

Considering Social Determinants of Health in Designing Clinical Interventions

**2011 Medical Providers' Best Practices
&
GPRA Measures Conference
May 25, 2011**

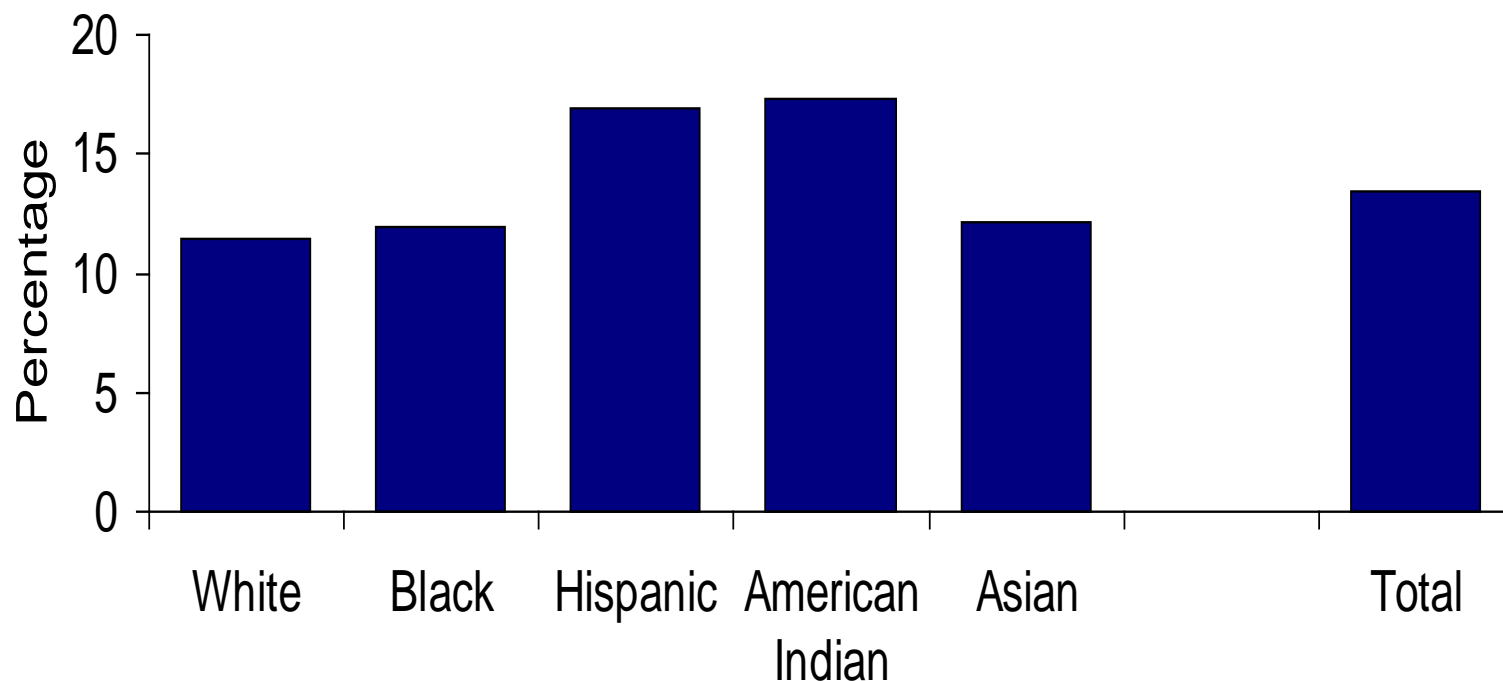
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UC Davis Medical Center, Sacramento, CA

Objectives

1. Adapt clinical interventions to work in specific community environments.
2. Recognize community characteristics that impact successful implementation of clinical interventions.
3. Use the known 'best evidence' on childhood overweight to create a program in your community.

