Reducing Obesity & Chronic Disease Risk in Youth: Current Research & Future Directions

Pat Crawford, DrPH, RD
Nutrition Policy Institute
Nutrition Specialist
Adjunct Professor
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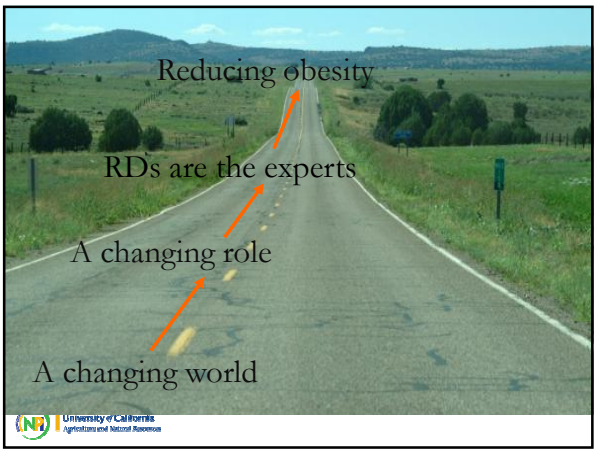
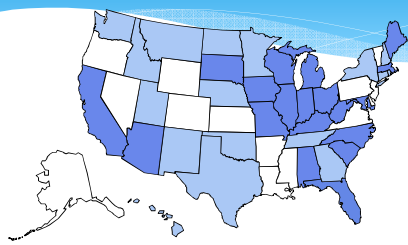


Obesity Trends* Among U.S. Adults
BRFSS, 1988

(*BMI ≥30, or ~ 30 lbs overweight for 5' 4" person)



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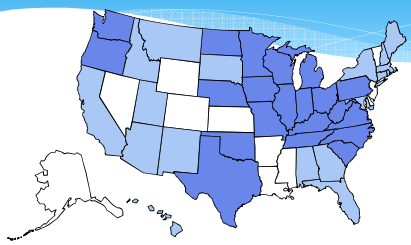

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Obesity Trends Among U.S. Adults
BRFSS, 1990

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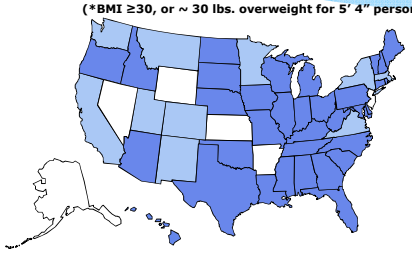

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Obesity Trends* Among U.S. Adults
BRFSS, 1991

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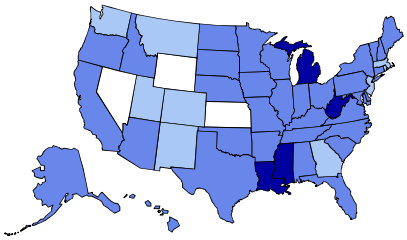

