



An Epidemic: Overweight and Unfit Children In California Assembly Districts

December 2002

This report also is background material for the Senate Policy Brief, An Epidemic: Overweight and Unfit Children in California Senate Districts, released in April 2003. Copies of the Senate Policy Brief and district fact sheets for the 40 Senate Districts can be obtained at www.publichealthadvocacy.org

California Center for Public Health Advocacy
P.O. Box 2309
Davis, CA 95617
Phone: (530) 297-6000 Fax: (530) 297-6200
info@publichealthadvocacy.org

The California Center for Public Health Advocacy

The California Center for Public Health Advocacy is an independent, nonpartisan, non-profit organization that raises awareness about public health issues and mobilizes communities to promote the establishment of effective health policies. The California Public Health Association-North and the Southern California Public Health Association founded the Center. The Center is supported by grants from The California Endowment, The Robert Wood Johnson Foundation, The California Wellness Foundation, and the William Randolph Hearst Foundations.

Center Staff

Harold Goldstein, DrPH, *Executive Director*
Stefan Harvey, *Assistant Director*
Rosa Soto, *Grassroots Campaign Regional Manager*
Daniel Hackman, *Policy Analyst*
Jackie Domac, *Team Leader, 47th Assembly District*
Marianne Foust, *Team Leader, 54th Assembly District*
Mary Lou Tryba and Leonor Conroy, *Team Leaders, 55th Assembly District*
Jeanette Flores, *Team Leader, 57th Assembly District*
Maria Santa Maria, *Team Leader, 56th and 58th Assembly District*

Board of Directors

Ellen Alkon, MD, MPH, <i>Chair</i>	Jim Keddy
Julie Williamson, MPH, <i>Vice Chair</i>	Hanan Obeidi, MPH, CHES
Adele Amodeo, MPH, <i>Treasure</i>	Ruth Roemer, JD
Denise Adams-Simms	Bernie Weintraub, MPH
Calvin Freeman	Harold Goldstein, DrPH (<i>ex officio</i>)
Glenn Hildebrand, MPH	

Contact Information

Northern California Office: PO Box 2309
Davis, California 95617
530 297-6000
530 297-6200 (fax)

Southern California Office: PO Box 2277
La Puente, California 91746
626 961-1179
626 961-1609 (fax)

World Wide Web: info@publichealthadvocacy.org
www.publichealthadvocacy.org

**An Epidemic:
Overweight and Unfit Children
In California Assembly Districts**

Prepared for

The California Center for Public Health Advocacy

By

Samuels and Associates
Oakland, CA

Acknowledgements

Authorship. *An Epidemic: Overweight and Unfit Children in California Assembly Districts* was written and edited by Samuels and Associates, contractors of the California Center for Public Health Advocacy (CCPHA) and Dr. Chi Kao of the Institute for Health Policy Studies at the University of California at San Francisco. Authors at Samuels and Associates included: Sarah Stone, Lisa Craypo, Nancy Adess, and Sarah Samuels. Graphic design was provided by Bonnie Fisk-Hayden. Editorial input was provided by Stefan Harvey, Daniel Hackman and Harold Goldstein of CCPHA.

Data and Data Analysis. The report was based on findings of an analysis of the California Physical Fitness Test 2001. The California Department of Education provided this data to CCPHA. Dr. Chi Kao of the Institute for Health Policy Studies at the University of California at San Francisco conducted data management and analysis.

Scientific Advisory Panel. CCPHA convened a Scientific Panel of experts in the fields of nutrition, physical education, physical activity and social marketing to provide advice about how best to analyze the data and to recommend policies addressing childhood overweight and inactivity. Panel members included the following (with affiliations listed for information only).

- Dr. Kelli McCormack Brown (University of South Florida),
- Dr. Patricia Crawford (UC Berkeley),
- Betty Hennessy (Los Angeles County Office of Education),
- Dr. James Sallis (California State University, San Diego),
- Dr. Greg Welk (Iowa State University), and
- Dr. Antronette Yancey (UCLA).

Two individuals served as advisors to the study:

- Katherine Flegal, Ph.D. (University of California at Berkeley, and the Centers for Disease Control and Prevention), and
- Marion Nestle, Ph.D., MPH (New York University).

The views expressed in the report are those of CCPHA and do not necessarily represent the viewpoints of members of the Scientific Panel and their institutions.

Funding. Support for this report was provided by a grant from The Robert Wood Johnson Foundation®, Princeton, New Jersey.

Additional Information. An accompanying Policy Brief and fact sheets for each of the 80 Assembly Districts can be found at www.publichealthadvocacy.org.

Special Thanks. Several individuals contributed immensely to the work that resulted in this report. Chi Kao of University of California, San Francisco and our colleagues at Samuels and Associates - Nancy Adess, Lisa Craypo, Bonnie Fisk-Hayden, Sarah Samuels, Sarah Stone helped with the analysis and presentation of the findings. Particular thanks go to Bonnie Fisk-Hayden whose perseverance resulted in the maps of overweight and unfit children by Assembly District. John O'Connell of the Assembly Committee on Elections, Reapportionment, and Constitutional Amendments and Eugene Turner of California State University Northridge provided initial assistance with the map aspect of the project. Debbie Vigil and Diane Wilson-Graham of the California Department of Education were helpful throughout the project. Scott Sullivan of the Senate Office of Demographics was enormously helpful in identifying useful resources. The expertise provided by members of the Scientific Panel members and the Project Advisors was invaluable. Research conducted by Esther Epstein at the UCLA School of Public Health provided helpful background material. The California Center for Public Health Advocacy extends enormous thanks to these individuals.

Table of Contents

Executive Summary	2
Introduction	11
Chapter 1: Overweight Youth	16
Chapter 2: Physical Activity, Physical Education and Fitness Among Youth	24
Chapter 3: <i>FITNESSGRAM</i>	33
Chapter 4: Study Methodology	39
Chapter 5: Findings	42
Chapter 6: Policy Recommendations	63
Appendices	
Appendix A: Comparison Between CDC Growth Charts and Healthy Fitness Zone	66
Appendix B: Healthy Fitness Zone Definitions.....	67
Appendix C: Demographics of Students Tested by Assembly District.....	68
Appendix D: Results for Other Fitness Tests	70
Appendix E: Assembly District General Information	72

Executive Summary

Childhood overweight and physical inactivity have reached epidemic levels in California. These conditions are dooming our children to serious health problems now and in the future, and saddling the state's economy with exorbitant and preventable long-term costs. The crisis is perpetuated by complex social and environmental factors that overwhelm our children's ability to make healthy decisions about eating and physical activity. Given the political will, much can be done to ensure a healthier future for our children.

To understand the extent of the epidemic among California's children, the California Center for Public Health Advocacy analyzed the California Department of Education's 2001 *FITNESS-GRAM* data in a unique way—by state Assembly District. This analysis provides policy makers with a clear picture of childhood fitness among their constituents and gives all Californians a clear picture of childhood fitness in their communities.

Background

Overweight. National rates of children who are overweight are soaring.

- The National Health and Nutrition Examination Survey (NHANES)¹ data show that the prevalence of overweight among children from six to eleven years old increased nearly four-fold between 1963 and 2000 (Ogden et al., 2002).
- Among adolescents from 12–19 years old, the prevalence of overweight increased more than three-fold between 1966 and 2000 (Ogden et al., 2002).

Though the prevalence of overweight in children and adolescents is increasing, the rate of increase is particularly pronounced among certain ethnic groups (Ogden et al., 2002).

According to the Surgeon General (2001), overweight children face a greater risk of a host of problems, including Type 2 diabetes, high blood pressure, high blood lipids, asthma, sleep apnea, chronic hypoxemia (too little oxygen in the blood), early maturation, and orthopedic problems. Overweight children also suffer psychosocial problems, including low self-esteem, poor body image, and symptoms of depression (UCB/Cooperative Extension, 2000). For girls in particular, poor self-image from being categorized as obese follows them into adulthood, resulting in fewer years of completed education, lower family incomes, and higher rates of poverty, regardless of their initial socioeconomic background (Dietz, 1998). Obese children are also hospitalized more often than children with healthy weight (Wang et al., 2002).

Because overweight children are likely to become overweight adults, these children are more likely to suffer from cardiovascular disease, cancer, and diabetes in adulthood—all chronic, but largely preventable diseases that already account for two-thirds of all deaths in California.

¹ The NHANES data were analyzed using the Center for Disease Control and Prevention's definition of overweight.

Physical Inactivity. The majority of children of all ages in the United States do not get enough physical activity; fully one-third are considered physically inactive (CDC, 2001).

- Data from the 2001 Youth Risk Behavior Survey (YRBS) show that more than 30% of the youth responding did not participate in either moderate or vigorous physical activity over the previous week (CDC, 2001) compared to 14% in 1996 (Surgeon General, 1996).
- Only 3% of respondents to the 2001 YRBS met the Healthy People 2010 Objective for continuous vigorous physical activity (Pate et al., 2002).
- According to the YRBS survey, only 52% of students in the U.S. were enrolled in a physical education class, and only 32% attended a physical education class daily.

Physical fitness has a key role in children's health by keeping the cardio-respiratory system, joints, and muscles healthy and strong (Woodward-Lopez et al., 2000). Physically fit children are less likely to suffer from chronic diseases both as children and as adults. Regular physical activity helps to maintain healthy weight and prevent overweight (DeLany et al., 2002). Moreover, physically active children are more likely to be physically active adults, with much lower risks for diabetes and heart disease (Surgeon General, 1996).

Economic Costs. This combination of overweight and physical inactivity results in significant medical and financial resources being expended in the treatment of overweight youth and obese adults. As the percentage of children who are overweight rises, and as these children age, the health problems they face will burden California with growing costs for medical care, lost productivity and human resources.

- From 1979 to 1999, national costs associated with childhood obesity increased three-fold, from \$35 million to \$127 million (Wang et al., 2002).
- Based on the Surgeon General's (2001) assessment of the annual national cost of obesity, (including direct medical costs and costs attributed to illness, disability, and premature death), and based on population, the estimated cost of obesity in California is \$14.2 billion.
- Medical care costs associated with obesity are greater than those associated with both smoking and problem drinking (Sturm, 2002).

Causes of the Epidemic. The high prevalence of overweight and physical inactivity is caused by numerous individual, social, and environmental factors. The epidemic is perpetuated by conditions including, but not limited to, the following: increasing portion sizes, increasing consumption of fast food and soft drinks, lack of funding for nutrition and physical activity programs, availability of soda and junk food on school campuses, poor physical activity infrastructures in schools and communities, limited compliance with physical education requirements in many schools, limited access to healthy foods in low-income neighborhoods, and advertising of junk food to children and their families.

The Study

In 1995, California law mandated statewide physical performance testing for all fifth, seventh, and ninth graders at least every two years. The six measures of the *FITNESSGRAM* assessment tool, developed by the Cooper Institute in Dallas, Texas, are used to test fitness levels of California children each spring. Individual performance on the *FITNESSGRAM* measures is classified as either “in the Healthy Fitness Zone” or “not in the Healthy Fitness Zone,” with Healthy Fitness Zone describing the minimum level of fitness thought to provide some protection from health risks. The California Department of Education collects and analyzes *FITNESSGRAM* data annually and reports findings to the Governor and Legislature.

The California Center for Public Health Advocacy (the Center) analyzed data from two of the *FITNESSGRAM* measures of the 2001 assessment, body composition and aerobic capacity, by Assembly District for all students and stratified by grade, gender, and ethnicity. Assembly Districts used in this study are those that became effective in the November 2002 elections, based on the 2000 Census. The Center convened a Scientific Panel of nationally recognized experts in nutrition, physical activity, physical education, and social marketing to provide advice about how best to analyze the data and to recommend policies addressing childhood overweight and inactivity.

The body composition measure of *FITNESSGRAM* was used as the indicator of weight in this study. The aerobic capacity measure was used as the indicator for fitness for this study because it reflects the fitness of the cardiovascular and respiratory systems and the ability to engage in strenuous exercise for prolonged duration. Cardiovascular and respiratory fitness have been shown to reduce adult risk of high blood pressure, coronary heart disease, obesity, diabetes, and some forms of cancer (Surgeon General, 2001).

For the purposes of this analysis, children were classified as “overweight” if their body composition measurement was above the Healthy Fitness Zone and as “unfit” if their aerobic capacity score was below the Healthy Fitness Zone. These results can be expected to differ from studies using criteria other than the Healthy Fitness Zone.

The Findings

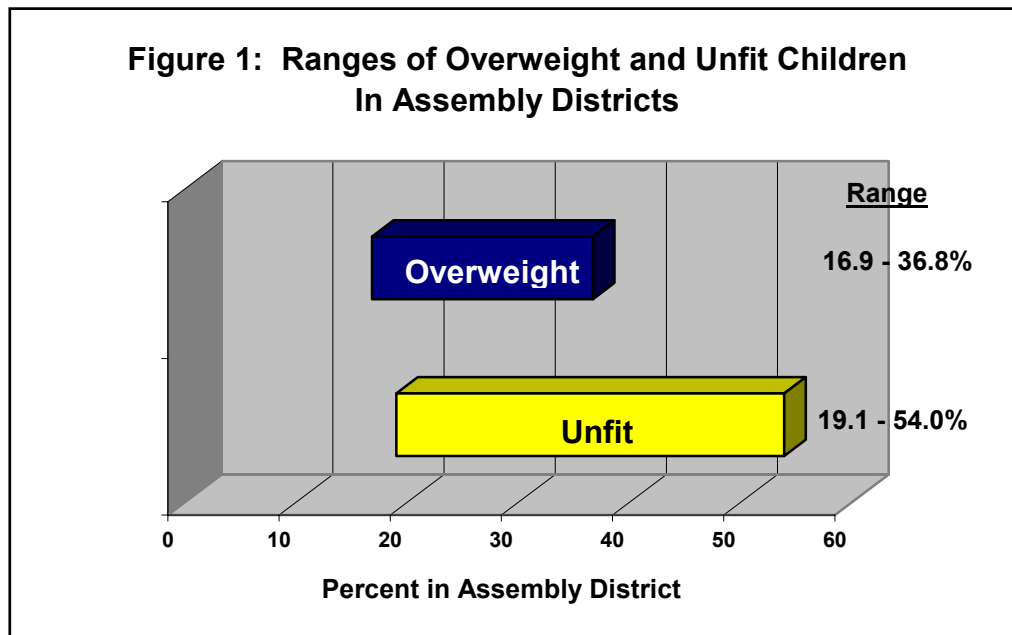
Principal Finding

THIS STUDY SHOWS THAT THERE ARE HIGH RATES OF OVERWEIGHT AND UNFIT CHILDREN IN ALL 80 ASSEMBLY DISTRICTS IN CALIFORNIA—EVEN IN THOSE DISTRICTS WITH THE LOWEST RATES.²

- In 45 of the 80 Assembly Districts (56%), at least one child out of four (25%) is overweight. In the Assembly District with the highest percentage of overweight chil-

² See Terms and Definitions in the Introduction for the technical meaning of the terms “overweight” and “unfit.”

dren, 36.8% of children are overweight; in the district with the lowest percentage of overweight children, the rate is still high at 16.9% (see Figure 1).



- In 78 of the 80 Assembly Districts (97.5%), at least one child out of four (25%) is unfit. In the district with the highest percentage of unfit children, 54.0% are unfit. In the district with the lowest rate, 19.1% of children are unfit (see Figure 1).

The maps on pages 43 and 44 illustrate the magnitude of the statewide problem. Across all districts statewide, 26.5% of children are overweight and 39.6% of children are unfit. Map A shows the percentage of children in each Assembly District who are overweight; Map B shows the percentage of children in each Assembly District who are unfit. Both maps also show the Los Angeles and Bay Area areas in greater detail. On each map, Assembly Districts are shaded according to the percentage of unfit or overweight children in that district, with each degree of shading representing one-fifth of the 80 Assembly District scores.

Other Key Findings

LOS ANGELES COUNTY ASSEMBLY DISTRICTS HAVE PARTICULARLY HIGH RATES OF OVERWEIGHT AND UNFIT CHILDREN. (SEE MAPS A AND B ON PAGES 43 AND 44)

- Of the nine Assembly Districts in the state with the highest percentages of both overweight and unfit children, eight are in Los Angeles County.
- Of the 16 Assembly Districts with the highest percentages of overweight children, 10 are in Los Angeles County.
- Of the 16 Assembly districts with the highest percentages of unfit children, 10 are in Los Angeles County.

THERE IS CONGRUENCE WITHIN ASSEMBLY DISTRICTS THAT HAVE EITHER THE HIGHEST OR LOWEST PERCENTAGES OF OVERWEIGHT AND UNFIT CHILDREN.

- Nine Assembly Districts have among the highest percentages of both overweight and unfit children. Ten districts have among the lowest percentages of both overweight and unfit children.

ASSEMBLY DISTRICTS HAVE HIGHER RATES OF OVERWEIGHT BOYS THAN OVERWEIGHT GIRLS.

- In every Assembly District (100%), the percentage of overweight boys is greater than the percentage of overweight girls (see Figure 2).
- In 71 of the 80 Districts (89%), at least one boy in four (25%) is overweight.

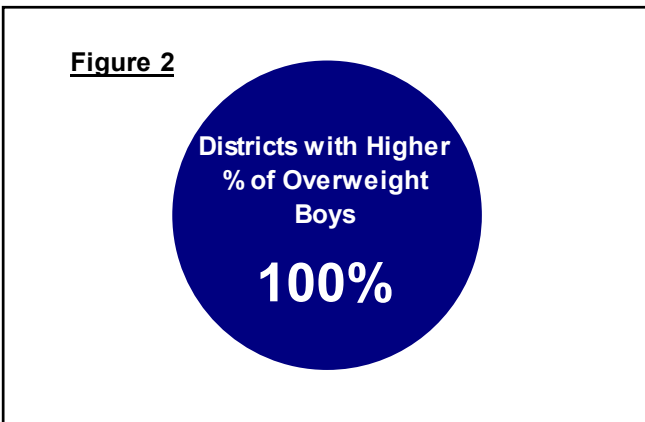


Figure 2: *In every Assembly District, the percentage of overweight boys is greater than the percentage of overweight girls*

ASSEMBLY DISTRICTS HAVE HIGHER RATES OF UNFIT GIRLS THAN UNFIT BOYS.

- In 62 of the 80 Assembly Districts (77.5%), the percentage of unfit girls is greater than the percentage of unfit boys (see Figure 3).

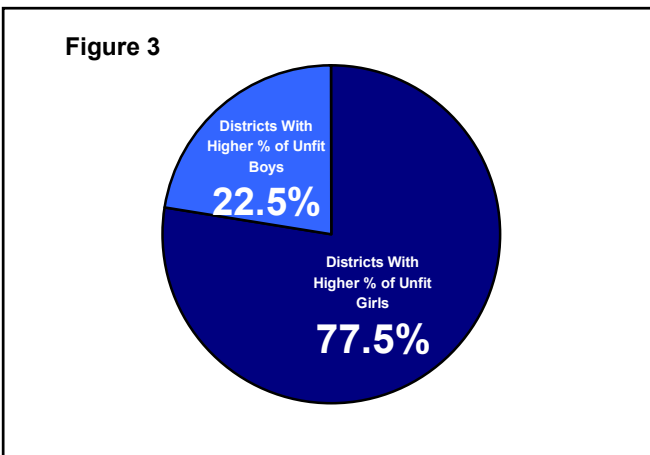


Figure 3: *In more than three-quarters of the Assembly Districts, the percentage of unfit girls is greater than the percentage of unfit boys.*

THOUGH CHILDREN IN ALL GRADES ARE OVERWEIGHT AT HIGH RATES, THE PERCENTAGE OF OVERWEIGHT CHILDREN IN ASSEMBLY DISTRICTS DECREASES FROM ELEMENTARY SCHOOL TO HIGH SCHOOL.

- In 72 of the 80 Districts (90%), there are higher percentages of overweight fifth graders than ninth graders.
- Across all Districts statewide, 28.2% of fifth graders, 27.0% of seventh graders, and 23.6% of ninth graders are overweight.

THE PERCENTAGE OF UNFIT CHILDREN IN ASSEMBLY DISTRICTS INCREASES FROM ELEMENTARY SCHOOL TO HIGH SCHOOL.

- In 64 of the 80 Assembly Districts (80%), there are higher percentages of unfit ninth graders than unfit fifth graders (see Figure 4).

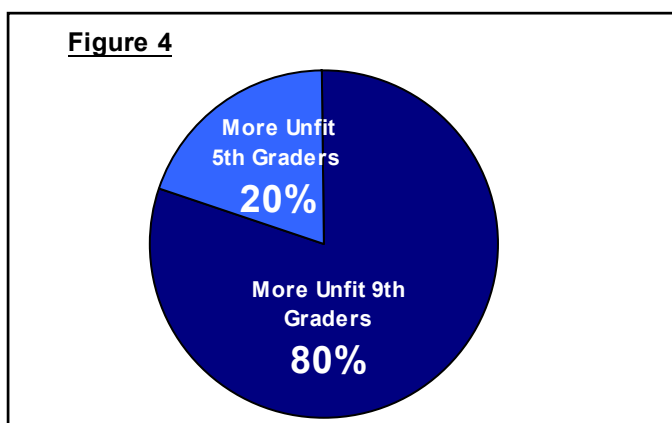


Figure 4: *In 4 out of 5 Assembly Districts, there are higher percentages of unfit ninth graders than unfit fifth graders.*

THOUGH ALL ETHNIC GROUPS HAVE HIGH RATES OF OVERWEIGHT AND UNFIT CHILDREN, THERE ARE HIGHER PERCENTAGES AMONG CERTAIN ETHNICITIES.³

- Across all Districts statewide, 33.7% of Latino children are overweight and 44.5% are unfit.
- Across all Districts statewide, 28.6% of African-American children are overweight, and 46.0% are unfit.
- Across all Districts statewide, 20.2% of White children are overweight, and 33.5% are unfit.
- Across all Districts statewide, 17.5% of Asian children are overweight and 35.7% are unfit.

³ The appropriate data were not available for this analysis to determine whether these findings are a function of ethnicity or socioeconomic factors.

Priority Recommendations

Unless dramatic action is taken to reform state and local policies, many of California's children will face a lifetime of poor health; furthermore, the state's economy will be burdened with additional long-term costs. The California Center for Public Health Advocacy calls on policy makers throughout the state to take clear and direct action to address this serious situation in order to ensure a healthier future for our children. The Center's recommendations are based on those made by the Scientific Panel.

Immediate Actions

1. The Governor should declare this epidemic a public health emergency and immediately convene a summit of government, health, education, business and nonprofit leaders to identify immediate strategies to address the emergency.
2. Every legislator should consider how best to address the epidemic.
3. Every legislator should convene a District forum of community leaders within six months to identify immediate strategies to address the emergency locally.

Policies for the Coming Year (2003)

1. Enforce state law mandating 200–400 minutes of physical education every 10 days in grades 1–12.
2. Fund and implement State law outlining elementary school nutrition standards (SB 19, 2001). While there is a cost to implement the nutrition standards, these costs would be less than the long-term economic consequences that could arise if elementary schools are permitted to sell soda and junk food.
3. Hold Legislative hearings to examine the impact that advertising to children has on the epidemic.
4. Ensure that every school has operable water fountains.
5. Continue administering the *FITNESSGRAM* test annually and continue reporting findings to the Governor and the Legislature annually.
6. Implement the Physical Education Framework for California Public Schools K–12—a key and fundamental resource for developing physical education programs endorsed by the State Board of Education—in every school district.

Policies for the Next Four Years (2003–2007)

1. Ensure that nutrition and physical education are given equal priority to other academic subjects by:
 - Providing professional development for physical education and nutrition education teachers.
 - Reducing physical education class size to conform to class size of other subjects.
 - Utilizing evidenced-based nutrition, health education and physical education curricula.
2. Ensure that physical activity is included in all state-supported after-school and childcare programs.
3. Middle schools, high schools, after-school programs and childcare programs should implement the nutrition standards established by SB 19.

4. The California State University and the University of California system should accept physical education grades as part of a student's grade point average submitted for college admission.
5. Bond measures should be used to raise funds to improve physical education facilities, community infrastructure that supports physical activity, and school cafeterias.
6. State and local agencies should develop a "physical activity impact statement" as a method of determining the impact of community development on the ability of children and their families to be physically active.
7. Local health departments should make promotion of healthful nutrition and physical activity top priorities.
8. The University of California should conduct research to determine whether and how income and ethnicity affect fitness. Findings and recommended policy changes should be reported to the Legislature.

Additional Policy Recommendations

The Center recommends additional policy changes as discussed in Chapter 6.

Executive Summary: References

Centers for Disease Control and Prevention (CDC). Youth Risk Behavior Surveillance System: United States Summary Results 2001. National Center for Chronic Disease Prevention and Health Promotion. Atlanta, GA, 2001. [http://www.cdc.gov/nccdphp/dash/yrbs/summary_results/usa.htm (Accessed August 27, 2002)]

DeLany JP, Bray GA, Harsha DW, Volaufova J. Energy expenditure in preadolescent African American and white boys and girls: the Baton Rouge Children's Study. *American Journal of Clinical Nutrition*. 2002; 75(4):705-713.

