

STATE OF CHILDHOOD OBESITY IN SAN DIEGO COUNTY: SUPPLEMENTAL DATA REPORT 2019



SAN DIEGO COUNTY
**CHILDHOOD
OBESITY
INITIATIVE**

Working Together to Shape a Healthy Future
Facilitated by Community Health Improvement Partners

Core funding provided by:



Facilitated by:



COMMUNITY HEALTH
IMPROVEMENT PARTNERS
making a difference together



Inquiries regarding this document may be directed to: County of San Diego Health and Human Services Agency Public Health Services Maternal, Child and Family Health Services Branch

Health Services Complex

3851 Rosecrans Street, MS: P-511H

San Diego, CA 92110-3652

(619) 542-4110

All materials in this document are in the public domain and may be reproduced and copied without permission. However, citation to source is appreciated.

Suggested citation:

San Diego Childhood Obesity Initiative, County of San Diego, Health and Human Services Agency. Live Well San Diego, State of Childhood Obesity in San Diego County: Supplemental Data Report September 2019.

This work is a program of Live Well San Diego: Healthy Works and implemented by Community Health Improvement Partners. This work supports Live Well San Diego, the County vision for a region that is Building Better Health, Living Safely, and Thriving.

TABLE OF CONTENTS



REPORT CREDITS

Authors:

Camellia Mortezaadeh, MPH
Director, San Diego County Childhood Obesity Initiative

Megan Gietzen, MPH
Program Manager, San Diego County Childhood Obesity Initiative

Data and Analysis: Christiane-Rayna Lopez, MPH

Contributors: Anahid Brakke; Heather Cruz; Joangrace Espiritu; Heidi Gjertsen, PhD; Ariel Hamburger, MA, MPH; Deirdre Kleske; Stacey Kurz; Mary Beth Moran; Laura Niksch, MS, RD

Design: Brenda Manzelli

Photo Credits: iStock

Inquiries regarding this document may be directed to:

San Diego County Childhood Obesity Initiative
 Facilitated by Community Health Improvement Partners
www.sdcoi.org • (858)-609-7961

Issued September 2019

Acknowledgements	4
Letter from the Co-Chairs	5
Executive Summary	6
San Diego County Childhood Obesity Initiative	7
Background	9
Prevalence of Childhood Overweight and Obesity in San Diego County	12
Discussion: Inequities in Childhood Overweight and Obesity	16
A Call to Action	23
Appendices	
Appendix A: Body Mass Index (BMI) Ranges	24
Appendix B: District Level Childhood Overweight and Obesity Data	25
Appendix C: Overweight and Obesity across HHS Live Well Regions	30
References	33

Acknowledgements

The San Diego Childhood Obesity Initiative is built on the collective efforts of multiple, diverse partners across the county. Thank you to the following partners for their sustained engagement and efforts in working to improve the health of children and families across the county.

2-1-1 San Diego
9th District PTA
Aetna
AKA Head Start
Alliance for a Healthier Generation
Alliance for Regional Solutions
Alpine Union School District
Alta Planning+Design
American Academy of Pediatrics
American Cancer Society
American Council on Exercise
American Dental Association
American Diabetes Association
American Heart Association
American Liver Foundation
American Produce Distributors
American Red Cross WIC
Arborea Group, LLC
Bayside Community Center
Be There San Diego
Bonsall School District
Borrego Springs Unified School District
Cajon Valley Union School District
California Department of Education
California Department of Public Health
California Food Policy Advocates
California Pan-Ethnic Health Network
California Project LEAN
California State University, San Marcos
CAPSLO Head Start
Cardiff Elementary School District
Care 1st Health Plan
Carlsbad Unified School District
Center for Ecoliteracy
Center for Healthy Eating and Active Research
ChangeLab Solutions
Child Development Associates
Children's Home Society of California
Children's Primary Care Medical Group
Chula Vista Community Collaborative
Chula Vista School District
Circulate San Diego
City of Chula Vista
City of Lemon Grove
City of National City
Community Health Improvement Partners
Coronado Unified School District
County of San Diego Health & Human Services Agency
County of San Diego Parks & Recreation
Dairy Council of California
Del Mar Union School District
Easterseals
Educational Enrichment Systems
Encinitas Union School District
Environmental Health Coalition
Episcopal Community Services
Escondido Education COMPACT
Escondido Union Elementary & High School Districts
Fallbrook Union Elementary & High School Districts
Family Health Centers of San Diego
Farm Fresh to You
Feeding San Diego
First 5 San Diego
FoodCorps
Foundation for the Children of the Californias
Grossmont-Cuyamaca Community College District
Grossmont Union High School District
Harder+Company
Healthy Chula Vista Initiative
Healthy Dining Finder
Healthy Kids Choice
Hunger Advocacy Network
Hunger Free San Diego
Hygia Weight Loss & Nutrition
Imperial Beach Health Center
Inner City Athletic Program
Jamul-Dulzura Union School District
Jewish Family Services
Julian Union Elementary & High School Districts
Kaiser Permanente
Kitchens for Good
La Mesa-Spring Valley School District
Lakeside Union School District
League of Women Voters
Lean and Green Kids
Leichtag Foundation
Link 2 Feed
Live Well Schools
MAAC Project
Miracle Babies
National School District
Neighborhood House Association
Nile Sisters Development Initiative
North County Health Services
Oceanside Unified School District
Olivewood Gardens
Palomar Health
PCI: California Border Health Start
Rady Children's Hospital Center for Healthier Communities
Rady Children's Hospital
San Diego County Bicycle Coalition
San Diego County Office of Education
San Diego Hunger Coalition
San Diego Public Library
San Diego Roots Sustainable Food Project
San Diego State University
San Diego Unified School District
San Dieguito Union High School District
San Marcos Unified School District
San Pasqual Union School District
San Ysidro Health Center
San Ysidro School District
SANDAG
Santee School District
SAY San Diego
Scripps Health
San Diego Gas & Electric
SDSU College of Extended Studies
SDSU School of Public Health
SDSU School of Communication
Sharp Healthcare
Solana Beach School District
South Bay Community Services
South Bay Union School District
SPARK Programs
Spencer Valley School District
Sweetwater Union High School District
The Children's Initiative
UC San Diego Center for Community Health
UC San Diego Cooperative Extension
UC San Diego Health
UC San Diego Medical Center
Union of Pan Asian Communities
UnitedHealthcare
United Way
University of California, Davis
University of California, San Diego
University of San Diego
Valley Center-Pauma Unified School District
Vista Unified School District
Vizer App
Warner Unified School District
Women, Infants, and Children (WIC)
YMCA Childcare Resource Service
YMCA of San Diego County

Letter from the Co-Chairs:

San Diego County remains a diverse, vibrant, growing region with a wealth of opportunities for its nearly 3.4 million residents and families. While we outpace many counties across California on health indicators, the health and well-being of our county's nearly 805,000 children remain at risk as we continue to face high rates of childhood obesity. As of 2018, nearly 1 out of every 3 children across San Diego County was overweight or obese. These overall rates, however, mask the disparities that exist among children of racial and ethnic minorities and children living in poverty.

To continue to improve the health of San Diego County's children, government agencies, cities, businesses, schools, community- and faith-based organizations, early childcare and providers – along with parents, teachers, and individual residents – must work together to solve some of our toughest challenges.

The San Diego County Childhood Obesity Initiative was created in 2006 as a public-private partnership with the mission of reducing and preventing childhood obesity through policy, systems, and environmental change. While the collective efforts of more than 200 partners have worked to make improvements in a range of sectors, and although childhood obesity rates have in some districts levelled off or

even declined, **more work needs to be done.** Health disparities and inequities persist across the County – with children in some districts across the County experiencing almost double the rates of overweight and obesity than others.

In addition, persistent issues such as childhood hunger and food insecurity, poverty, Adverse Childhood Experiences, and a lack of access to healthy food or quality childcare remain realities for many San Diego children and families. These issues are amplified in our neighborhoods with lowest socioeconomic status and/or high rates of minority populations, where social and environmental conditions such as lack of: affordable housing, healthy foods, safe parks and streets, and disproportionate marketing of unhealthy food and beverages are most prevalent. All of these are factors that contribute to the childhood obesity epidemic.

We believe that the health of children in San Diego – and their risk or likelihood of becoming obese – should not be determined by where they live, go to school, or play. Childhood obesity is preventable and ensuring all communities across San Diego County are equipped with the appropriate policies, resources, and tools to advance the health, safety, and well-being of our children is more critical than ever.

Wilma Wooten, MD, MPH
*Public Health Officer
County of San Diego HHS*

Shaila Serpas, MD, MPH
*Scripps Mercy Family Medicine
Residency Program*

Deborah MacDonald, MA, MBA
*Former Executive Director (retired)
YMCA Childcare Resource Service*

Executive Summary

BACKGROUND

As of 2018, 34%, or nearly 1 out of every 3 children in San Diego County's schools were overweight or obese.¹ These rates vary by grade, with 5th graders having the highest rates of overweight and obese children – 36% – compared to 7th graders (34%) and 9th graders (33%).

In examining trends across longer periods of time, overweight and obesity prevalence among children in San Diego County appears to be leveling off and even declining slightly. For example, a 2005 UCLA study estimated 36% of children in San Diego County were overweight or obese, with that number decreasing to 35% in 2010. Based on these data, childhood overweight and obesity prevalence in 2018 has decreased by two percentage points since 2005. This small decrease from 36% to 34%, however, would represent approximately 8,600 fewer students across public school districts who were overweight and obese in 2017-2018.

FINDINGS

Compared to the State of California, San Diego County had a lower prevalence of childhood overweight and obesity (34% compared to California's 39%) for the 2017-2018 school year. Nationally, estimates and measurement of childhood obesity vary by both method and age groups, therefore it is not possible to compare directly with California. However, the Centers for Disease Control and Prevention's (CDC) 2015–2016 National Health and Nutrition Examination Survey (NHANES) estimated the national prevalence of overweight and obesity and severe obesity among children and adolescents aged 2-19 years at 40.7%.²

Despite the potential improvements in San Diego County, disparities among children who are overweight or obese persist, particularly among diverse racial, ethnic, and economic groups. For example, in 2018, 43% of Hispanic students were overweight or obese. Compared to White students with an overweight and obesity prevalence of 24%, Hispanic students were nearly twice as likely to be overweight or obese. These findings are relevant as nearly half – or 48% – of all students tested in San Diego County identified as Hispanic or Latino, compared to 29% of students identifying as White for the 2017-2018 school year.³ Students who identified as American Indian or Alaskan Native, or Native Hawaiian or Pacific Islander, had overweight and obesity rates of 44% and 49%, respectively. For students identifying as Black or African American, the story was similar with 37% being overweight or obese. Only students identifying as Asian have rates lower than White children – 22% compared to 24%.

During the 2017-2018 school year, more than half, or 53% of San Diego County students in both public and charter schools, were identified as socioeconomically disadvantaged. Socioeconomically disadvantaged is defined as students who are: migrants, in foster care or homeless at any time during the academic year, eligible or had direct certification for the Free or Reduced-Priced Meal (FRPM) program, or are in a family where both parents did not receive a high school diploma.⁴ Among these students, 42% were overweight or obese. Compared to their non-economically

disadvantaged peers, socioeconomically disadvantaged students were almost twice as likely to be overweight or obese (42% vs 24%). Overweight and obesity prevalence among these students has held steady at 42% since 2014; however, alarming disparities continue to grow across racial and ethnic groups. American Indian or Alaskan Native students, for example, had a 10% increase in overweight and obesity prevalence between 2014 and 2018, and Native Hawaiian or Pacific Islander students had an even greater increase – 12% – during this time period.

DISCUSSION

These trends, and the glaring differences in overweight and obesity prevalence among racial and ethnic minority students compared to their White or non-disadvantaged peers, highlight severe inequities in health outcomes that are avoidable and preventable. Students in San Diego County should not be more likely to be overweight or obese by virtue of where they live, what school they attend, their race or ethnicity, or their family's income. Reducing the prevalence of overweight and obese children, specifically in traditionally underserved communities, requires long-term, sustained resources, investments, and partnerships across sectors to meet neighborhood, school, family, and individual children's needs. Families who cannot afford their housing, are food insecure, and who live in neighborhoods that are unsafe or have limited access to affordable, healthy food, are all too often among those with children who are overweight or obese. Many of these families belong to groups targeted by systemic racism, discrimination or trauma, which further affects their social and emotional well-being and ability to lead healthy, thriving lives.

This report provides an update to the [2016 State of Childhood Obesity Report](#). The primary data in this supplemental report is childhood overweight and obesity, as measured through the FITNESSGRAM® test. To learn about additional indicators measured and tracked through the San Diego County Childhood Obesity Initiative and State of Childhood Obesity Report, please visit the initiative's website here: www.sdcoi.org

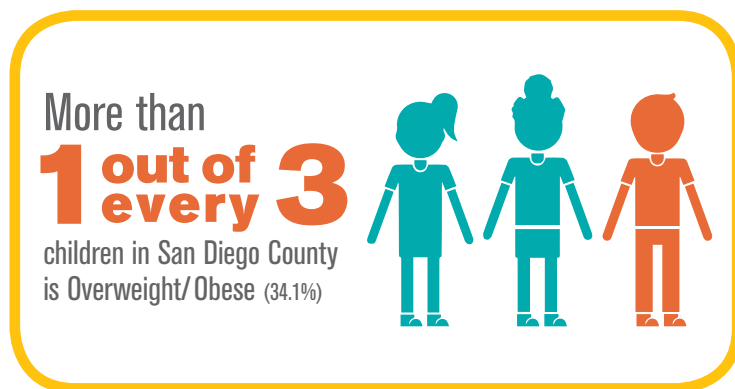


Figure 1. San Diego County Childhood Overweight and Obesity Prevalence 2017-2018. Data retrieved from California Department of Education. FITNESSGRAM® Data 2017-2018. Includes charter schools. Average of students across 5th, 7th, and 9th grade students tested.



The San Diego County Childhood Obesity Initiative

The San Diego County Childhood Obesity Initiative (COI) was established in 2006 with the understanding that obesity is a complex issue that requires individuals and organizations across multiple sectors to work together for change to take place. Over a decade later, we have witnessed remarkable advancements in access to opportunities for healthy eating and physical activity including changes in community infrastructure; school and early childhood settings; local, state, and federal policies; and healthcare settings.

Although substantial, these accomplishments have not led to significant reductions in childhood obesity rates in San Diego County. Just as obesity rates rose over several decades, sustained, long-term efforts must continue for us to see reductions.⁵ It is also clear that challenges remain in reaching the highest-need communities and addressing the multitude of upstream issues that make it difficult for many families to make healthy choices. As long as inequities exist in access to basic needs that influence health – such as affordable housing, employment, transportation, and healthcare – improvements in associated poor health outcomes such as obesity rates will likely remain elusive.

The COI operates based on the recognition that longterm impact is more achievable when multiple partners come together to work toward a common agenda. As with many public health issues, obesity rates are affected by many factors that expand across different sectors of the community including non-profits, businesses, schools, government agencies, neighborhoods, and more. With finite funding and resources, the COI's collective impact model (see *Table 1*) presents an opportunity for organizations and partners to enhance current activities and identify new ways to achieve success through collaboration.⁶



The COI uses the collective impact model (see Table 1) to engage hundreds of partners across seven domains: Government, Healthcare, Schools and Afterschool, Early Childhood, Community, Media, and Business. Partners involved in these domains are encouraged to work collaboratively to implement strategies outlined in the [Call to Action: San Diego County Childhood Obesity Action Plan](#) that are designed to support healthy eating and active living.

Through collaboration, the COI coordinates and sustains countywide efforts to prevent and reduce childhood obesity; provides leadership and vision; creates, supports, and mobilizes partnerships; provides outreach, advocacy, and education; and assesses and reports on progress toward countywide goals.

FIVE KEY CONDITIONS FOR COLLECTIVE IMPACT

Common Agenda	All participants have a shared vision for change including a common understanding of the problem and a joint approach to solving it through agreed upon actions.
Shared Measurement	Collecting data and measuring results consistently across all participants ensures efforts remain aligned and participants hold each other accountable.
Mutually Reinforcing Activities	Participant activities must be differentiated while still being coordinated through a mutually reinforcing plan of action.
Continuous Communication	Consistent and open communication is needed across the many players to build trust, assure mutual objectives, and create common motivation.
Backbone Support	Creating and managing collective impact requires a separate organization with staff and a specific set of skills to serve as the backbone for the entire initiative and coordinate participating organizations and agencies.