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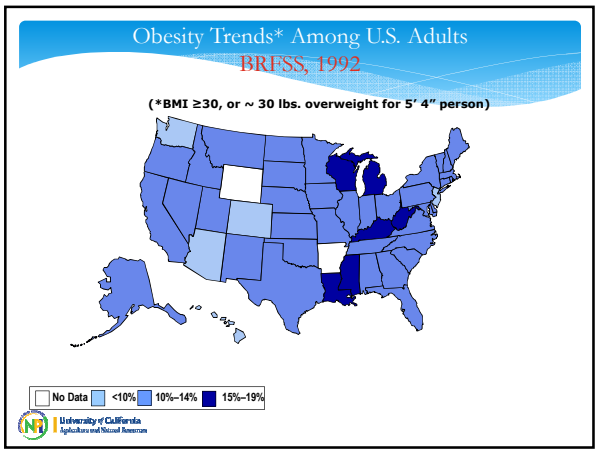
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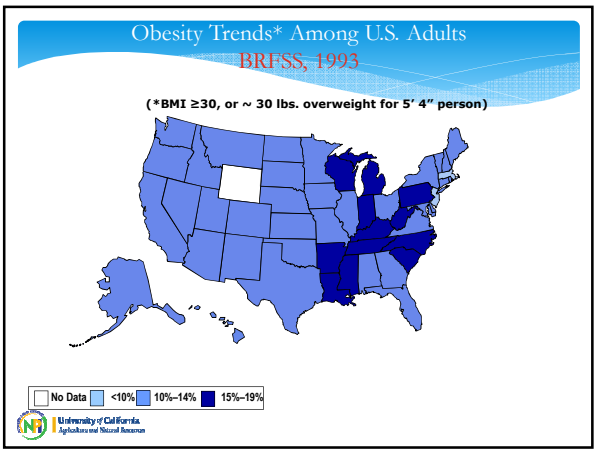
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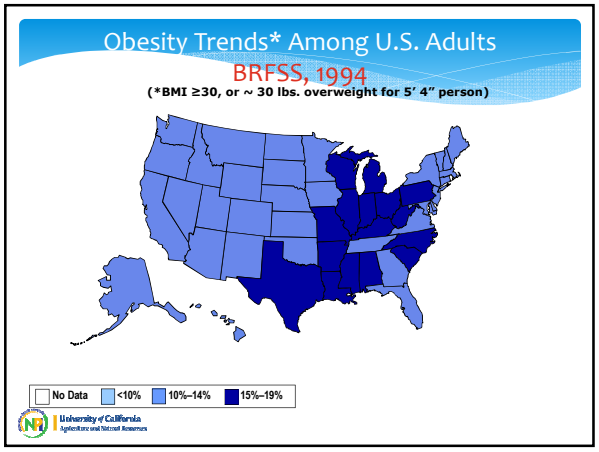
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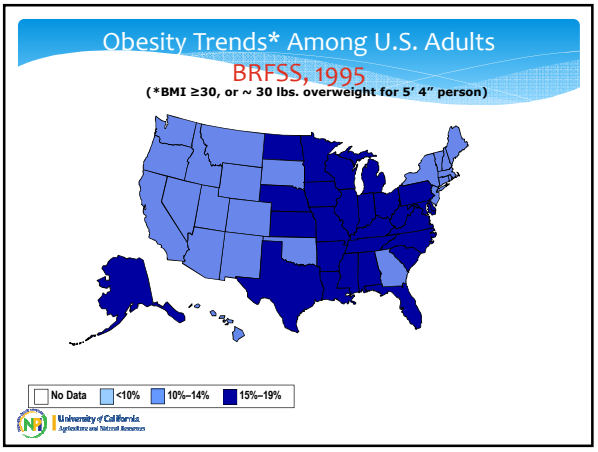
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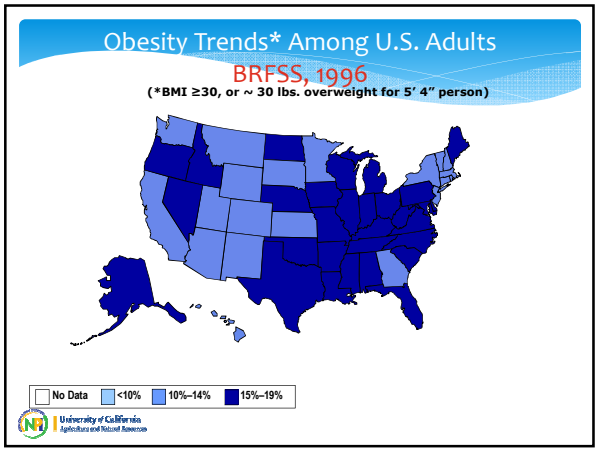
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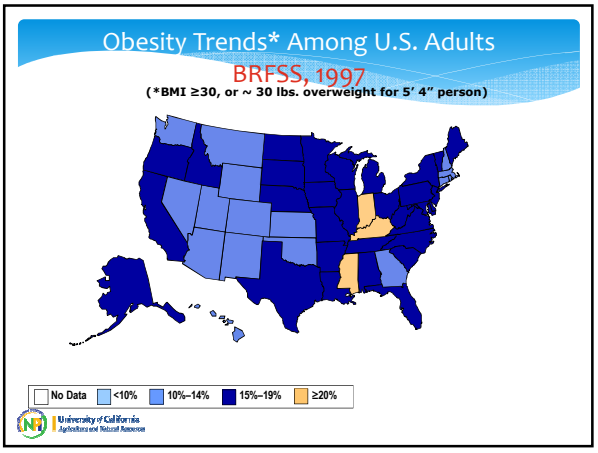
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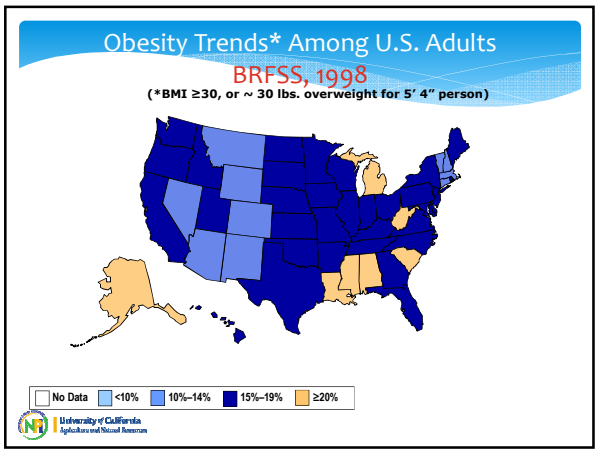
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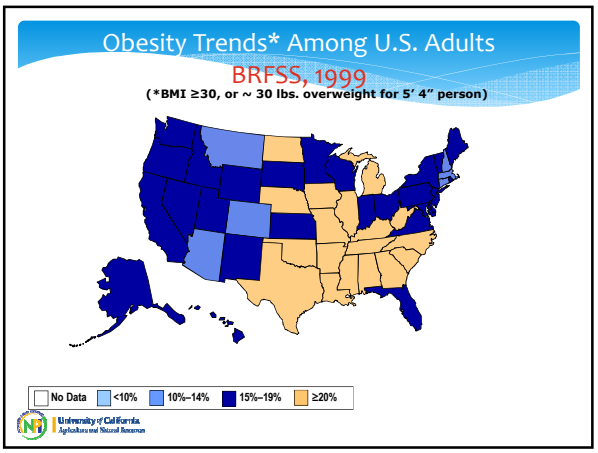
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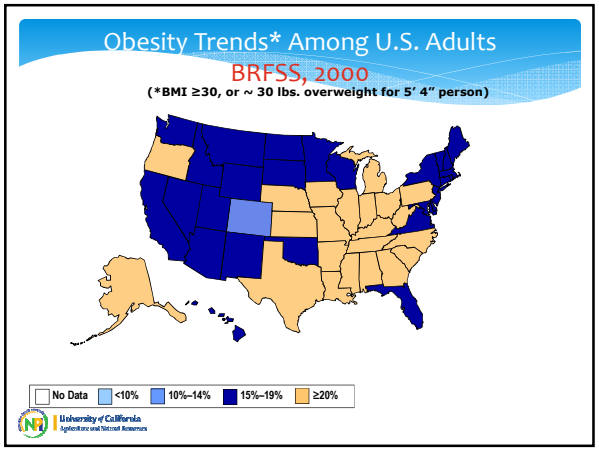
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BRFSS, 2000
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University of California
