

# Lecture Overview

1. Introductions – Class room introductions and review CCS website
2. Syllabus Overview
3. Lecture
4. Break
5. Video
6. Debate (if time permits)



# Obesity, Consequences and focus on the Hispanic Community

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# Objectives



1. Define obesity
2. Discuss obesity trends
3. Outline consequences of obesity
4. Discuss obesity and consequences in the Hispanic Population
5. Structural factors that effect obesity

# Define Obesity



**What is Obesity and how is it measured?**



# What is obesity?



- Overweight and obesity are both labels given to ranges of weight that are considered unhealthy in relation to a person's height (CDC)
- In the US, Body Mass Index (BMI) is used to measure obesity by  $\text{kg/m}^2$  ( $\text{weight/ht}^2$ )
- For adults, the following scale is used:

Height	Weight Range	BMI	Considered
5' 9"	124 lbs or less	Below 18.5	Underweight
	125 lbs to 168 lbs	18.5 to 24.9	Healthy weight
	169 lbs to 202 lbs	25.0 to 29.9	Overweight
	203 lbs or more	30 or higher	Obese

# Measuring Obesity in Children



- BMI is also used to measure obesity in children
- However, because children are at various growth stages during childhood, percentiles are used
- The percentile indicates the relative position of the child's BMI number among children of the same sex and age (CDC.gov)

Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Healthy weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

# Obesity Trends



**What are the trends?**



# Consequences



**What are the consequences of obesity?**



# What are the consequences of obesity/overweight?



<b>Physical</b>	<b>Psychological</b>	<b>Economic</b>
Cardiovascular Disease Type 2 Diabetes Gall Bladder Disease Hypertension Dyslipidemia Osteoarthritis Possibly Cancer	Feelings of insecurity Bullying Social Stigma Discrimination Lower Quality of Life	Medical Burden – annual cost of \$147 billion Work absenteeism Disability and unemployment benefit costs

# Obesity Trends Among U.S. Adults Between 1985 and 2010

*(DATA, text and MAPS are directly from CDC)*

## *Source of the data:*

- The data shown in these maps were collected through CDC's Behavioral Risk Factor Surveillance System (BRFSS). Each year, state health departments use standard procedures to collect data through a series of telephone interviews with U.S. adults. Height and weight data are self-reported.
- Prevalence estimates generated for the maps may vary slightly from those generated for the states by BRFSS (<http://aps.nccd.cdc.gov/brfss>) as slightly different analytic methods are used.

# Overview of Trends

- In 1990, among states participating in the Behavioral Risk Factor Surveillance System, 10 states had a prevalence of obesity less than 10% and no state had prevalence equal to or greater than 15%.
- By 2000, no state had a prevalence of obesity less than 10%, 23 states had a prevalence between 20–24%, and no state had prevalence equal to or greater than 25%.
- In 2010, no state had a prevalence of obesity less than 20%. Thirty-six states had a prevalence equal to or greater than 25%; 12 of these states (Alabama, Arkansas, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Oklahoma, South Carolina, Tennessee, Texas, and West Virginia) had a prevalence equal to or greater than 30%.

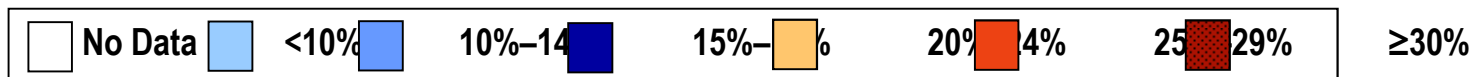
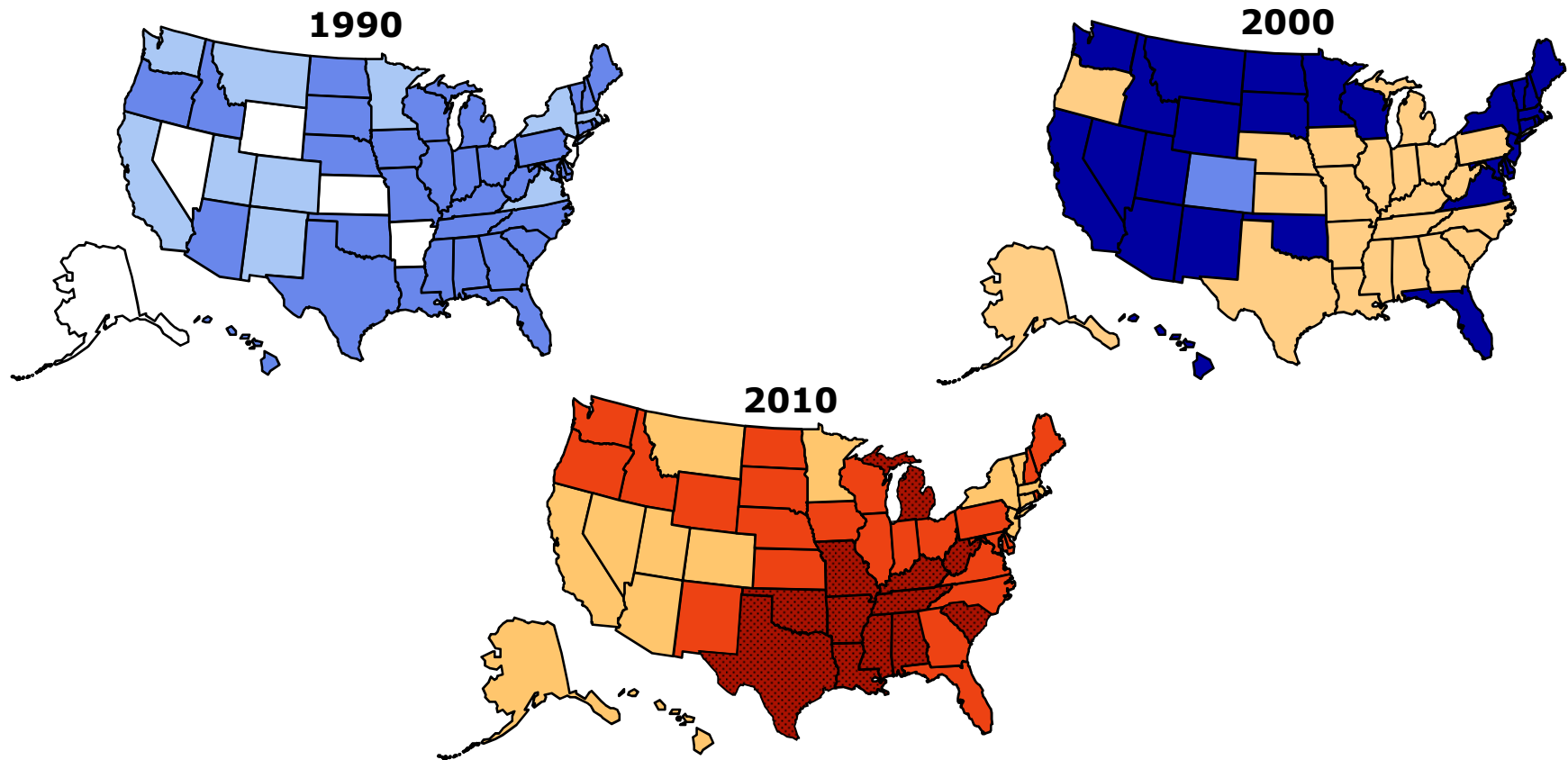
# Citations

- Mokdad AH, et al. The spread of the obesity epidemic in the United States, 1991–1998. *JAMA* 1999;282:16:1519–22.
- Mokdad AH, et al. The continuing epidemics of obesity and diabetes in the United States. *JAMA* 2001;286:10:1519–22.
- Mokdad AH, et al. Prevalence of obesity, diabetes, and obesity-related health risk factors, 2001. *JAMA* 2003;289:1:76–9.
- CDC. State-specific prevalence of obesity among adults — United States, 2005. *MMWR* 2006;55(36):985–8.
- CDC. State-specific prevalence of obesity among adults — United States, 2007. *MMWR* 2008;57(28):765–8.
- CDC. Vital signs: State-specific prevalence of obesity among adults — United States, 2009. *MMWR* 2010;59:1–5.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1990, 2000, 2010

(\*BMI  $\geq 30$ , or about 30 lbs. overweight for 5'4" person)



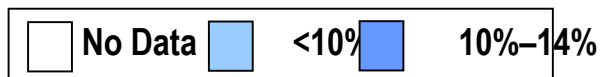
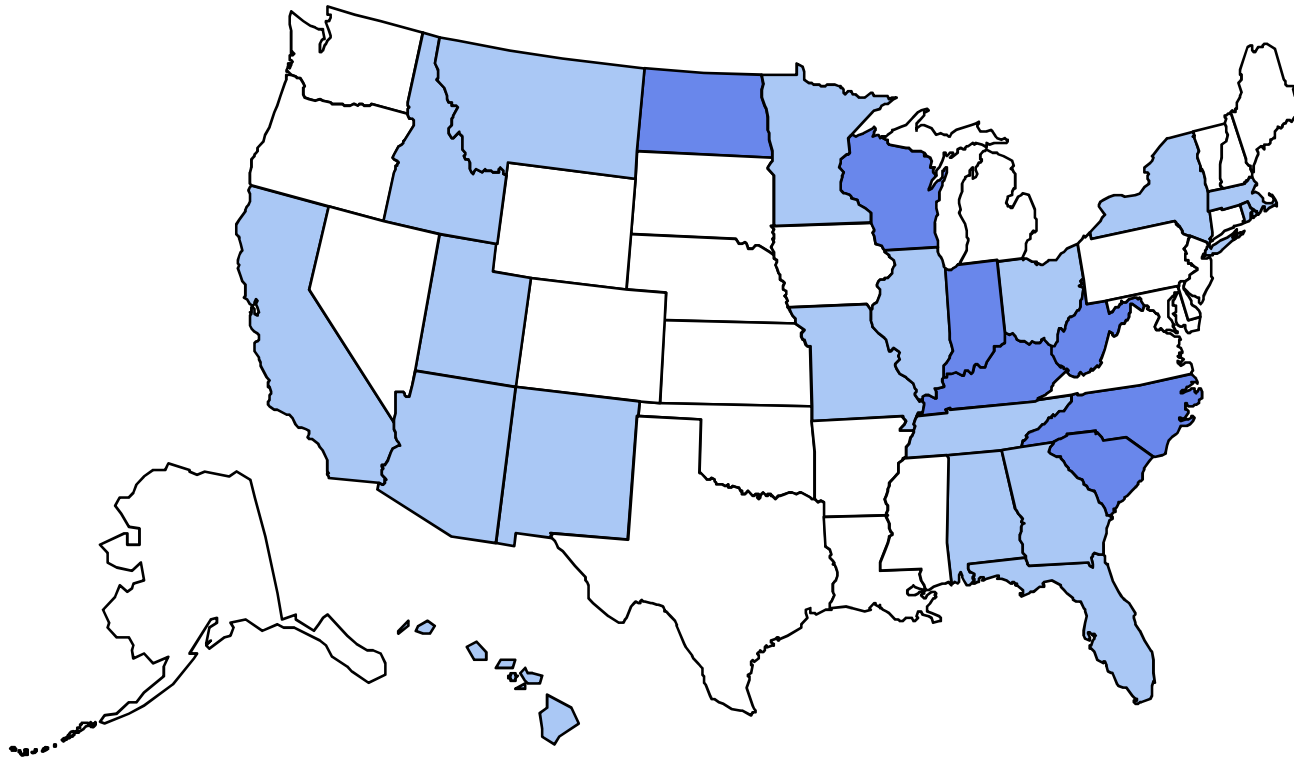
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1986