Prevalence of overweight*

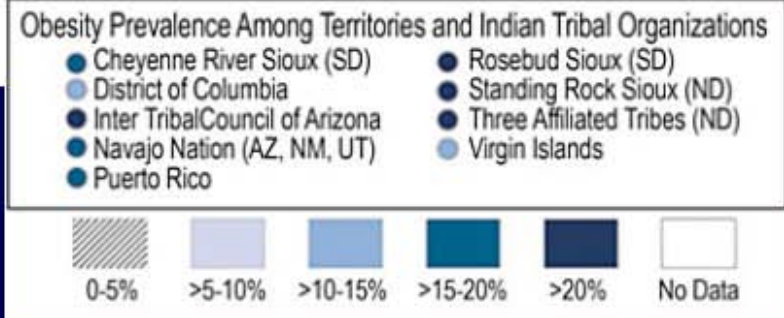
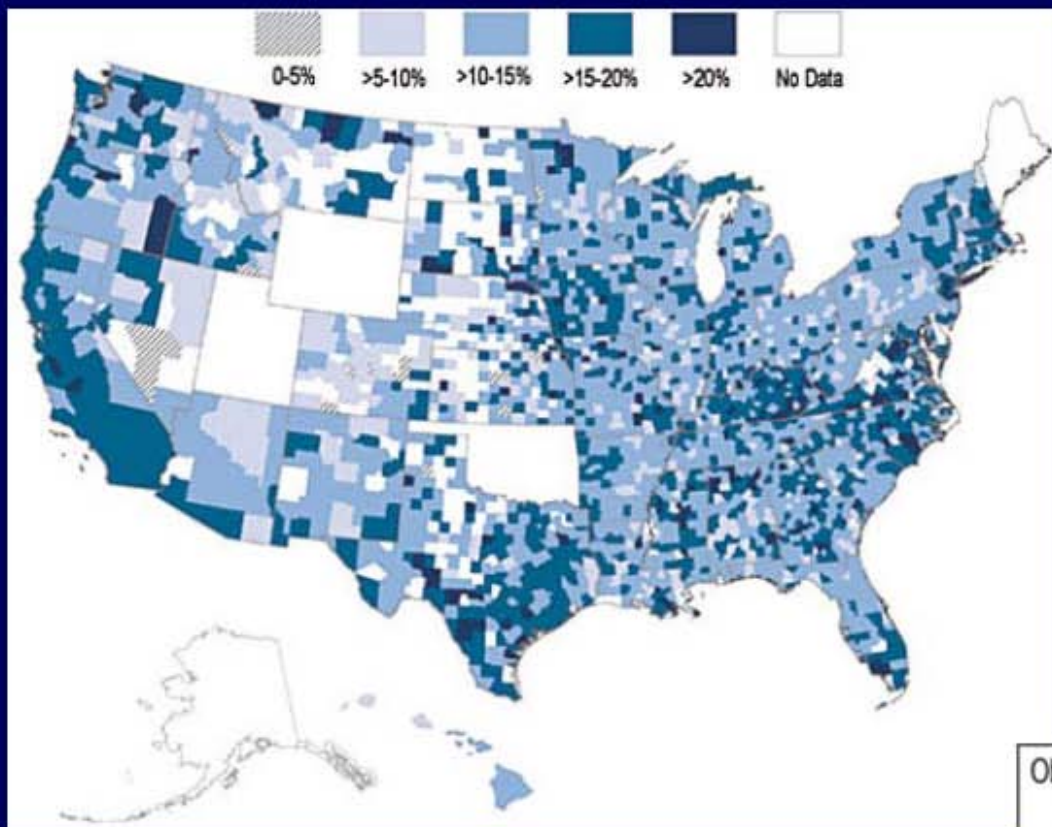
Among Children Aged <5 years, by Race and Ethnicity



2002 National PedNSS Table 8D

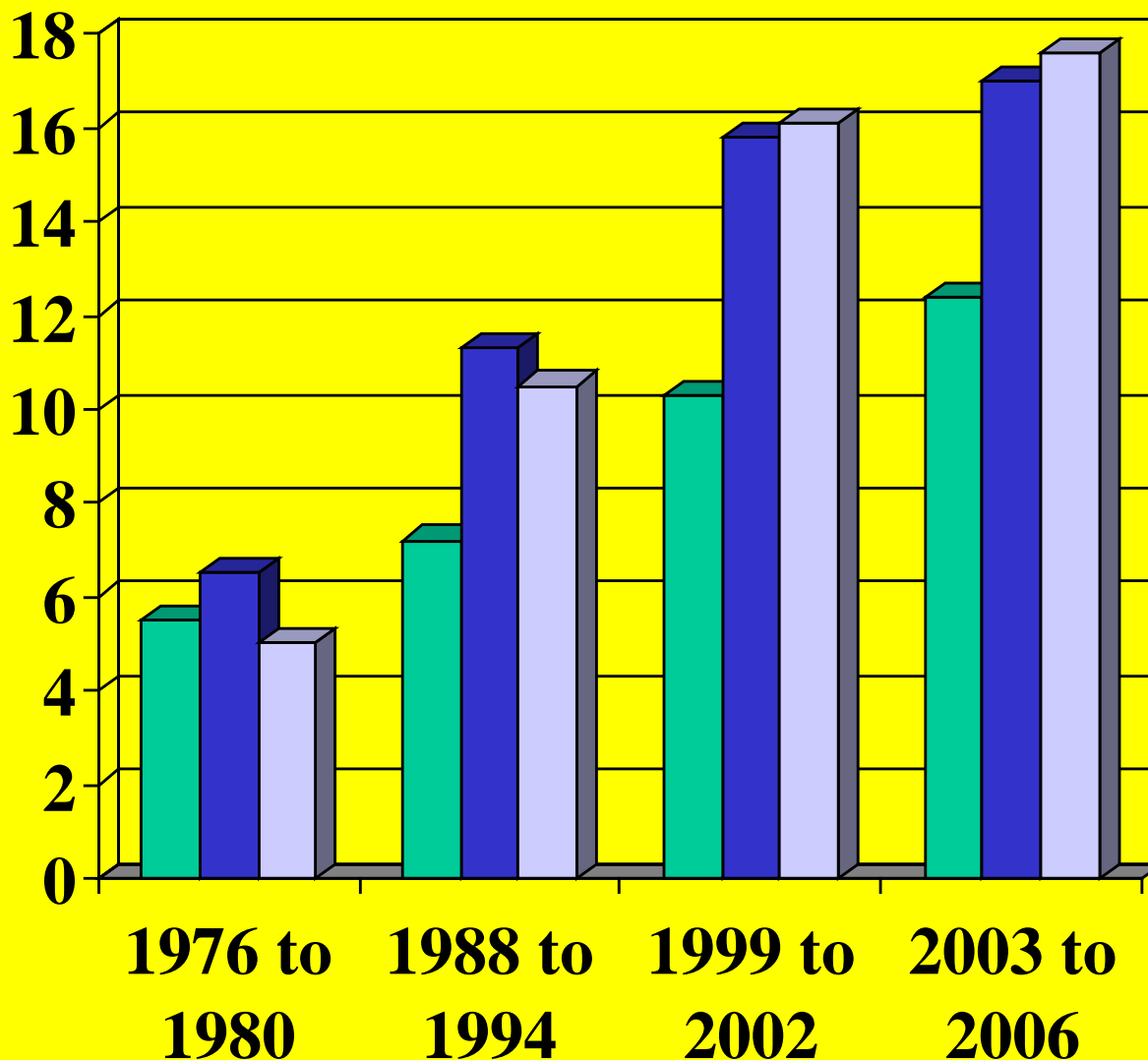
* \geq 95th percentile weight-for-length or BMI-for-age, CDC Growth Charts, 2000.
5% of children are expected to fall above the 95th percentile.

