

# Childhood Obesity Prevention:

## Best Practices and Initiatives of the University of New Mexico Prevention Research Center

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New Mexico Legislative Health and  
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September 10, 2014  
Las Cruces



PREVENTION RESEARCH CENTER  
*Prevention & Population Sciences*

[hsc.unm.edu/som/prc/](http://hsc.unm.edu/som/prc/)

## THE UNIVERSITY OF NEW MEXICO PREVENTION RESEARCH CENTER

**Mission:** The mission of the (UNM) Prevention Research Center (PRC) is to address the health promotion and disease prevention needs of New Mexican communities through participatory, science-based, health promotion and disease prevention research. We fulfill this mission through collaboration, training, dissemination and evaluation activities.

**Our Research Priorities:** Our research agenda is designed to focus on community needs and to create a structure for engaging the community. The priority areas for PRC research include:

- Nutrition, physical activity and obesity prevention
- Adolescent and school health
- Tobacco, alcohol and substance abuse prevention
- Dissemination research and translation of research findings into usable formats

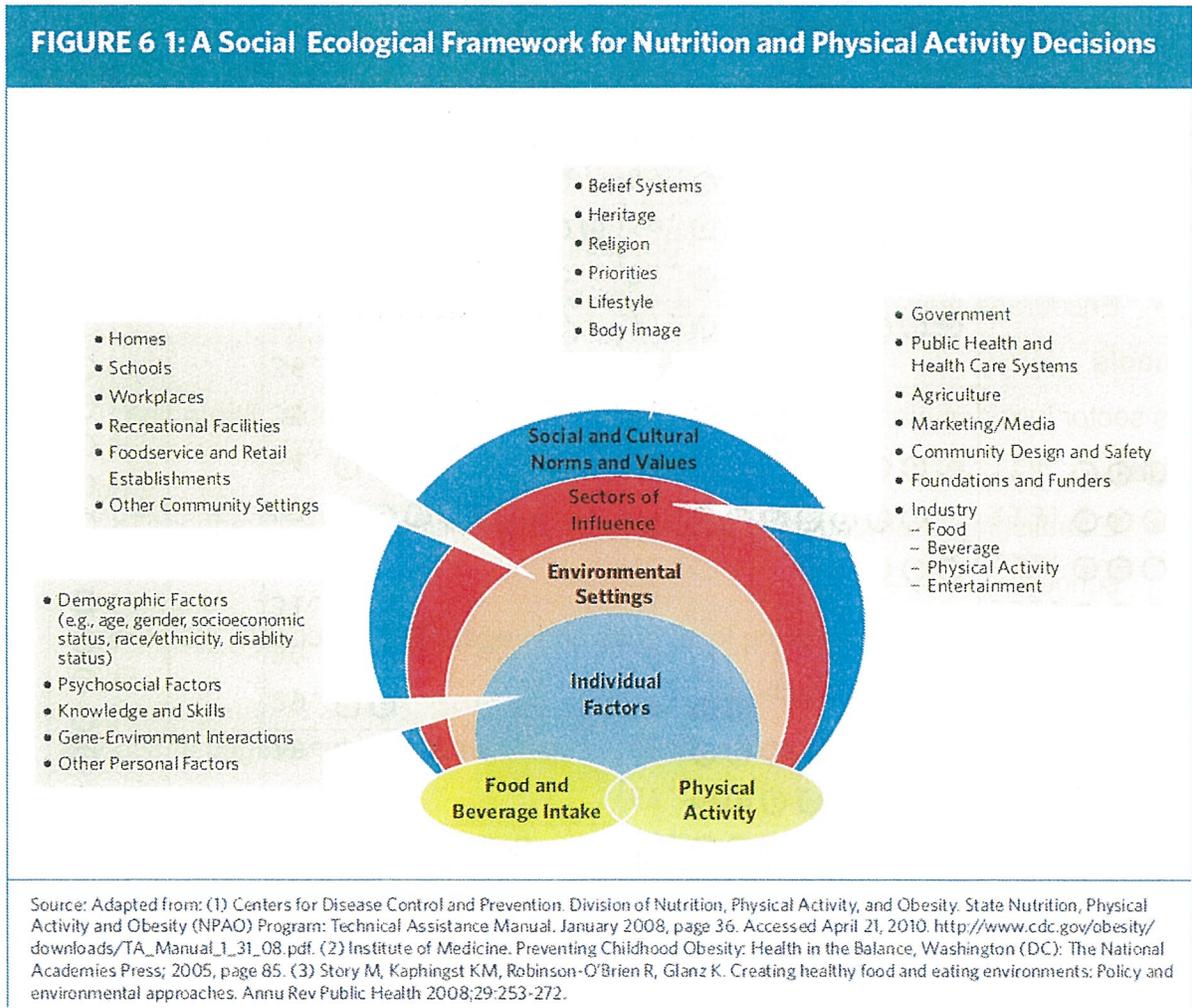
These priority areas emphasize the chronic diseases and conditions that have the greatest total effect on health, longevity and quality of life of New Mexicans. Addressing these areas is crucial for achieving the long-term goal of eliminating health disparities in New Mexico communities.