Table 1: Five Conditions of Collective Impact; Source: Channeling Change: Making Collective Impact Work. 2012. FSG Interviews⁷

San Diego County Childhood Obesity Initiative (COI)



MISSION:

The San Diego County Childhood Obesity Initiative is a multi-sector coalition with the mission of reducing and preventing childhood obesity by advancing policy, systems, and environmental change through collective impact.



VISION:

We envision healthy eating and active living resulting in optimal health and wellness for all children and families in the San Diego region.



PURPOSE:

The San Diego County Childhood Obesity Initiative uses a collective impact model to: coordinate and sustain countywide efforts to prevent and reduce childhood obesity; provide leadership and vision; create, support, and mobilize partnerships; provide outreach, advocacy, and education; and assess and report on progress toward countywide goals.



GOALS:

1. Increase access to healthful foods and beverages in a culturally-appropriate manner.
2. Increase opportunities for safe physical activity in an inclusive and culturally-appropriate manner.
3. Create and improve the social, economic, service, and built environments that support healthy eating and active living.
4. Promote operational excellence of the initiative.

Background

The 2016 State of Childhood Obesity Report focused on three tiers of measurement: childhood obesity prevalence, indicators of progress, and the San Diego County Childhood Obesity Initiative (COI) domain workgroup activities. The purpose of the report was to understand progress on efforts to reduce and prevent childhood obesity. The previous report included information on the prevalence of childhood obesity during the 2014-2015 school year, baseline measures for indicators of progress in policy and environmental change, and activities of COI partners that advance recommended obesity prevention strategies. The current report is designed to provide an update on the prevalence of childhood obesity in San Diego County and encourage broader actions to address social determinants of health that contribute to obesity and other health outcomes.

The goals of this progress report are to:

1. Build awareness that childhood obesity remains a problem in San Diego County with many serious health consequences for the region's children and families.
2. Provide new data and renew countywide dedication to strategies outlined in the [Call to Action: San Diego County Childhood Obesity Action plan](#).
3. Identify the highest need communities and school districts to encourage the direction of funds, support, and resources.
4. Engage stakeholders and decision makers to advance policies and environmental changes that promote health and well-being.
5. Encourage actions to address upstream issues and root causes that lead to adverse health outcomes, such as childhood obesity and overweight (*readers can review the Call to Action on page 23 for more information*).

The Obesity Epidemic

The obesity epidemic is a complex, growing, global public health challenge with a myriad of causes and widespread implications for children and families. As a result, no one sector, agency, organization, or individual can be charged with finding a solution. Obesity further leads to a range of additional health issues, such as diabetes, high cholesterol, high blood pressure, and heart disease, which result in dire personal and public costs. For example, in California, there were an estimated 4 million cases of diabetes in 2015.⁸ Hypertension, or high blood pressure, rates in 2018 were estimated at 28.4%.⁹ Should these trends stay the same, California is projected to have 3.8 million cases of diabetes, 8.4 million cases of hypertension, and 8.4 million cases of heart disease by 2030.¹⁰

Estimates suggest that California is paying billions in obesity-related hospital expenses annually, and that a reduction in just five percent in the adult obesity rate could save California \$81.7 billion in obesity-related healthcare costs by 2030.¹¹ Obesity, however, often does not begin in adulthood. In fact, more children are becoming obese very early in life, and studies show children who become overweight or obese by age five are more likely to be obese adolescents.^{11,12} The concerning trend can continue throughout life as obese adolescents typically become obese adults.¹³ Nationally, the direct medical costs of childhood obesity total \$14.3 billion in healthcare, prescription drugs, and emergency room visits each year. Reducing childhood overweight and obesity, and tackling it before it progresses to adulthood, therefore remains a priority concern.

Overweight and obese children face additional unique health problems such as asthma, sleep apnea, and bone and joint problems.¹⁴⁻¹⁹ Research has also shown that students with risk factors such as limited physical activity – or worse, with chronic conditions such as diabetes and obesity – experience lower levels of academic achievement.²⁰

Childhood obesity has also been adversely linked to a child's mental health. Specifically, obese children are more likely to be bullied and have been shown to have lower self-esteem and quality of life and higher rates of depression, anxiety, and suicide.²¹ These obesity-related psychosocial problems further affect a child's academic performance and attendance, as obese students are more likely to be absent from school than their non-obese peers.²²

A Complex Problem

Overweight and obesity, put simply, is caused by an imbalance between calorie consumption and calorie expenditure. Various behaviors and factors can contribute to this imbalance and are thus risk factors for obesity, such as a sedentary lifestyle, poor nutrition, limited consumption of fruits and vegetables, limited physical activity, and excessive screen time. Factors such as an individual's genetic predisposition can also influence risk of overweight and obesity; however, this plays a smaller role than the previously discussed risk factors.²³



It is unreasonable to expect that people will change their behavior easily when so many forces in the social, cultural, and physical environment conspire against such change.

-Institute of Medicine, 2001



It is important to note that these risk factors do not exist in isolation, nor are they completely attributable to unique individual or family choices. In efforts to mitigate risk factors, we must think beyond individuals and address the larger environments where we live, work, learn, and play.

Our environment and where we live affects how we live. It shapes our decisions, health, safety, and ability to thrive and can in turn promote or limit our ability to make healthy choices.

Social determinants of health are the economic and social conditions that influence individual and group differences in health status. They include, but are not limited to: education levels; employment; access to good food, water, transportation, and housing; quality of schools, workplaces, and neighborhoods; income and wealth status; public safety; and social environments and networks (see Figure 1). As a result, risk factors for obesity such as poor nutrition and limited consumption of fruits and vegetables are often the result of the individuals who are food insecure. These individuals often live in neighborhoods that lack full-service grocery stores or farmers' markets (i.e., food deserts), and/or neighborhoods with a high density of convenient, cheap, unhealthy fast food restaurants (i.e., food swamps).^{24,25} These same neighborhoods too often have limited opportunities for physical activity due to a lack of infrastructure – such as parks, green spaces, bike lanes, or even sidewalks.²⁶

Efforts to successfully address the obesity epidemic in children therefore require multiple sectors working collectively towards large-scale, environmental changes. Government, schools, healthcare, faith-based groups, businesses, industries, community groups, and parents must work together to advocate for sustainable policy, systems, and environmental change to help make healthy choices easier for all. The San Diego County COI uses a collective impact model (see Table 1) to align the efforts of multiple sectors to tackle the childhood obesity epidemic. Improving our environment to foster healthy decisions and ensure equitable access to resources such as healthy food and safe places for physical activity requires policy and system-level changes that address the social determinants of health that are making many of our county's children overweight or obese.

However, as the data demonstrates, these changes take time. The true impact of collective efforts may not be realized for several years. Improvements, or even just slowing the growth of obesity rates requires ongoing commitment and years of collective work. Much as large-scale societal issues have taken years or decades to improve, reversing the childhood obesity epidemic will take a sustained commitment of resources, attention, efforts, and time. The health, well-being, and future of our children is at stake, and addressing this epidemic must continue to be at the forefront of our efforts to improve the health of children and families.



STRUCTURAL INEQUITIES AND BIASES, AND SOCIOECONOMIC AND POLITICAL DRIVERS



Figure 2. Addressing health inequities. Adapted from *Social Determinants of Health and the Root Causes of Health Inequity*. From "The Root Causes of Health Inequities," National Academies Press.

Prevalence of Childhood Overweight and Obesity in San Diego County

The following section provides updated data on childhood overweight and obesity prevalence among 5th, 7th, and 9th graders across San Diego County. Unless noted, all student-level data is from children measured in both charter schools and San Diego County's 42 public school districts in the 2017-2018 academic year.

Methodology

Childhood overweight and obesity is measured by assessing body composition for students enrolled in California schools as part of a comprehensive assessment called the FITNESSGRAM®. This test is conducted annually for all 5th, 7th, and 9th graders in California schools and uses a suite of six measurement areas to evaluate fitness performance: aerobic capacity, abdominal strength and endurance, upper body strength and endurance, trunk extensor strength and flexibility, body composition, and flexibility. Body composition is the focus for this report and is categorized as either Healthy Fitness Zone (HFZ), Needs Improvement, or Needs Improvement – Health Risk. These categories align with the Centers for Disease Control and Prevention (CDC) standards for healthy weight, overweight, and obesity respectively. You will see the latter (i.e., CDC categories) used throughout this report. It is important to

note that these definitions change periodically and do not follow specific students over time, which must be taken into consideration when evaluating trends (*see Appendix A for details on FITNESSGRAM® measurements for body composition using BMI data*).

Findings

Among all 5th, 7th, and 9th grade children in San Diego County, over one-third (34%) were overweight or obese. When analyzed by grade, compared to 7th and 9th grade students, 5th grade students had higher rates of obesity, which accounted for a higher overweight and obesity prevalence overall for students measured (*see Figures 3*). As shown in Figure 4, rates of overweight and obesity in San Diego County among all students were lower than California rates.



2017-2018 FITNESSGRAM® Results

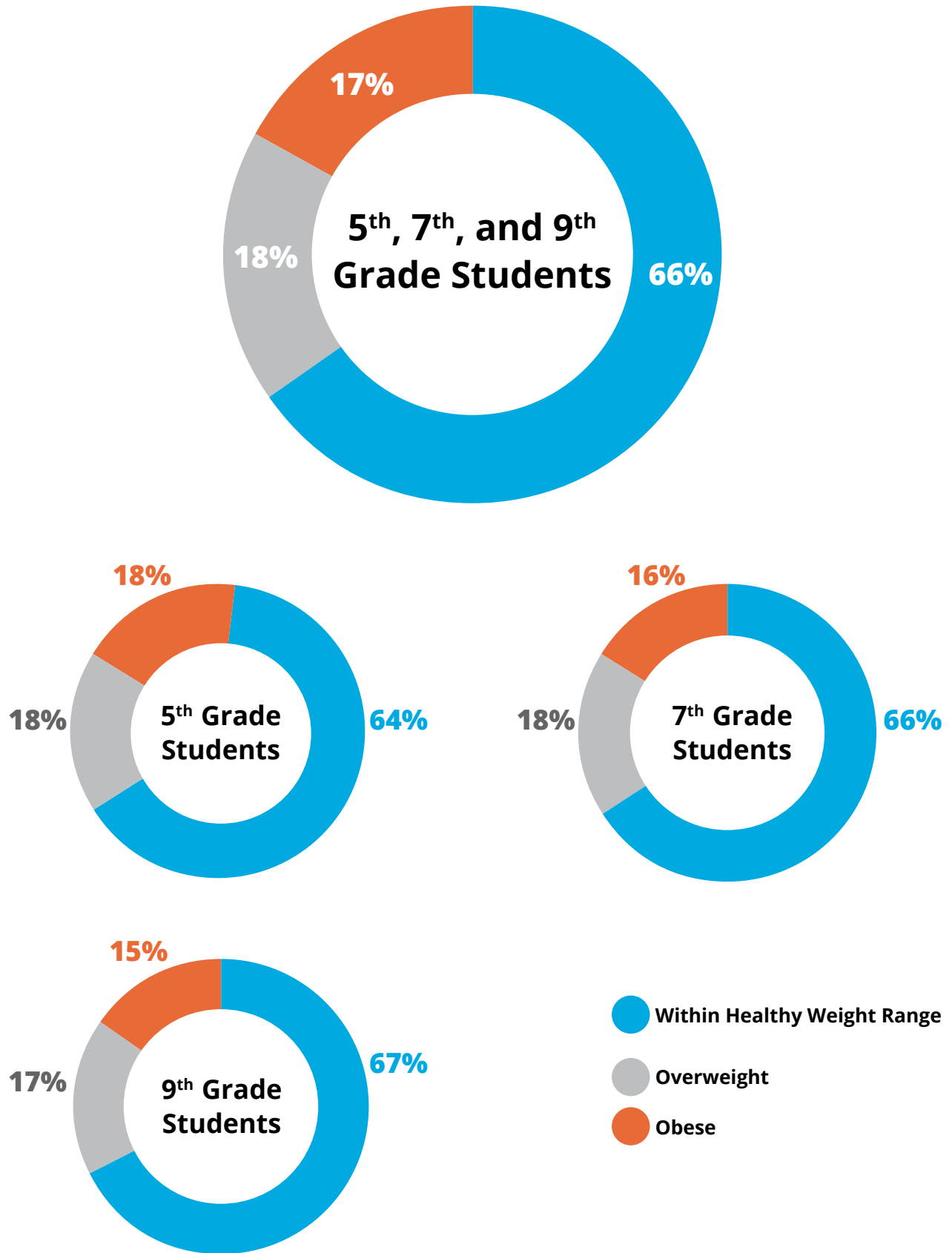


Figure 3. 2017-2018 FITNESSGRAM® Results. Data retrieved from California Department of Education.

California and San Diego County Childhood Overweight and Obesity Prevalence Trends

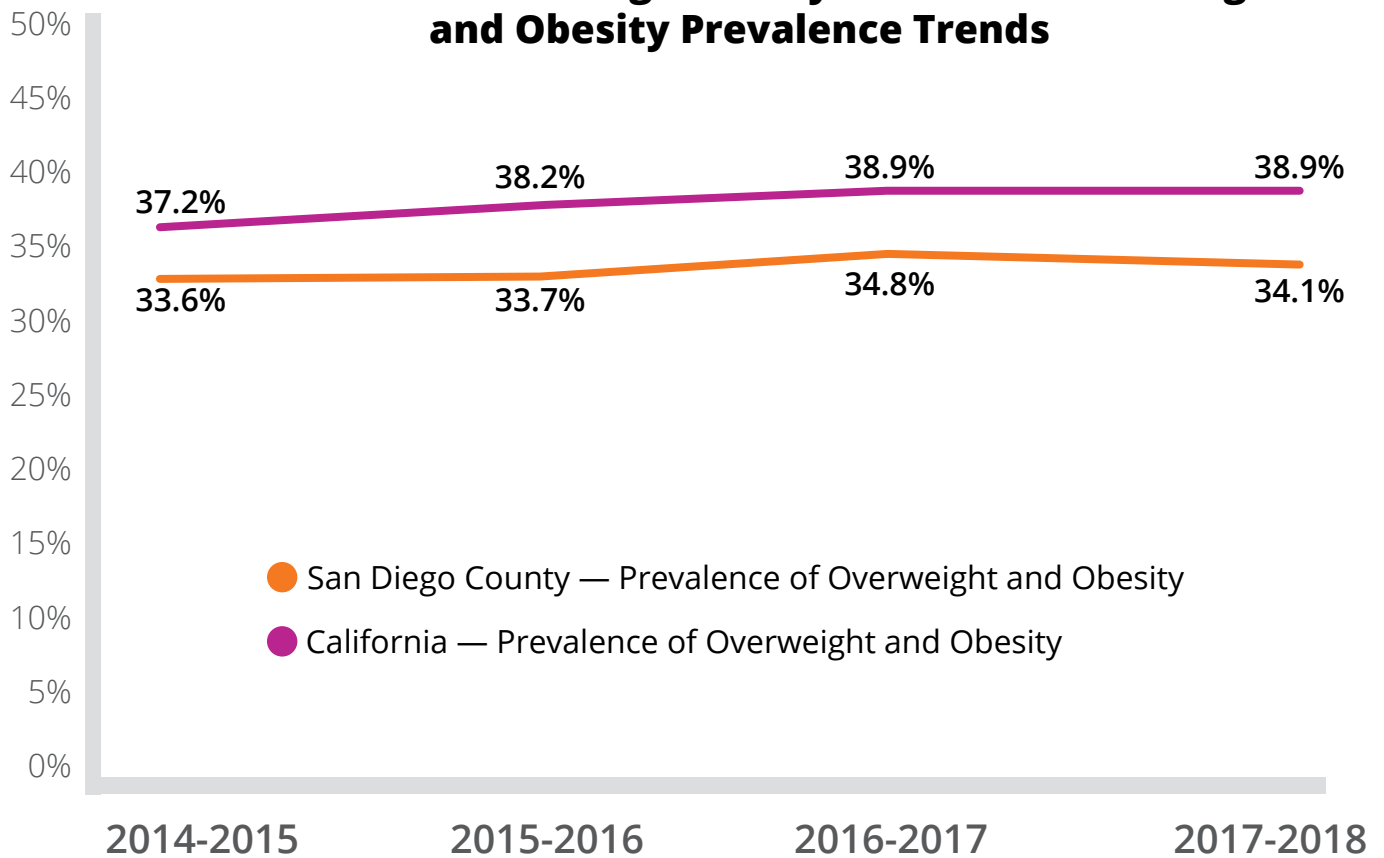


Figure 4. Prevalence trends. Data retrieved from California Department of Education. FITNESSGRAM® data 2014-2015 to 2017-2018.