Geographic Patterns Among Low-Income, Preschool-Aged Children 2006-2008



<http://www.cdc.gov/obesity/childhood/lowincome.html>
accessed 3-30-10

Obesity Through The Ages



Ogden CL, Carroll MD, Flegal KM. High Body Mass Index for Age Among US Children and Adolescents, 2003–2006. *JAMA* 2008;299:2401–2405.

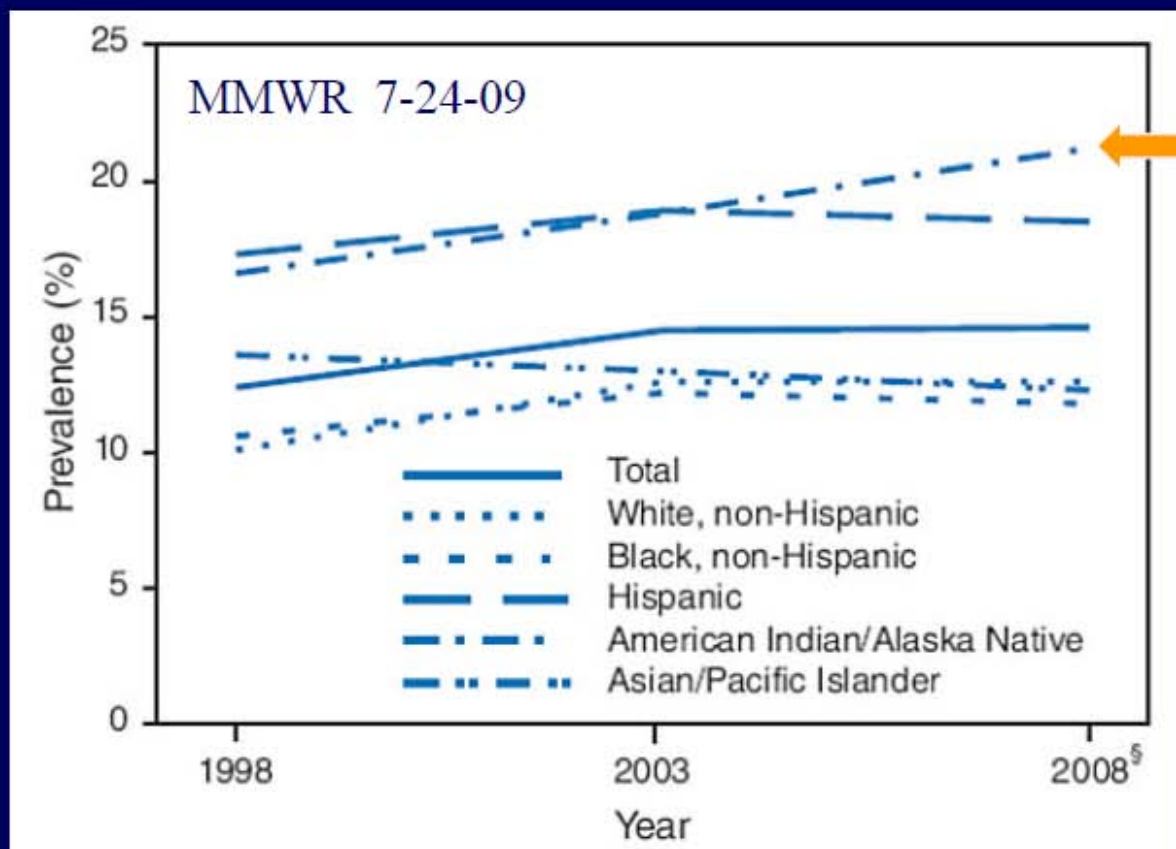
2 to 5
6 to 11
12 to 19

<http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/prevalence.htm>

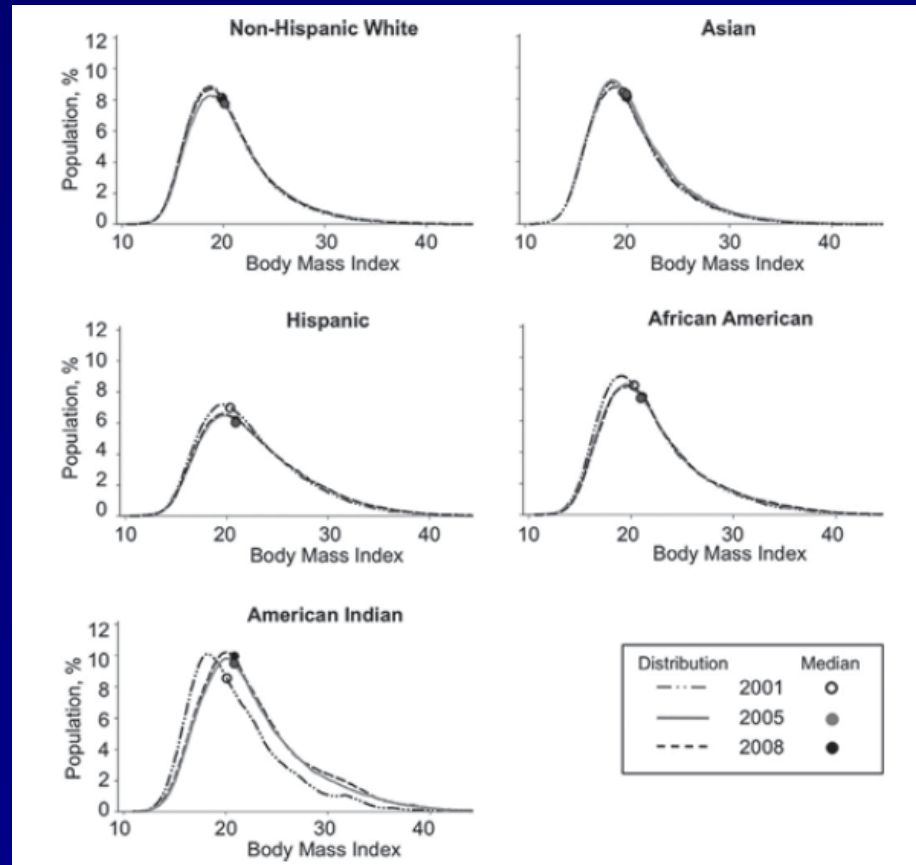
Childhood and Adolescent Obesity

- The trend has leveled off
 - The prevalence of high BMI for age among children and adolescents showed no significant changes between 2003-2004 and 2005-2006 and no significant trends between 1999 and 2006.
 - Ogden CL, Carroll MD, Flegal KM. High Body Mass Index for Age Among US Children and Adolescents, 2003–2006. *JAMA* 2008;299:2401–2405
- The trend has not leveled off
