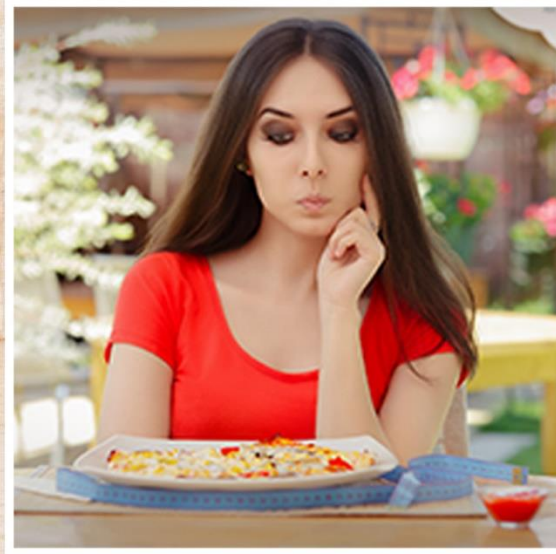


Earn
1 CEU

Exclusive Webinar Presentation



Food Psychology:

Why We Eat More
Than We Think

Presented by Jim Painter, PhD, RD Wednesday, June 21 2:00-3:00pm ET

Dr. Jim Painter, PhD, RD

- University of Texas - Houston, School of Public Health
- Emeritus Professor – Eastern Illinois University



Speaker Disclosure

- **Board Member/Advisory Panel/Consultant**

- Present**

- Chic-fil-A, Sun-Maid Raisins, National Dairy Council, Tree Top Apples, Bush's Beans, United Sorghum Checkoff Board.

- **Past**

- American Heart Association Eat Well Task Force, California Raisin Marketing Board, Wonderful Pistachios, White Wave Foods, Davidson's Safest Choice Eggs

- **Honoraria**

- Honorarium underwritten by Today's Dietitian
- Dietitians of Canada, Exxon Mobil, Frito Lay, Midwest Dairy Council, Pennsylvania Nutrition Network, California Raisin Marketing Board, Alaska Tanker Company, Dairy Max, Texas AND, California AND, Florida AND, MINK, NY AND, South Carolina AND, Iowa AND, Nebraska AND, Manitoba Dairy Farmers, Dairy Farmers of Canada, Davidsons Safest Choice Eggs, National Dairy Council, New Products Conference, the Flavor Experience, BNP Media, and Cooper Vision.

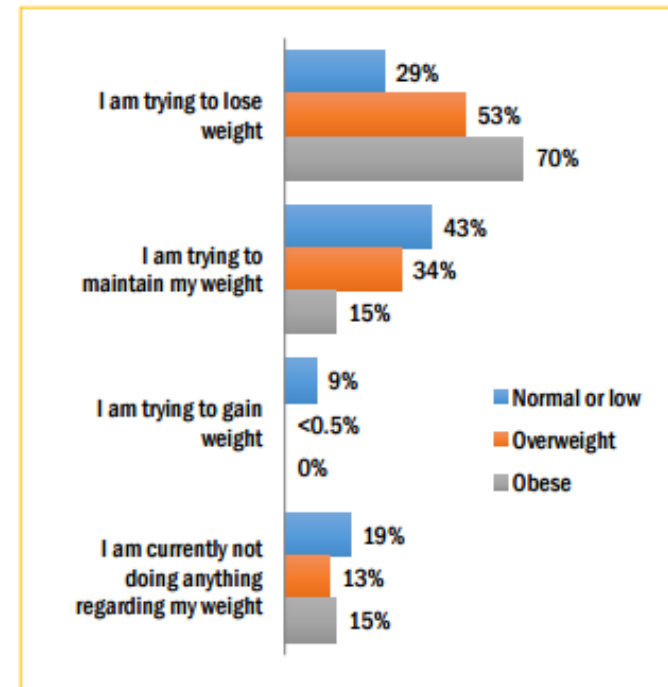
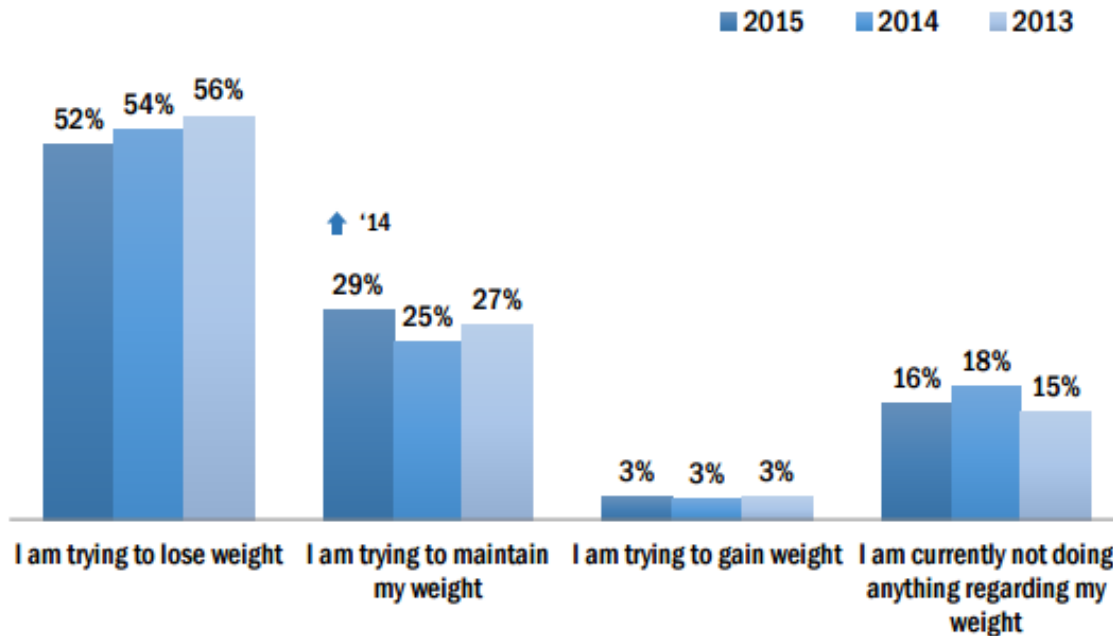
- Author of *Let's Eat Mindfully (2017)*

Food and Health Survey 2016

**INTERNATIONAL FOOD
INFORMATION COUNCIL**

4 out of 5 Americans are Trying to Lose Weight or Maintain their Current Weight

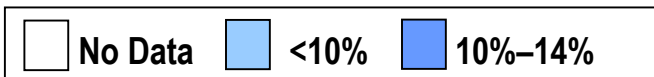
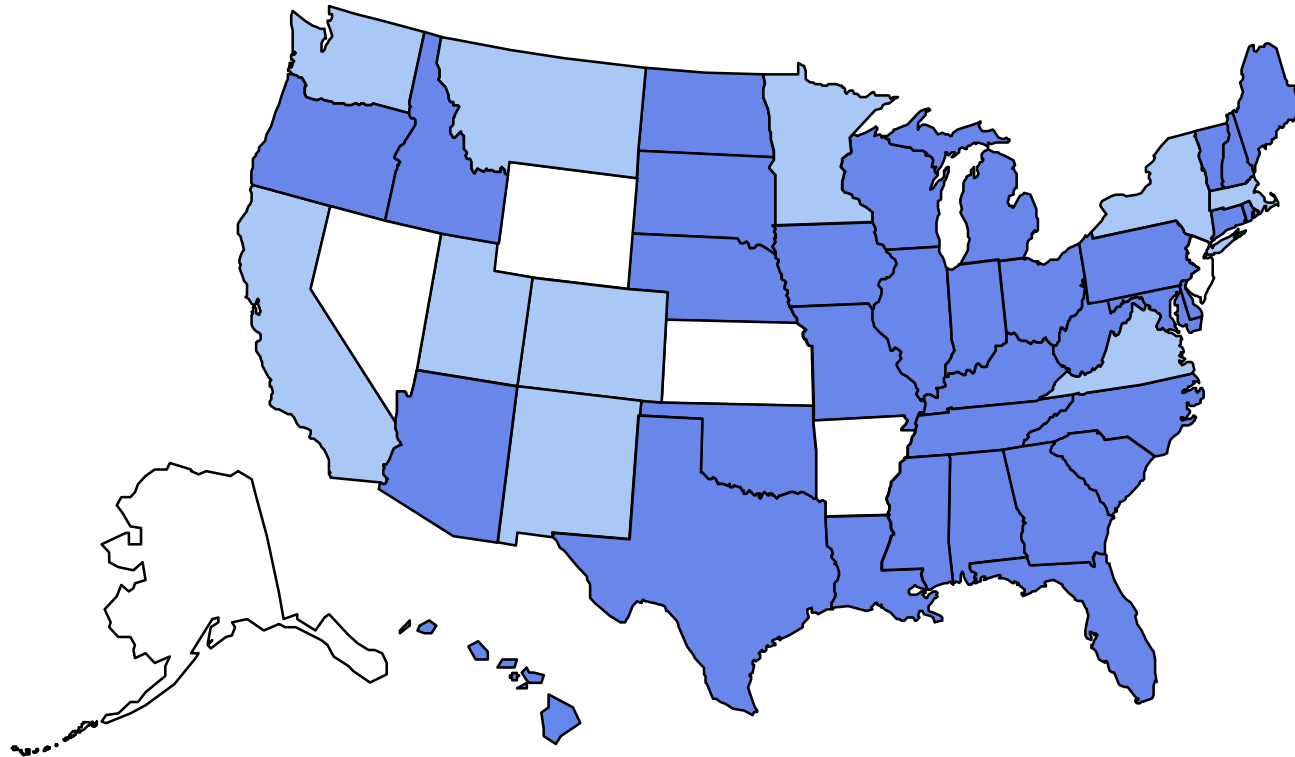
Which of the following best describes what you are currently doing regarding your weight?