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

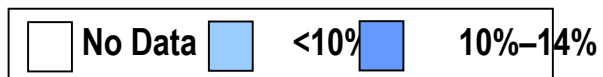
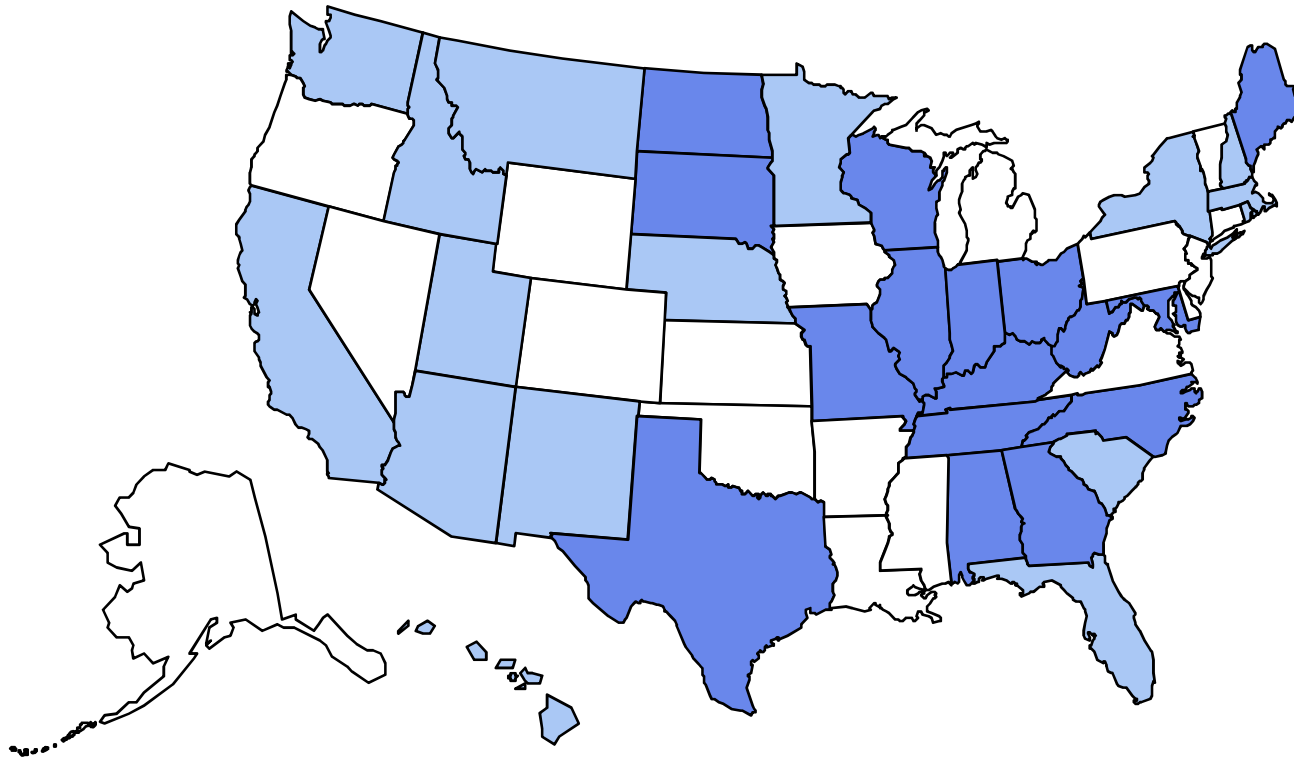


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1987

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



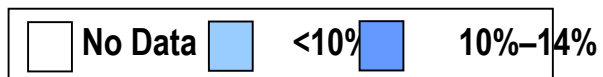
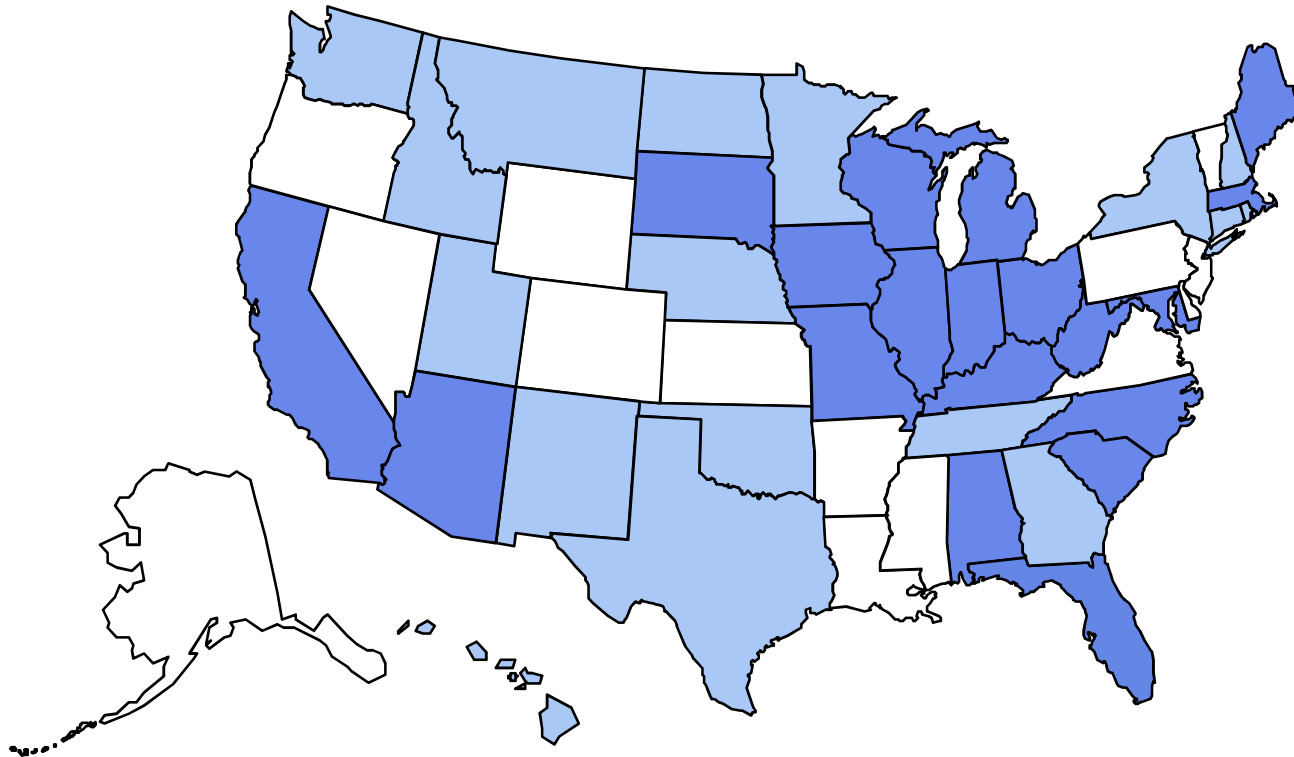
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1988

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



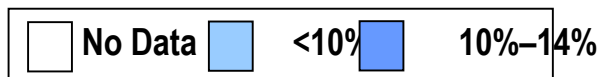
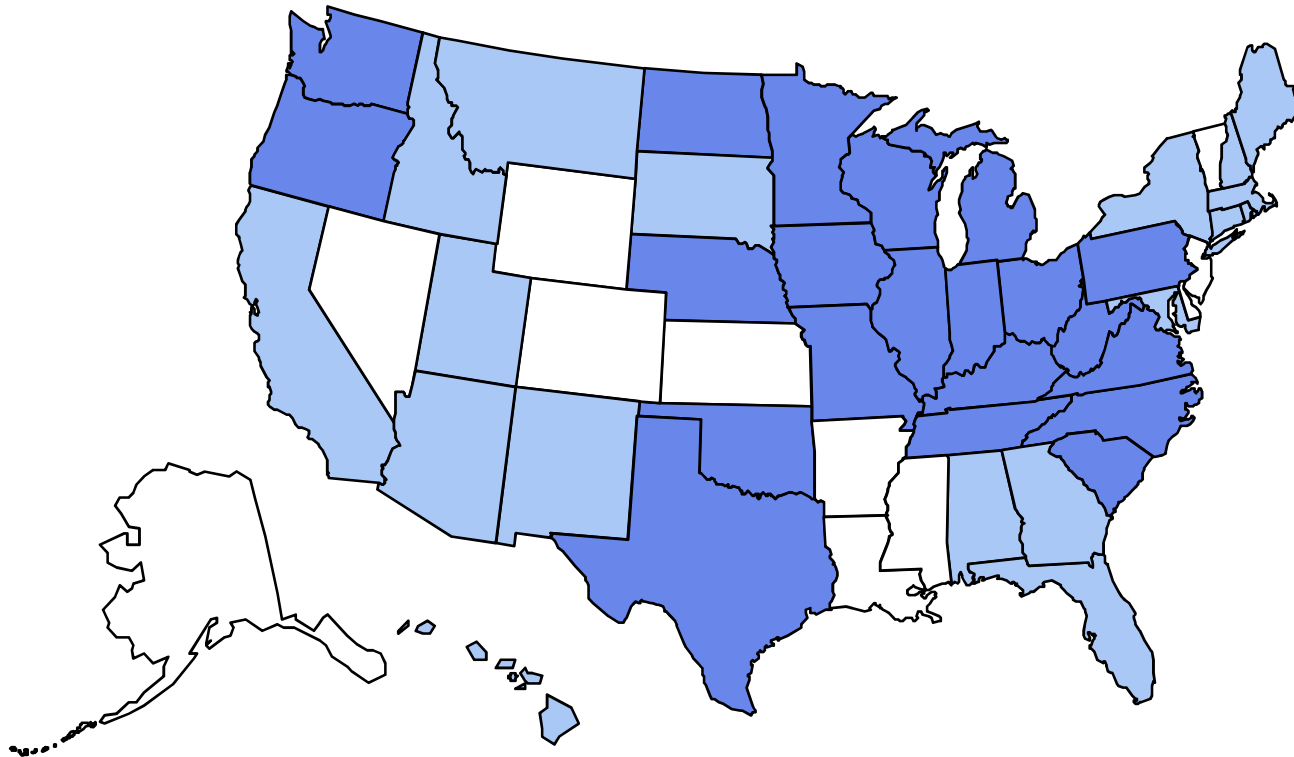
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1989