 - Social inequalities in obesity and overweight prevalence increased because of more rapid increases in prevalence among children in lower socioeconomic groups.
 - Singh GK, Siahpush M, Kogan MD. Rising social inequalities in US childhood obesity, 2003-2007. *Ann Epidemiol.* 2010 Jan;20(1):40-52. Erratum in: *Ann Epidemiol.* 2010 Mar;20(3):250. PubMed PMID: 20006275.

Change in obesity* prevalence during 1998--2003 and 2003--2008
among children aged 2--4 years, by race/ethnicity --- Pediatric
Nutrition Surveillance System, United States, 1998-2008



Disparities in Peaks, Plateaus, and Declines in Prevalence of High BMI Among Adolescents



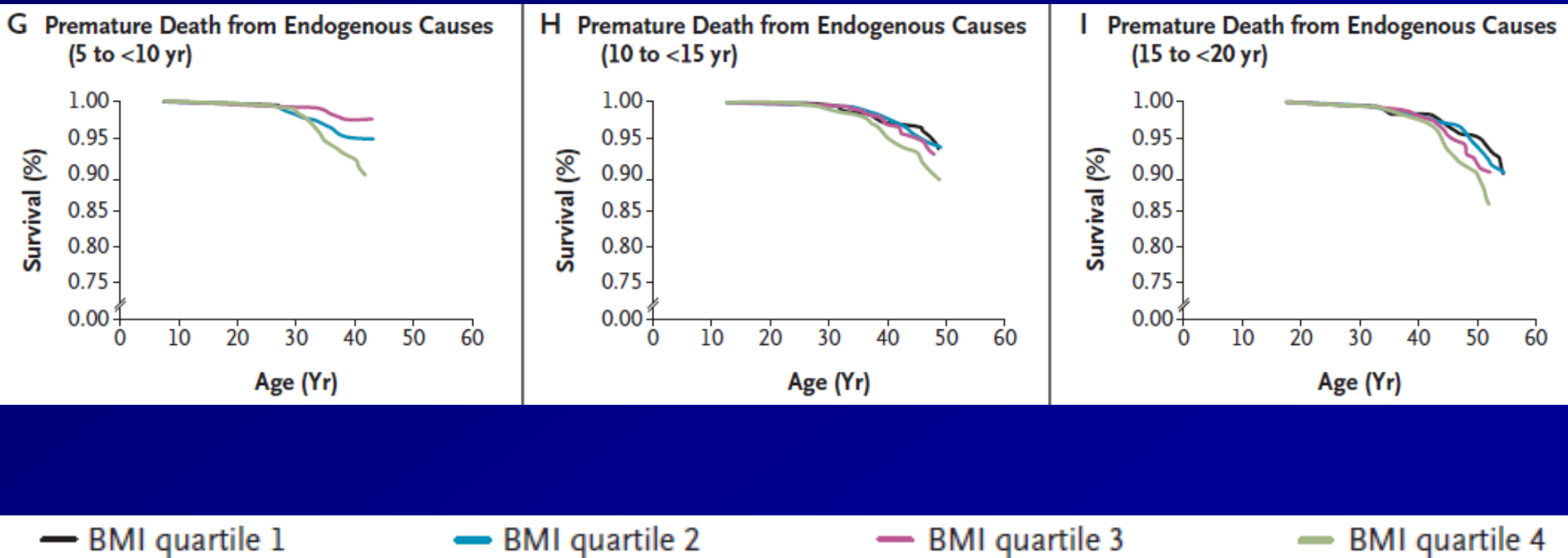
Madsen KA, Weedn AE, Crawford PB. Disparities in Peaks, Plateaus, and Declines in Prevalence of High BMI Among Adolescents. *Pediatrics*. 2010 Aug 16.

A Potential Decline in Life Expectancy in the United States in the 21st Century

Olshansky Et Al

NEJM 352:1138-1145 3/17/05

Childhood Obesity, Other Cardiovascular Risk Factors, And Premature Death.