As mentioned earlier, overweight and obesity prevalence among children in San Diego County appears to be leveling off and may even be declining slightly. Based on UCLA data, 2018 childhood overweight and obesity prevalence has decreased by two percentage points since 2005 (34% in 2018 vs 36% in 2005). On the other end, the percentage of obese children has slightly increased from 2015 to 2018, from 15.9% to 16.5%. However, caution should be used when interpreting improvements in trends, as year-to-year estimates may show slight increases or no changes in prevalence. For example, in comparing overweight and obesity prevalence from 2014-2015 to 2017-2018 for all students, the difference is minor (33.6% in 2015 vs 34.1% in 2018; see Figure 4).



Public School Districts

Substantial variation and disparities exist across San Diego County's 42 public school districts in the prevalence of childhood overweight and obesity. Data presented on public school district students is not intended to rank specific districts or compare quality of schools. The wide variation in childhood overweight and obesity rates across particular school districts is attributable to a number of factors including the environments where schools and districts are located. The children and families that make up a school or district are affected by a number of underlying social determinants of health. We therefore cannot compare districts without considering the larger environmental context and root causes that either promote or hinder health.

When assessing the state of overweight and obesity among children in San Diego County's public school districts, it is important to remember that data presented are prevalence estimates and a snapshot of that district

at a particular point in time. The data on districts does not reflect changes or improvements among individual students. However, reviewing estimates of the prevalence of childhood overweight and obesity in districts at various points in time can help provide insights on progress.

Of the 42 school districts, 43% (n=18) saw either a reduction or no change in the percentage of children who were overweight between school years 2014-2015 and 2017-2018. When examining the data more closely, 25 of the 42 districts either had reductions or no changes in the percentage of students who were obese in the same time frame. This trend is promising, as incremental change is needed in reducing overall childhood obesity rates, and improvements may manifest as children shift to being overweight from obese, and eventually to a healthy weight from overweight.

District-level data grouped by school type: unified, elementary, and high school can be found in Appendix B.

Discussion: Inequities in Childhood Overweight and obesity

Disparities in childhood overweight and obesity rates persist across San Diego County. The fact that children in La Mesa-Spring Valley School District experience twice the rates of obesity when compared to children in Carlsbad Unified School District (20% vs 10%) is an unacceptable and inequitable health outcome, resulting from the intersection of social, economic, environmental, and racial and ethnic inequalities that affect students' ability to thrive and achieve long-term health.

Poverty and Childhood Overweight and Obesity

The effects of poverty, economic disadvantage, and racial and ethnic inequities on health are well documented. Income can predict a number of health outcomes and indicators, such as life expectancy, infant mortality, asthma, heart conditions, obesity, and other chronic diseases.²⁷ Financial resources, such as higher income or access to wealth, on the other hand, can serve as a buffer for catastrophic events such as job loss and unplanned medical events. These positive financial indicators also increase access to housing in safe neighborhoods with good schools and parks, and the ability to purchase healthy, nutritious food.²⁸ Racial inequities play out through residential segregation among neighborhoods, with non-white and low-income individuals often living in segregated and isolated communities with lower housing quality, higher concentrations of poverty, and less access to education or job opportunities, all resulting in inequitable levels of stressors and a higher risk for adverse health outcomes.²⁹

One area where there are consistent disparities in overweight and obesity prevalence rates is among “socioeconomically disadvantaged students.” Socioeconomically disadvantaged is defined as students who are: migrants, in foster care or homeless at any time during the academic year, eligible for the Free or Reduced-Price Meal (FRPM) program, or in families where both parents did not receive a high school diploma. In 2017-2018, approximately 47,156, or 43% of students tested were economically disadvantaged. Figure 5 displays rates of overweight and obesity among socioeconomically disadvantaged students, all students, and not economically disadvantaged students. Compared to non-economically disadvantaged students, disadvantaged students had a 16% greater prevalence of overweight and obesity.

Percent of 5th, 7th, and 9th Grade Students in San Diego County that are Overweight or Obese by Economic Status, 2013-2018

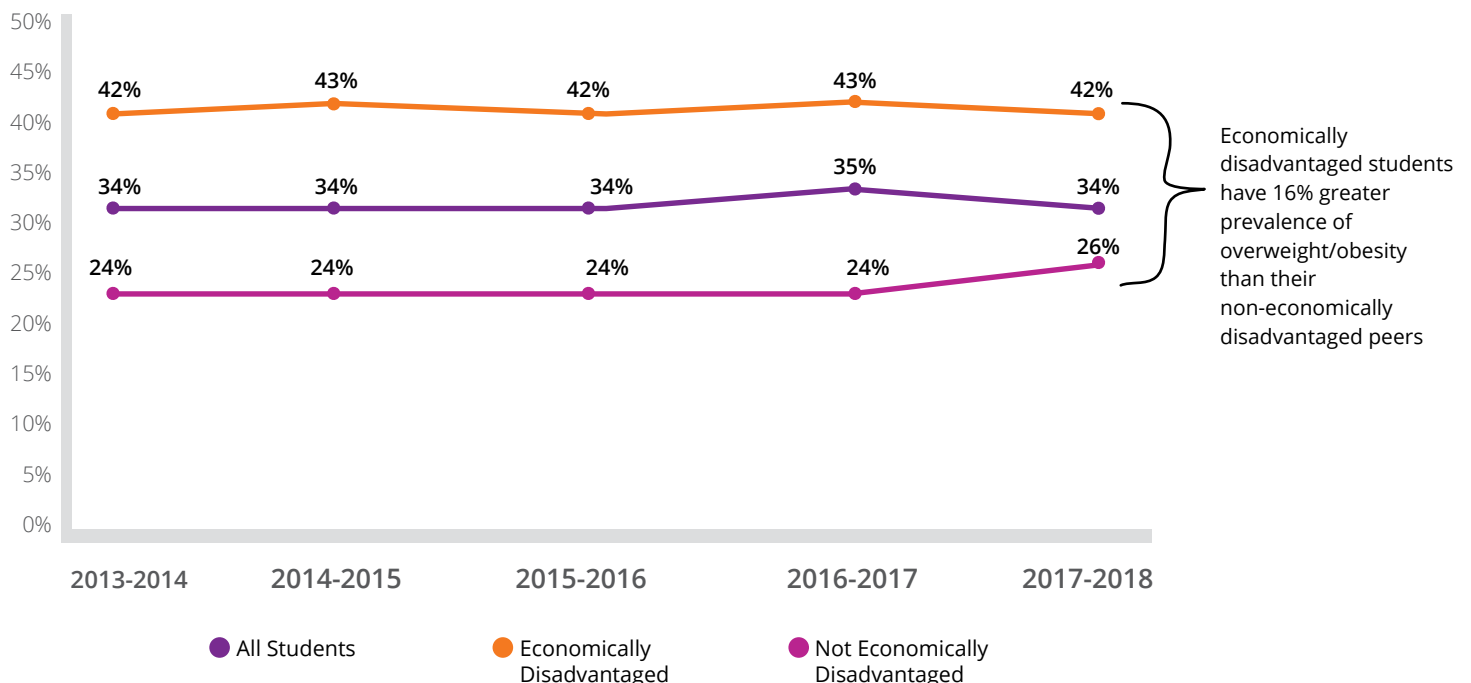


Figure 5. Overweight/Obesity by economic status. Data retrieved from California Department of Education. FITNESSGRAM® data 2013-2014 to 2017-2018.

Neighborhoods and the social and environmental conditions that shape them affect health, and poverty or economic disadvantage in certain neighborhoods further shape and affect health outcomes such as rates of childhood overweight and obesity. Figure 7 shows a map of census tracts across San Diego County, highlighting those with high concentrations of the population who make less than 200% of the Federal Poverty Level. As of 2019, this would translate to a family of 4 with an annual income of less than \$51,500 a year.³⁰ As indicated by the map, darker areas of the county have higher concentrations of the population under the 200% threshold and lighter colored areas have lower concentrations of the population under the 200% Federal Poverty Level.

In San Diego County, 1 in 5 children are food insecure.

Source: Hunger Free Kids: Opportunities by District to End Child Hunger

Neighborhoods with high concentrations of poverty, and associated racial segregation within low-income neighborhoods, are associated with poorer health outcomes and contribute to health disparities.³¹ Numerous studies have also found correlations between

lower income households and food insecurity, with these combined factors leading to higher likelihoods of obesity and overweight.³² Lower income households have limited resources and may not be able to afford high quality, healthy food such as fresh fruits and vegetables. Furthermore, low-income neighborhoods often lack full-service grocery stores and farmers' markets where families can buy a variety of high-quality fruits, vegetables, and whole grains, and may be limited to shopping at discount stores or small neighborhood convenience stores with limited healthy options.³³ If these families have limited transportation options, their food purchasing choices are further constrained.³⁴ In addition, when purchasing food, households with limited resources may try to stretch their food budgets by purchasing cheap, nutrient-poor foods that are filling but high in calories and low in nutritional value. Consequently, these low-cost foods contribute to higher rates of overweight and obesity.

When the percentage of overweight and obesity in school districts is overlaid on the map, areas with higher rates of poverty are also more likely to have greater percentages of overweight or obese students, as referenced by the dark red dots in the map (see Figure 8). Specific regions of San Diego County are presented in more detail in the Appendix C.

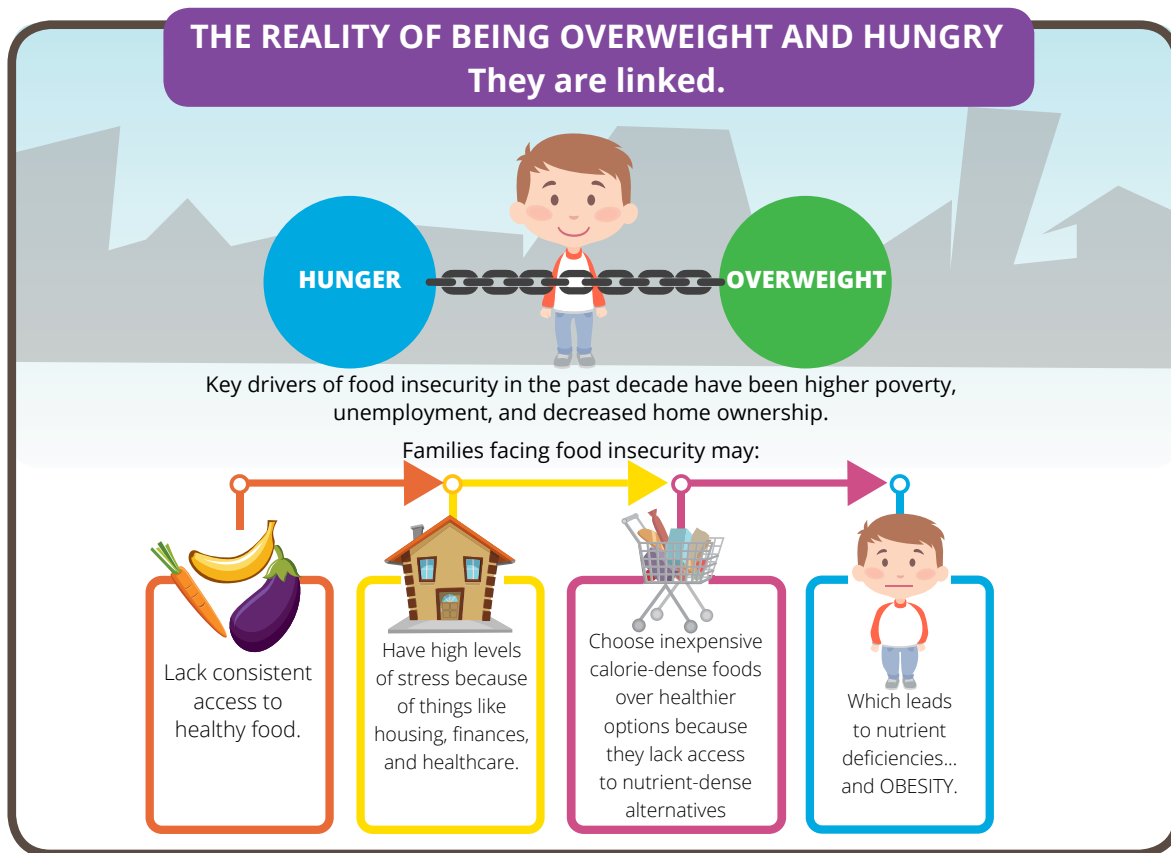


Figure 6. Link between hunger and overweight/obesity. Adapted from *Nourish to flourish* infographic. Eat Right. Academy of Nutrition and Dietetics. Retrieved from https://childrensnexus.weebly.com/uploads/2/0/4/9/20493824/nourish_to_flourish_infographic_from_the_academy_of_nutrition_and_dietetic.pdf

Figure 7. Percent of Population at Less than 200% Federal Poverty Level in San Diego County Census Tracts

