

THE (NOT SO) SKINNY ON SUMMERTIME AND CHILD OBESITY

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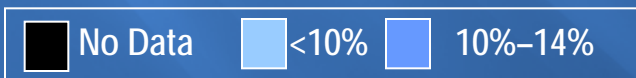
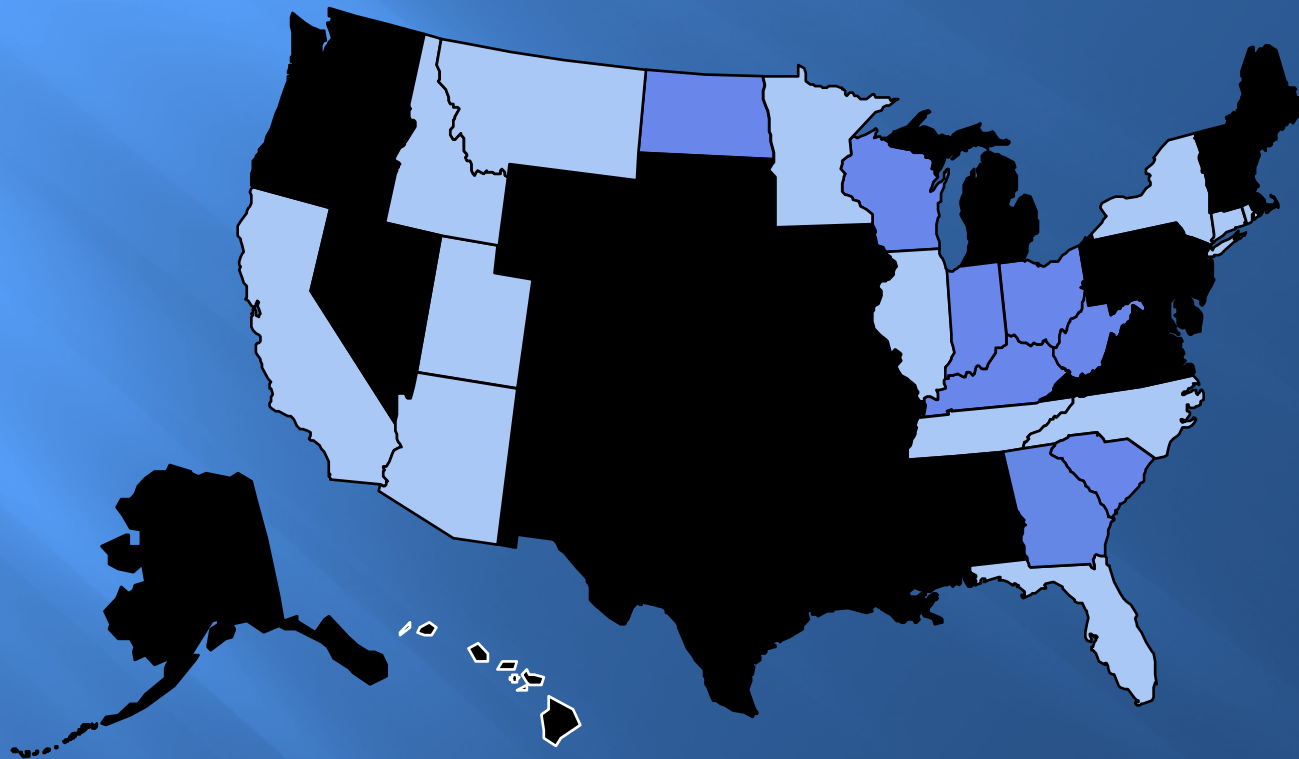
November 17, 2009

PRESENTATION ROAD MAP

- ▣ **BACKGROUND ON OBESITY**
- ▣ **SUMMARY OF TWO RESEARCH STUDIES**
- ▣ **CONCLUSIONS AND IMPLICATIONS**

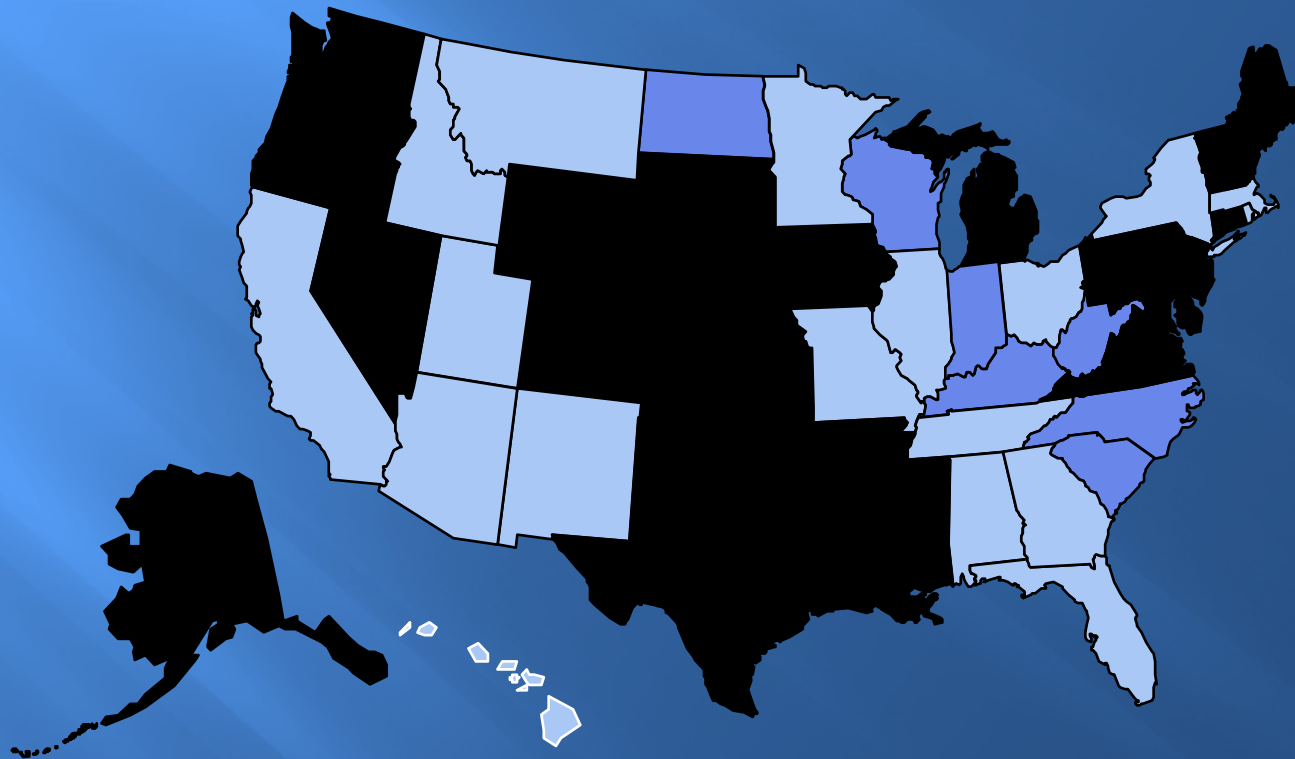
Obesity Trends* Among U.S. Adults BRFSS, 1985

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



Obesity Trends* Among U.S. Adults BRFSS, 1986

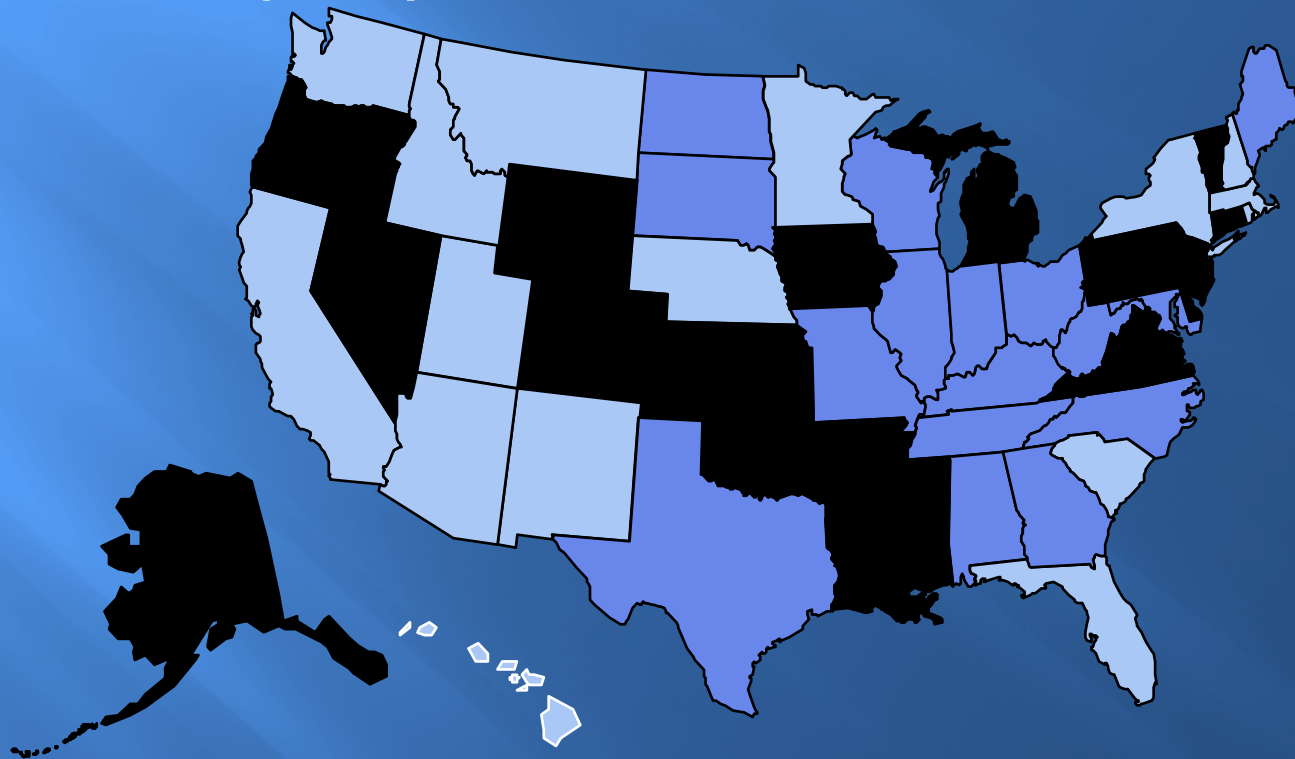
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Obesity Trends* Among U.S. Adults

