



United States–México Border Health Commission

Childhood Obesity and the U.S.-México Border

A White Paper

June 22, 2009



Background: The purpose of this white paper is to raise awareness of the prevalence, risk factors, and health outcomes of the childhood obesity epidemic along the U.S. side of the U.S.-México border. More importantly, it should serve as a call to action and a catalyst to identify gaps in data, programs, and policies to prevent obesity in children as well as address other obesity related issues. The primary focus is on childhood obesity because it is a prevalent risk factor from which Type 2 Diabetes and other adverse health conditions can arise.

Demographics: The border area is defined as the area 100 kilometers (62 miles) north and south of the U.S.-México border^{1,2} and includes the 48 counties along the U.S. side of the border of the four U.S. border states (Arizona, California, New Mexico, and Texas). The border area, for the purposes of this paper, refers only to the 44 U.S. border counties, excluding Maricopa, Pinal, and La Paz in Arizona and Riverside County in California.

The population in the border region continues to grow at a rapid pace. There are over 69 million people in the U.S. border states and 7 million in the U.S. border counties³ with over 25 million Hispanics in the U.S. border states and 3 million in the U.S. border counties.^{3,4} The border region also has a young population with over 2.2 million under 19 years of age.⁵

Definition of Obesity: The Centers for Disease Control and Prevention (CDC) endorses the measurement of Body Mass Index (BMI) to determine if a child, defined as an individual under age 18, is overweight or obese. BMI is a measure of weight in relation to height that is used to determine weight status. The BMI value is plotted on gender specific growth charts to determine the corresponding BMI-for-age-percentile. Overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile. Obesity is defined as a BMI at or above the 95th percentile.⁶

Factors Contributing to Obesity: The factors contributing to obesity are varied and complex, especially along the border, and can be biological, social, or environmental in nature. The border region is marked by low levels of education, poverty, and high migration rates, which may indirectly contribute to the obesity epidemic. For example, between 16% and 29% of children under the age of 18 in the U.S. border states are living below the federal poverty level⁷ and some research demonstrates an association between high poverty rates and high obesity rates.^{8,9}

Some examples of risk factors for obesity include:

- Socio-economic status such as poverty and low education levels
- Poor nutritional intake, such as high calorie, high fat foods that are low in minerals and vitamins
- Reduced physical activity
- Increased sedentary lifestyle

These factors and many others need to be carefully addressed when designing programs or implementing policies to prevent obesity.

Obesity is one of the major risk factors for developing Type 2 Diabetes.⁹ Once an individual is diagnosed with diabetes, that person's risk for developing other diseases and conditions sharply increases. Some of these diseases and conditions are heart disease, strokes, blindness, kidney disease, dental disease, hypertension, and pregnancy complications.¹⁰

Approximately 1.5 million adults in the border region are overweight or obese and another 1.2 million have been diagnosed with Type 2 Diabetes.¹¹ An increasing number of children and adolescents in this region are becoming overweight or obese, which can have negative lifelong impacts.



Prevalence of Obesity: Methods for collecting, analyzing, and reporting overweight and obesity data differ by state making it difficult to provide a comprehensive picture of childhood obesity along the border as well as make comparisons between the U.S. border states and the border counties. Some data on the prevalence rates of overweight and obese adolescents are available as well as information on nutritional intake and physical activity levels. On the other hand, data on children under the age of 10 years is not systematically collected by any of the four border states.

Overweight/obesity combined with a sedentary lifestyle is 5-10 times higher among Mexican-Americans living in the border region compared to the rest of the U.S.¹² This demonstrates the need to closely examine what is occurring in the border region among all populations, especially among the Hispanic population.