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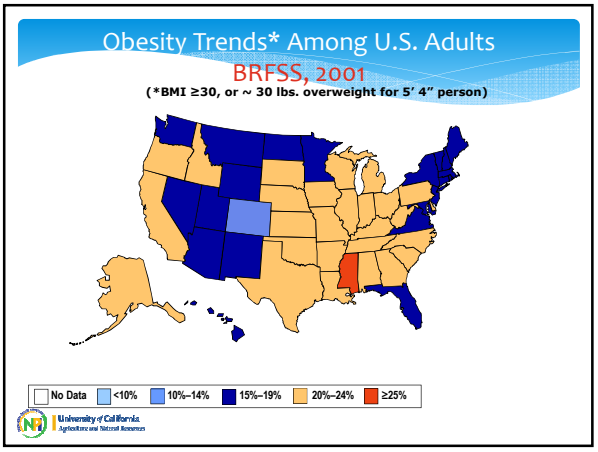
Obesity Trends* Among U.S. Adults
BRFSS, 2001
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)
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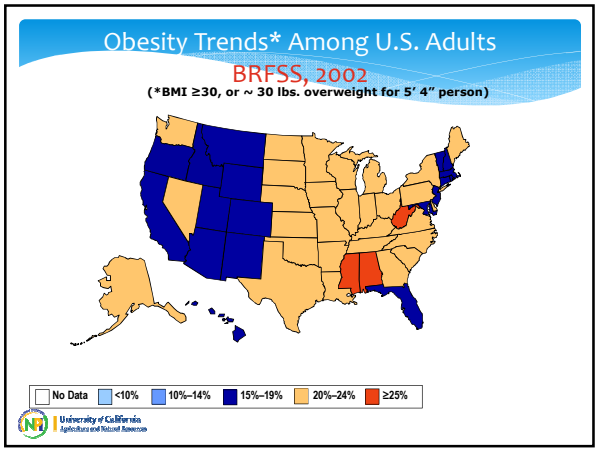
Obesity Trends* Among U.S. Adults
BRFSS, 2002
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)
No Data
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≥25%
University of California
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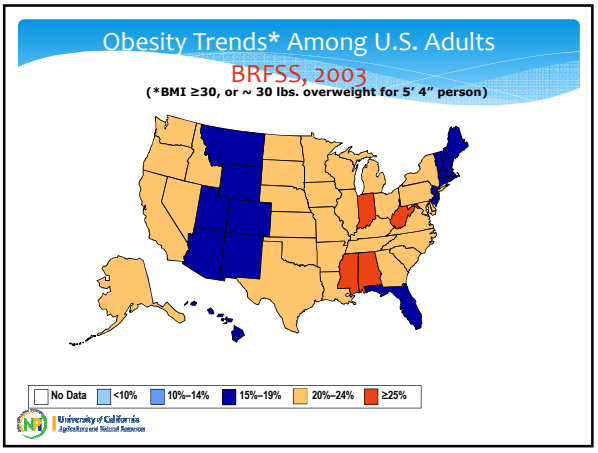
Obesity Trends* Among U.S. Adults
BRFSS, 2003
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)
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University of California
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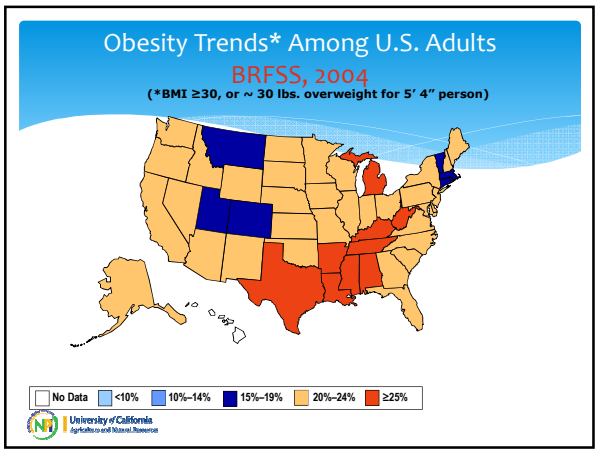
Obesity Trends* Among U.S. Adults
BRFSS, 2004
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)
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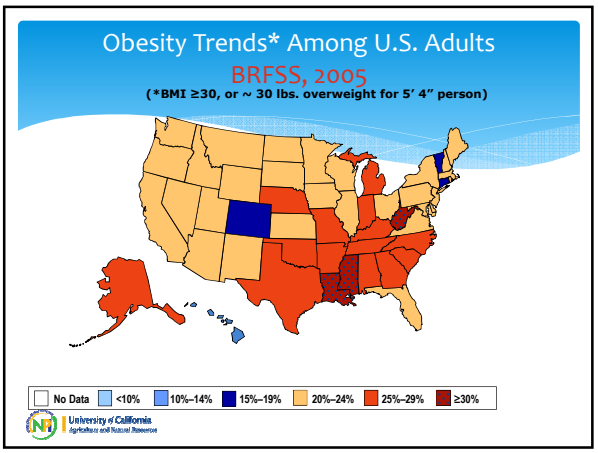
University of California