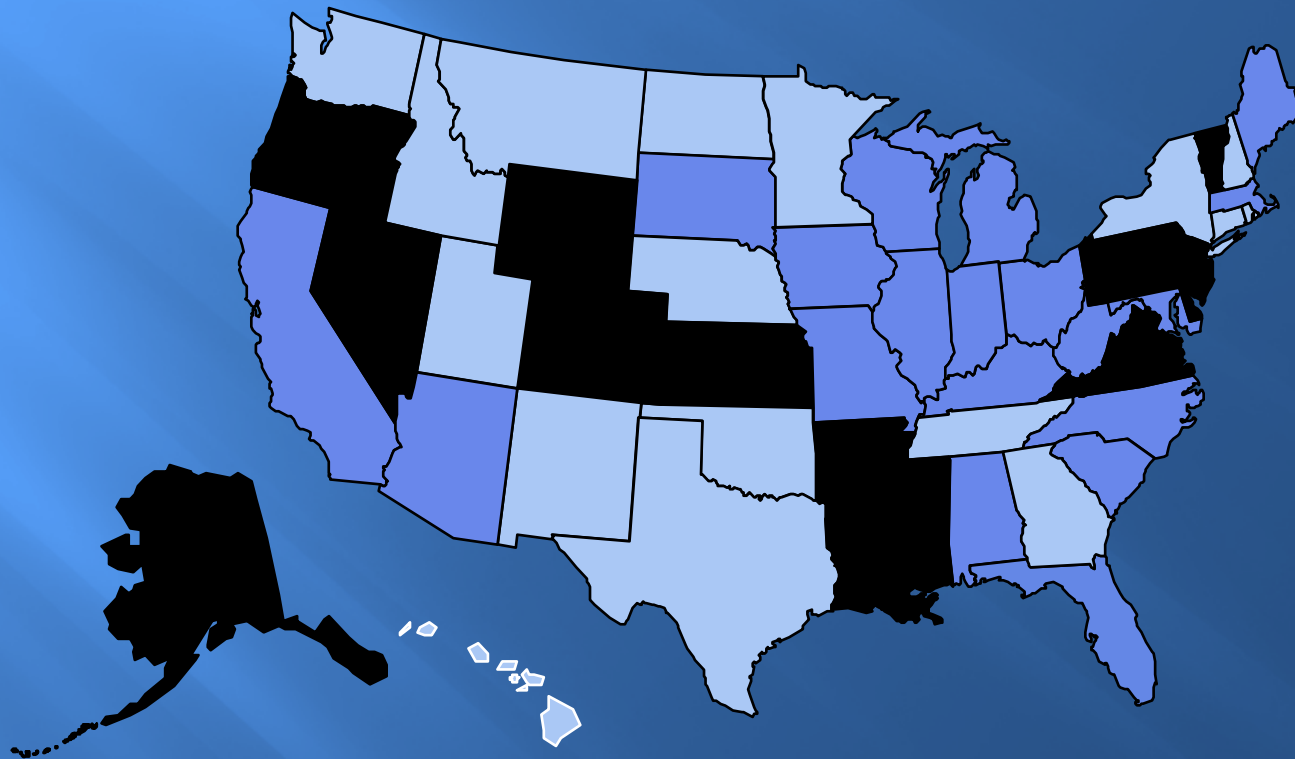
BRFSS, 1987

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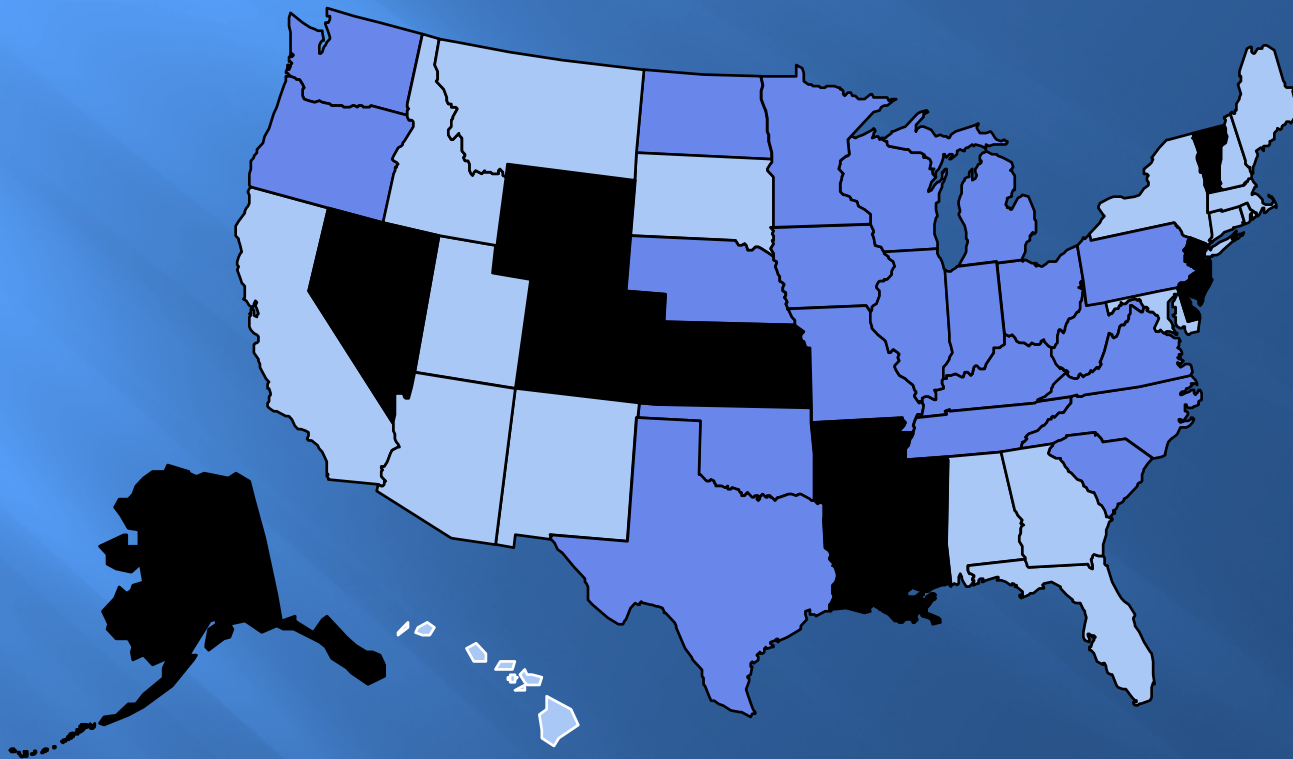
Obesity Trends* Among U.S. Adults BRFSS, 1988

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Obesity Trends* Among U.S. Adults BRFSS, 1989

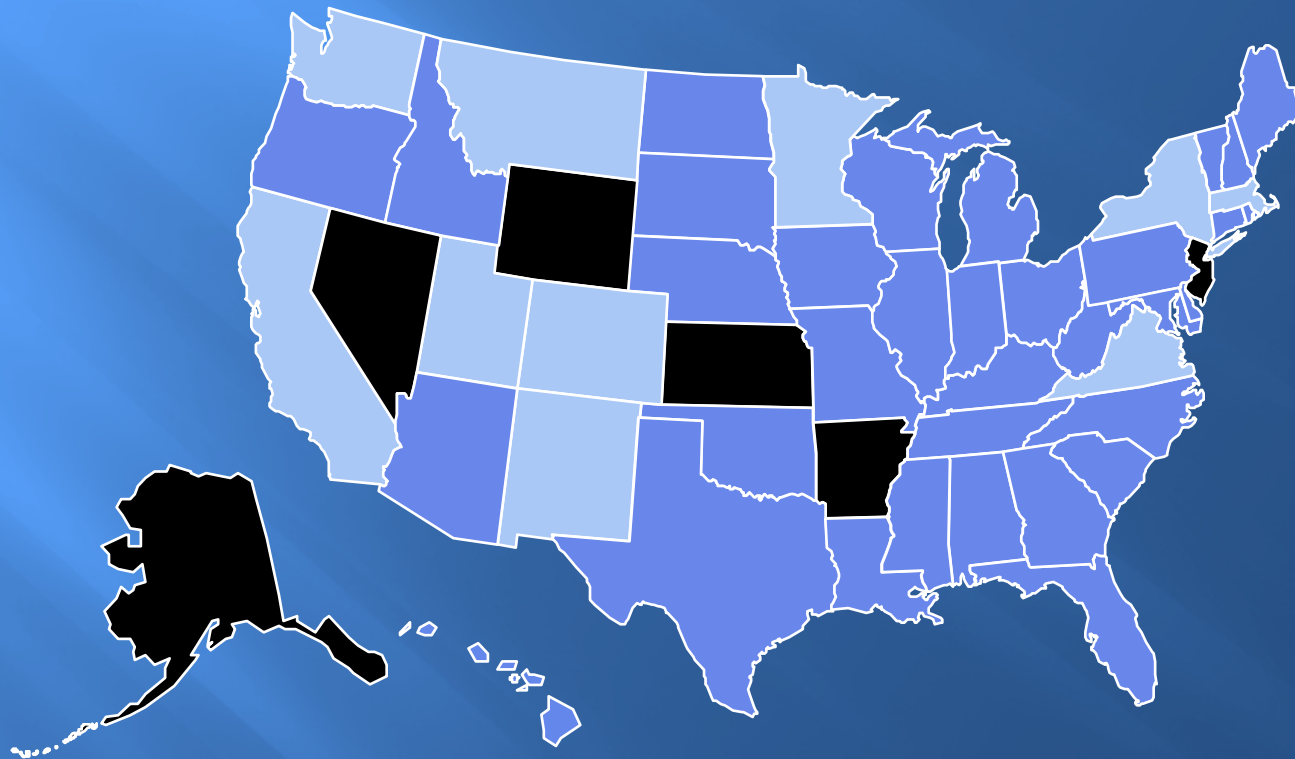
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Obesity Trends* Among U.S. Adults

BRFSS, 1990

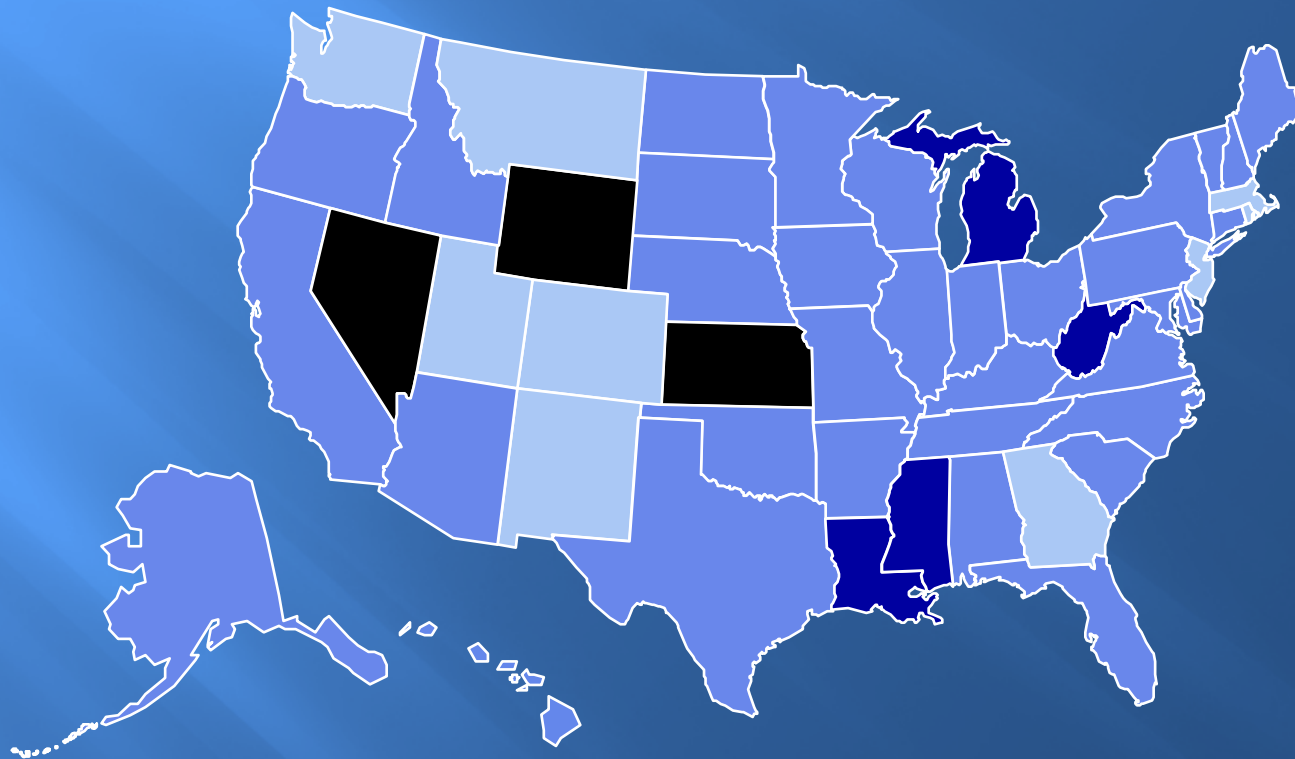
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Obesity Trends* Among U.S. Adults