### CHILDHOOD OBESITY PREVENTION

In New Mexico, among kindergarten children, 14.6% are obese and 13.4% are overweight. Although rates of obesity among low-income preschool aged children in New Mexico declined from 12% in 2008 to 11.3% in 2011, rates are still high. In New Mexico, American Indians (36.3%) and Hispanics (30.8%) are at increased risk for overweight and obesity compared with non-Hispanic whites (20.8%) overall. This disparity in obesity prevalence is evident in kindergarten with American Indian (23.8%) and Hispanic (14.2%) children surpassing the prevalence in non-Hispanic white (11.8%)

kindergarten children. This is consistent with national studies that show substantial differences in the prevalence of obesity by race/ethnicity.

Overall, areas of focus for preventing childhood obesity are on improvements to nutrition and physical activity. While the emphasis was long on individual choice and behavior, the evidence is clear that more emphasis needs to be placed on multiple sectors of influence to include policy and environmental change approaches. This figure from the 2010 Dietary Guidelines for Americans illustrates the social ecological framework that is utilized in much of our work.



## **SECTORS OF INFLUENCE & STRATEGIES**

### **Early Care and Education**

This sector includes Head Start, PreK, child care centers and child care homes.

Strategies include

- Develop, implement and evaluate wellness policies consistent with best practice standards for nutrition, physical activity, and screen time.
- Participate in the federal Child and Adult Care Food Program
- Incorporate nutrition and physical activity into all levels of programming, and all teaching, administrative and foodservice staff
- Establish wellness councils or expand existing wellness council scope to include obesity prevention initiatives
- Engage families in all wellness initiatives and include them in policy development
- Educate families on developmentally appropriate healthy eating and physical activity
- Provide regular opportunities for physical activity throughout the day
- Encourage movement and limit screen time at home

### **Schools**

This sector includes elementary, middle, junior high and high schools. Strategies include:

- Establishing strong nutrition policies, including limiting competitive foods in schools.
- Expand programs that bring local fruits and vegetables to schools, including getting salad bars into schools.
- Limiting availability and accessibility to sugar-sweetened beverages at schools and in public venues
- Support quality daily physical education in schools

### **Community wide**

- Menu labeling initiatives in fast food and full service restaurants

- Improving retail access to fruits and vegetables, including Incentivizing grocery stores and farmers' markets to establish their businesses in low-income areas or to sell healthier foods.
- Promote breastfeeding initiation, duration and exclusivity, including supporting breastfeeding in the workplace
- Transportation policies that support physical activity such as walking and bicycling including active transport to school
- Create and maintain safe neighborhoods for physical activity and improve access to parks and playgrounds.

### Resources of Interest

For more information on UNM PRC projects, call us at 505-272-4462 or visit our website: [http://hsc.unm.edu/som/prc/\\_pages/projects/current\\_projects.html](http://hsc.unm.edu/som/prc/_pages/projects/current_projects.html)

For additional information on best practices for childhood obesity prevention, nutrition and physical activity:

- **Centers for Disease Control and Prevention:** <http://www.cdc.gov/obesity/>
- **State of Obesity:** <http://stateofobesity.org> A Project of the Trust for America's Health and the Robert Wood Johnson Foundation
- **Institute of Medicine:** <http://www.iom.edu/About-IOM/Leadership-Staff/Boards/Food-and-Nutrition-Board/ObesityReports.aspx>
- **Nemours' Childhood Obesity Prevention Strategies for Rural Communities**  
[https://www.nemours.org/content/dam/hkhf/filebox/resources/supportingyourcause/Childhood\\_Obesity\\_Prevention\\_Toolkit\\_for\\_Rural\\_Communities.pdf](https://www.nemours.org/content/dam/hkhf/filebox/resources/supportingyourcause/Childhood_Obesity_Prevention_Toolkit_for_Rural_Communities.pdf)
- **2010 Dietary Guidelines for Americans.**  
[http://www.cnpp.usda.gov/sites/default/files/dietary\\_guidelines\\_for\\_americans/PolicyDoc.pdf](http://www.cnpp.usda.gov/sites/default/files/dietary_guidelines_for_americans/PolicyDoc.pdf)

## **CURRENT UNM PRC PROJECTS RELATED TO CHILDHOOD OBESITY PREVENTION**

### **CHILE Plus: Child Health Initiative for Lifelong Eating and Exercise (CHILE) Plus**

**Principal investigator:** Patricia C. Keane, MS, RD

**Purpose:** CHILE Plus is a nutrition and physical activity education program for pre-school age children and their families enrolled in Head Start, and is built upon the social ecological framework. CHILE Plus originated from the CHILE study, a randomized control trial conducted by the UNM PRC from 2006-2011. CHILE Plus began in 2011, and is currently serving approximately 1,800 families in rural New Mexico. Components include classroom instruction, parent education, teacher training, changes in foodservice, nutrition and physical activity policy changes at the Head Start, a community grocery store initiative, and a partnership with local health care providers to reinforce CHILE Plus messages around nutrition and physical activity.

**Funder:** New Mexico Human Services Department; a USDA SNAP-Ed project

**Ages:** Children ages 3 – 5 years old and their families

**Locations:** Since 2011, CHILE Plus has been implemented at Head Start programs in the following communities: Pueblo of Laguna, Pueblo of Santo Domingo, Las Vegas, Española, Hernandez, Silver City (4 centers), Socorro, Mora, Raton, Springer and Cimarron. In 2014, CHILE Plus implementation expanded into Head Start programs in the following communities: Pueblo of San Ildefonso, Haak'u Learning Center at the Pueblo of Acoma, Pueblo of Nambe, Artesia, Carlsbad, Dexter, Hagerman, and Roswell (3 centers).

**Outcomes:** Expected outcomes of CHILE Plus include that children and their families will eat more fruits and vegetables, choose whole grains, low-fat dairy products and drink more water, while eating fewer high-fat foods and drinking fewer sugar-sweetened beverages. Children and families will also spend at least 30 minutes every day engaged in moderate-to-vigorous physical activity and spend no more than two hours per day being sedentary.

## **SNAP Ed New Mexico Social Marketing**

**Principal investigator:** Glenda Canaca, MD

**Purpose:** The purpose of this project is to establish healthy eating habits using the social marketing framework. The SNAP-Ed New Mexico Social Marketing Project supports the overall goal of the SNAP-Ed program to improve the likelihood that persons eligible for SNAP will make healthy food choices within a limited budget and choose physically active lifestyles consistent with current Dietary Guidelines for Americans and the USDA food guidance. The goal is to develop, implement and evaluate social marketing campaigns on fruits and vegetables, low fat dairy and whole grains.

**Funder:** New Mexico Human Services Department; a USDA SNAP-Ed project

**Ages:** Children ages 8 – 10 years old, families of preschool age children, and families of elementary school age children.

**Locations:** The formative research was conducted in Las Cruces, Hatch, Española and Albuquerque. The first pilots were conducted in Valencia County. In the next phase we will implement the campaign in Santa Fe, at a very specific area around the Airport Road.

**Outcomes:** As a result of all the work done with the priority population we have developed five videos in English and Spanish about fruits and vegetables, low fat dairy and whole grains and several posters and banners with tested messages. The materials have been well received by the population. This project was chosen as one of the Best Practices in Nutrition Education for Low-Income Audiences, funded by USDA and conducted by Colorado State University.