Dietz, WH. Childhood weight affects adult morbidity and mortality. *Journal of Nutrition*. 1998; 128(2): 411S-414S.

Ogden, CL, Flegal, KM, Carroll, MD, Johnson, CL. Prevalence and Trends in Overweight Among US Children and Adolescents, 1999-2000. *Journal of the American Medical Association*. 2002; 288: 1728-1732.

Pate RR, Freedson PS, Sallis JF, Taylor WC, Sirard J, Trost SG, Dowda M. Compliance with physical activity guidelines: prevalence in a population of children and youth. *Annals of Epidemiology*. 2002; 12(5): 303-308.

Sturm, R. The effects of obesity, smoking, and drinking on medical problems and costs. *Health Affairs (Millwood)*. 2002; 21(2): 245-253.

U.S. Department of Health and Human Services. *Physical Activity and Health: A Report of the Surgeon General*. Atlanta, GA, 1996.

United States Department of Health and Human Services. *The Surgeon General's Call to Action To Prevent and Decrease Overweight and Obesity*. Atlanta, GA, 2001.

University of California, Berkeley (UCB) / Cooperative Extension *Childhood Overweight: A Fact Sheet for Professionals*, Crawford et al., UC Berkeley, Jan. 2000.

Wang, G, and Dietz, WH. Economic Burden of Obesity in Youths aged 6-17 years: 1979-1999. *Pediatrics*. 2002; 109(5): E81-1.

Woodward-Lopez, G, et al. The Research Section of *Improving Children's Academic Performance, Health, and Quality of Life: A Top Policy Commitment in Response to Children's Obesity and Health Crisis in California*. CEWAER (California Elected Women's Association for Education and Research) and University of California, Center for Weight and Health, Berkeley, CA. 2000.

INTRODUCTION

Overview

Three largely preventable chronic diseases—cardiovascular disease, cancer, and diabetes—account for two-thirds of all deaths in California. Two risk factors for developing these diseases in adulthood— childhood overweight and physical inactivity—have reached epidemic levels in California and across the nation. The crisis of childhood overweight and inactivity is perpetuated by complex social and environmental factors that decrease the likelihood that our children will make healthy eating and physical activity decisions. These factors include the following:

- lack of funding for nutrition and physical activity programs;
- massive availability of soda and junk food on school campuses;
- poor physical activity infrastructures in schools and communities;
- limited compliance with physical education requirements in many schools;
- limited access to healthy foods in low-income neighborhoods; and
- extensive and insidious advertising of junk food to children and their families.

To understand the extent of the epidemic among youth across California, the California Center for Public Health Advocacy analyzed the 2001 fitness data collected by the California Department of Education in a unique way— by Assembly District. This report was prepared for the California Center for Public Health Advocacy by Samuels and Associates, an Oakland-based research and evaluation firm.

This report is a companion to the policy brief by the same name, a version of which constitutes the Executive Summary of this report. In this Introduction, we present a listing of terms and meanings as used throughout this paper. To give the reader some insight into recent policy changes occurring at both the state level and the school district level with regard to nutrition and physical activity, information about recent legislation, and school policy changes are included later in the Introduction.

- Chapters 1 and 2 present relevant background information regarding childhood overweight, physical activity, physical education, and physical fitness.
- The origin of the fitness data is the California Department of Education’s mandated fitness test of students in fifth, seventh, and ninth grades in California public schools. A complete description of this fitness test, called the *FITNESSGRAM*, is included in Chapter 3.
- Chapter 4 presents the methods of the data analysis.
- The analytical findings are presented in Chapter 5, stratified by Assembly District in order to provide policy makers a clear picture of childhood fitness among their constituents, and to give constituents a clear picture of fitness among their youth.
- The Center convened a Scientific Panel of experts on childhood overweight, physical education, physical activity, and social marketing which provided advice about how best

to analyze the fitness data and to recommend policies and programs to address the public health threat of childhood overweight and diminishing physical activity from a population perspective. These recommendations are presented in the Executive Summary and Chapter 6.

Terms and Definitions

AEROBIC CAPACITY

A *FITNESSGRAM* measure that reflects the fitness of the cardiovascular and respiratory systems and the ability to engage in strenuous exercise for prolonged duration. Aerobic capacity is determined in the *FITNESSGRAM* by running and walking tests. Data from the aerobic capacity measure were analyzed in this study.

ASSEMBLY DISTRICT

A geographic area that contains 1/80th of the population of California. That population elects an individual to represent their interests in the California State Assembly. There are 80 Assembly Districts, apportioned by population every decade. This study uses the Assembly Districts that became effective in the November 2002 elections based on the 2000 Census.

BODY COMPOSITION

A *FITNESSGRAM* measure to assess weight as determined by Body Mass Index or percent of body fat. *FITNESSGRAM* data on body composition were analyzed in this study.

BODY MASS INDEX (BMI)

A ratio measurement of weight to height that is used to categorize individuals as underweight, normal, at risk for overweight, or overweight.

FITNESSGRAM

An assessment protocol created by the Cooper Institute (Dallas) that measures a number of health-related aspects of a child's fitness in a multi-test format. Aerobic capacity and body composition are the two *FITNESSGRAM* measures analyzed in this study. (See Chapter 3 for more information.)

HEALTHY FITNESS ZONE (HFZ)

The *FITNESSGRAM*'S scoring of fitness test outcomes. A score of "within the Healthy Fitness Zone" indicates the person has the minimum level of fitness related to the specific test thought to provide some protection from health risks.

OBESITY

An excess in body fat relative to lean muscle mass. This term is no longer favored to describe children. "Overweight" is the preferred scientific term.

OVERWEIGHT

Used in this study to describe children who scored above the Healthy Fitness Zone for body composition. This definition differs from the one employed by the Centers for Disease Control and Prevention (CDC). (See Appendix A.)

Studies cited in Chapter 1 that use the term “overweight” may define “overweight” differently than the definition used in this study. In the most recent scientific literature, “childhood overweight” and “at risk for overweight” are the preferred terms to the term obese to describe excess weight among youth. We use these terms throughout this paper, except when reporting findings from literature that employs other terminology. Several common terms with corresponding definitions are included below to provide clarity when reading Chapter 1. These include the following:

- ***At risk for overweight:*** The “at risk” category includes youth 2-20 who are between the 85th and 94th percentiles weight-for-height for their age and gender, according to the Centers for Disease Control and Prevention (CDC). These children are not currently overweight, but have a much greater chance of becoming overweight than children who fall below the 85th percentile.
- ***Childhood overweight:*** This category defines excess in body weight for height. According to the CDC, this definition captures those children and youth ages 2-20 who are at or above the 95th percentile weight-for-height for their age and gender.
- ***Obese:*** “Obese” refers to “an excess in body fat relative to lean muscle mass” (Crawford, et al., 2000). Researchers studying youth use “obese” less frequently now for two reasons. First, the most frequently used measurement of children’s body composition—Body Mass Index (BMI), which measures the heaviness of the body—does not directly correlate with the definition of “obese.” According to Crawford, et al., there is a “good, but not perfect correlation between body fat and body heaviness.” Second, children grow at different rates; some children who appear overweight are growing normally. Labeling a child as obese based on weight and height measures may be inaccurate. In addition, the obesity label carries psychosocial consequences that persist long after childhood.

PHYSICAL FITNESS

The ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and to meet unforeseen emergencies.

PHYSICAL ACTIVITY

Participation in moderate to vigorous physical activity for at least thirty minutes per day on most days of the week.

PHYSICAL EDUCATION

Physical Education refers to a planned, sequential program of curricula and instruction that helps students develop the knowledge, attitudes, motor skills, self-management skills, and confidence needed to adopt and maintain physically active lifestyles.

RATE ACROSS ALL ASSEMBLY DISTRICTS

The percentage of all students in California who were unfit or overweight.

SCIENTIFIC PANEL

The experts in nutrition, physical activity, physical education, and social marketing convened by the California Center for Public Health Advocacy to provide advice about how best to analyze the 2001 *FITNESSGRAM* data and to recommend policies addressing childhood overweight and inactivity. Panel members are listed on the credits page inside the cover.

UNFIT

Used in this study to describe children whose aerobic capacity score was below the Healthy Fitness Zone. (Some members of the Scientific Panel were not comfortable identifying all children below the Healthy Fitness Zone as “unfit.” They preferred the term “under-fit” because it recognizes a continuum of aerobic capacity fitness below the Healthy Fitness Zone.)

Nutrition, Physical Activity and Physical Education Policy in California

Recent Legislation

The media, scientific researchers, and the health community have recently brought increased public attention to the childhood overweight epidemic. As a result, several pieces of legislation aimed at changing nutrition, physical activity, and physical education policy for California’s youth have been enacted by the Legislature and signed by the Governor.

California School Nutrition Standards (Senate Bill 19, Chapter 913 Statutes of 2001). In the fall of 2001, Governor Davis signed SB 19 (Escutia), the "The Pupil Nutrition, Health, and Achievement Act of 2001" into law. The law establishes nutrient standards for all foods sold outside of the school meal program on elementary school campuses and limits the availability of carbonated beverages in middle schools. The standards - based on those developed by a national consensus panel of nutrition and child health experts convened by the California Center for Public Health Advocacy - must be implemented in January 2004 if the state's 2003-2004 budget contains funding to increase the state's reimbursement for school meals. The law also provides funding for pilot programs to assess implementation of the nutrient standards in middle and high schools.

California School Physical Education Standards (Assembly Bill 1793, Chapter 943 Statutes of 2002). In the fall of 2002, Governor Davis signed AB 1793 (Migden). This law requires the California Board of Education to set and adopt physical education standards for schools serving grades K-12. The law also requires the state to monitor public school compliance with physical education requirements (including the number of hours of instruction offered), and makes other clarifying changes regarding compliance. However, no additional funds were appropriated to carry out the new requirements.

Expanded School District Authority Regarding Physical Education (Senate Bill 1868, Chapter 1166 Statutes of 2002). In the fall of 2002, Governor Davis signed SB 1868 (Torlakson). This law requires school districts - to the extent that resources are available - to provide quality physical education to prepare students to be physically active for life. This law authorizes school districts to perform the fitness test on students in grade 10-12, and requires that the two-

year exemption from high school physical education be contingent on passing the "designated physical performance test" (the *FITNESSGRAM*) in the grades 9-12. The results of *FITNESSGRAM* tests would be provided to individual students, and aggregate results would be included in School Accountability Report Cards. The law also allows the Superintendent of Public Instruction to consider the results of the fitness test when deciding whether a school will be considered a "distinguished school", for purposes of the High Achieving/Improving Schools Program.

Recent Changes In Local School Nutrition Policies

The epidemic of overweight children is linked to diminishing physical activity, waning physical education, and declining quality nutrition practices. In light of the inextricable link between nutrition and overweight, some California school districts have enacted their own stringent school policies pertaining to nutrition.

School	Policy Changes
Berkeley	In August 1999, the Berkeley Unified School District adopted a policy specifying the use of organic produce in lunch food preparation. In the Fall of 2002, however, this policy was abandoned due to funding and logistical problems
Oakland	As of January 2002, the Oakland Unified School District Board of Education, which serves 52,000 students, banned the sale of soda and candy on school grounds. This was the first such ban in the state.
Capistrano	Effective September 2002, the Capistrano Unified School District banned sugary, carbonated, and high-fat foods from vending machines.
Los Angeles	In September 2002, the Los Angeles Unified School District Board of Educators unanimously passed a revised school nutrition policy that bans the sale of soda and sweetened beverages on the grounds of middle and high schools. This ban will become effective in 2004.

Chapter 1:

OVERWEIGHT YOUTH

Obesity is at epidemic levels in the United States, afflicting nearly one-third of all adults, while the problem of overweight affects more than 1 in 7 youth ages 6-17 (Flegal, et al., 2002; Ogden, et al., 2002). A number of factors, including genetics, contribute to the rising rate of adolescent overweight. However, there is a consensus among scientists and medical professionals that poor diet and lack of physical activity play important roles in children being overweight (Berkey, et al., 2000; Rowlands, et al., 1999). For the most part, teens in California follow eating patterns that do not meet national dietary recommendations (Foerster, 2000). The majority of youth of all ages do not get enough physical activity and one-third are considered physically inactive (CDC, 2001). Many factors, including environmental factors, contribute to the inadequate diets and inactivity of youth. Regardless of the causes, significant medical and financial resources are expended in the treatment of overweight among youth and obesity among adults. Unless the trend is reversed, the rising rates of overweight among youth will put further stress on these resources for years to come.

Researchers employ several terms to describe children and weight. As discussed in the Introduction, the terms “childhood overweight” and “at risk for overweight” are preferred within the current scientific literature. Therefore, these terms are used throughout discussion of the literature. However, when an author used other terms— such as “obese,” “heavy,” or “fat”—we use these terms to preserve the integrity of the particular study.

Overweight Children In The United States

National rates of children who are overweight and at risk for overweight are soaring. According to National Health and Nutrition Examination Survey (NHANES) data:

- During 1963-2000 the prevalence of overweight among ages 6-11 increased nearly four-fold from 4.2% to 15.3% (Ogden, et al., 2002)
- During 1966-2000 the prevalence of overweight among ages 12-19 increased from 4.6% to 15.5% (Ogden, et al., 2002).

The prevalence of overweight youth is increasing in all age, ethnic, gender and socioeconomic groups. However, overweight is greater among ethnic minorities.

- NHANES 1999-2000 data indicate that the prevalence of childhood overweight and at risk for overweight among 6-11 year olds is 35.9% among non-Hispanic Blacks, 39.3% among Mexican Americans, and 26.2% among non-Hispanic Whites (Ogden, et al., 2002).
- African American girls and Hispanic boys and girls have higher rates of overweight than non-Hispanic white boys and girls at most ages (Ogden, et al., 2002).

The prevalence of childhood overweight varies across ages, both within and among ethnicities. Thus, while African American girls are generally thinner than their white counterparts at a young age, they surpass white girls in average BMI by the age of 12.

- The average BMI of black girls increases from 0.4 to 2.3 times that of their white counterparts over the ages of 9-19 (Kimm, et al., 2001).
- After adjusting for puberty and onset of menstruation, black girls were “fatter” than white girls by age 12, and the gap continued to widen into young adulthood (Kimm, et al., 2001).

Overweight Children In California

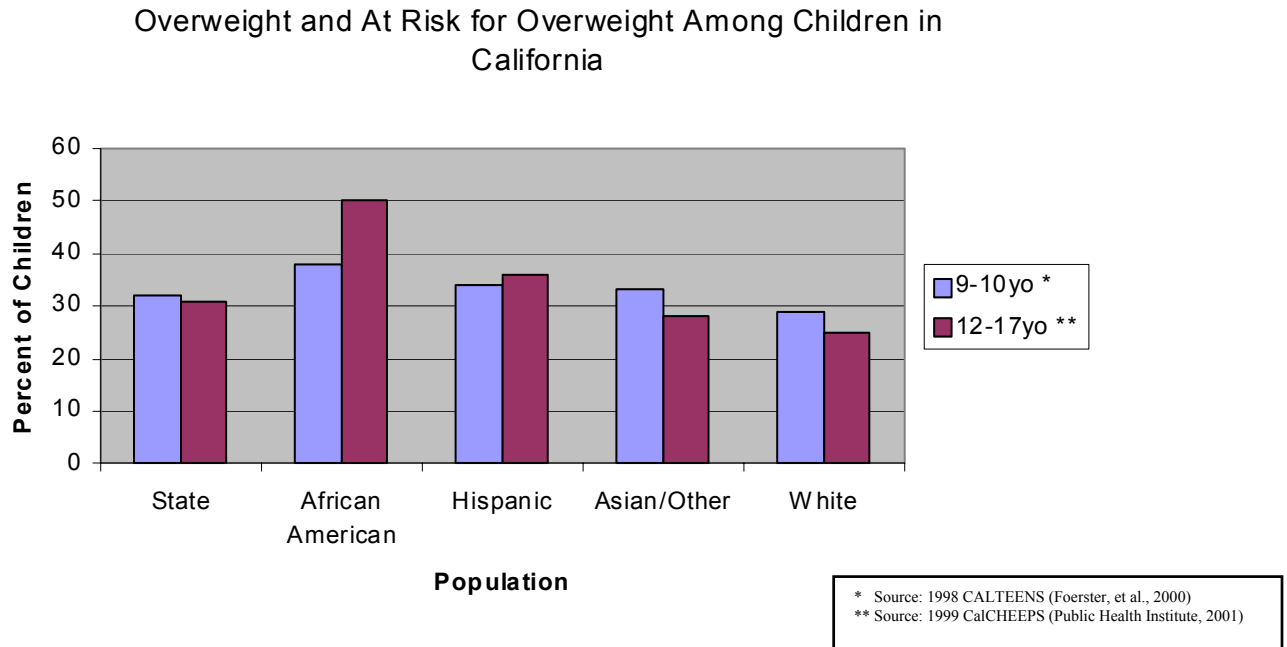
California data on childhood overweight mirror the national trends, with the number of at risk and overweight children in the state rising quickly.

- California Teenage Eating, Exercise and Nutrition Survey (CALTEENS, administered by the California Department of Health Services) data classified 31% of California youth ages 12-17 overweight or at risk of overweight. When stratified by gender, the data showed 35% of males and 26% of females age 12-17 were either overweight or at risk of overweight (Foerster, 2000).
- Pediatric Nutrition Surveillance System (PedNSS, administered by the California Department of Health Services) data showed that the percentage of overweight children in the state increased from 12.4% to 14.1% from 1990 to 1998 (California Department of Health Services, 2000).
- In some school districts in California, 40-50% of children are overweight (Slusser, et al., 1999).

Disparities in childhood overweight exist among certain ethnic groups, differing income groups, and across gender in California.

- California Children’s Healthy Eating and Exercise Practices (CalCHEEPS, administered by the California Department of Health Services) data show the following percentages of overweight or at risk of overweight among 9- and 10-year-olds in California:
 - 38% of African Americans
 - 34% of Latinos
 - 33% of Asian and Pacific Islander Americans
 - 29% of whites (Public Health Institute, 2001).
- In California, African American and Latino teens are at higher risk of overweight than white teens (Ritchie, et al., 2001).
- Among all ethnicities in California, boys 12-17 are at higher risk for overweight than girls. (Woodward-Lopez, et al., 2000).
- Self-reported CALTEENS data (see Figure 1) show that among ages 12-17, 50% of African Americans, 36% of Latinos, 28% of Asian and Pacific Islander Americans, and 25% of whites were overweight or at risk of overweight (Foerster, 2000).

- Pediatric Nutrition Surveillance System (PedNSS) data showed that 14% of low-income California youth under the age of 12 are overweight compared to 10.7% of low-income children nationally (CMS, 2000).



Health Consequences Of Childhood Overweight And Obesity

The current childhood obesity epidemic has significant medical and psychosocial consequences. There is, for example, a strong correlation between childhood overweight and adult overweight.

- Among overweight children and teens, 50% remain overweight as adults (Dietz, 1998); adult obesity is associated with a number of chronic diseases, including diabetes, heart disease, hypertension and some cancers (Surgeon General, 2001).
- Men who were obese as children have higher morbidity and mortality as adults from all causes (Dietz, 1998).
- Obese adolescents have a higher risk of cardiovascular disease, diabetes, atherosclerosis, hip fracture, and gout when they become adults (Dietz, 1998).

Some chronic diseases associated with being overweight that have traditionally been considered “adult onset” are appearing in younger segments of the population. Overweight children experience increased risks of high blood pressure, increased stress on weight bearing joints, type 2 diabetes, high blood lipids, sleep apnea, asthma, hyperlipidemia, chronic hypoxemia, early maturation, and orthopedic problems (Surgeon General, 2001). Childhood overweight has also been implicated in increased hospitalizations and psychosocial problems among youth.

Type 2 Diabetes

- Type 2 diabetes is increasing in children and adolescents – and this increase has paralleled the rising childhood obesity rates (American Diabetes Association, 2000; Rosenbloom, 1999).
- Among children diagnosed with type 2 diabetes, 80% are overweight. Children with a family history of type 2 diabetes and those who are members of specific ethnic groups, including African American, Latino, Native American, and Asian and Pacific Islander American, experience an increased risk of the disease (ADA, 2000).
- In Ventura County, California, an examination of school records revealed 75% more diabetes diagnoses among Mexican American teens than had been predicted based on previous prevalence data (Neufeld, et al., 1998).

Heart Disease. Studies have detected high rates of cardiovascular disease risk factors among very young children and shown that this increased risk is associated with being overweight.

- In a study of 358 4th-6th graders, 53% had one or more risk factors for cardiovascular disease (Cowell, et al., 1999).
- Overweight children are more likely to have risk factors for cardiovascular disease than non-overweight children (Dietz, et al., 1985).

Hospitalizations

- Nationally, obesity-associated disease-related hospital admissions among youth have increased “dramatically” from 1981-1999, with the following rates of increase: obesity (197%), diabetes (65%), sleep apnea (436%), and gallbladder disease (228%) (Wang, et al., 2002).
- The average length for youth obesity-associated hospital stays increased from 1981 to 1999 from just over 5 days to 7 full days. The average length for all youth hospital stays remained at 4.5 days over the same time period (Wang, et al., 2002).

Psychosocial Consequences of Childhood Overweight. Serious and persistent psychosocial consequences often accompany childhood overweight.

- Overweight children are at increased risk for discrimination, low self-esteem, and poor body image (UCB/Cooperative Extension, 2000).
- School children as young as five years old perceive overweight as undesirable (Feldman, 1988).
- Children identified thin body types as having more friends, being better looking, smarter, and neater than fat body types (Harris, 1983).
- Feelings of low self-esteem and symptoms of depression are associated with obesity. One study of 9–11 year olds found lower self-esteem in overweight children who felt responsible for their weight or who felt that their weight negatively affected their social interactions (French, 1995).
- Among 868 third grade children in California public schools, “overweight concerns” were strongly associated with depressive symptoms among girls, but not among boys (Erickson, et al., 2001).
- Women who were categorized obese as adolescents were followed up after seven years into adulthood. Data showed that they experienced fewer years of completed education,

lower family incomes, and higher rates of poverty. Social consequences persisted after adjusting for income and education of the woman's family and self-esteem of the woman, suggesting that obesity "was a determinant rather than a consequence" (Dietz, 1998).

Economic Burden of Childhood Overweight

As the rates of overweight youth and the corresponding medical conditions rise, so do the expenses of care. In addition, the high correlation between adult and childhood overweight suggests that these costs will continue to rise as overweight children grow into overweight adults.

- From 1979–1999 national costs associated with youth obesity have increased three-fold, from \$35 million to \$127 million (Wang, et al., 2002).
- Based on the Surgeon General's (2001) assessment of the annual national cost of obesity, (including direct medical costs and costs attributed to illness, disability, and premature death), and based on population, the estimated cost of obesity in California is \$14.2 billion.
- The costs of obesity outweigh both the costs associated with smoking and problem drinking. Obesity is responsible for a 36% increase in inpatient and outpatient costs and a 77% increase in medications. In comparison, the increase in inpatient and outpatient costs for smoking are less than 21% and even less for problem drinking (Sturm, 2002).

Chapter 1: References

- ADA (American Diabetes Association). Children and Diabetes. ADA website [http://www.diabetes.org/main/application/commercewf?origin=*.jsp&event=link (B4_3)]
- Berkey CS, Rockett HR, Field AE, Gillman MW, Frazier AL, Camargo CA Jr, Colditz GA. Activity, Dietary Intake, and Weight Changes in a Longitudinal Study of Preadolescent and Adolescent Boys and Girls. *Pediatrics*. 2000; 105(4): E56.
- California Department of Health Services, Children's Medical Services Branch. *Pediatric nutrition surveillance system, 1998 annual report highlights*. Sacramento, CA. 2000.
- CDC (Centers for Disease Control). Pediatric Nutrition Surveillance, 1997, Full Report. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Atlanta, GA. 1998.
- CDC (Centers for Disease Control). Youth Risk Behavior Surveillance System: United States Summary Results 2001. National Center for Chronic Disease Prevention and Health Promotion. Atlanta, GA, 2001. [http://www.cdc.gov/nccdphp/dash/yrbs/summary_results/usa.htm (Accessed August 27, 2002)]
- CMS. Pediatric Nutrition Surveillance System (PedNSS) 1998 Annual Report Highlights, 2000. California Department of Health Services.
- Cowell, JM, Warren, JS, and Montgomery, AC. Cardiovascular Risk Prevalence Among Diverse School-age Children: Implications for Schools. *Journal of School Nursing*. 1999; 15(2): 8-12.
- Dietz, WH. Childhood weight affects adult morbidity and mortality. *Journal of Nutrition*. 1998; 128(2): 411S-414S.
- Dietz, WH, Jr., Gortmaker, SL. Do We Fatten Our Children at the Television Set? Obesity and Television Viewing in Children and Adolescents. *Pediatrics*. 1985; 75(5): 807-812.
- Erickson SJ, Robinson TN, Haydel KF, Killen JD. Are Overweight Children Unhappy?: Body Mass Index, Depressive Symptoms, and Overweight Concerns in Elementary School Children. *Archives of Pediatrics & Adolescent Medicine*. 2001; 155(4): 525-526.
- Feldman W, Feldman E, Goodman JT. Culture versus biology: Children's attitudes towards thinness and fatness. *Pediatrics*. 1998; 81: 190-194.
- Flegal K, Carroll MD, et al. Prevalence And Trends In Obesity Among Us Adults, 1999-2000. *Journal of the American Medical Association*. 288:1723-1727.
- French SA, Story M, Perry CL. Self-esteem and obesity in children and adolescents: a literature review. *Obesity Research*. 1995; 3: 479-480.