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

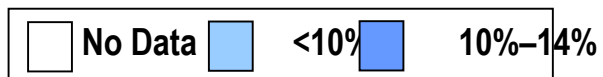
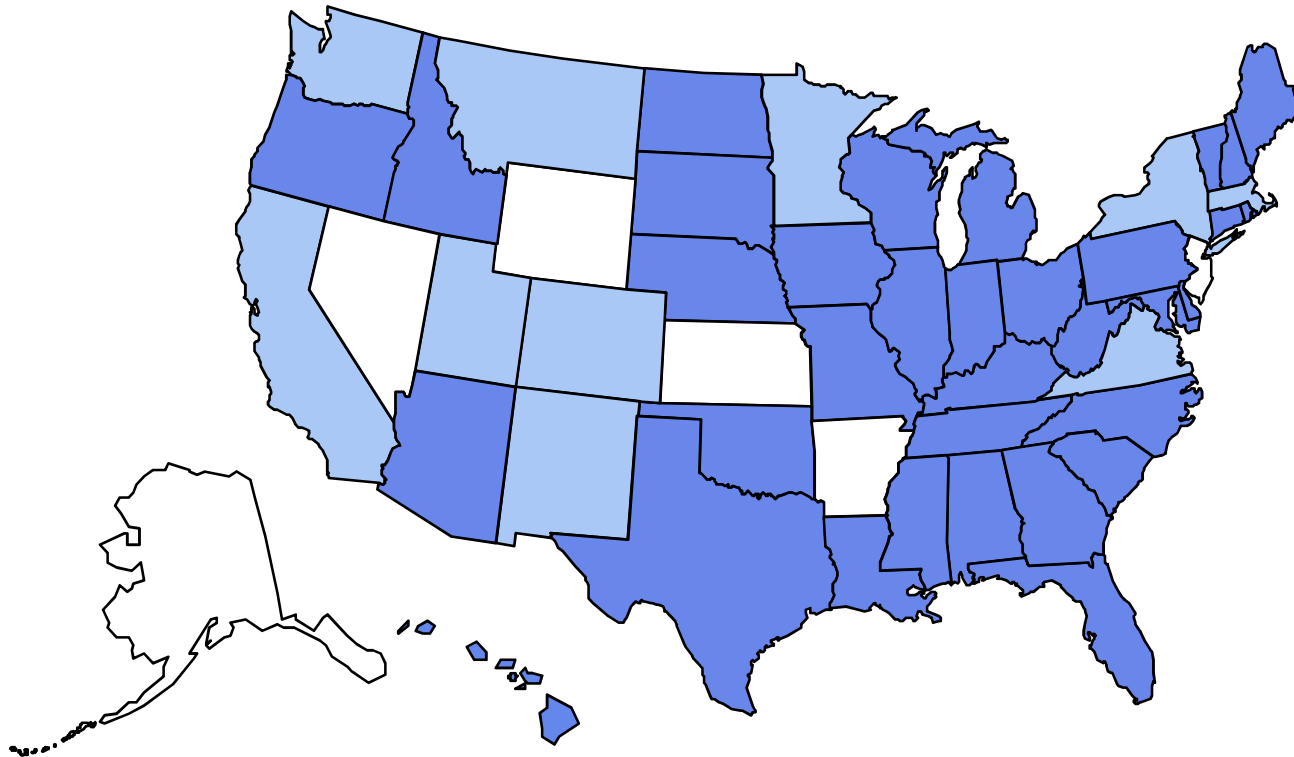


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1990

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



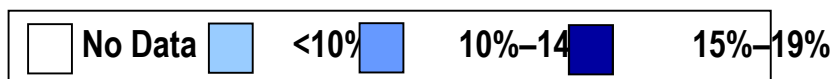
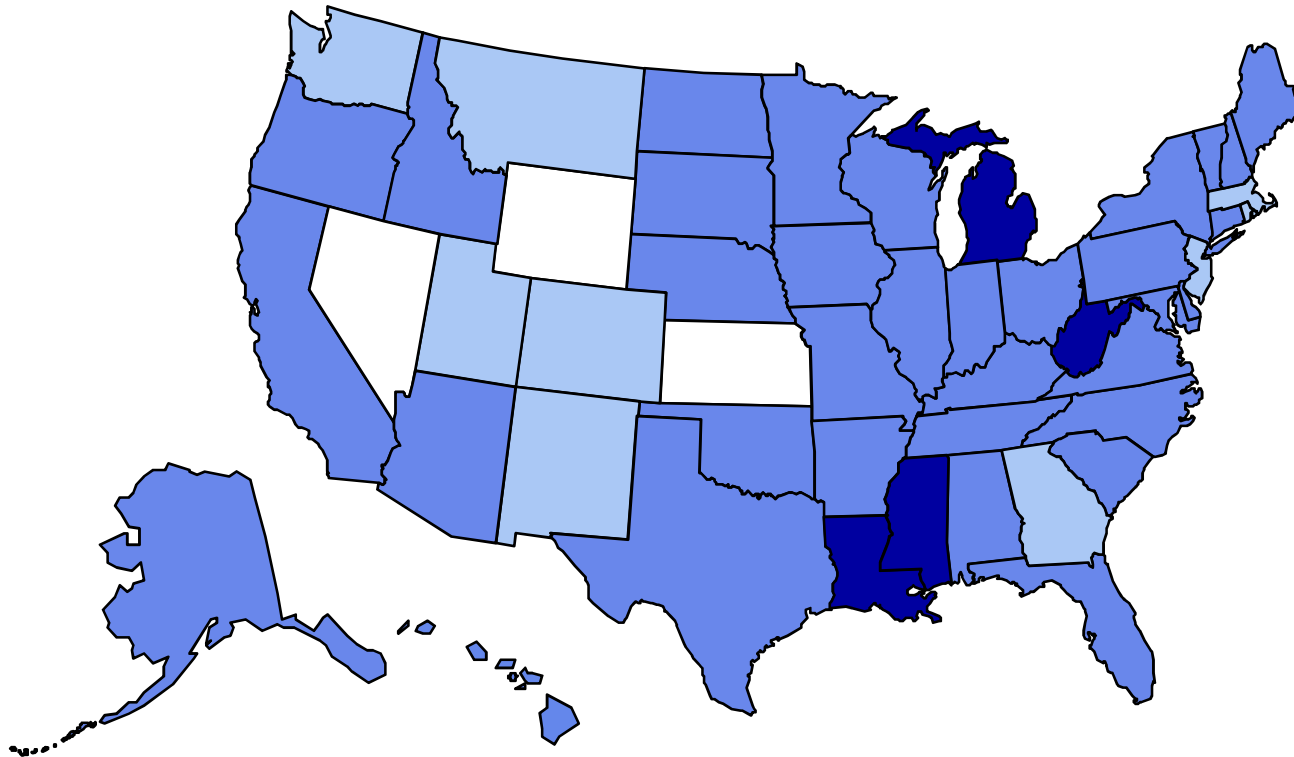
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1991

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



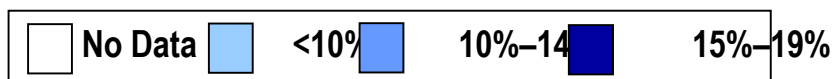
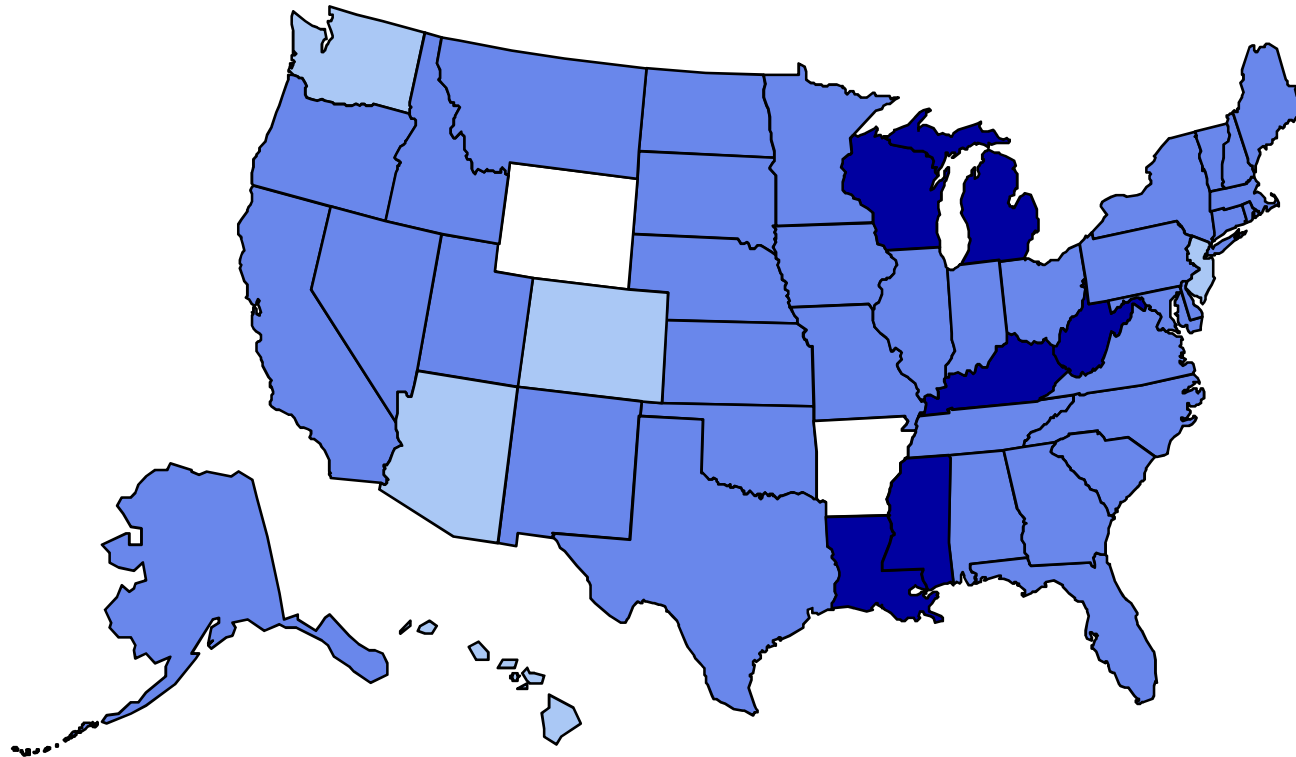
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1992