Obesity Trends* Among U.S. Adults

BRFSS, 1990

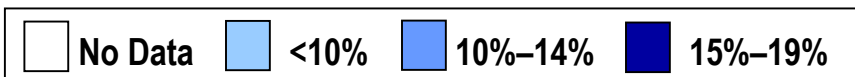
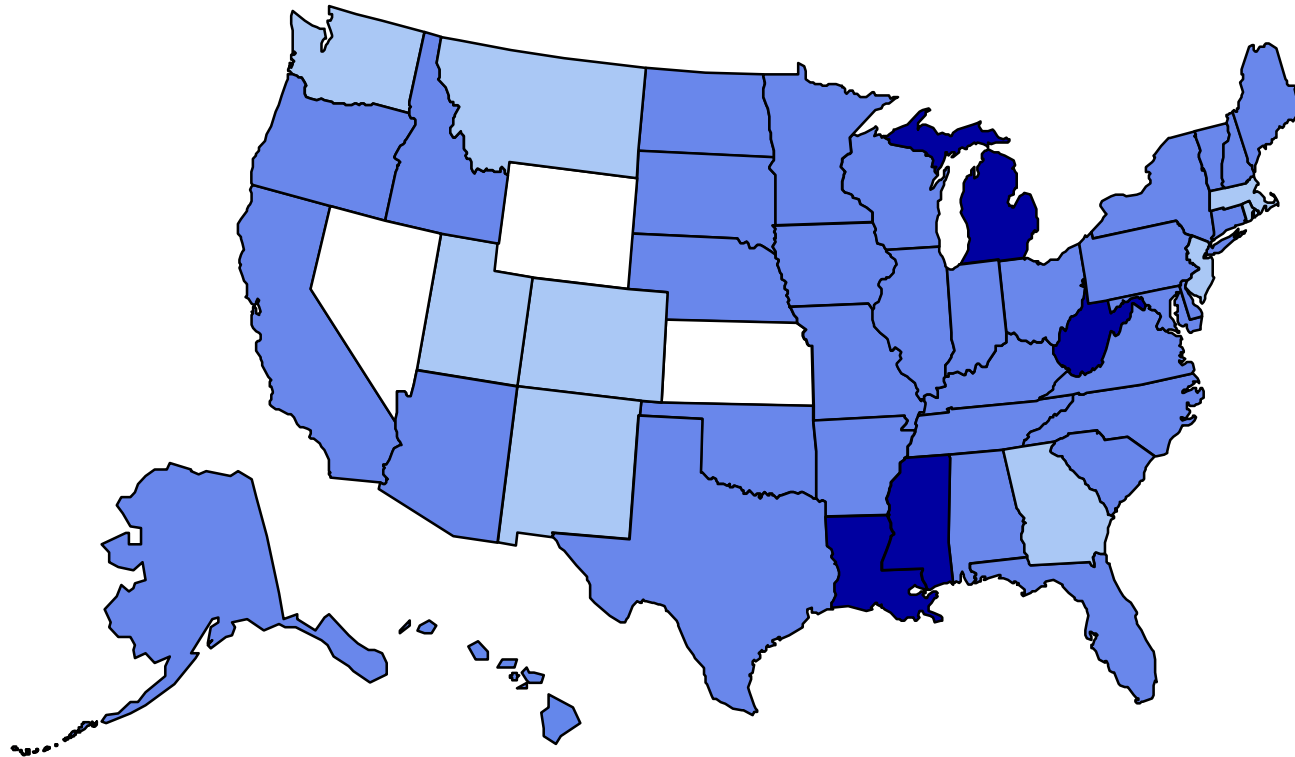
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1991

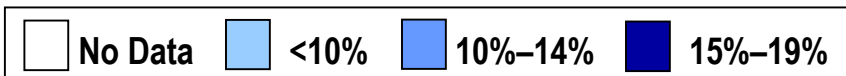
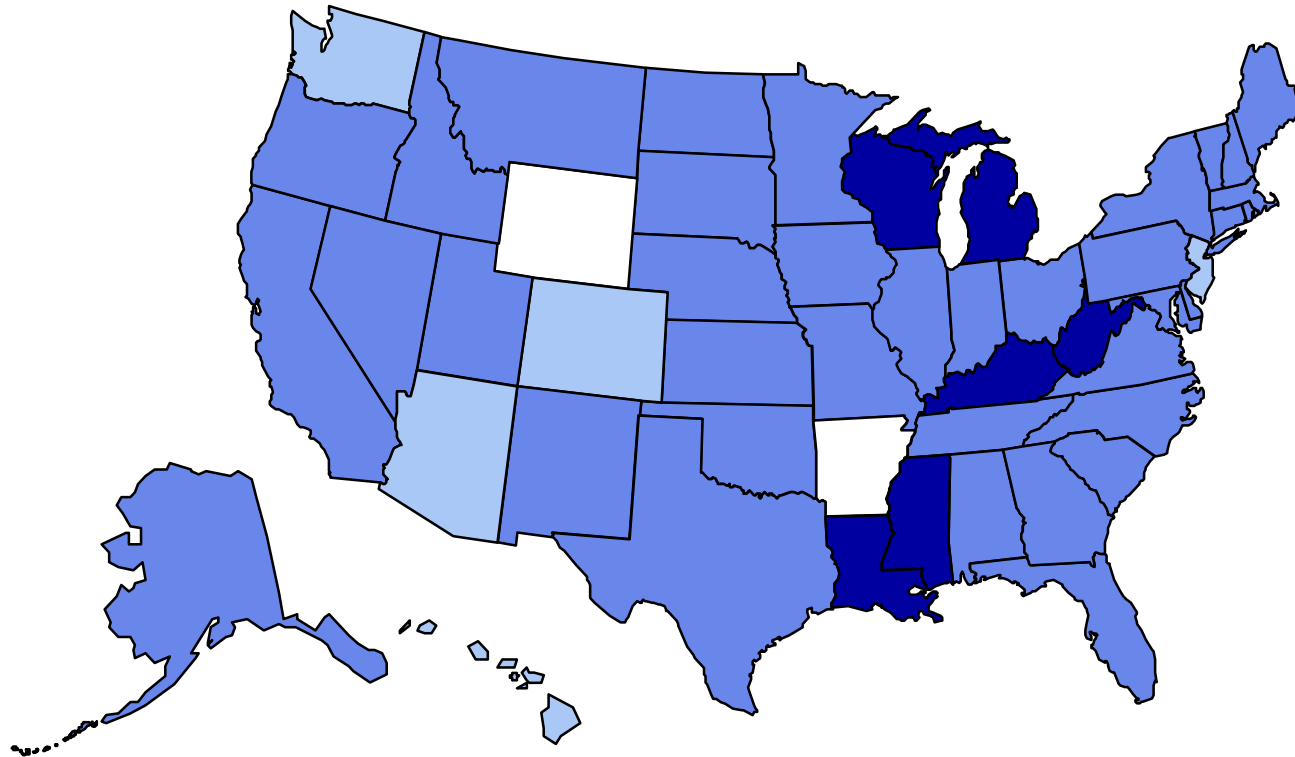
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Obesity Trends* Among U.S. Adults