Legend

Percent of Population at Less Than 200% Federal Poverty Level

- <17%
- 17% - 28%
- 29% - 42%
- 43% - 59%
- >59%

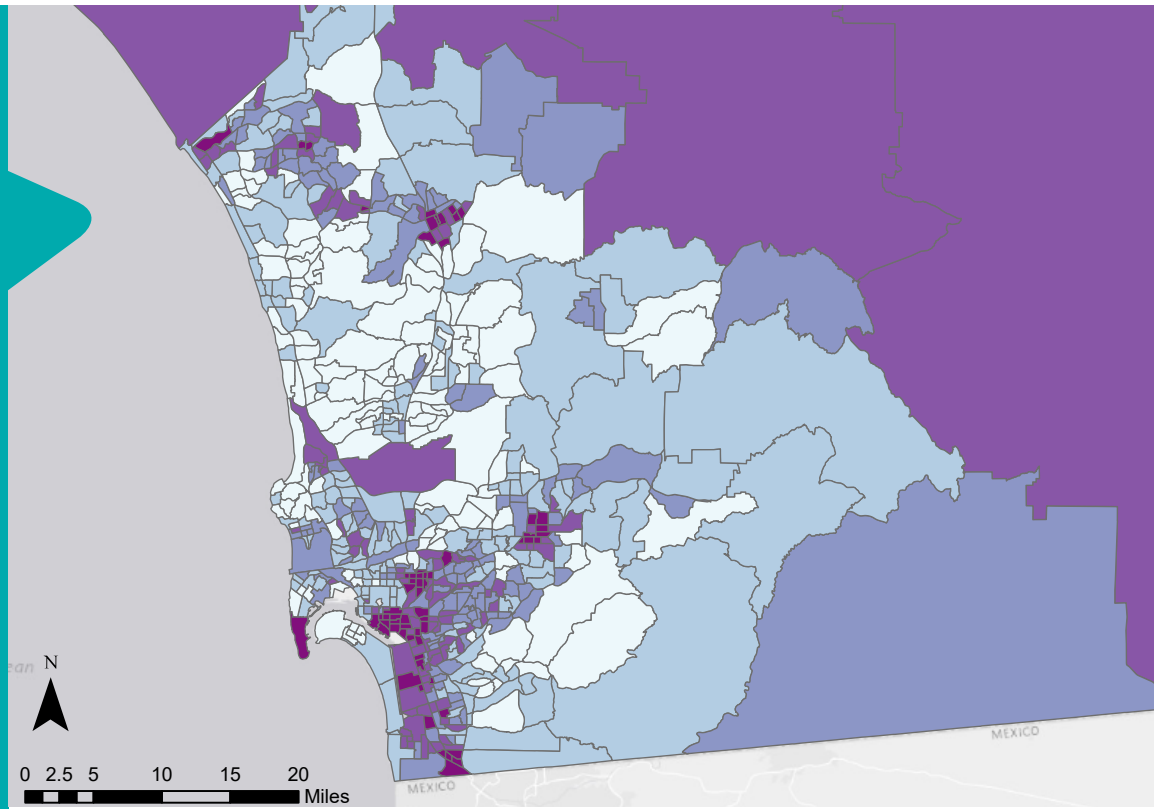
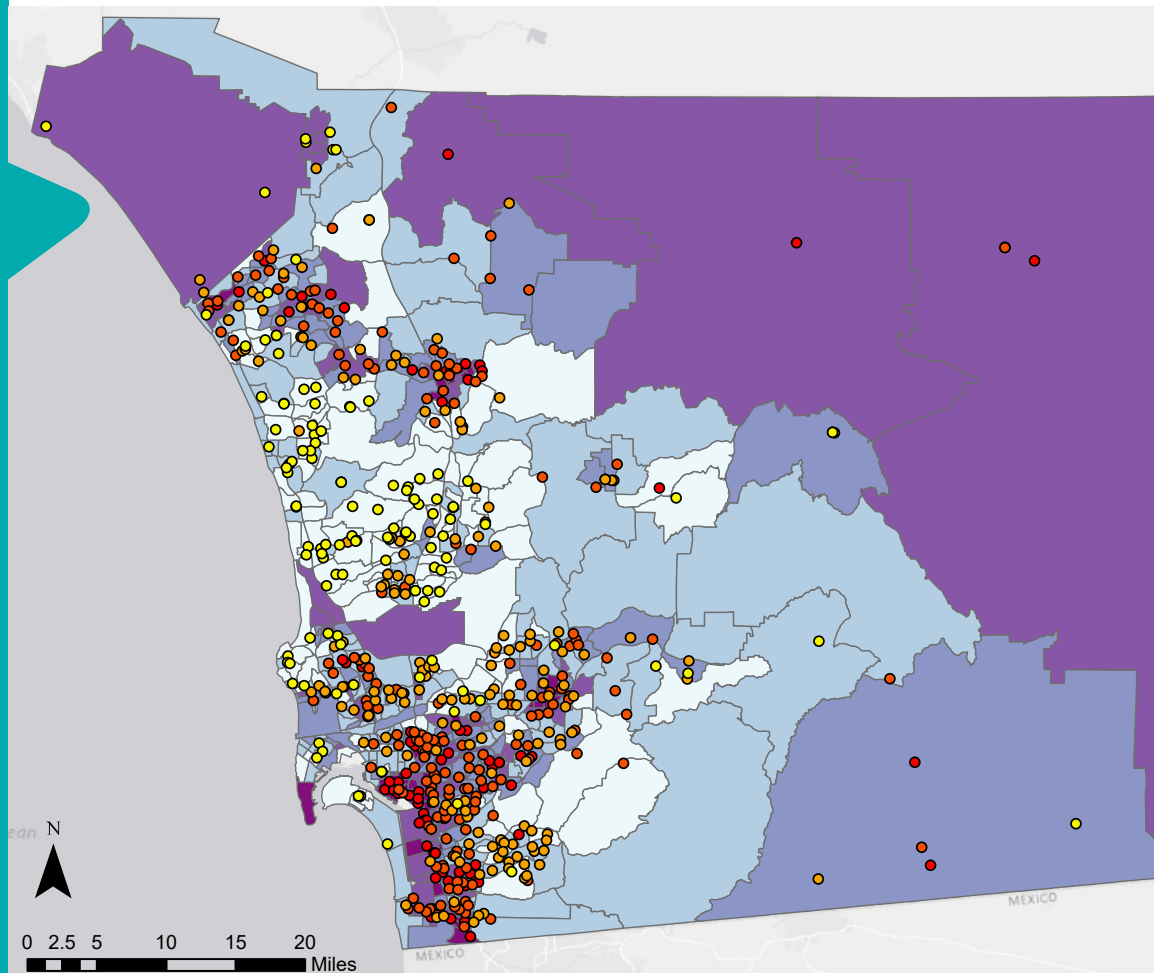


Figure 8. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts

Percent of Overweight or Obese 5th, 7th, and 9th Grade Students

- ≤25%
- 26% - 38%
- 39% - 51%
- >51%



Figures 7-8: Childhood Obesity Initiative - State of Childhood Obesity Report Map Date: 04.19.19 Data Sources: 2016 ACS 5-Year Estimates. LiveWellSD.org THIS MAP/DATA IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Copyright SanGIS 2015 - All Rights Reserved. Full text of this legal notice can be found at: http://www.sangis.org/Legal_Notice.htm

The effect of poverty and food insecurity on students' overweight and obesity rates can perhaps most profoundly be observed when looking at districts with high concentrations of students enrolled in the Federal Reduced Price Meals program (FRPM). All students can participate in school nutrition programs; however, students with family incomes under 130% of the Federal Poverty Level are eligible for free meals, and those with incomes between 130% and 185% of the poverty level are eligible for low-cost (or "reduced price") meals.³⁵ Students enrolled in this

50%, or half of all students in San Diego County are enrolled in the Federal Reduced Price Meals Program (FRPM)

Source: California Department of Education. 2018-2019 Student Poverty FRPM Data

program not only come from lower income households, but are also likely to be food insecure.

It is important to note that the percentage of FRPM enrollment in schools does

not necessarily reflect the total percentage of students that could qualify for the FRPM program based on their household income or other factors. Unfortunately, due to barriers in the enrollment process, such as the

complexity of the application, limited English proficiency, or fear of enrolling in a government program due to immigration status, many households do not successfully enroll, which results in higher rates of food insecurity for children who are eligible.^{36,37} Table 2 shows school districts with 50% or more of their students receiving FRPM and the corresponding percent of overweight and obese students in 2017-2018. Many of these school districts reside in lower income neighborhoods across the county represented by the darker shading in the previous maps. As described earlier, children from low-income households are at much greater risk for obesity due to the challenges of accessing higher-cost, nutritious foods.

Figure 9 shows the relationship for schools between enrollment in FRPM and overweight and obesity rates. In this analysis, the coefficient of determination, or R2 value, indicates a strong relationship between the percentage of students in districts who are in the FRPM program and the percentage of students who are overweight or obese.

Districts with 50% or more Students Eligible for Free and Reduced Priced Meals	Percent of Students Eligible for Free and Reduced Price Meal Program 2017-2018	Percent of Overweight and Obese Students 2017-2018
Borrego Springs Unified	77%	56%
Cajon Valley Union	66%	40%
Chula Vista Elementary	53%	40%
Escondido Union	72%	47%
Escondido Union High	60%	38%
Fallbrook Union Elementary	70%	20%
Fallbrook Union High	61%	38%
Grossmont Union High	54%	36%
Jamul-Dulzura Union Elementary	52%	35%
Julian Union High	54%	31%
La Mesa-Spring Valley	59%	39%
Lemon Grove	74%	44%
Mountain Empire Unified	56%	47%
National Elementary	82%	47%
Oceanside Unified	59%	39%
San Diego Unified	59%	35%
San Ysidro Elementary	64%	39%
South Bay Union	71%	47%
Sweetwater Union High	60%	38%
Vallecitos Elementary	78%	44%
Valley Center-Pauma Unified	55%	41%
Vista Unified	63%	40%

Table 2. School Districts with 50% or More of Students Enrolled in Free and Reduced Price Meals Program and Percent of Overweight and Obese Students in 2017-2018. Data retrieved from California Department of Education. FITNESSGRAM® data 2013-2014 to 2017-2018.

The Relationship Between School District Percent of Overweight and Obese Students and Percent of Students Eligible for Free and Reduced Price Meals

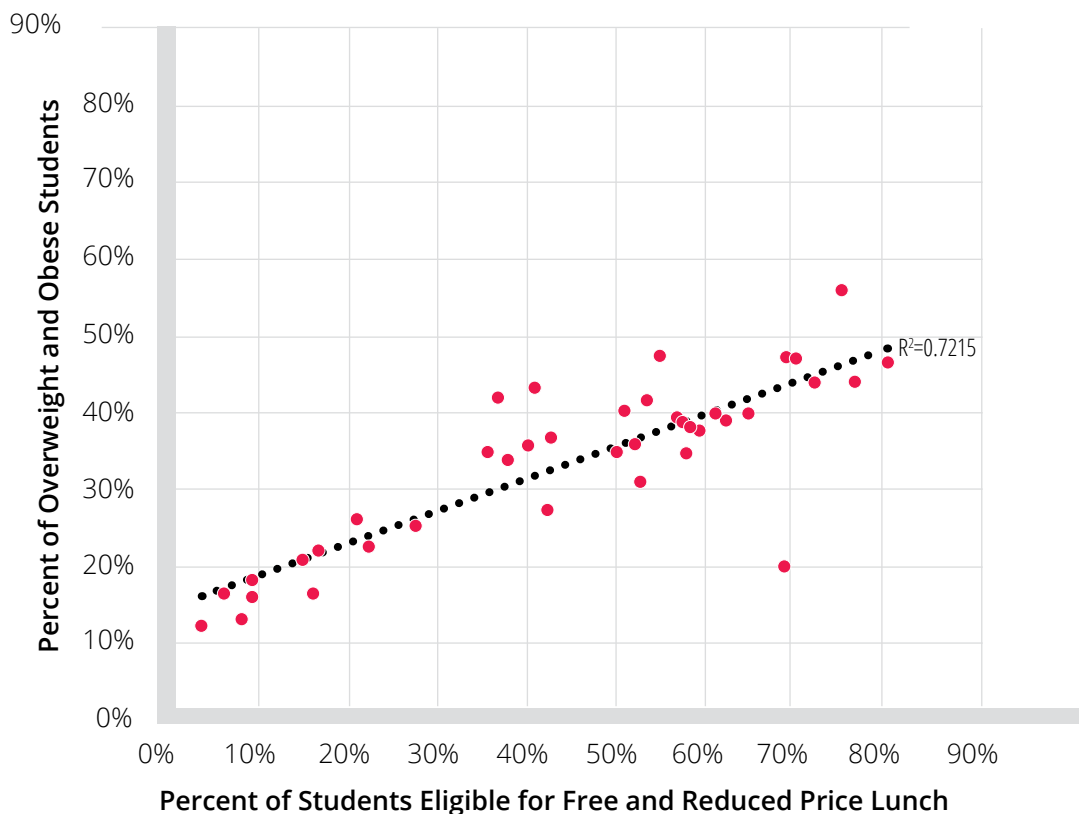


Figure 9. Overweight/obesity and Free and Reduced Price Meals. Data retrieved from California Department of Education. 2017-2018 FITNESSGRAM®.

NOTE. Outlying data is Borrego Springs Unified School District with a 56% prevalence of childhood overweight and obesity, and with 77% of students receiving Free and Reduced Price Meals, and Fallbrook Union Elementary district with a 20% prevalence of childhood overweight and obesity and 70% of students eligible for Free and Reduced Price Meals.

Racial and Ethnic Disparities in Childhood Overweight and Obesity

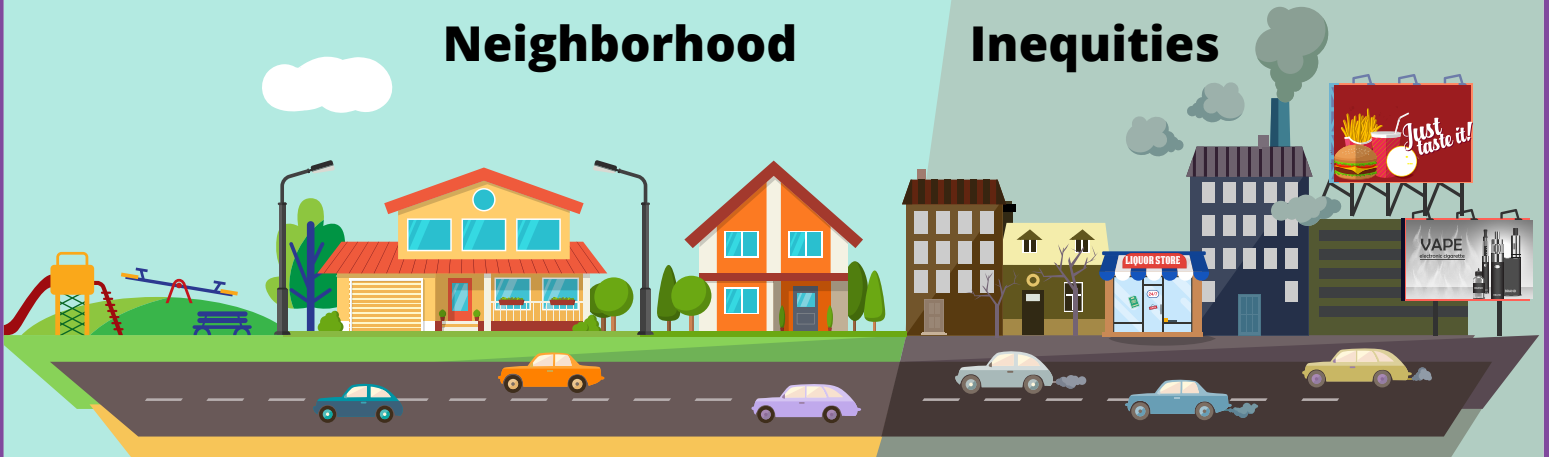
Concentrated poverty and corresponding factors such as food insecurity, poor quality housing, segregated neighborhoods, and limited access to transportation, good schools, jobs, parks, and healthy food disproportionately affect racial and ethnic minorities, and result in unequal opportunities for health (see Figure 10). African Americans in metropolitan areas, for example, are nearly four times more likely than other residents to live in neighborhoods where the poverty rate is 40% or higher, and this racial divide has persisted even when comparing households of the same income.³⁸ Furthermore, a 2017 Annie E. Casey Foundation report found that African American, American Indian, and Hispanic or Latino children are least likely to live in areas where poverty rates are low, and consequentially grow up in communities where unemployment and crime rates are higher, schools are poorer, and access to fresh produce, transportation, healthcare, and support services are fewer.³⁹

The effects of growing up in high-poverty, and often segregated, neighborhoods for children of color permeates to schools where children spend a significant amount of time. In 2016, among all public schools in the US, 40.8% of students of color were in high-poverty schools, while only 8.5% of White students were.⁴⁰ Thus, children of color are more likely to attend schools that are inadequately funded and have less economic and social resources than White children. Studies have further shown important racial differences in school nutrition, access to competitive foods, physical education, and participation in school-sponsored sports, all contributing to racial gaps in childhood obesity rates.^{41,42}

NOT EVERYONE HAS THE SAME OPPORTUNITY TO BE HEALTHY

Neighborhood

Inequities



Neighborhood inequities contribute to obesity rates and disparities.

Figure 10. Neighborhood Inequities. Adapted from Robert Wood Johnson Foundation County Health Rankings. 2012.

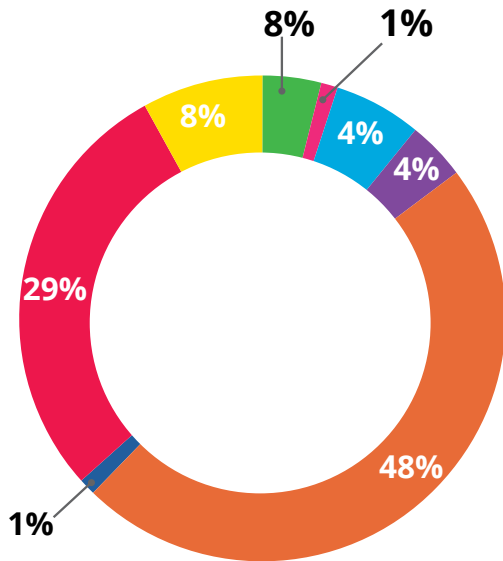
In San Diego County, overweight and obesity prevalence rates of Hispanic students were 43%, almost 2 times the prevalence of their White peers, during the 2017-2018 school year. This disparity is alarming given that Hispanic or Latino students made up nearly half of all students tested and total students across the county. Native Hawaiian and Pacific Islander students, and American Indian or Alaskan Native students, while making up a small percentage of our total county students, had the highest obesity prevalence rates – 49% and 44%, respectively (see Figures 11-13). This mimics statewide trends where, in 2017, about half of all Native Hawaiian/Pacific Islander and Hispanic/Latino 5th graders were overweight or obese, compared with less than 30% of their Asian American and White peers.⁴⁰

In assessing prevalence trends over time from FITNESSGRAM® data in San Diego, only Filipino students saw decreases in their prevalence of overweight and obesity in the past 3 years, from 30% to 28%. Prevalence estimates among other racial and ethnic groups either slightly increased or stayed the same. Most glaringly however, were childhood obesity prevalence estimates among American Indian or Alaskan Native students, who experienced an increase from 37% in 2014-2015 to 44% in 2017-2018.