According to the most recently published data for the National Health and Nutrition Examination Survey (NHANES, 2003-2006), Mexican-American males, aged 12-19 years, had the highest prevalence of obesity (22.1%) compared to non-Hispanic white (17.3%) and black males (18.5%). Mexican-American males also had the largest increase in prevalence of obesity (14.1%-22.1%) from the NHANES survey periods of 1988-1994 and 2003-2006. The prevalence of obesity for Mexican-American females was 19.9% for the period of 2003-2006 and their prevalence also increased (9.2%-19.9%) from the NHANES survey periods of 1988-1994 and 2003-2006.¹³

The 2007 National Survey of Children's Health presents a grimmer picture which indicates that across the U.S. 31.7% of all children and 40.9% of Hispanic children aged 10-17 years are overweight or obese. The following compares Hispanic children in the four border states to the national rate for Hispanic children (40.9%) in the same age group:¹⁴

- Arizona 43.4%
- California 39.9%
- New Mexico 37.0%
- Texas 46.8%

The Youth Risk Behavior Survey (YRBS) is a school-based survey that monitors health-risk behaviors among adolescents. In Arizona, available data compares 2005 and 2007 for three border counties, Cochise, Santa Cruz, and Yuma. Cochise and Santa Cruz experienced increases, 11.9%-12.4% and 12.0%-12.2%, respectively, in the percentage of overweight youth, while Yuma experienced a decrease (20%-17%) in the percentage of overweight youth. All three counties reported an increase in the percent of youth who are at risk of becoming overweight.^{15,16,17}

In Luna County, New Mexico, 23.2% of students in grades 9-12 were either overweight or obese in 2007. In Hidalgo County, 28.7% of students and 24.4% of students in Doña Ana County were either overweight or obese in 2007.^{18,19,20}

Like Arizona and New Mexico, Texas also participates in the YRBS, but data are reported for the entire state rather than by individual counties. However, the Nutrition, Physical Activity, and Obesity Prevention Program within the Department of State Health Services reports on the prevalence of overweight and obese children by Health Service Region (HSR). Four of these HSRs, regions 8-11, include border counties in addition to non-border counties. In 2005, the most recent data reported that between 15% and 39% of 4th, 8th, and 11th grade children were overweight or obese in these regions.²¹

The 2007 California Health Survey provides the most recent information for overweight and obese children throughout each county in the state. Imperial County reports a significantly higher percent (18.9%) of



children under the age of 12 years who are overweight for their age when compared to San Diego County (8.8%) and the state of California (11.2%).²² In Imperial County, 11.5%, and in San Diego County, 12.1%, of adolescents aged 12-17 years were overweight or obese,²² although in the San Diego Unified School District in San Diego County, 36% of Hispanic teens that participated in the 2007 YRBS considered themselves overweight.²³

Addressing Obesity: Childhood obesity has been made a national-level priority. *Healthy People 2010*, developed by the U.S. Department of Health and Human Services (HHS), includes an objective to reduce the proportion of children and adolescents who are overweight or obese. However, the midcourse review shows the prevalence of overweight and obese youths aged 6-19 years increased from 11% in 1994 to 16% in 2002.²⁴ In fact, research is showing that children as young as ten years of age are now being diagnosed with Type 2 Diabetes, which is most likely the result of the obesity epidemic.¹⁰

For the border region, *Healthy Border 2010* was established as an initiative for health promotion and disease prevention by the U.S.-México Border Health Commission (BHC) at the beginning of the decade. While morbidity and mortality from diabetes mellitus in adults was made a priority, obesity and related risk factors such as poor nutrition and physical inactivity were excluded from the binational framework, although the U.S. states maintained an adult obesity objective under the U.S.-only *Healthy Gente 2010* initiative.²⁵ Obesity, nutrition, and physical activity will be proposed for inclusion in *Healthy Border 2020*.

The economic costs associated with obesity for both families and the health care system are often overlooked. Nationally, annual hospital costs for obesity-associated conditions in children and adolescents tripled, rising from \$35 million between 1979 and 1981 to \$127 million between 1997 and 1999.²⁶ This does not include indirect costs such as productivity lost at work and school because parents must take their children to the hospital.

In addition to data on overweight and obese children, nutritional intake and physical activity levels are two common measurable behaviors used to identify those at risk of becoming overweight or obese. The U.S. Department of Agriculture and HHS recommend children and adolescents eat at least five servings of fruits and vegetables each day. Data shows that healthy eating is associated with a lower risk for overweight and obesity.²⁷ This highlights the need to consider dietary habits in any and all obesity prevention programs. In Arizona border counties, approximately 82% of students, and throughout the state of Texas, 83% of children ate less than the recommended amount in 2007.^{15, 16, 17, 28}

