003.

In 2001, only half of adults in Sonoma County were getting the minimum recommended level of physical activity. One in five adults (19.8%) in Sonoma County reported no vigorous activity at all (were sedentary). This rate was significantly higher for Sonoma County females (26.1%) than for males (16.2%). Rates were also higher among adults age 65+ (49.4%) compared to adults age 18-44 (13.2%) and age 45-64 (19.3%). However, the rate of sedentary adults in Sonoma County was significantly lower than the California rate (25%) and met the Healthy People 2010 goal of 20% or less adults participating in no leisure-time physical activity.

Figure 8.5
Percent of Teens (age 12-17) Who Reported Participating in Adequate Physical Activity in the Past Week, Sonoma County and California 2001



Source: California Health Interview Survey, Sonoma County and California 2001.

For children and adolescents, the U.S. Dietary Guidelines recommend at least 60 minutes of physical activity on most, preferably all, days of the week.¹⁸ Although there are no data to specifically examine these recommendations, basic fitness standards are evaluated for teens age 12-17.

Each year students in the 5th, 7th and 9th grades are evaluated for 6 basic fitness areas. In 2002-2003, only 31% of Sonoma County 7th graders met the basic fitness standards (Figure 8.4).¹⁹

In 2001 over 82% of Sonoma County teens reported getting adequate physical activity in the past week compared to 73% of California teens. Rates for Sonoma County



Table 8.2
Adults by Weight Classification (Body Mass Index*), Sonoma County and California 2001

	Sonoma County	California
Underweight (BMI<18.5)	1.9%	2.2%
Normal (BMI 18.5-24.9)	49.2%	43.4%
Overweight (BMI 25-29.9)	34.8%	35.5%
Obese (BMI 30+)	14.1%	18.9%

*Body mass index (a ratio of weight to height) is used to measure overweight and obesity.

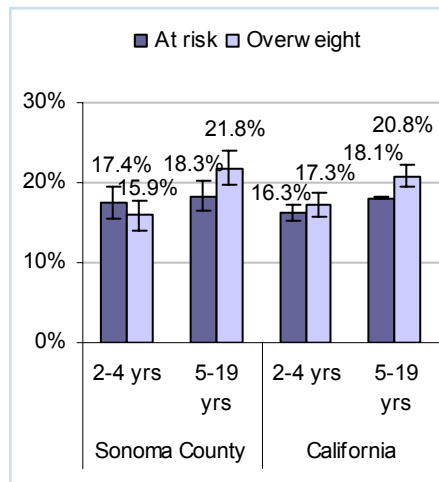
Source: California Health Interview Survey, Sonoma County and California 2001.

males and females were similar (82.7% and 82.2%). This comes close to satisfying the Healthy People 2010 goal to increase the proportion of adolescents who get adequate physical activity each week to at least 85% (Figure 8.5).²⁰

In 2001, almost three-fourths (71.2%) of Sonoma County teens reported participating in physical activity three or more days a week. This is significantly higher than the California rate of 63%.

High consumption of television, computer and video games by children contribute to inactive lifestyles. Nationally, children spend more time watching television than they spend on any other daily activity except sleeping, and the average adolescent spends more time watching television each year than

Figure 8.6
Childhood Growth Indicators by At-risk for Overweight and Overweight, Sonoma County and California 2002



Source: Pediatric Nutrition Surveillance (PedNSS), Sonoma County and California 2002.

attending school.²¹ The American Academy of Pediatrics recommends limiting children’s total media time (entertainment media) to no more than one to two hours of quality programming per day.²²

In 2001 almost 50% of Sonoma County children and teens spent two to three hours per weekday watching television. This is similar to California rates of television watching by children and teens.

On the weekend, one in four (25%) Sonoma County children and teens spent four or more hours per day watching television. Over 31% of Sonoma County children and teens spent less than one hour in front of the television during a weekend day.

Overweight and Obesity

Overweight and obese individuals are at increased risk for many chronic diseases and health conditions across the lifespan, including hypertension, type-2 diabetes, and heart disease.²³

For adults, overweight and obesity ranges are determined by using weight and height to calculate a number called the “body mass index” (BMI). BMI is used because, for most people, it correlates with their amount of body fat. An adult who has a BMI between 25 and 29.9 is considered overweight. An adult who has a BMI of 30 or higher is considered obese.²⁴

For children, BMI is gender and age specific. Cut-off criteria are based on the 2000 Centers for Disease Control and Prevention’s BMI-for-age growth charts for the nation. Children with BMI-for-age values at or above the 95th percentile are categorized as overweight and those with BMI values between the 85th and 95th percentiles are categorized as at-risk of overweight.²⁵

In 1997, an estimated 92,500 (28%) of Sonoma County adults were overweight or obese.²⁶ As of 2001, over 48% of Sonoma County adults were estimated to be overweight or obese, an increase of 75% in four years (Table 8.2).

Although Sonoma County had a significantly lower rate than California (53.9%), the Healthy People

2010 goal (less 40% overweight or obese) has not been achieved.²⁷

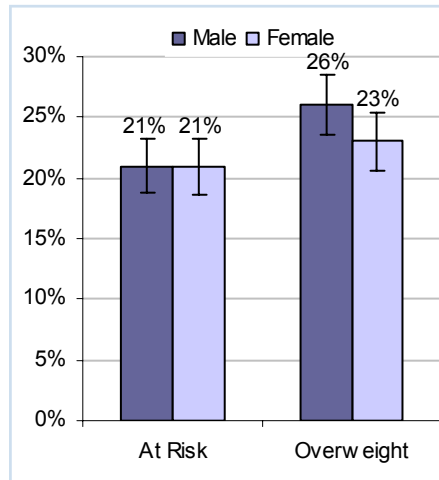
More than 20% of children in the nation are considered obese, 41% of whom continue to be obese as an adult. The Healthy People 2010 goal is to reduce the proportion of overweight children to 5%.

According to annual pediatric nutrition surveillance data collected for low-income children in Sonoma County, one in three (33%) children age 2-4 are overweight or at risk of becoming overweight. This rate is higher for children age 5-19 (40%). These rates are similar to California rates (Figure 8.6).²⁸

An annual height and weight assessment among Santa Rosa City Schools 5th graders indicated that from 1999 to 2004. Almost half of the males and females screened (46.5%) were overweight or at-risk for overweight (Figure 8.7).

Hispanic and American Indian had the highest percentage of overweight students. More than one in three Hispanic 5th grade males, and 28% of Hispanic 5th grade females, were considered overweight in the assessment. Over half of the American Indian males and one-third of the American Indian females evaluated in the assessment were considered overweight.²⁹

Figure 8.7
Percent of 5th Graders Who are At-risk for Overweight or Overweight by Gender, Santa Rosa City Schools 1999-2004




Source: Santa Rosa City Schools, Overweight Risk Assessment 1999-2004.



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