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

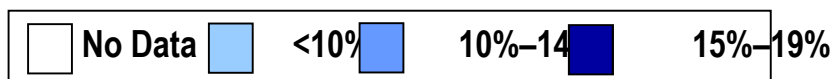
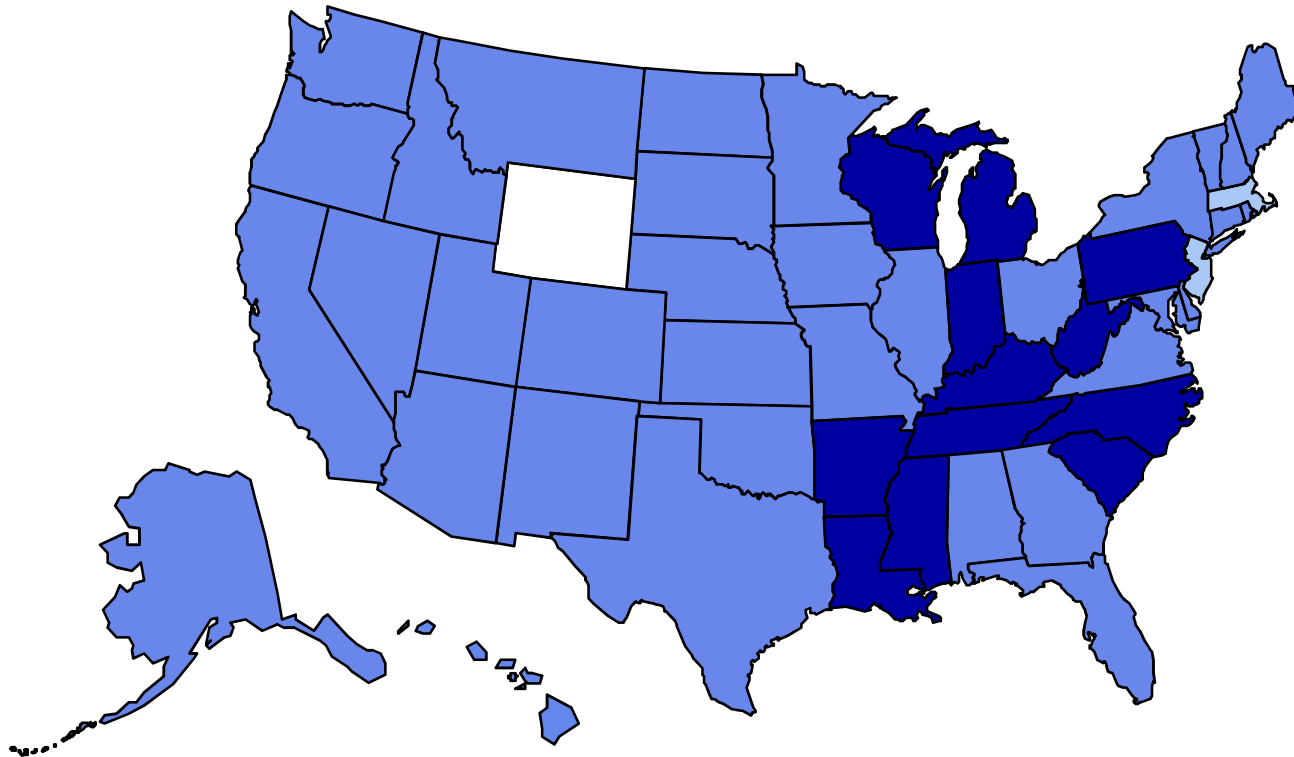


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1993

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



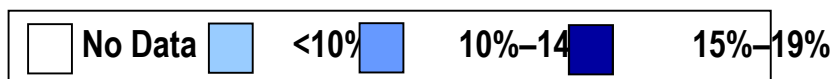
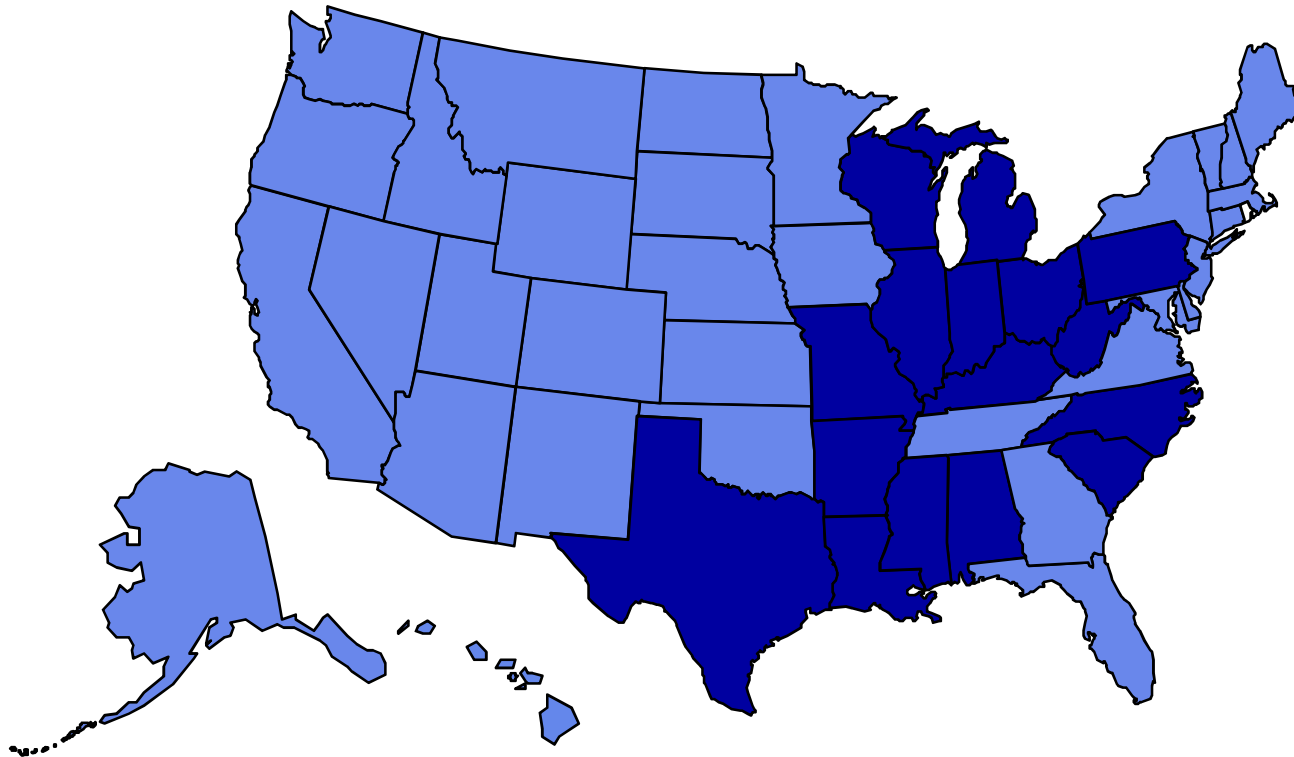
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1994

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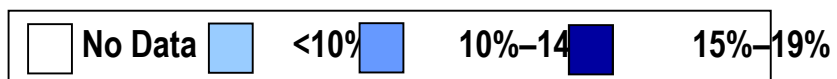
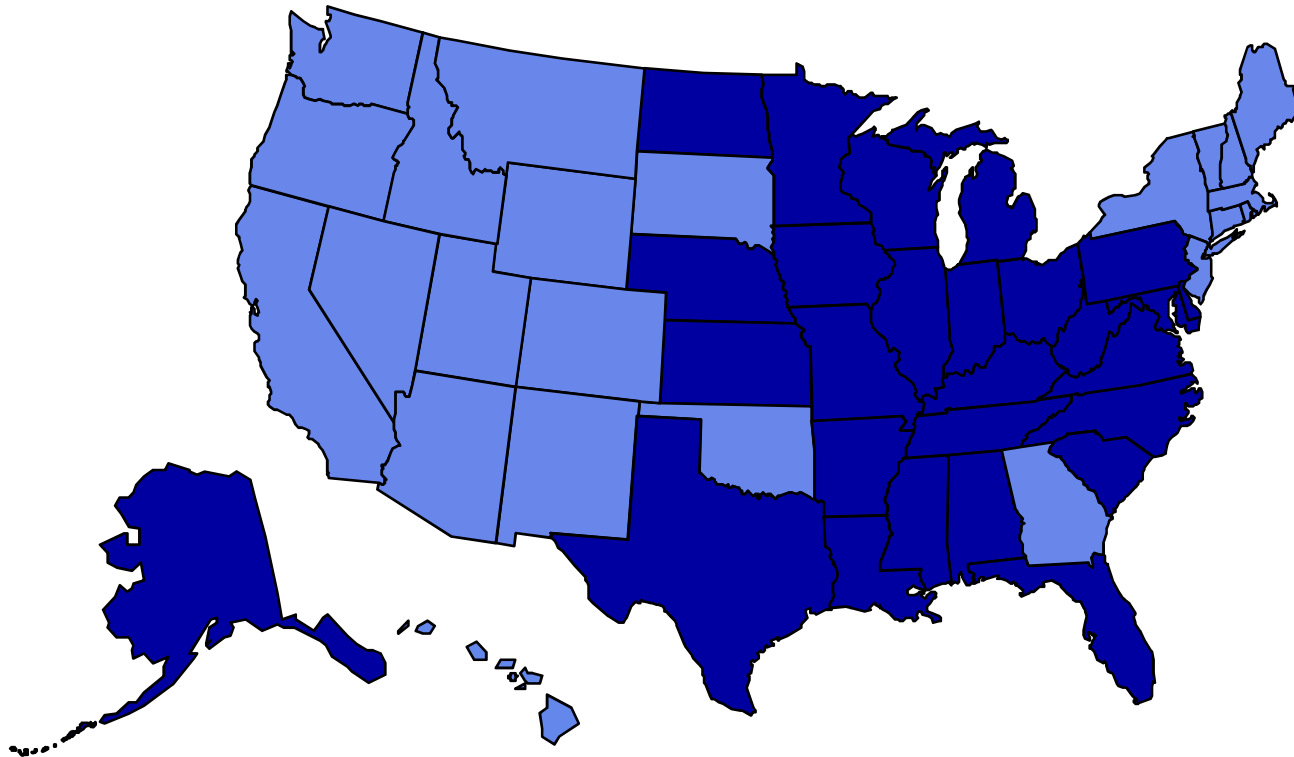