Foerster, SB, Fierro, MP, Gregson, J, Hudes, M, Oppen, M, Sugerman, SB. 1998 California Teen Eating, Exercise, and Nutrition Survey: Also Profiling Body Weight and Tobacco Use—Media Highlights. Public Health Institute, Berkeley, CA, 2000.

Harris MB, Smith SD. The relationships of age, sex, ethnicity, and weight to stereotypes of obesity and self-perception. *International Journal of Obesity*. 1983; 7: 361-371.

Kimm SY, Barton BA, Obarzanek E, McMahon RP, Sabry ZI, Waclawiw MA, Schreiber GB, Morrison JA, Similo S, Daniels SR. Racial Divergence in Adiposity During Adolescence: The NHLBI Growth and Health Study. *Pediatrics*. 2001; 107(3): E34.

Neufeld ND, Raffel LJ, Landon C, Chen YD, Vadheim CM. Early Presentation of Type 2 diabetes in Mexican-American Youth. *Diabetes Care*. 1998; 21(1): 80-86.

Ogden, CL, Flegal, KM, Carroll, MD, Johnson, CL. Prevalence and Trends in Overweight Among US Children and Adolescents, 1999-2000. *Journal of the American Medical Association*. 2002; 288: 1728-1732.

Public Health Institute. A Special Report on Policy Implications from the 1999 California Children's Healthy Eating and Exercise Practices (CalCHEEPS). Public Health Institute: Sacramento, CA. May 2001.

Ritchie, L, et al.. *Pediatric Overweight*. University of California, Center for Weight and Health. Berkeley, CA, 2001.

Rosenbloom, AL, Joe, JR, and Winter, WE. The rising rates of Type II diabetes in youth. *Diabetes Care*. 1999; 22(2): 345-54.

Rowlands, AV, Eston, RG, and Ingledew, DK. Relationship between activity levels, aerobic fitness, and body fat in 8- to 10-yr-old children. *Journal of Applied Physiology*. 1999; 86(4): 1428-1435.

Samuels & Associates. *California High School Fast Food Survey: Findings and Recommendations*. Public Health Institute. Berkeley, CA, 2000.

Slusser W, Cohen S, et al. Obesity In Urban, Low Income, Los Angeles Elementary School Children. UCLA Schools of Medicine and Public Health, 1999.

Sturm, R. The effects of obesity, smoking, and drinking on medical problems and costs. *Health Affairs (Millwood)*. 2002; 21(2): 245-253.

Surgeon General. *The Surgeon General's Call to Action To Prevent and Decrease Overweight and Obesity*. U.S. Department of Health and Human Services. Atlanta, GA, 2001.

UCB/Cooperative Extension. Childhood Overweight: A Fact Sheet for Professionals. University of California, Berkeley. Department of Nutritional Sciences, Prepared by Crawford P, Mitchell R, and Ikeda J, in January 2000.

Wang, G, and Dietz, WH. Economic Burden of Obesity in Youths aged 6-17 years: 1979-1999. *Pediatrics*. 2002; 109(5): E81-1.

Woodward-Lopez, G, et al. The Research Section of *Improving Children's Academic Performance, Health, and Quality of Life: A Top Policy Commitment in Response to Children's Obesity and Health Crisis in California*. CEWAER (California Elected Women's Association for Education and Research) and University of California, Center for Weight and Health, Berkeley, CA. 2000.

Chapter 2: **PHYSICAL ACTIVITY, PHYSICAL EDUCATION AND FITNESS AMONG YOUTH**

Overview

Physical activity plays a crucial role in maintaining healthy weight and preventing overweight by helping the body utilize the energy consumed through food. DeLany et al. found that among pre-adolescents, obese children expend less energy than non-obese children; this difference in energy expenditure suggests that physical activity may be crucial to preventing childhood overweight (DeLany, et al., 2002). Moreover, physical activity has been found to improve children's health whether or not it affects their weight (Woodward-Lopez, et al., 2000), as it plays a key role in maintaining the health and strength of the cardio-respiratory system, joints, and muscles.

Physical education is one way that youth in California obtain physical activity. Physical education refers to a planned, sequential program of instruction that helps students develop the knowledge, attitudes, motor skills, self-management skills, and confidence needed to adopt and maintain physically active lifestyles. Youth who begin leading physically active lifestyles are more likely to do so as adults, and adults who are more physically active tend to be more physically fit. Those who are physically fit report feeling healthier, having more energy, sleeping better, and being less likely to fall ill or become injured while engaging in routine activities. Physical activity among adults has been shown to improve health and reduce risk factors for many diseases, such as diabetes and heart disease (Surgeon General, 1996).

Physical activity among youth has not yet been directly linked with reduced disease among youth, primarily because chronic diseases usually develop during adulthood. However, physical activity levels in youth are reliable predictors of adult physical activity. In a cohort of young adults (18-30) throughout the United States, reductions in physical activity led to diminishing physical fitness as adults, predisposing them to higher levels of "bad" cholesterol and lower levels of "good" cholesterol as they grow older (Sternfeld, et al., 1999). It's undisputed that physical activity has a beneficial effect on reducing the presence of risk factors for chronic disease among youth. Physical activity reduces cardiovascular risk factors present in children and has also been cited as an important factor in developing strong, healthy bones (Surgeon General, 1996). The Surgeon General recommends a minimum of 30 minutes of at least moderate physical activity every day for every person over the age of two (Surgeon General, 1996). The Institute of Medicine recently recommended at least 60 cumulative minutes per day of exercise and physical activity for both adults and children (IOM, 2002).

Extensive research has been conducted on youth regarding their physical activity levels, physical fitness, and methods to increase their physical activity. A synopsis of the scientific literature is presented here. Terminology defining the subjects studied or surveyed is used in the same way individual authors use it. In general discussion, the term "children" is used to refer people under the age of 11, while "adolescent" refers to people between 11 and 18. Occasionally, pre-

adolescent is used to capture youth ages 11-13. In all other cases, the term youth is used to describe all school-age children.

Physical Activity Among Youth

Levels of physical activity among youth in the US have been decreasing over the past few decades as sedentary behaviors, such as television viewing and video game playing, have increased. Physical activity levels in children begin declining in early adolescence and continue to decrease into adulthood (Sternfeld, et al., 1999). There is consensus that girls are less physically active than boys (DeLany, et al., 2002; Powers, et al., 2002).

Various studies have examined the amount and intensity of physical activity among children of different ethnicities (DeLany, et al., 2002; Gordon-Larsen, et al., 2000; Kimm, et al., 2002; Sun, et al., 1998). In addition, youth of all ethnicities are participating in less physical activity than recommended by the Surgeon General, and youth today are less physically active than youth in the past.

- Data from the 2001 Youth Risk Behavior Survey (YRBS, administered by the CDC) show that more than 30% of the youth respondents did not participate in either vigorous or moderate physical activity over the previous week (CDC, 2001), compared to 1992 YRBS data where only 14% of respondents did not participate in any moderate or vigorous physical activity (Surgeon General, 1996).
- When students in grades 1-12 wore accelerometers, devices that detect and measure physical activity, the following information was gathered:
 - 90% achieved the Healthy People 2010 Objective pertaining to accumulation of physical activity at any level (Healthy People 2010 Objectives aim to increase both accumulated and continuous physical activity)
 - Only 3% met the objective for continuous vigorous physical activity (Pate, et al., 2002)
- Based on data from the National Heart, Lung, and Blood Institute Growth and Health Study, amounts of physical activity decline more in black girls than in white girls from ages 9-10 to 18-19.
 - By the 10th year of participation in the study, activity levels as measured in the study had fallen 100% for black girls, and 64% for white girls (Kimm, et al., 2002).
 - Among black girls in the study, pregnancy was associated with a decline in physical activity, and among older black girls lower levels of parental education were associated with decreased physical activity.
 - Among white girls in the study, smoking and lower levels of parental education were both associated with a decline in physical activity.
 - Among all girls, greater declines in physical activity were associated with a higher Body Mass Index (Kimm, et al., 2002).

A number of environmental factors determine the amount of physical activity, in which youth engage. Overall, the literature shows that children and adolescents are more likely to participate in physical activity when:

- Modern school facilities are available and adequate time is allotted to physical activity
- Parents are available to encourage and facilitate physical activity

- Youth can easily access recreational facilities
- Quality physical education is offered during and after school

The aforementioned is supported by the specific examples provided here regarding the many factors that contribute to the length and vigor of physical activity among youth:

- Adolescents who participate in physical education classes or use a community recreation center are more likely to get moderate to vigorous physical activity than those who do not (Gordon-Larsen, et al., 2000).
- When provided with supplementary physical education three times per week for 15 weeks, elementary schoolchildren showed improvement in body composition, cardio-respiratory health, and flexibility (Stephens, et al., 1998).
- Among Anglo- and Mexican-American preschoolers home activity patterns correlated slightly with school activity patterns. However, the preschoolers were still found to be much more active at school than at home, suggesting that school is an important place for physical activity beginning at a very young age (McKenzie, et al., 1992).
- Adolescents who live in a neighborhood with a high level of “serious crime” are less likely to obtain moderate to vigorous physical activity compared to those who live in less crime-stricken areas (Gordon-Larsen, et al., 2000).
- A study linking 1992 Youth Risk Behavior Survey data representative of the general US population with 1990 Census data found lower socioeconomic status to be associated with less physical activity. After adjusting for SES, being of Hispanic descent was more often associated with less physical activity than being of non-Hispanic descent. Neighborhood characteristics, such as social disorganization, a concentration of racial/ethnic minorities, and urbanization were not associated with lower physical activity (Lee, et al., 2002).
- Among adolescents, high family income is associated with increased moderate to vigorous physical activity and decreased inactivity (Gordon-Larsen, et al., 2000).

Physical Activity Among Youth in California

In California studies environmental factors similar to those found in national studies were found to contribute to the physical activity levels of youth.

- Observations of Southern California adolescents showed that girls visit school activity areas much less often than do boys; however, only a small percentage (19.5%) of students visited the activity areas at all. The authors suggest that this could be due to a lack of supervision, equipment, and structured programs (McKenzie, et al., 2000).
- In 24 schools in San Diego, extracurricular physical activity programs engaged the average participating student in 3.6 hours of physical activity per week. (Powers, et al., 2002).
- At 24 middle schools in California, high levels of supervision and structured play areas (such as basketball courts) explained a four-fold increase in physical activity among girls and a five-fold increase among boys (Sallis, et al., 2001).
- In a diverse community in California, the amount of physical activity in which adolescent girls and boys engaged outside of school was directly related to parental provision of transportation (Hoefler, et al., 2001).

- In a suburban city in California, television viewing among both children and parents correlated with the time it took to complete the mile run/walk test, a measure of physical fitness (Armstrong, et al., 1998).
- Self reported data from San Diego high schools showed that students who lived in lower socioeconomic areas had fewer physical education classes, less vigorous activity in those classes, and fewer activity-related lessons outside of school compared to students who lived in higher socioeconomic areas (Sallis, et al., 1997).

Aerobic Fitness and Body Composition

Physical activity leads to many kinds of physical fitness, depending on the type of activity. Types of fitness include aerobic, endurance, strength, and flexibility. Aerobic fitness is the fitness component that has been most strongly correlated with body composition. A low-calorie balanced diet combined with physical activity that produces aerobic fitness has been shown to stave off weight gain among youth. Youth with lower levels of aerobic fitness tend to have a less healthy body composition.

- Among 9- to 14-year-old boys and girls, higher caloric intakes, and more time spent in sedentary activities were associated with larger one-year increases in BMI. Among girls 9-14, less physical activity was associated with larger increases in BMI (Berkey, et al., 2000).
- Pre-pubescent boys and girls with less body fat are able to remain physically active for longer and have more efficient cardio-respiratory systems than their counterparts with more body fat (Rump, et al., 2002).

Physical Fitness

Even though national physical activity levels have been declining among youth (Kimm, et al., 2002; CDC, 2001), fitness levels among California's youth have not been declining. However, fitness levels among youth in California were not stellar to begin with. Many factors contribute to physical fitness, including heredity, environmental factors, age, and physical activity. Physical fitness, along with a healthy diet, is inextricably linked to good health. Physical fitness has been correlated with reduced risk factors for chronic disease among children and adults. Specifically, aerobic fitness has been linked to improved cardiovascular health, muscle strength has been correlated with good posture and back health, flexibility helps with preventing injuries, weight-bearing exercises have been associated with increased bone health, and physical activity has been shown to assist in maintaining a healthy weight to prevent obesity-related diseases.

Physical activity patterns among youth often predict adult physical activity patterns. Thus, detecting low physical fitness among youth offers an opportunity for physically unfit youth to begin making life changes early. Mandatory fitness testing, which began in California schools in 1995, provides one way to identify youth whose fitness needs improvement. In 1999, the California Department of Education (CDE) began reporting the data collected through the mandatory fitness testing to the Governor and Legislature as required by law. In December 2001, CDE reported the finding of the fitness tests administered in the spring of 2001. Most students tested were not fit: only 21 percent of the 5th graders, 25 percent of the 7th graders

and 23 percent of the 9th graders met the six fitness standards (CDE 2001).

Physical Education

Overview

Students spend approximately seven hours in school each weekday during nine months of the year. The majority of these seven hours are spent on sedentary activities. In addition to providing a learning environment for core subjects, schools afford an opportunity to ensure youth become physically active. Students who are physically active tend to perform better academically (Shephard, 1996).

Today in the United States, however, the majority of students do not participate in a daily Physical Education class.

- According to self-reported CDC 2001 Youth Risk Behavior Survey data, only 52% of students in the US were enrolled in a physical education class, and only 32% attended a physical education class daily.

Once students have a physical education class in which to participate, standardizing physical education, decreasing physical education class size, and engaging girls more are all ways to increase the amount of physical activity in those classes.

- Standardized physical education in schools has been shown to increase the per-day amount of vigorous physical activity students obtain by 12 minutes. In summation, this amounts to an extra hour of physical activity each week. Students participating in standardized physical activities were found to be able to run further in a 9-minute run than students without standardized physical activity (McKenzie, et al., 1996).
- Smaller class size for physical education has been shown to be associated with increased student physical activity during classes (Marshall, et al., 2000).
- Girls tend to be less active than boys in physical education classes (Marshall, et al., 2000).

Several physical activity interventions throughout the United States provide evidence-based methods for improving physical activity and other health-related behaviors among youth. The Sports, Play, and Active Recreation for Kids (SPARK) curriculum and Child and Adolescent Trial for Cardiovascular Health (CATCH) are two well-known interventions that include a California cohort.

- Fifth-grade students participating in a school-based CATCH intervention decreased their fat intake and increased their amount of physical activity compared to students in a control group. Three years later the between-group differential was sustained (Nader, et al., 1999).
- Third- through fifth-graders in 56 California schools participated in a CATCH program that combined school and family interventions. At three-year follow-up, students who participated in the intervention sustained a significantly reduced fat intake and an increased amount of physical activity compared to students attending the control schools (Nader, et al., 1999).
- The SPARK intervention employed physical education specialists to provide physical education in elementary schools. Specialists also trained classroom teachers in physical

education techniques. The use of physical education specialists significantly improved the quality and quantity of physical education in seven schools. After physical education specialists were removed, the levels of activity decreased to 88% of the intervention levels (McKenzie, et al., 1997).

- After two years of participating in a SPARK intervention, fourth- and fifth-grade students had lower levels of body fat than students in a control group (Sallis, et al., 1993).

Physical Education in California Schools

The California Education Code requires that students in grades 1 through 8 receive 200 minutes of physical education during every 10 school days and that children in grades 9 through 12 receive 400 minutes every 10 school days. CDE does not currently collect data on how many schools meet this requirement, however. Studies suggest California students may not receive this level of physical education every 10 days.

- According to 1999 YRBS data, an average of only 60% of 9th to 12th grade California students attended Physical Education class daily: 65% of boys, and 55% of girls (Briggs, 1999).
- From 9th to 12th grade the percent of California students participating in daily Physical Education classes decreased from 87.4% to 29.1% (Briggs, 1999).

In some California schools time spent in physical education has been reduced to free up time for other subjects. Some school personnel contend that time spent in physical education classes detracts from students' academic performance; however, there is evidence that time spent in physical education does not detract from student's academic performance (Sallis, et al., 1999). In fact, evidence suggests that physical education can improve academic achievement (Shephard, 1996).

- Students in 12 Southern California schools participated in a SPARK intervention utilizing physical education specialists to either teach physical education or train classroom teachers to facilitate physical education.
 - Students' academic achievement scores, while higher at baseline than the national average, declined less among students participating in the SPARK intervention arm than among controls receiving standard amounts of physical education.
 - The reading scores of students participating in the intervention improved, while those of the control students declined (Sallis, et al., 1999).

Studies conducted in California show that Physical Education is most effective when directed by a trained specialist. In addition, trained classroom teachers can also improve physical activity among youth, especially if they follow a standardized Physical Education curriculum.

- Hiring physical education specialists has been shown to improve the quantity and quality of physical education classes (McKenzie, et al., 1997).
- In physical activity interventions, physical education specialists have been shown to provide longer lessons and more physical activity than control classes whose physical education classes remained unchanged (McKenzie, et al., 2001).
- Physical education classes led by physical education specialists or specially trained classroom teachers have been shown to increase students' physical activity levels in school. Physical Education specialists and specially trained classroom teachers have also been able to increase the abdominal strength and aerobic endurance of girls (Sallis, et al., 1997).

Chapter 2: References

- Armstrong CA, Sallis JF, Alcaraz JE, Kolody B, McKenzie TL, Hovell MF. Children's television viewing, body fat, and physical fitness. *American Journal of Health Promotion*. 1998; 12(6):363-368.
- Berkey CS, Rockett HR, Field AE, Gillman MW, Frazier AL, Camargo CA Jr, Colditz GA. Activity, dietary intake, and weight changes in a longitudinal study of preadolescent and adolescent boys and girls. *Pediatrics*. 2000;105(4):E56.
- Briggs, M. Youth Risk Behavior Survey and Other Department of Education Data *Presentation*. California Department of Education: Nutrition Services Division, 1999. [<http://www.cde.ca.gov/nsd/obesity1.ppt> (Accessed August 27, 2002)]
- Bandini LG, Vu D, Must A, Cyr H, Goldberg A, Dietz WH. Comparison of high-calorie, low-nutrient-dense food consumption among obese and non-obese adolescents. *Obesity Research*. 1999; 7(5):438-443.
- CDC (Centers for Disease Control). Youth Risk Behavior Surveillance System: United States Summary Results 2001. National Center for Chronic Disease Prevention and Health Promotion. Atlanta, GA, 2001. [http://www.cdc.gov/nccdphp/dash/yrbs/summary_results/usa.htm (Accessed August 27, 2002)]
- CDE (California Department of Education). *California Physical Fitness Test 2001: Report to the Government and the Legislature*. Standards and Assessment Division, 2001.
- DeLany JP, Bray GA, Harsha DW, Volaufova J. Energy expenditure in preadolescent African American and white boys and girls: the Baton Rouge Children's Study. *American Journal of Clinical Nutrition*. 2002; 75(4):705-713.
- Gordon-Larsen P, McMurray RG, Popkin BM. Determinants of adolescent physical activity and inactivity patterns. *Pediatrics*. 2000; 105(6): E83.
- Hoefer WR, McKenzie TL, Sallis JF, Marshall SJ, Conway TL. Parental provision of transportation for adolescent physical activity. *American Journal of Preventive Medicine*. 2001; 21(1):48-51.
- IOM (Institute of Medicine). Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Protein and Amino Acids (Macronutrients). The National Academies Press, Washington, D.C., 2002.
- Kimm, SYS, Glynn, NW, Kriska, AM, Barton, BA, Kronsberg, SS, Daniels, SR, Crawford, PB, Sabry, ZI, Liu, K. Decline, in Physical Activity in Black Girls and White Girls During Adolescence. *The New England Journal of Medicine*. 2002; 347(10): 709-715.
- Lee RE, Cubbin C. Neighborhood context and youth cardiovascular health behaviors. *American Journal of Public Health*. 2002; 92(3): 428-436.

- McKenzie TL, Sallis JF, Nader PR, Broyles SL, Nelson JA. Anglo- and Mexican-American preschoolers at home and at recess: activity patterns and environmental influences. *Journal of Developmental and Behavioral Pediatrics*. 1992; 13(3): 173-180.
- McKenzie TL, Nader PR, Strikmiller PK, Yang M, Stone EJ, Perry CL, Taylor WC, Epping JN, Feldman HA, Luepker RV, Kelder SH. School physical education: effect of the Child and Adolescent Trial for Cardiovascular Health. *Preventive Medicine*. 1996; 25(4):423-431.
- McKenzie TL, Sallis JF, Kolody B, Faucette FN. Long-term effects of a physical education curriculum and staff development program: SPARK. *Research Quarterly Exercise and Sport*. 1997; 68(4):280-291.
- McKenzie TL, Marshall SJ, Sallis JF, Conway TL. Leisure-time physical activity in school environments: an observational study using SOPLAY. *Preventive Medicine*. 2000; 30(1): 70-77.
- McKenzie TL, Marshall SJ, Sallis JF, Conway TL. Student Activity Levels, Lesson Context, and Teacher Behavior During Middle School Physical Education. *Research Quarterly for Exercise and Sport*. 2000; 71(3): 249-259.
- McKenzie TL, Stone EJ, Feldman HA, Epping JN, Yang M, Strikmiller PK, Lytle LA, Parcel GS. Effects of the CATCH physical education intervention: teacher type and lesson location. *American Journal of Preventive Medicine*. 2001; 21(2):101-109.
- Nader PR, Sellers DE, Johnson CC, Perry CL, Stone EJ, Cook KC, Bebhuk J, Luepker RV. The effect of adult participation in a school-based family intervention to improve Children's diet and physical activity: the Child and Adolescent Trial for Cardiovascular Health. *Preventive Medicine*. 1996; 25(4):455-464.
- Nader PR, Stone EJ, Lytle LA, Perry CL, Osganian SK, Kelder S, Webber LS, Elder JP, Montgomery D, Feldman HA, Wu M, Johnson C, Parcel GS, Luepker RV. Three-year maintenance of improved diet and physical activity: the CATCH cohort. Child and Adolescent Trial for Cardiovascular Health. *Archive of Pediatric and Adolescent Medicine*. 1999; 153(7):695-704.
- Neumark-Sztainer D, Martin SL, Story M. School-based programs for obesity prevention: what do adolescents recommend? 2000; 14(4): 232-235.
- Pate RR, Freedson PS, Sallis JF, Taylor WC, Sirard J, Trost SG, Dowda M. Compliance with physical activity guidelines: prevalence in a population of children and youth. *Annals of Epidemiology*. 2002; 12(5): 303-308.
- Powers HS, Conway TL, McKenzie TL, Sallis JF, Marshall SJ. Participation in Extracurricular Physical Activity Programs at Middle Schools. *Research Quarterly for Exercise and Sport*. 2002; 73(2): 187-192.
- Rump P, Verstappen F, Gerver WJ, Hornstra G. Body composition and cardiorespiratory fitness indicators in prepubescent boys and girls. *International Journal of Sports Medicine*. 2002; 23(1): 50-54.

Sallis, JF, McKenzie TL, Alcaraz JE, Kolody B, Hovell MF, Nader PR. Project SPARK. Effects of physical education on adiposity in children. *Annals of the New York Academy of Sciences*. 1993; 699: 127-36.

Sallis JF, Zakarian JM, Hovell MF, Hofstetter CR. Ethnic, socioeconomic, and sex differences, in physical activity among adolescents. *Journal of Clinical Epidemiology*. 1997; 49(2):125-34.

Sallis JF, McKenzie TL, Alcaraz JE, Kolody B, Faucette N, Hovell MF. The effects of a 2-year physical education program (SPARK) on physical activity and fitness in elementary school students. *Sports, Play and Active Recreation for Kids*. Am J Public Health. 1997 Aug;87(8):1328-1334.

Sallis JF, McKenzie TL, Kolody B, Lewis M, Marshall S, Rosengard P. Effects of health-related physical education on academic achievement: project SPARK. *Research Quarterly for Exercise and Sport*. 1999; 70(2): 127-135.

Sallis JF, Conway TL, Prochaska JJ, McKenzie TL, Marshall SJ, Brown M. The association of school environments with physical activity. *American Journal of Public Health*. 2001; 91(4):618-620.

