



Multiple Variables and Data Visualization in Intro Stat

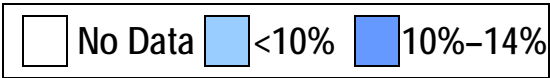
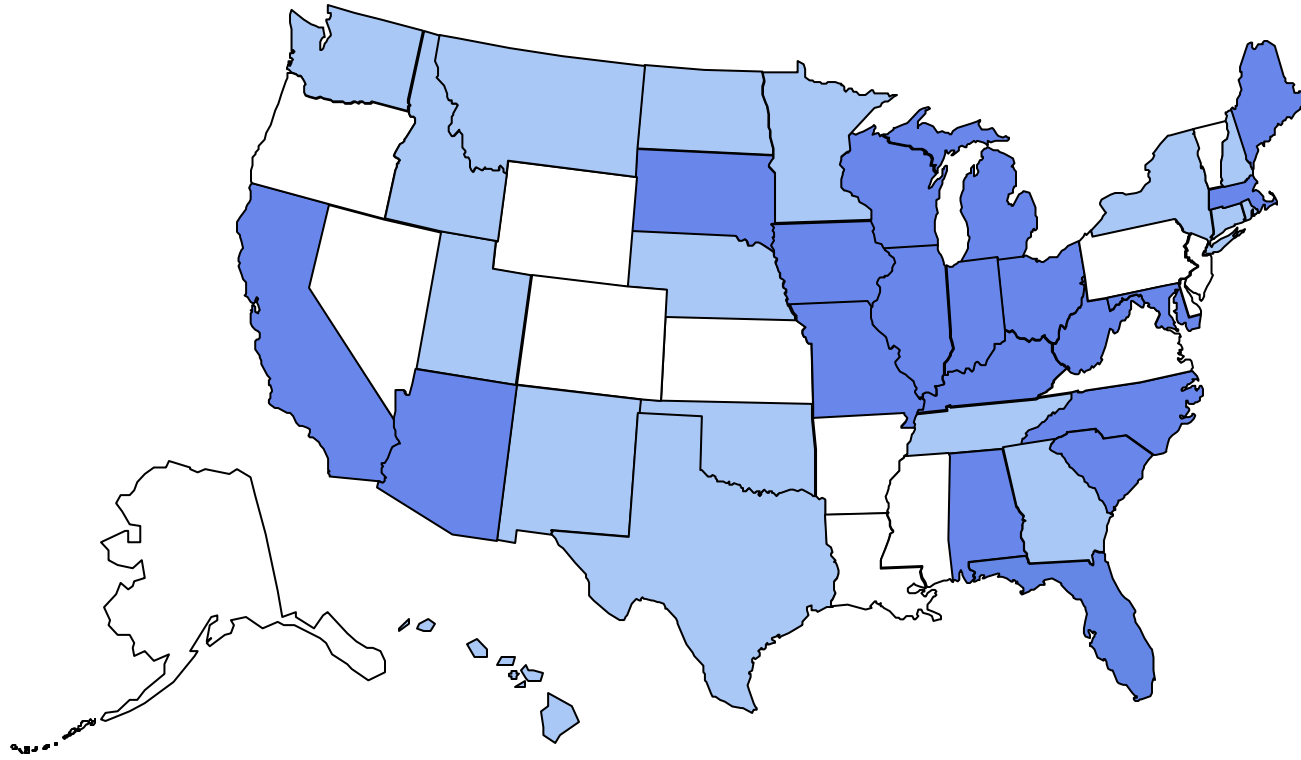
Kari Lock Morgan
Department of Statistics
Penn State University

Joint work with Robin, Patti, Eric, & Dennis Lock
USCOTS 2017 Breakout Session

Visualizing Geographic Data

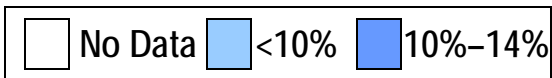
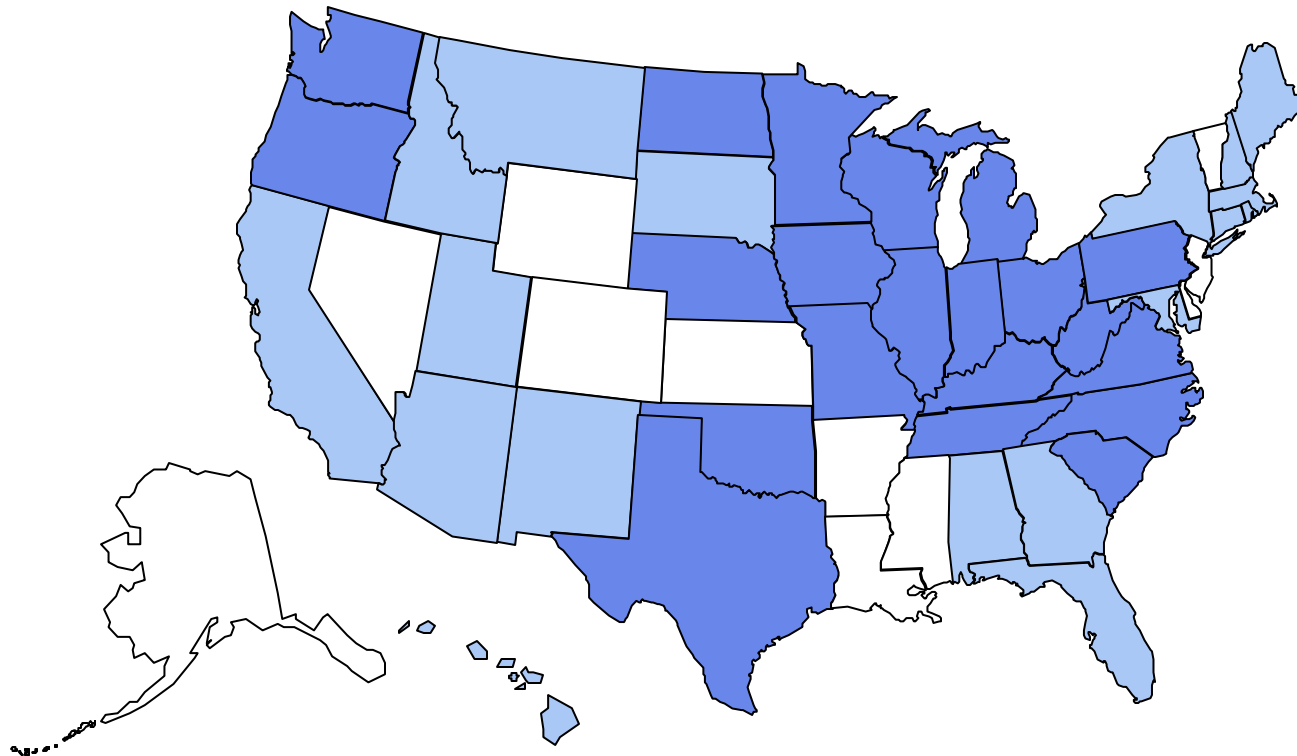
Obesity* in U.S. Adults: 1988