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1995

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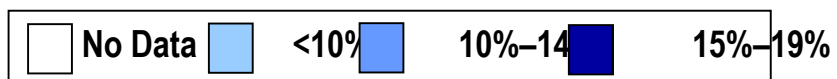
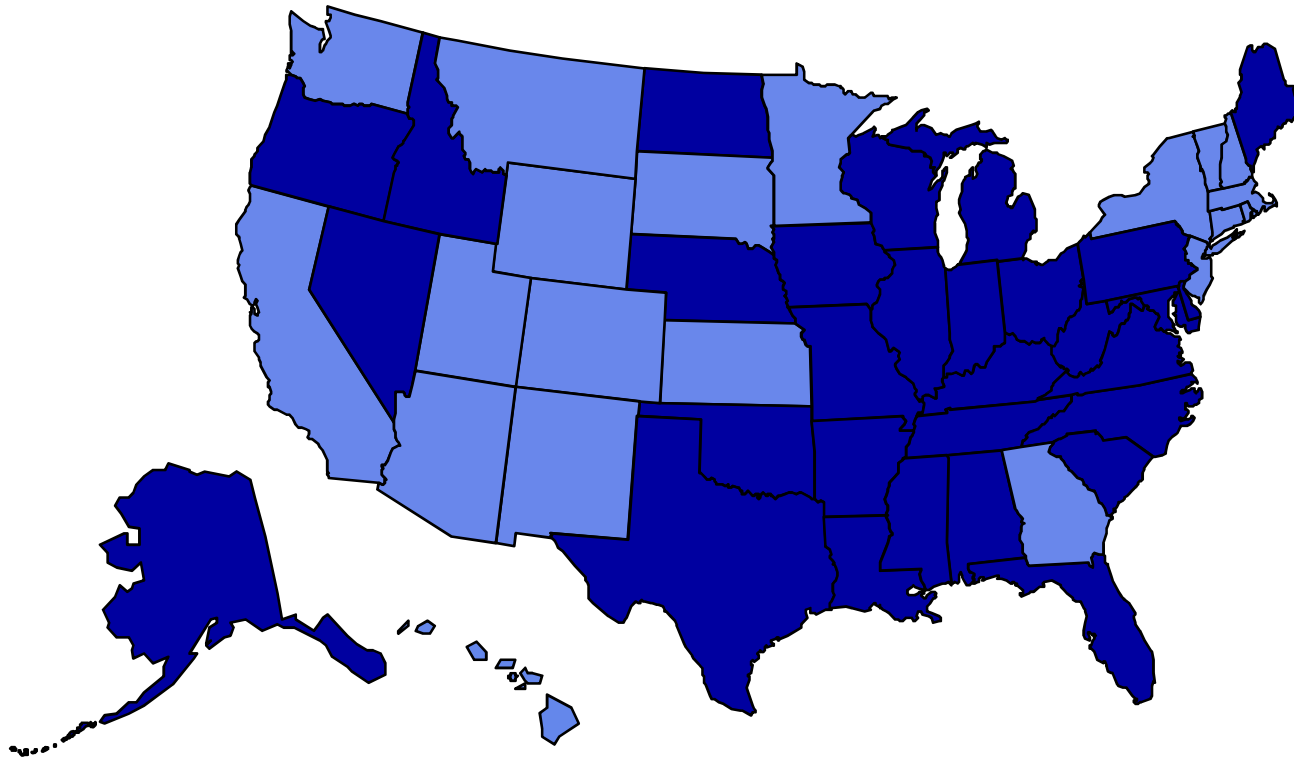
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1996

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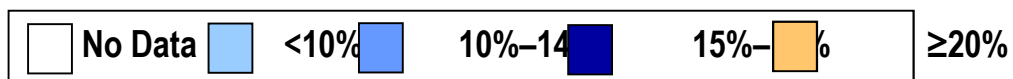
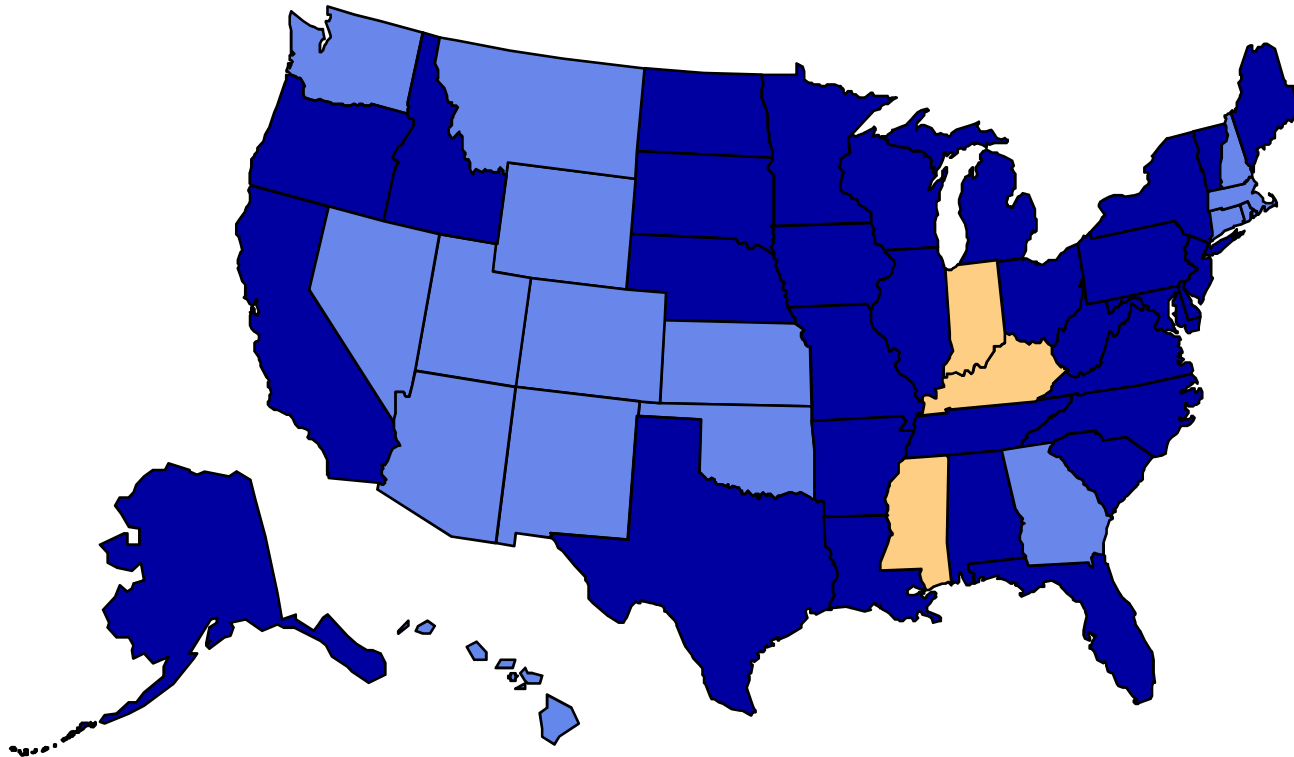


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1997

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



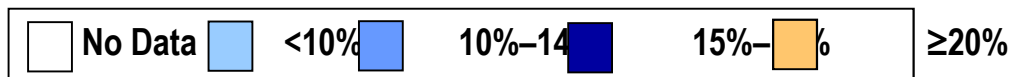
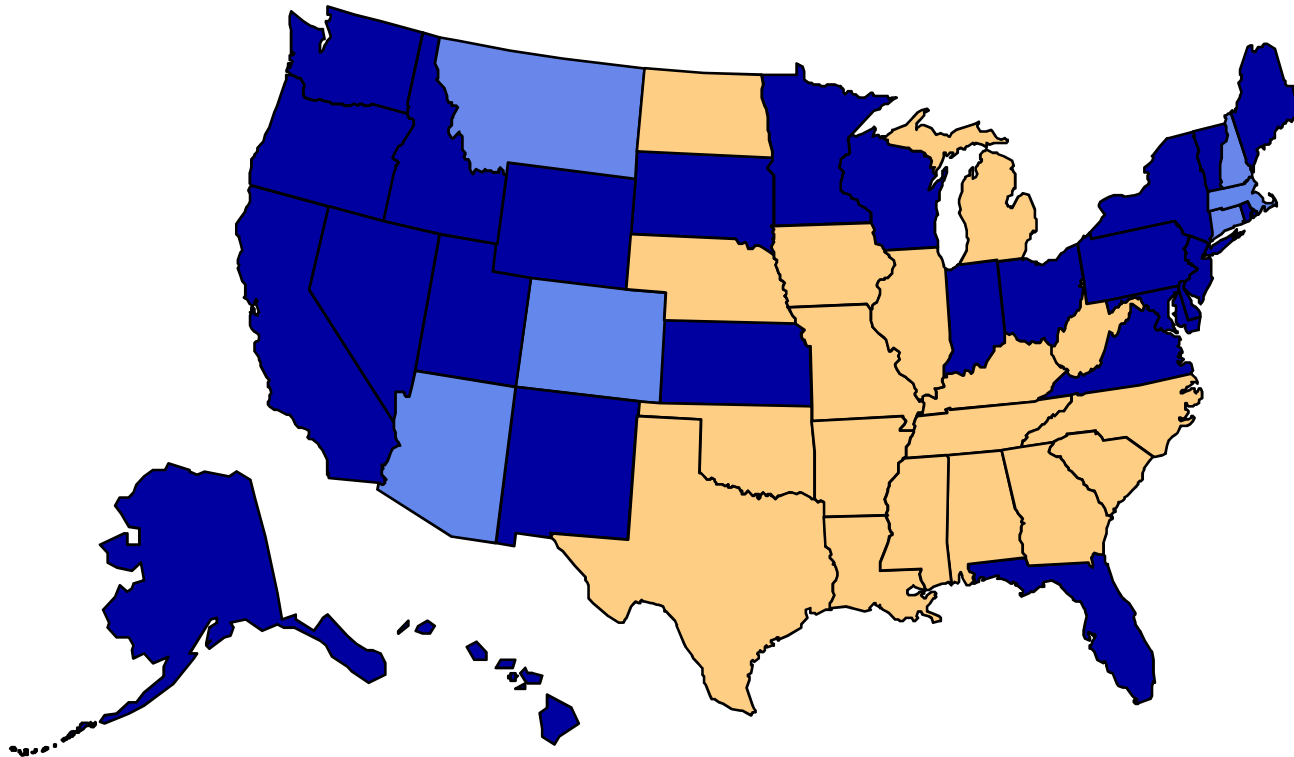
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