BRFSS, 1992

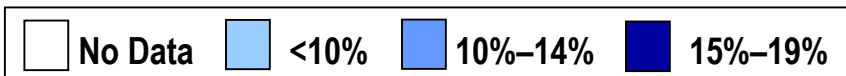
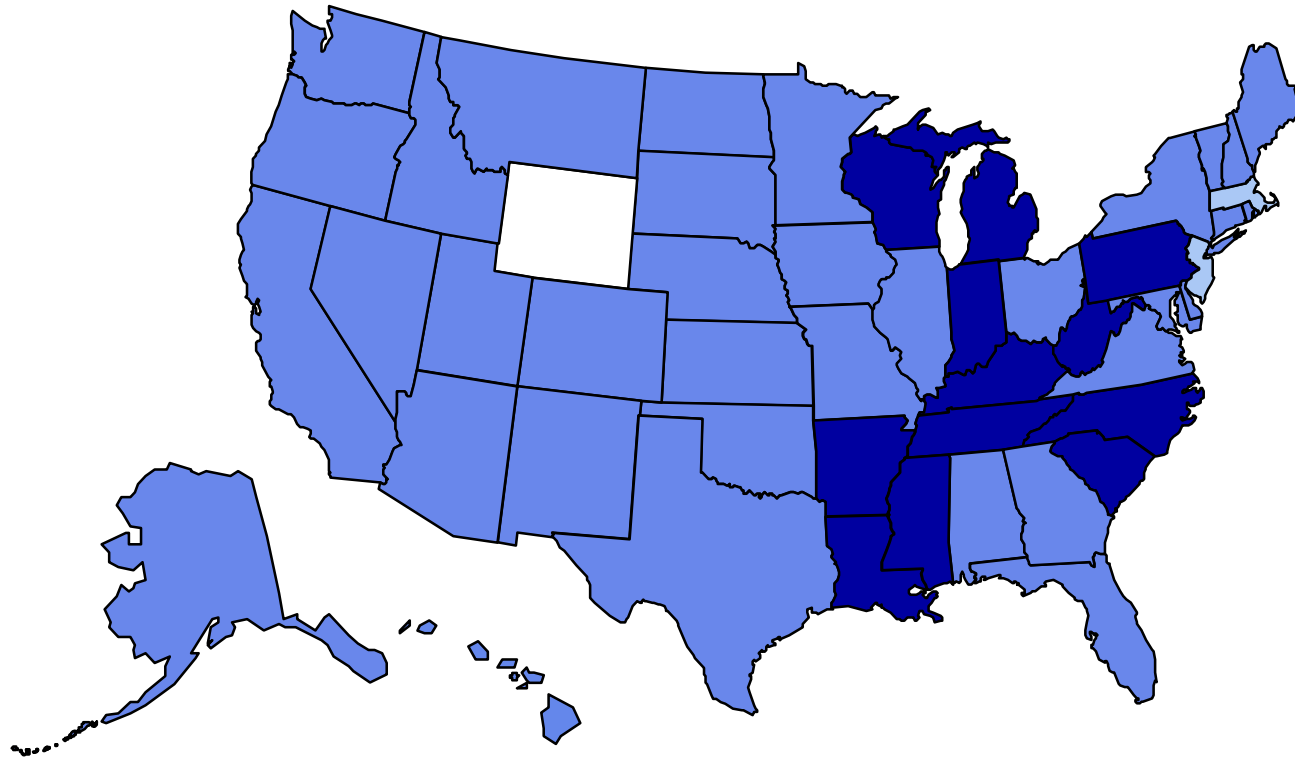
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1993

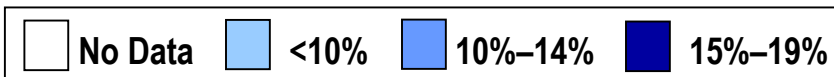
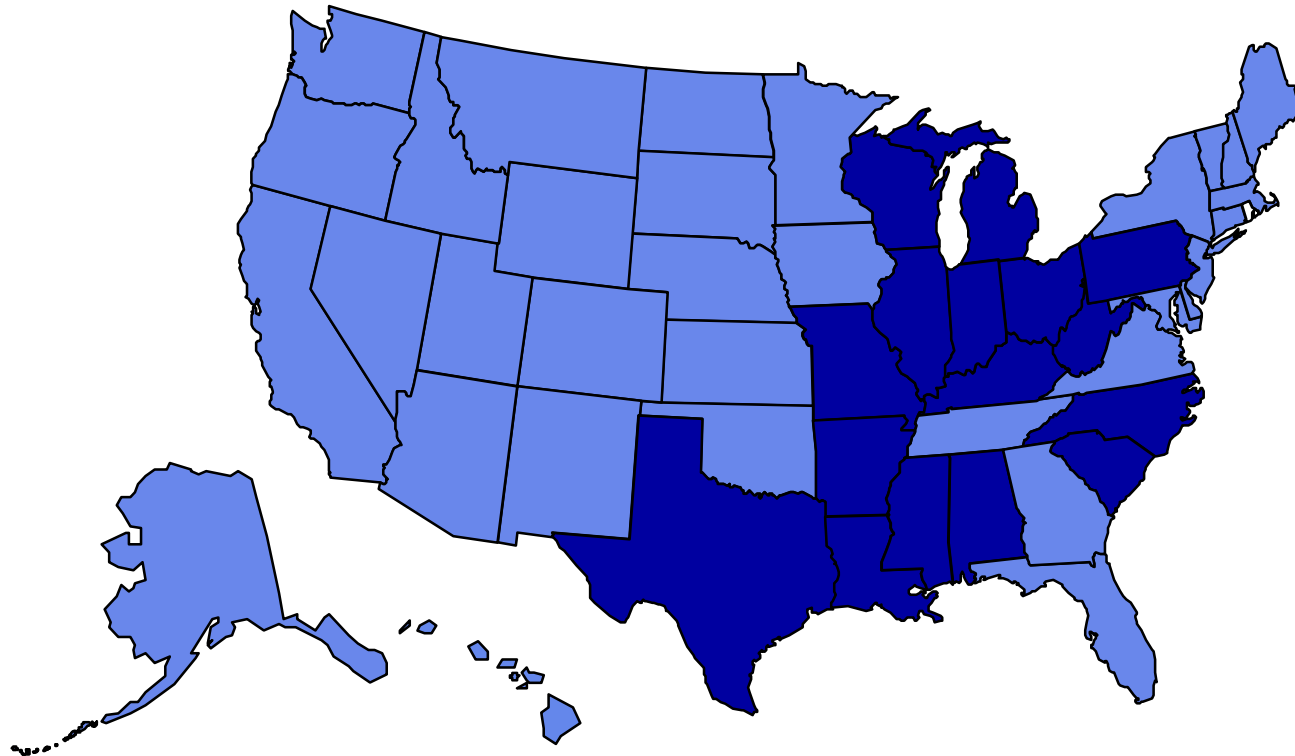
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1994