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



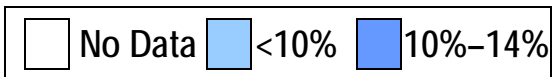
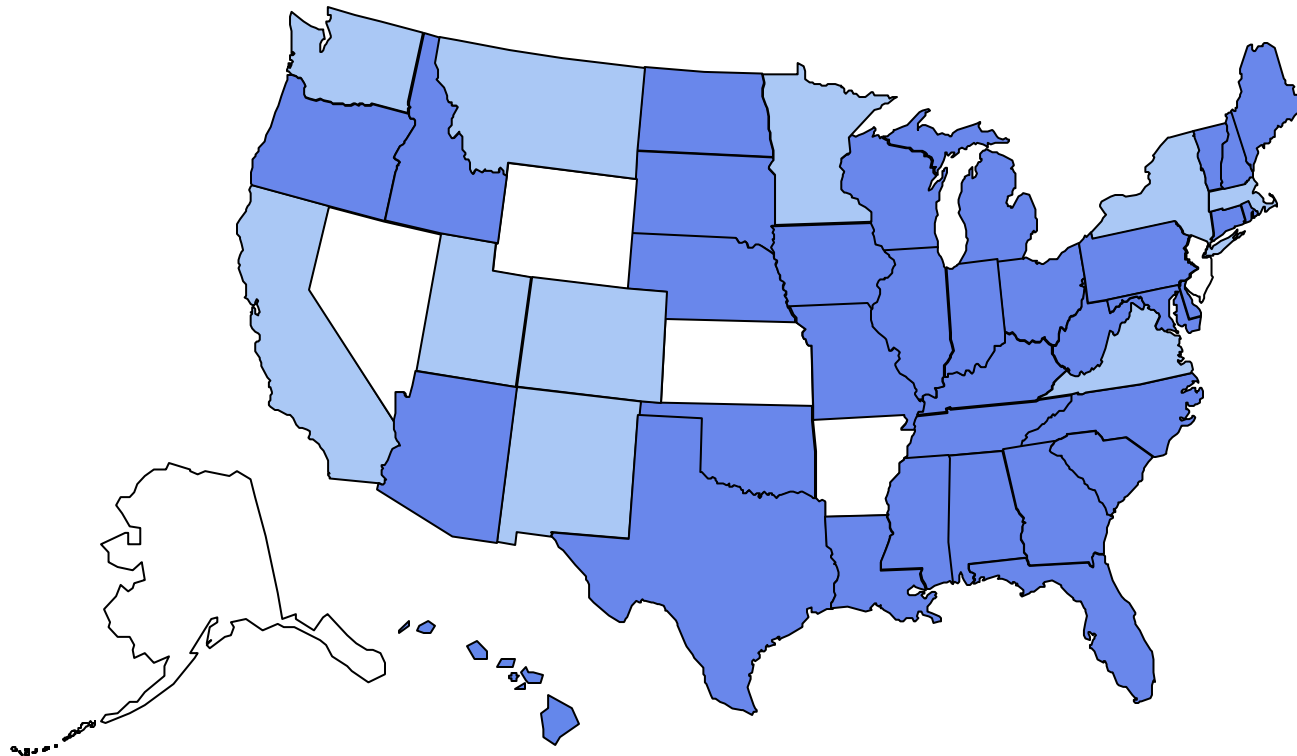
Obesity* in U.S. Adults: 1989

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



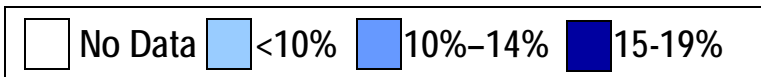
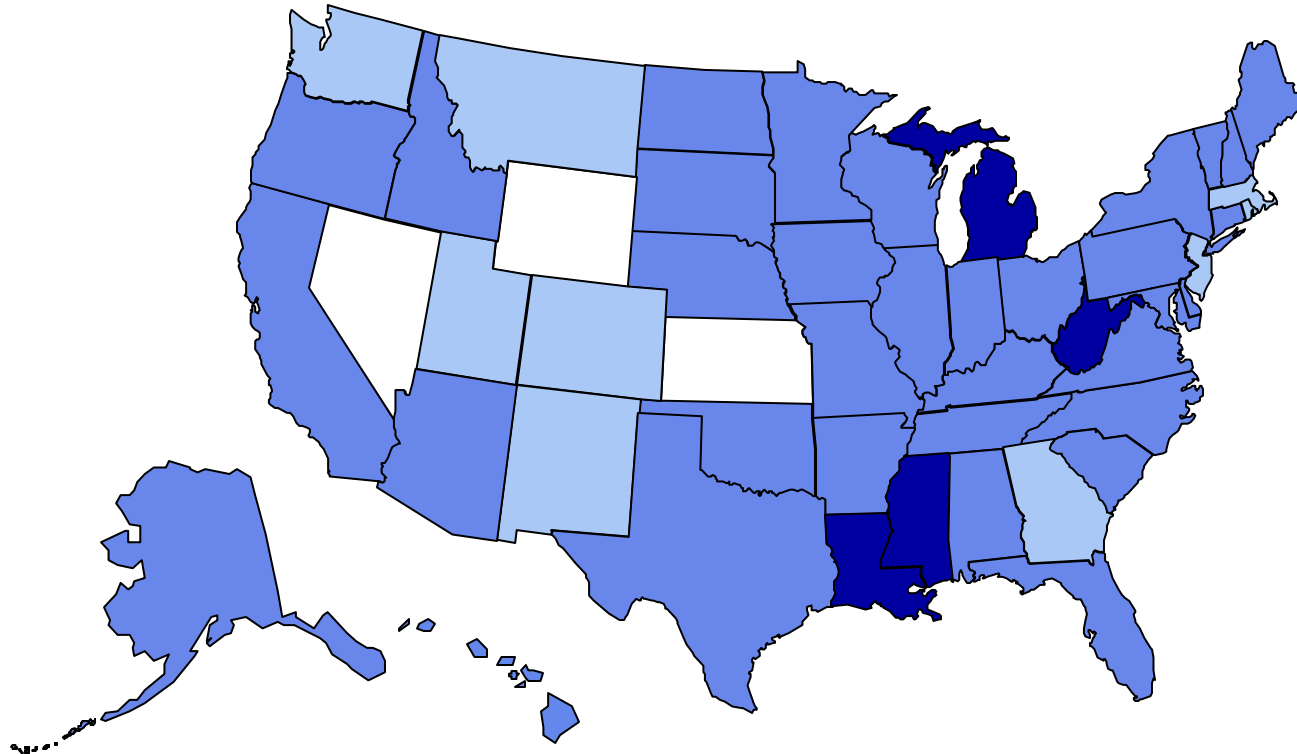
Obesity* in U.S. Adults: 1990

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



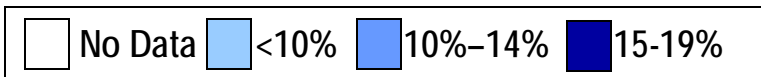
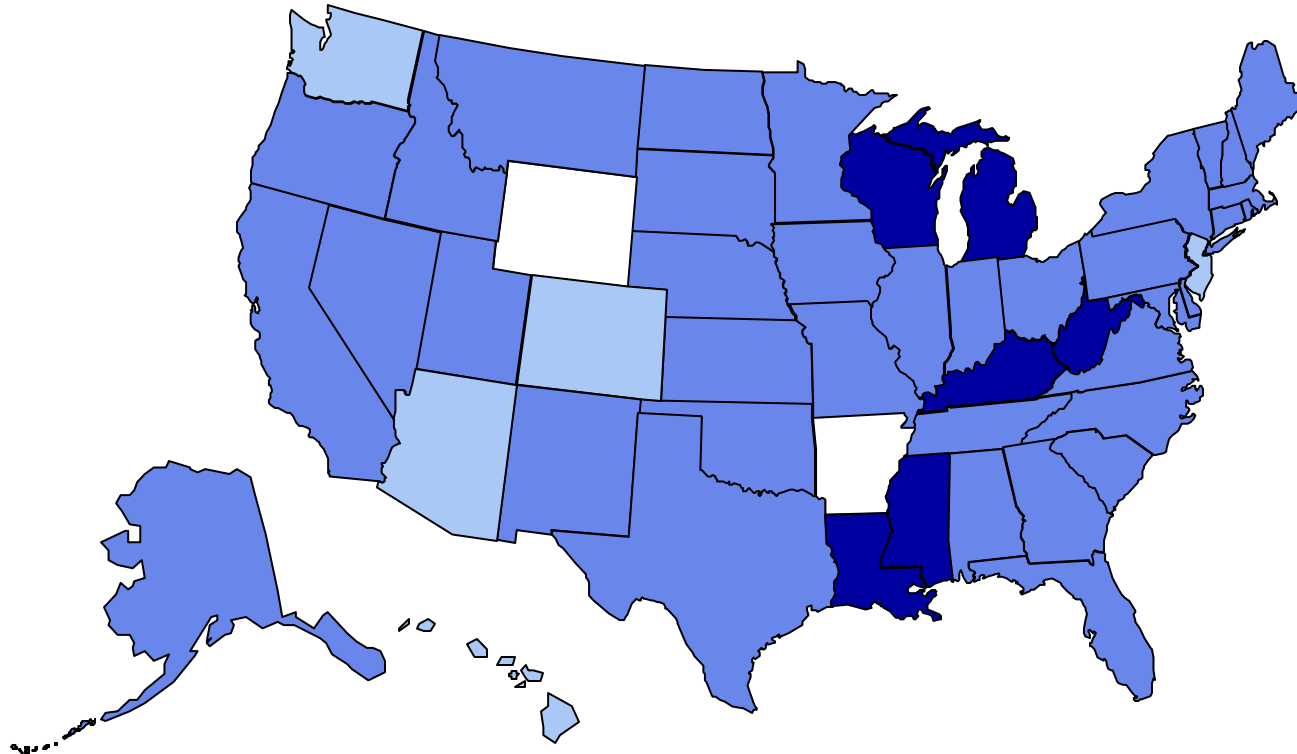
Obesity* in U.S. Adults: 1991