## **ACTION PAC: Adolescents Committed to Improvement of Nutrition and Physical Activity**

**Principal investigator:** Alberta Kong, MD, MPH

**Purpose:** The goal of the proposed research is to investigate the efficacy of motivational interviewing approaches for overweight and obesity prevention and treatment through the use of school-based health centers

**Funder:** NIH/NHLBI

**Ages:** High school ages (around 14-17 years of age)

**Locations:** High schools in the Southwest

**Preliminary Results (N=207 enrolled):** Demographics: 82% of participants identified as Hispanic. 57% are female. 4.8% were found to be underweight (BMI <5<sup>th</sup> percentile), 58.9% were in the healthy weight range, 36.2% of students were overweight or obese (BMI ≥85<sup>th</sup> percentile), 20% were obese (BMI ≥95<sup>th</sup> percentile) and 4% were found to be severely obese (≥99<sup>th</sup> percentile). Using waist circumference definitions from the National Cholesterol Education Program for metabolic syndrome (Men: ≥102 cm; Women: ≥88 cm), 24.6% of female students and 12.4 percent of male students have a waist circumference that meet criteria. Overall 2.5% had a blood pressure in the pre-hypertensive to hypertensive range (≥90<sup>th</sup> percentile). 19.3% reported playing video or computer games ≥2 hours per day and 30.9% reported watching ≥2 hours of videos or movie on a typical weekday. 75 overweight and obese students had their glucose, hemoglobin A1c, and lipids checked. 38.7% had HDL-C <40 mg/dL (the good cholesterol is low), 26.7% had triglyceride levels ≥130 mg/dL (high), 4% had LDL-C levels ≥130mg/dL (high), 22.7% had fasting plasma glucose ≥100 mg/dL (prediabetic), and 10.5% had hemoglobin A1c levels in the prediabetic range (≥5.7%-6.4%).

**Significance:** Preliminary findings from these 9<sup>th</sup> and 10<sup>th</sup> grade students are concerning. The high prevalence of students with a BMI ≥85<sup>th</sup> percentile (overweight and obese) and 20% obesity supports the need for prevention efforts to decrease the risk for excess weight gain and for intervening with lifestyle modification. Dyslipidemia is also highly prevalent among these overweight and obese students. While 22.7% of these overweight/obese students already have impaired fasting glucose with 10.5% showing hemoglobin A1c levels in the prediabetic range, none were found to be diabetic. This is encouraging as type 2 diabetes progresses more rapidly in children and adolescents than in adults and is harder to treat (≥50% treatment failure rate). These findings support the urgent need to intervene with this age group to delay and prevent the onset of type 2 diabetes.

## **SNAP Ed Evaluation**

**Principal investigator:** Theresa Cruz, PhD

**Purpose:** The purpose of this project is to assess the effectiveness of the statewide Supplemental Nutrition Assistance Program-Education (SNAP-Ed) programs in getting participants and their families to eat more fruits and vegetables.

**Funder:** New Mexico Human Services Department; a USDA SNAP-Ed project

**Ages:** To date, the ages are pre-school through elementary school.

**Locations:** The evaluation materials have been pilot-tested in Santa Fe, Albuquerque, Las Cruces, and with some Head Start Centers.

**Outcomes:** While pre- post- results will not be available until next year, we did get comments on the SNAP-Ed programs in response to the question: “What is your family doing differently because of the program?” including:

- My child is more willing to try new foods
- We are eating more fruits and veggies
- We are trying to cook more healthy
- I like it a lot because I can cook more healthy for less money
- We enjoy preparing and eating healthy snacks

## **VIVA and VIVA II—Step Into Cuba**

**Principal investigator:** Sally M. Davis, PhD

**Purpose:** The purpose of this 10-year project is to study the adaptation and implementation of evidence-based recommendations to increase physical activity in Cuba, NM (VIVA), and dissemination of successful strategies throughout rural New Mexico and United States communities (VIVA II). Using local assets such as abundant scenic public lands and strong community social support and volunteerism, Cuba area residents are creating new places to walk and hike, and promoting and facilitating their use. The University of New Mexico Prevention Research Center is studying the community’s strategies and will disseminate successful strategies while studying the dissemination process. We want to determine the most effective approaches to assist

rural communities in becoming more physically active and thereby improve the health and quality of life of their citizens.