Physical activity is another measurable behavior that can be used to prevent obesity. Reports show that children and adolescents along the border are not receiving the recommended amount of at least 60 minutes of physical activity each day.^{29,30} The three border counties in Arizona have experienced a decrease in the percentage of youth who were active for the recommended amount of time from 2005-2007.^{15,16,17} In California, 38% of children, in New Mexico, 56% of children, and in Texas, 55% of children were not physically active for the recommended amount of time.^{18, 19, 20,23, 28}

Gaps: A major issue in addressing childhood obesity along the U.S.-México border is the lack of comparable data, including reporting measures and reporting standards, for the border region. Data are highly dependent on the agency collecting the information, the methods used to determine prevalence, and information on obesity-related behaviors. Establishing a standard borderwide surveillance system for monitoring rates of childhood obesity in the U.S. and in México at the state level, county level, and in sister cities, where obesity rates are rising will help address these data-specific issues.

The lack of a comprehensive approach in addressing childhood obesity between and among the primary sectors, i.e. health care, public health, education, food and beverage industry, etc. is a key barrier to



achieving the best outcomes.³¹ Additionally, there is little in the form of a comprehensive health promotion media campaign focused on children and youth related to obesity prevention. The VERB multi-media campaign, sponsored by the CDC, was aimed at increasing and maintaining physical activity levels for children aged 9-13 years, but campaign funding ended in 2006, despite positive outcomes from initial evaluations.^{32,33}

While there are interventions in place in local communities and schools throughout the border region, it is important to ensure these interventions are evidenced-based. To meet this end, funding is needed for translational and adaptation research to test existing evidence-based interventions in the unique sociocultural context of the border region.

Developing Solutions: There are numerous programs and policies already in place in local communities and schools across the border region working to address and prevent childhood obesity. In general, they focus on improving nutrition and increasing physical activity levels. Examples of these include:

- Nutrition:
 - Implementing healthier breakfast and lunch menus in schools
 - Eliminating sweet foods and sodas in vending machines in schools
 - Incorporating nutrition education into other parts of school curriculums (i.e. reading nutrition labels to increase vocabulary)
 - Eliminating trans fats from foods in restaurants and fast food establishments
 - Breastfeeding promotion programs
 - Providing healthy foods at affordable prices in stores
- Physical Activity:
 - Increasing the amount of time in physical education classes
 - Providing alternate activities to decrease time spent on the computer and watching television in after-school programs, daycare centers, and community programs
 - Implementing programs that encourage children and families to walk to school and other areas within their community

Challenges and Opportunities: The population of children and adolescents residing on the U.S. side of the U.S.-México border numbers over 2 million and has one of the highest rates of obesity in the nation.⁵ Obesity contributes to the onset of Type 2 Diabetes, which is associated with many other health, social, and economic problems throughout an individual's lifetime.¹⁰

A standard surveillance system for the border region is needed to understand disease prevalence and trends in the border region and to compare this unique geographic region to other areas.

With the daily migration and general sociocultural parameters of the border region, it cannot be assumed that interventions tested outside of the border will necessarily have a similar impact in the border region. Evidence-based programs that are tailored to the unique aspects of the border are needed to reduce the number of obese children.

It is imperative that leaders at all levels seek broad-based and comprehensive solutions such as through the promotion of national and borderwide action plans that are aimed at prevention and wellness in particular, as more children will be at risk of developing these debilitating and chronic conditions brought about by the growing problem of childhood obesity.^{31, 34}



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- ⁵ La Fe Research & Education Center. (2008). *U.S/Mexico Border Fact Sheet: Demographic Profile*. Retrieved May 15, 2009 from <http://www.lafepolicycenter.org/documents/US%20MX%20BORDER%20DEMOGRAPHIC%20PROFILE.11%2018%2008%20.BRF.PDF>.
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- ¹⁶ Arizona Department of Health Services. *Santa Cruz County Trends Report: BRFSS 2004-2007, YRBS 2005, 2007*. Steps To A Healthier Arizona Initiative, Arizona Department of Health Services, Public Health Services, May 2008.
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- ¹⁸ New Mexico Department of Health. *2007 New Mexico Youth Risk and Resiliency Survey, High School (Grades 9-12), Hidalgo County*.
- ¹⁹ New Mexico Department of Health. *2007 New Mexico Youth Risk and Resiliency Survey, High School (Grades 9-12), Luna County*.
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