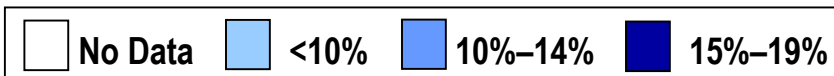
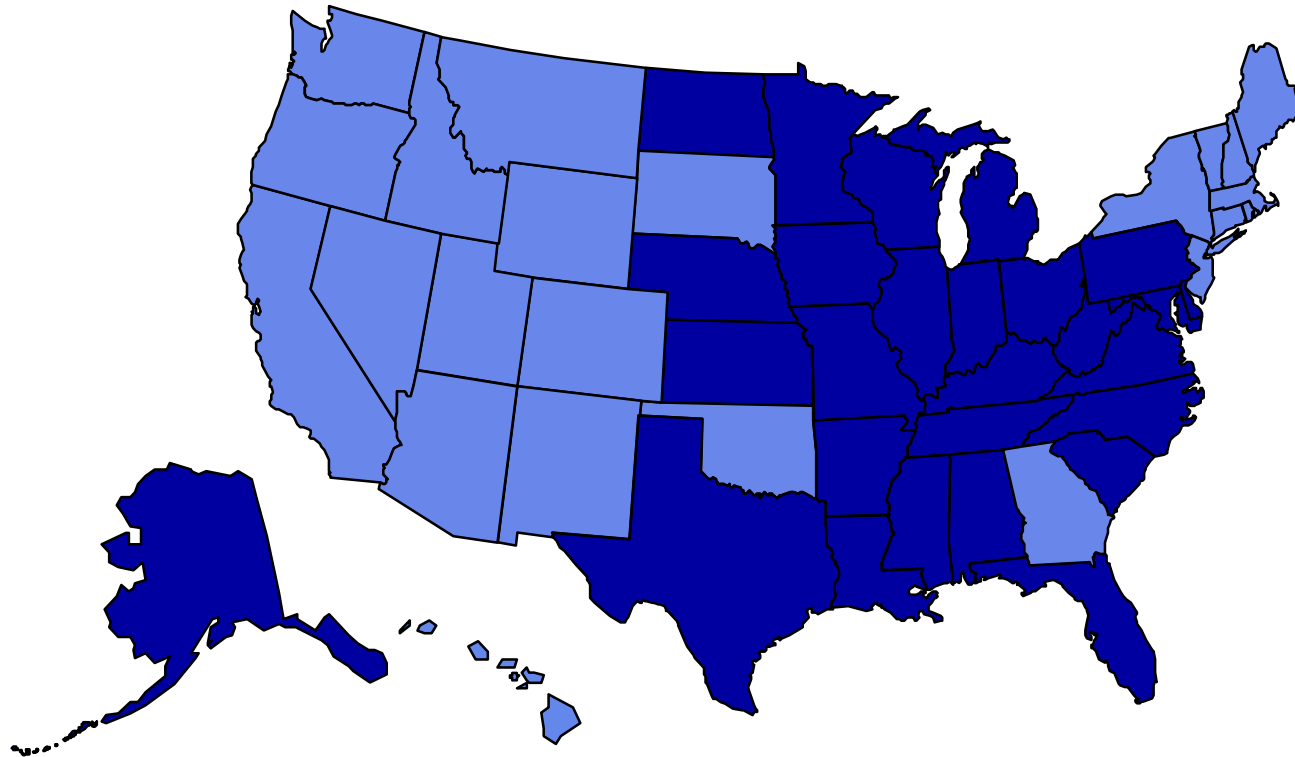
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1995

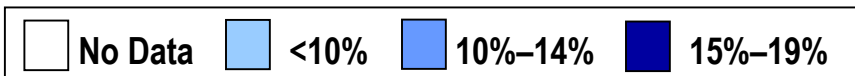
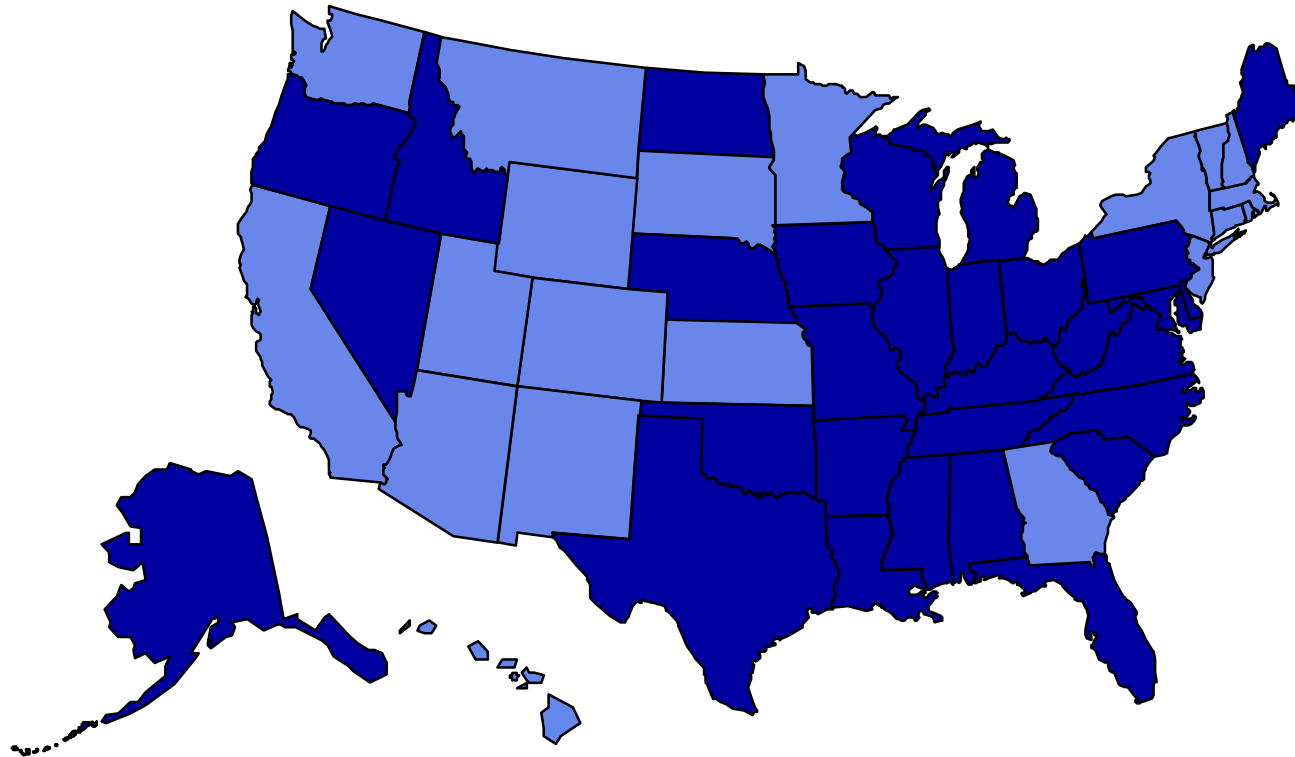
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1996

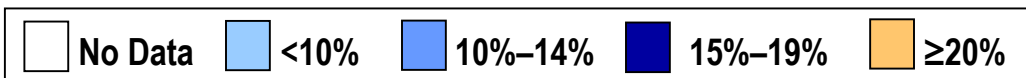
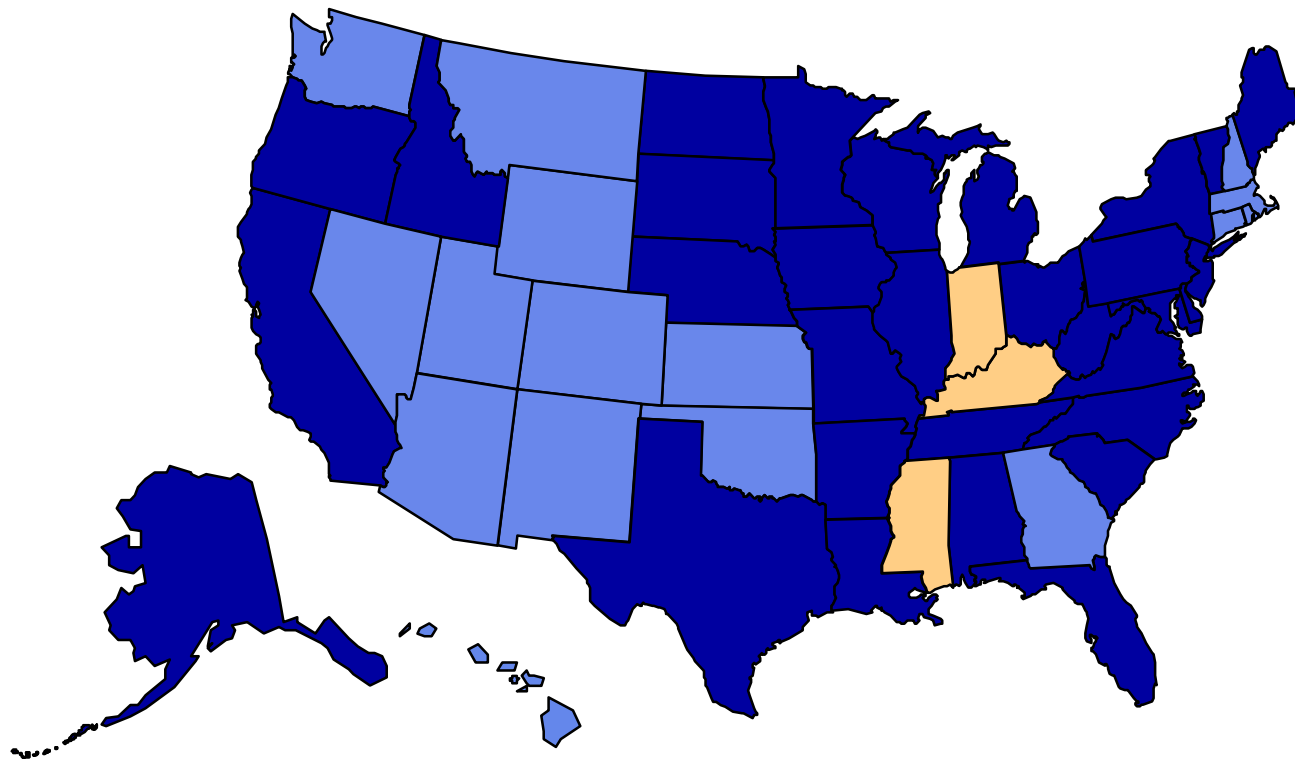
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1997