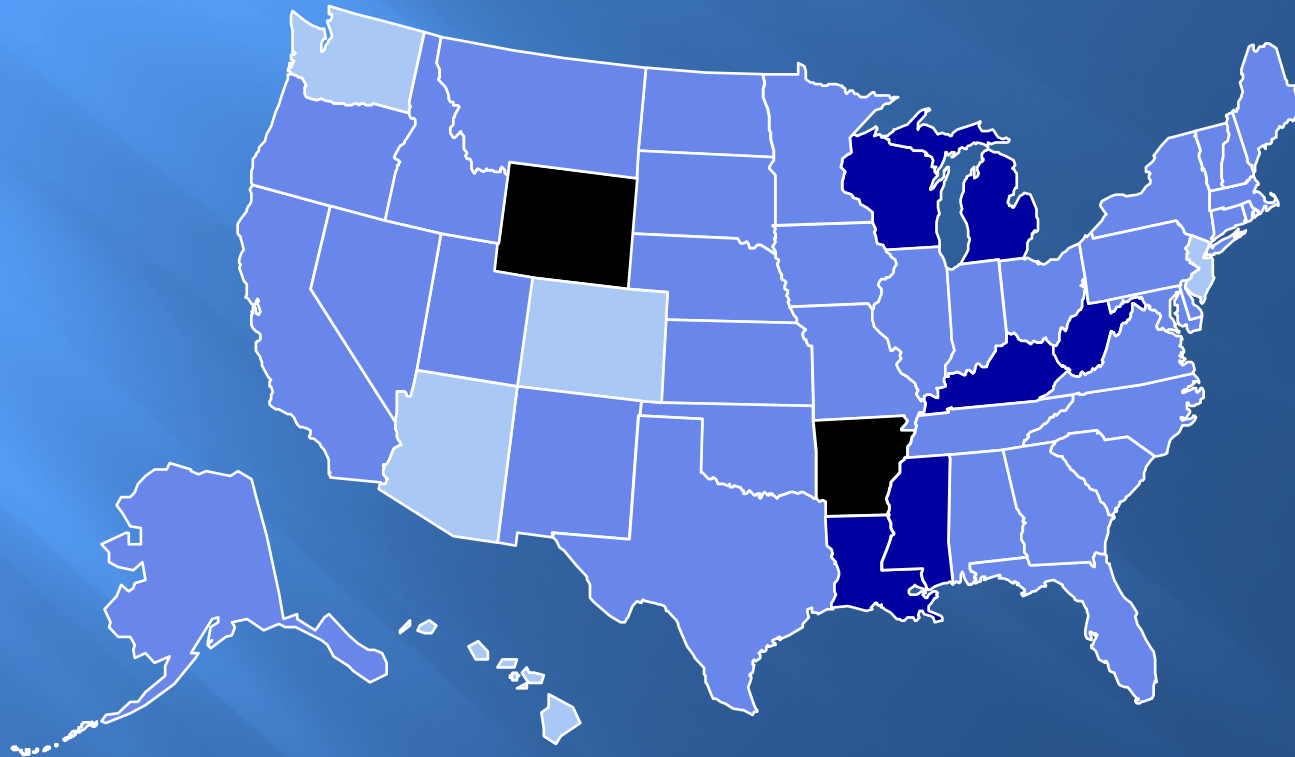
BRFSS, 1991

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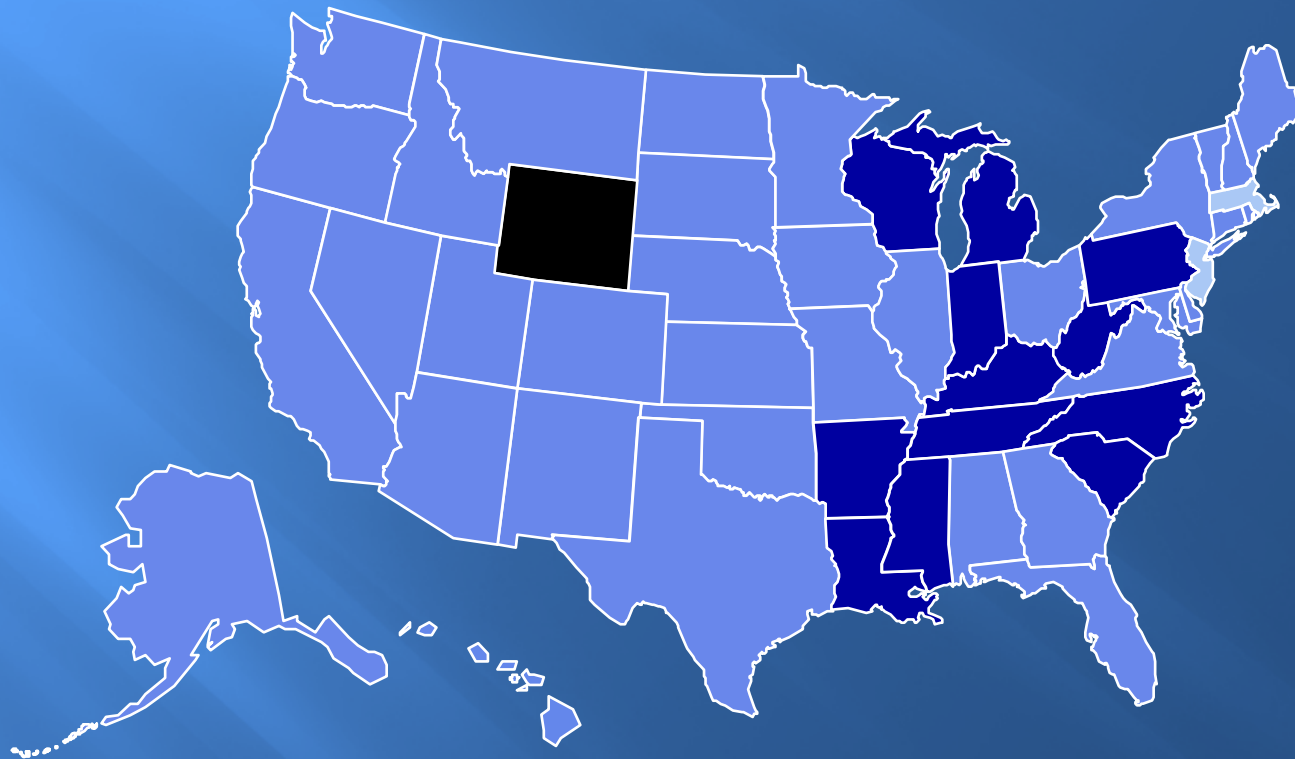
Obesity Trends* Among U.S. Adults BRFSS, 1992

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Obesity Trends* Among U.S. Adults BRFSS, 1993

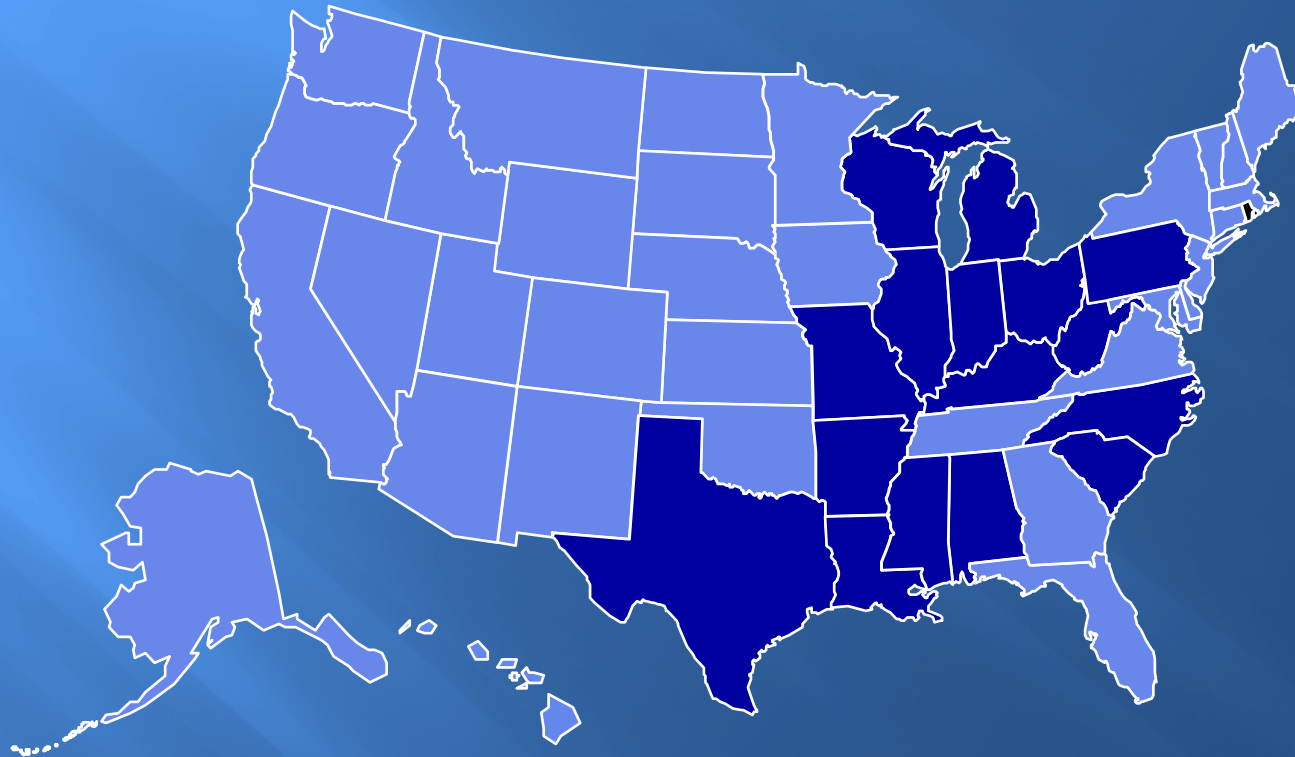
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Obesity Trends* Among U.S. Adults

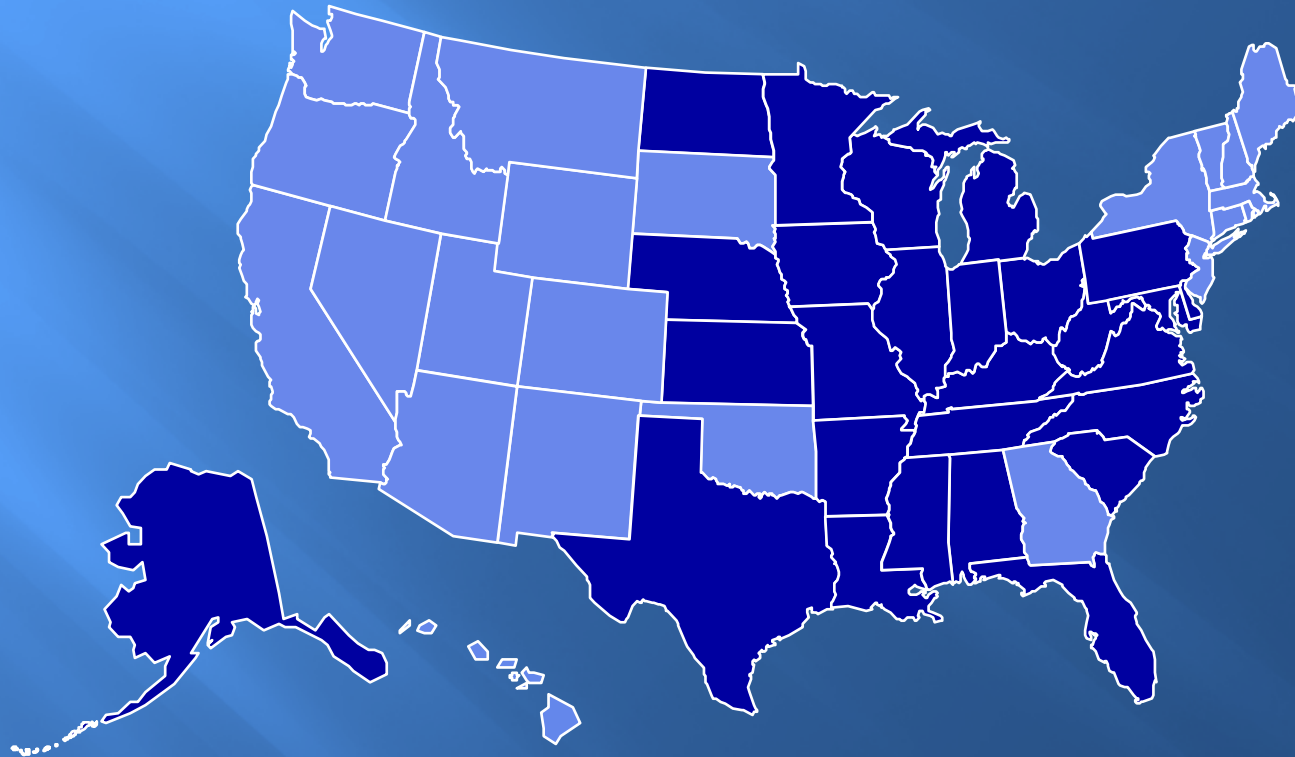
BRFSS, 1994

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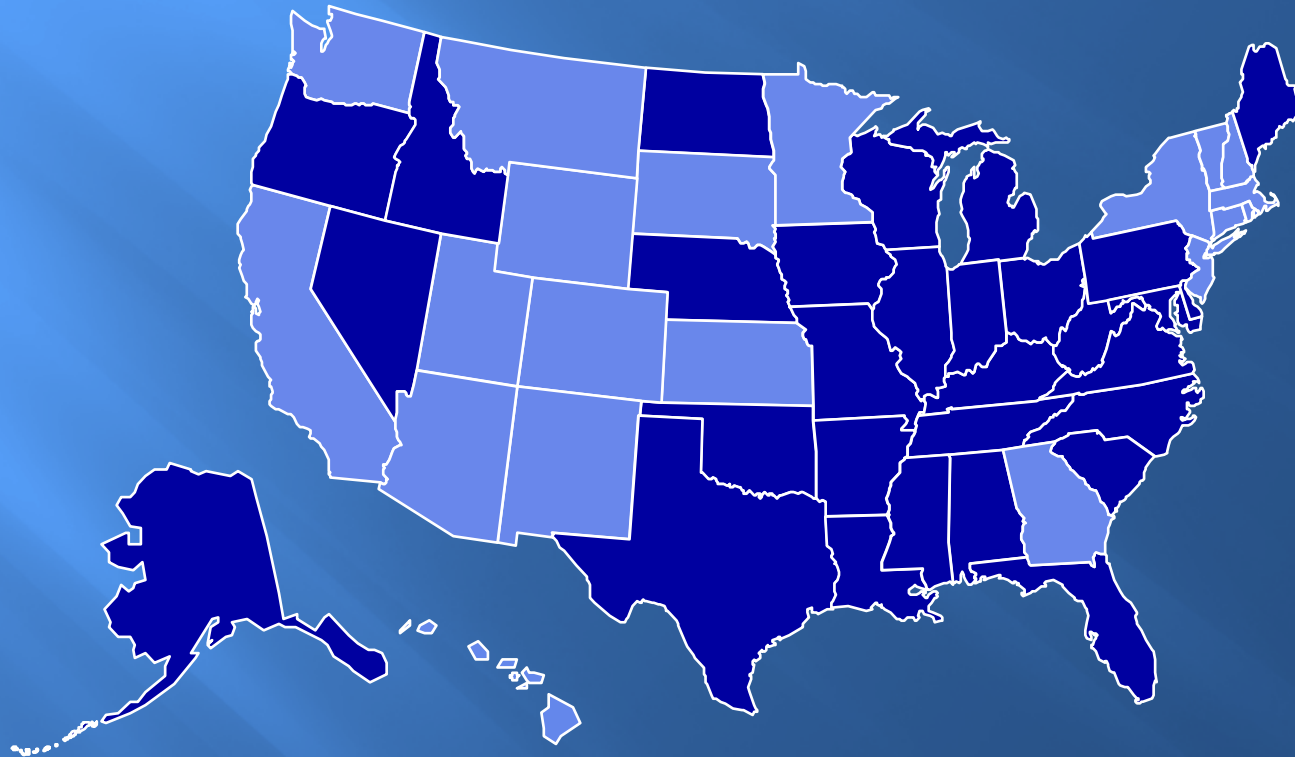
Obesity Trends* Among U.S. Adults BRFSS, 1995