Obesity Trends* Among U.S. Adults
BRFSS, 2005
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25%–29%
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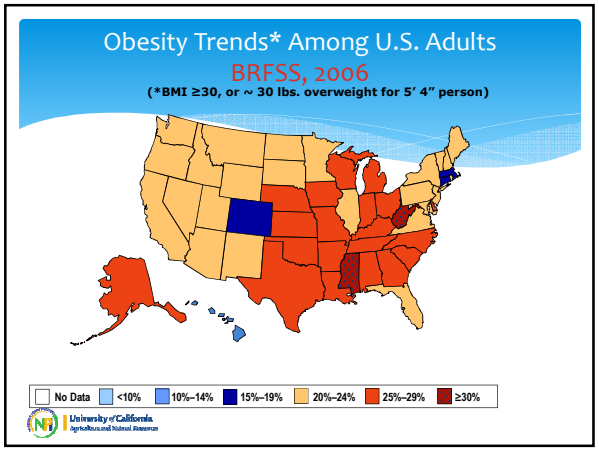
University of California


Obesity Trends* Among U.S. Adults
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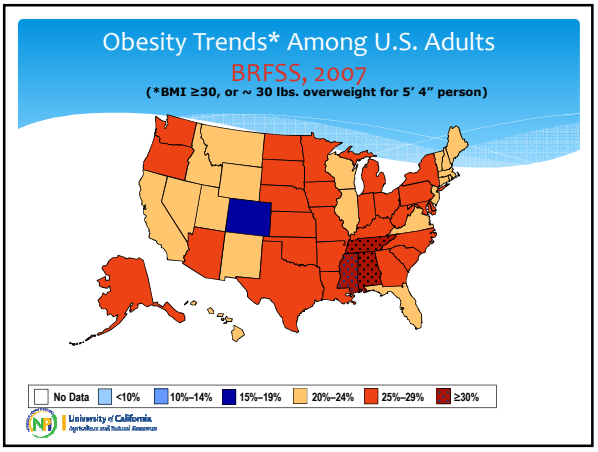
University of California