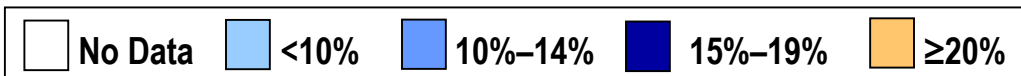
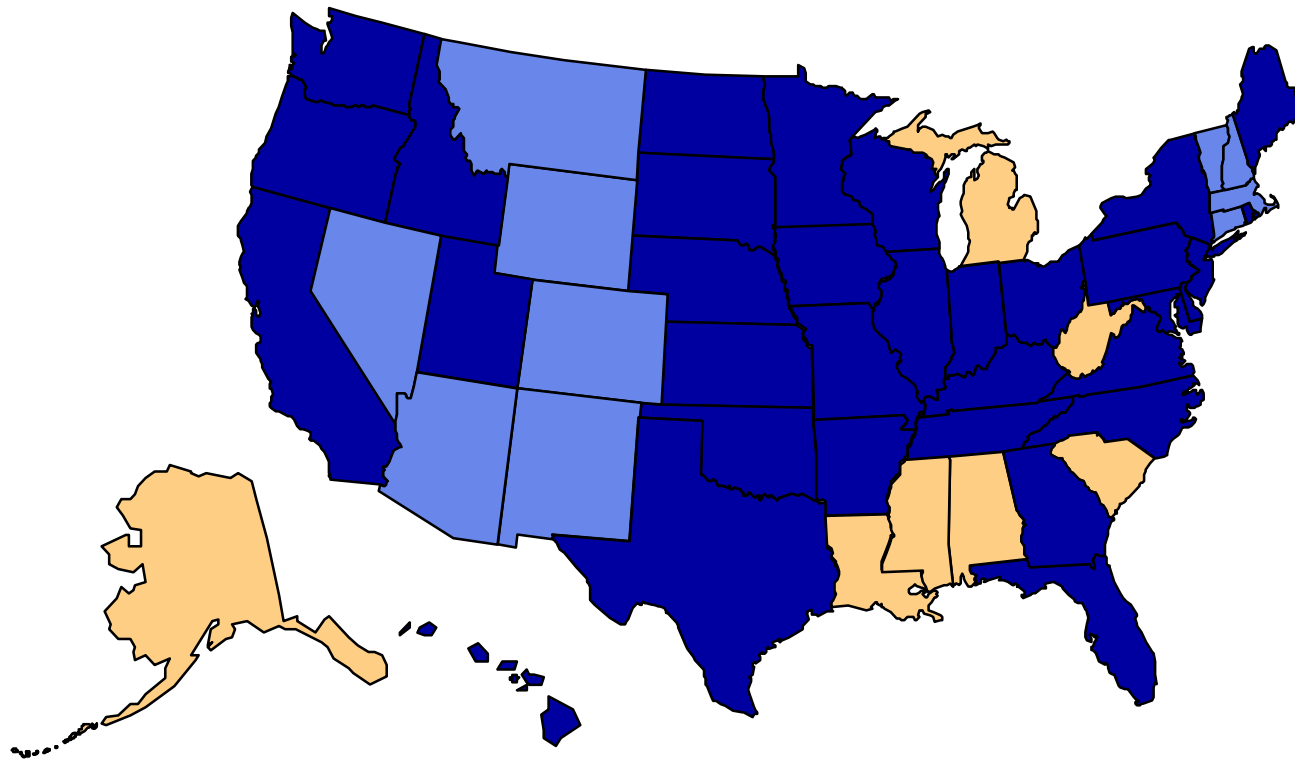
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1998

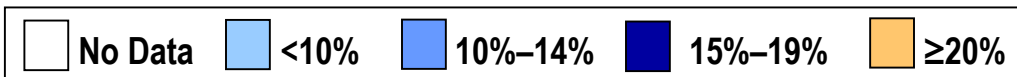
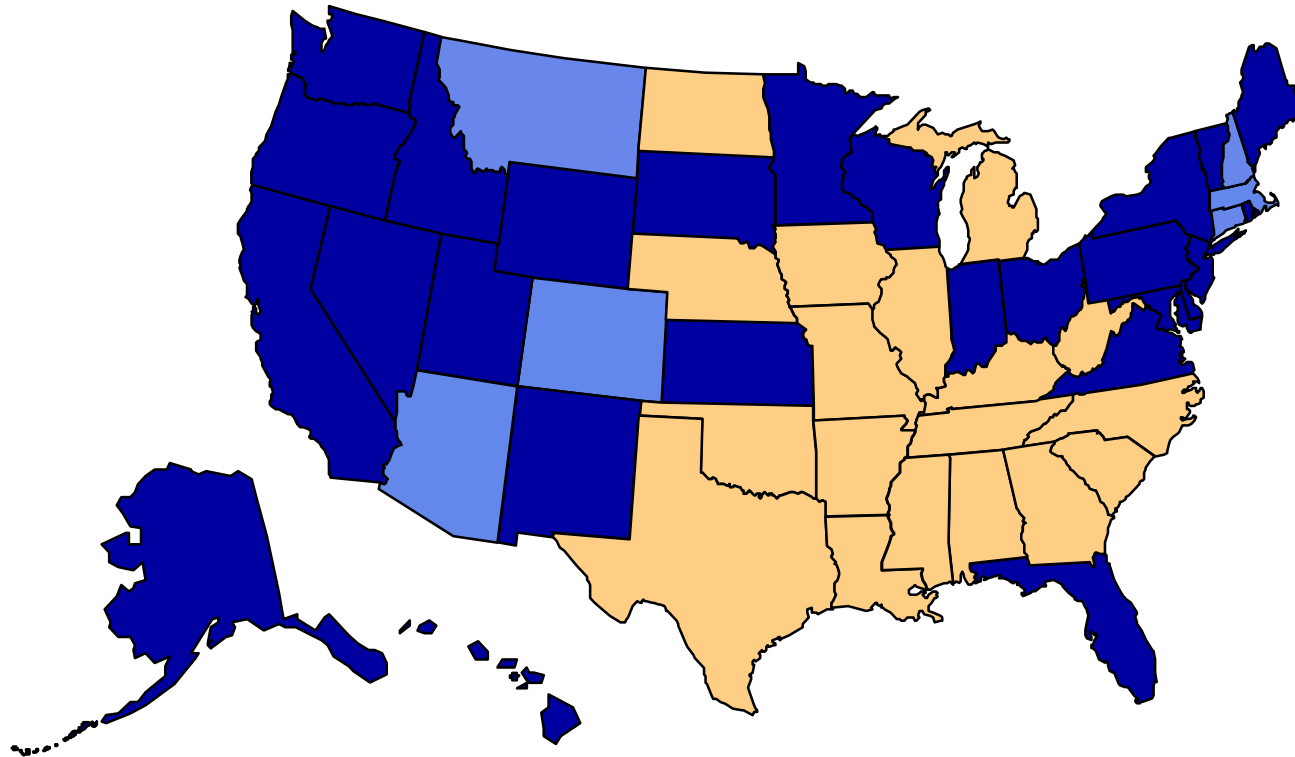
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1999