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Obesity Trends* Among U.S. Adults BRFSS, 1996

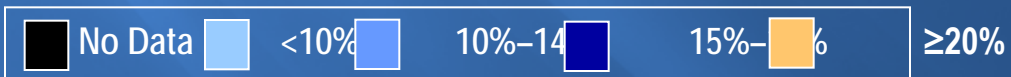
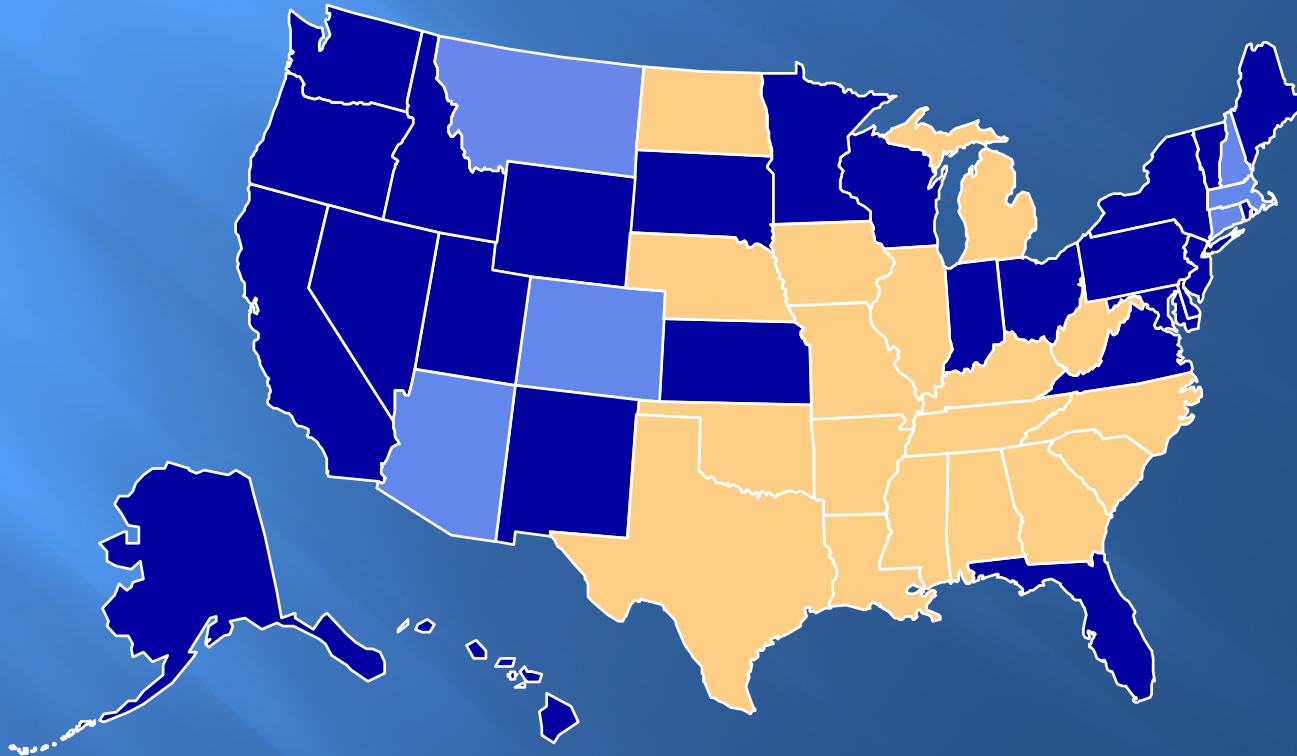
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Obesity Trends* Among U.S. Adults

BRFSS, 1999

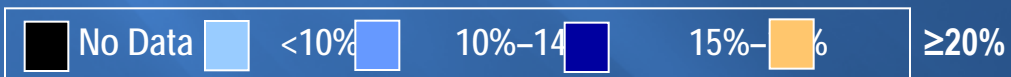
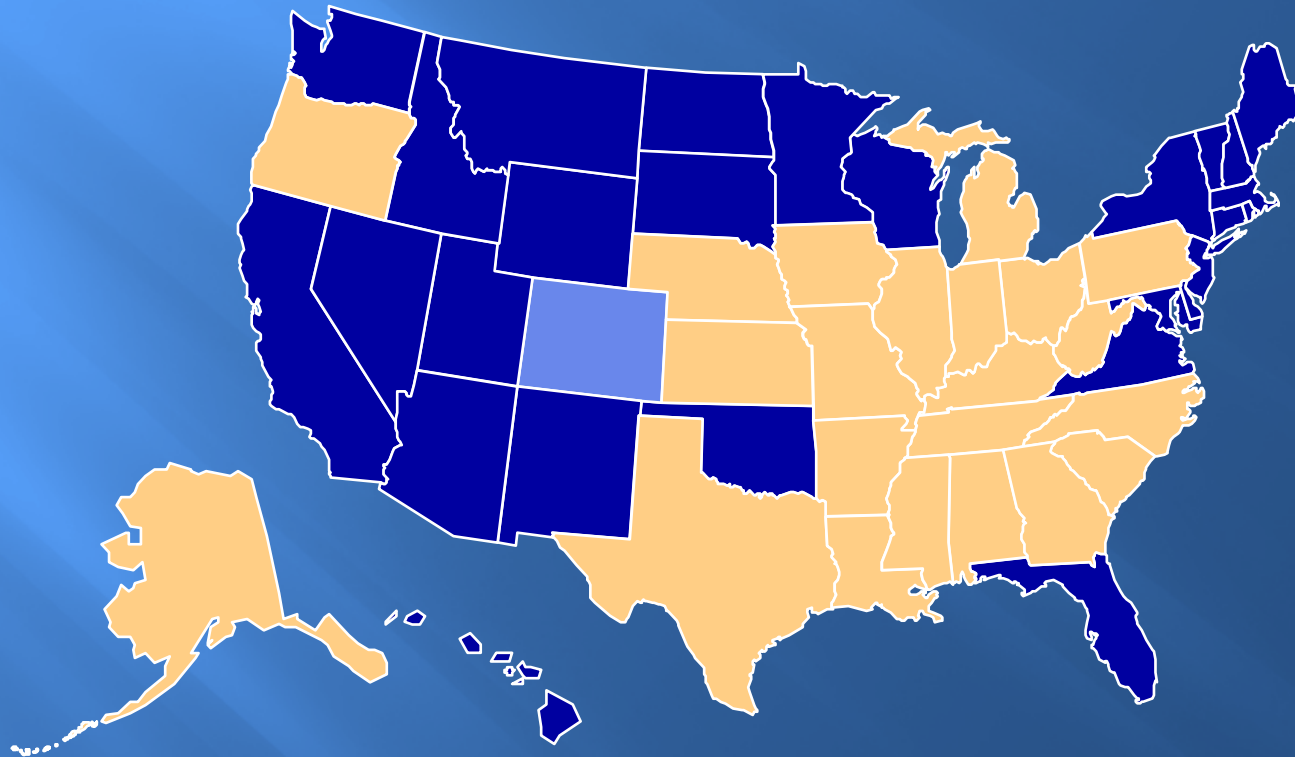
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Obesity Trends* Among U.S. Adults

BRFSS, 2000

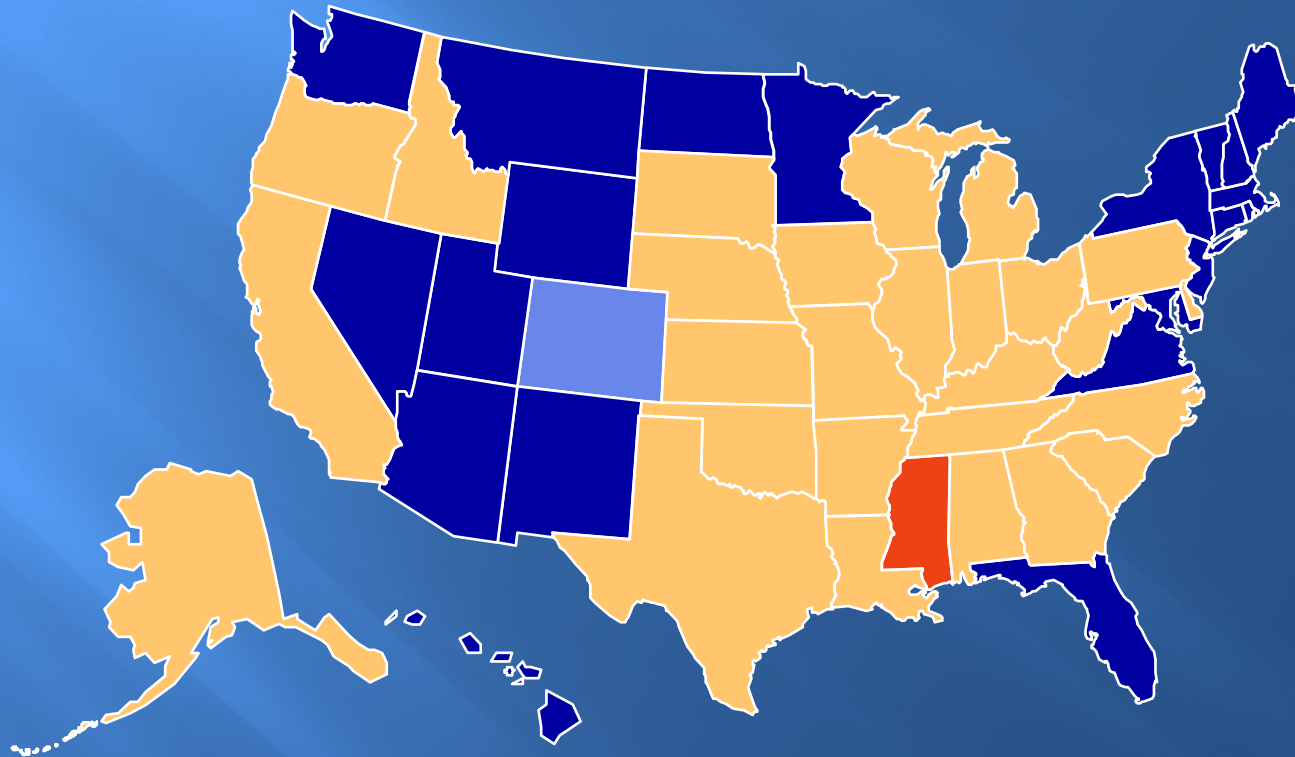
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Obesity Trends* Among U.S. Adults