Obesity Trends* Among U.S. Adults
BRFSS, 2007
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)
No Data
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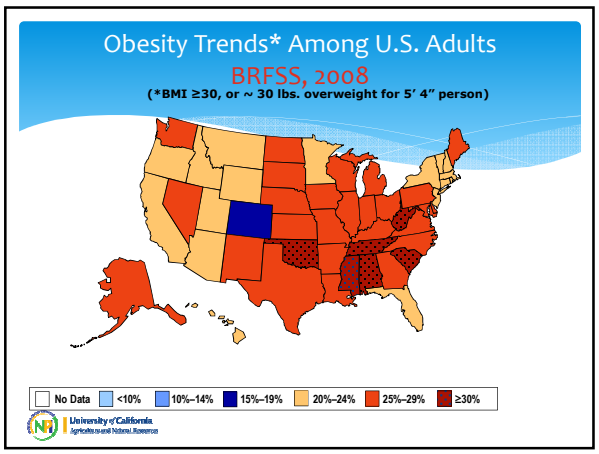
25%–29%
≥30%
University of California


Obesity Trends* Among U.S. Adults
BRFSS, 2008
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)
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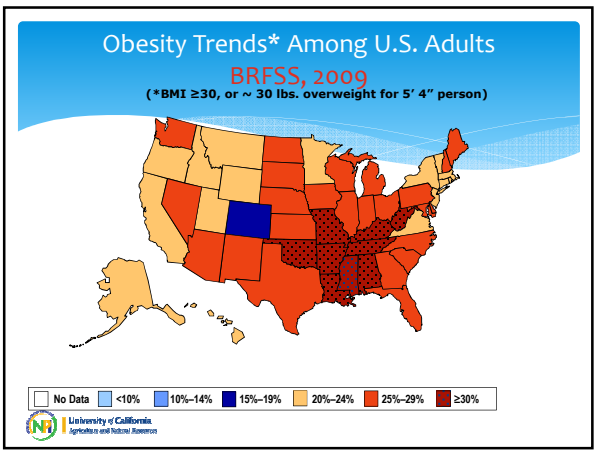
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University of California

Obesity Trends* Among U.S. Adults
BRFSS, 2010
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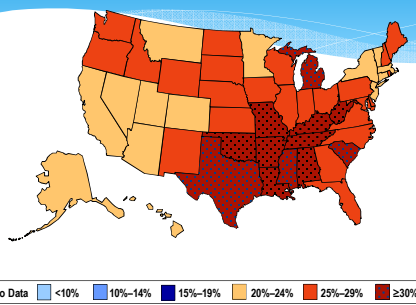

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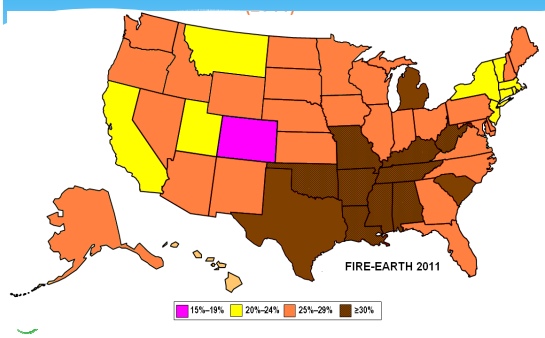
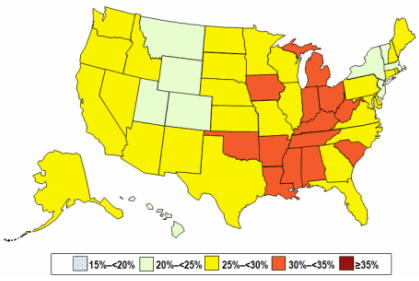
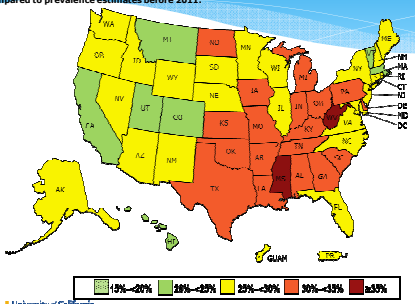
Obesity Trends* Among U.S. Adults
BRFSS, 2011
(*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)



Prevalence* of Self-Reported Obesity Among U.S. Adults
BRFSS, 2012
*Prevalence reflects BRFSS methodological changes in 2011, and these estimates should not be compared to those before 2011.



Prevalence* of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2013
*Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



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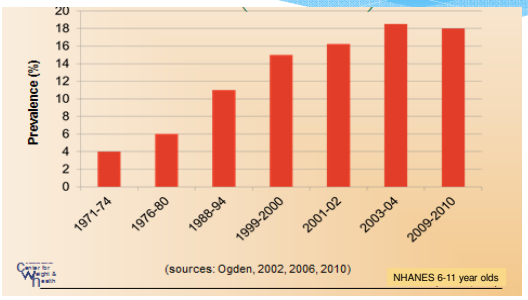
Source: Behavioral Risk Factor Surveillance System, CDC.