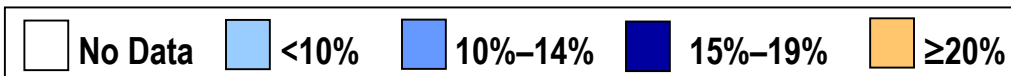
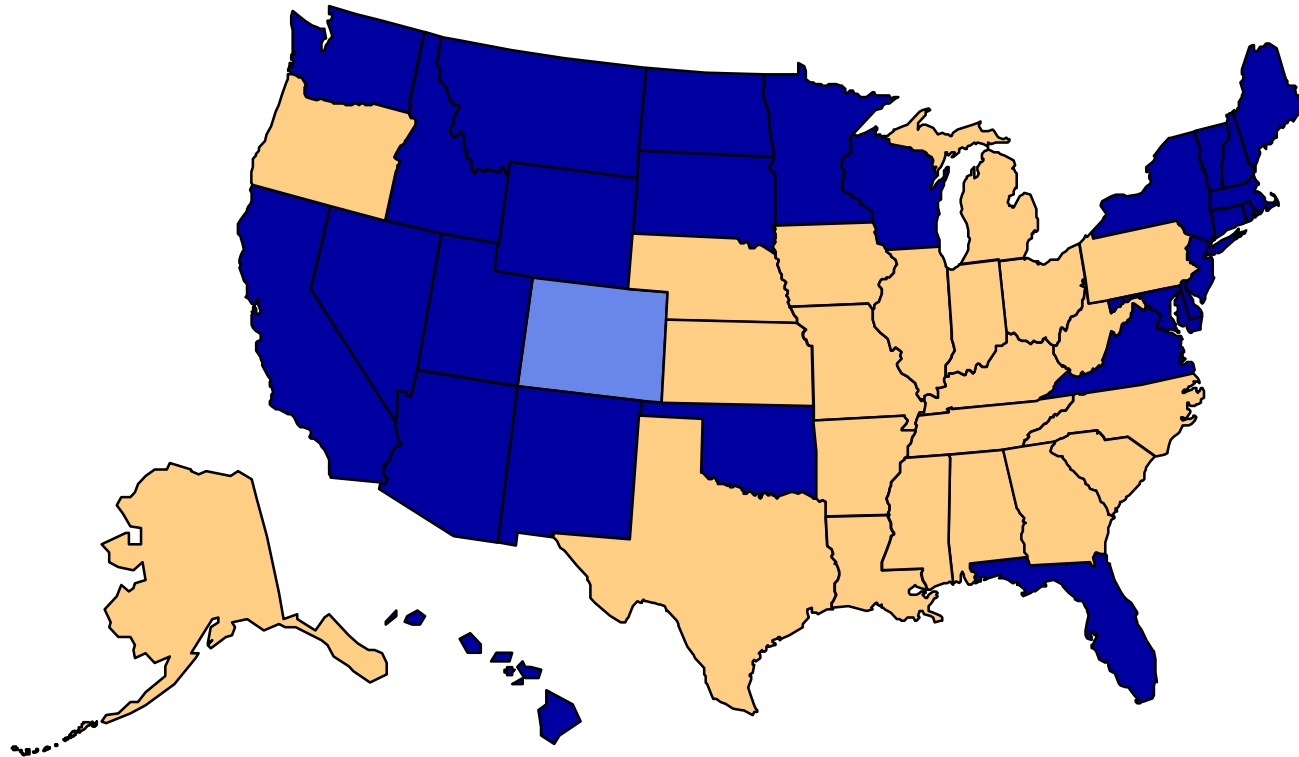
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2000

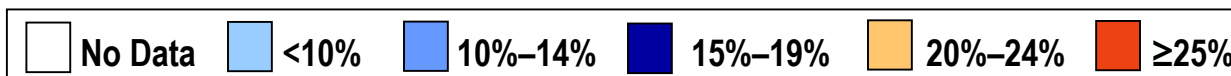
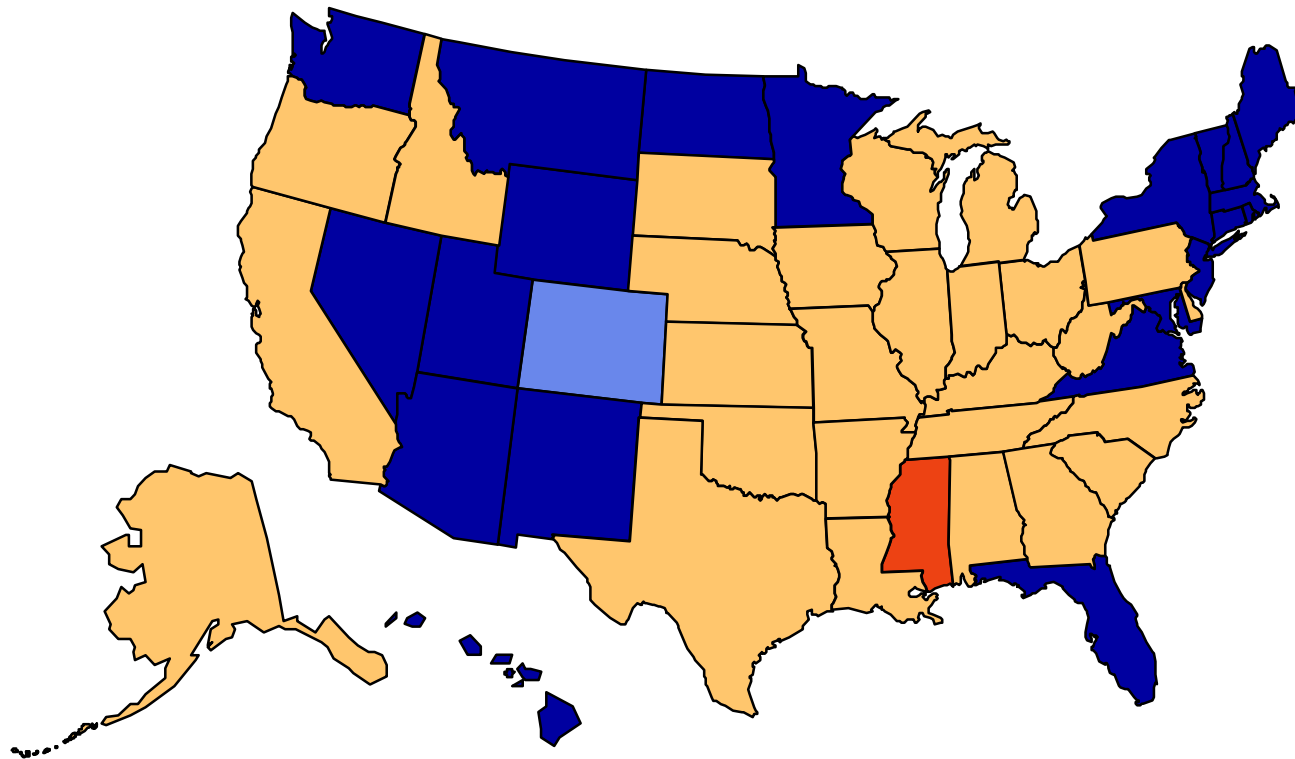
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2001