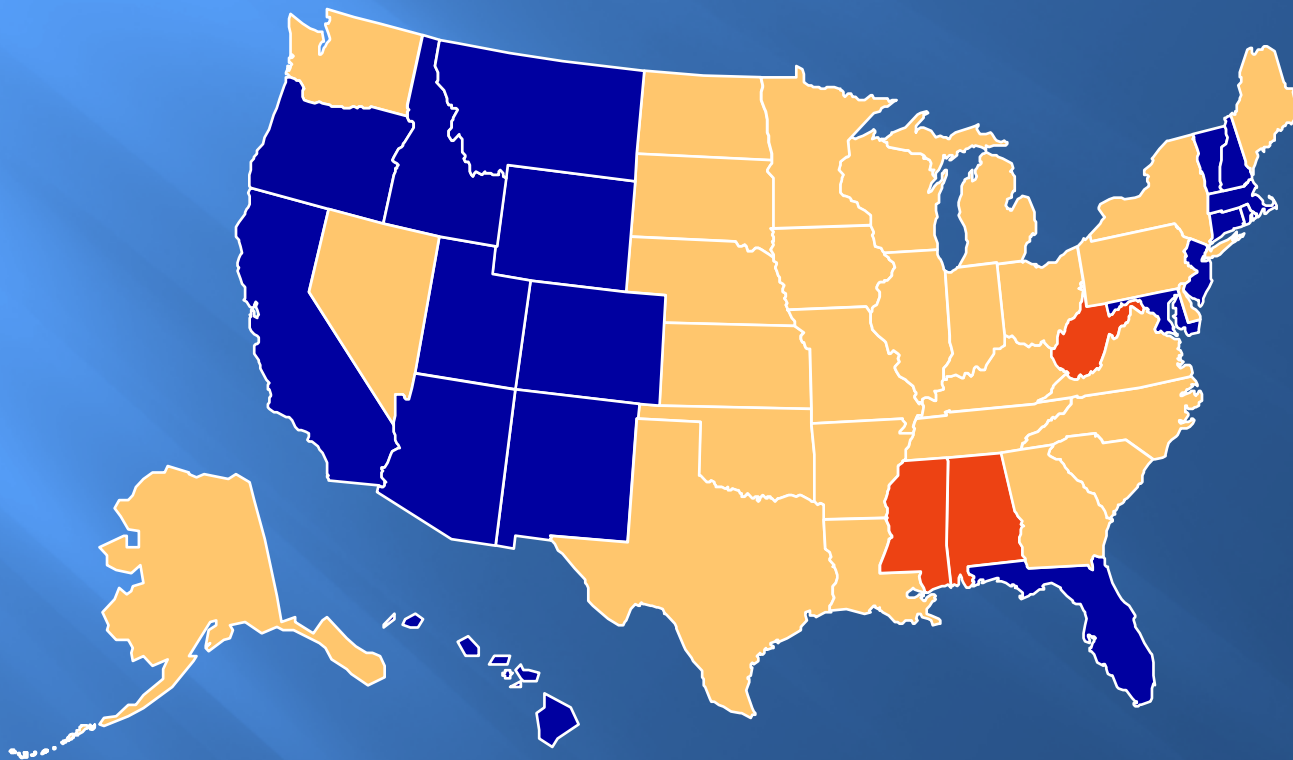
BRFSS, 2001

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



Obesity Trends* Among U.S. Adults BRFSS, 2002

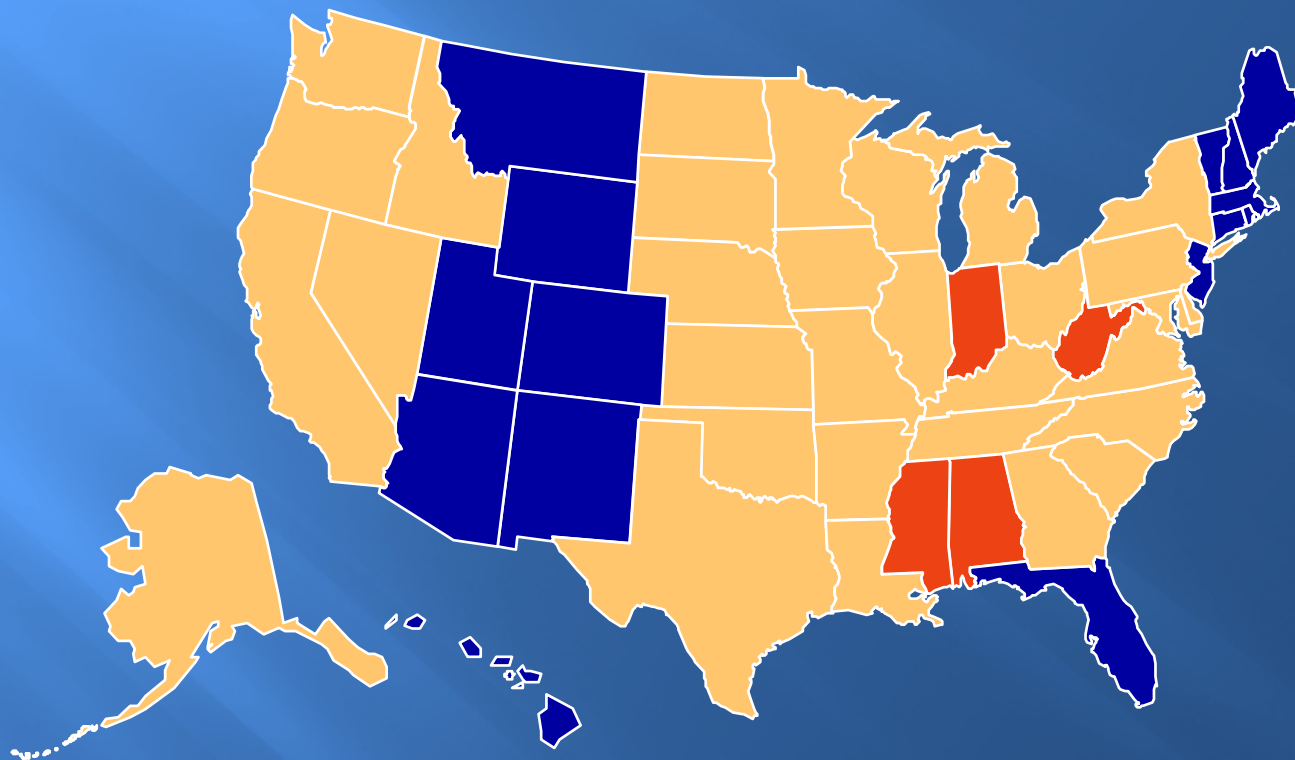
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Obesity Trends* Among U.S. Adults

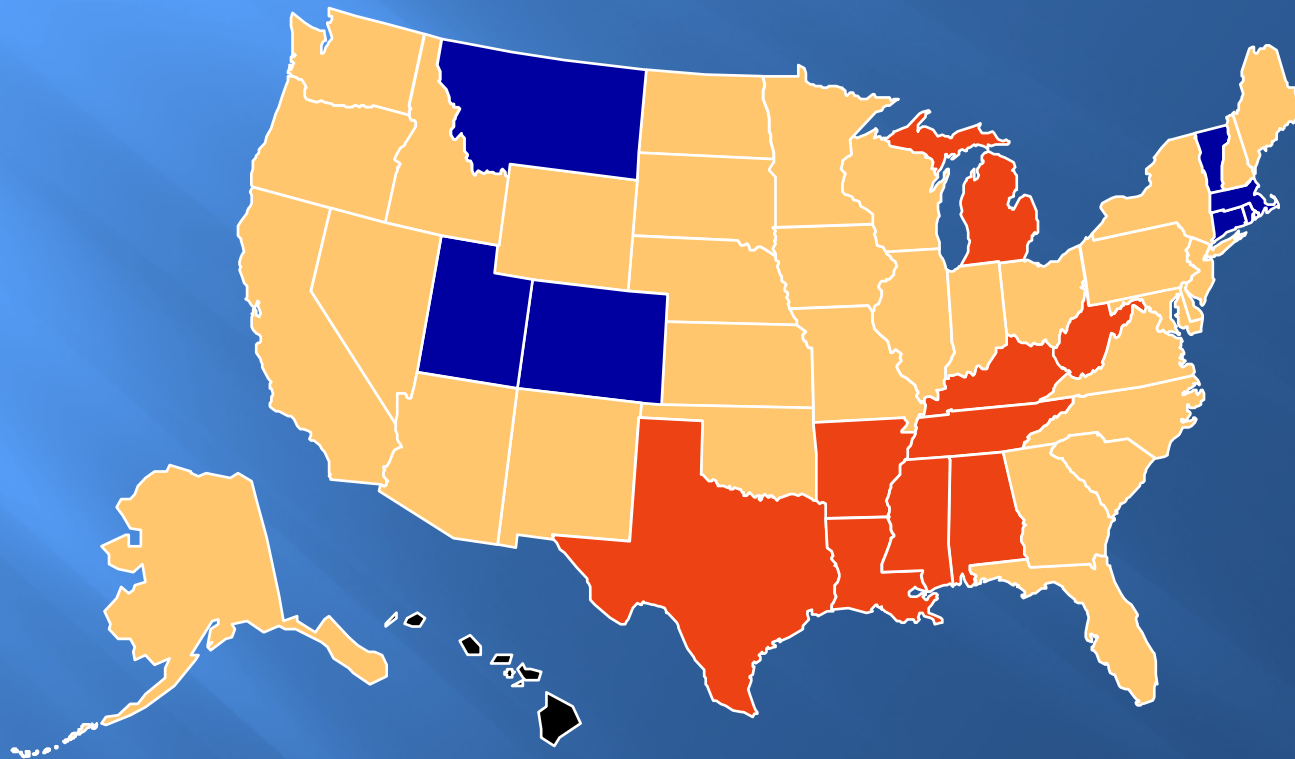
BRFSS, 2003

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



Obesity Trends* Among U.S. Adults BRFSS, 2004

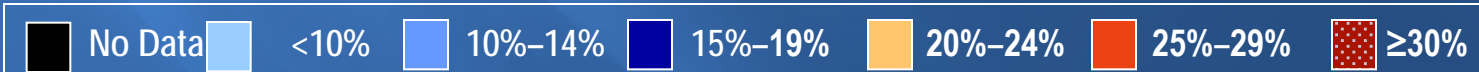
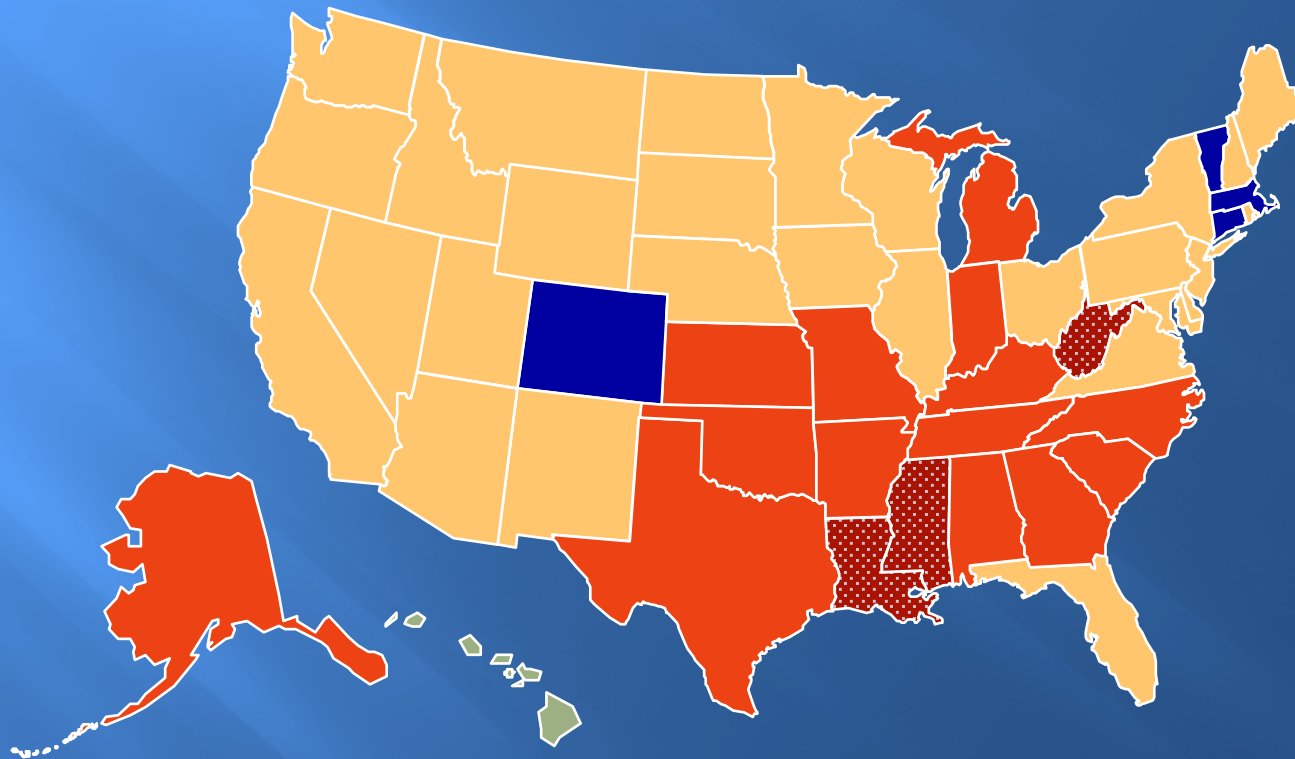
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Obesity Trends* Among U.S. Adults