Shephard, RJ. Habitual physical activity and academic performance. *Nutrition Reviews*. 1996; 54(4 Pt 2):S32-6.

Stephens MB, & Wentz SW. Supplemental fitness activities and fitness in urban elementary school classrooms. *Family Medicine*. 1998; 30(3): 220-223.

Sternfeld B, Sidney S, Jacobs DR Jr, Sadler MC, Haskell WL, Schreiner PJ. Seven-year changes in physical fitness, physical activity, and lipid profile in the CARDIA study. *Coronary Artery Risk Development in Young Adults*. *Annals of Epidemiology*. 1999; 9(1):25-33.

Sun M, Gower BA, Nagy TR, Trowbridge CA, Dezenberg C, Goran MI. Total, resting, and activity-related energy expenditures are similar in Caucasian and African-American children. *American Journal of Physiology*. 1998; 274:E232-E237.

Surgeon General. *Physical Activity and Health: A Report of the Surgeon General*. U.S. Department of Health and Human Services. Atlanta, GA, 1996.

Woodward-Lopez, G, et al. The Research Section of *Improving Children's Academic Performance, Health, and Quality of Life: A Top Policy Commitment in Response to Children's Obesity and Health Crisis in California*. CEWAER (California Elected Women's Association for Education and Research) and University of California, Center for Weight and Health, Berkeley, CA. 2000.

Chapter 3: ***FITNESSGRAM***

The *FITNESSGRAM* was developed by the Cooper Institute in Dallas, Texas. The *FITNESSGRAM* measures a number of health-related aspects of fitness. The *FITNESSGRAM* philosophy is to promote regular physical activity among all youth, with emphasis on activities that reduce the risk for chronic disease and improve health-related physical fitness. The *FITNESSGRAM* was developed in response to physical educators' need for a comprehensive assessment protocol. In 1996, the California State Board of Education mandated that *FITNESSGRAM* would be the tool used to test the fitness levels of California children.

The *FITNESSGRAM* measures the following health-related aspects of fitness, including the following:

- Cardiovascular health: Assesses the capacity of the heart and lungs by measuring endurance. Endurance is perhaps the most important indicator of physical fitness.
- Muscle strength (upper body, trunk, and abdominal): Measures muscle strength, which is related to good posture and back health.
- Muscular endurance (abdominal): Measures the ability of muscles to work over time. Muscle endurance is related to correct posture and back health.
- Flexibility: Assesses the limberness of muscles, which is important in injury prevention.
- Body Composition: Assesses overweight and underweight through measurements of height, weight and in some cases skinfold thickness, which measures percentage of body fat.

Test Components

The *FITNESSGRAM* provides a number of options for measuring each of the fitness components to assure that all children and youth, including those with physical limitations, have the maximum opportunity to complete the test. The methods available within each of the six *FITNESSGRAM* testing areas and their objectives are described briefly here. In order to complete the test in each area, a child must complete one of the options for each area, as listed on the following pages.

Fitness Area	Test Options	Description
<i>Aerobic Capacity</i>	Pacer	A multi-stage fitness test set to music involving running along a 20-meter distance at a specified pace that increases by the minute.
	One-Mile Walk/Run	Walk and/or run a one-mile distance at the fastest possible pace.
	Walk Test	Walk a one-mile distance as quickly as possible while maintaining a consistent pace over the entire one mile.
<i>Abdominal Strength and Endurance</i>	Curl-Up Test	Complete as many curl-ups as possible (up to 75) at a specified pace.
<i>Trunk Extensor and Flexibility</i>	Trunk Lift	Lift the upper body 12 inches off the floor using the muscles of the back. To complete the test, the lift must be held long enough to allow for measurement.
<i>Upper Body Strength and Endurance</i>	Push-up	Facing the floor, push the body off the ground using the arms. Complete as many push-ups as possible.
	Pull-up	Complete as many pull-ups as possible.
	Modified Pull-Up	Complete as many modified pull-ups as possible.
	Flexed Arm Hang	Hang with the chin above a bar as long as possible.

<i>Flexibility</i>	Back Saver Sit and Reach	Assess the flexibility of the lower back and posterior thigh through reaching a specified distance while sitting in a sit and reach box.
	Shoulder Stretch	Assess upper body flexibility through touching fingertips together behind the back by reaching one arm over the shoulder and the other arm under the elbow.
<i>Body Composition</i>	Body Mass Index	Provides an estimate of body composition and risk for overweight through measure of weight relative to height. Although the test is less accurate than other measures, it is relatively easy to administer and is the test most frequently used.
	Skinfold Thickness Percent Fat	Measures the thickness of the skinfold on the back of the upper arm and the inside of the right calf. Measurements are collected using a skinfold caliper. The measurements are inserted into a formula in order to calculate percent body fat.

Standards

The *FITNESSGRAM* uses criterion-referenced standards to evaluate fitness performance. Reference standards were created for each test component tying fitness levels to health and prevention of chronic diseases and associated risk factors. The *FITNESSGRAM* standards were developed based on national norms for the United States. Standards are specified by age and gender and can be found in Appendix B.

Individual performance is classified in two categories:

- **In the Healthy Fitness Zone (HFZ):** Children achieving a test score that meets the criterion-referenced standard for their age and gender are considered “in the HFZ.” Children in the HFZ for a particular test are considered to have achieved a level of fitness thought to provide some protection from the health risks stemming from a lack of fitness in the measure. *FITNESSGRAM* developers state that not only should all children strive to achieve a score within the HFZ, but that all children should be able to score within the HFZ. Students who score above the HFZ, in all but the body composition test, are considered to be in the HFZ.
- **Not in the Healthy Fitness Zone:** Students achieving a score below the criterion-referenced standard for their age and gender are not in the HFZ; they are categorized as “needing improvement.” Although low fitness levels may not affect health until adulthood, identifying risks as early as possible allows for intervention to decrease them.

***FITNESSGRAM* Uses**

The developers of *FITNESSGRAM* describe a set of uses for *FITNESSGRAM* data. These include:

- Personal Fitness Self-Testing: Students test themselves and interpret their own results. Students use the results to develop individual physical activity programs and goals.
- Personal Best Testing: For students who want to see how well they can perform on each test.
- Institutional Testing: Testing large groups of students in a school or school district to provide information on the fitness levels of groups of students and direction for curriculum planning. This time consuming testing requires teams of trained testers. The *FITNESSGRAM* developers recommend that institutional testing be done only periodically, such as every third year.
- Parental Reporting: Results of institutional tests can be used to inform parents of the fitness status of their children. The *FITNESSGRAM* developers suggest that school officials help parents understand the test results. Parents can use *FITNESSGRAM* results to help their children develop personalized physical activity programs and goals.
- Personal Tracking: Student test results are tracked on a regular basis to see if fitness status is maintained over time. The goal is to help all children achieve a score within the HFZ over time.

FITNESSGRAM developer's caution against using *FITNESSGRAM* data in inappropriate ways that contradict the *FITNESSGRAM* philosophy. Although the *FITNESSGRAM* is a comprehensive fitness assessment tool, it does not address all of the factors that make a child fit, nor does it address the factors that contribute to a child's level of physical activity. Therefore, the *FITNESSGRAM* results should not be used to measure teacher or student success in the physical education setting.

***FITNESSGRAM* Use in California**

In 1995 California Assembly Bill 265 was signed into law mandating statewide physical performance testing for fifth, seventh, and ninth graders at least every two years. The law as adopted, states that:

“During the month of March, April or May, the governing board of each school district maintaining any of grades five, seven, and nine shall administer to each pupil in those grades the physical performance test designated by the state board of education.”

All students in grades five, seven or nine are expected to participate in the test. Students who are physically unable to complete the full test are expected to complete as many components of the test as possible.

After reviewing potential physical performance tests, in 1996 the State Board of Education selected *FITNESSGRAM* as the required physical performance test for California. *FITNESSGRAM* was used for the first time in California schools in 1997, and has been used every two years thereafter. Beginning in 2001, CDE has required annually fitness testing by all schools with fifth, seventh and ninth graders.

Schools conduct fitness testing using *FITNESSGRAM* in the spring of every year. The California Department of Education collects the data and reports to the Governor and Legislature. Data on the six tests included in *FITNESSGRAM* are presented according to gender, grade, and ethnicity. Aggregated student data on the number and percent of students who were in the Healthy Fitness Zone (HFZ) on each test and the percent of students who were in the HFZ zone on one, two, three, four, five or all six tests. CDE provides the fitness data by county, school district and school on its web site.

The California Center for Public Health Advocacy used data from two of the *FITNESSGRAM* tests, aerobic capacity and body composition, in the analysis discussed in this report, *An Epidemic: Overweight and Unfit Children in California Assembly Districts*.

California 2001 *FITNESSGRAM* Data

***FITNESSGRAM* Data Collection**

In the spring of 2001 students were tested and school districts submitted *FITNESSGRAM* data electronically. School districts submitted their data to CDE by July 15, 2001 through the Internet, diskette, CD-ROM, data tape, or through e-mail. The quality of the data provided by California school districts varies. According to the CDE, some districts provided data for all schools, some districts provided data some schools and some districts provided data for no schools.

Annually, CDE provides school districts with instructions on how to conduct the test and report findings. To date, CDE has not had the resources to collect data on how *FITNESSGRAM* is administered at schools, the background and expertise of the school personnel administering *FITNESSGRAM* and the quality control measures used by schools when conducting the tests. Consequently, errors may exist in the California *FITNESSGRAM* data and any interpretation of *FITNESSGRAM* results must take these considerations into account.

Reporting of the Data by the California Department of Education

In 2001 CDE announced it would submit a report of statewide physical fitness test results to the Governor and Legislature annually. The 2001 report released in December included data on all six tests according to gender, grade, and ethnicity. Aggregated student data are presented according to the number and percent of students who are in the Healthy Fitness Zone (HFZ) in each test and the percent of students who were in the Healthy Fitness Zone for one test, all six tests, or some combination in between. CDE reports the fitness data by county, school district, and school on its web site.

California Center for Public Health Advocacy's Use of 2001 FITNESSGRAM Data

The California Center for Public Health Advocacy obtained the 2001 *FITNESSGRAM* data from CDE. Data from two of the *FITNESSGRAM* tests, aerobic capacity and body composition, were analyzed by Assembly District stratified by grade, gender, and ethnicity.

This analysis utilized the measure of aerobic capacity as the primary indicator for fitness. Aerobic capacity is a key component of fitness because it reflects the fitness of the cardiovascular and respiratory systems and the ability to engage in strenuous exercise for prolonged duration. Cardiovascular and respiratory fitness have been shown to reduce adult risk of high blood pressure, coronary heart disease, obesity, diabetes, and some forms of cancer.

The analysis also utilized body composition because body composition is often associated with a person's levels of physical activity. *FITNESSGRAM* measures body composition by measuring a person's weight relative to their height or measuring the percent of their body that is composed of fat. Overweight among youth has been implicated with type 2 diabetes, and higher risk factors for heart disease and high blood pressure. Overweight youth are more likely to be overweight adults, who are more likely to develop type 2 diabetes, coronary artery disease, and to become obese.

How This Analysis Differs from CDE's

The California Department of Education (CDE) conducts an annual analysis of *FITNESSGRAM* data. The analysis presented here differs from that of CDE in the following ways:

- Based on the recommendations of the Scientific Panel, this study is based on two of the six *FITNESSGRAM* measures: body composition and aerobic capacity.
- Based on the recommendations of the Scientific Panel, for body composition the analysis distinguishes between students who scored above the Healthy Fitness Zone (overweight children), and students who scored below (underweight children). For aerobic capacity the analysis focuses only on those students scoring below the Healthy Fitness Zone.
- The Center aggregated the data into Assembly Districts, rather than reporting by county, school district, and school.

Chapter 4:

STUDY METHODOLOGY

The 2001 *FITNESSGRAM* data was the primary source of data for the analysis. (See Chapter 3 for background information about *FITNESSGRAM*.) Two of the six *FITNESSGRAM* tests were used in the analysis: aerobic capacity and body composition. This study utilizes measures of aerobic capacity as the primary indicator for fitness. Aerobic capacity is a key component of fitness because it reflects the fitness of the cardiovascular and respiratory systems and the ability to engage in strenuous exercise for prolonged duration. Cardiovascular and respiratory fitness have been shown to reduce adult risk of high blood pressure, coronary heart disease, obesity, diabetes, and some forms of cancer. Results from the body composition measurement were used as the indicator for overweight. The body composition measurement is the only *FITNESSGRAM* test that addresses weight and body composition is an important element of overall health and fitness.

Classification as unfit or overweight was based on comparison of student aerobic capacity and body composition scores to their respective Healthy Fitness Zone (HFZ). The Healthy Fitness Zone is the *FITNESSGRAM* term used to describe the minimum level of fitness thought to provide some protection from health risks imposed by a lack of fitness in each area tested. The Cooper Institute, developers of *FITNESSGRAM*, defined the Healthy Fitness Zone for each of the six fitness tests included in *FITNESSGRAM* (see page 35 for a full description of the HFZ). For this analysis, students whose aerobic capacity score was below the Healthy Fitness Zone (HFZ) were defined as unfit. Students who scored above the HFZ for body composition were considered overweight. The definition of overweight used to present the findings of this analysis differs from the Center for Disease Prevention and Control definition of overweight presented in the definitions section.

Data for the study's two indicators of fitness, aerobic capacity and body composition, were aggregated into Assembly Districts, as described below. This is the first time fitness data had been analyzed by Assembly district.

This analysis of the 2001 *FITNESSGRAM* data differs from the California Department of Education's (CDE) *FITNESSGRAM* report in three ways. First, CDE reports fitness data by county, school district and school but not by legislative district. Second, this analysis reports findings for only two of the six tests. Third, this presentation of the body composition data focuses solely on those children with scores above the HFZ; CDE's analysis combines children who scored above or below the HFZ as "not in the HFZ." Similarly, this analysis of the aerobic capacity results focuses only on those students scoring below the HFZ.

Data Sources

The following data sources were used in the analysis:

- Student Fitness Score file was obtained from Educational Data Systems, Inc. (EDS). The file contains the 2001 *FITNESSGRAM* data for children in grades 5, 7 and 9 (the grades tested). The California Department of Education (CDE) contracts with EDS to manage the *FITNESSGRAM* data. Data is provided for each student tested and includes a school identifier. The identifier indicates which school the student attends. Each school has a unique identifier.
- The Public School Zip Code file, SIFbc01 from http://www.cde.ca.gov/demo-graphics/files/cbeds_ae.htm. This file provides a zip code for each public school based on the school's street address and includes a unique identifier for each school.
- California Senate Office of Demographics Assembly District zip code file. This file lists the zip codes within each Assembly District (based on district boundaries after the 2002 reapportionment). The file also includes the percentage of the population from the zip code in the corresponding Assembly District.

Data Linkage Process

To aggregate the fitness data by Assembly District, two steps were undertaken.

Step 1: The 2001 public school zip code file was matched to the *FITNESSGRAM* data through the school identifier. Through this matching the fitness data for each student were grouped by the zip code of the school where the testing took place.

Among 6,837 schools that reported *FITNESSGRAM* data 81 schools (1.2%) were not included in the CDE public school zip code list. As a result, these schools were excluded from this study. This low percentage of exclusion is reasonable when combining data sources and when utilizing zip code data sources which are revised periodically.

Step 2: Step two involved identifying the Assembly district of each school by using the school zip code. In order to collapse school zip code data to Assembly Districts, the zip code file provided by the California Senate Office of Demographics was used. It includes the following data:

1. Zip codes
2. Corresponding Assembly District Code (districts 1-80)
3. Percentage of population from the zip code in corresponding Assembly District

The percentages of the population from each zip code in the corresponding Assembly District were applied to the zip code level *FITNESSGRAM* data. This allowed the *FITNESSGRAM* data to be aggregated into Assembly Districts.

There were 1,365 zip codes for the 6,837 schools reporting *FITNESSGRAM* data. Among these 1,365 zip codes 29 zip codes (2%) could not be matched with the Assembly

District zip code list. Consequently, these 29 zip codes were excluded from the study. Given that two distinct data sources were combined, this is a reasonable percentage of exclusion.

Statistics

The percentage of students considered unfit and overweight was calculated for each Assembly District.

Numerators were number of students in each Assembly District who were unfit or overweight. Denominators were all students in the Assembly District excluding those who did not have valid data for the test. Reasons for invalid or missing data include:

- Missing age data
- Missing gender data
- Absent on test date and all make-up sessions for all tasks
- Parent's written request for child to be excused from test
- Waiver granted by the State Board of Education
- Individual Education Plans (IEP)/Special needs
- Extraordinary circumstances

The amount of data missing from schools reporting *FITNESSGRAM* scores in each Assembly district covered a broad range. Of schools reporting *FITNESSGRAM* data, for aerobic capacity, the proportion of invalid or missing data ranged from 5% to 37% per district. For body composition, the proportion of invalid or missing data ranged from 4% to 29% per district. In addition, there were schools with 5th, 7th and 9th graders that reported no *FITNESSGRAM* data. These schools did not conduct the *FITNESSGRAM* test, as required by law. These schools were not included in the study.

The percentage of unfit and overweight in each Assembly district was sorted from lowest to highest. Data were also stratified by gender, grade and ethnicity. Percentages of unfit and overweight children were calculated for each Assembly district for all students, males, females, 5th graders, 7th graders, 9th graders and for eight ethnicities. The eight ethnicities are African Americans, American Indian/Alaska Native, Asian, Filipino, Hispanic/Latino, Pacific Islander, Non-Hispanic White and Other.

For all students the percentages of unfit and overweight in each Assembly district were grouped into quintiles. The quintiles (from one to five), which represent from the lowest one-fifth to the highest one-fifth of the percentages among 80 districts for aerobic capacity and body composition, are reported on the maps (see pages 43 and 44).

Finally, the analysis examined the question of how many schools required by law to administer the *FITNESSGRAM* in fact conducted the test. The percentage of schools (with 5th, 7th or 9th graders) not administering the *FITNESSGRAM* test was determined by comparing schools with reported *FITNESSGRAM* data (6,837 schools) to schools with enrolled 5th, 7th or 9th graders. The Public School List, file SIFbc01, indicated that of the 14,218 public schools, 8,298 schools had 5th, 7th or 9th graders. Of the 8,298 schools with students in the grades that must be tested, 6,837 schools (82.4 percent) reported *FITNESSGRAM* data to CDE.

Chapter 5: **FINDINGS**

The findings described here are based on the 2001 *FITNESSGRAM* results from California's fifth, seventh, and ninth graders who completed the body composition and/or aerobic capacity tests with usable data. There are six tests or measures in the *FITNESSGRAM*; this analysis focuses on the data from two of them: the body composition and aerobic capacity tests.

The *FITNESSGRAM* uses the term "Healthy Fitness Zone" to describe the minimum level of fitness thought to provide some protection from health risks imposed by a lack of fitness in each area tested. The Cooper Institute, developers of *FITNESSGRAM*, defined the Healthy Fitness Zone for each of the six fitness tests included in *FITNESSGRAM*.

For the purposes of this analysis, children were classified as "overweight" if their body composition measurement was above the healthy fitness zone and "unfit" if they did not achieve the healthy fitness zone for the aerobic capacity test. See Appendix B for the HFZ range for the body composition and aerobic capacity tests.

Themes

One principal theme emerged from analysis of the 2001 *FITNESSGRAM* data by Assembly District:

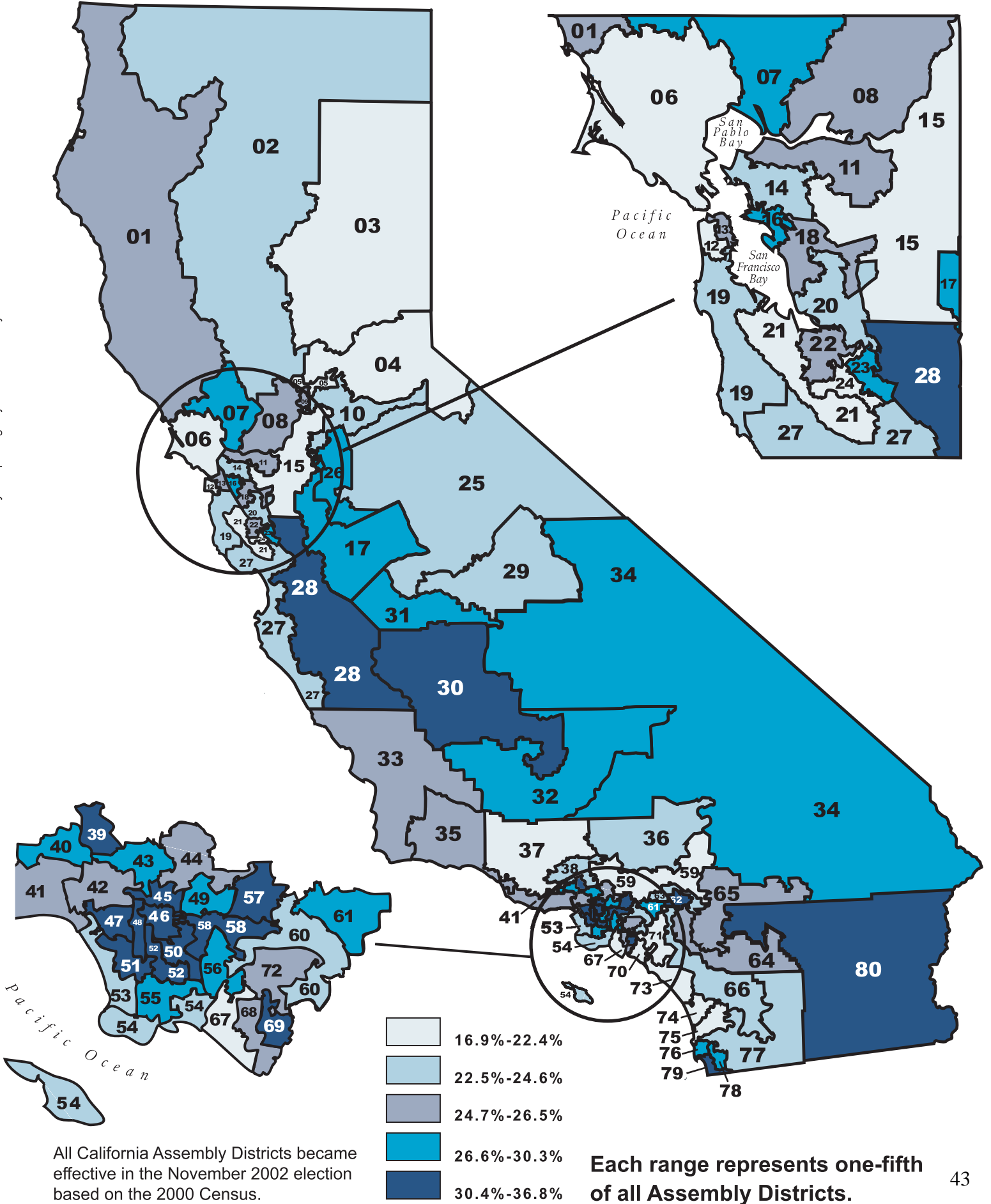
- There are high rates of overweight and unfit children in all 80 Assembly Districts in California. This is an epidemic found everywhere in the state.

Several other themes were apparent:

- In Los Angeles County Assembly Districts there is a strong concentration of the most overweight and unfit children. Assembly Districts in the San Francisco Bay Area have a moderate concentration of percentages of children at the other end of the scale: those least overweight and unfit.
- There is congruence within Assembly Districts that have either the highest or lowest percentages of overweight and unfit children.
- Assembly Districts have higher rates of overweight boys than overweight girls.
- Assembly Districts have higher rates of unfit girls than unfit boys.
- California children in all grades are overweight at high rates, though the percentage of overweight children in Assembly Districts appears to decrease with age.
- The percentage of unfit California children in Assembly Districts increases from elementary school to high school.
- Children in all ethnic groups in California are overweight and unfit, though there are concentrations among certain ethnicities.