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



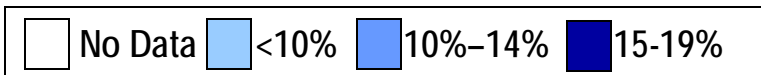
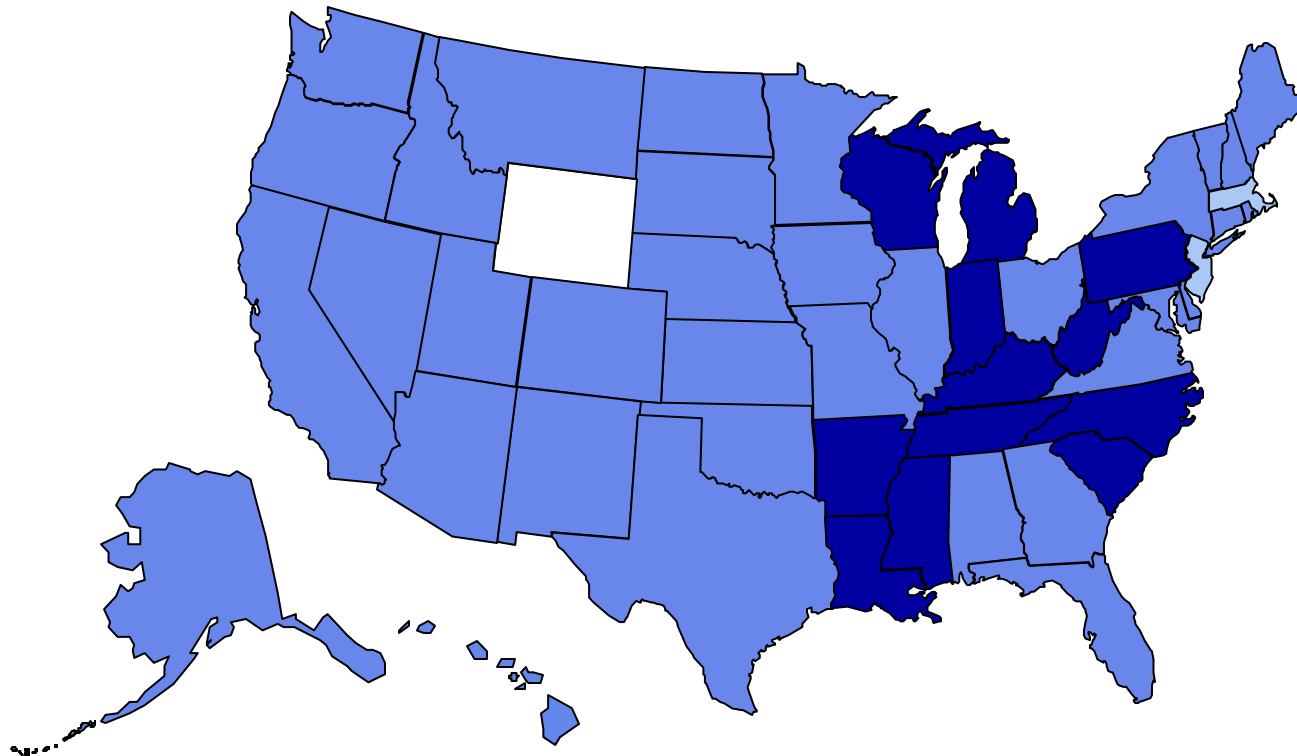
Obesity* in U.S. Adults: 1992

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



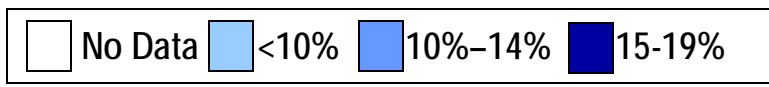
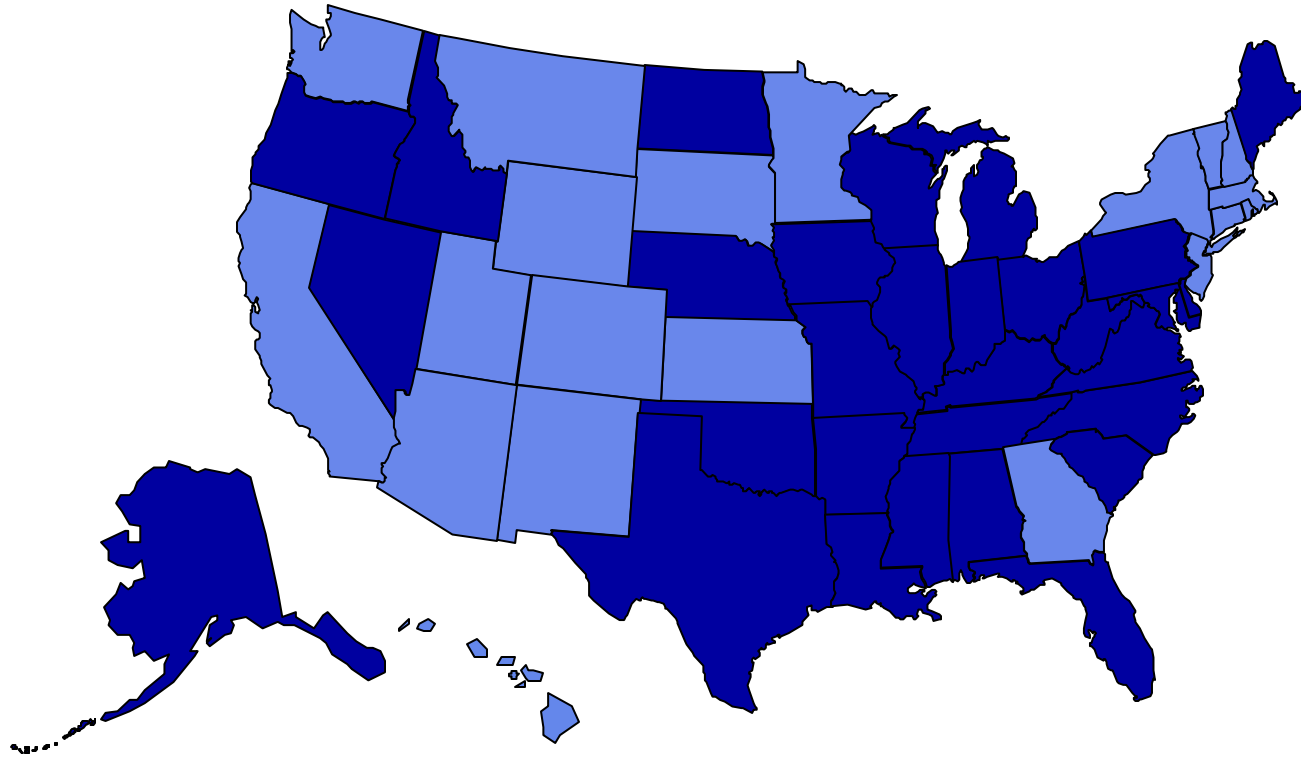
Obesity* in U.S. Adults: 1993