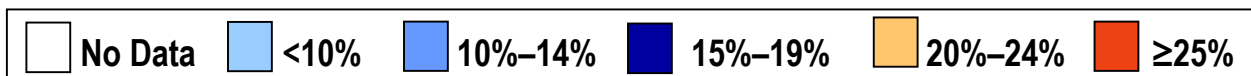
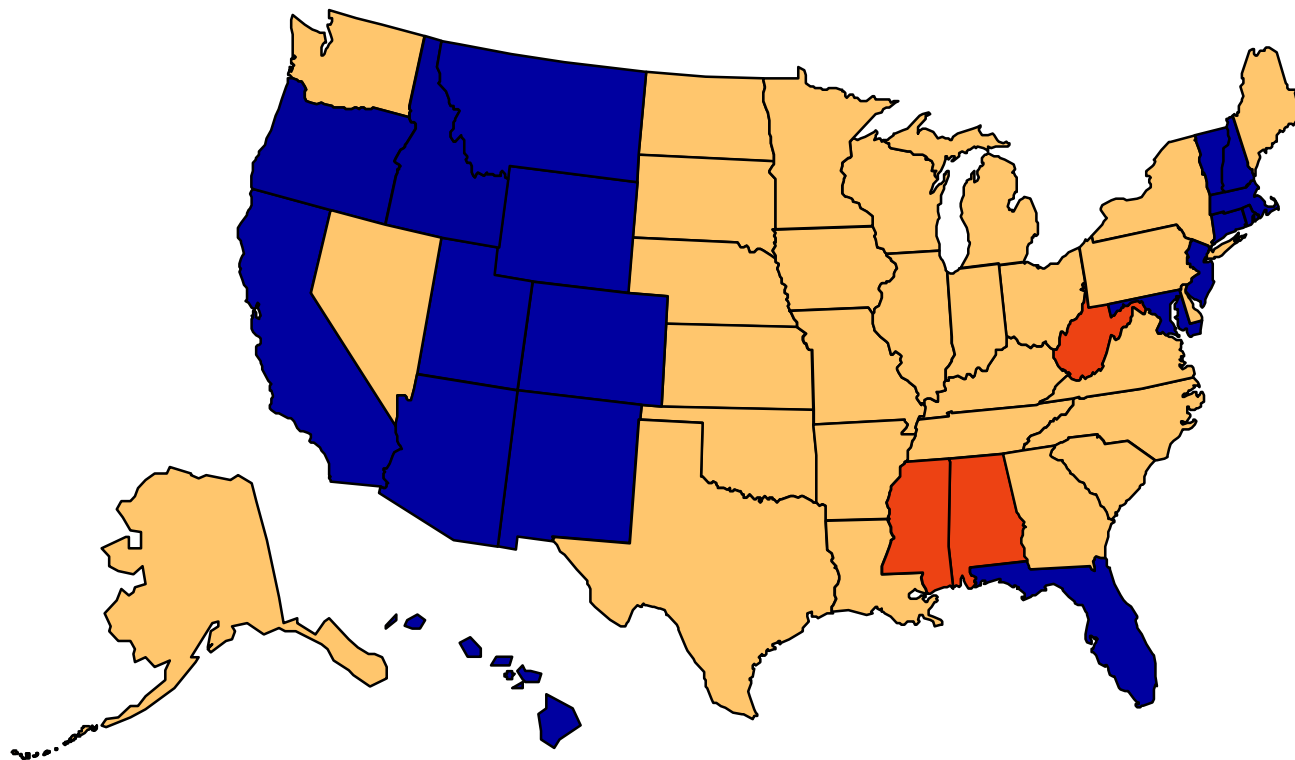
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2002

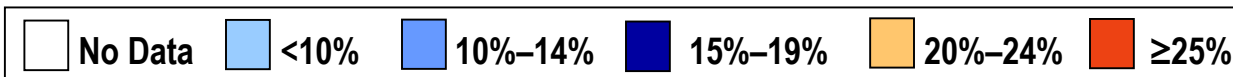
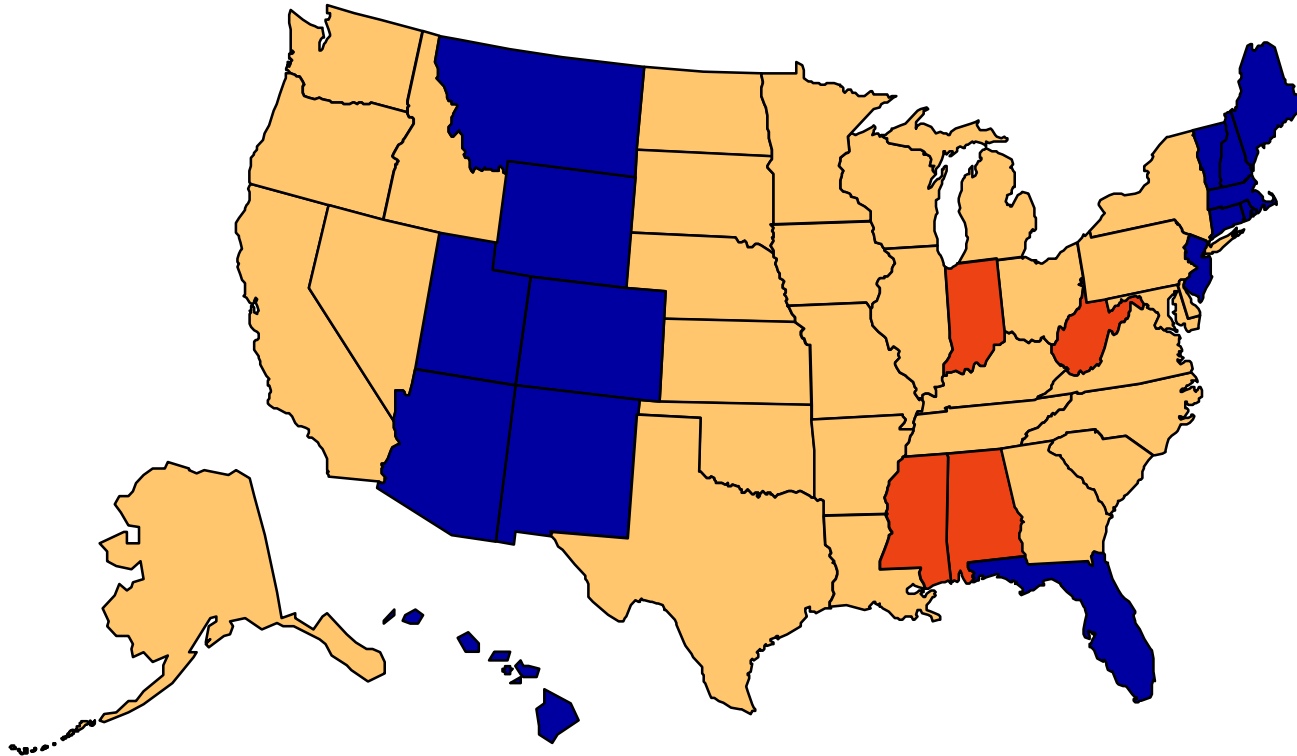
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2003

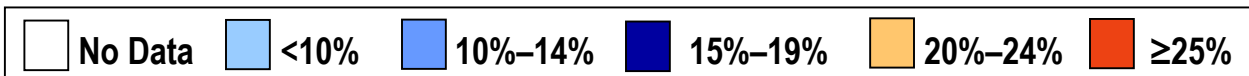
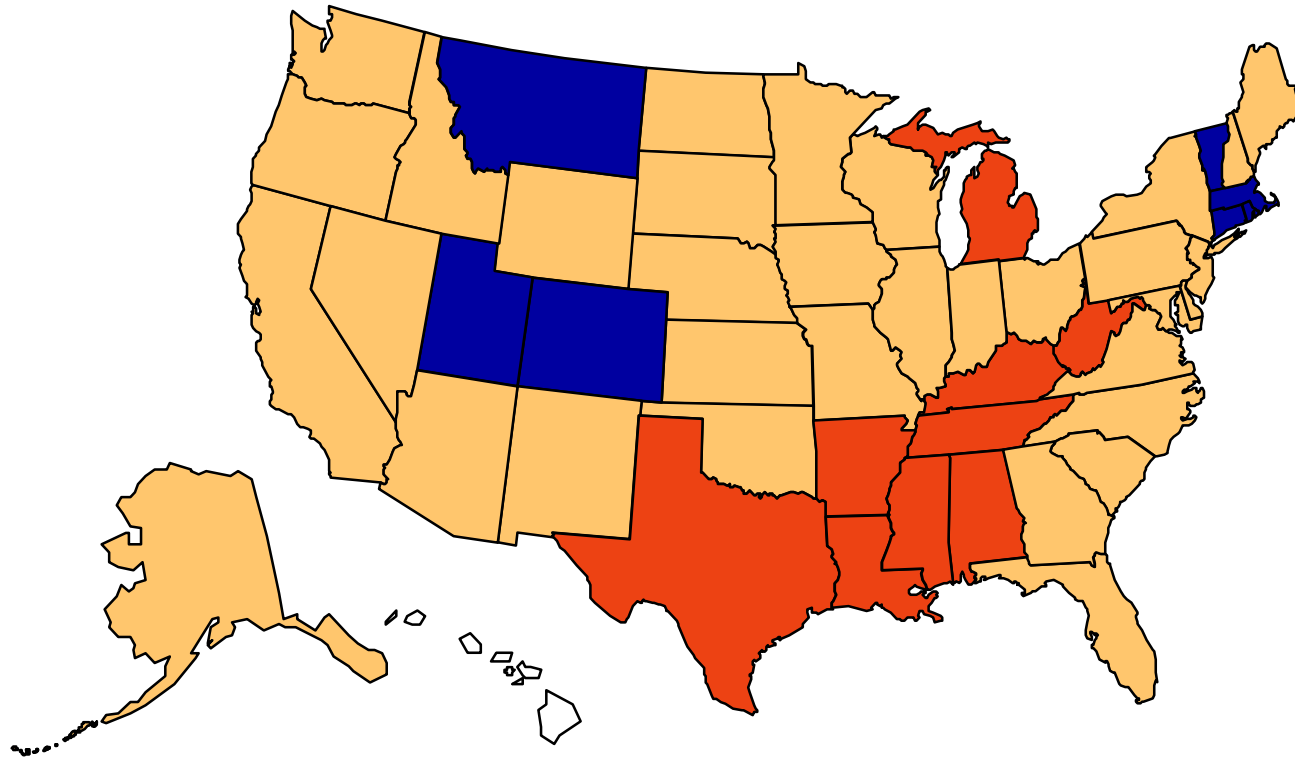
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2004