BRFSS, 2005

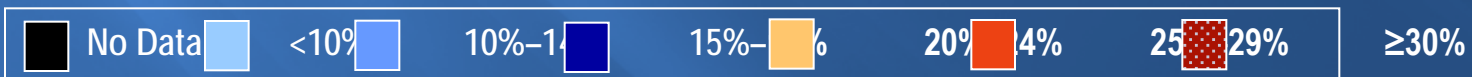
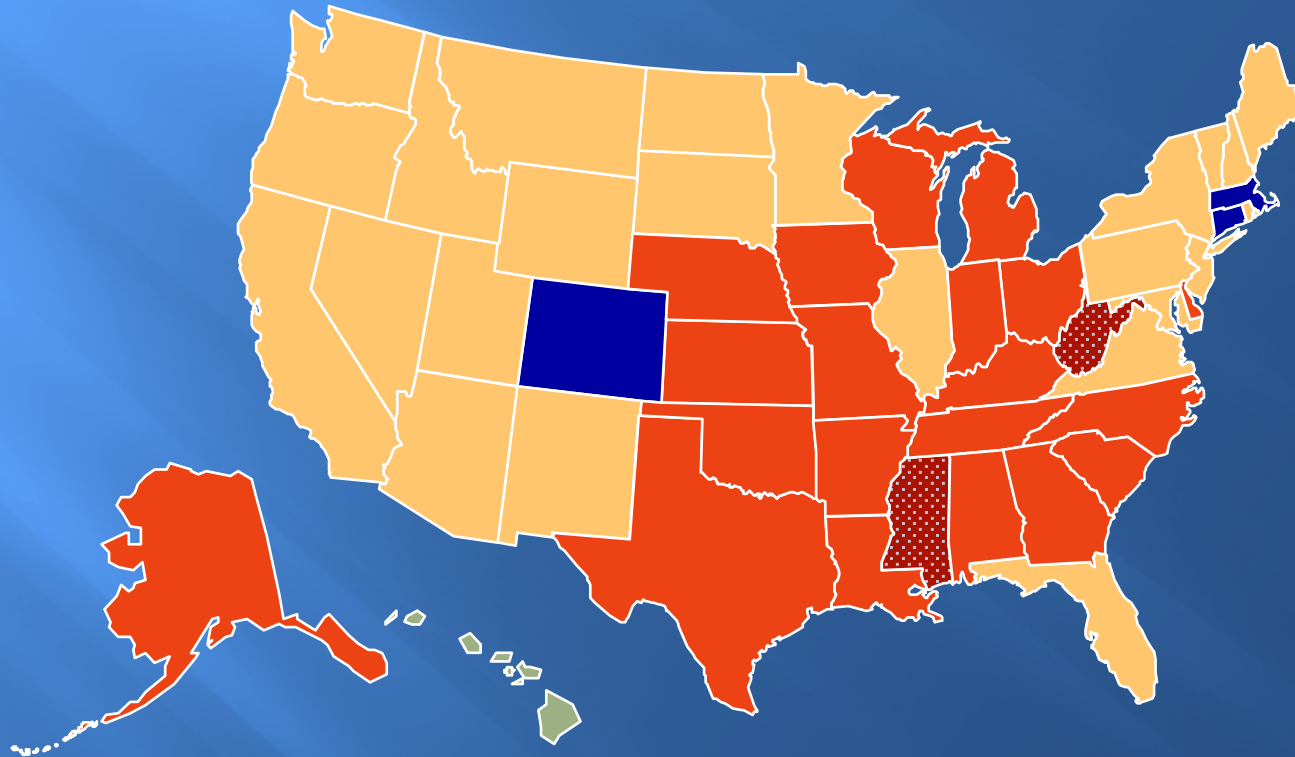
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Obesity Trends* Among U.S. Adults

BRFSS, 2006

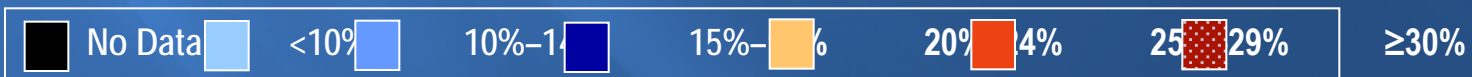
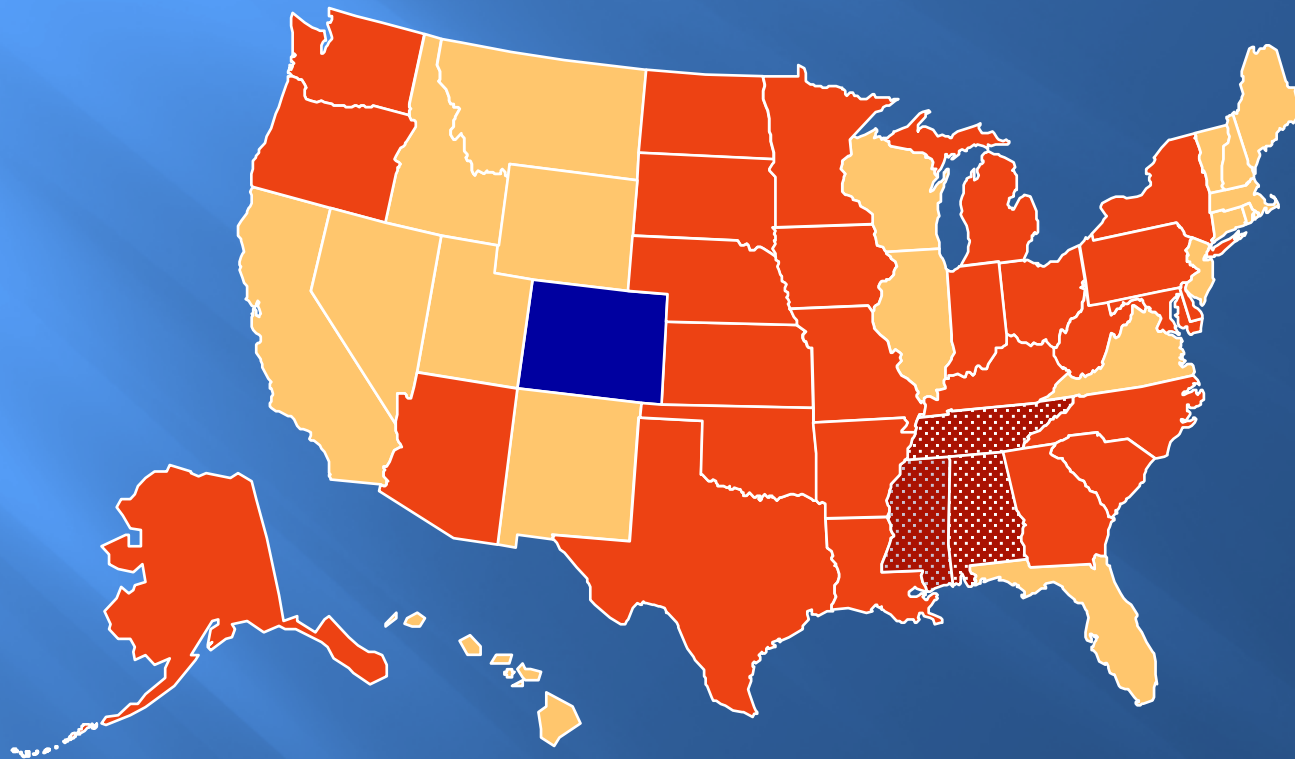
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Obesity Trends* Among U.S. Adults

BRFSS, 2007

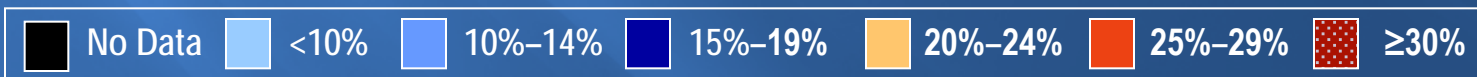
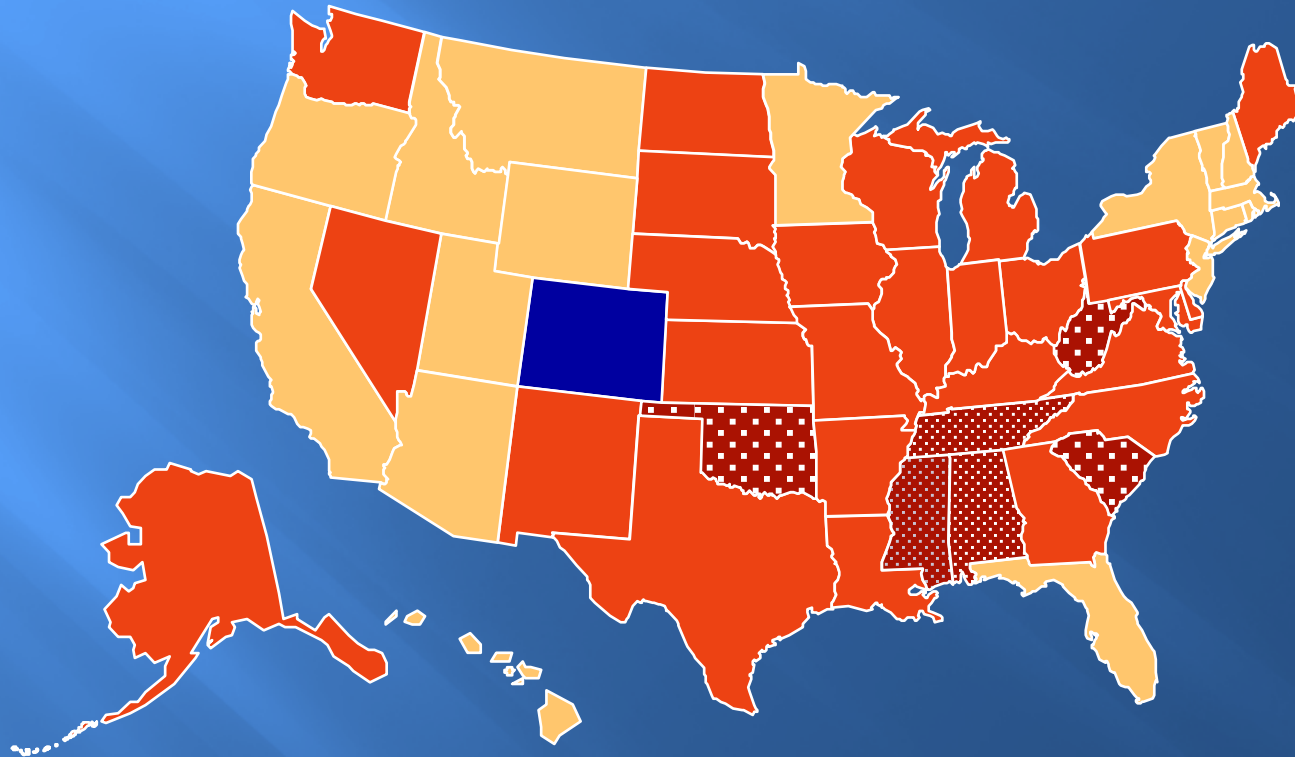
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Obesity Trends* Among U.S. Adults