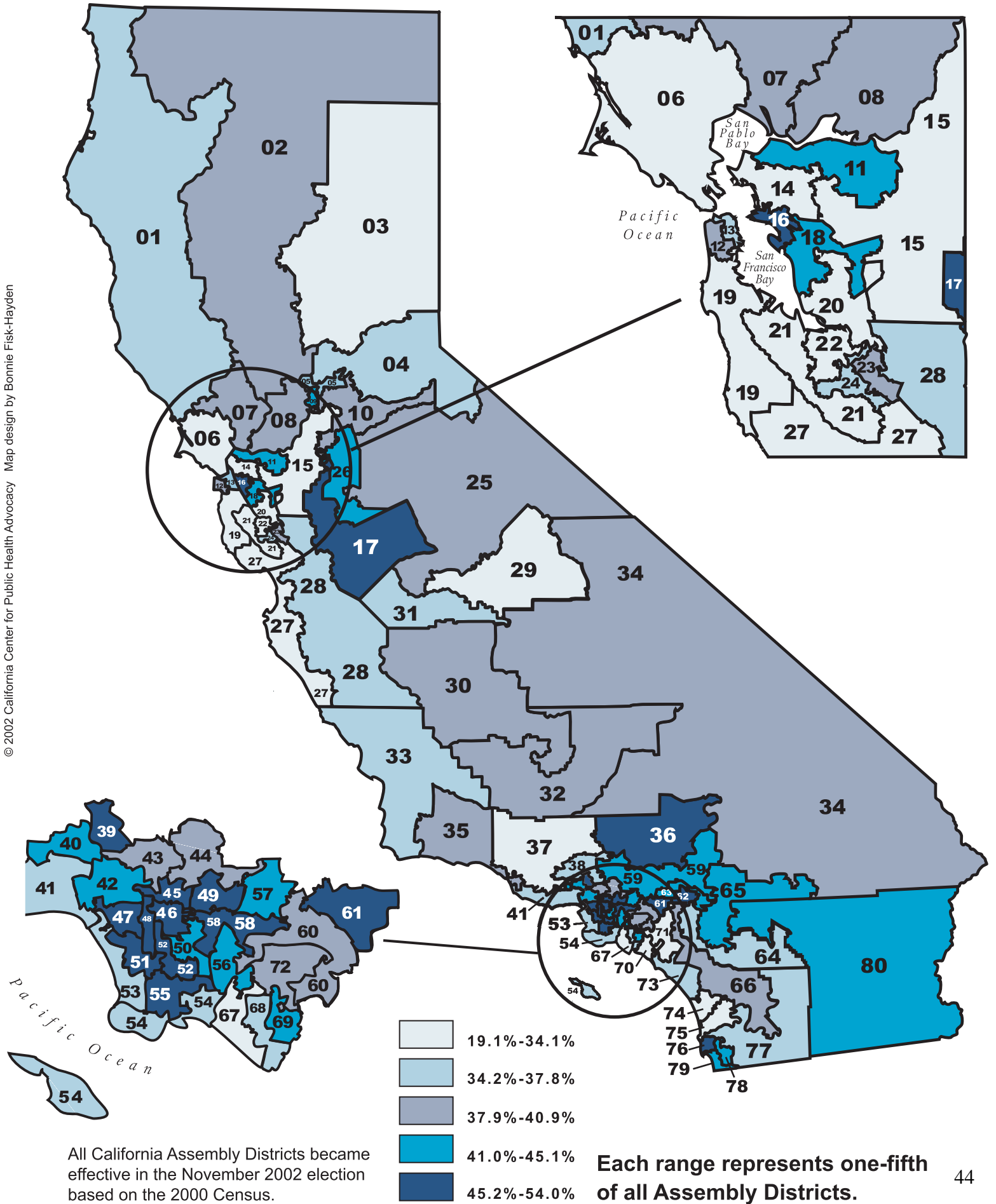
MAP A

Percentage of Children in Each Assembly District Who Are Overweight



MAP B

Percentage of Children in Each Assembly District Who Are Unfit



Findings

OVERWEIGHT AND UNFIT CHILDREN ARE FOUND IN EACH OF THE 80 ASSEMBLY DISTRICTS IN CALIFORNIA. THIS IS AN EPIDEMIC FOUND EVERYWHERE IN THE STATE.

High percentages of overweight and unfit children are found throughout the state. The maps on the previous pages illustrate the magnitude of the statewide problem. Map A indicates the percentage of children in each Assembly District who were overweight; Map B indicates the percentage of children in each Assembly District who were unfit. On each map, Assembly Districts are shaded according to the percentage of overweight and unfit children in that district, with each degree of shading representing one-fifth of the 80 Assembly District scores.

Table 1 shows the percentages of all students and subsets of students who were overweight in each Assembly District. Table 2 shows the percentages of all students and subsets of students who were unfit in each Assembly District. These data are plotted in Figures 1 and 2 on the following two pages.

Figure 1 shows the percentages of children in each assembly district classified as unfit based on their aerobic capacity test results. In nearly all of the Assembly Districts (78 of 80 districts), at least one out of four children (25.0%) was unfit. Across all assembly districts, 39.6% of the children taking the aerobic capacity test were unfit. In the district with the lowest percentage of unfit children, 19.1% of the children were nevertheless classified as unfit; in the district with the highest percentage, 54.0% of children were unfit.

Figure 2 shows the percentages of children in each assembly district classified as overweight based on their *FITNESSGRAM* body composition results. In 56% of the Assembly Districts, one out of four children (25.0%) was overweight. Across all Assembly Districts, 26.5% of children taking the *FITNESSGRAM* body composition test were overweight. In the district with the lowest percentage of overweight children, 16.9% of children were classified as overweight; in the district with the highest percentage, 36.8% of children were classified as overweight.

THERE IS CONGRUENCE WITHIN ASSEMBLY DISTRICTS ON TEST SCORES. ASSEMBLY DISTRICTS WITH EITHER THE LOWEST OR THE HIGHEST PERCENTAGES OF CHILDREN CONSIDERED OVERWEIGHT AND UNFIT OFTEN SCORE SIMILARLY ON THE BODY COMPOSITION AND AEROBIC TESTS.

Comparing the overweight and unfit data presented on Maps A and B shows that Assembly Districts often have similar percentages of children considered overweight and unfit. In nine districts, the percentages of overweight and unfit children are among the highest in the state for both measures. In ten districts, the percentages of overweight and unfit children are among the lowest in the state for both measures.

Figure 1: Percentage of Unfit Children by Assembly District

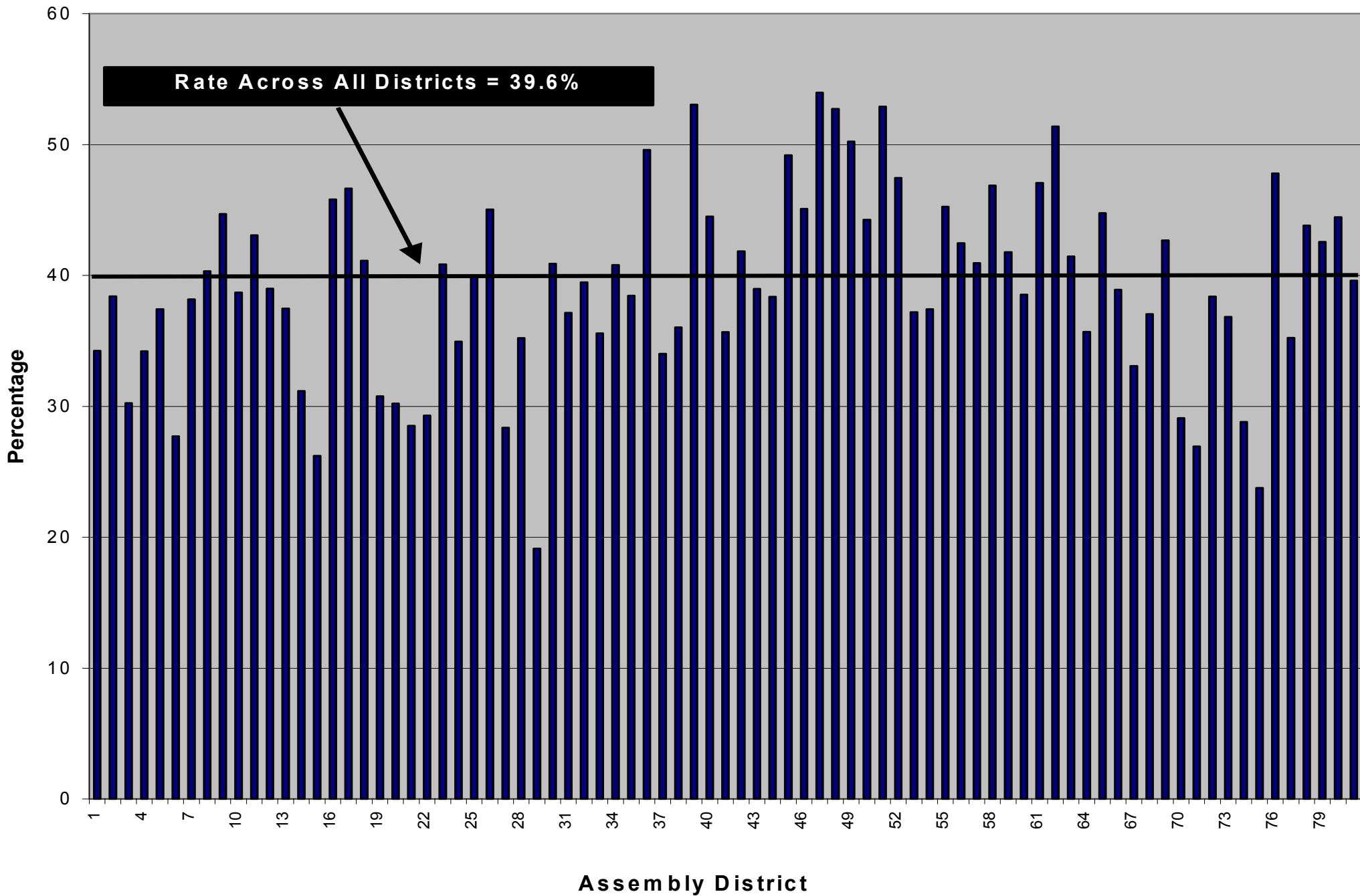
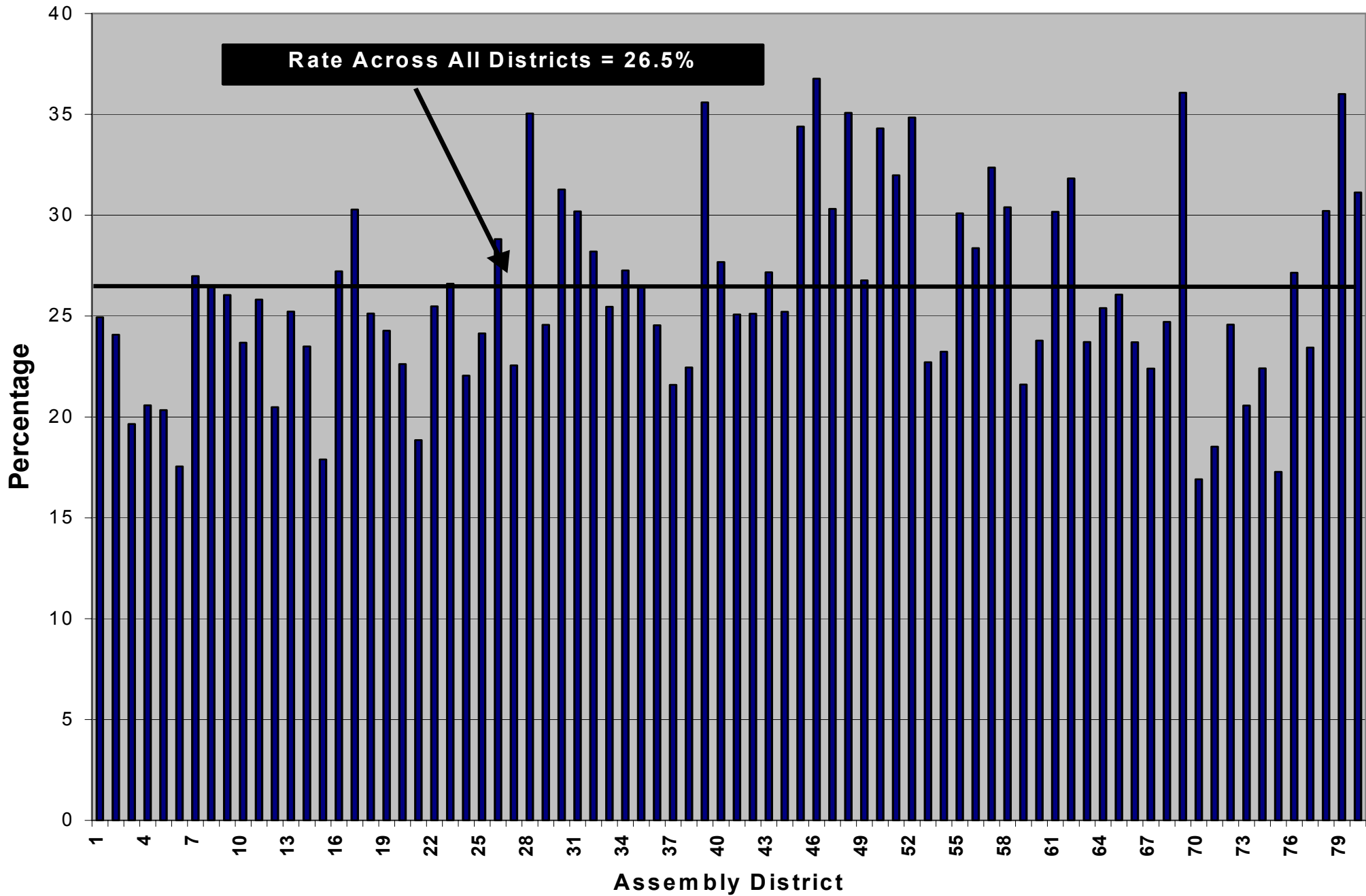


Figure 2: Percentage of Overweight Children by Assembly District



THERE IS A STRONG CONCENTRATION OF THE MOST OVERWEIGHT AND UNFIT CHILDREN IN LOS ANGELES COUNTY. THE SAN FRANCISCO BAY AREA HAS A MODERATE CONCENTRATION OF PERCENTAGES OF CHILDREN AT THE OTHER END OF THE SCALE: THOSE LEAST OVERWEIGHT AND UNFIT.

As the Los Angeles area inserts on Maps A and B show, 10 of the 16 Assembly Districts with the highest percentage of overweight children are in Los Angeles County as are 11 of the 16 Assembly Districts with the highest percentage of unfit children. Of the nine districts with percentages for both overweight and unfit children in the highest category, eight are in Los Angeles County. Maps A and B illustrate that seven Bay Area Assembly Districts have percentages of both overweight and unfit children in the lowest or next-to-lowest category.⁴

ASSEMBLY DISTRICTS HAVE HIGHER RATES OF OVERWEIGHT BOYS THAN OVERWEIGHT GIRLS.

Analysis of the body composition data by gender revealed that more boys were overweight than girls. Table 1 describes the percentage of boys and girls in each Assembly District who were overweight. In all 80 Assembly Districts, the percentage of boys who were overweight exceeded that of girls (see Figure 3). Across all Assembly Districts, 31.8% of boys were considered overweight, compared to 21.0% of girls. As shown in Table 1, in 71 of the 80 districts at least 25.0 % of boys were classified as overweight. In comparison, in only 18 of the 80 districts were at least 25.0 % of girls classified as overweight. In the district with the highest percentage of overweight boys, 44.3% were overweight. In the district with the lowest rate, 22.6% of the boys were overweight. The comparable range of overweight girls was from 31.2% to 11.0%.

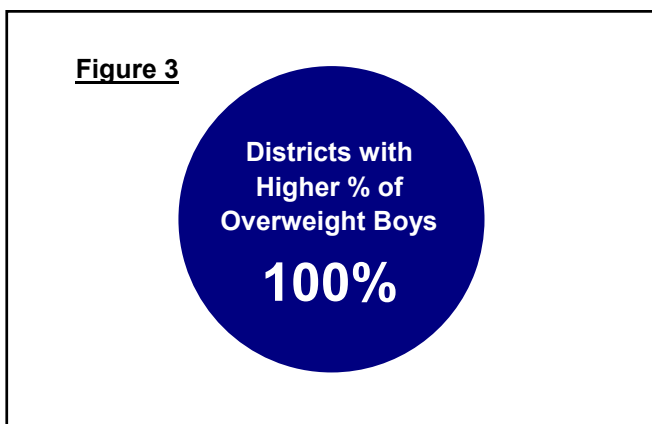


Figure 3: *In every Assembly District, the percentage of overweight boys is greater than the percentage of overweight girls*

ASSEMBLY DISTRICTS HAVE HIGHER RATES OF UNFIT GIRLS THAN UNFIT BOYS.

Data were analyzed by gender to uncover any differences in rates of unfitness between boys and girls. Table 2 shows the percentage of boys and girls in each Assembly District classified as unfit. In over three quarters of the Assembly Districts (77.5%), more girls than boys were unfit (see Figure 4). Across all Assembly Districts, the statewide percentage of unfit boys was lower (38.2%) than that of girls (41.1%). Among girls, in the district with the highest percentage of unfit girls, 57.4% of girls were unfit. In the district

⁴ Bay Area region is defined as including Assembly Districts: 6, 7, 12, 13, 14, 15, 16, 18, 19, 20, 21, 22, 23 and 24.

with the lowest percentage of unfit girls, 18.7% were classified as unfit. For boys, that range was from 50.7% to 19.5%.

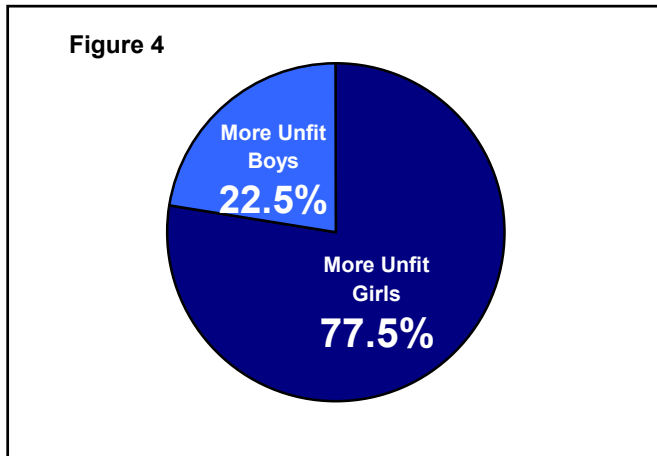


Figure 4: *In more than three-quarters of the Assembly Districts, the percentage of unfit girls is greater than the percentage of unfit boys.*

THE PERCENTAGE OF UNFIT CALIFORNIA CHILDREN IN ASSEMBLY DISTRICTS APPEARS TO INCREASE WITH AGE.

Data were analyzed by grade to identify trends in percent of overweight and unfit children across fifth, seventh, and ninth graders. Table 2 provides the percentage of unfit fifth, seventh, and ninth graders in each Assembly District. Across all assembly districts, the percentage of unfit fifth (38.9%) and seventh graders (36.7%) was fairly similar; but with ninth graders the percentage of unfit students jumped to 44.1%, suggesting that fitness levels decrease as students age. In four-fifths of the Assembly Districts (80%, 64 districts), there were more unfit ninth graders than fifth graders (see Figure 5).

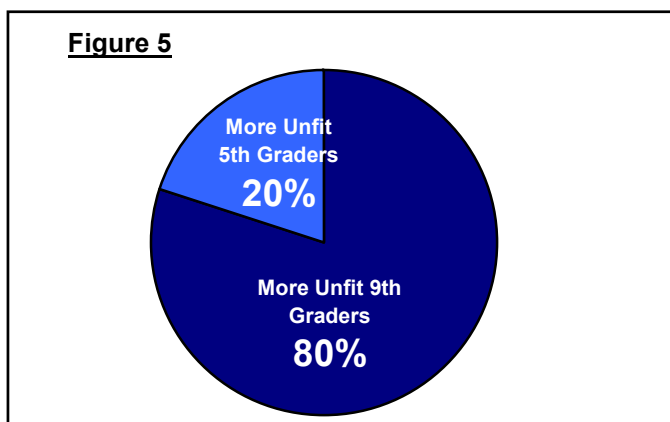


Figure 5: *In 4 out of 5 Assembly Districts, there are higher percentages of unfit ninth graders than unfit fifth graders.*

In nearly one-third of the districts (28.8%, 23 districts), at least half of the ninth graders were considered unfit; in only one Assembly District were more than half of the fifth graders considered unfit and in only five districts were more than half of the seventh graders considered unfit. Table 2 shows that from 18.6% to 51.2% of fifth graders were unfit, 16.1% to 55.5% of seventh graders, and 22.7% to 70.2% of ninth graders, depending on Assembly District.

CALIFORNIA CHILDREN IN ALL GRADES ARE OVERWEIGHT, THOUGH THE PERCENTAGE OF OVERWEIGHT CHILDREN IN ASSEMBLY DISTRICTS APPEARS TO DECREASE WITH AGE.

Table 1 shows the percentage of overweight children by grade. Across all Assembly Districts and all grades, almost one out of four children were overweight: 28.2% of fifth graders, 27.0% of seventh graders, and 23.6% of ninth graders were overweight. From 18.1% to 49.3% of fifth graders were overweight, 15.3% to 36.7% of seventh graders, and 14.6% to 33.9% of ninth graders. Almost all Assembly Districts (72 out of 80 Districts, 90%) had more overweight fifth graders than ninth graders.

Children in all ethnic groups in California are overweight and unfit though there are concentrations among certain ethnicities

Data were analyzed by ethnicity to identify trends in the percentage of overweight and unfit children among ethnic groups in each Assembly District. Table 3 provides data on the percentage of overweight children; Table 4 provides data on the percentage of unfit children by ethnicity.

Together, these data indicate that across all Assembly Districts, higher percentages of overweight and unfit children are found among African-Americans, Latinos and Pacific Islanders than the statewide percentage for all ethnic groups combined. In addition, the following findings are notable:

- In 79 out of 80 Assembly Districts, at least 30.0% of African-American children were considered unfit.
- In every Assembly District, a higher percentage of Latino children were overweight as compared to the percentage of overweight students of all ethnicities across the 80 Assembly Districts.

Two limitations must be applied to the interpretation of these data. First, the number of total students in each ethnic group varied considerably among Assembly Districts. As Appendix C shows, the number of Asian students in all Assembly Districts ranged from 60 to 7,100. Because of the very small populations of some ethnic groups in some districts, the percentage of unfit or overweight may be less stable. Latino students ranged from 10.2% of an Assembly District to 93.8%. The second limitation is that disparities in the percentage of overweight and unfit children that appear to be related to ethnicity may in fact be a function of socioeconomic factors rather than ethnicity. The appropriate data to make this determination were not available for the analysis and preparation of this report. Further analysis including socioeconomic data is necessary.

Figure 6 (on page 51) indicates the range of overweight students in each ethnicity across all Assembly Districts, and the statewide rate for each ethnicity. Figure 6 also provides the statewide rate and the range of overweight students in each Assembly District for all students (all ethnicities).

Figure 7 (on page 51) shows the range of unfit students in each ethnicity across all Assembly Districts and the statewide percentage of unfit students for each ethnicity. Figure 7 also provides the statewide rate and the range of unfit students in each Assembly District for all students (all ethnicities).

Figure 6
Ranges of Percent Overweight Across Assembly Districts: By Ethnicity

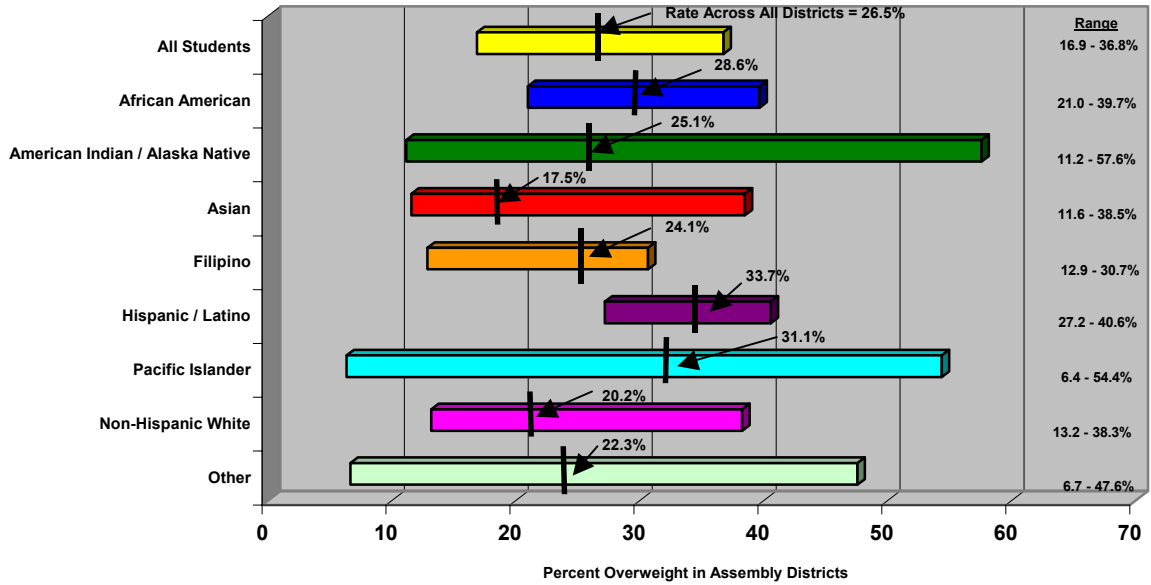
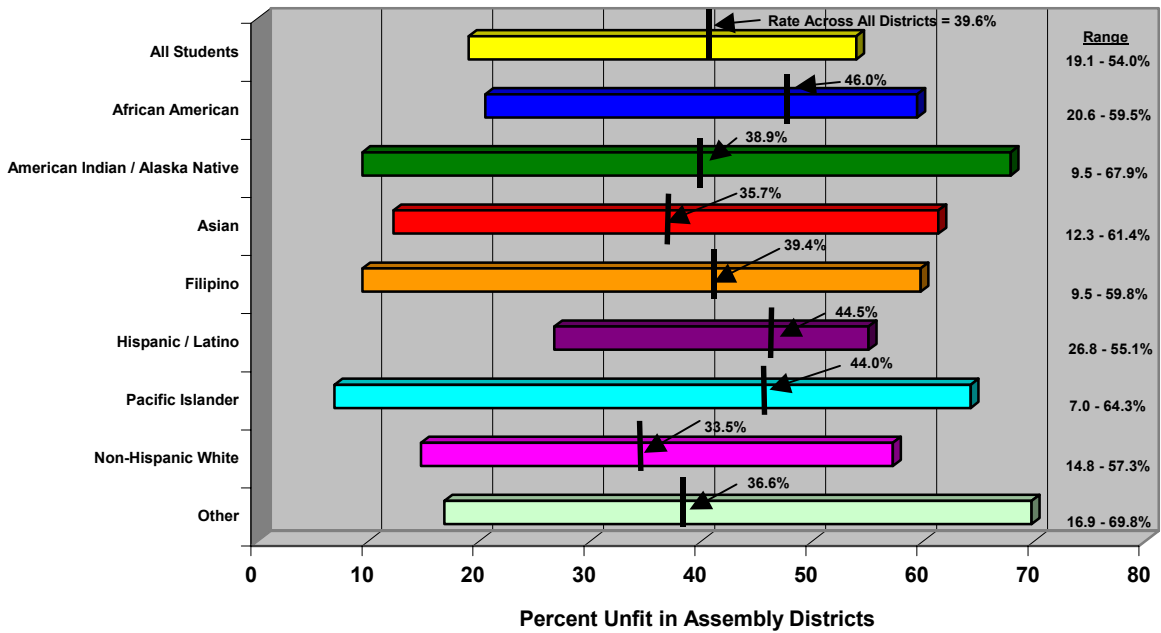


Figure 7
Ranges of Percent Unfit Across Assembly Districts: By Ethnicity



Appendix D includes data on the percentage of students in each Assembly District who were not in the Healthy Fitness Zone in the four *FITNESSGRAM* measures not analyzed in this study. Refer to Chapter 3 for information about these measures.