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



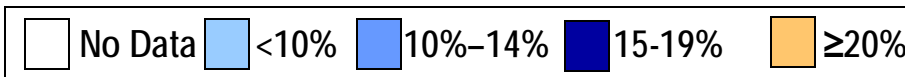
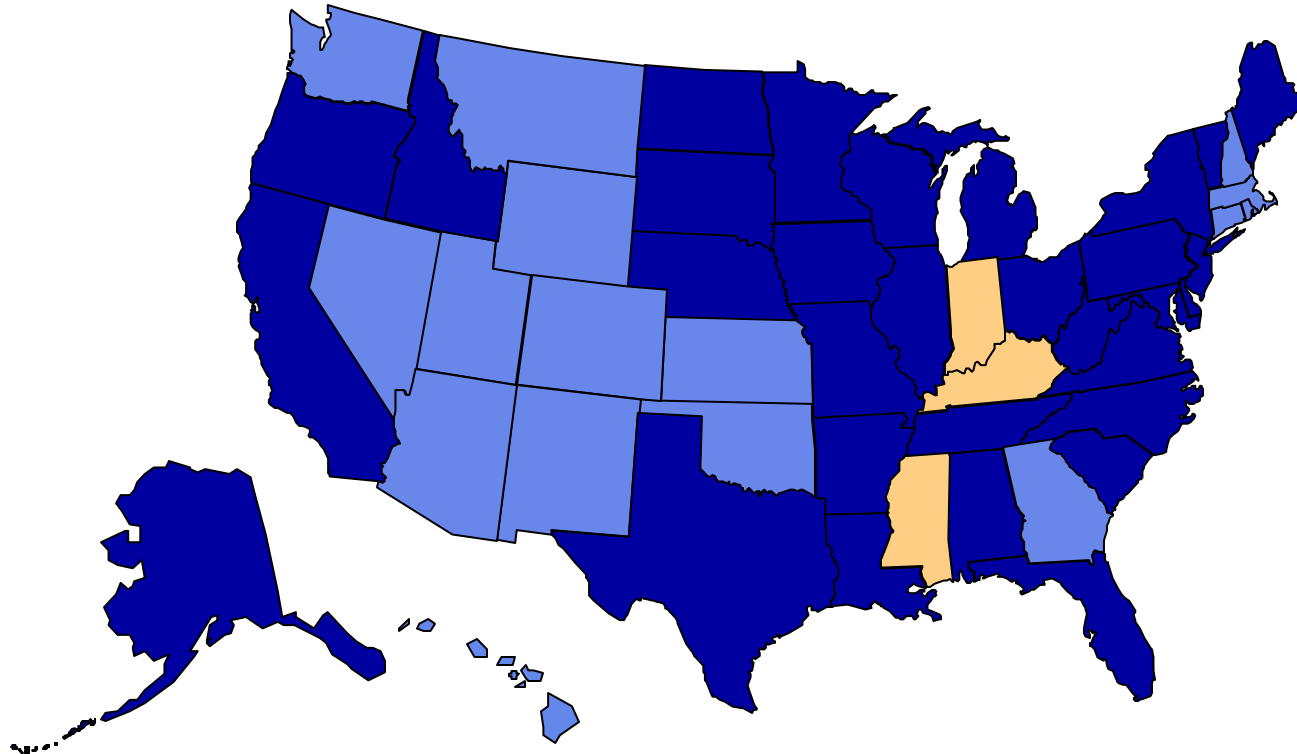
Obesity* in U.S. Adults: 1996

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



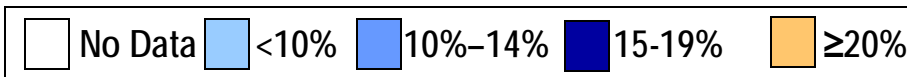
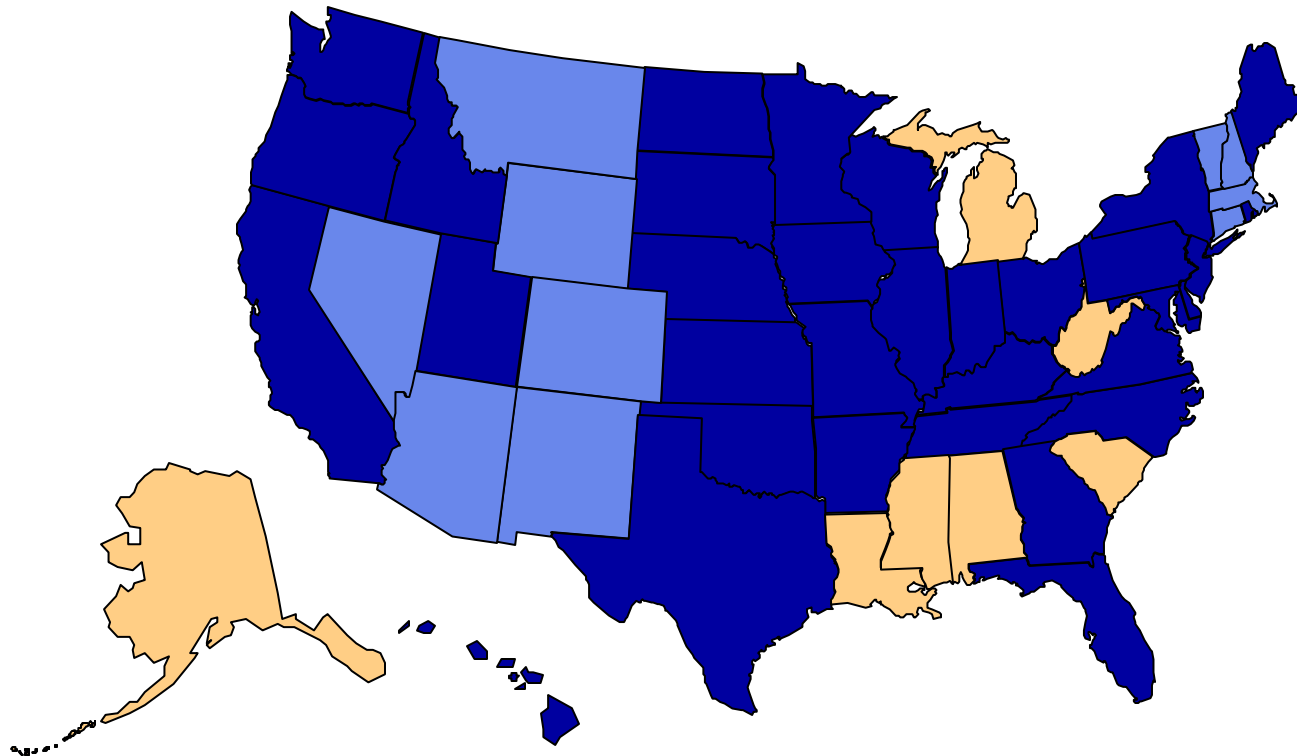
Obesity* in U.S. Adults: 1997

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



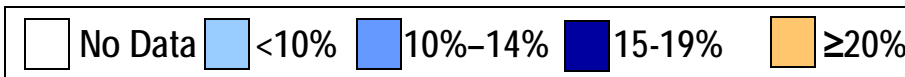
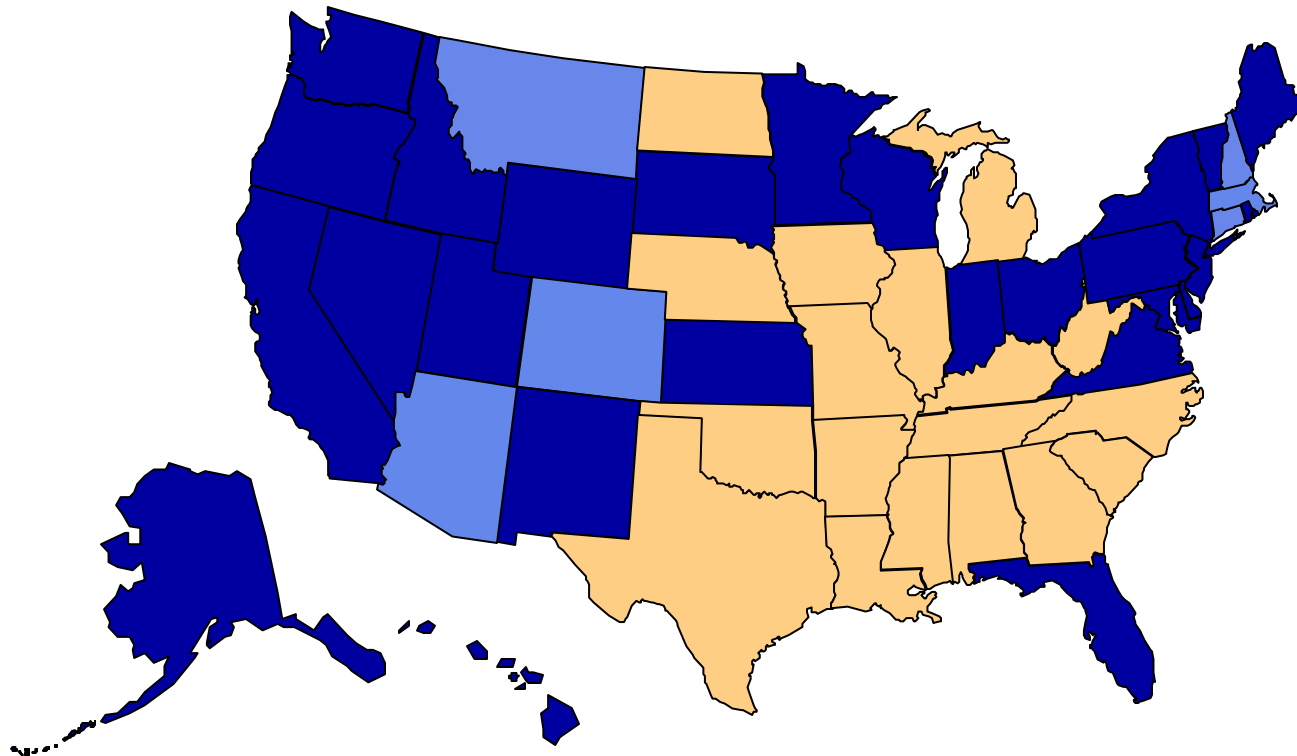
Obesity* in U.S. Adults: 1998