BRFSS, 2008

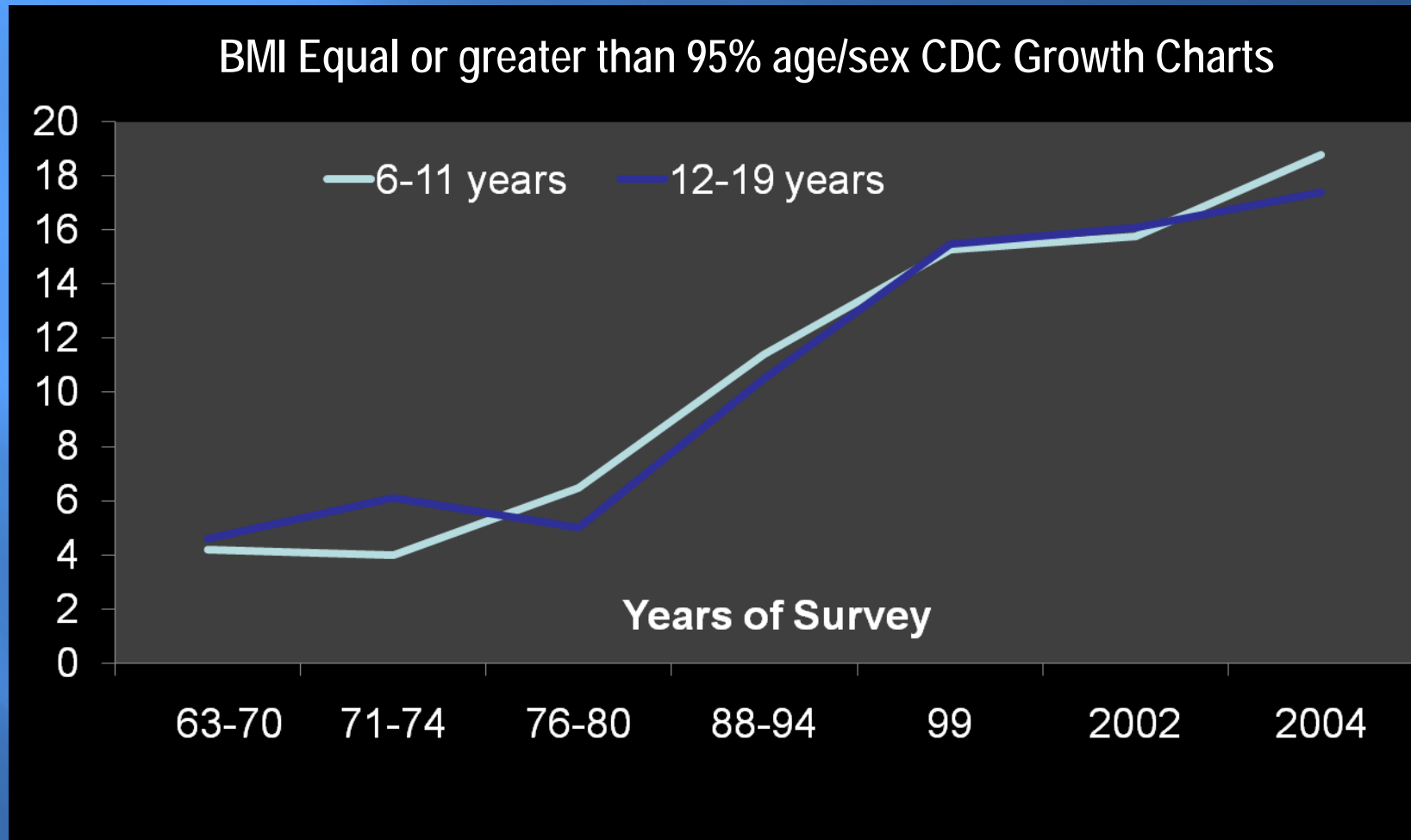
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Obesity Epidemic

- ▣ Prevalence of adult obesity has doubled in the last 30 years.
- ▣ Relative increase has been greater among young people under 18

Percentage of U.S. Youth who are Obese by age



Obesity in California Children

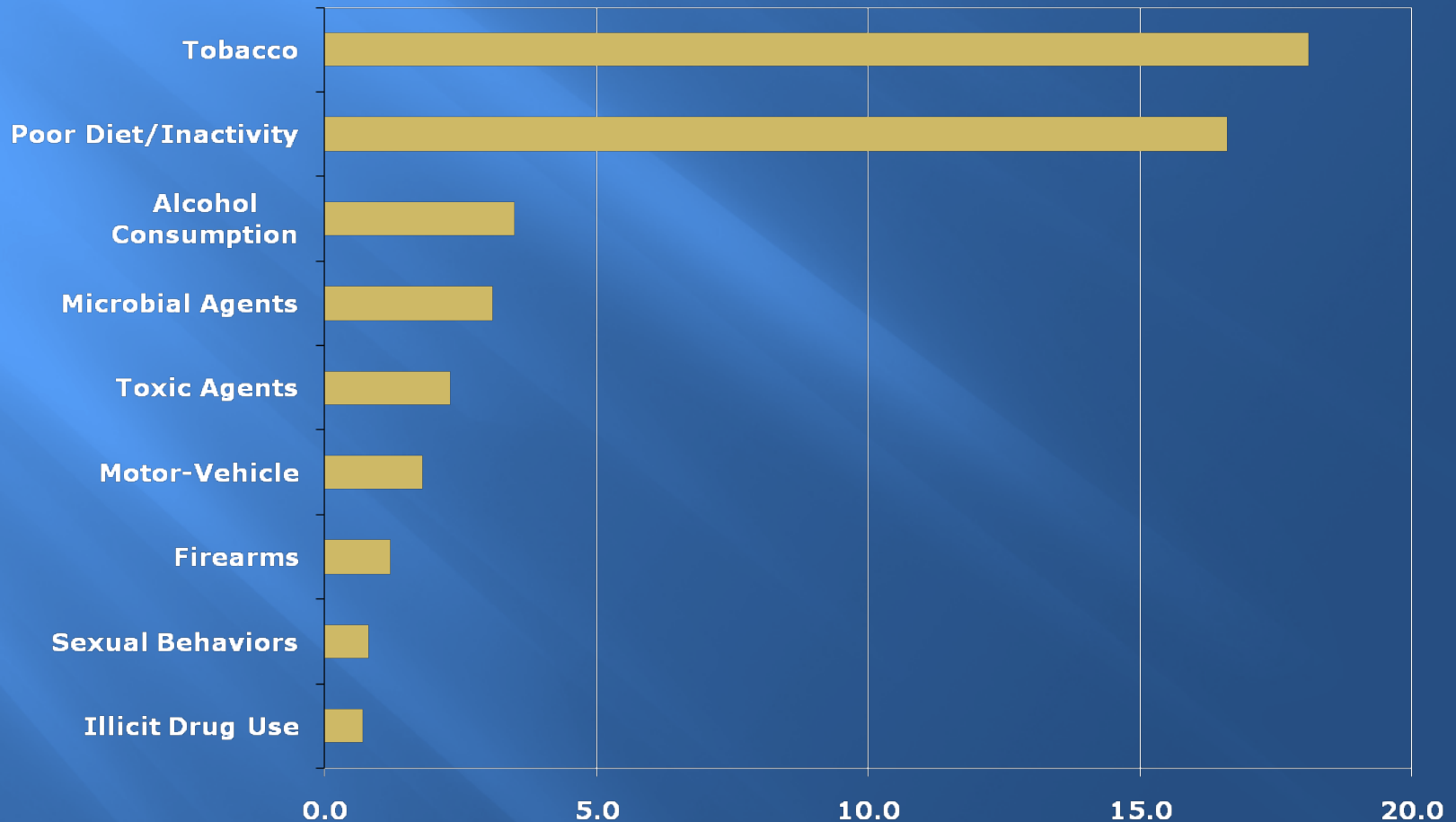
- ▣ 32% are overweight or obese.
 - Pacific Islanders (42%), Latinos (40%), American Indians (37%)
- ▣ 75% of overweight children will become overweight or obese adults.

Who Cares?

- ▣ Sleep apnea
- ▣ High Blood Pressure & Hypertension
- ▣ Gallbladder Disease
- ▣ Psychological Disorders (e.g., depression)
- ▣ Type II Diabetes
- ▣ Adult Cardiovascular Disease
- ▣ Premature Death

Actual Causes of Death in US-2000

Physical inactivity and poor diets are associated with
 $\approx 400,000$ deaths each year



Percent of Deaths



Costs of Overweight & Obesity

- National \approx \$75.1 billion
 - 9.1% of all U.S. medical expenditures
- California \approx \$7.7 billion
 - $\frac{1}{2}$ paid through Medicare and Medi-Cal
- Note: The 2009 California Center Public Health Advocacy reports \approx \$21 billion for overweight/obesity

Reasons?

- ▣ Energy Input > Energy Output
- ▣ Toxic Food Environment
- ▣ Sedentary Lifestyle

Summertime and Obesity

- ▣ ECLS study of $\approx 17,000$ K-1 Graders. **BMI gains were more than twice as large during the summer than the school year.**
 - Summer weight intensified the racial/ethnic gap in obesity
- ▣ **Summer weight gain undermines otherwise effective obesity treatments during the school year.**
- ▣ **Why?**
 - **More sedentary time** (e.g., TV and snacking).
 - **More opportunities to overeat** (e.g., celebrations, socializing).
 - **More exposure to highly caloric foods** (e.g., sugar drinks).

Main Hypothesis

Organized Activities are Healthy Arrangements for Children

- ▣ After-school Programs
- ▣ Extracurricular Activities
 - Sports, Lessons, Clubs
- ▣ Community-Based Organizations
 - Boys and Girls Clubs, Scouts

Why Should Organized Activities Reduce/Prevent Obesity?

- ▣ Opportunities for physical recreation and health education
- ▣ Controlled eating
- ▣ More “palatable” than traditional treatments

Challenges California Elementary Schools Face

- Avg. 15 min
PE/day
- Avg. 2 min
MVPA/day

MVPA = Moderate to Vigorous
Physical Activity
(you can break a sweat)