The findings discussed in this chapter formed the basis for the recommendations prepared by the Scientific Panel, which are included in the Executive Summary and in the next chapter.

TABLE 1: Percentage of Overweight Children: All Students and by Gender and Grade

District	All Students	Boys	Girls	5th Graders	7th Graders	9th Graders
1	24.9	28.9	20.6	25.8	26.4	22.3
2	24.1	27.7	20.3	25.6	24.9	21.7
3	19.6	23.4	15.6	20.1	17.3	21.8
4	20.6	23.8	17.3	21.6	23.3	16.8
5	20.3	24.3	16.3	19.4	21.4	20.3
6	17.5	22.7	12.2	20.4	17.0	14.9
7	27.0	31.4	22.2	29.1	26.2	24.5
8	26.4	29.4	23.5	27.2	28.5	23.4
9	26.0	30.1	21.9	24.3	28.5	25.3
10	23.7	27.9	19.4	25.1	21.9	23.7
11	25.8	29.7	21.6	24.9	29.6	23.0
12	20.5	25.4	15.2	26.1	21.2	15.6
13	25.2	30.7	19.5	25.6	28.7	20.1
14	23.5	27.1	19.7	23.1	26.0	20.2
15	17.9	22.7	12.8	18.1	17.4	18.1
16	27.2	32.6	21.6	27.8	27.4	25.7
17	30.3	35.4	25.1	30.8	30.8	28.5
18	25.1	30.7	19.1	26.6	24.7	23.6
19	24.3	29.5	18.5	23.3	27.5	21.3
20	22.6	28.4	16.4	22.7	23.6	21.3
21	18.9	24.1	13.4	19.1	19.7	17.4
22	25.5	31.3	19.4	24.0	22.1	31.9
23	26.6	33.6	19.6	29.8	27.5	21.1
24	22.1	27.6	16.2	22.2	22.4	21.3
25	24.1	28.7	19.5	25.5	25.1	21.7
26	28.8	33.8	23.7	30.5	30.6	24.5
27	22.6	27.5	17.2	23.9	23.3	20.1
28	35.0	38.8	31.2	39.5	34.6	30.2
29	24.6	29.1	19.8	25.6	24.2	23.7
30	31.3	37.1	25.3	32.1	31.3	29.9
31	30.2	35.0	25.2	29.5	31.7	29.4
32	28.2	31.7	24.6	28.5	28.3	27.8
33	25.5	31.2	19.3	26.9	26.8	21.7
34	27.3	31.5	22.9	25.1	29.6	27.2
35	26.5	31.0	21.9	25.3	28.7	25.2
36	24.5	27.9	21.2	21.8	25.9	27.1
37	21.6	26.5	16.4	22.2	21.1	21.6
38	22.5	28.8	15.9	23.0	23.2	21.0
39	35.6	42.5	28.4	37.0	36.7	30.0
40	27.7	33.7	21.3	31.1	28.7	22.8

**TABLE 1: Percentage of Overweight Children: All Students and by Gender and Grade
(Continued)**

District	All Students	Boys	Girls	5th Graders	7th Graders	9th Graders
41	25.1	30.1	19.9	25.7	25.9	23.5
42	25.1	32.9	17.0	26.4	24.9	23.3
43	27.2	35.0	19.1	29.9	26.4	24.4
44	25.2	31.8	18.6	27.9	25.4	21.2
45	34.4	41.3	27.3	37.4	34.7	29.7
46	36.8	44.3	29.0	39.3	37.3	30.9
47	30.3	34.7	25.8	32.1	31.7	26.4
48	35.1	41.3	28.8	36.9	33.6	33.9
49	26.8	32.4	20.6	29.4	28.2	24.3
50	34.3	41.1	27.1	37.1	34.4	29.7
51	32.0	37.4	26.5	33.2	33.2	25.4
52	34.8	40.3	29.6	37.2	34.2	30.9
53	22.7	27.9	17.3	24.2	22.3	21.3
54	23.2	29.4	17.0	27.1	21.3	20.0
55	30.1	35.4	24.6	33.8	29.6	25.6
56	28.4	35.1	21.3	30.3	29.7	23.2
57	32.4	38.9	25.5	33.2	33.1	30.1
58	30.4	38.2	22.3	34.6	30.1	25.7
59	21.6	26.6	16.5	22.6	21.5	20.5
60	23.8	31.0	16.3	27.4	23.2	20.0
61	30.2	36.5	23.5	27.9	33.7	29.4
62	31.8	36.6	26.9	31.3	33.4	30.7
63	23.7	28.3	19.0	24.5	24.2	22.2
64	25.4	30.6	19.8	26.0	26.4	23.3
65	26.1	30.4	21.5	27.1	26.3	24.6
66	23.7	29.2	18.1	24.7	25.2	20.2
67	22.4	27.7	16.7	24.0	23.6	18.8
68	24.7	29.9	19.5	25.5	25.9	22.1
69	36.1	42.2	29.9	39.5	36.3	29.3
70	16.9	22.6	11.0	19.1	15.3	15.7
71	18.5	23.6	13.2	18.9	18.4	18.3
72	24.6	31.3	17.7	27.0	27.2	18.8
73	20.6	26.6	14.2	24.0	20.7	14.6
74	22.4	27.6	17.0	23.2	23.5	20.3
75	17.3	22.7	11.5	18.2	18.6	15.2
76	27.2	32.1	22.0	27.4	28.5	25.1
77	23.4	28.3	18.4	24.5	24.2	21.8
78	30.2	35.0	25.2	37.7	28.9	22.1
79	36.0	41.4	30.4	49.3	28.6	26.2
80	31.1	36.1	26.0	30.6	34.0	28.6
Across All Districts	26.5	31.8	21.0	28.2	27.0	23.6

TABLE 2: Percentage of Unfit Children: All Students and by Gender and Grade

District	All Students	Boys	Girls	5th Graders	7th Graders	9th Graders
1	34.3	32.5	36.1	38.4	29.1	35.0
2	38.4	35.1	41.9	41.6	36.0	37.4
3	30.3	29.4	31.2	27.4	29.3	34.4
4	34.2	33.2	35.3	37.5	28.1	37.2
5	37.4	35.8	39.1	38.5	34.8	38.8
6	27.7	28.0	27.4	30.1	23.6	30.1
7	38.2	36.3	40.3	41.2	33.1	39.9
8	40.3	37.9	42.8	42.4	37.7	40.8
9	44.7	42.7	46.8	43.1	43.0	50.8
10	38.7	36.1	41.4	44.0	34.6	36.7
11	43.1	39.5	47.0	39.6	42.5	48.4
12	39.0	39.9	38.0	37.0	39.6	40.0
13	37.5	38.8	36.1	35.5	41.0	36.8
14	31.2	29.8	32.7	29.1	31.3	34.7
15	26.2	27.3	25.1	26.3	25.1	27.3
16	45.8	44.2	47.5	38.3	46.8	59.0
17	46.6	44.2	49.1	49.2	39.4	54.0
18	41.1	39.2	43.2	43.1	37.5	43.0
19	30.8	31.0	30.6	28.3	26.3	40.2
20	30.2	31.2	29.1	29.6	28.5	33.0
21	28.5	28.6	28.4	29.6	24.0	34.0
22	29.3	30.4	28.2	35.4	24.5	27.5
23	40.8	41.3	40.4	42.9	32.7	46.7
24	35.0	34.3	35.6	35.7	32.0	37.9
25	39.9	37.4	42.4	44.5	33.5	41.2
26	45.0	40.8	49.3	46.6	36.7	52.1
27	28.4	28.1	28.7	29.5	25.0	30.6
28	35.2	33.0	37.5	34.6	32.8	39.2
29	19.1	19.5	18.7	18.6	16.1	22.7
30	40.9	37.7	44.2	38.5	38.0	48.6
31	37.2	34.4	40.0	36.3	37.0	38.7
32	39.5	37.9	41.1	33.0	35.7	50.0
33	35.6	34.5	36.7	44.2	25.7	36.1
34	40.8	38.3	43.4	41.7	36.0	45.1
35	38.5	37.2	39.7	36.2	38.0	41.9
36	49.6	45.1	54.2	49.3	43.3	60.5
37	34.0	33.2	34.9	36.6	29.7	36.9
38	36.0	35.5	36.7	30.6	33.2	45.9
39	53.1	50.5	55.7	46.6	53.5	70.2
40	44.5	42.7	46.4	39.1	45.4	49.8

**TABLE 2: Percentage of Unfit Children: All Students and by Gender and Grade
(Continued)**

District	All Students	Boys	Girls	5th Graders	7th Graders	9th Graders
41	35.7	33.8	37.6	29.9	37.2	41.6
42	41.8	41.9	41.8	35.3	36.4	61.2
43	39.0	37.5	40.5	32.6	27.6	55.1
44	38.4	38.0	38.7	36.7	38.1	41.0
45	49.2	48.2	50.2	47.1	45.5	56.6
46	45.1	43.7	46.5	38.1	49.2	54.4
47	54.0	50.7	57.4	48.1	54.4	61.7
48	52.7	50.1	55.4	51.2	50.9	64.9
49	50.2	47.3	53.4	44.7	48.4	55.1
50	44.3	41.8	46.9	46.9	35.5	49.8
51	52.9	50.3	55.6	48.4	55.5	60.4
52	47.5	43.2	51.6	44.6	44.9	56.9
53	37.2	36.8	37.6	35.2	35.6	41.7
54	37.4	36.6	38.3	40.4	31.6	43.2
55	45.3	42.1	48.5	43.9	44.6	47.8
56	42.5	40.8	44.2	40.4	42.4	46.1
57	41.0	39.9	42.1	39.2	37.8	47.9
58	46.9	44.2	49.7	48.9	43.0	48.8
59	41.8	40.9	42.7	37.6	38.0	51.1
60	38.5	38.3	38.8	40.3	35.1	40.3
61	47.1	43.4	50.9	40.0	41.7	56.6
62	51.4	48.3	54.6	42.5	53.6	61.5
63	41.5	39.4	43.6	38.5	41.3	45.1
64	35.7	34.5	37.0	35.1	34.0	38.7
65	44.8	43.0	46.7	42.3	36.3	58.4
66	38.9	38.4	39.5	40.4	34.8	42.4
67	33.1	35.2	30.8	32.3	29.8	38.6
68	37.1	45.6	28.4	38.1	32.8	40.5
69	42.7	45.2	40.2	45.7	37.2	45.9
70	29.1	29.9	28.2	29.1	27.7	30.9
71	27.0	26.4	27.5	27.1	23.2	31.4
72	38.4	36.7	40.1	40.4	36.3	37.9
73	36.8	36.9	36.8	37.9	35.1	37.7
74	28.8	29.1	28.4	29.2	27.2	30.1
75	23.8	24.4	23.1	25.6	22.3	23.3
76	47.8	45.5	50.2	46.1	44.3	54.6
77	35.2	33.6	37.0	35.4	34.2	35.9
78	43.8	40.7	47.1	42.7	43.7	45.4
79	42.6	41.6	43.6	37.7	40.1	53.1
80	44.5	43.4	45.6	44.7	39.5	50.0
Across All Districts	39.6	38.2	41.1	38.9	36.7	44.1

TABLE 3: Percentage of Overweight Children in Each Assembly District by Ethnicity

District	All Students	African-American	American Indian / Alaska Native	Asian	Filipino	Hispanic / Latino	Pacific Islander	Non-Hispanic White	Other
1	24.9	28.1	28.9	21.3	*	32.7	27.4	24.0	23.0
2	24.1	29.3	32.9	19.0	27.7	32.4	31.1	21.3	24.9
3	19.6	21.0	32.2	21.5	16.3	27.2	25.4	18.5	17.4
4	20.6	27.8	26.5	14.8	20.5	28.9	27.0	17.5	20.0
5	20.3	25.1	26.5	15.9	20.0	28.5	30.2	18.8	17.2
6	17.5	25.4	11.7	13.1	12.9	29.1	25.3	15.0	18.0
7	27.0	30.5	27.2	19.0	25.3	37.0	31.9	21.9	22.9
8	26.4	28.6	30.2	19.8	25.6	35.0	24.7	23.0	19.2
9	26.0	27.1	29.4	20.7	26.2	32.3	34.1	21.9	*
10	23.7	26.6	22.7	18.3	24.0	30.6	34.5	21.8	22.0
11	25.8	28.5	20.4	21.1	24.9	32.7	36.6	22.5	24.0
12	20.5	27.3	*	12.7	25.6	34.4	*	16.4	16.3
13	25.2	28.5	26.9	14.3	28.0	35.9	*	20.1	20.6
14	23.5	33.8	11.2	18.0	23.5	34.0	32.7	15.9	9.7
15	17.9	26.2	17.4	11.6	20.9	29.6	30.0	15.2	17.2
16	27.2	30.5	32.9	18.3	22.7	35.8	45.6	16.6	29.5
17	30.3	31.2	33.9	22.8	29.8	34.2	31.2	26.8	31.5
18	25.1	28.2	21.4	15.5	22.8	32.6	26.1	21.6	21.1
19	24.3	29.2	34.9	15.7	25.2	31.2	39.9	20.6	24.2
20	22.6	27.2	32.2	14.3	23.3	34.1	34.2	21.8	25.8
21	18.9	31.7	17.1	12.4	24.9	29.1	41.4	13.9	16.1
22	25.5	27.9	30.2	21.2	28.0	35.2	30.5	25.1	23.8
23	26.6	32.3	*	16.4	26.0	30.9	37.9	26.4	28.5
24	22.1	24.2	18.5	14.5	23.8	29.0	25.4	20.7	18.3
25	24.1	23.5	24.3	17.7	27.3	31.8	19.9	21.4	24.6
26	28.8	27.2	23.4	20.5	25.2	36.3	35.5	28.2	35.3
27	22.6	30.8	26.8	15.8	23.6	32.5	27.0	18.1	23.8
28	35.0	29.0	25.1	20.1	28.7	40.6	34.0	23.7	31.5
29	24.6	23.3	32.7	20.7	18.6	32.6	17.8	19.6	14.8
30	31.3	31.3	28.1	25.2	22.7	34.1	29.4	26.5	29.3

**TABLE 3: Percentage of Overweight Children in Each Assembly District by Ethnicity
(Continued)**

District	All Students	African-American	American Indian / Alaska Native	Asian	Filipino	Hispanic / Latino	Pacific Islander	Non-Hispanic White	Other
31	30.2	26.1	*	22.2	27.3	32.2	*	25.6	28.8
32	28.2	30.1	27.9	19.5	24.1	35.1	28.2	23.9	25.7
33	25.5	24.0	33.0	20.0	20.0	32.2	32.1	21.5	18.8
34	27.3	24.1	28.7	20.9	25.6	31.3	25.9	23.1	26.4
35	26.5	26.9	29.8	17.1	21.3	34.5	29.5	16.9	20.9
36	24.5	23.4	19.3	22.7	23.5	29.6	28.9	21.4	20.1
37	21.6	26.9	24.0	13.5	22.0	32.9	27.5	16.1	17.4
38	22.5	24.4	19.5	18.4	19.6	31.4	23.2	17.8	23.6
39	35.6	26.4	29.3	23.6	24.7	37.1	*	26.5	*
40	27.7	24.1	23.3	16.9	21.9	32.0	28.6	22.0	31.0
41	25.1	23.6	32.5	16.2	20.8	36.4	39.3	17.0	19.0
42	25.1	23.7	*	18.2	16.3	33.6	*	17.6	6.7
43	27.2	24.4	*	17.7	28.7	34.7	21.9	23.4	*
44	25.2	26.2	18.3	16.3	21.0	33.4	26.3	19.7	23.1
45	34.4	21.3	*	21.0	23.6	37.2	*	23.1	*
46	36.8	27.3	*	21.5	17.4	37.5	*	24.0	*
47	30.3	27.9	*	19.8	18.8	35.9	*	18.5	25.0
48	35.1	29.4	*	24.5	27.0	38.4	*	23.0	*
49	26.8	36.2	31.6	16.8	19.5	33.2	*	26.5	21.4
50	34.3	25.0	*	25.3	25.0	34.7	*	29.3	24.8
51	32.0	27.5	36.9	26.2	24.6	35.3	44.5	26.4	30.4
52	34.8	29.1	53.9	18.0	18.7	36.7	52.7	38.3	37.8
53	22.7	25.8	19.0	16.9	25.8	33.1	33.8	18.2	24.1
54	23.2	22.9	20.3	15.2	20.3	29.5	41.7	18.7	17.6
55	30.1	25.2	32.5	16.9	24.2	34.4	54.4	25.9	23.6
56	28.4	23.8	28.4	15.4	21.9	32.6	33.5	25.2	29.2
57	32.4	25.3	30.5	20.8	27.8	35.2	41.9	26.1	33.4
58	30.4	24.8	33.0	19.0	23.7	32.6	50.0	24.8	29.2
59	21.6	24.7	20.7	17.5	22.6	29.3	23.3	17.7	17.6
60	23.8	29.0	20.8	20.3	21.7	30.8	29.2	20.6	21.0

**TABLE 3: Percentage of Overweight Children in Each Assembly District by Ethnicity
(Continued)**

District	All Students	African-American	American Indian / Alaska Native	Asian	Filipino	Hispanic / Latino	Pacific Islander	Non-Hispanic White	Other
61	30.2	30.5	22.1	19.2	26.3	32.5	45.3	26.8	16.6
62	31.8	25.9	28.7	20.6	25.9	35.0	41.2	25.9	36.8
63	23.7	24.0	26.3	16.1	23.7	29.2	25.9	19.4	20.2
64	25.4	27.4	30.2	20.3	19.5	30.7	35.2	20.5	18.7
65	26.1	27.7	30.5	21.2	24.1	31.5	32.5	22.3	20.4
66	23.7	26.1	28.7	21.6	19.3	30.2	27.2	18.7	22.7
67	22.4	21.2	15.7	17.6	25.3	30.7	30.3	19.9	20.0
68	24.7	27.1	13.5	14.1	21.4	32.2	45.4	20.9	22.8
69	36.1	Apparent error found in 2001 California Physical Fitness Test Data for ethnicity in the 69th Assembly District							
70	16.9	34.2	15.0	14.5	18.2	27.5	18.0	13.2	12.5
71	18.5	30.7	16.4	14.3	20.9	27.8	17.6	15.7	*
72	24.6	28.5	31.7	14.5	18.4	30.6	29.2	19.1	18.3
73	20.6	23.3	29.8	12.1	22.1	29.3	35.3	15.4	13.5
74	22.4	24.6	22.5	19.2	26.0	32.8	35.4	15.3	27.8
75	17.3	21.2	24.4	14.6	20.1	27.2	19.8	14.2	17.7
76	27.2	25.7	24.8	16.8	24.4	33.5	29.5	22.8	*
77	23.4	27.1	33.4	17.8	21.2	30.6	28.9	21.3	*
78	30.2	23.9	44.2	22.6	26.4	36.3	42.5	27.7	*
79	36.0	25.6	57.6	38.5	26.8	38.4	42.3	32.0	*
80	31.1	25.1	31.0	19.6	30.7	34.4	20.7	21.8	26.2
Across All Districts	26.5	28.6	25.1	17.5	24.1	33.7	31.1	20.2	22.3

* 30 or fewer children

TABLE 4: Percentage of Unfit Children in Each Assembly District by Ethnicity

District	All Students	African-American	American Indian / Alaska Native	Asian	Filipino	Hispanic / Latino	Pacific Islander	Non-Hispanic White	Other
1	34.3	40.3	45.3	33.9	*	37.3	44.1	33.7	43.9
2	38.4	38.7	46.8	37.2	42.5	39.0	38.9	37.0	46.8
3	30.3	31.5	40.5	34.7	31.0	31.0	26.9	29.6	34.2
4	34.2	48.2	38.2	37.3	32.8	41.8	38.7	31.8	34.9
5	37.4	49.1	46.4	36.2	30.5	43.5	50.2	35.1	50.6
6	27.7	32.2	32.2	24.4	35.3	36.6	39.1	25.3	28.8
7	38.2	46.5	41.3	34.7	45.0	42.4	44.6	33.3	32.3
8	40.3	46.5	44.4	37.7	40.3	45.7	41.9	37.2	*
9	44.7	46.8	48.8	44.3	40.2	47.2	52.5	40.3	66.0
10	38.7	45.7	46.2	43.3	42.0	44.5	41.3	36.1	35.9
11	43.1	47.1	47.7	42.3	45.3	47.3	48.8	39.4	43.0
12	39.0	51.6	*	30.4	47.7	51.8	*	30.2	36.6
13	37.5	43.1	51.1	31.1	35.8	40.5	*	33.3	38.5
14	31.2	47.7	9.5	29.9	36.6	41.4	33.7	20.0	16.9
15	26.2	38.9	24.5	23.0	33.4	40.5	28.5	22.3	37.0
16	45.8	51.6	37.6	42.8	46.1	52.2	58.4	27.7	36.8
17	46.6	49.3	56.5	47.2	56.8	48.3	37.4	44.6	31.3
18	41.1	49.4	47.8	33.7	46.7	49.5	55.0	32.6	27.5
19	30.8	38.9	44.9	21.4	34.9	33.9	44.5	24.6	38.7
20	30.2	34.2	25.8	25.1	28.7	37.9	35.1	29.6	31.7
21	28.5	42.4	30.5	22.0	28.7	46.2	52.7	20.7	25.3
22	29.3	38.7	39.9	22.1	33.7	40.8	30.0	30.0	26.7
23	40.8	38.7	*	35.1	37.5	43.4	39.2	39.9	33.5
24	35.0	36.3	36.1	28.4	33.9	42.8	38.0	32.0	40.0
25	39.9	43.3	39.1	38.4	35.5	43.2	40.4	38.8	34.7
26	45.0	52.8	54.1	50.0	52.9	44.5	52.5	40.7	40.6
27	28.4	30.3	28.7	25.5	28.6	33.5	35.4	26.2	29.2
28	35.2	30.7	33.6	20.8	30.7	37.3	31.4	34.4	31.7
29	19.1	20.6	18.7	12.3	9.5	26.8	7.0	14.8	19.2
30	40.9	42.6	42.4	44.1	36.1	38.5	35.8	44.0	30.8