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



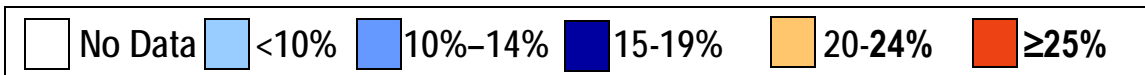
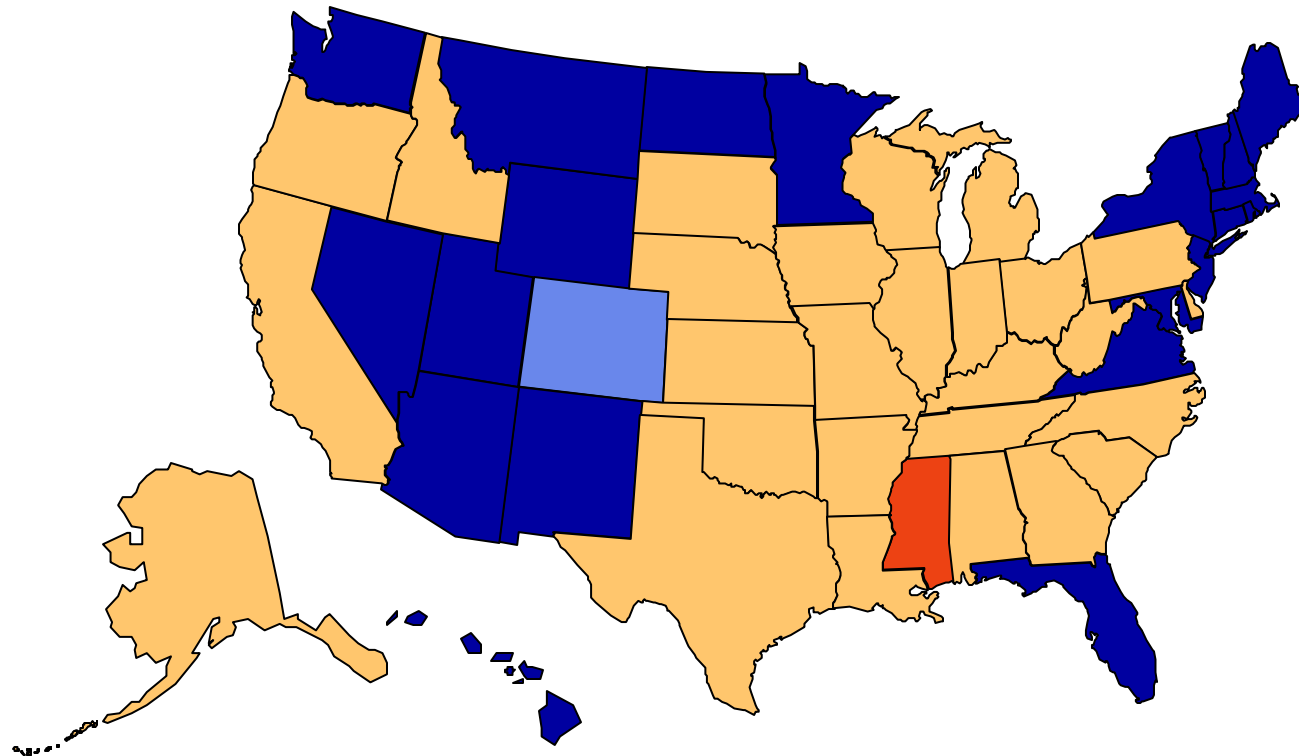
Obesity* in U.S. Adults: 1999

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



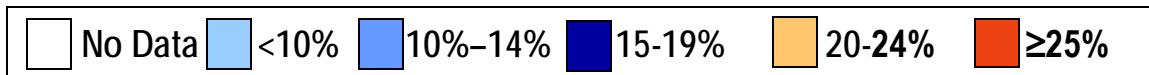
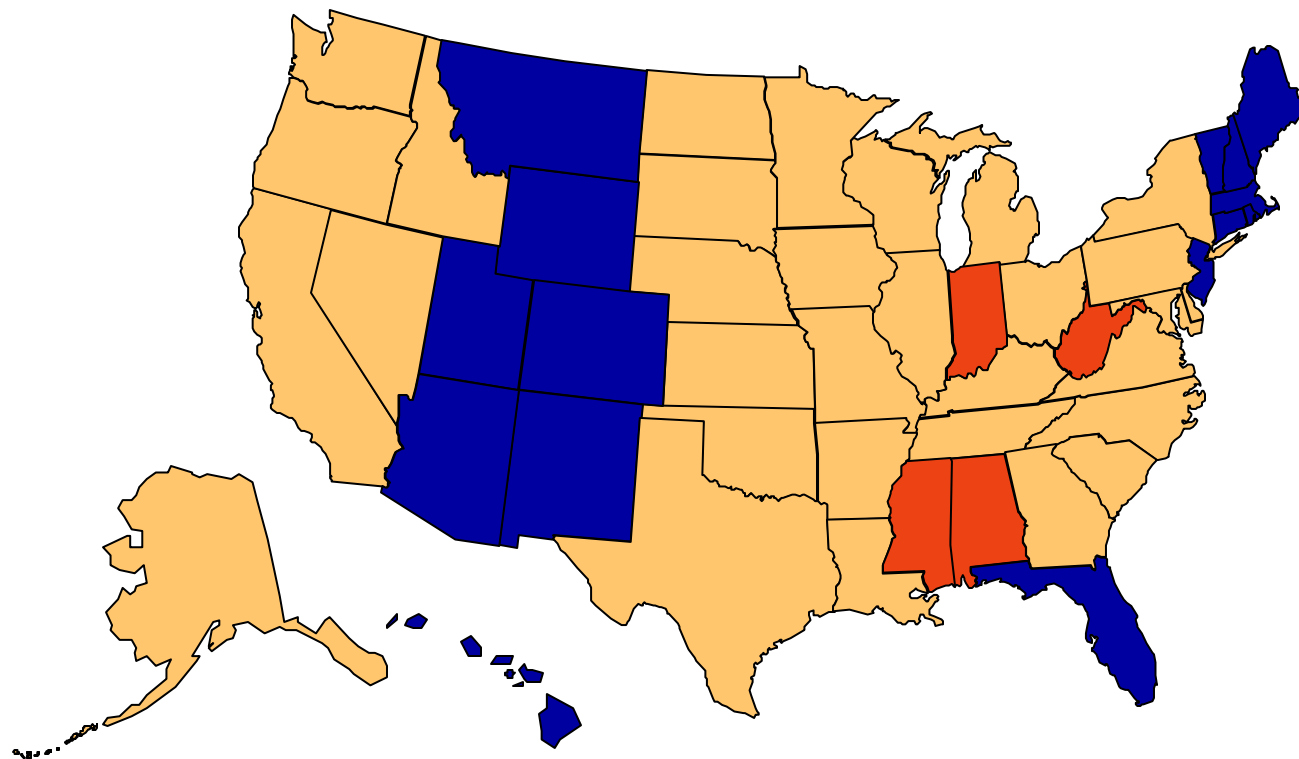
Obesity* in U.S. Adults: 2001