It Wasn't Always This Way

Clark Wissler. Measurements of Dakota Indian Children. Annals of the New York Academy of Sciences 2/7/11, 20;7:355-64.

Publication based on data collected by James Walker, M.D.
1896 to 1914
Pine Ridge, South Dakota

Childhood Obesity: The Etiology

- CNS Set Point?
- Genetics?
- Endocrine Disorders?
- Diet?
- Activity?
- Environment?
- Iatrogenic Medications?
- Everything in our 21st Century Life?
 - The Environment and systems are the target of the largest philanthropies

If Environmental Changes
Got Us Here,
Can Environmental Changes
Get Us *Out* of Here?

The Built Environment

- Obesity is associated with socioeconomic disparities that exist within the “built environment” as defined by the DHHS as “our homes, schools, workplaces, parks/recreation areas, business areas and roads, “indoor and outdoor physical environments, as well as social environments (e.g., civic participation, community capacity and investment) and subsequently our health and quality of life”.

Education Alone?

- Education has not by itself been successful in preventing or treating obesity and diabetes in the face of an adverse environment but a multidisciplinary approach incorporating education and life style modification with a corresponding improvement in the community setting is a recommended approach.

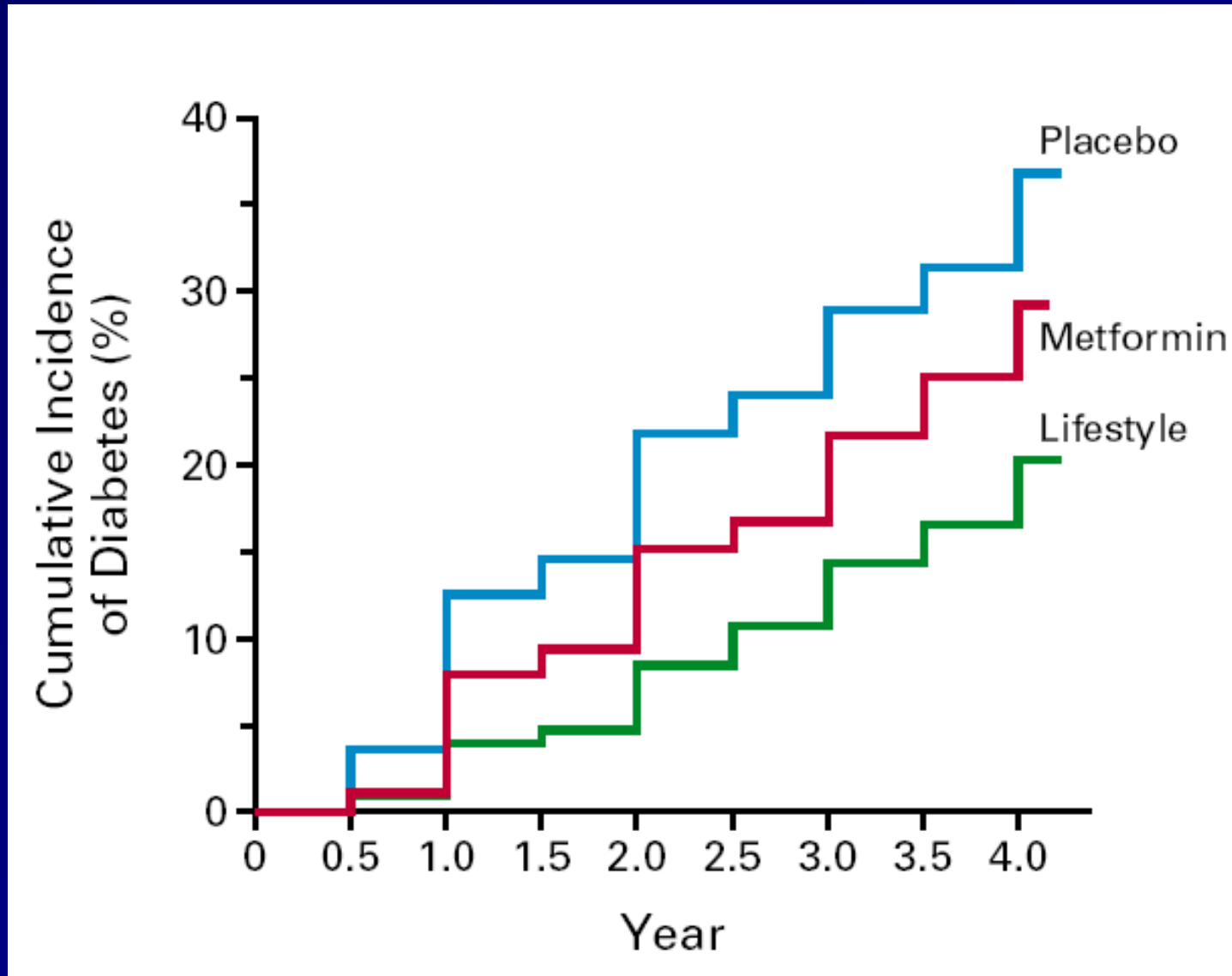
A Modest Proposal

- We propose significant training of community members in the rationale and skills necessary to carry out action research which aims to study a system and concurrently to collaborate with members of the system in changing it in a desirable direction.
- To ensure that the community can determine that the research is locally relevant and safe, community members will be involved in the decision as to which issues should be studied through the creation of a new tribal institutional review board.

1. Adapt clinical interventions to work in specific community environments.

- Environment is the key to addressing the obesity epidemic
- Resources available at Urban Centers with less available at rural rancherias
- How to connect the two to improve the rural environment?