**TABLE 4: Percentage of Unfit Children in Each Assembly District by Ethnicity
(Continued)**

District	All Students	African-American	American Indian / Alaska Native	Asian	Filipino	Hispanic / Latino	Pacific Islander	Non-Hispanic White	Other
31	37.2	38.2	*	37.6	37.3	36.4	*	41.6	26.4
32	39.5	40.6	41.9	40.4	39.2	43.6	35.7	36.7	34.5
33	35.6	35.4	47.3	33.5	33.5	40.9	31.5	32.4	31.8
34	40.8	40.3	44.3	36.1	42.5	41.0	40.0	40.9	39.9
35	38.5	39.6	38.8	33.4	38.7	43.2	43.6	30.7	35.9
36	49.6	53.6	50.6	41.3	43.1	51.3	49.8	49.6	52.2
37	34.0	37.8	46.6	31.7	43.9	40.8	57.8	30.4	34.6
38	36.0	38.3	49.0	32.4	35.4	44.4	32.9	31.7	31.8
39	53.1	50.3	59.2	43.4	49.7	53.6	*	51.2	*
40	44.5	44.4	51.9	39.0	51.8	46.7	36.1	39.8	*
41	35.7	42.5	26.6	31.7	40.2	44.0	37.7	28.1	38.2
42	41.8	44.7	*	38.1	49.6	45.8	*	37.2	30.4
43	39.0	42.7	*	30.3	33.5	47.7	35.4	35.7	*
44	38.4	45.1	31.9	27.5	41.0	45.4	36.6	32.1	32.5
45	49.2	54.9	*	46.2	44.4	49.4	*	49.3	*
46	45.1	50.6	*	39.0	37.5	44.9	*	55.0	*
47	54.0	59.5	*	43.3	38.7	55.1	*	35.6	43.8
48	52.7	56.0	*	47.6	48.6	51.7	*	54.5	*
49	50.2	45.1	61.8	49.5	47.8	53.0	40.9	53.4	37.8
50	44.3	50.6	*	61.4	51.4	42.9	*	54.2	*
51	52.9	54.1	67.9	41.2	44.5	52.8	52.2	47.7	50.3
52	47.5	48.9	42.1	44.3	47.7	46.7	53.3	57.3	47.1
53	37.2	45.6	43.7	31.3	42.1	47.9	54.9	31.5	43.8
54	37.4	40.3	41.0	39.7	35.5	41.6	50.3	30.2	27.3
55	45.3	42.5	45.5	44.8	45.9	47.1	56.2	42.0	41.7
56	42.5	40.8	38.8	34.5	40.5	44.2	45.7	42.5	40.8
57	41.0	33.6	25.7	41.0	44.3	40.3	40.7	37.7	50.5
58	46.9	46.3	36.7	40.8	47.7	48.1	55.4	46.2	52.1
59	41.8	45.5	54.2	28.6	33.9	46.5	44.9	39.5	42.2
60	38.5	39.0	29.7	42.6	37.3	41.9	41.8	35.5	35.5

**TABLE 4: Percentage of Unfit Children in Each Assembly District by Ethnicity
(Continued)**

District	All Students	African-American	American Indian / Alaska Native	Asian	Filipino	Hispanic / Latino	Pacific Islander	Non-Hispanic White	Other
61	47.1	42.1	34.0	48.2	37.4	50.8	54.7	54.3	36.4
62	51.4	45.2	54.1	41.2	44.0	53.0	61.5	52.3	54.8
63	41.5	44.0	46.7	32.8	36.7	45.6	40.4	38.0	48.4
64	35.7	38.2	43.0	31.9	30.2	39.9	45.7	31.7	40.4
65	44.8	48.2	52.2	44.0	57.7	46.5	51.2	43.7	41.3
66	38.9	39.9	46.5	37.8	38.0	42.4	42.7	35.9	38.6
67	33.1	35.3	40.4	33.9	39.5	37.3	36.7	30.1	25.1
68	37.1	38.6	26.1	38.4	40.3	37.9	43.0	35.0	37.1
69	42.7	Apparent error found in 2001 California Physical Fitness Test Data for ethnicity in the 69th Assembly District							
70	29.1	40.4	28.7	29.7	35.2	34.6	27.2	26.7	21.5
71	27.0	46.0	28.8	20.9	27.6	34.1	30.4	24.2	*
72	38.4	44.1	35.3	33.9	36.8	41.1	35.6	35.8	40.0
73	36.8	42.3	42.4	31.6	45.6	46.1	56.7	30.6	27.1
74	28.8	35.2	27.6	27.7	31.7	35.0	25.1	24.3	42.4
75	23.8	30.4	29.3	24.9	29.8	29.6	21.9	20.6	25.7
76	47.8	49.1	43.4	46.8	54.1	51.8	38.4	42.3	*
77	35.2	38.4	42.8	35.3	35.6	37.3	35.5	34.3	*
78	43.8	49.8	38.0	44.8	40.3	47.6	47.6	36.2	*
79	42.6	47.0	39.1	42.2	35.4	44.1	48.0	36.1	*
80	44.5	47.4	61.4	32.6	59.8	45.2	38.8	43.7	49.3
Across All Districts	39.6	46.0	38.9	35.7	39.4	44.5	44.0	33.5	36.6

* 30 or fewer children

Chapter 6: **POLICY RECOMMENDATIONS**

Dramatic action to reform state and local policy in the areas of nutrition, physical activity and physical education can help mollify the social and environmental factors that condemn many of California's children to a lifetime of poor health. Reforms can also help avert a significant drain on California's limited public resources. Based on recommendations made by the Scientific Panel, the California Center for Public Health Advocacy developed nearly three-dozen recommendations to address the epidemic of overweight and unfit children.

The highest priority recommendations are included only in the Executive Summary. The additional recommendations are presented in this chapter.

Policies and Actions for the Coming Year (2003)

1. The Governor should urge state agencies, local governments and private industry to implement policies that:
 - increase physical activity among California's children by expanding the physical activity opportunities in schools and communities;
 - improve physical education in the schools;
 - improve health and nutrition education in the schools; and
 - improve the nutrition and physical activity environments in schools and communities.
2. State agencies must pursue federal grants and matching funds to increase resources for physical activity, physical education and nutrition programs in communities and schools across the state. Local action is needed too; for example, local public health departments must bring together existing resources and organizations currently involved in physical activity, physical education and nutrition work.
3. CDE should ensure there is staff responsible for the improvement of physical education and the implementation of the Physical Education Framework.
4. The Governor should reconvene the Governor's Council on Physical Fitness and Sports and name members by February 1, 2003.
5. Incentives for school districts that eliminate advertising, marketing and promotion of junk food on school campuses should be provided. Incentives should be available for the 2003/2004 school year; at a minimum, pilot funds should be available for demonstration projects. Schools should be advertising-free-zones and should be urged to replace junk food with fruits and vegetable and others food that meet the SB 19 standards.
6. Schools should be required to provide parents with fitness test results and information about the importance of daily physical activity for learning and life-long good health. CDE should provide school districts with guidance and models on how to meet this requirement. The feasibility of CDE providing schools with *FITNESSGRAM* reports for each student for distribution to parents should be considered.

Policies and Actions for the Next Four Years (2003-2007)

1. The Department of Health Services (DHS) and the Department of Education (CDE) should be required annually to provide the Legislature and the Governor a report on the status of physical education and needed reforms to improve the physical activity and weight of California's children.
2. Ensure there is staff and space for quality physical education:
 - hire credentialed physical education teachers for elementary schools;
 - provide gyms for elementary and middle schools separate from cafeterias/eating areas.
3. Reinstate the California Subject Matter Project for Physical Education and Health and provide funding for schools to adopt evidence-based physical education programs and provide incentive funding to teachers to prepare for the national professional board exam in secondary physical education and elementary physical education. Such changes would enable schools to strengthen their capacity to provide quality physical education and health education. The promotion of physical education, health and nutrition education and physical activity should be conducted within the context of the Coordinated School Health Program.
4. A panel of experts in the fields of nutrition, medicine and food industry should be convened to develop a long-range plan to ensure that fast food establishments and restaurants provide at least 25% of all menu options that met nutrition guidelines established by the American Heart Association or a comparable health organization. The plan should also include steps to ensure that fast food restaurants provide nutrition labeling on printed and posted menus.
5. Tax incentives should be provided to grocers who sell fresh fruits and vegetables to families in low-income communities.
6. Requirements for new schools to be sited and planned should include objectives to ensure that students who live within one mile can safely walk or ride to school. School renovation funds and transportation funds should be allocated for improvements to schools and transportation infrastructure that facilitate students walking to school. Requirements for new schools should be developed and implemented by January 2004, and by the same date some renovation and transportation funds should be allocated to facilitate students walking to schools. A committee of comprised of architects, landscapers, engineers, physical education practitioners, and community development personnel should be convened to revise current comprehensive guidelines for school facility development and community use of school physical activity areas.
7. A course in physical education or health education should be required for entrance into the California State University system and the University of California system.
8. CDE should be required to include fitness test results in school performance evaluations when determining whether a school shall be classified as a distinguished school for purposes of the High Achieving/Improving Schools program.
9. CDE should develop and pilot a behavior-focused and evidenced-based nutrition education curriculum for K through 12. CDE should report back to the Legislature during the 2004/2005 session.

10. The California State University system and the University of California system should be funded to provide technical assistance to school districts to establish workplace wellness programs in schools. This would help ensure that adults working in schools are physically active and good role models for students.
11. CDE should be urged to expand the SAT 9 test to include questions about the health benefits of healthy eating and physical activity, and the methods of changing eating and physical activity behaviors.
12. After school programs for elementary and teenage children run by local Parks and Recreation departments, schools, other public agencies, and privately-funded organizations and Head Start and childcare programs for the very young should be funded to ensure that quality, evidenced-based physical activity is provided daily. There should be training for activity leaders.
13. Incentives should be available to local health departments to develop evidenced-based plans to promote healthful nutrition and physical activity to help California children reach the Healthy People 2010 objectives.
14. Incentives should be provided to communities that adopt ordinances that:
 - increase physical activity opportunities (facilities and programs);
 - establish school zones that do not include fast-food or junk food sales, and
 - establish school zones that do not permit advertising of food.
15. CDE should be encouraged to urge school districts to spend technology funds to enhance physical education and health education curricula. Physical education teachers should be included in staff discussions of how technology funds will be spent by school districts.
16. Research is needed on a variety of issues to improve programs now in place and to better understand the complexities of the factors that prevent California's children from making healthy eating and physical activity choices. The following research should be undertaken:
 - A study to investigate the prevalence of fast food restaurants, convenience stores and junk food advertising near schools and whether there is a related health outcome when there is a high prevalence of such sales and advertising. *FITNESSGRAM* data, data from health surveys conducted by the Department of Health Services, California Department of Education and CDC could be used in the study.
 - A study to investigate the feasibility and cost of mandating four years of physical education as a requirement for high school graduation.
 - A study to determine the health and educational benefits of physical activity and quality physical education for California children and youth.
 - An assessment of how *FITNESSGRAM* is being administered in a sample of schools prior to the annual fitness testing to be conducted in the spring of 2004. If necessary, CDE should be required to develop a plan to improve the administration of the fitness tests; the plan should include training of school personnel who administer *FITNESSGRAM*.

Appendix A:
**Comparison Between CDC Growth Charts and
 Healthy Fitness Zone**

GIRLS¹

Age	CDC 95 th percentile *	CDC 90 th percentile	CDC 85 th percentile **	Healthy Fitness Zone Upper Limit	Healthy Fitness Zone relationship to CDC percentiles
10	23.0	21.0	20.0	23.5	Above 95 th
11	24.1	22.0	20.8	24	Just under 95 th
12	25.2	22.9	21.7	24.5	Between 90 th -95 th
13	26.3	23.8	22.5	24.5	Between 90 th -95 th
14	27.2	24.7	23.3	25	Between 90 th -95 th
15	28.1	25.4	24.0	25	Between 85 th -90 th
16	28.9	26.1	24.6	25	Between 85 th -90 th

Note: Decimal Points in CDC percentiles are approximations from the CDC growth charts

*CDC definition of overweight: BMI-for-age \geq 95th percentile

** CDC definition of at-risk for overweight: BMI-for-age 85th percentile to $<$ 95th percentile

BOYS²

Age	CDC 95 th percentile *	CDC 90 th percentile	CDC 85 th percentile **	Healthy Fitness Zone Upper Limit	Healthy Fitness Zone relationship to CDC percentiles
10	22.1	20.3	19.4	21	Between 90 th -95 th
11	23.2	21.2	20.2	21	Just under 90 th
12	24.2	22.1	21.0	22	Just under 90 th
13	25.1	23.0	21.8	23	90 th
14	26.0	23.8	22.6	24.5	Between 90 th -95 th
15	26.8	24.6	23.4	25	Between 90 th -95 th
16	27.6	25.4	24.2	26.5	Between 90 th -95 th

Note: Decimal Points in CDC percentiles are approximations from the CDC growth charts

* CDC definition of overweight: BMI-for-age \geq 95th percentile

** CDC definition of at-risk for overweight: BMI-for-age 85th percentile to $<$ 95th percentile

¹ <http://www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41c024.pdf>

(SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000). <http://www.cdc.gov/growthcharts>; Published May 30, 2000 (modified 10/16/00)

² <http://www.cdc.gov/nchs/data/nhanes/growthcharts/set1clinical/cj41c023.pdf>

(SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000). <http://www.cdc.gov/growthcharts> Published May 30, 2000 (modified 10/16/00).

Appendix B:

FITNESSGRAM Standards for Healthy Fitness Zone (HFZ)*

FEMALES

Age	One Mile min:sec	PACER # laps	VO _{2max} ml/kg/min	Percent Fat	Body Mass Index	Curl-up # completed
10	12:30 - 9:30	15 - 41	40 - 48	32 - 17	23.5 - 16.6	12 - 26
11	12:00 - 9:00	15 - 41	39 - 47	32 - 17	24 - 16.9	15 - 29
12	12:00 - 9:00	23 - 41	38 - 46	32 - 17	24.5 - 16.9	18 - 32
13	11:30 - 9:00	23 - 51	37 - 45	32 - 17	24.5 - 17.5	18 - 32
14	11:00 - 8:30	23 - 51	36 - 44	32 - 17	25 - 17.5	18 - 32
15	10:30 - 8:00	23 - 51	35 - 43	32 - 17	25 - 17.5	18 - 35
16	10:00 - 8:00	32 - 61	35 - 43	32 - 17	25 - 17.5	18 - 35

Age	Trunk Lift inches	Push-up # completed	Modified Pull-up # completed	Pull-up # completed	Flexed Arm Hang seconds	Back Saver Sit & Reach ** inches	Shoulder Stretch
10	9 - 12	7 - 15	4 - 13	1 - 2	4 - 10	9	Passing = Touching the fingertips together behind the back.
11	9 - 12	7 - 15	4 - 13	1 - 2	6 - 12	10	
12	9 - 12	7 - 15	4 - 13	1 - 2	7 - 12	10	
13	9 - 12	7 - 15	4 - 13	1 - 2	8 - 12	10	
14	9 - 12	7 - 15	4 - 13	1 - 2	8 - 12	10	
15	9 - 12	7 - 15	4 - 13	1 - 2	8 - 12	12	
16	9 - 12	7 - 15	4 - 13	1 - 2	8 - 12	12	

MALES

Age	One Mile min:sec	PACER # laps	VO _{2max} ml/kg/min	Percent Fat	Body Mass Index	Curl-up # completed
10	11:30 - 9:00	23 - 61	42 - 52	25 - 10	21 - 15.3	12 - 24
11	11:00 - 8:30	23 - 72	42 - 52	25 - 10	21 - 15.8	15 - 28
12	10:30 - 8:00	32 - 72	42 - 52	25 - 10	22 - 16.0	18 - 36
13	10:00 - 7:30	41 - 72	42 - 52	25 - 10	23 - 16.6	21 - 40
14	9:30 - 7:00	41 - 83	42 - 52	25 - 10	24.5 - 17.5	24 - 45
15	9:00 - 7:00	51 - 94	42 - 52	25 - 10	25 - 18.1	24 - 47
16	8:30 - 7:00	61 - 94	42 - 52	25 - 10	26.5 - 18.5	24 - 47

Age	Trunk Lift inches	Push-up # completed	Modified Pull-up # completed	Pull-up # completed	Flexed Arm Hang seconds	Back Saver Sit & Reach ** inches	Shoulder Stretch
10	9 - 12	7 - 20	5 - 15	1 - 2	4 - 10	8	Passing = Touching the fingertips together behind the back.
11	9 - 12	8 - 20	6 - 17	1 - 3	6 - 13	8	
12	9 - 12	10 - 20	7 - 20	1 - 3	6 - 13	8	
13	9 - 12	12 - 25	8 - 22	1 - 4	12 - 17	8	
14	9 - 12	14 - 30	9 - 25	2 - 5	15 - 20	8	
15	9 - 12	16 - 35	10 - 27	3 - 7	15 - 20	8	
16	9 - 12	18 - 35	12 - 30	5 - 8	15 - 20	8	

* Number on left is lower end of HFZ; number on right is upper end of HFZ.

** Test scored Pass/Fail; must reach this distance to pass.

Appendix C: ASSEMBLY DISTRICT DEMOGRAPHICS

	African American		American Indian / Alaskan Native		Asian		Filipino		Hispanic / Latino		Pacific Islander		White (non-Hispanic)		Other		Unknown/ Missing		Total Students
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	
California	109,213	9%	17,758	1%	92,591	8%	33,835	3%	474,531	39%	14,182	1%	401,822	33%	17,716	1%	49,440	4%	1,211,088
AD 1	226	2%	674	5%	268	2%	32	0%	1,745	12%	81	1%	8,354	60%	244	2%	2348	17%	13,972
2	212	1%	471	3%	618	4%	86	1%	2,676	17%	73	0%	9,763	61%	401	3%	1720	11%	16,019
3	340	2%	491	3%	999	6%	65	0%	1,570	10%	67	0%	10,304	63%	166	1%	2259	14%	16,262
4	812	5%	198	1%	510	3%	270	2%	1,708	10%	113	1%	10,976	66%	424	3%	1550	9%	16,561
5	1,125	8%	256	2%	842	6%	147	1%	1,547	11%	97	1%	10,507	72%	73	0%	94	1%	14,686
6	255	2%	104	1%	549	4%	150	1%	1,837	15%	92	1%	7,990	64%	510	4%	965	8%	12,452
7	1,260	9%	206	2%	423	3%	787	6%	3,206	23%	123	1%	6,282	46%	348	3%	1022	7%	13,657
8	740	4%	1,334	8%	765	4%	643	4%	3,990	23%	400	2%	8,470	48%	400	2%	788	4%	17,530
9	2,512	21%	268	2%	2,829	23%	155	1%	3,174	26%	220	2%	2,752	23%	37	0%	274	2%	12,223
10	816	7%	260	2%	906	8%	248	2%	1,975	17%	107	1%	6,270	55%	386	3%	448	4%	11,416
11	1,493	11%	106	1%	801	6%	760	6%	2,683	20%	133	1%	5,742	43%	506	4%	1003	8%	13,227
12	1,150	11%	35	0%	3,319	33%	1,189	12%	1,825	18%	25	0%	1,273	13%	1,082	11%	140	1%	10,038
13	1,382	22%	63	1%	1,532	24%	347	6%	1,736	28%	0	0%	523	8%	698	11%	0	0%	6,281
14	3,289	25%	208	2%	1,309	10%	274	2%	2,458	19%	76	1%	4,981	38%	129	1%	395	3%	13,120
15	399	3%	209	1%	1,224	8%	346	2%	2,335	15%	58	0%	10,542	67%	162	1%	432	3%	15,706
16	5,583	40%	61	0%	2,759	20%	295	2%	3,299	24%	144	1%	1,458	10%	99	1%	295	2%	13,993
17	1,439	7%	277	1%	2,158	11%	515	3%	8,526	43%	60	0%	5,354	27%	240	1%	1310	7%	19,880
18	2,409	17%	119	1%	1,494	10%	675	5%	4,259	29%	470	3%	4,324	30%	291	2%	548	4%	14,589
19	325	3%	39	0%	1,433	12%	1,178	10%	2,600	22%	342	3%	4,240	36%	614	5%	1101	9%	11,872
20	867	6%	76	0%	4,147	27%	1,481	10%	2,935	19%	174	1%	5,078	33%	200	1%	529	3%	15,487
21	484	4%	154	1%	1,461	12%	130	1%	2,659	22%	243	2%	5,602	47%	369	3%	767	6%	11,869
22	301	3%	66	1%	3,498	32%	603	5%	1,823	16%	83	1%	3,852	35%	350	3%	506	5%	11,083
23	305	4%	33	0%	1,837	22%	578	7%	3,623	43%	79	1%	780	9%	206	2%	972	12%	8,412
24	456	4%	199	2%	1,994	16%	409	3%	3,168	26%	131	1%	5,173	42%	163	1%	728	6%	12,421
25	567	3%	263	2%	644	4%	134	1%	4,454	26%	168	1%	9,810	57%	333	2%	878	5%	17,252
26	770	4%	429	2%	1,664	9%	214	1%	6,039	31%	119	1%	5,595	29%	83	0%	4586	24%	19,499
27	138	1%	59	1%	304	3%	88	1%	2,739	29%	48	1%	5,695	60%	171	2%	241	3%	9,482
28	205	1%	111	1%	483	3%	498	3%	9,879	64%	132	1%	2,681	17%	368	2%	1019	7%	15,376
29	438	3%	185	1%	1,016	8%	111	1%	4,528	35%	36	0%	6,296	49%	123	1%	123	1%	12,857
30	697	4%	118	1%	170	1%	419	2%	10,624	59%	118	1%	3,360	19%	435	2%	2090	12%	18,031
31	221	2%	35	0%	463	5%	77	1%	6,591	68%	12	0%	1,789	18%	181	2%	333	3%	9,702
32	1,580	8%	233	1%	504	2%	185	1%	7,129	35%	151	1%	10,439	51%	248	1%	187	1%	20,656
33	415	3%	123	1%	288	2%	251	2%	5,557	35%	59	0%	8,613	55%	76	0%	365	2%	15,745
34	820	4%	321	2%	510	3%	213	1%	9,006	45%	106	1%	7,684	38%	278	1%	1084	5%	20,020
35	382	2%	166	1%	372	2%	268	2%	7,551	49%	49	0%	5,043	33%	416	3%	1174	8%	15,421
36	1,781	9%	248	1%	954	5%	1,487	8%	4,605	24%	2,669	14%	6,899	36%	322	2%	278	1%	19,242
37	348	2%	114	1%	823	5%	277	2%	4,506	29%	130	1%	8,370	54%	279	2%	558	4%	15,405
38	671	4%	127	1%	1,265	7%	536	3%	5,585	30%	217	1%	8,993	48%	485	3%	1049	6%	18,928
39	522	4%	42	0%	280	2%	253	2%	12,561	86%	32	0%	883	6%	14	0%	0	0%	14,587
40	1,223	7%	62	0%	1,280	8%	447	3%	9,933	60%	54	0%	3,666	22%	12	0%	0	0%	16,678
41	860	6%	120	1%	627	5%	312	2%	4,770	35%	53	0%	5,642	41%	504	4%	805	6%	13,692
42	698	9%	17	0%	650	8%	154	2%	3,452	44%	19	0%	2,646	34%	71	1%	113	1%	7,821
43	323	3%	9	0%	838	7%	1,846	15%	4,025	32%	2,103	17%	3,390	27%	6	0%	21	0%	12,561
44	1,126	10%	350	3%	1,983	17%	416	4%	4,357	37%	64	1%	1,977	17%	614	5%	745	6%	11,632
45	392	3%	29	0%	740	6%	405	3%	10,782	81%	14	0%	832	6%	20	0%	30	0%	13,244
46	620	4%	22	0%	194	1%	36	0%	14,711	94%	10	0%	120	1%	17	0%	0	0%	15,729
47	4,257	36%	30	0%	582	5%	101	1%	5,585	47%	28	0%	1,036	9%	71	1%	91	1%	11,779
48	4,188	30%	16	0%	463	3%	81	1%	9,177	65%	15	0%	138	1%	15	0%	1	0%	14,094
49	1,890	9%	117	1%	7,151	34%	491	2%	9,630	45%	31	0%	1,140	5%	292	1%	506	2%	21,248
50	404	3%	25	0%	66	0%	59	0%	12,942	88%	20	0%	334	2%	98	1%	793	5%	14,741