*Physical Education Matters, Failing Fitness,
California Endowment Reports 2006*

Study 1

After-school Program Participation and Obesity: Disadvantaged Children

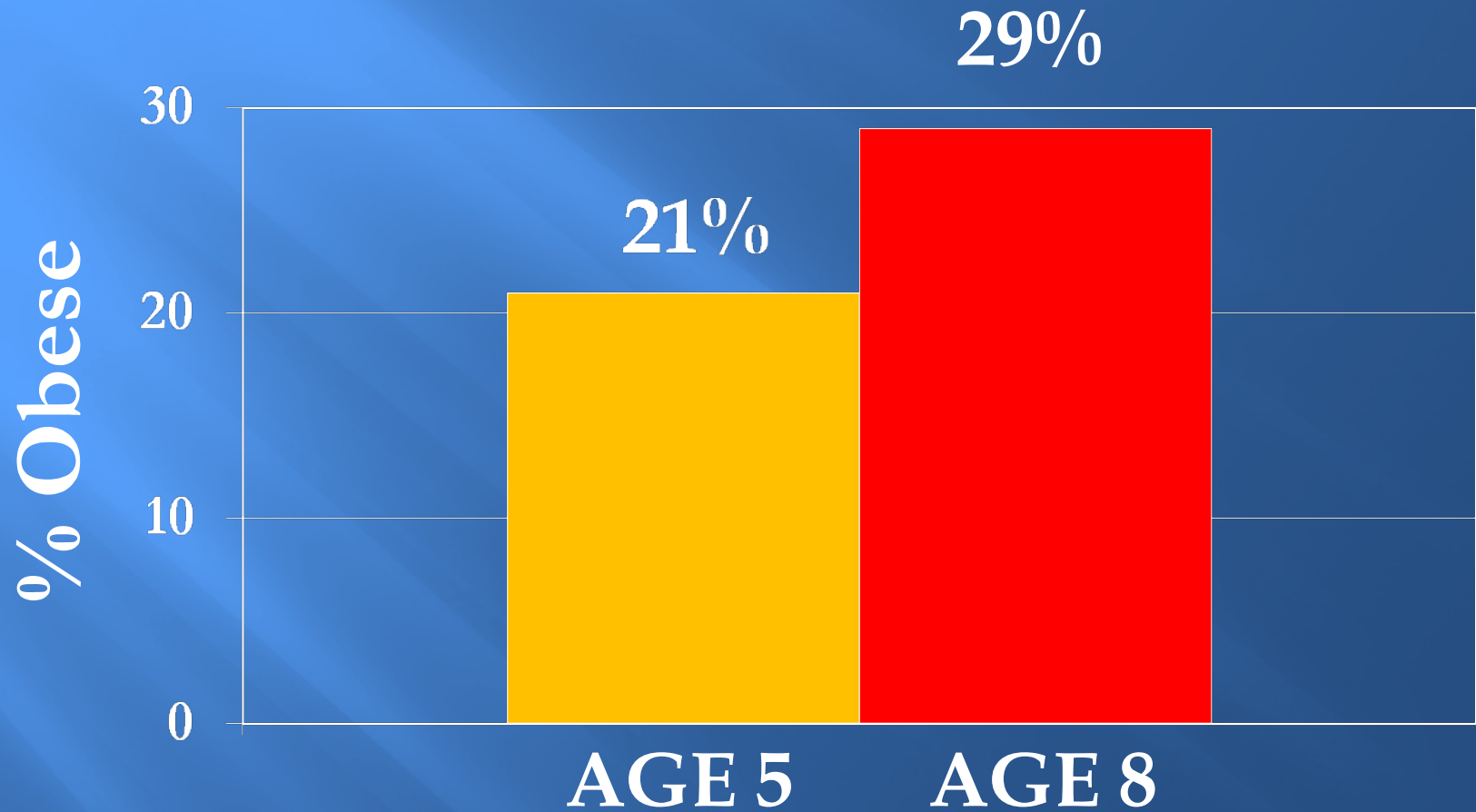
National Institutes of Health

Grant # R01HDMH39909

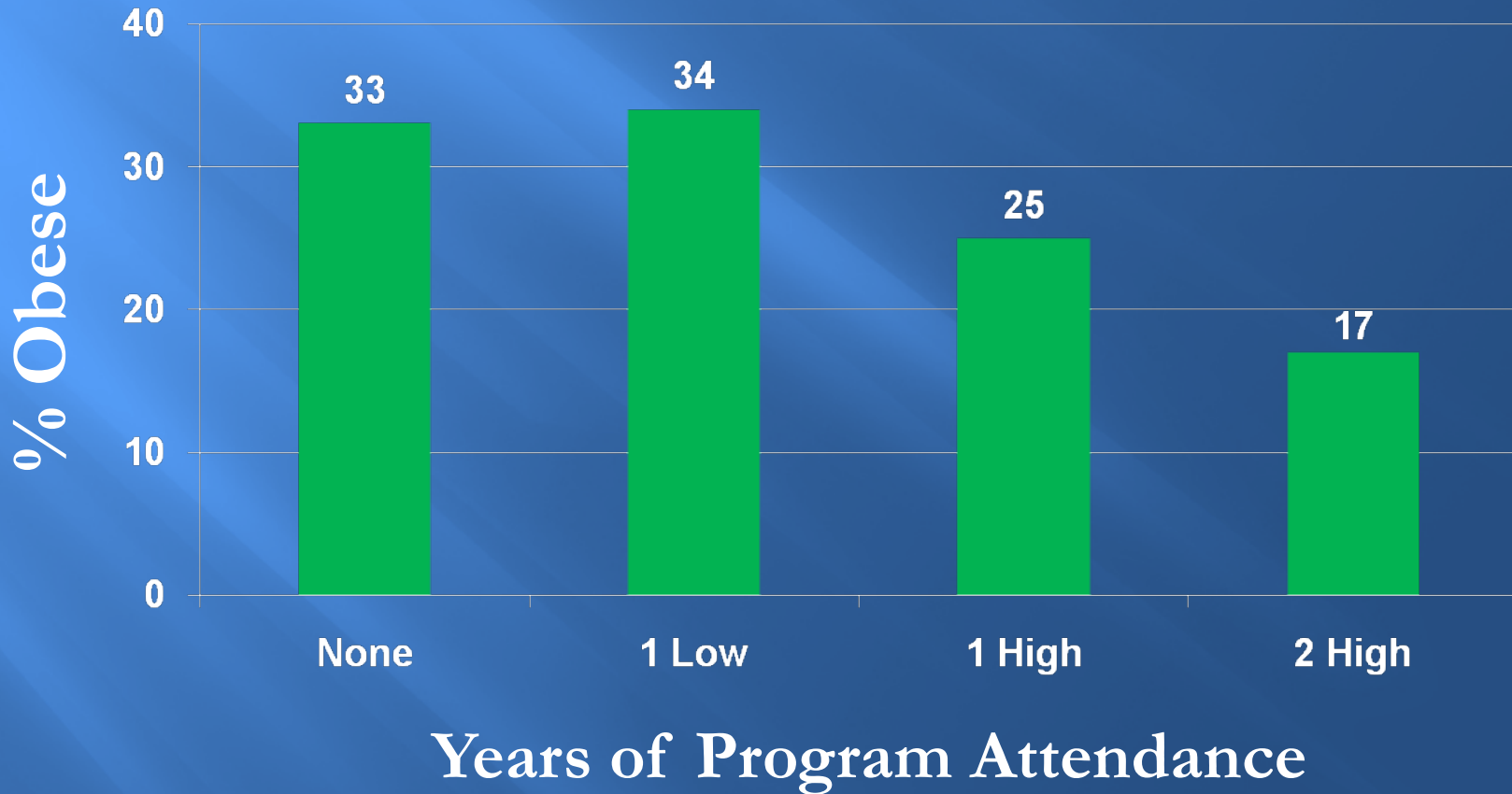
Research Participants

- ▣ 600 Children, Followed Across Ages 5-8
- ▣ Economically Disadvantaged, Urban
- ▣ Key Measures
 - BMI and Obesity
 - After-school Program Attendance

PERCENT OBESE BY AGE



After-school Program Attendance and Obesity



Study 2

Consequences of Summertime for Child/Adolescent Obesity

National Institutes of Health

Grant #R03HD055318

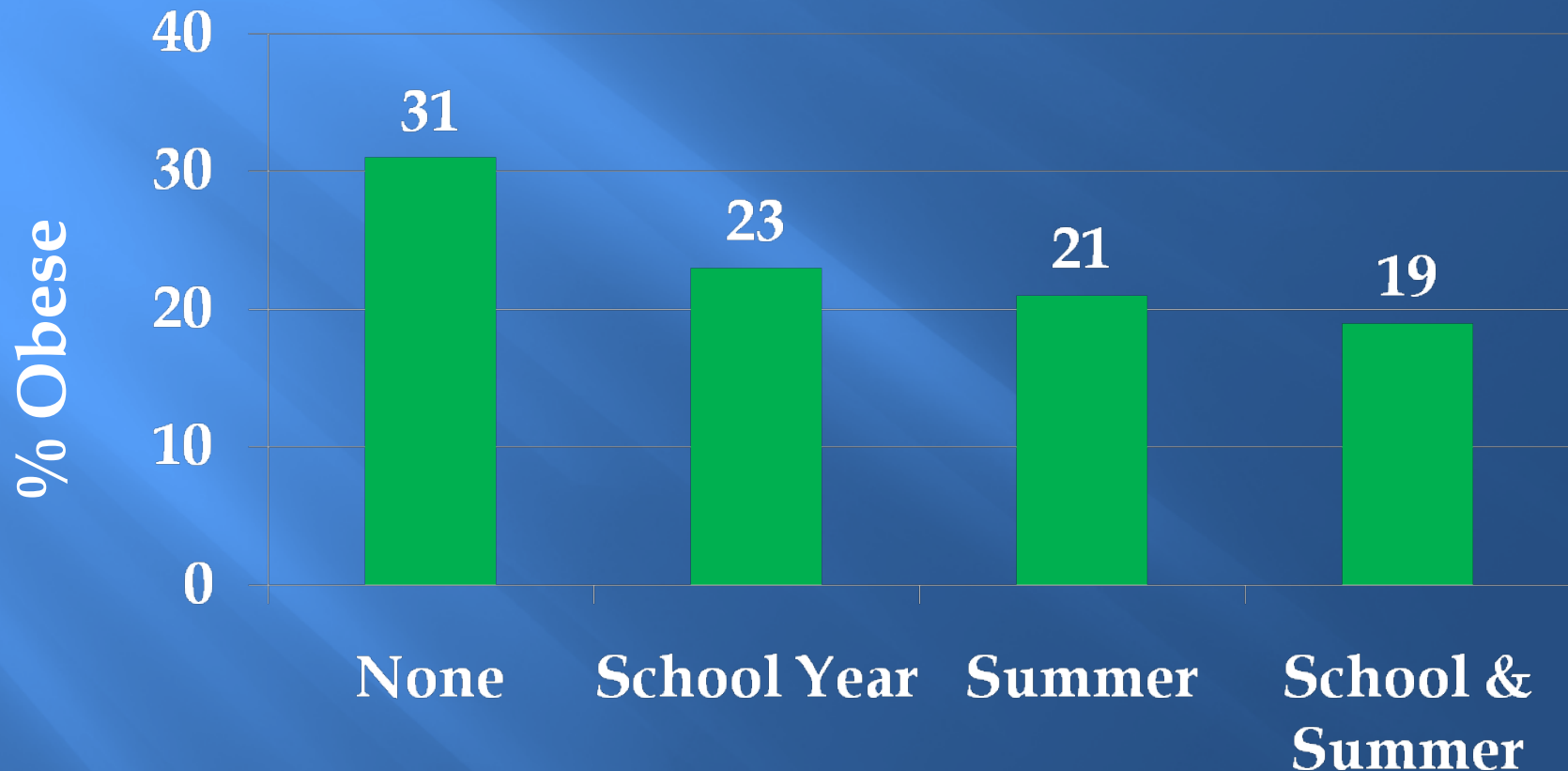
Research Participants

- ▣ Panel Study of Income Dynamics
 - Nationally Representative Sample
- ▣ Followed from 1997 – 2003
- ▣ 1,750 Youth, Ages 10-18 in 2003
- ▣ Measures: BMI and Obesity

Summer Arrangements

- ▣ **Organized Activities**
 - Organized Sports
 - Extracurricular Activities
 - After-school Programs
- ▣ **Parent Care**
- ▣ **Other Adult Care** (e.g., Relative, Sitter)
- ▣ **Self Care**

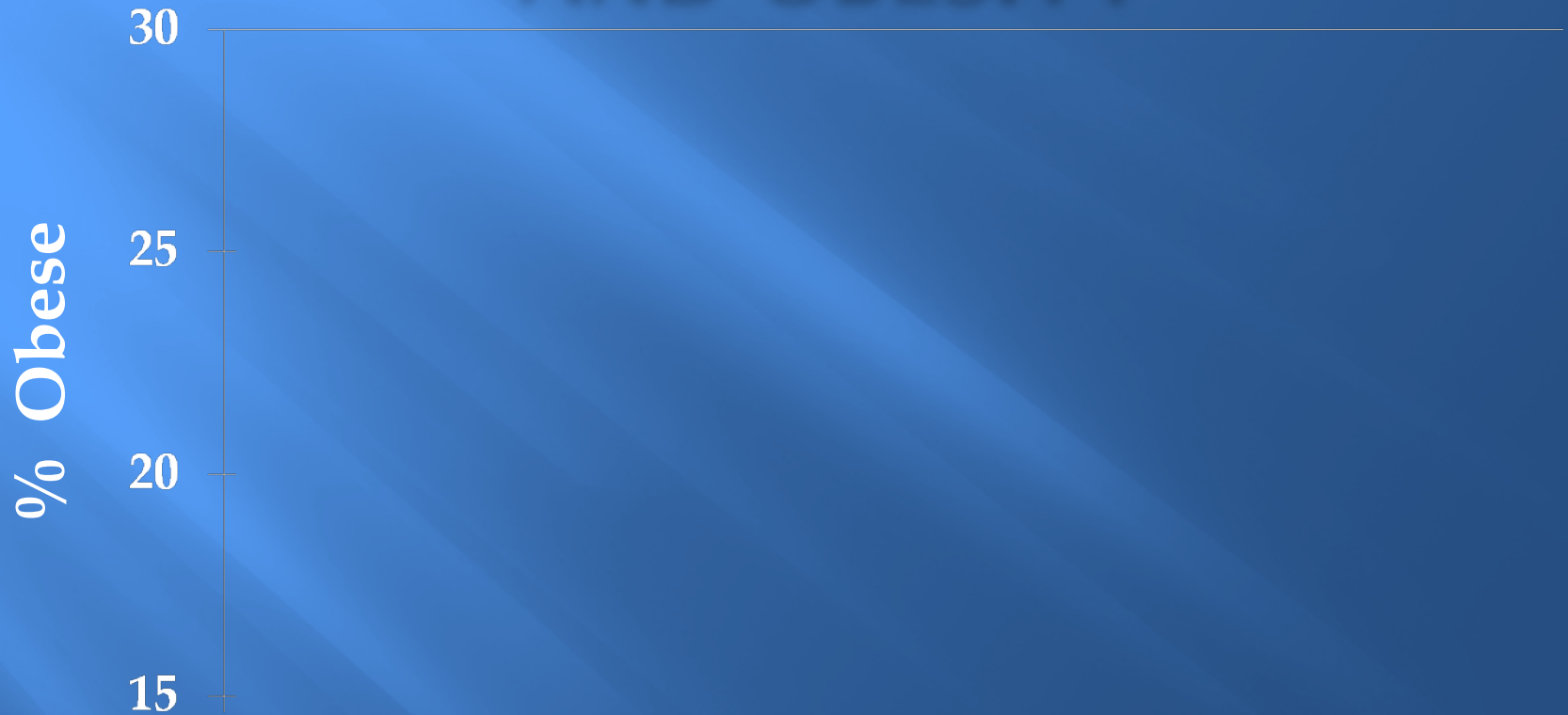
Organized Activity Participation and Obesity



Activity Participation



SUMMER ARRANGEMENTS AND OBESITY



Summer Arrangements

Summary

- ▣ Obesity is a global epidemic that has grown markedly in the past 30 years.
- ▣ Summertime arrangements are significantly associated with child obesity.
- ▣ Participation in organized activities over the summer predicts lower rates of obesity.

Conclusions

- ▣ Children (and adults) tend to gain weight the fastest when their environments lack structure.
- ▣ Summer is a period of risk probably because of the greater opportunities for unhealthy eating and an extended time for sedentary behavior.
- ▣ To prevent child obesity, policies that deal with the summer vacation period are likely to be more effective than those concentrating only on the school year.

Implications of the Research

- ▣ **Provide affordable and accessible organized activities during the summertime.**
 - ▣ 19% of CA K-12 in after-school programs
 - ▣ 24% of CA K-12 in self-care
 - ▣ 36% of CA K-12 looking for programs
- ▣ **Encourage organized activity participation.**
 - Public health education campaign
- ▣ **Ensure the activities are of high quality.**