CDC

An Epidemic



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How does Hawaii compare with the rest of the US?
Prevalence of Overweight (BMI 25-30) in 2013
BRFSS-CDC

	Hawaii (Mean %)	US (Median %)
Overall	33.6	35.4
Male	39.9	41.4
Female	27.0	29.8
Age (years)		
18-24	24.5	26.1
25-34	34.1	33.7
35-44	37.0	36.4
45-54	35.7	36.9
55-64	34.7	37.8
≥65	32.9	39.8

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How does Hawaii compare with the rest of the US?

Prevalence of Overweight (BMI >30) in 2013 BRFSS-CDC

	Hawaii (Mean %)	US (Median %)
Overall	21.8	29.4
Male	24.7	29.1
Female	18.7	28.0
Age (years)		
18-24	15.0	15.6
25-34	25.8	27.5
35-44	24.2	32.7
45-54	27.0	34.1
55-64	21.9	34.6
≥65	16.1	26.7

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Prevalence of Overweight and Obesity in Youth Aged 10-17 Years 2011-2012 (National Survey of children's Health)

BRFSS-CDC

	Hawaii (%)	US (%)
Overweight (85th – 94th percentile)	15.9	15.6
Obese (≥95th percentile)	11.5	15.7

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Prevalence of Adult Diabetes and Coronary Heart Disease in Hawaii vs the US

BRFSS-CDC 2013

	Hawaii (%)	US (%)
Diabetes	8.4	9.7
Gestational Diabetes	1.2	0.9
Pre-diabetes	4.6	1.2
Total Diabetes and Pre-diabetes	14.2	11.8
Coronary Heart Disease	2.7	4.1

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A Changing World

23% of adolescents have Type 2 Diabetes or are pre-diabetic…
up from 9% in less than a decade!

May AL, et. Al. Prevalence of cardiovascular Disease Risk Factors Among Adolescents, 1999-2008 Pediatrics 2012;129:1035-1041

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A Changing Role In Our Profession

Tertiary Prevention

Secondary Prevention

Primary Prevention

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Question: Can you change the prevalence of obesity without one person losing weight?

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Answer: Yes, if you change the incidence of obesity.

How?

Prevention

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How

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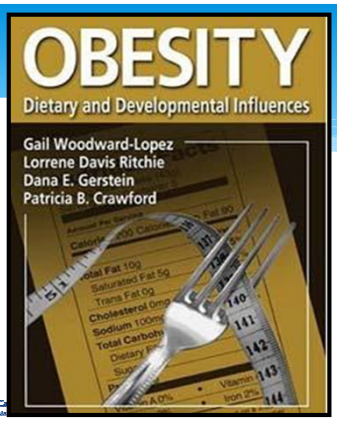

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❖ Causes of obesity from 1992-2003 review

1. Dietary fat
2. Whole grains
3. Sugar
4. Protein
5. Reduced fat foods
6. Eating out
7. Fast foods/eating out
8. Caloric intake
9. Energy density
10. Portion size
11. Fruits and vegetables
12. Dairy and calcium
13. Breakfast skipping
14. Sweetened beverages
15. Fruit juice
16. Eating frequency
17. Dietary variety
18. Snacking
19. Parental restriction
20. Breast feeding

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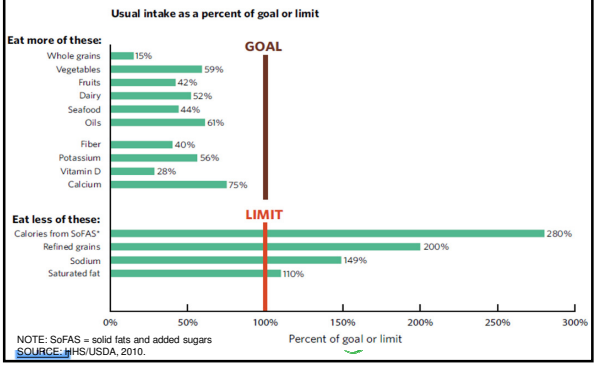
Comparison of typical American Diets With Dietary Guidelines for Americans



Strongest evidence linking diet and excess body weight

2010 Final DGA	2015 Draft DGA
Sweetened beverages	Added sugars from foods and sugar sweetened beverages
Eating out (fast food)	

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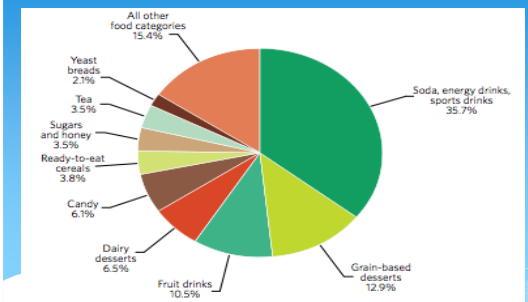
Sources of Dietary Added Sugars: Americans Ages 2+



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NHANES 2006

More than 20% OF WEIGHT INCREASE IN THE U.S. BETWEEN 1977 AND 2007 IS ATTRIBUTED TO SUGAR-SWEETENED BEVERAGES.