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



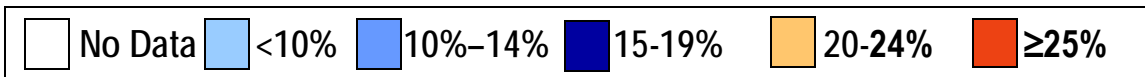
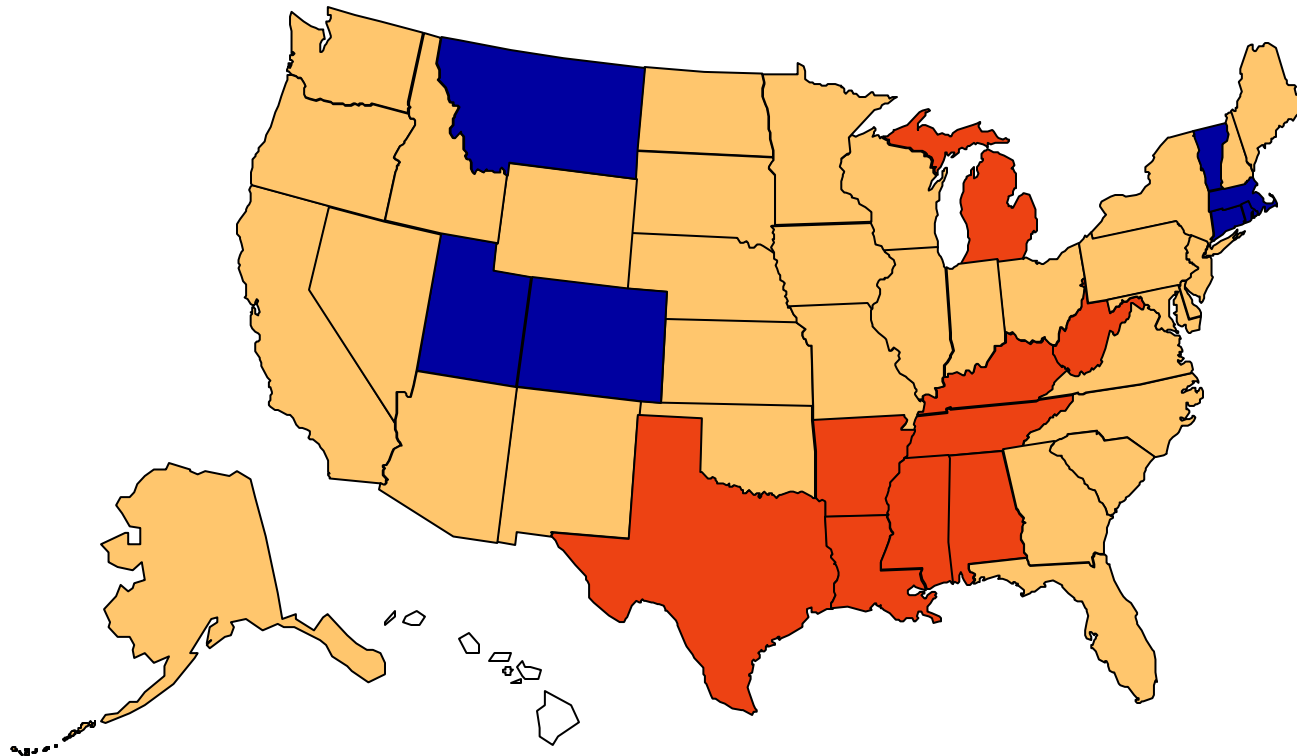
Obesity* in U.S. Adults: **2003**

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



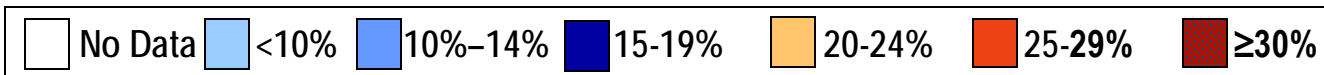
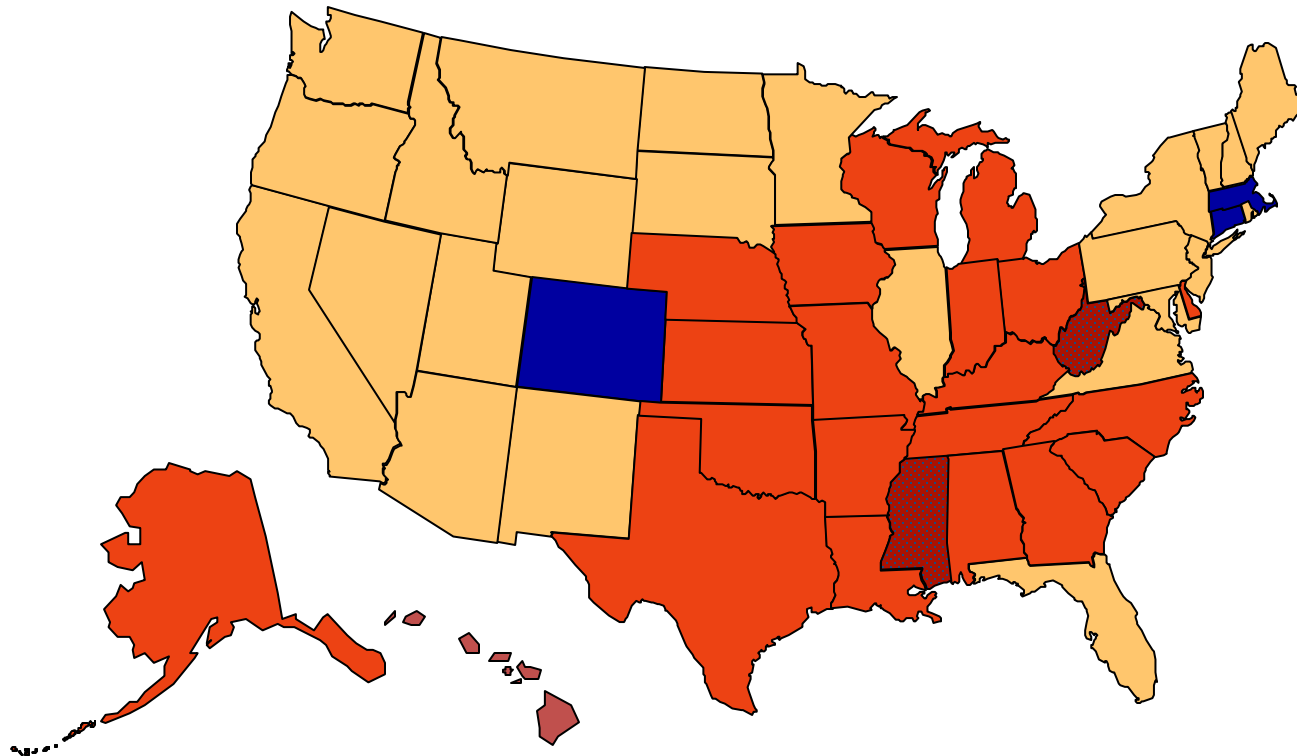
Obesity* in U.S. Adults: 2004