Given the wide range of growing inequities in overweight and obesity prevalence estimates as well as the disparities in rates between economically disadvantaged students and their peers, future efforts must concentrate on specific neighborhoods and priority populations that have historically faced racism and other systemic disadvantages. Access to healthy foods and safe spaces for physical activity are critical factors for behavior change and the prevention of poor health outcomes such as obesity and overweight, yet low-income families and many racial and ethnic minorities reside in neighborhoods without these advantages.^{24, 25} Factors such as these highlight the importance of working toward broader policy, systems, and environmental changes, particularly in communities facing inequities in access to the resources and services needed for families to lead healthy lives.

Disparities in Overweight and Obesity Prevalence

Figure 11. Race and Ethnicity Demographics for Students Tested (N=110,770)



Color Key for Figures 11, 12, and 13

- Hispanic or Latino
- Native Hawaiian or Pacific Islander
- White
- Two or more races
- All Students
- Black or African American
- American Indian or Alaska Native
- Asian
- Filipino

Figure 12. Prevalence of Overweight and Obesity by Race and Ethnicity

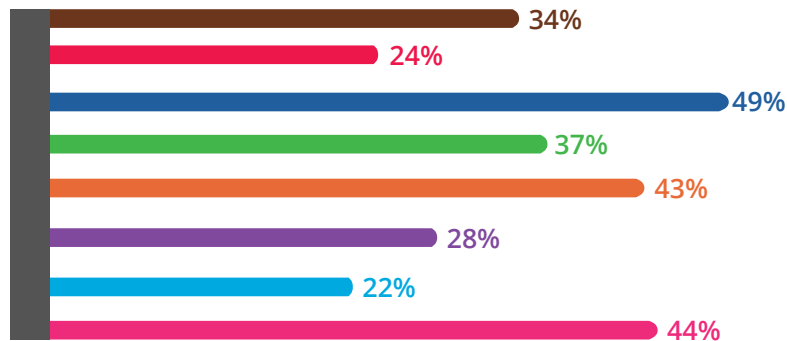
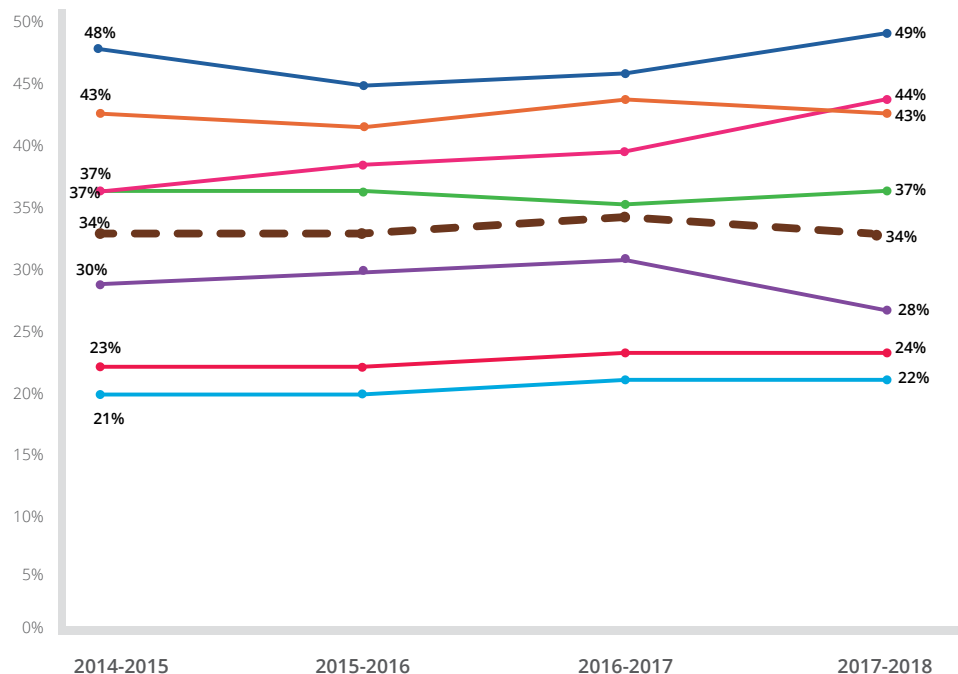


Figure 13. Trends in Childhood Overweight and Obesity by Race and Ethnicity



Figures 11-13. Data retrieved from California Department of Education. 2014-2015 to 2017-2018 FITNESSGRAM®.



A Call to Action

As this report illustrates, childhood obesity remains a serious and pressing issue for San Diego County. If current trends do not improve, San Diego County's children will continue growing up experiencing obesity-related health burdens and may face shorter life expectancies than their parents.⁴³ In addition, San Diego County will end up spending billions on healthcare-related costs. These implications are too concerning to ignore, and even more concerning is the evidence that many children are disproportionately affected simply due to the color of their skin or where they live or go to school. Addressing and preventing childhood obesity is one of the most promising solutions to preventing long-term impacts to the health of San Diego communities and the economy.

Although the current state of childhood obesity in San Diego County appears bleak, San Diegans have taken action to improve the situation. Through involvement in the San Diego County Childhood Obesity Initiative (COI) and the seven mutually reinforcing domains, more organizations and communities are answering the call to action and dedicating their efforts to implementing policies and environmental solutions that will promote changes early in life and create a healthier future for children and families. These include steps ensuring all children have access to healthy foods and opportunities to be active, and underscoring the connections between physical health and mental and emotional well-being.

While the efforts to date have been significant, we must continue to expand on current actions to build on progress and address the large inequities that exist. Long-term investments are needed to provide access to healthy foods and opportunities for active living, but these represent just one piece of the puzzle. In communities where children and families experience homelessness, poverty, and violence, it can be extremely challenging if not impossible to prioritize healthy eating and active living. It is necessary to focus on upstream priority issues and root causes of poor health outcomes as part of a comprehensive, holistic, and collaborative approach to address childhood obesity and begin to break down the prominent health inequities that prevent many San Diego communities from achieving optimal health. Moving forward, we must continue to collaborate with partners – inclusive of healthcare, city planners, elected officials, housing organizations, and many others – to ensure we advocate for and reinforce the connection between institutions and services within our built environments that collectively affect health.

The San Diego County Childhood Obesity Initiative brings together partners and stakeholders from multiple sectors across the county to identify critical strategies that will help create healthy environments for children and families. The current recommended strategies are laid out in the [Call to Action: San Diego County Childhood Obesity Action Plan](#). This report presents an opportunity to reevaluate where things stand in San Diego County to help guide the development of future strategies.

Appendices

APPENDIX A: BODY COMPOSITION – BODY MASS INDEX (BMI)

AGE	HEALTHY WEIGHT	OVERWEIGHT	OBESE
Female			
10	14.3 - 20.3	≥ 20.4	≥ 23.6
11	14.7 - 21.2	≥ 21.3	≥ 24.7
12	15.5 - 22.1	≥ 22.2	≥ 25.8
13	15.7 - 22.9	≥ 23.0	≥ 26.8
14	16.2 - 23.6	≥ 23.7	≥ 27.7
15	16.7 - 24.3	≥ 24.4	≥ 28.5
Male			
10	14.5 - 19.7	≥ 19.8	≥ 22.7
11	14.9 - 20.5	≥ 20.6	≥ 23.7
12	15.3 - 21.3	≥ 21.4	≥ 24.7
13	15.8 - 22.2	≥ 22.4	≥ 25.6
14	16.4 - 23.0	≥ 23.1	≥ 26.5
15	16.9 - 23.7	≥ 23.8	≥ 27.2

Table 3. BMI ranges for healthy weight, overweight, and obese for 5th, 7th, & 9th graders. Data retrieved from California Department of Education. 2017-2018 FITNESSGRAM®. Note colors represent the standard age ranges for students in grades 5 (blue), 7 (green), and 9 (orange).

Body Mass Index (BMI) is one of three ways schools can measure body composition – the others being bioelectric impedance and the skinfold test. BMI is used to approximate whether body weight is appropriate for a child’s height. It is not a perfect measure, but can help assess whether there is a health risk based on typical weight standards for youth of the same age and gender. The California Department of Education’s current FITNESSGRAM® ranges for BMI categories (see Table 3) align with the Centers for Disease Control and Prevention. Definitions for BMI ranges have been adjusted several times in the past – 2006, 2011, and most recently in 2014. These changes must be taken into account when comparisons are made over time.

APPENDIX B: DISTRICT-LEVEL CHILDHOOD OVERWEIGHT AND OBESITY DATA

The following shows the prevalence of overweight and obesity across public school districts, ranked by the number of students tested. It is important to keep in mind that, although similar in size, these districts may exist in highly variable environments with differential access to resources, services, and healthy options. While these data may provide insight into districts and perhaps neighborhoods that need additional funding to support healthy environments, it should not be considered a reflection of district-level efforts to promote health among their students. Thus, care should be taken with using these data for comparison purposes.

2017-2018 Childhood Overweight and Obesity Prevalence for Unified School Districts in San Diego County (N = Number of Students Tested)

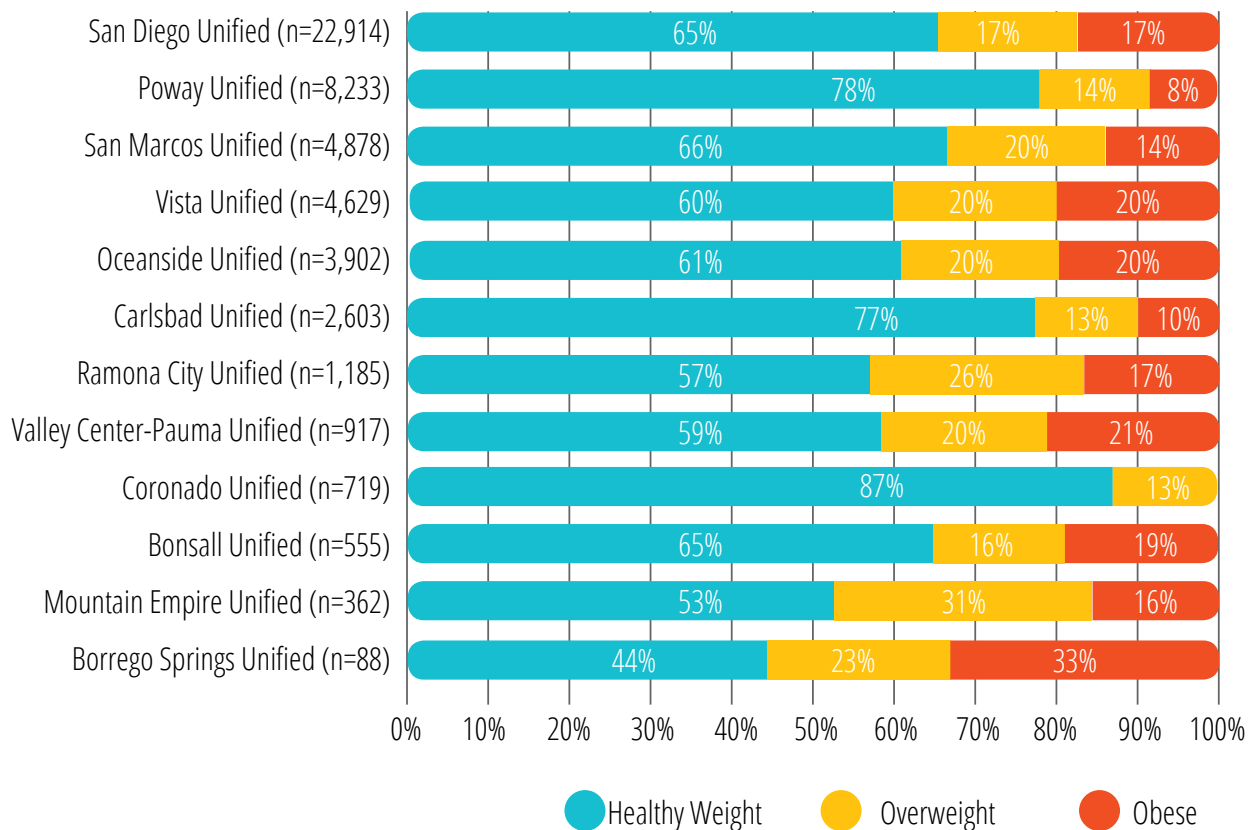


Figure 14. Overweight/obesity for unified school districts. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 Childhood Overweight and Obesity Prevalence for Elementary School Districts in San Diego County (N = Number of Students Tested)

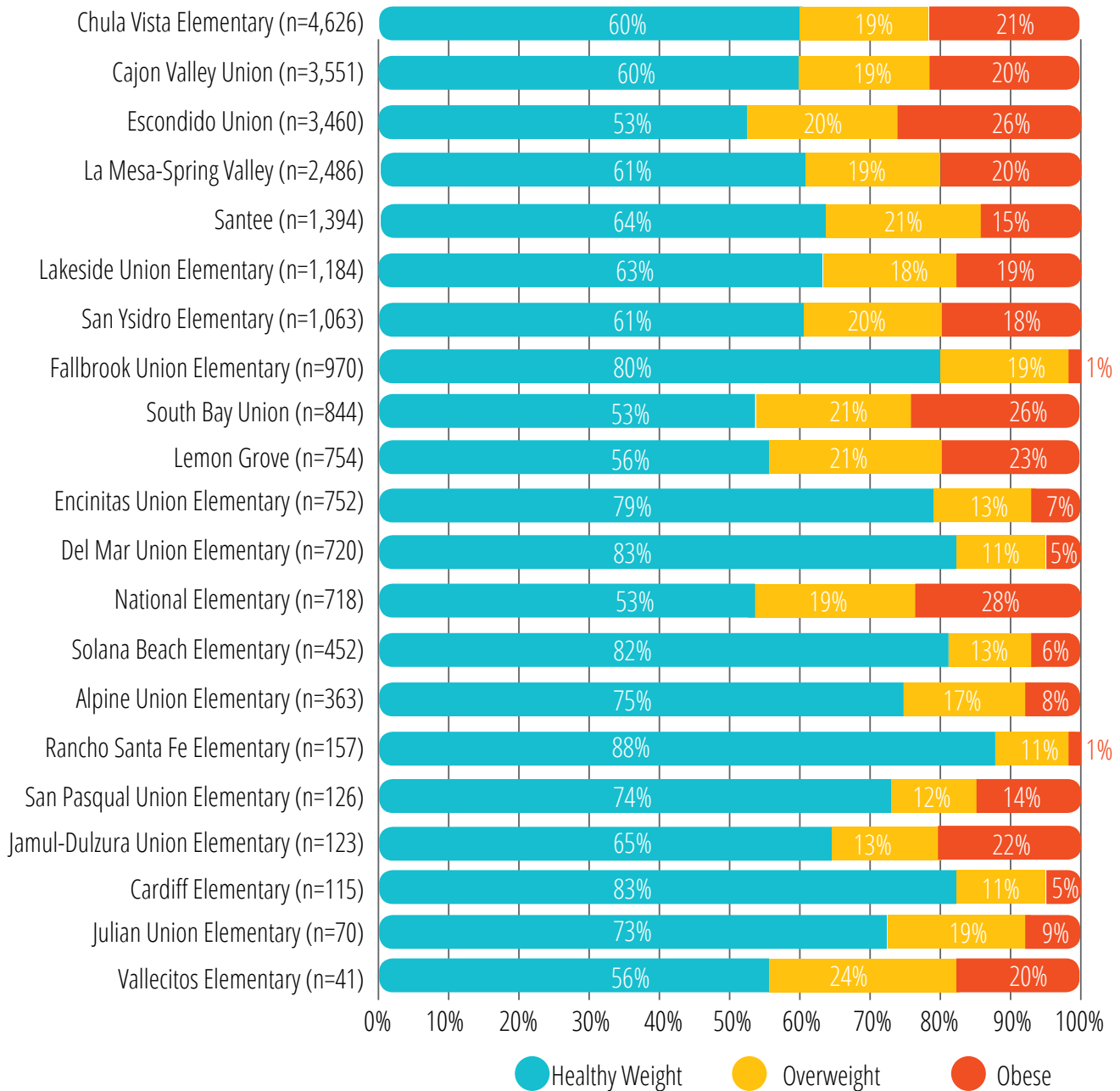


Figure 15. Overweight/obesity for elementary school districts. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 FITNESSGRAM® Results for High School Districts in San Diego County (N = Number of Students Tested)