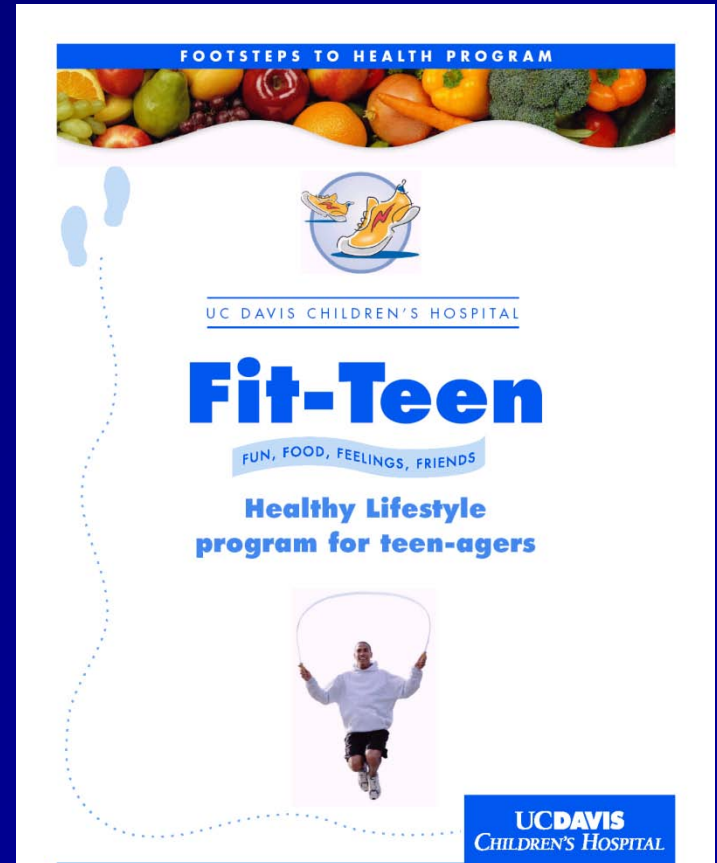
Lifestyle Trumps Medication



Knowler WC, Barrett-Connor E, Fowler SE, Hamman RF, Lachin JM, Walker EA, Nathan DM; Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. N Engl J Med. 2002 Feb 7;346(6):393-403.

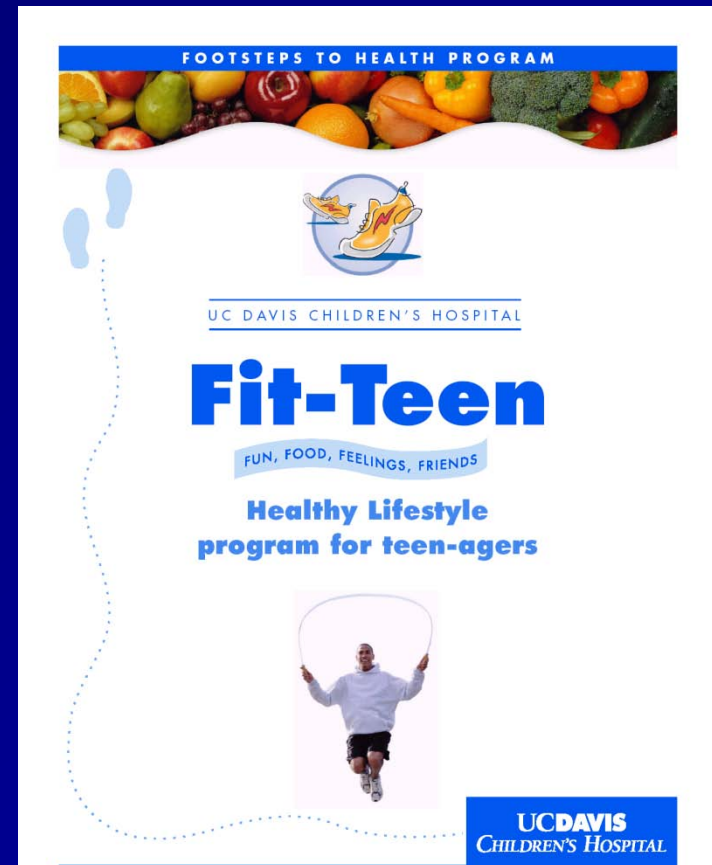
UCDMC FIT-KID/FIT-TEEN

- An average of 12-15 children/teenagers attended each session with their adult family members.
- Initial program as developed at UCDMC required a minimum of
 - Physician
 - Nurse
 - Dietitian
 - Exercise Physiologist
 - 2 Social Workers
 - Students



UCDMC FIT-KID/FIT-TEEN

The ten week program provides weekly sessions of 2 - 2.5 hours each, involving active learning by children and their parents using visually aided interactive presentations, learning through physically active games and activities, behavior modification sessions and sequenced home activities in an order that matched the weekly sessions.



Development of a Telemedicine Based Obesity Prevention Program

- We collaboratively developed a telemedicine-based outreach and behavior modification program for AI children living in rural Northern California tribal communities distant (2-5 hours) from UCDavis.
- Modifications of the UCDMC multidisciplinary “Fit-Kid and Fit-Teen” programs incorporated community traditional value systems, healthy diet and activities and incorporating images specific to each site's culture to facilitate increased community ownership.

Community Acceptance of a Telemedicine Based Obesity Prevention Program

- The program was first presented to local tribal healthcare councils, health center staff and potential families for approval and buy-in.
- The children readily accept the live, interactive video presentations and enjoy appearing on screen themselves.