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



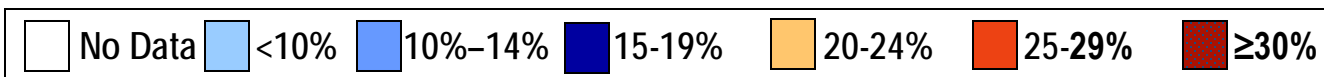
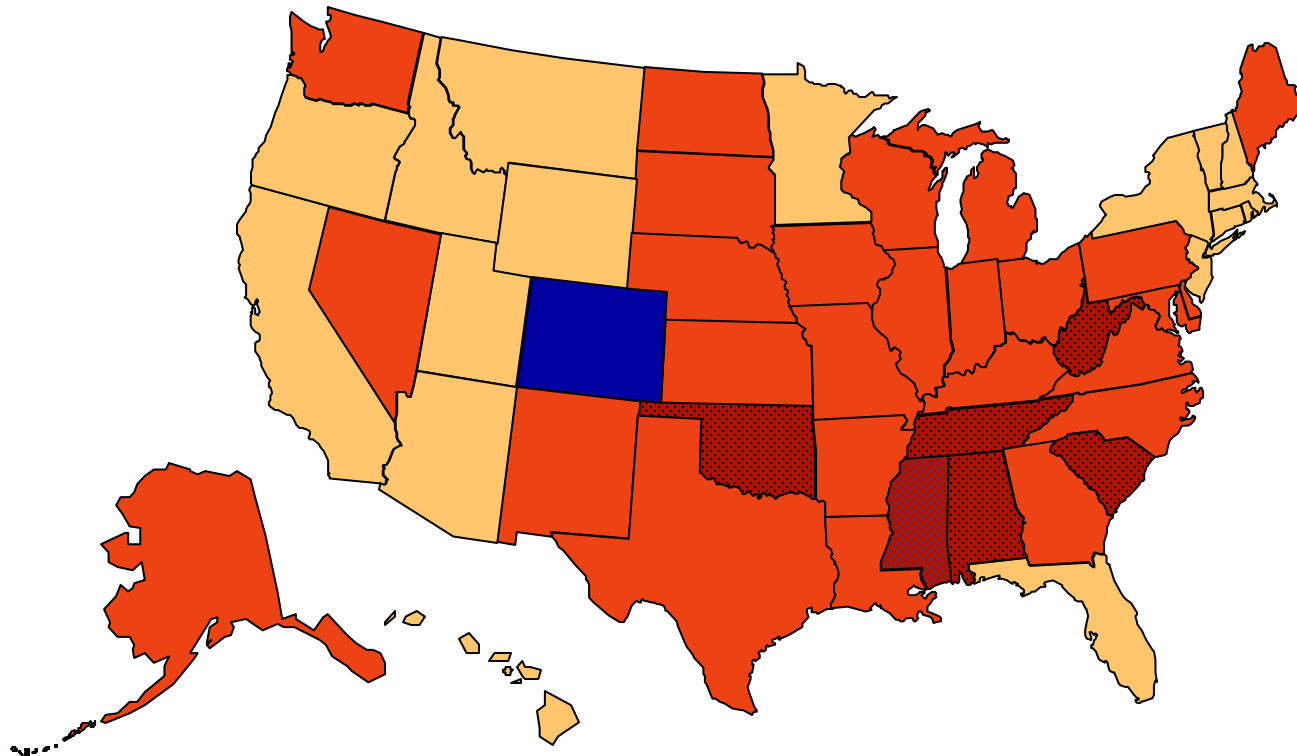
Obesity* in U.S. Adults: 2006

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



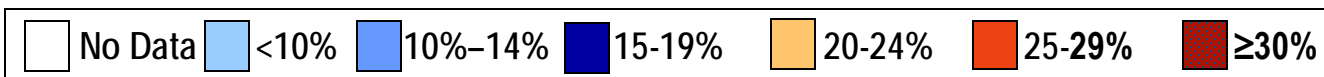
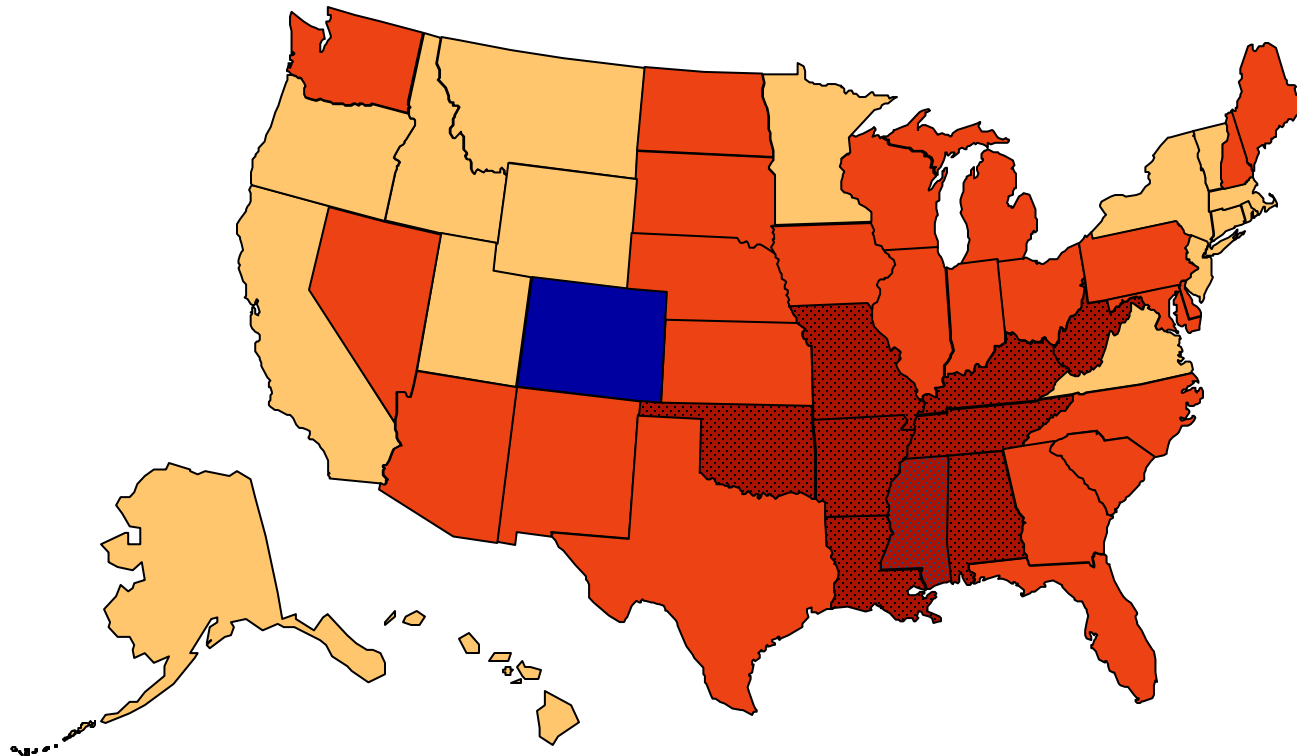
Obesity* in U.S. Adults: 2008

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



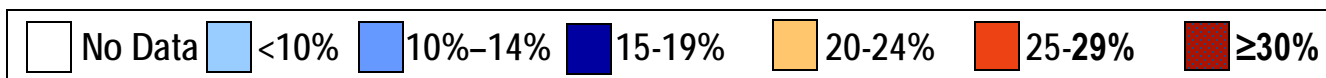
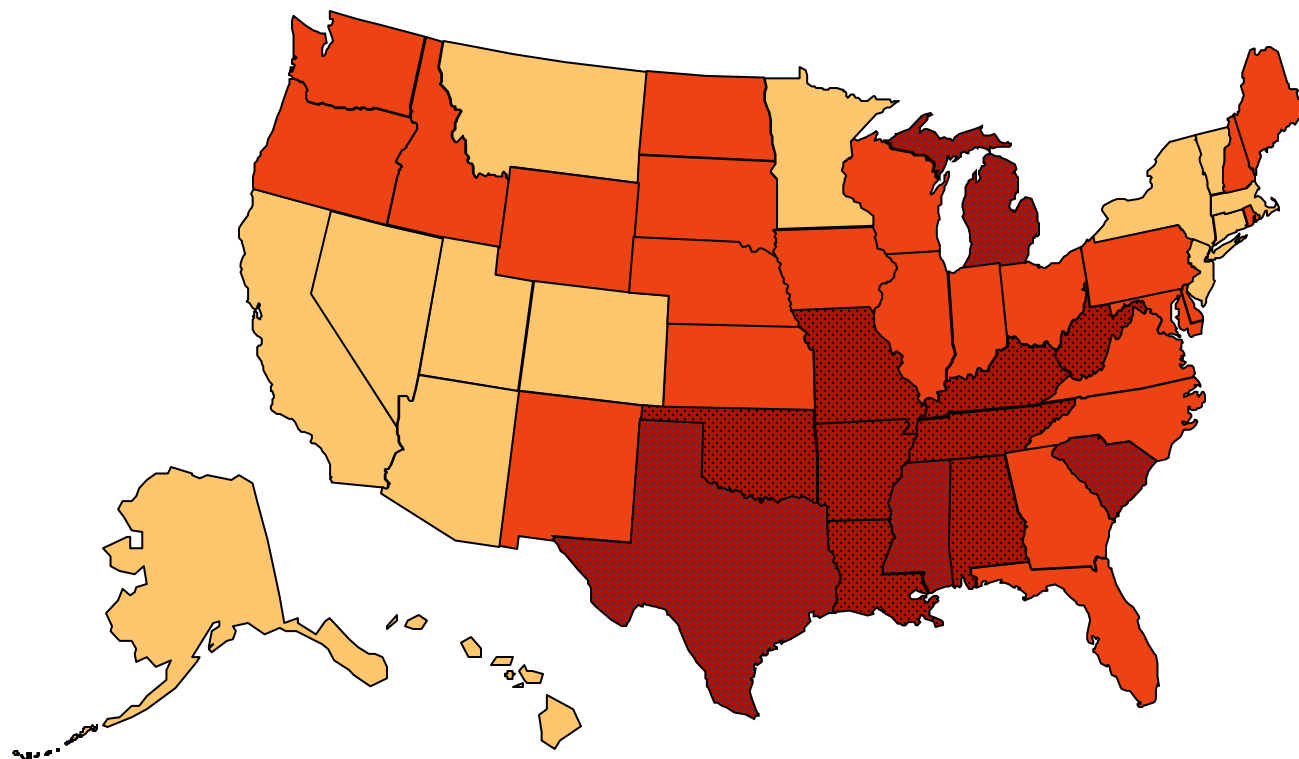
Obesity* in U.S. Adults: 2009