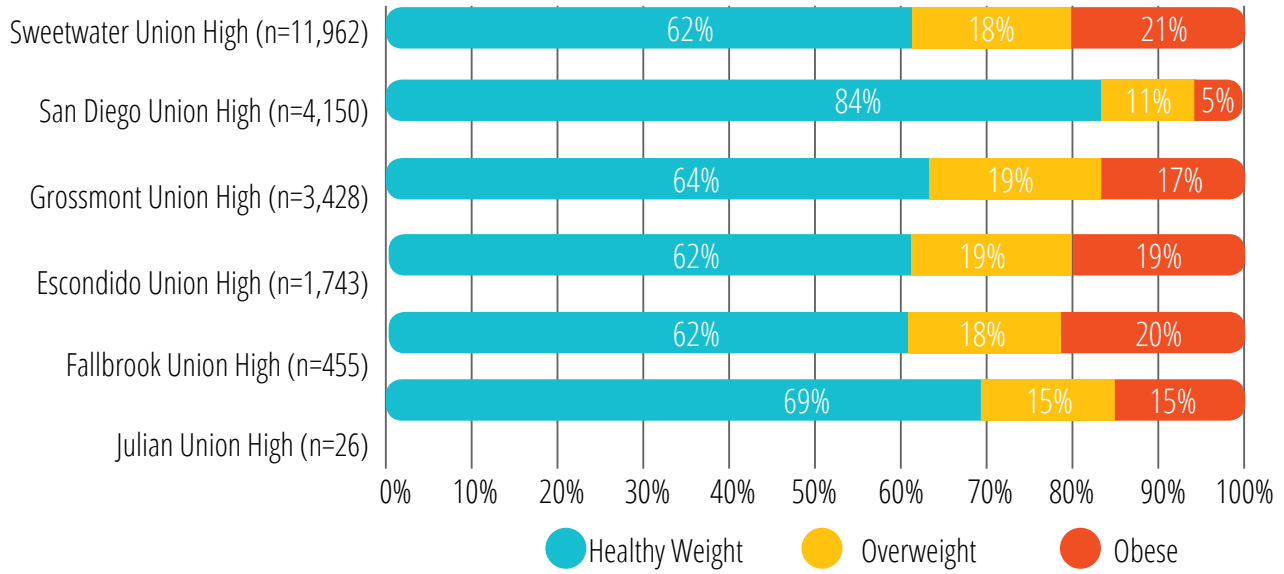


Figure 16. Overweight/obesity for high school districts. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 FITNESSGRAM® Results for Public School Districts with 5,000+ Students Tested

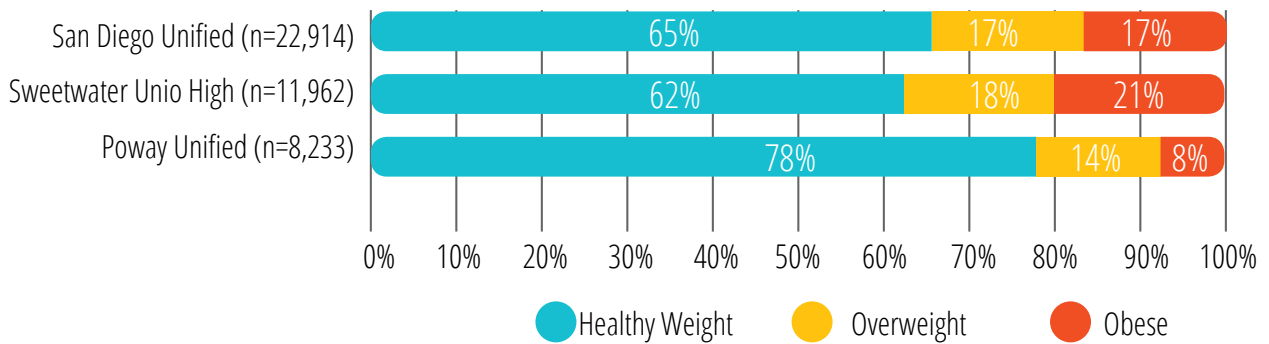


Figure 17. Overweight/obesity for districts with 5,000+ students. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 FITNESSGRAM® Results for Public School Districts with 1,000 - 4,999 Students Tested

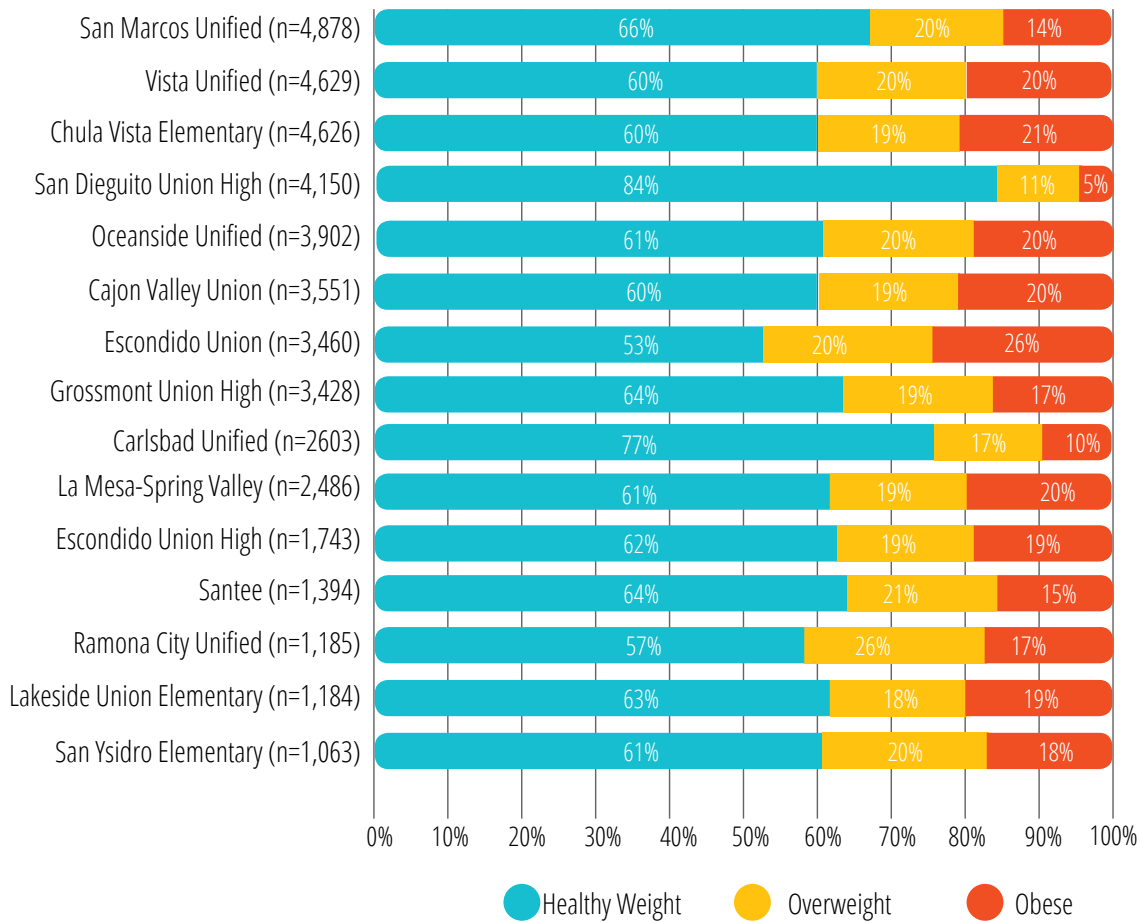


Figure 18. Overweight/obesity for districts with 1,000 - 4,999 students. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 FITNESSGRAM® Results for Public School Districts with 500 - 999 Students Tested

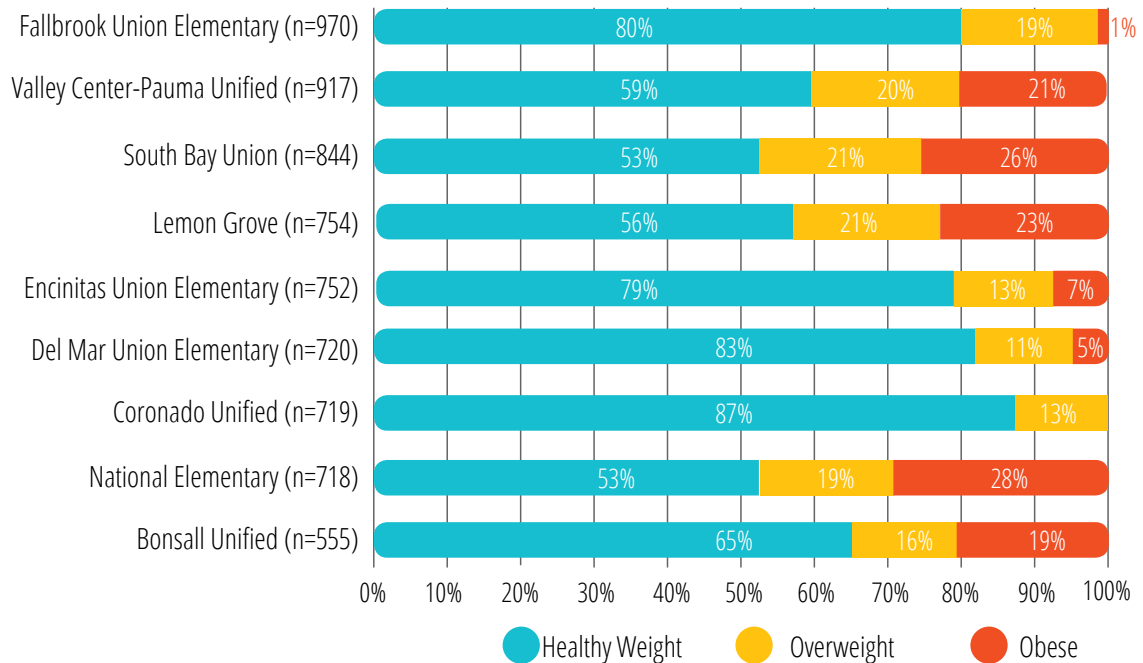


Figure 19. Overweight/obesity for districts with 500 - 999 students. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 FITNESSGRAM® Results for Public School Districts with 100 - 499 Students Tested

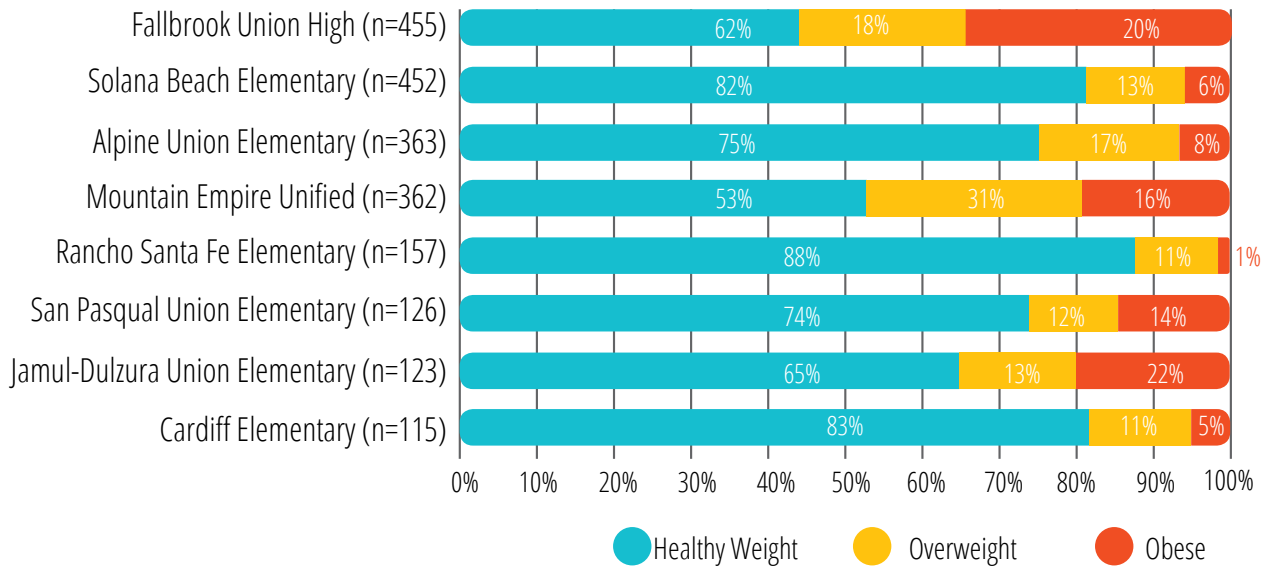


Figure 20. Overweight/obesity for districts with 100 - 499 students. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

2017-2018 FITNESSGRAM® Results for Public School Districts with <100 Students Tested

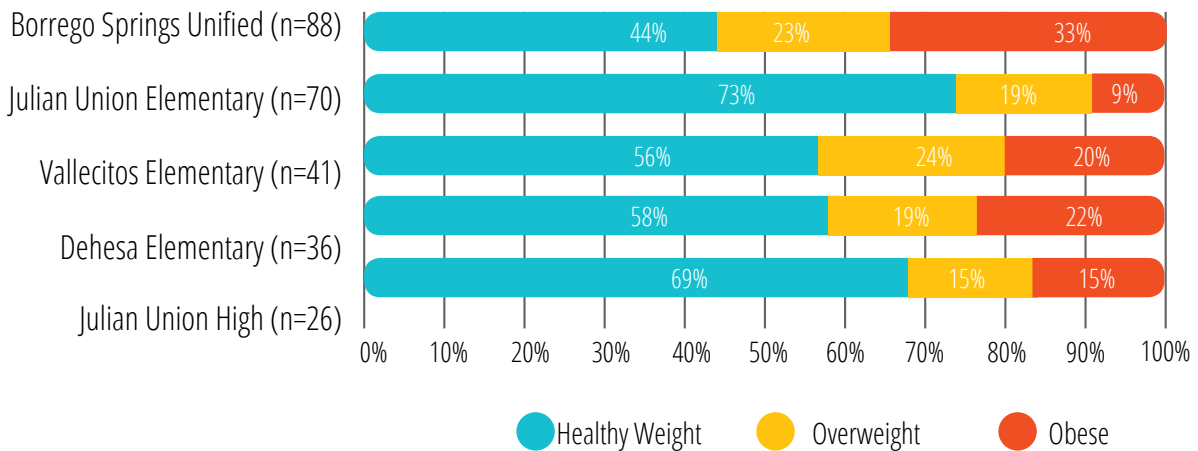


Figure 21. Overweight/obesity for districts with <100 students. Data retrieved from from California Department of Education. 2017-2018 FITNESSGRAM®.