Sharing Personnel by a Telemedicine Based Obesity Prevention Program

- The tele-conference approach allows different sites to cooperatively share their local talents and resources.
- e.g., a UCDCMC physical fitness specialist provided education via teleconference to a clinic that lacked physical fitness expertise.

Sharing Personnel by a Telemedicine Based Obesity Prevention Program

- However, on site psychosocial help is essential.
- Feelings and histories are uncovered.
- These issues require prompt attention!

Development of a Telemedicine Based Obesity Prevention Program

- As the programs developed, the services provided by UCDCMC were exchanged to those from the tribal programs.
- Tribal sites now work independently.
- New programs developed from this start.

Weekly Sessions

- Week 1
 - Welcome to FIT KID, Fitness Testing, BM, Stars of FIT KID (craft activity)
- Week 2
 - Food Pyramid, Grocery Grab Bag Game, Coping with Boredom, Blood Flow & The Muscles, RED-BLUE BLOOD GAME
- Week 3
 - Serving Sizes, Serving Station Activity- “What is a Portion?”, “The Components of a Workout”, Feeling cards/Crafts Activity, Activities A to Z
 - Parachute Play Activity
- Week 4
 - Food Pyramid BINGO, Food Pyramid Plates, Aerobic Exercise, Feeling Bags (craft activity)
- Week 5
 - Food Labels, Rate the Breakfast Cereals, Anaerobic Exercise, Questions Relay Game Activity, Craft Activity

Weekly Sessions

- Week 6
 - Food Labels, Fast Food Follies, Flexibility & Stretching, Craft Activity
- Week 7
 - Eating Cues, Strength Exercises, Craft Activity
- Week 8
 - Adventures in the Kitchen and Holiday Eating, “Injuries”
- Week 9
 - Delightful Dining Out, Motivation, “How Much Control?”
- Week 10
 - Fitness Testing Final, Review of concepts learned, Recognition, Certificates and Raffle Prizes

Successes

- The IHS awarded the Round Valley Site a three year grant to continue and spread the program.
- Round Valley introduced the FIT-KID curriculum in to the local school.
- California Endowment grant to study FEAST in Round Valley.
- RWJ Grant to study FEAST in Mechoopda and Grindstone.

Case Study: The Food and Environment Assessment Study: FEAST

- Community-IHS clinic-academic partnership

Case Study: The Food and Environment Assessment Study

- Community advisory board engaged in participatory research methods
- THRIVE tool (Tool for Health and Resilience in Vulnerable Environments)
 - evidence-based community assessment tool created by the Prevention Institute
www.preventioninstitute.org
 - community members identify and rate the importance of key social and environmental factors to health

THRIVE Implementation

- THRIVE tool adapted - shortened and made into paper-based rather than internet based
- Implemented in three ways:
 - Quantitative purposeful survey (n=300)
 - Focus groups (4 groups, 8 people per group)
 - Health Center
 - High School
 - Elders
 - Business stakeholders
 - Photovoice
 - 1 focus group also did a photovoice exercise after the focus group

EQUITABLE OPPORTUNITY

Equal distribution of opportunity and resources

- Racial injustice exists
- There are “two worlds”: Native and
non-Native
- Most residents are “barely making it”
- Unemployment was reported at ~ 73%

Findings

“We are trapped with what we have. We eat what’s here, and that isn’t good.”

-focus group participant



Action

- Presentation of findings to community stakeholders
 - Included photovoice pictures
 - Included quotes from focus group
 - Included academic-community-clinic partners

Intervention Outcomes

- Partnership meetings
- Shelf space allocation in local market for fruits and vegetables increased from 3% to 30%
- Special ordering offered
- Design and construction of walk/bike path
- Creation of producer's guild and community-supported agriculture program (CSA)
- Pilot- 25% of commodity foods will include local produce
- Farmers market reintroduced with ability to accept EBT

Intervention Outcomes

- Creation of the Grindstone Residents Engaged in Environment Needs (GREEN) action group focused on improving access to healthy foods, safe streets and play areas for youth.

Successes:

The RV Community Ran With Fit Kid/Teen

- Pot Luck Fit Community
- Teen Mother Nutrition
- Bike Wednesdays
- Swimming Pool Open In Summer Due to Teen Life Guard Training

2. Recognize community characteristics that impact successful implementation of clinical interventions.

- Trust in long term relationship developed
- Community leaders acknowledged
- Employment opportunities are limited
- Distrust in research is prevalent, even when aiming to improve health
- Research projects directed from outside organizations with little local input

2. Recognize community characteristics that impact successful implementation of clinical interventions.

- Trust in long term relationship developed
 - Two way communication
- Community leaders acknowledged
 - Can lead a program locally
- Employment opportunities are limited
 - Employ community in research
- Distrust in research, even when aiming to improve health, is prevalent
 - Involve community in performing research
- Research projects directed from outside organizations
 - Have community determine projects, appropriateness and safety

Northern California Healthy Indian Communities/University of California, Davis Medical Center Research Partnership

- NIH Recovery Act Research Support
- Diana Cassady UCD
- Valarie Bluebird Jernigan UCD/UNM
- Karen Jetter UCD
- Jim Marcin UCD
- Vicki Shively NV
- Diann Simmons RV
- Eddie Whipple RV
- Dennis Styne UCD

Focus on Community Characteristics to Build a Program

1. Choose community research associates (CRAs) in the Round Valley and North Valley tribal groups, community leaders who will ensure relevance for health and community support of the projects chosen.