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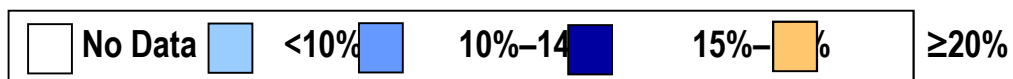
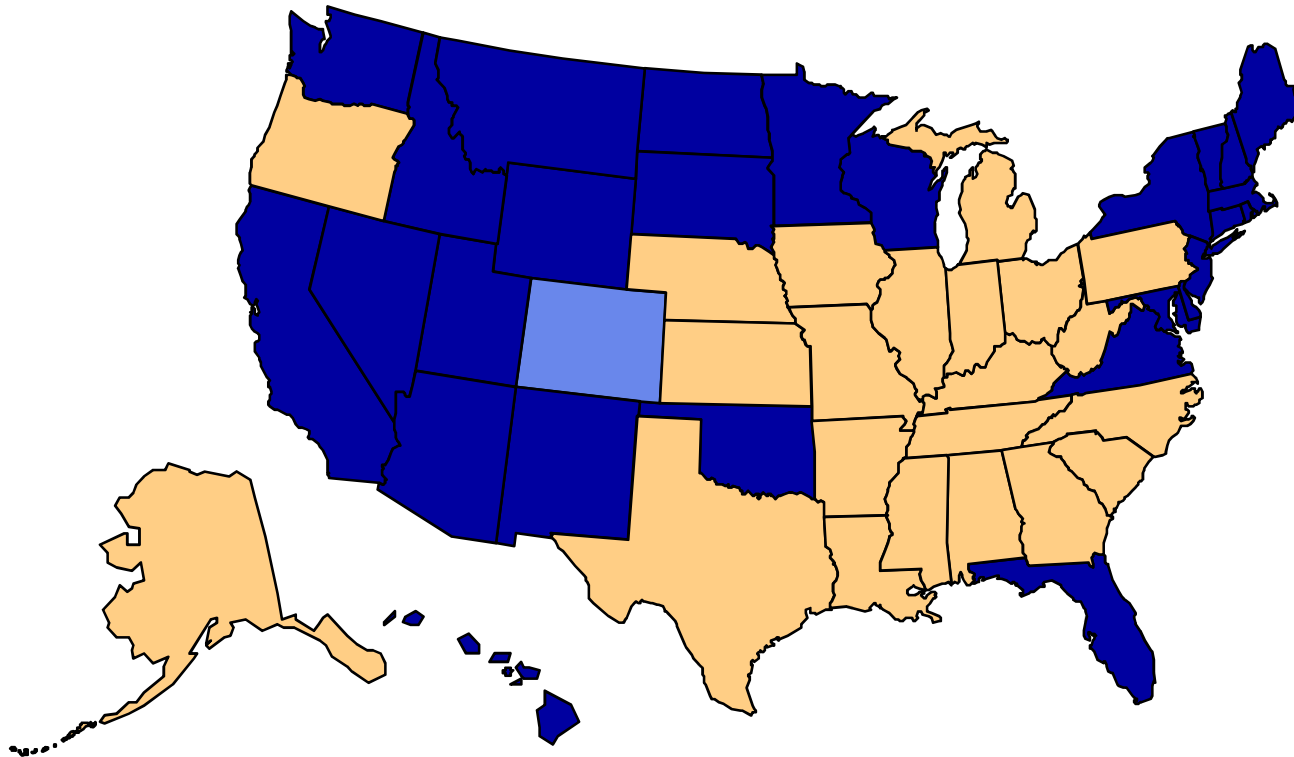
Source: Behavioral Risk Factor Surveillance System, CDC.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2000

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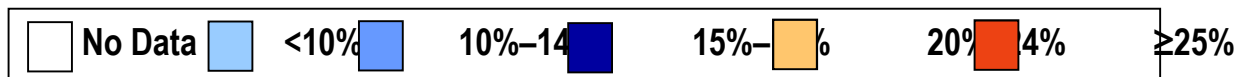
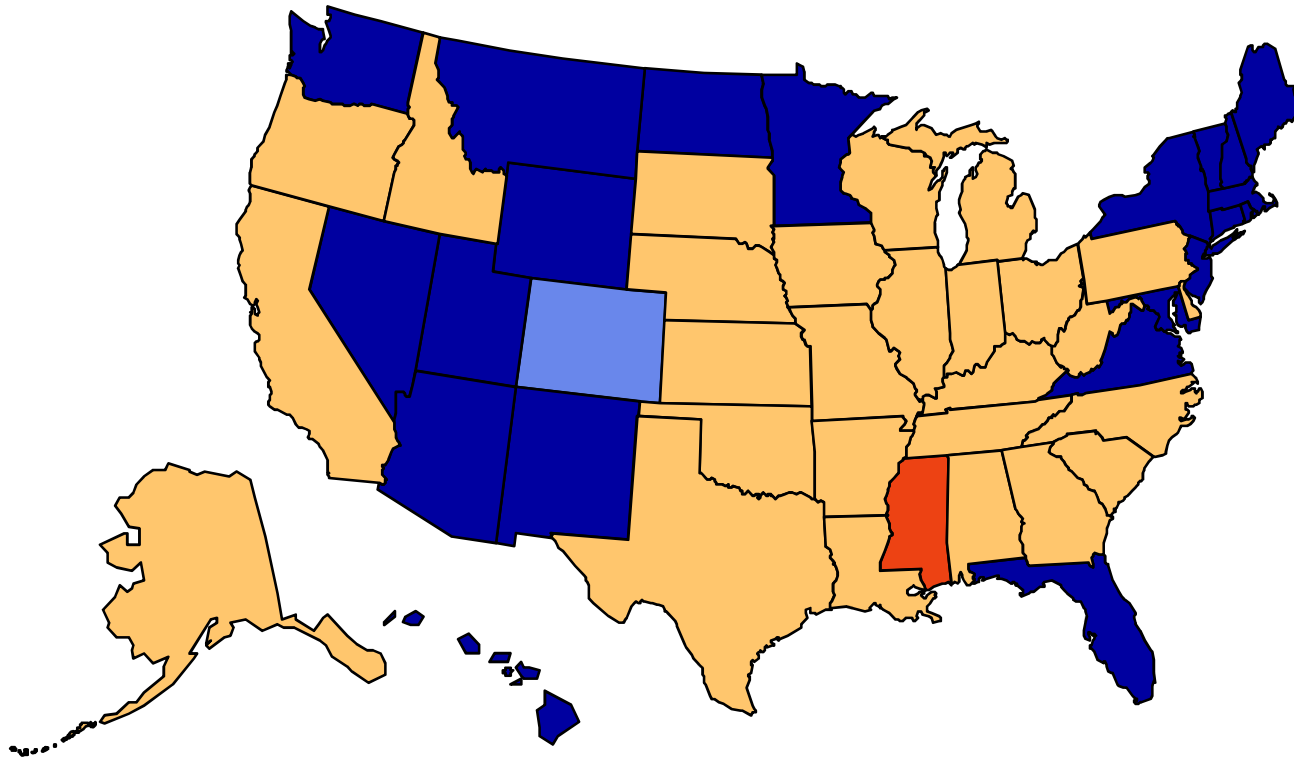


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2001

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.





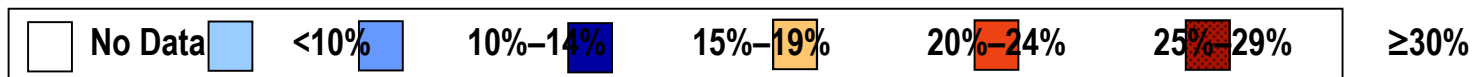
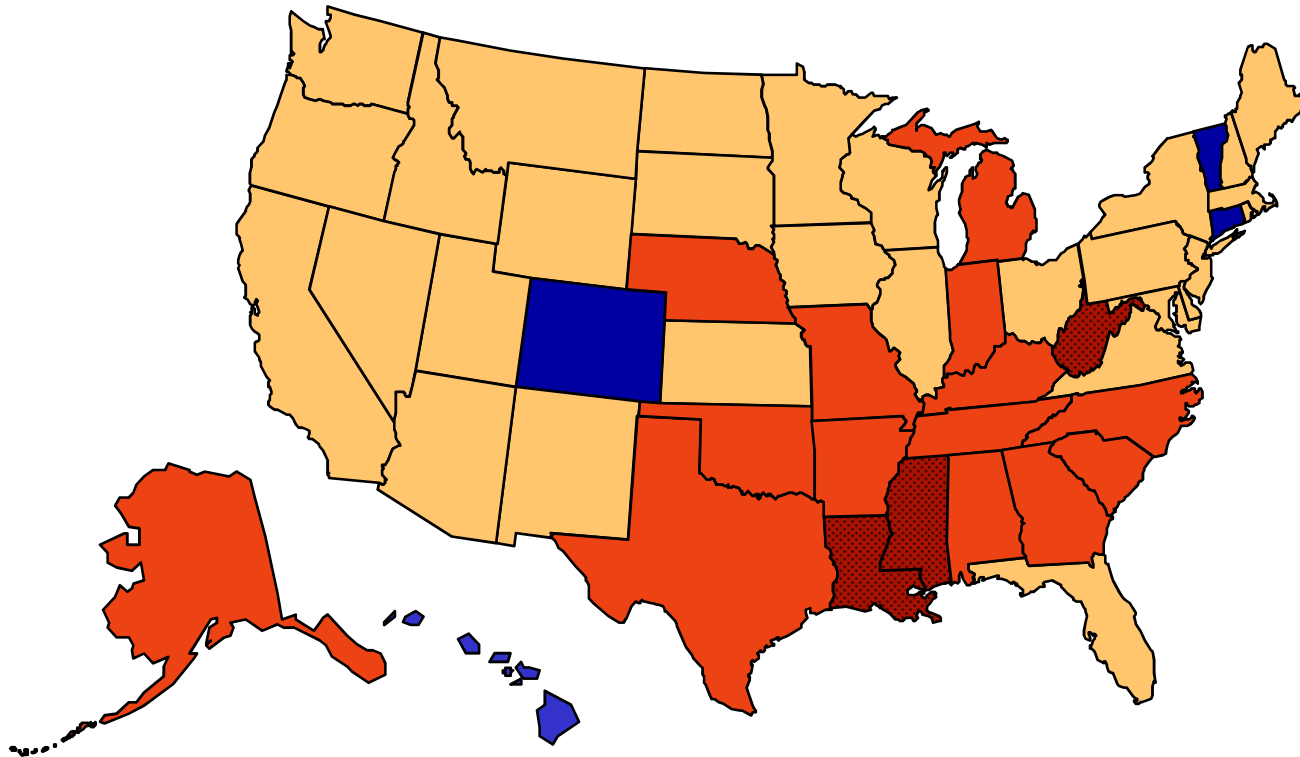