APPENDIX C: OVERWEIGHT AND OBESITY ACROSS HHSA LIVE WELL REGIONS

Figure 22. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts, HHSA Central Region

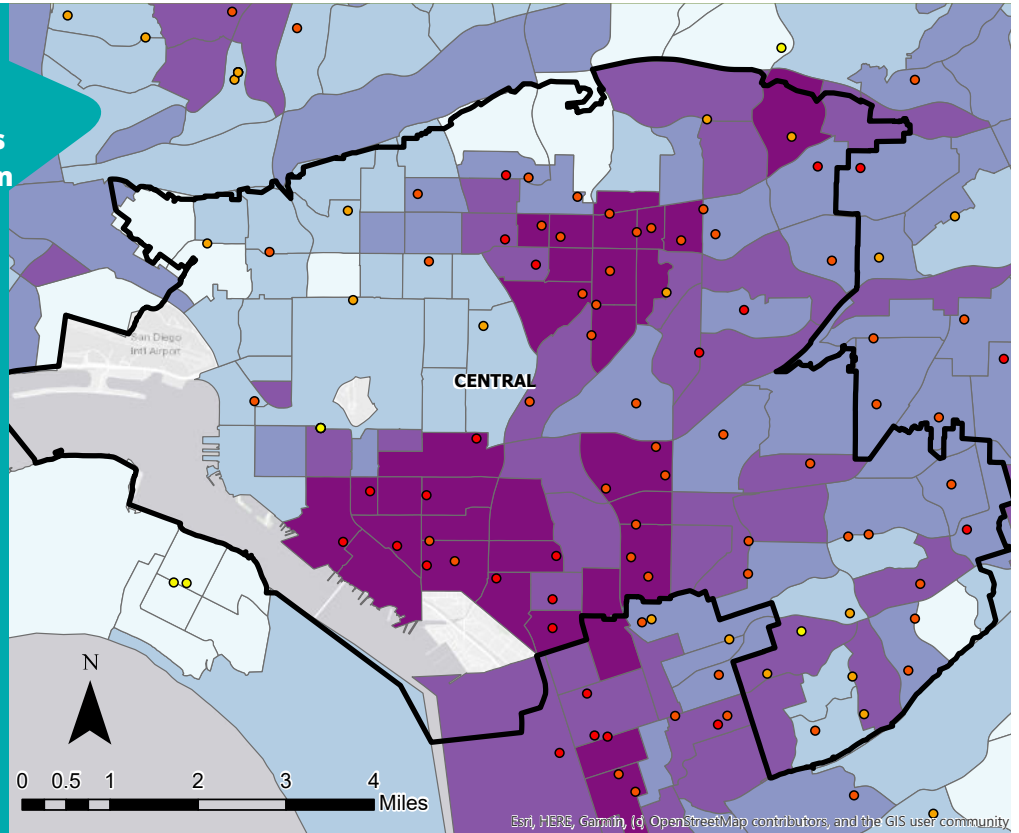
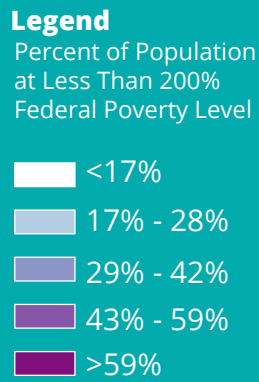
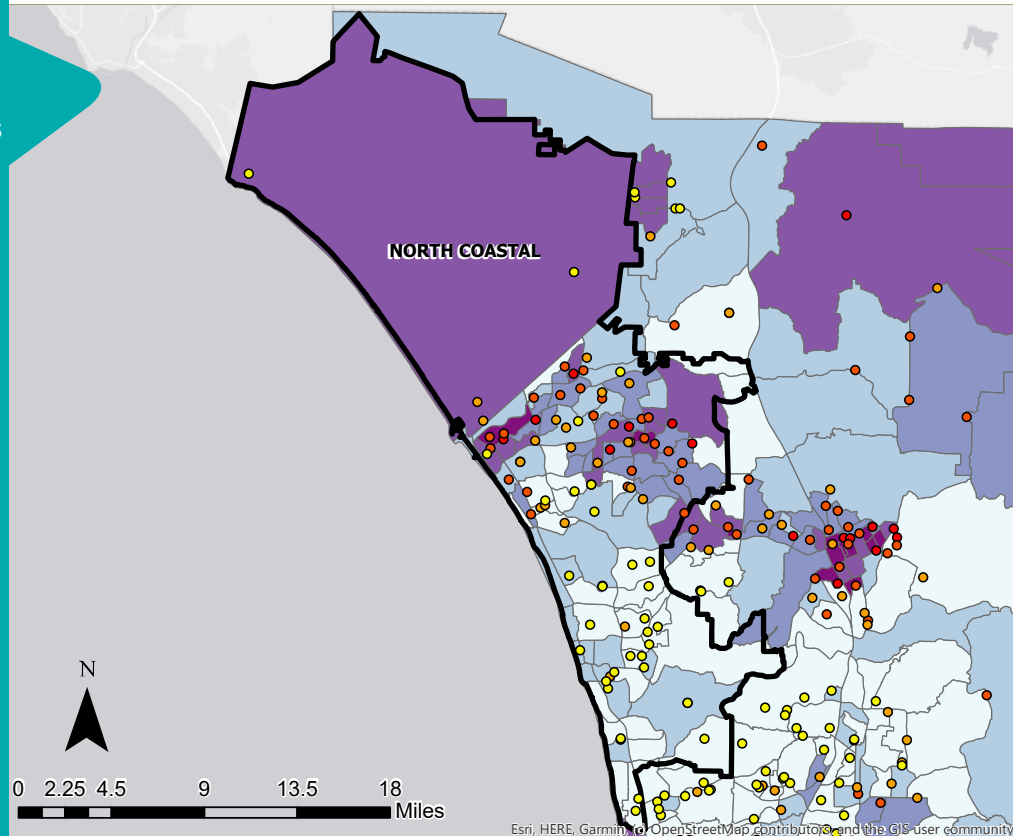
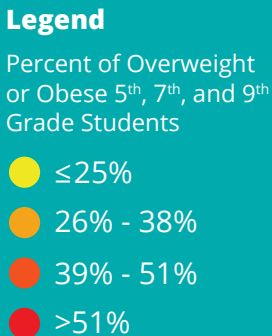


Figure 23. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts, HHSA North Coastal Region



Project: Figures 22-23. Childhood Obesity Initiative - State of Childhood Obesity Report Map Date: 04.19.19 Data Sources: 2016 ACS 5-Year Estimates LiveWellSD.org THIS MAP/DATA IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Copyright SanGIS 2015 - All Rights Reserved. Full text of this legal notice can be found at: http://www.sangis.org/Legal_Notice.htm

Figure 24. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts, HHS North Inland Region

Legend
Percent of Population at Less Than 200% Federal Poverty Level

- <17%
- 17% - 28%
- 29% - 42%
- 43% - 59%
- >59%

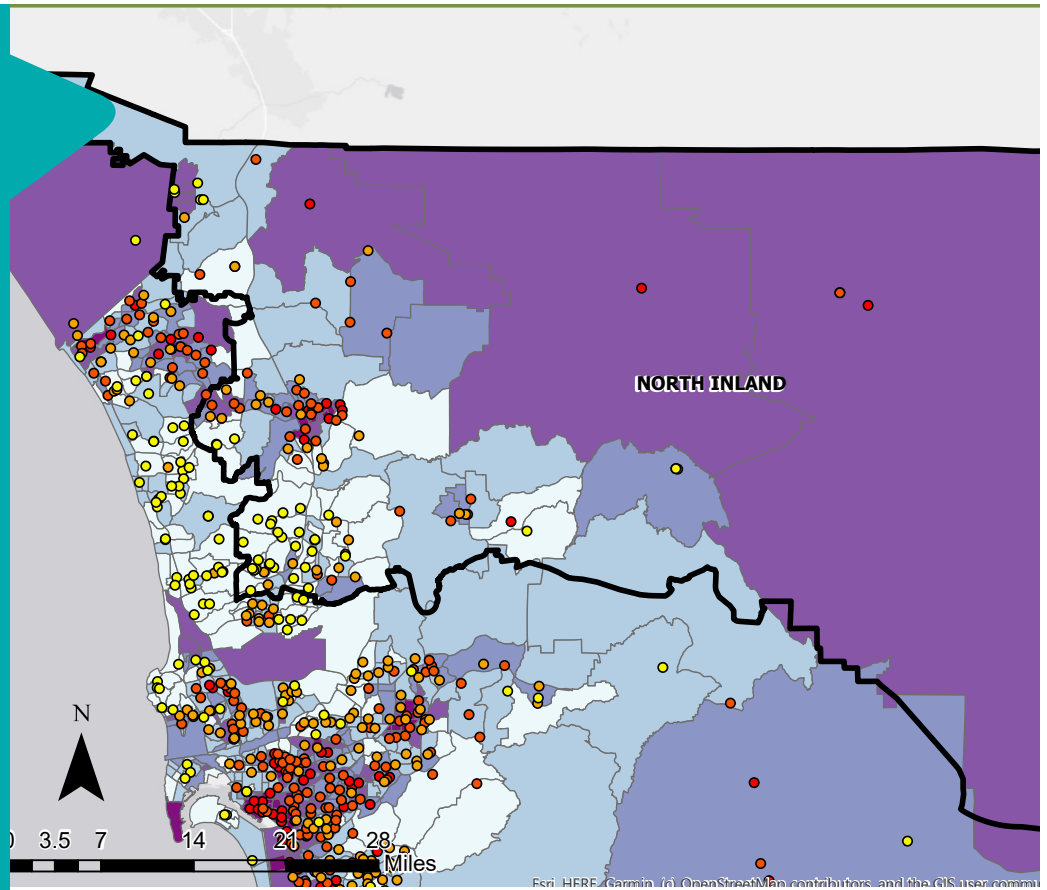
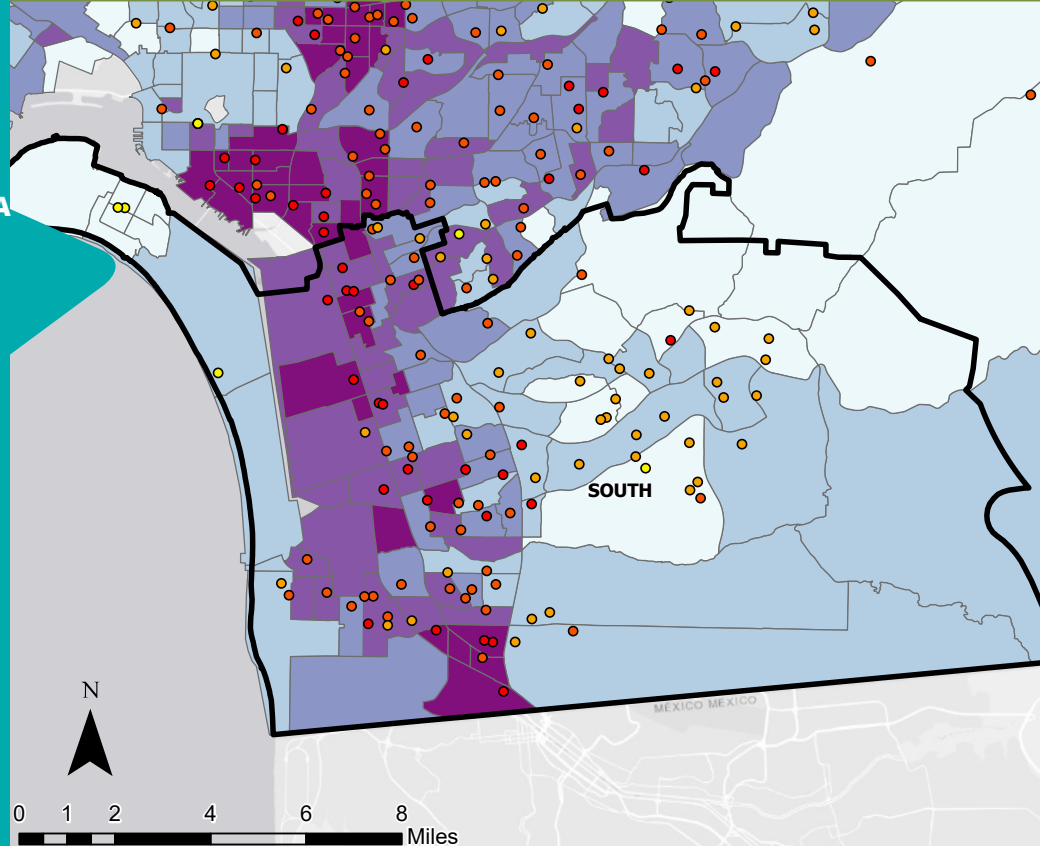


Figure 25. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts, HHS South Region

Legend
Percent of Overweight or Obese 5th, 7th, and 9th Grade Students

- ≤25%
- 26% - 38%
- 39% - 51%
- >51%



Project: Figures 24-25. Childhood Obesity Initiative - State of Childhood Obesity Report Map Date: 04.19.19 Data Sources: 2016 ACS 5-Year Estimates. LiveWellSD. org THIS MAP/DATA IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Copyright SanGIS 2015 - All Rights Reserved. Full text of this legal notice can be found at: http://www.sangis.org/Legal_Notice.htm

Figure 26. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts, HHS North Central Region

Legend

Percent of Population at Less Than 200% Federal Poverty Level

- <17%
- 17% - 28%
- 29% - 42%
- 43% - 59%
- >59%

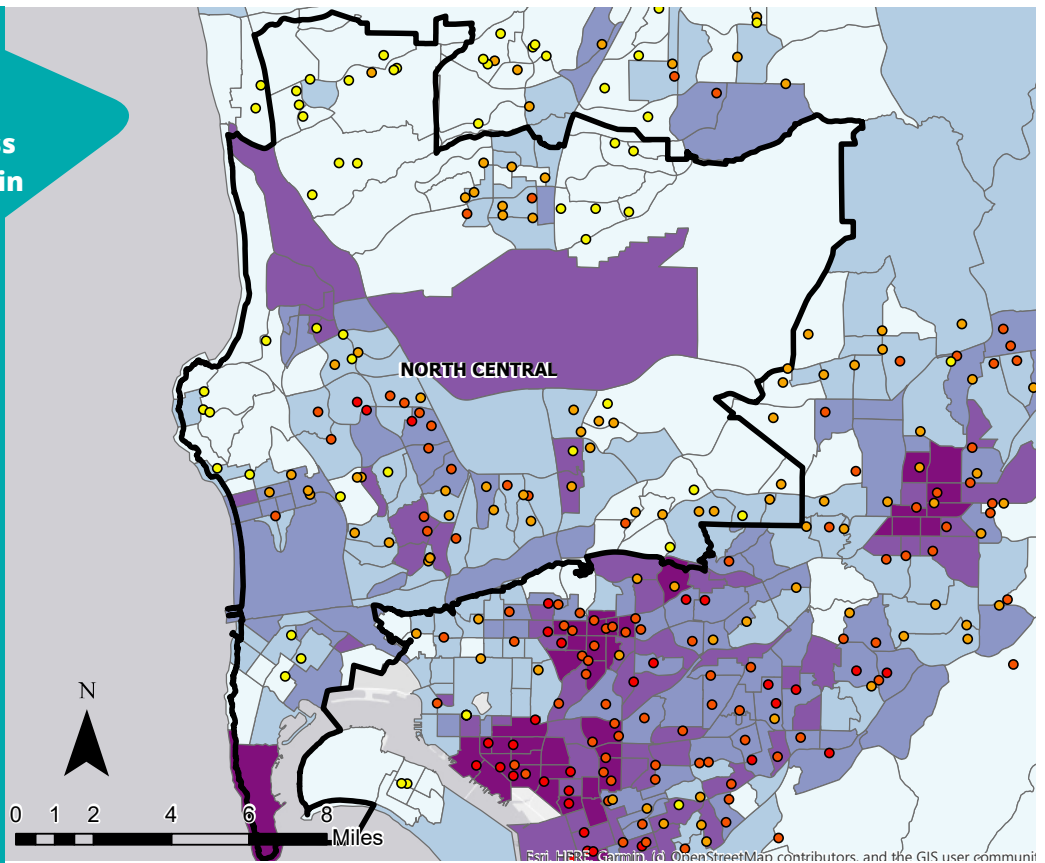
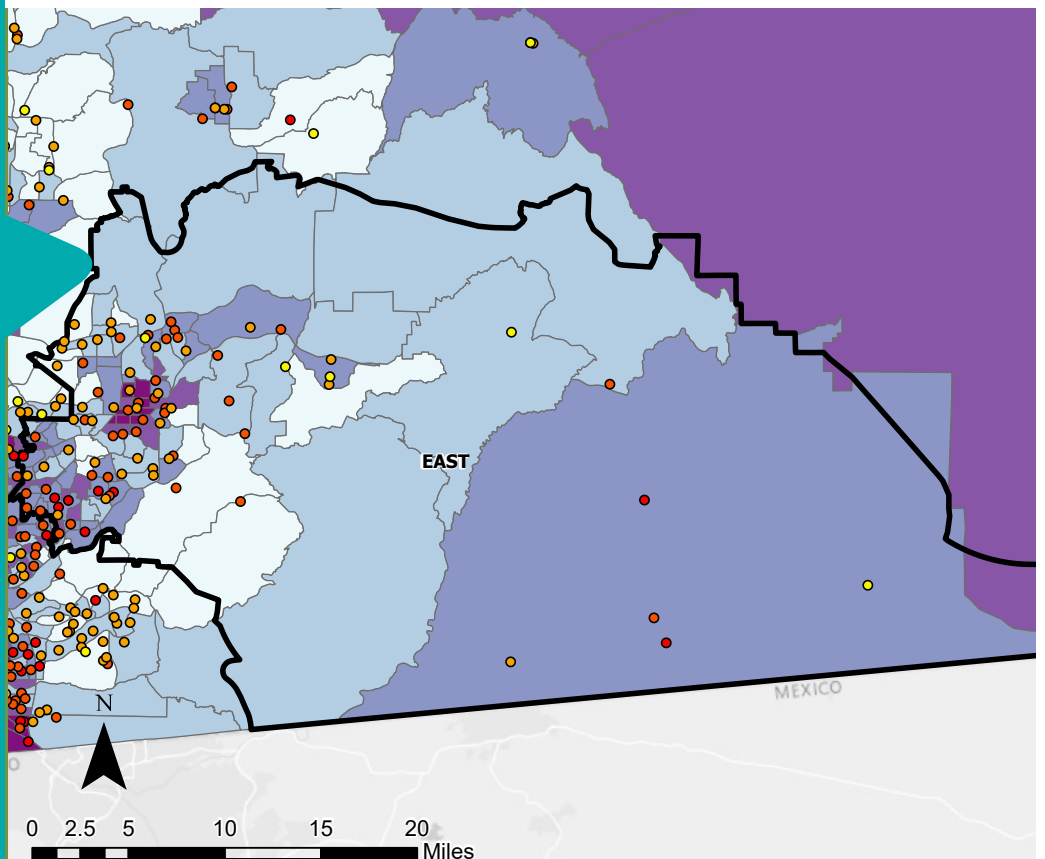