Focus on Community Characteristics to Build a Program

2. Train community members in the use of Community Based Participatory Research (CBPR) to determine and rank their research priorities related to improved health. CBPR principles and methodologies can promote the development of culturally-centered health interventions and support tribal/community research infrastructure allowing University to engage with communities.

CBPR

- “Systematic inquiry, with the participation of those affected by an issue for the purpose of education and action or effecting social change”
- “A collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings.

CBPR

Both communities outlined a research plan. Video conferences and in person meetings led to lively discussions between the clinic staff, community members and UCDMC researchers to assess interest in evaluating the impact of local K-8 school Fit-Teen program as well as a diabetes education and management program “Working on Wellness (WOW)”. An outline for an IRB application to be submitted to the UC Davis IRB for approval of these activities was started.

Focus on Community Characteristics to Build a Program

3. Train community members in the development of surveys and other data collection techniques. This collaboration with the communities aims to change the built environment in a desirable direction. While data collection will be done by community members as part of their training, analysis will be directed by trained UCD staff.

Data Collection Training

- Map the food environment, including the location and distance to the towns that are the primary food shopping destinations for the two communities.
- Survey food stores on the availability and prices and standard and healthier food items (ie., white bread vs whole wheat bread, etc.)
- Data input

Development of Surveys: Economic

- Development of the two-week menus of foods commonly consumed by Native Americans in Northern California provides the shopping list for the food surveys. In a more rural site, development proceeds on a database on sources of fresh fruits and vegetables for on-site delivery. Communities considered different tools to collect baseline consumption data and decided to use the Block fruit, vegetables and fiber survey and to look for funding to develop a broader food frequency survey based on Native American diets.

Focus on Community Characteristics to Build a Program

4. Travel and fuel expenditure between the distant AI sites and UCDCMC will be reduced by enhancement and extension of the existing telecommunications network established between UCDCMC and the communities to enable community based clinical endeavors to benefit the community.

Video Conferencing Enhancement

- High quality connection difficult in one rural site
- Working to improve present telephone audio connection and satellite download of video/slides
- Commercial concerns interact with community needs

Focus on Community Characteristics to Build a Program

5. Develop a Nor Cal Tribal Institutional Review Board, to review and approve research projects which are identified by and include Northern California Indian communities. The UCDMC IRB administration provides education for community volunteers. Telecommunications will play a fundamental role in the education of the members and the performance of reviews.

Nor Cal Tribal Institutional Review Board

- Establishment of an independent IRB is a complex issue
 - High administrative cost
 - Issues of sovereignty
 - Cultural norms
- Could view/join UCDCMC IRB or another IRB
- Could serve as visiting consultants to an established IRB

Nor Cal Tribal Institutional Review Board

- No modules available specifically for AI community members
 - Difficult for some individuals to take online testing
 - One community is now CITI certified in performing research and in serving on an IRB

3. Use the known 'best evidence' on childhood overweight to create a program in your community.

- Lessons learned in the partnership can be disseminated throughout American Indian communities in Northern California and further a field, leading to positive effects on public health.

3. Use the known 'best evidence' on childhood overweight to create a program in your community.

- Can use a packaged program but adapt it to your community culture
- Incorporate elders and local nutrition lore and history into the program
- If outsiders are involved, make sure the effort is bidirectional with the support of the community
- Use best practices guidelines such as found in:

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Expert Committee Recommendations Regarding the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity: Summary Report

Sarah E. Barlow and the Expert Committee

Pediatrics 2007;120:S164-S192

DOI: 10.1542/peds.2007-2329C

The online version of this article, along with updated information and services, is located on the World Wide Web at:

http://www.pediatrics.org/cgi/content/full/120/Supplement_4/S164

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Indian Health Service

The Federal Health Program for American Indians and Alaska Natives

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HEALTHY WEIGHT FOR LIFE

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A VISION FOR HEALTHY WEIGHT ACROSS THE LIFESPAN OF AMERICAN INDIANS AND ALASKA NATIVES

Promoting a healthy weight across the lifespan is critical to improving the health status and well-being of American Indians and Alaska Natives (AI/AN). Across the country, hundreds of thousands of AI/AN participate in innovative nutrition, physical activity, and weight management programs. While progress has been made, overweight and obesity continue to drive up high rates of chronic disease. Taking action now has the potential to achieve the Indian Health Service's mission of raising the physical, mental, social, and spiritual health of AI/AN to the highest level.



KNOW IF YOU'RE OVERWEIGHT? USE OUR CALCULATOR

The [What Is a Healthy Weight](#) page now has an online calculator for body mass index, an important weight-to-height measurement that helps to tell you if you're overweight.

Now is the time to put our minds and resources together to address the problem of overweight and obesity. We all have a role to play. It's up to you to decide what actions you'll take and how you'll chart your journey.



*Dr. Yvette Roubideaux
IHS Director*

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For Communities, Individuals, and Families

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Childhood Obesity 2011

Summary

- How Do We Define It? New Definitions
- How Bad Is It? Epidemic
- Who Gets It? Ethnic Minorities Worst
- Why Does Anyone Get It? Modern Life
- Why Does It Matter? Morbidity and Mortality
- How Do We Evaluate It? AMA Guidelines
- What Do We Do About It? Lifestyle Change First

Childhood Obesity

The Canary in the Mine Shaft

The Canary is Suffocating

The Atmosphere is Toxic

Do We Have the Resolve to Institute Common Sense
Approaches

While

We Increase Research and To Develop Effective Programs

or

Will We Look Back to the 2010s as the Good Old Days in
Childhood Obesity

When the Prevalence was only 18%?