	African American		American Indian / Alaskan Native		Asian		Filipino		Hispanic / Latino		Pacific Islander		White (non-Hispanic)		Other		Unknown/ Missing		Total Students
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	
California	109,213	9%	17,758	1%	92,591	8%	33,835	3%	474,531	39%	14,182	1%	401,822	33%	17,716	1%	49,440	4%	1,211,088
AD 51	4,606	33%	36	0%	293	2%	135	1%	7,236	52%	163	1%	577	4%	182	1%	728	5%	13,955
52	4,503	24%	43	0%	197	1%	60	0%	12,823	70%	191	1%	191	1%	70	0%	358	2%	18,436
53	1,049	8%	78	1%	2,043	16%	263	2%	3,421	27%	68	1%	5,014	39%	213	2%	692	5%	12,842
54	2,234	15%	70	0%	1,922	13%	290	2%	6,054	39%	127	1%	3,992	26%	157	1%	504	3%	15,351
55	4,023	21%	88	0%	1,280	7%	1,212	6%	9,602	49%	565	3%	2,178	11%	97	1%	358	2%	19,403
56	870	5%	94	1%	2,063	12%	611	3%	10,088	58%	123	1%	2,624	15%	417	2%	586	3%	17,476
57	703	4%	62	0%	752	4%	546	3%	12,782	67%	53	0%	2,339	12%	116	1%	1616	9%	18,968
58	422	2%	82	0%	890	4%	248	1%	16,709	78%	38	0%	2,086	10%	59	0%	792	4%	21,327
59	1,082	6%	217	1%	835	5%	253	1%	4,455	26%	519	3%	8,541	50%	407	2%	690	4%	17,000
60	1,136	8%	1,565	10%	2,793	19%	765	5%	3,831	25%	50	0%	4,021	27%	257	2%	648	4%	15,067
61	3,532	17%	1,732	8%	860	4%	263	1%	12,676	60%	80	0%	1,720	8%	102	0%	81	0%	21,047
62	3,997	17%	118	1%	422	2%	178	1%	14,928	64%	84	0%	3,530	15%	44	0%	4	0%	23,304
63	2,752	13%	186	1%	960	4%	375	2%	8,165	38%	104	0%	8,614	40%	124	1%	78	0%	21,357
64	2,108	11%	125	1%	524	3%	214	1%	7,208	39%	209	1%	7,402	40%	113	1%	454	2%	18,357
65	1,368	10%	158	1%	293	2%	128	1%	4,298	32%	139	1%	5,386	40%	239	2%	1318	10%	13,328
66	722	4%	373	2%	306	2%	310	2%	7,406	37%	275	1%	9,752	49%	329	2%	411	2%	19,882
67	415	3%	296	2%	2,103	14%	392	3%	3,864	25%	135	1%	7,457	48%	218	1%	582	4%	15,463
68	248	2%	297	2%	2,880	20%	196	1%	6,208	44%	172	1%	3,713	26%	170	1%	225	2%	14,109
69	Apparent error found in 2001 California Physical Fitness Test Data for ethnicity in the 69th Assembly District																		15,930
70	441	4%	1,283	12%	414	4%	176	2%	1,930	17%	130	1%	6,485	58%	67	1%	193	2%	11,120
71	508	5%	133	1%	602	6%	195	2%	1,660	17%	41	0%	6,557	67%	8	0%	23	0%	9,727
72	252	2%	33	0%	1,347	12%	163	1%	5,693	49%	61	1%	3,303	29%	123	1%	528	5%	11,503
73	744	6%	67	1%	385	3%	314	3%	3,694	31%	157	1%	6,650	55%	39	0%	28	0%	12,078
74	478	3%	126	1%	497	3%	248	1%	6,019	35%	108	1%	9,371	55%	121	1%	0	0%	16,968
75	599	4%	66	0%	1,769	11%	1,254	8%	2,840	17%	74	0%	9,712	59%	184	1%	0	0%	16,496
76	1,245	13%	86	1%	835	9%	243	3%	3,813	41%	103	1%	2,951	32%	6	0%	0	0%	9,280
77	961	5%	280	1%	534	3%	318	2%	3,429	18%	120	1%	13,450	70%	6	0%	0	0%	19,098
78	2,412	14%	198	1%	1,450	9%	1,807	11%	6,541	38%	191	1%	4,377	26%	18	0%	0	0%	16,992
79	1,313	7%	121	1%	431	2%	1,357	7%	13,254	69%	144	1%	2,465	13%	23	0%	0	0%	19,108
80	456	3%	63	0%	159	1%	138	1%	12,704	71%	41	0%	2,939	16%	165	1%	1269	7%	17,935

Appendix D:
RESULTS FOR OTHER FITNESS TESTS

PERCENTAGE OF STUDENTS BELOW HEALTHY FITNESS ZONE				
District	Abdominal Strength and Endurance	Trunk Extensor and Flexibility	Upper Body Strength and Flexibility	Overall Flexibility
1	9.4	5.1	25.0	27.0
2	9.4	7.0	26.7	25.2
3	6.7	4.4	21.4	21.2
4	7.6	6.2	20.7	26.4
5	7.5	7.6	26.3	24.9
6	9.3	5.1	19.9	24.1
7	8.2	5.9	23.5	23.5
8	9.9	8.9	26.8	26.6
9	12.9	10.5	25.4	25.0
10	8.5	9.4	22.6	24.0
11	10.4	9.7	24.0	28.1
12	13.9	6.4	23.5	17.6
13	16.2	6.4	29.4	22.1
14	10.2	11.0	21.6	30.3
15	8.0	5.6	21.7	24.2
16	17.7	8.8	28.6	28.7
17	14.9	8.6	25.8	32.5
18	12.0	8.7	23.3	28.7
19	10.1	4.8	26.5	29.0
20	8.7	4.3	20.7	23.0
21	9.5	5.6	20.4	25.0
22	17.8	11.6	24.8	21.9
23	13.8	6.9	24.7	22.4
24	13.1	7.4	26.7	25.4
25	11.2	9.9	23.0	25.9
26	12.7	8.0	25.2	30.5
27	8.2	4.1	22.4	28.8
28	16.1	9.5	31.0	29.2
29	5.2	2.1	10.6	13.4
30	12.4	8.2	27.4	31.9
31	12.5	3.8	26.8	24.3
32	12.4	5.9	24.3	29.3
33	13.7	9.2	31.3	28.2
34	10.4	3.8	26.5	28.0
35	13.8	9.6	25.1	35.3
36	10.0	6.6	21.6	29.6
37	8.1	5.5	20.4	22.6
38	8.8	4.9	20.3	24.1
39	18.9	8.7	29.8	36.1
40	15.3	5.9	27.8	29.8

PERCENTAGE OF STUDENTS BELOW HEALTHY FITNESS ZONE				
District	Abdominal Strength and Endurance	Trunk Extensor and Flexibility	Upper Body Strength and Flexibility	Overall Flexibility
41	12.1	7.1	21.3	30.3
42	14.0	6.3	29.3	31.6
43	10.4	6.6	25.7	24.7
44	12.0	7.5	25.1	26.8
45	16.5	9.2	31.4	33.6
46	18.7	10.2	32.2	38.4
47	15.9	8.8	26.6	31.7
48	16.1	11.8	25.1	34.6
49	10.7	6.8	24.6	22.8
50	21.4	10.0	36.2	34.0
51	17.1	10.0	27.9	34.1
52	17.5	12.8	26.3	32.8
53	8.7	4.7	20.9	27.5
54	10.4	5.9	22.2	28.0
55	15.1	7.9	22.5	33.9
56	13.6	5.8	25.8	25.5
57	8.9	4.4	22.6	24.6
58	13.8	8.0	31.0	29.2
59	11.0	7.9	22.7	31.0
60	11.2	4.2	21.5	21.1
61	16.6	5.4	27.5	30.0
62	17.2	6.4	27.5	31.5
63	8.0	5.5	20.5	28.5
64	9.0	3.9	21.4	21.9
65	11.0	4.0	23.8	23.6
66	9.1	4.1	22.5	27.3
67	9.6	4.3	22.1	21.7
68	13.2	5.6	26.7	25.3
69	14.5	6.9	28.0	28.3
70	8.0	4.0	22.9	22.5
71	8.5	5.8	20.0	20.6
72	9.5	4.4	22.3	26.1
73	11.4	3.4	24.0	26.0
74	9.5	3.7	27.4	25.7
75	6.5	3.3	21.4	20.0
76	14.0	5.3	30.8	26.0
77	9.2	2.6	23.2	23.9
78	12.6	7.9	24.9	26.8
79	22.1	9.2	34.5	31.1
80	15.3	6.8	31.5	24.7

Appendix E:
ASSEMBLY DISTRICT
GENERAL INFORMATION

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
1	All of Del Norte, Humboldt, Lake, Mendocino and Trinity Counties, as well as part of Sonoma County.	Patty Berg	D	2003	http://democrats.assembly.ca.gov/members/a01	(916) 319-2001
2	All of Colusa, Glenn, Modoc, Shasta, Siskiyou, Sutter and Tehama Counties, as well as parts of Butte and Yolo Counties.	Doug La Malfa	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=2&Lang=1	(916) 319-2002
3	All of Lassen, Nevada, Plumas, Sierra and Yuba Counties, as well as parts of Butte and Placer Counties, including the city of Chico.	Rick Keene	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=3&Lang=1	(916) 319-2003
4	Alpine County, most of El Dorado and Placer Counties, and part Sacramento County.	Tim Leslie	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=4&Lang=1	(916) 319-2004
5	Parts of Placer and Sacramento Counties, including the cities of Arden-Arcade, Citrus Heights, Folsom, North Highlands, Orangevale, and part of Sacramento.	Dave Cox	R	2004	http://republican.assembly.ca.gov/members/index.asp?Dist=5&Lang=1	(916) 319-2005
6	Marin and part of Sonoma Counties, including the cities of Novato, Petaluma, and San Rafael.	Joe Nation	D	2006	http://democrats.assembly.ca.gov/members/a06	(916) 319-2006
7	Napa County and part of Solano and Sonoma Counties, including all of the cities of Santa Rosa and Vallejo.	Patricia Wiggins	D	2004	http://democrats.assembly.ca.gov/members/a07	(916) 319-2007
8	Parts of Solano and Yolo Counties, including all of the cities of Davis, Fairfield, Vacaville, and Woodland.	Lois Wolk	D	2008	http://democrats.assembly.ca.gov/members/a08	(916) 319-2008
9	Most of the City of Sacramento.	Darrell Steinberg	D	2004	http://democrats.assembly.ca.gov/members/a09	(916) 319-2009

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
10	All of Amador County and parts of El Dorado, Sacramento and San Joaquin Counties, including Carmichael, Elk Grove, Laguna, Lodi, Rancho Cordova, and part of Stockton.	Alan Nakanishi	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=10&Lang=1	(916) 319-2010
11	Part of Contra Costa County, including the cities of Antioch, Concord, Martinez, and Pittsburg.	Joseph Canciamilla	D	2006	http://democrats.assembly.ca.gov/members/a11	(916) 319-2011
12	Parts of San Francisco and San Mateo Counties, including the western part of the City of San Francisco and part of Daly City.	Leland Yee	D	2008	http://democrats.assembly.ca.gov/members/a12	(916) 319-2012
13	Part of the City of San Francisco.	Mark Leno	D	2008	http://democrats.assembly.ca.gov/members/a13	(916) 319-2013
14	Parts of Alameda and Contra Costa Counties, including the cities of Berkeley, Pleasant Hill, Richmond, San Pablo, and part of Oakland.	Loni Hancock	D	2008	http://democrats.assembly.ca.gov/members/a14	(916) 319-2014
15	Parts of Alameda, Contra Costa, Sacramento and San Joaquin Counties, including the cities of Danville, Elk Grove, Livermore, San Ramon and Walnut Creek.	Guy Spencer Houston	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=15&Lang=1	(916) 319-2015
16	Cities of Alameda, Oakland and Piedmont.	Wilma Chan	D	2006	http://democrats.assembly.ca.gov/members/a16	(916) 319-2016
17	Merced County and parts of San Joaquin and Stanislaus Counties, including the cities of Atwater, Los Banos, Merced, Tracy and part of Stockton.	Barbara Matthews	D	2006	http://democrats.assembly.ca.gov/members/a17	(916) 319-2017
18	Part of Alameda County, including Castro Valley, Dublin, Hayward, San Leandro, and parts of Oakland and Pleasanton.	Elen M. Corbett	D	2004	http://democrats.assembly.ca.gov/members/a18	(916) 319-2018
19	Part of San Mateo County, including Pacifica, San Bruno, San Mateo, South San Francisco, and part of Daly City.	Gene Mullin	D	2008	http://democrats.assembly.ca.gov/members/a19	(916) 319-2019

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
20	Parts of Alameda and Santa Clara Counties, including the cities of Fremont, Milpitas, Newark and Union City.	John Dutra	D	2004	http://democrats.assembly.ca.gov/members/a20	(916) 319-2020
21	Parts of San Mateo and Santa Clara Counties, including the cities of Los Gatos, Menlo Park, Palo Alto, Redwood City, and part of San Jose.	Joe Simitian	D	2006	http://democrats.assembly.ca.gov/members/a21	(916) 319-2021
22	Cities of Cupertino, Mountain View, Sunnyvale, and parts of San Jose and Santa Clara.	Sally Lieber	D	2008	http://democrats.assembly.ca.gov/members/a22	(916) 319-2022
23	Part of the City of San Jose.	Manny Diaz	D	2006	http://democrats.assembly.ca.gov/members/a23	(916) 319-2023
24	Cities of Campbell, Saratoga, and parts of San Jose and Santa Clara.	Rebecca Cohn	D	2006	http://democrats.assembly.ca.gov/members/a24	(916) 319-2024
25	All of Calaveras, Mariposa, Mono and Tuolumne Counties, as well as parts of Madera and Stanislaus Counties, including part of the City of Modesto.	Dave Cogdill	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=25&Lang=1	(916) 319-2025
26	Parts of San Joaquin and Stanislaus Counties, including the cities of Ceres, Manteca, Turlock, and parts of Modesto and Stockton.	Greg Aghazarian	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=26&Lang=1	(916) 319-2026
27	Parts of Monterey, Santa Clara and Santa Cruz Counties, including the cities Monterey, Morgan Hill, Santa Cruz and Seaside.	John Laird	D	2008	http://democrats.assembly.ca.gov/members/a27	(916) 319-2027
28	San Benito County as well as parts of Monterey, Santa Clara and Santa Cruz Counties, including the cities of Gilroy, Hollister, Salinas, Watsonville, and part of San Jose.	Simon Salinas	D	2006	http://democrats.assembly.ca.gov/members/a28	(916) 319-2028
29	Parts of Fresno, Madera and Tulare Counties, including Clovis, Madera and part of Fresno.	Steve Samuelian	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=29&Lang=1	(916) 319-2029

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
30	Kings County as well as parts of Fresno, Kern and Tulare Counties, including the cities of Delano, Hanford, Lemoore, Wasco and parts of Bakersfield	Nicole Parra	D	2008	http://democrats.assembly.ca.gov/members/a30	(916) 319-2030
31	Parts of Fresno and Tulare Counties, including the cities of Dinuba, Reedley, Sanger, Selma, and part of Fresno.	Sarah Reyes	D	2004	http://democrats.assembly.ca.gov/members/a31	(916) 319-2031
32	Parts of Kern and San Bernadino Counties, including Oildale, Ridgecrest and part of Bakersfield.	Kevin McCarthy	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=32&Lang=1	(916) 319-2032
33	San Luis Obispo County and part of Santa Barbara County, including Atascadero, Lompoc, Orcutt, Paso Robles, Santa Maria and San Luis Obispo.	Abel Maldonado	R	2004	http://republican.assembly.ca.gov/members/index.asp?Dist=33&Lang=1	(916) 319-2033
34	Inyo County and parts of Kern, San Bernardino and Tulare Counties, including Barstow, Lindsay, Porterville, Tulare and Visalia.	Bill Maze	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=34&Lang=1	(916) 319-2034
35	Parts of Santa Barbara and Ventura Counties, including the cities of Goleta, Santa Barbara, Ventura, and part of Oxnard.	Hannah-Beth Jackson	D	2002	http://democrats.assembly.ca.gov/members/a35	(916) 319-2035
36	Parts of Los Angeles and San Bernardino Counties, including the cities of Lancaster, Palmdale and Victorville.	Sharon Runner	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=36&Lang=1	(916) 319-2036
37	Parts of Los Angeles and Ventura Counties, including the cities of Camarillo, Moorpark, Thousand Oaks, and parts of Simi Valley and Los Angeles.	Tony Strickland	R	2004	http://republican.assembly.ca.gov/members/index.asp?Dist=37&Lang=1	(916) 319-2037
38	Parts of Los Angeles and Ventura Counties, including Santa Clarita and parts of Simi Valley and Los Angeles.	Keith Richman	R	2002	http://republican.assembly.ca.gov/members/index.asp?Dist=38&Lang=1	(916) 319-2038
39	East San Fernando Valley, including Mission Hills, Pacoima, Panorama City, San Fernando and Sun Valley.	Cindy Montanez	D	2008	http://democrats.assembly.ca.gov/members/a39	(916) 319-2039

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
40	San Fernando Valley, including Canoga Park, Granada Hills, North Hills, Northridge, Reseda, Van Nuys, Woodland Hills and West Hills.	Lloyd Levine	D	2008	http://democrats.assembly.ca.gov/members/a40	(916) 319-2040
41	Parts of Los Angeles and Ventura Counties, including Agoura Hills, Calabasas, Encino, Malibu, Santa Monica, Tarzana, and part of Oxnard.	Fran Pavley	D	2006	http://democrats.assembly.ca.gov/members/a41	(916) 319-2041
42	Bel Air, Beverly Hills, Brentwood, Hancock Park, Los Angeles, Sherman Oaks, Studio City and West Hollywood.	Paul Koretz	D	2006	http://democrats.assembly.ca.gov/members/a42	(916) 319-2042
43	Burbank, Glendale, Los Feliz, North Hollywood and Silver Lake.	Dario Frommer	D	2006	http://democrats.assembly.ca.gov/members/a43	(916) 319-2043
44	Altadena, Arcadia, Duarte, Eagle Rock, La Canada-Flintridge, Los Angeles, Pasadena, South Pasadena, and Temple City.	Carol Liu	D	2006	http://democrats.assembly.ca.gov/members/a44	(916) 319-2044
45	Atwater Village, East Hollywood, East Los Angeles, Echo Park, Hollywood, Los Angeles, and Mount Washington.	Jackie Goldberg	D	2006	http://democrats.assembly.ca.gov/members/a45	(916) 319-2045
46	Huntington Park, Maywood, Vernon and the Boyle Heights, Downtown, Pico-Union and University Park neighborhoods of Los Angeles.	Fabian Nunez	D	2008	http://democrats.assembly.ca.gov/members/a46	(916) 319-2046
47	Culver City and portions of West Los Angeles, including the neighborhoods of Cheviot Hills, Crenshaw, Hyde Park, Mid-City, Palms and Westwood.	Herb Wesson	D	2004	http://democrats.assembly.ca.gov/members/a47	(916) 319-2047
48	Westmont and the Exposition Park, Grammercy Place, Harvard Park and Koreatown neighborhoods of Los Angeles.	Mark Ridley-Thomas	D	2008	http://democrats.assembly.ca.gov/members/a48	(916) 319-2048
49	the western San Gabriel Valley cities of Alhambra, El Monte, Monterey Park, Rosemead and San Gabriel.	Judy Chu	D	2006	http://democrats.assembly.ca.gov/members/a49	(916) 319-2049

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
50	Cities of Bell, Bell Gardens, Bellflower, Lynwood, Southgate, and parts of Downey.	Marco A. Firebaugh	D	2004	http://democrats.assembly.ca.gov/members/a50	(916) 319-2050
51	Cities of Gardena, Hawthorne, Inglewood, Lawndale, Los Angeles.	Jerome Horton	D	206	http://democrats.assembly.ca.gov/members/a51	(916) 319-2051
52	Cities of Compton, Poaramount, and parts of Long Beach and Los Angeles.	Mervyn Dymally	D	2008	http://democrats.assembly.ca.gov/members/a52	(916) 319-2052
53	El Segundo, Hermosa Beach, Lomita, Manhattan Beach, Marina Del Rey, Redondo Beach, Torrance and Venice Beach.	George Nakano	D	2004	http://democrats.assembly.ca.gov/members/a53	(916) 319-2053
54	Parts of Long Beach and Los Angeles, as well as Palos Verdes Estates, Rancho Palos Verdes and Rolling Hills Estates.	Alan Lowenthal	D	2004	http://democrats.assembly.ca.gov/members/a54	(916) 319-2054
55	Parts of Long Beach and Los Angeles, and Carson and Lakewood.	Jenny Oropeza	D	2006	http://democrats.assembly.ca.gov/members/a55	(916) 319-2055
56	Parts of Los Angeles and Orange Counties, including Buena Park, Cerritos, Norwalk, Santa Fe Springs, South Whittier and Whittier.	Rudy Bermudez	D	2008	http://democrats.assembly.ca.gov/members/a56	(916) 319-2056
57	Azusa, Baldwin Park, Covina, La Puente and West Covina.	Ed Chavez	D	2006	http://democrats.assembly.ca.gov/members/a57	(916) 319-2057
58	Southeast Los Angeles County communities of Downey, East Los Angeles, Hacienda Heights, Montebello, Pico Rivera and Whittier.	Ronald Calderon	D	2008	http://democrats.assembly.ca.gov/members/a58	(916) 319-2058
59	Parts of Los Angeles and San Bernardino Counties, including Apple Valley, Claremont, Glendora, Hesperia, La Verne, San Dimas and part of San Bernardino.	Dennis Mountjoy	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=59&Lang=1	(916) 319-2059
60	Parts of Los Angeles, Orange and San Bernardino Counties, including the cities of Chino Hills, Diamond Bar, La Mirada, Walnut, and parts of Anaheim, La Habra and Orange.	Robert Pacheco	R	2004	http://republican.assembly.ca.gov/members/index.asp?Dist=60&Lang=1	(916) 319-2060

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
61	Parts of Los Angeles and San Bernardino Counties, including the cities of Chino, Montclair, Ontario and Pomona.	Gloria N. McLeod	D	2006	http://democrats.assembly.ca.gov/members/a61	(916) 319-2061
62	Part of San Bernardino County, including the cities of Colton, Rialto, and parts of Fontana and San Bernardino.	John Longville	D	2004	http://democrats.assembly.ca.gov/members/a62	(916) 319-2062
63	Part of San Bernardino County, including Rancho Cucamonga, Redlands, Upland, and part of San Bernardino.	Robert Dutton	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=63&Lang=1	(916) 319-2063
64	Part of Riverside County, including Palm Desert and parts of Moreno Valley and Riverside.	John Benoit	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=64&Lang=1	(916) 319-2064
65	Parts of Riverside and San Bernardino Counties, including Banning, Hemet, Perris, San Jacinto, Yucaipa, and parts of Moreno Valley.	Russ Bogh	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=65&Lang=1	(916) 319-2065
66	Parts of Riverside and San Diego Counties, including Fallbrook, Lake Elsinore, Murrieta, Rubidoux, Temecula, and parts of Riverside.	Ray Haynes	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=66&Lang=1	(916) 319-2066
67	Part of Orange County, including Cypress, Huntington Beach, Seal Beach, and parts of Anaheim and Westminster.	Tom Harman	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=67&Lang=1	(916) 319-2067
68	Part of Orange County, including Costa Mesa, Fountain Valley, and parts of Anaheim, Garden Grove, Stanton and Westminster.	Ken Maddox	R	2004	http://republican.assembly.ca.gov/members/index.asp?Dist=68&Lang=1	(916) 319-2068
69	Part of Orange County, including Santa Ana and parts of Anaheim and Garden Grove.	Lou Correa	D	2004	http://democrats.assembly.ca.gov/members/a69	(916) 319-2069
70	Part of Orange County, including Irvine, Laguna Beach, Lake Forest, Newport Beach and Tustin.	John Campbell	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=70&Lang=1	(916) 319-2070

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
71	Parts of Orange and Riverside Counties, including Corona, Mission Viejo, Norco, Rancho Santa Margarita, Tustin Foothills, and part of Orange.	Todd Spitzer	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=71&Lang=1	(916) 319-2071
72	Part of Orange County, including Brea, Fullerton, Placentia, and parts of Anaheim, La Habra, Orange, and Yorba Linda.	Lynn Daucher	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=72&Lang=1	(916) 319-2072
73	Parts of Orange and San Diego Counties, including Dana Point, Laguna Hills, Laguna Niguel, Oceanside, San Clemente and San Juan Capistrano.	Patricia Bates	R	2004	http://republican.assembly.ca.gov/members/index.asp?Dist=73&Lang=1	(916) 319-2073
74	Part of San Diego County, including Carlsbad, Encinitas, San Marcos, Vista, and part of Escondido.	Mary Wyland	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=74&Lang=1	(916) 319-2074
75	Part of San Diego County, including Poway and parts of Escondido and San Diego.	George Plescia	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=75&Lang=1	(916) 319-2075
76	The City of San Diego, including the neighborhoods of Balboa Park, Clairemont Mesa, Kearny Mesa, Mission Valley, Pacific Beach, Uptown, and parts of Centre City.	Christine Kehoe	D	2006	http://democrats.assembly.ca.gov/members/a76	(916) 319-2076
77	Eastern San Diego County as well as El Cajon, La Mesa, Miramar Naval Air Station, Santee, and parts of San Diego.	Jay La Suer	R	2006	http://republican.assembly.ca.gov/members/index.asp?Dist=77&Lang=1	(916) 319-2077
78	Part of San Diego County, including La Presa, Lemon Grove, Spring Valley, and parts of Chula Vista and San Diego.	Shirley Horton	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=78&Lang=1	(916) 319-2078
79	Part of San Diego, including Coronado, Imperial Beach, National City, as well as the western portion of Chula Vista and the southern part of San Diego.	Juan Vargas	D	2006	http://democrats.assembly.ca.gov/members/a79	(916) 319-2079

District	District Description	Assembly Member	Party	Term Limit	Assembly Member's Website	Phone Number
80	Imperial County and part of Riverside County, including Calexico, Cathedral City, El Centro, Indio and Palm Springs.	Bonnie Garcia	R	2008	http://republican.assembly.ca.gov/members/index.asp?Dist=80&Lang=1	(916) 319-2080