Woodward-Lopez, 2011
IOM, 2012

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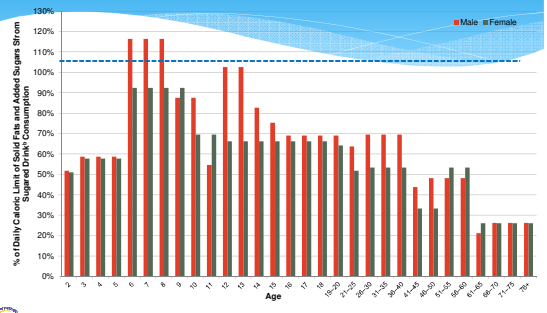
% of SoFAS daily caloric limit from sugared drink consumption



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DGA, 2010

SSB Risk Beyond Obesity

- One Sugar Sweetened Beverage (SSB) per day is associated with a greater risk of type 2 diabetes, hypertension and CVD mortality (after adjusting for CVD risk factors and diet quality)
- CVD risk increases by almost a third
- Type 2 Diabetes risk doubles (for women) a day

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Yang, JAMA Intern Med., 2014; Shultz, JAMA, 2004

A Changing Role for RDs

Nutrients & education

- Foods & education
  - Dietary patterns & education
    - Food access & education

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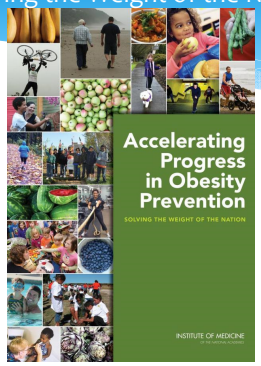
RDs are the **Experts**

About the Institute of Medicine (IOM)

- *Established in 1970*
- *Health arm of the National Academy of Sciences*
- *Evidence-based recommendations*
- *Unbiased, authoritative advice to the nation to improve health*

The IOM and Obesity Prevention

Accelerating Progress in Obesity Prevention: Solving the Weight of the Nation



Committee Membership

Daniel Glickman, JD, (*chair*), The Aspen Institute and Bipartisan Policy Center
M.R.C. Greenwood, PhD, (*vice chair*), University of Hawaii System
William Purcell, JD, (*vice chair*), Jones Hawkins & Farmer, PLC
David Britt, MPA, retired, Sesame Workshop
Jamie Chriqui, PhD, MHS, University of Illinois, Chicago
Patricia Crawford, DrPH, University of California at Berkeley
Christina Economos, PhD, RD, Tufts University
Sandra Hassink, MD, FAAP, A.I. duPont Hospital for Children
Anthony Iton, MD, JD, The California Endowment
Steven Kelder, PhD, MPH, University of Texas
Harold (Bill) Kohl, PhD, University of Texas
Shiriki Kumanyika, PhD, University of Pennsylvania
Philip Marineau, MBA, LNK Partners
Vicky Rideout, MA, VJR Consulting
Eduardo Sanchez, MD, MPH, Blue Cross and Blue Shield of Texas
Ellen Wartella, PhD, Northwestern University

Committee on Accelerating Progress in Obesity Prevention

STUDY CHARGE:

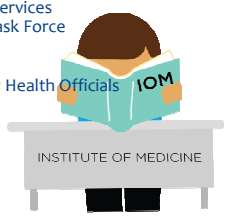
"review past…obesity prevention-related recommendations, identify a set of critical recommendations for future action, and recommend indicators of progress in implementing these actions."

The Process

Reviewed ~800 obesity prevention-related recommendations!

Comprehensive review reflecting:

- Institute of Medicine and National Research Council
- Childhood Obesity Action Network
- Healthy Eating Activity Living Convergence Partnership
- US Department of Health and Human Services
- CDC, Community Preventive Services Task Force
- Keystone Forum
- National Governors Association
- National Association of County and City Health Officials
- National Physical Activity Plan
- Robert Wood Johnson Foundation
- Trust for America's Health
- USDA
- White House



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Recommendation 1: Physical Activity

Communities, health professionals, and governments should increase access to places and opportunities for physical activity.

OF AMERICANS GET THE RECOMMENDED AMOUNT OF PHYSICAL ACTIVITY.