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



Obesity* in U.S. Adults: 2010

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



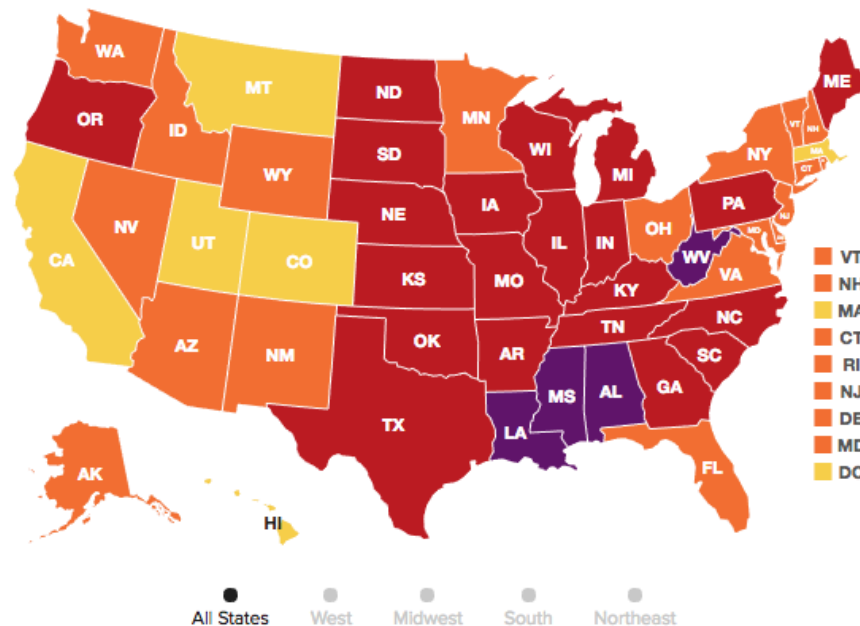
Two Different Visualizations

Adult Obesity Rate by State, 2015

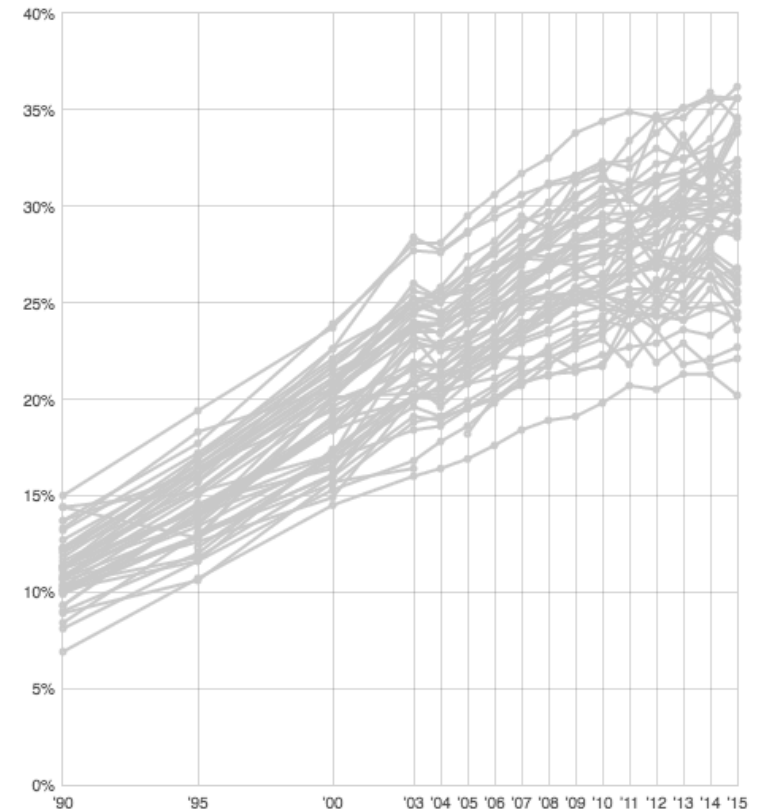
Select years with the slider to see historical data. Hover over states for more information. Click a state to lock the selection. Click again to unlock.

Percent of obese adults (Body Mass Index of 30+)

0 - 9.9% 10 - 14.9% 15 - 19.9% 20 - 24.9% 25 - 29.9% 30 - 34.9% 35%+



Adult obesity rates, 1990 to 2015



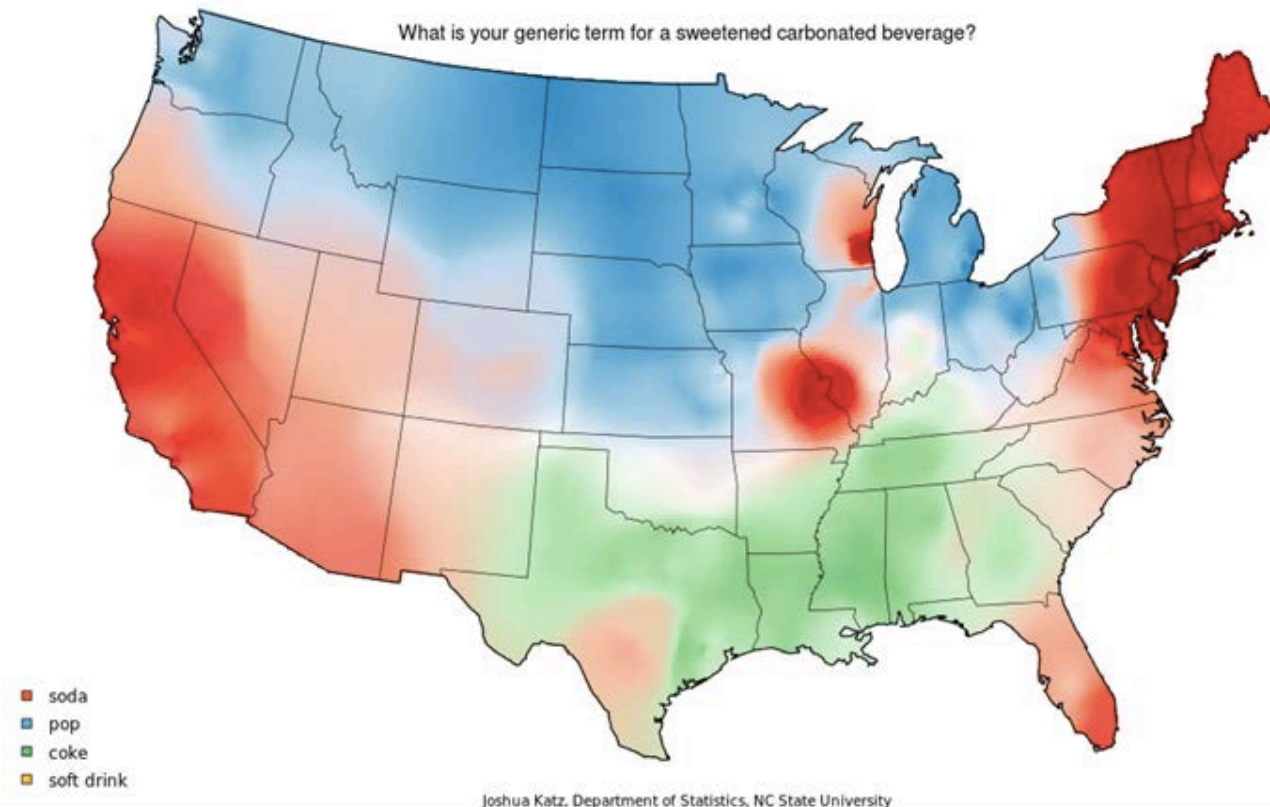
<http://stateofobesity.org/adult-obesity/>

- What are the pros and cons of each?

Regional Dialects

What is your generic term for a sweetened carbonated beverage?

- a) soda b) pop c) coke d) soft drink



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