# Obesity Trends\* Among U.S. Adults

## BRFSS, 2005

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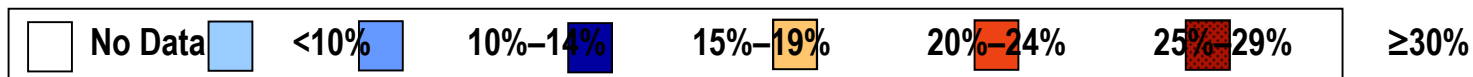
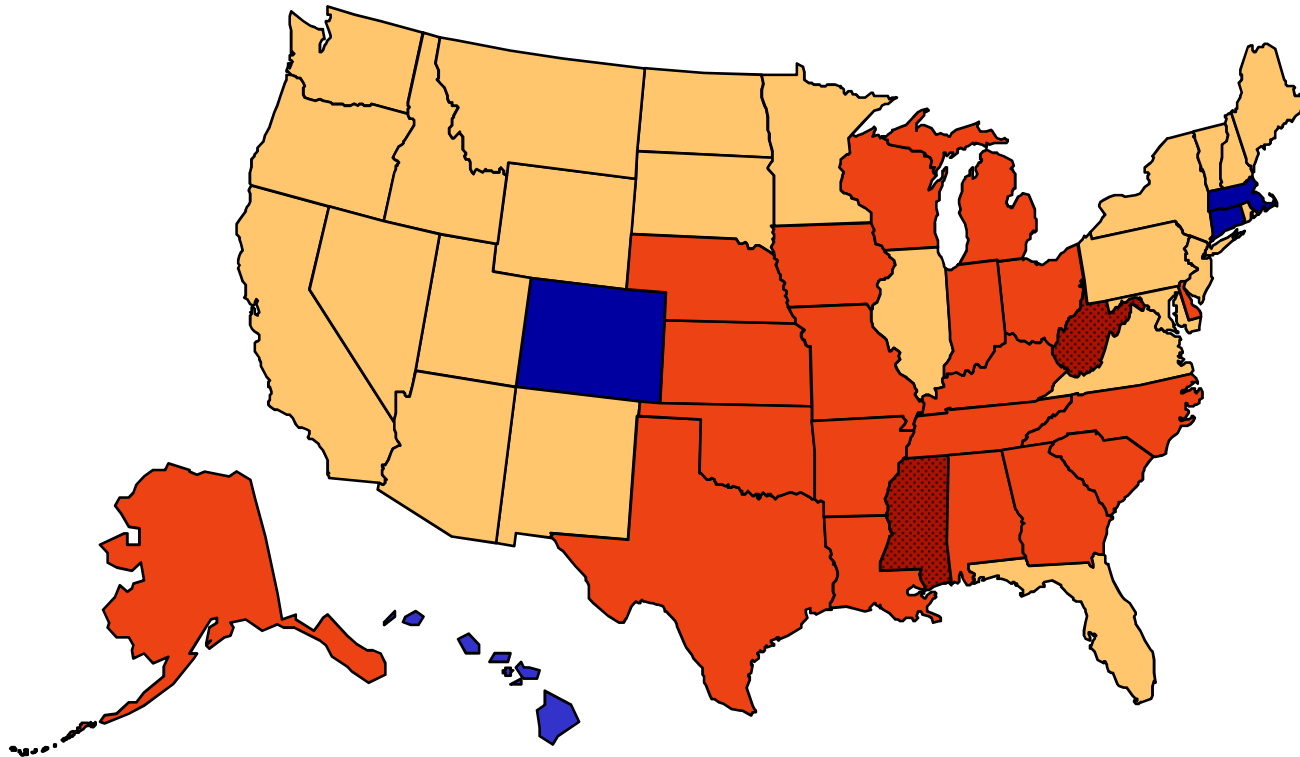


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2006

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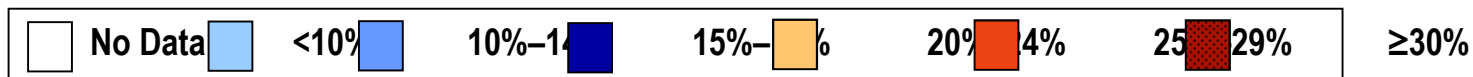
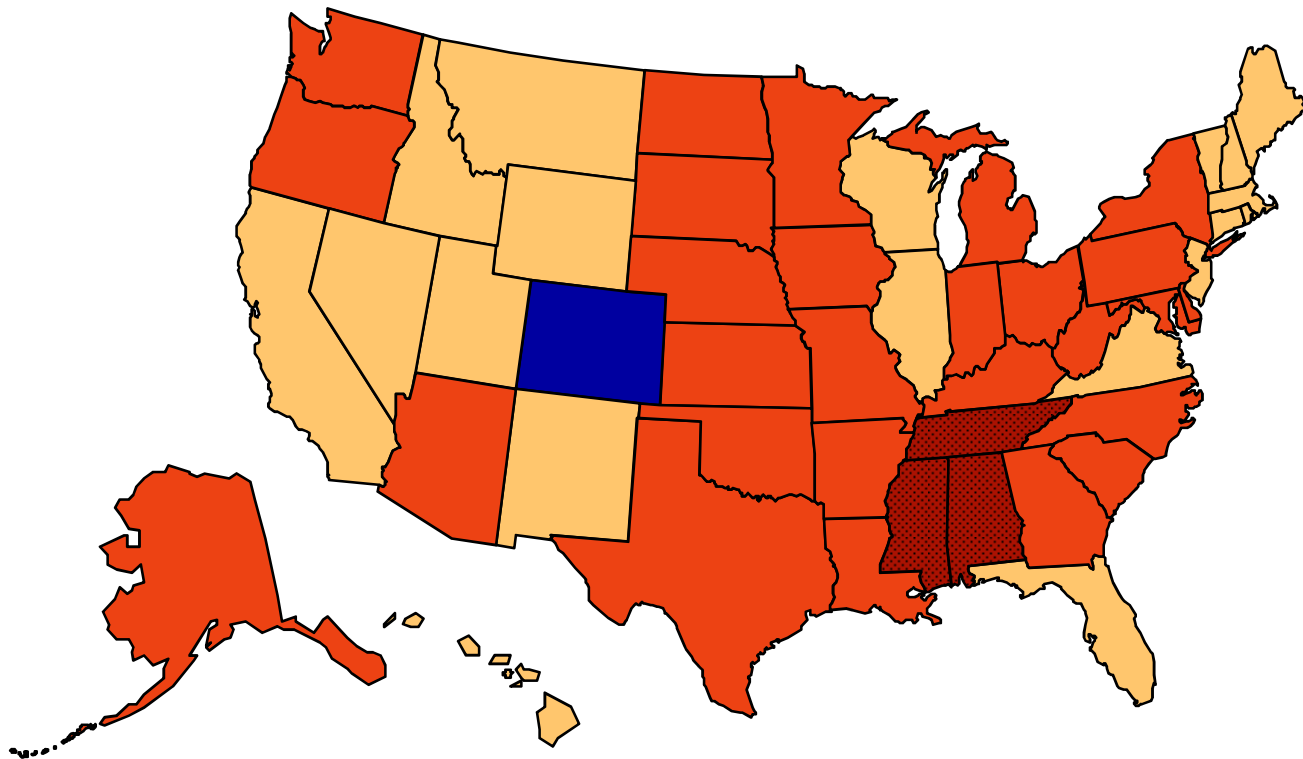


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2007

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

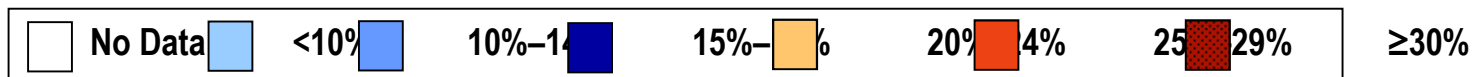
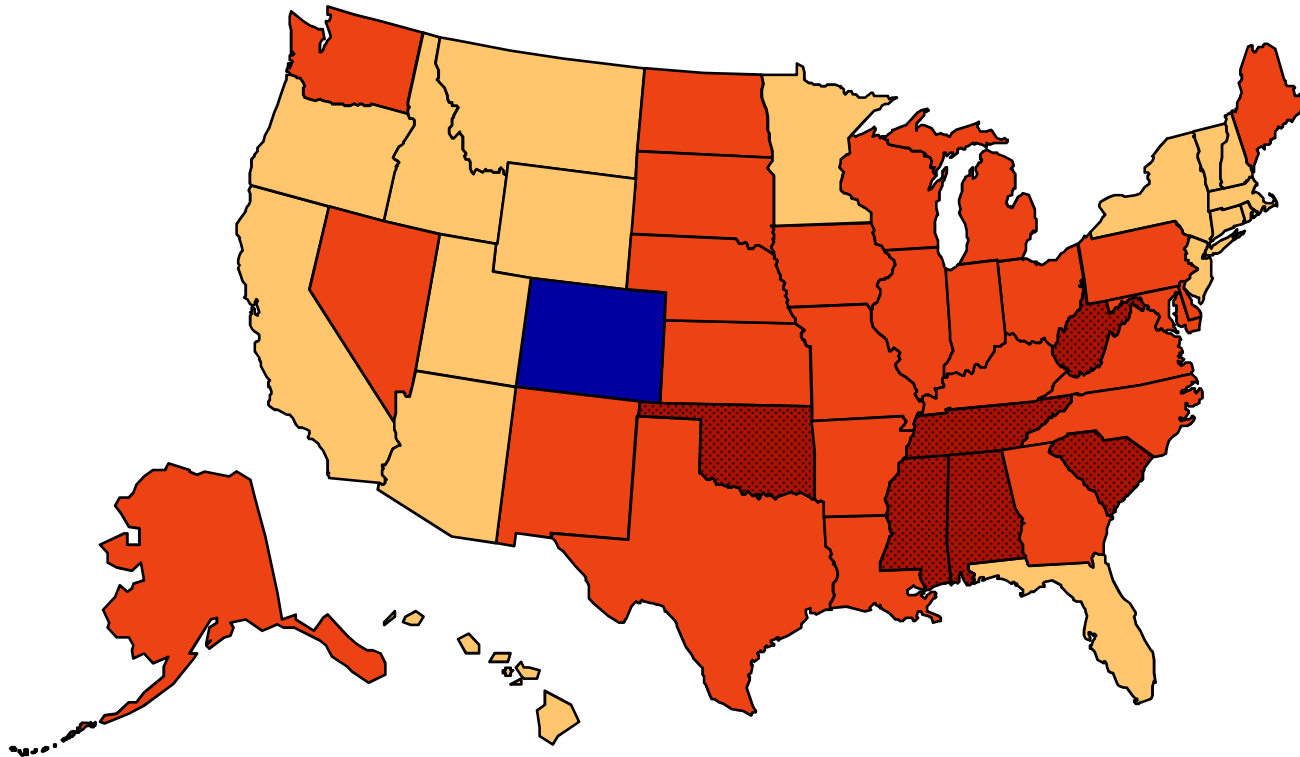