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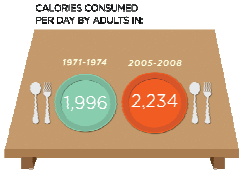
Recommendation 2: Food and Beverage Environments

Governments and the private sector should make a concerted effort to reduce unhealthy food and beverage options and substantially increase healthier foods and beverages options at affordable prices.



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Recommendation 3: Message Environments

Industry, and governments should act aggressively to transform the environment that surrounds Americans with messages about physical activity, food, and nutrition.

OLDER CHILDREN AND ADOLESCENTS CONSUME MORE THAN 7.5 HOURS OF MEDIA EACH DAY.

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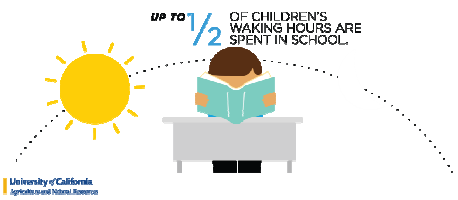
Recommendation 4: Schools

Government and education authorities, with support from parents, teachers, and the community should make schools a focal point for obesity prevention.



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Recommendation 5: Health Care and Work Environments

Health care providers, and employers should increase the support structure for achieving better population health and obesity prevention.

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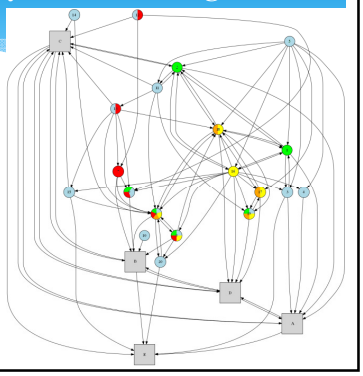
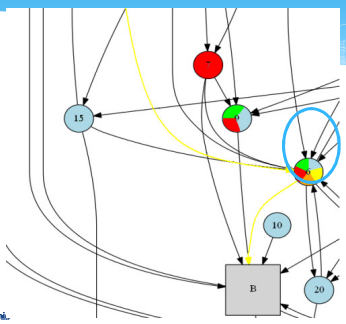
Mapping Systems of Change

Sectors
- Business
- Public
- Civic Organizations
- Health Care
- Worksites



Multi-Sector Interactions



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Multi-level Strategies

Cohen, L. / Prevention Institute

What Would You Do If You Knew That

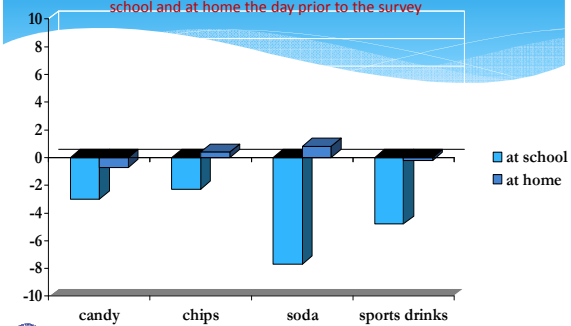
- Nutrition is important to health, prevention of disease and learning
- Less than 2% of children meet the Dietary Guidelines
- Children receive up to ½ of their calories in the school setting
- Children are more likely to select healthy foods if they are offered healthy foods
- Lunches from home are less likely to be healthy than school lunches

Legislation Signed into Law in 2005

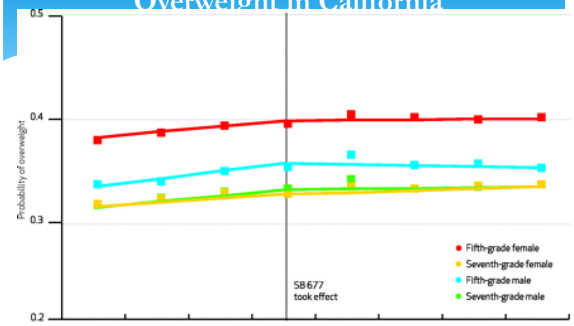
- SB 12 sets nutrition standards for food served and sold in K-12 public schools.
- SB 965 bans the sale of soda and other sugary drinks in all K-12 public schools.

Policy Evaluation

Change in percent of students reporting consumption of select items at school and at home the day prior to the survey



A Legislative Strategy to Reduce Overweight in California



Sanchez-Vaznaugh, Crawford, 2010

Medical Cost Savings Per Child

- Annualize the adjusted decrease in prevalence from peak to 2008
- Assume that annual decrease continues until 2015
- Apply this to ALL kids in CA
- ~ 100,000 kids DROP OUT of the obese category
- Assuming a savings of $220 per child*
- Savings of more than $20 million

*(based on MEPS data from 2001 to 2003, as reported in NY state comptroller report from Oct 2012)

Your strategies

Thank you

For more information:
http://npi.ucanr.edu/