**Funder:** Centers for Disease Prevention and Control (CDC) Prevention Research Center (PRC) Program

**Ages:** Families and individual community members of all ages

**Locations:** Cuba, New Mexico and surrounding areas; US 550 corridor communities, Sandoval County, other areas of rural New Mexico

**Outcomes:** 1. Successful model of working with US Forest Service, US Bureau of Land Management, US National Park Service, New Mexico Department of Transportation, New Mexico Department of Health, local and country government, schools, local non-profits, health care providers, and other partners to create access to, improve and promote places to be physically active including trails, walking paths and sidewalks 2. Increased number of community trails. 3. Increased number of people walking and being physically active 4. Agreements in place for community use of schools, fairgrounds, city park and other places for walking 5. Walking groups established and active. 6. Active website. 7. Special walking events such as full moon community hikes 8. Replication of successful Cuba strategies in other rural communities.

## **RECENTLY COMPLETED UNM PRC PROJECTS RELATED TO CHILDHOOD OBESITY PREVENTION**

### **Healthy Kids, Healthy Cuba**

**Principal investigator:** Patricia C. Keane, MS, RD

**Purpose:** The purpose of this four-year project was to increase access to fresh healthy foods and safe places to walk and play, in Cuba and outlying areas, through policy and environmental change. **Funder:** Robert Wood Johnson Foundation Healthy Kids, Healthy Communities Initiative

**Ages:** Community-wide initiative

**Locations:** Cuba and outlying areas including Ojo Encino, Torreon and Counselor chapters of the Navajo Nation.

**Outcomes:** HKHC was successful in increasing access to fresh, healthy foods through multiple avenues, including the establishment and growth of the Cuba Farmers' Market; support for the previously established Cuba Community Garden; backyard gardening and small agricultural site development in outlying Native communities; and changes to the offerings at the Sandoval County Fairgrounds. HKHC was successful in increasing access to safe places to walk and play in Cuba through the installation of new safer sidewalks. Additional progress toward this goal has been made through the development of a master plan for Park improvements, conduction of a Health Impact Assessment, the inclusion of additional sidewalks and safe walkway from the Village to the school in NMDOT funding priorities, a pedestrian mapping project, and the continued running of afterschool activity buses.

### **Joint Use Agreement/Shared Use Evaluation**

**Principal investigator:** Theresa Cruz, PhD

**Purpose:** The purpose of this project was to pilot test efforts to develop joint use agreements and shared use policies in three different communities in New Mexico. Each site had a coordinator that worked with local school personnel, school district officials, and other community stakeholders to facilitate program objectives. Strategies included enhancing and promoting the physical space, making sites more welcoming, and gaining support from students, families and community members.

**Funder:** DOH

**Ages:** The project was aimed at elementary schools/school aged children.

**Locations:** The three sites were Albuquerque, Las Cruces and Rio Rancho.

**Outcomes:** The pilot projects were successful at making policy and environmental changes supporting access to schoolyards outside school hours. These achievements included the following:

- A new resolution passed the Bernalillo County Commission promoting development of a relationship with Albuquerque Public Schools for the purpose of establishing a joint use agreement allowing for use of school grounds and facilities during non-school hours by the community.

- Children were excited to be involved in the process of promoting physical activity on the school grounds.
- Shared use progressed from being tolerated to being encouraged at pilot schools.
- All sites were able to develop new welcoming signage and make environmental improvements that promoted physical activity.
- The number of people observed using school grounds outside school hours increased by 9.3% over the school year.

### **Healthy Kids Las Cruces (HKLC)**

**Principal investigator:** Theresa Cruz, PhD

**Purpose:** To examine the accomplishments of HKLC in its efforts to prevent childhood obesity. The HKLC experience provides important insights for coalition work in public health and suggests a model for a collaborative, multi-sectoral childhood obesity prevention strategy.

**Funder:** DOH

**Ages:** The project was aimed mainly at elementary school aged children, although the effects of environmental and systems changes could benefit multiple ages.

**Location:** Las Cruces

**Outcomes:** HKLC used a variety of strategies, including the introduction of evidence-informed educational programs, environmental modifications, and policy and systems changes to increase physical activity and improve nutrition for children, families and communities. The collective impact of HKLC is demonstrated through the growth of the initiative, the significant resources leveraged, the numerous community awards received, and the reputation HKLC has achieved as a leader in childhood obesity prevention in the community.