Figure 27. Overweight and Obesity in Schools and Percent of Population at Less Than 200% Federal Poverty Level in San Diego County Census Tracts, HHS East Region

Legend

Percent of Overweight or Obese 5th, 7th, and 9th Grade Students

- ≤25%
- 26% - 38%
- 39% - 51%
- >51%



Project: Figures 26-27. Childhood Obesity Initiative - State of Childhood Obesity Report Map Date: 04.19.19 Data Sources: 2016 ACS 5-Year Estimates. LiveWellSD.org THIS MAP/DATA IS PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Copyright SanGIS 2015 - All Rights Reserved. Full text of this legal notice can be found at: http://www.sangis.org/Legal_Notice.htm

References

- 1 California Department of Education. (2018). FITNESSGRAM® body composition test. Data for 5th, 7th and 9th grade students enrolled in San Diego County's 42 public school districts in school year 2017-2018. Retrieved from <https://data1.cde.ca.gov/dataquest/>
- 2 Centers for Disease Control and Prevention. (2018). Prevalence of Overweight, Obesity, and Severe Obesity Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2015–2016. Atlanta, GA: U.S. Department of Health and Human Services. Retrieved from https://www.cdc.gov/nchs/data/hestat/obesity_child_15_16/obesity_child_15_16.htm
- 3 California Department of Education. (2018). 2017-2018 Enrollment by Ethnicity, San Diego County. Retrieved from <https://www.cde.ca.gov/ds/sd/cb/dataquest.asp>
- 4 California Department of Education. (2018). 2018-2019 California School Dashboard Technical Guide. Retrieved from <https://www.cde.ca.gov/ta/ac/cm/documents/dashboardguide18.pdf>.
- 5 Ng, M., Fleming, T., Robinson, M., Thomson, B., Graetz, N., Margono, C.,...Gakidou, E. (2014). Global, regional and national prevalence of overweight and obesity in children and adults 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*, 384(9945), 766-781. doi: [10.1016/S0140-6736\(14\)60460-8](https://doi.org/10.1016/S0140-6736(14)60460-8)
- 6 Kania, J., & Kramer, M. (2013). Embracing emergence: How collective impact addresses complexity. *Stanford Social Innovation Review*. Retrieved from <https://pdfs.semanticscholar.org/8fc9/79eaf990c4e5c40d3fa41596453cfb379dcd.pdf>
- 7 Hanleybrown, F., Kania, J., & Kramer, M. (2012). Channeling change: Making collective impact work. *Stanford Social Innovation Review*. Retrieved from https://ssir.org/articles/entry/channeling_change_making_collective_impact_work
- 8 American Diabetes Association. (2018). *The burden of diabetes in California* [Fact Sheet]. Retrieved from <http://www.diabetes.org/assets/pdfs/advocacy/state-fact-sheets/california-state-fact-sheet.pdf>
- 9 America's Health Rankings. (2019) Public Health Impact: High Blood Pressure. Retrieved from <https://www.americashealthrankings.org/explore/annual/measure/Hypertension/state/CA>
- 10 Levy, J., Segal, L.M., Thomas, K., St. Laurent, R., & Lang, A. (2013). F as in fat: How Obesity Threatens America's Future. Trust for America's Health/Robert Wood Johnson Foundation. Retrieved from <https://www.rwjf.org/en/library/research/2013/08/f-as-in-fat-how-obesity-threatens-america-s-future-2013.html>
- 11 Woo Baidal, J. A., & Taveras, E.M. (2012). Childhood obesity: Shifting the focus to early prevention. *Arch Pediatr Adolesc Med*, 166(12), 1179-1181. doi:[10.1001/2013.jamapediatrics.358](https://doi.org/10.1001/2013.jamapediatrics.358).
- 12 Cunningham, S. A., Kramer, M.R., & Venkat Narayan, K.M. (2014). Incidence of childhood obesity in the United States. *N Engl J Med*, 270, 403-411. doi: [10.1056/NEJMoa1309753](https://doi.org/10.1056/NEJMoa1309753)
- 13 Gordon-Larsen, P., Adair, L.S., & Popking, B.M. (2004). Five-year obesity incidence in the transition period between adolescence and adulthood: the National Longitudinal Study of Adolescent Health. *Am j Clin Nutr*, 80(3), 569-575. <https://www.ncbi.nlm.nih.gov/pubmed/15321794>
- 14 Daniels, S.R., Arnett, D.K., Eckel, R.H., Gidding, S.S., Hayman, L.L., Kumanyika, S.,...Williams, C.L. (2005). Overweight in children and adolescents: pathophysiology, consequences, prevention, and treatment. *Circulation*, 111(15), 1999-2012. doi:[10.1161/01.CIR.0000161369.71722.10](https://doi.org/10.1161/01.CIR.0000161369.71722.10)
- 15 U.S. Department of Health and Human Services, Office of the Surgeon General. (2010). *The Surgeon General's Vision for a Healthy and Fit Nation*. Rockville, MD. Retrieved from: <https://www.ncbi.nlm.nih.gov/books/NBK44660/>.
- 16 Freedman, D.S., Zugno, M., Srinivasan, S.R., Berenson, G.S., & Dietz, W.H. (2007). Cardiovascular risk factors and excess adiposity among overweight children and adolescents: the Bogalusa Heart Study. *Journal of Pediatrics*, 150(1), 12-17. doi:[10.1016/j.jpeds.2006.08.042](https://doi.org/10.1016/j.jpeds.2006.08.042)

- 17 Li, C., Ford, E.S., Zhao, G., & Mokdad, A.H. (2009). Prevalence of pre-diabetes and its association with clustering of cardiometabolic risk factors and hyperinsulinemia among US adolescents: NHANES 2005–2006. *Diabetes Care* 32(2), 342–347. doi: <https://doi.org/10.2337/dc08-1128>
- 18 Centers for Disease Control and Prevention. (2011). National Diabetes Fact Sheet: National estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: U.S. Department of Health and Human Services. Retrieved from http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf.
- 19 Dietz, W.H. (2004). Overweight in childhood and adolescence. *New England Journal of Medicine*, 350, 855-857. doi: : [10.1056/NEJMp048008](https://doi.org/10.1056/NEJMp048008)
- 20 Centers for Disease Control and Prevention. (2017). Health and Academics. Retrieved from https://www.cdc.gov/healthyschools/health_and_academics/index.htm
- 21 Centers for Disease Control and Prevention. (2016). Childhood Obesity Causes & Consequences. Retrieved from <https://www.cdc.gov/obesity/childhood/causes.html>
- 22 Carey, F.R., Singh, G.K., Brown III, S.H., & Wilkinson, A.V. (2015). Educational outcomes associated with childhood obesity in the United States: Cross-sectional results from the 2011-2012 National Survey of Children's Health. *Int J Behav Nutr Phys Act*, 12(Suppl 1), S3. doi: [10.1186/1479-5868-12-S1-S3](https://doi.org/10.1186/1479-5868-12-S1-S3)
- 23 Centers for Disease Control and Prevention. (2019). Childhood Obesity Facts. Retrieved from <https://www.cdc.gov/obesity/data/childhood.html>
- 24 Larson, N.I., Story, M.T., & Nelson, M.C. (2009). Neighborhood environments: disparities in access to healthy foods in the U.S. *Am J Prev Med*, 36(1), 74-81. doi: [10.1016/j.amepre.2008.09.025](https://doi.org/10.1016/j.amepre.2008.09.025)
- 25 Bell, J., Mora, G., Hagan, E., Rubin, V., & Karpyn, A. (2013). Access to Healthy Food and Why It Matters: A Review of the Research. Retrieved from <https://www.policylink.org/resources-tools/access-to-healthy-food-and-why-it-matters>
- 26 Lovasi, G.S., Hutson, M. A., Guerra, M., & Neckerman, K. M. (2009). Built environments and obesity in disadvantaged populations. *Epidemiologic Reviews*, 31(1), 7-20. doi: <https://doi.org/10.1093/epirev/mxp005>
- 27 Davis R et al. (2016). Countering the production of inequities: An emerging systems framework to achieve an equitable culture of health. Oakland, CA: Prevention Institute. Retrieved from <https://www.preventioninstitute.org/publications/countering-production-health-inequities-extended-summary>
- 28 Woolf S.H., et al. (2015). How are income and wealth linked to health and longevity? Urban Institute and Virginia Commonwealth University. Retrieved from <https://www.urban.org/sites/default/files/publication/49116/2000178-How-are-Income-and-Wealth-Linked-to-Health-and-Longevity.pdf>
- 29 Kreuger, P. & Reither E. (2015). Mind the Gap: Race/Ethnic and Socioeconomic Disparities in Obesity. *Curr Diab Rep*. 15(11): 95. doi: [10.1007/s11892-015-0666-6](https://doi.org/10.1007/s11892-015-0666-6)
- 30 U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation. (2019) Federal Poverty Guidelines. Retrieved from <https://aspe.hhs.gov/poverty-guidelines>
- 31 Peek, M. (2014). Poverty's Association with Poor Health Outcomes and Health Disparities. *Health Affairs*. October 30, 2014. Doi: [10.1377/hblog20141030.041986](https://doi.org/10.1377/hblog20141030.041986) and Boschma J (2016). Separate and still unequal. *The Atlantic*. Retrieved from <https://www.theatlantic.com/education/archive/2016/03/separate-still-unequal/471720/>
- 32 Food Research and Action Center. (2015). *Understanding the Connections: Food Insecurity and Obesity*. Retrieved from . http://frac.org/wp-content/uploads/frac_brief_understanding_the_connections.pdf
- 33 Beaulac, J., Kristjansson, E., & Cummins, S. (2009). A systematic review of food deserts, 1966-2007. *Preventing Chronic Disease*, 6(3). Retrieved from http://www.cdc.gov/pcd/issues/2009/jul/08_0163.htm

- 34 Ver Ploeg, M., Breneman, V., Farrigan, T., Hamrick, K., Hopkins, D., Kaufman, P.,...Tuckermanty, E. (2009). Access to affordable and nutritious food - measuring and understanding food deserts and their consequences: Report to congress (Report No. AP-036). U.S. Department of Agriculture, Economic Research Service. Retrieved from the United States Department of Agriculture, Economic Research Service website: <https://www.ers.usda.gov/publications/pub-details/?pubid=42729>
- 35 Danielson, C. (2015). *Low income students and school meal programs in California*. Sacramento, CA. Public Policy Institute of California. Retrieved from the Public Policy Institute of California website: https://www.ppic.org/content/pubs/report/R_315CDR.pdf
- 36 Brakke, A. (2018). Hunger free kids: Opportunities by district to end child hunger. Retrieved from the San Diego Hunger Coalition website: <https://www.sandiegohungercoalition.org/hunger-free-kids-report>
- 37 United States Department of Agriculture. (2015). Ensuring Access to Free and Reduced Price School Meals for Low Income Students. Retrieved from <https://www.fns.usda.gov/ensuring-access-free-and-reduced-price-school-meals-low-income-students>.
- 38 Firebaugh, G & Acciai F. (2016). For blacks in America, the gap in neighborhood poverty has declined faster than segregation. *Proc Natl Acad Sci USA*. 2016 113(47): 13372–13377 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5127296/>.
- 39 The Annie E. Casey Foundation. (2017) *Race for Results: Building a Path to Opportunity for all Children*. Baltimore, MD. Retrieved from <https://www.aecf.org/resources/2017-race-for-results/>.
- 40 PolicyLink and the USC Program for Environmental and Regional Equity; National Equity Atlas (2016). Retrieved from: https://nationalequityatlas.org/indicators/School_poverty
- 41 Ungar Davis, K. (2011). Racial Disparities in Childhood Obesity: Causes, Consequences and Solutions. *University of Pennsylvania Journal of Law and Social Change*, Vol 14 (2). Retrieved from <https://scholarship.law.upenn.edu/jlasc/vol14/iss2/4/>
- 42 Boschma, J. & Brownstein R. (2016) The Concentration of Poverty in American Schools. *The Atlantic*. Retrieved from <https://www.theatlantic.com/education/archive/2016/02/concentration-poverty-american-schools/471414/>
- 43 Olshansky, S. J., Passaro, D. J., Hershow, R. C., Layden, J., Carnes, B. A., Brody, J.,...Ludwig, D. S. (2005). A potential decline in life expectancy in the United States in the 21st Century. *N Engl J Med*, 352, 1138-1145. doi: [10.1056/NEJMSr043743](https://doi.org/10.1056/NEJMSr043743)

Live Well San Diego

In 2010, the County Board of Supervisors adopted *Live Well San Diego*, a long-term vision to advance the health, safety, and well-being of the region's more than three million residents. Based on a foundation of community involvement, *Live Well San Diego* includes three components: Building Better Health, Living Safely, and Thriving. *Live Well San Diego* involves a wide range of individuals and partners including: cities, businesses involved in healthcare and technology, military and veterans' organizations, schools, and community and faith-based organizations. Most importantly, *Live Well San Diego* focuses on empowering residents to take positive actions for their own health, safety, and well-being-actions that also extend throughout neighborhoods, communities, and the county as a whole.

The Childhood Obesity Initiative (COI) is a program of *Live Well San Diego: Healthy Works* and implemented by Community Health Improvement Partners. This work supports *Live Well San Diego*, the County of San Diego's vision for a region that is Building Better Health, Living Safely, and Thriving.



SAN DIEGO COUNTY
**CHILDHOOD
OBESITY
INITIATIVE**

Working Together to Shape a Healthy Future
Facilitated by Community Health Improvement Partners

Community Health Improvement Partners
5095 Murphy Canyon Road, Suite #105
San Diego, CA 92123
(p) 858.609.7961
www.sdcoi.org