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2008

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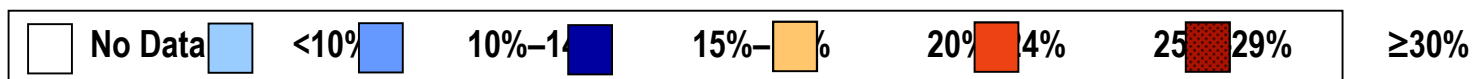
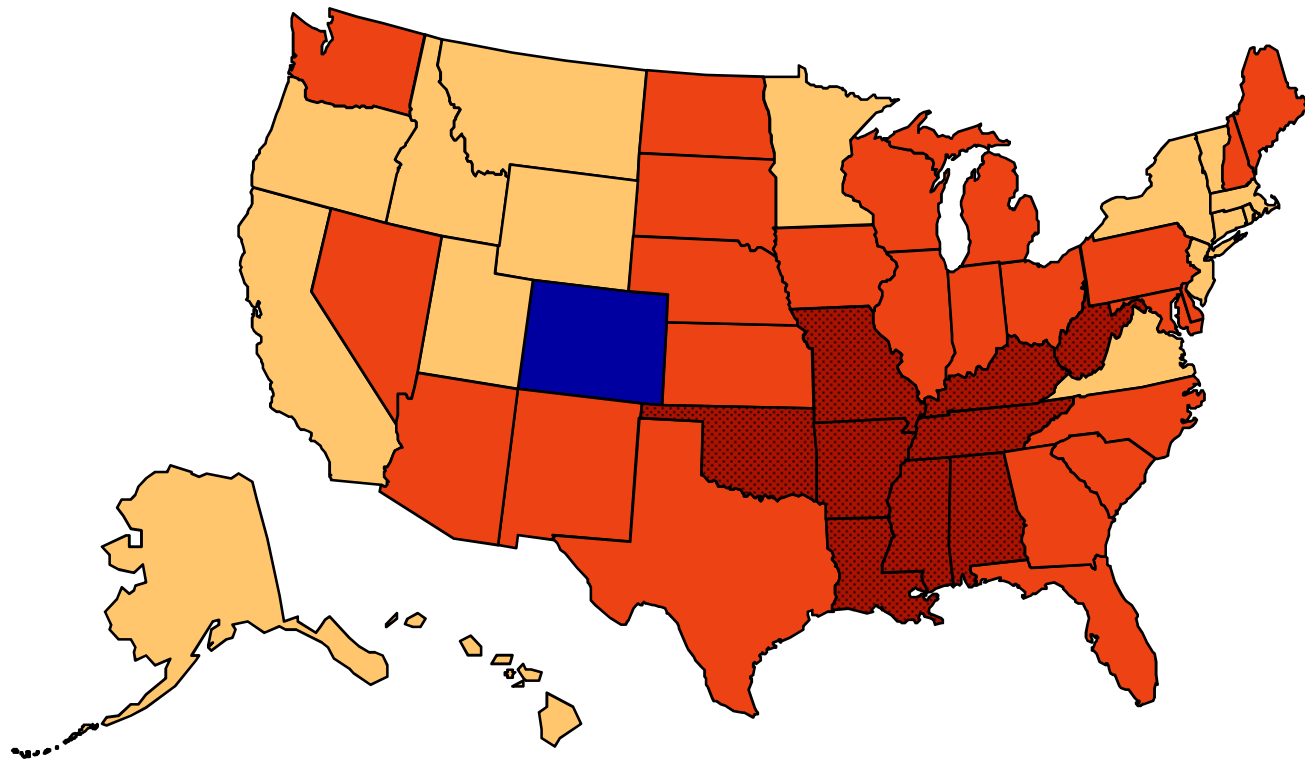


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2009

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.





# Overweight in Hispanic Americans



- Among Mexican American women, 78 percent are overweight or obese, as compared to only 60.3 percent of the non-Hispanic White women.
- In 2010, Hispanic Americans were 1.2 times as likely to be obese than Non-Hispanic Whites.
- In 2009 - 2010 Mexican American children were 1.6 times more likely to be overweight as Non-Hispanic White Children.
- From 2007-2010, Mexican American women were 40% more likely to be overweight, as compared to Non-Hispanic Whites.

**Age-adjusted percentage of overweight persons 20 years of age and over who are obese, 2007-2010. (Persons are considered obese if they have a Body Mass Index (BMI) of 30 or greater.)  
National Health and Nutrition Examination Survey (NHANES)**

	Mexican American	Non-Hispanic White	Mexican American/ Non-Hispanic White
Men	36.3	34.1	1.1
Women	44.6	32.5	1.4

Source: CDC 2012. Health United States, 2011. Table 74.  
<http://www.cdc.gov/nchs/data/hus/hus11.pdf> [PDF | 9.8MB]

# Weight in Hispanic Children



## Percentage overweight among children and adolescents 6-11 years of age, 2007-2010

	Mexican American	Non-Hispanic White	Mexican American/ Non-Hispanic White Ratio
Girls	22.4	14.0	1.6
Boys	24.3	18.6	1.3

Source: CDC 2012. Health United States, 2011. Table 75.  
<http://www.cdc.gov/nchs/data/hus/hus11.pdf> [PDF | 9.8MB]

# Weight in Hispanic Children



## Percentage of children and teens ages 2-19 who were told by a doctor that they were overweight, 2005-2008

Mexican American	Non-Hispanic White	Mexican American/ Non-Hispanic White Ratio
43.6	38.5	1.1

Source: 2011 National Healthcare Disparities Report. Table 6\_4\_4.1  
<http://www.ahrq.gov/qual/qdr11/index.html>

## Percent of children age 2-17 for whom a doctor or other health provider ever gave advice about amount and kind of physical activity, United States, 2008

Hispanics	Non-Hispanic White	Hispanic/ Non-Hispanic White
36.3	32.2	1.1

Source: 2011 National Healthcare Quality Report. Table 9\_1\_8.2b  
<http://www.ahrq.gov/qual/qdr11/index.html>

## Percent of children age 2-17 for whom a doctor or other health provider ever gave advice about eating healthy, United States, 2008

Hispanics	Non-Hispanic White	Hispanic/ Non-Hispanic White
49.7	49.0	1.0

Source: 2011 National Healthcare Quality Report. Table 9\_1\_9.2b  
<http://www.ahrq.gov/qual/qdr09/index.html>



# What factors influence obesity?



# Ecological Model/ Social Context



- Ecological model (Sallis et al., 2006)
- Social Contextual Theory
- Review figure 2 – 1; Both the macro and microenvironments influence weight, physical activity and eating behaviors

# Policy and Physical Activity



- Zoning, building codes, transportation and recreational design effect the *built environment*
- Policies effect programs, such as PE requirements in schools and sports programs and leagues in parks and recreation centers
- Incentives for insurance discounts, parking discounts or commuting by bikes
- Funding for policies and programs is critical

# The built environment, policy and policy makers



- There is a relationship between weight (obesity/overweight), physical activity, nutrition and policy
- The following figure demonstrates how the built environment and/or elements in the built environment that effect physical activity can be shaped by policy, and the decision makers who implement those policies



**TABLE 2-1 Relationships Among Selected Influences on Physical Activity**

Environment Attribute	Policy Determinant	Decision Makers
Mixed land use	Zoning	Local governments (as informed by planning officials)
Street connectivity	Guidelines, standards	Institute of Transportation Engineers; developers; local governments
Residential density	Zoning	Local governments (as informed by planning officials)
Pedestrian/bicycle facilities	Transport/complete streets*	Transportation departments; state and local governments
Traffic volume/speed	Transport	Transportation departments; governments
Transit access	Transport	Transportation departments; governments
Parks, trails	Park and recreation standards and funding	Developers of national standards; local governments
Private recreation facilities	Marketplace	Business owners
Aesthetics, vegetation	Various	Multiple
School grounds, siting	Standards, joint-use agreements	State education departments and governments

\*A complete street is a road designed and operated to be safe for all users, including drivers, bicyclists, transit vehicles and users, and pedestrians of all ages and abilities.

SOURCE: Sallis, 2011.

# Building Bridges



- The following needs to be considered in order to improve obesity, physical activity and nutrition through policy:
  - Appropriate measurement is needed for the policy and the environment, both the presence and quality of each
  - Cross-collaboration between public health sectors and non-health sectors
- Provide examples of above

# Appropriate Measurement



- How are policy data measured?
- What are the appropriate tools and how to improve them?
  - Surveys
  - Observations
  - Geographic Information Systems (GIS)
  - Policy Measures
  - Crime Measures

# Healthy People 2020 Physical Activity and Policy



## BOX 2-1 Physical Activity Environment/Policy Objectives for Healthy People 2020

1. Increase the proportion of the nation's public and private schools that require daily physical education for all students.
2. Increase regularly scheduled elementary school recess in the United States.
3. Increase the proportion of school districts that require or recommend elementary school recess for an appropriate period of time.
4. Increase the proportion of the nation's public and private schools that provide access to their PA [physical activity] spaces and facilities for all persons outside of normal school hours.
5. Increase the number of states with licensing regulations for PA provided in child care.
6. (Developmental)\* Increase the proportion of employed adults who have access to and participate in employer-based exercise facilities and exercise programs.
7. (Developmental)\* Increase legislative policies for the built environment that enhance access to and availability of PA opportunities.

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\*There is currently no national baseline data for developmental objectives, but they should have a confirmed nationally representative data source that will ultimately provide baseline data and at least one tracking point. Developmental objectives address areas of national importance for which investments should be made over the next decade to measure their change (<http://healthypeople.gov/2020/about/aboutdata.aspx> [accessed August 30, 2011]).

SOURCE: <http://healthypeople.gov/2020/topicsobjectives2020>.

# Healthy People 2020 Nutrition and Policy



## **Nutrition and Weight Status**

**Number            Objective Short Title**

### **Healthier Food Access**

- NWS-1            State nutrition standards for child care
- NWS-2            Nutritious foods and beverages offered outside of school meals
- NWS-3            State-level incentive policies for food retail
- NWS-4            Retail access to foods recommended by Dietary Guidelines for Americans

### **Health Care and Worksite Settings**

- NWS-5            Primary care physicians who measure patients' body mass index (BMI)
- NWS-6            Physician office visits with nutrition or weight counseling or education
- NWS-7            Worksite nutrition or weight management classes or counseling