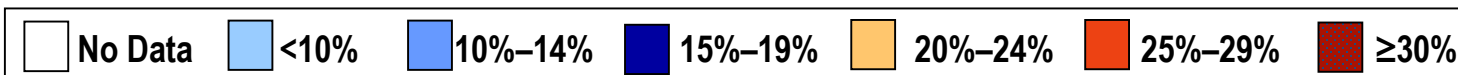
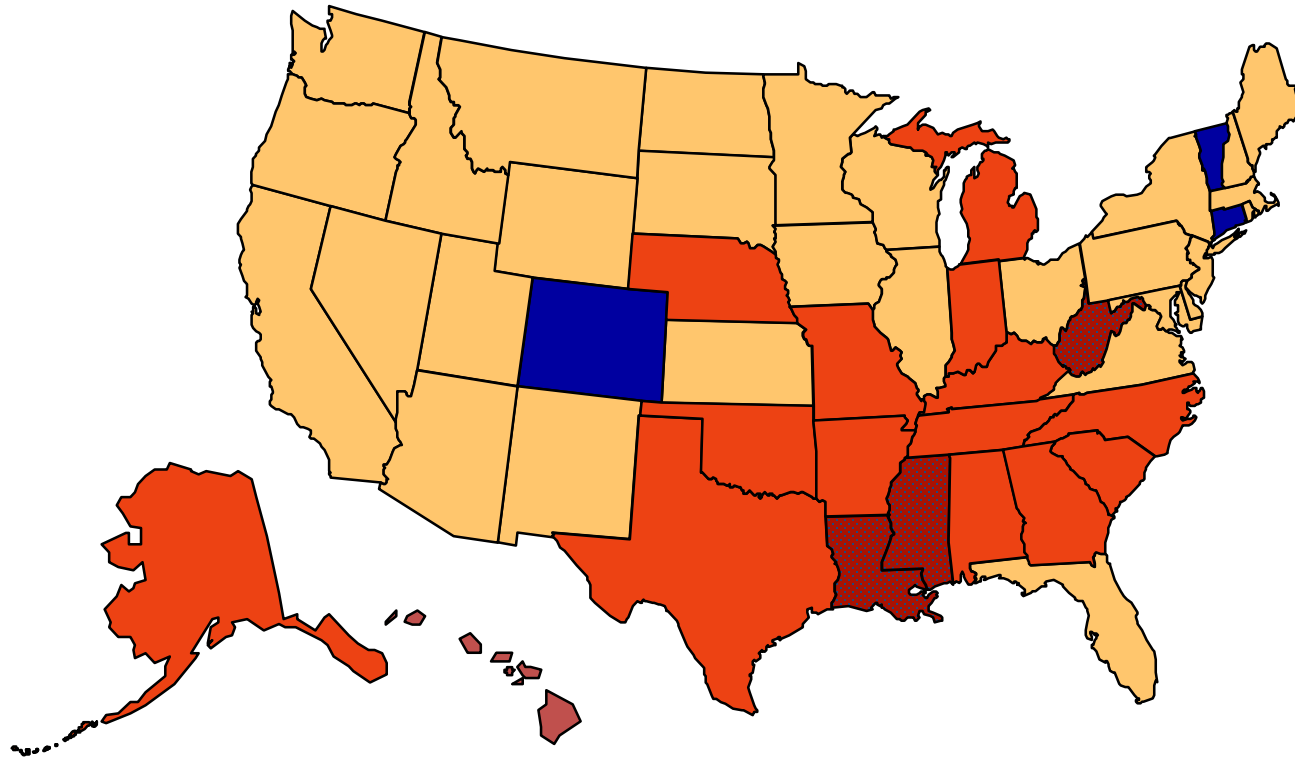
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Obesity Trends* Among U.S. Adults

BRFSS, 2005

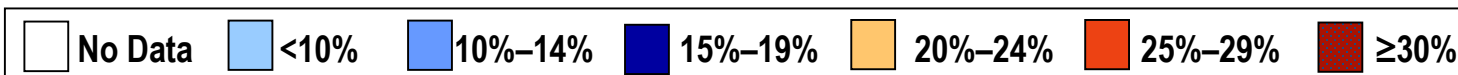
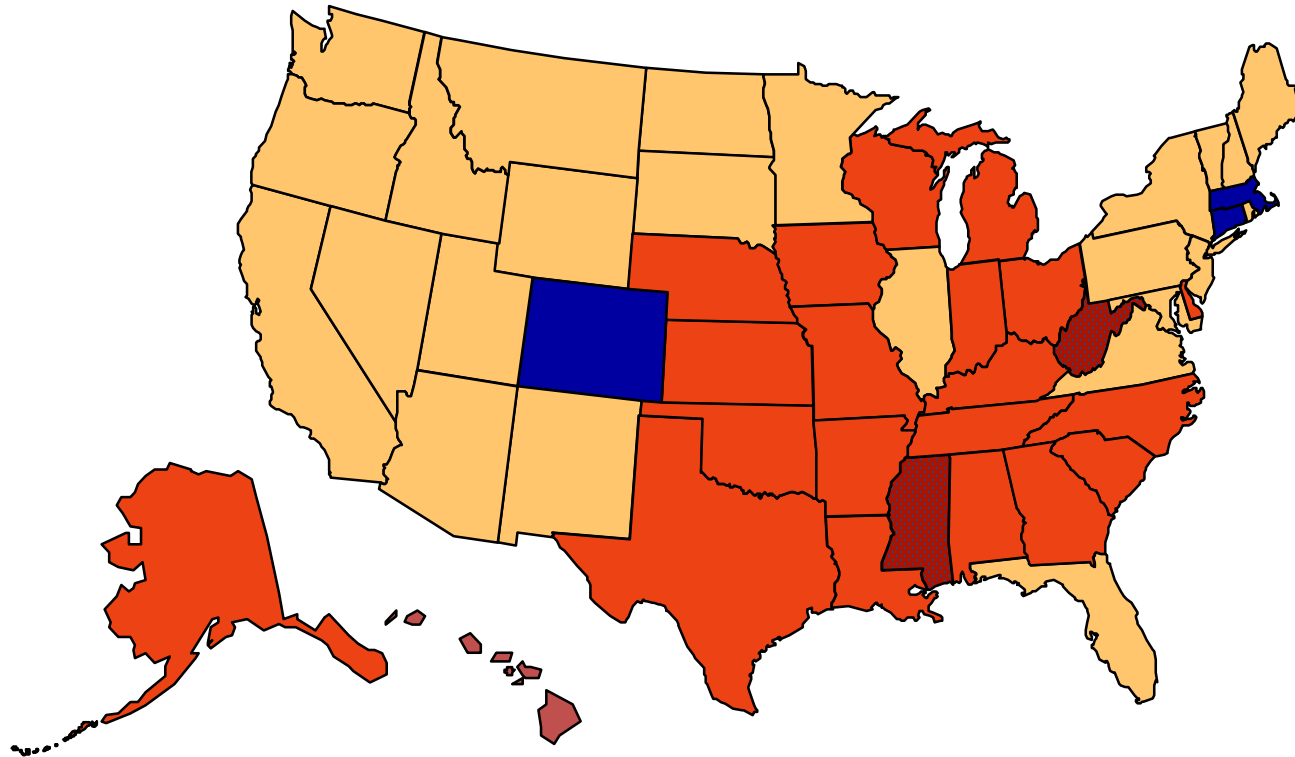
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Obesity Trends* Among U.S. Adults

BRFSS, 2006

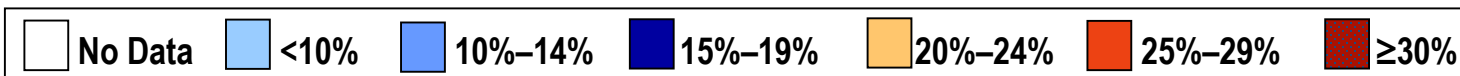
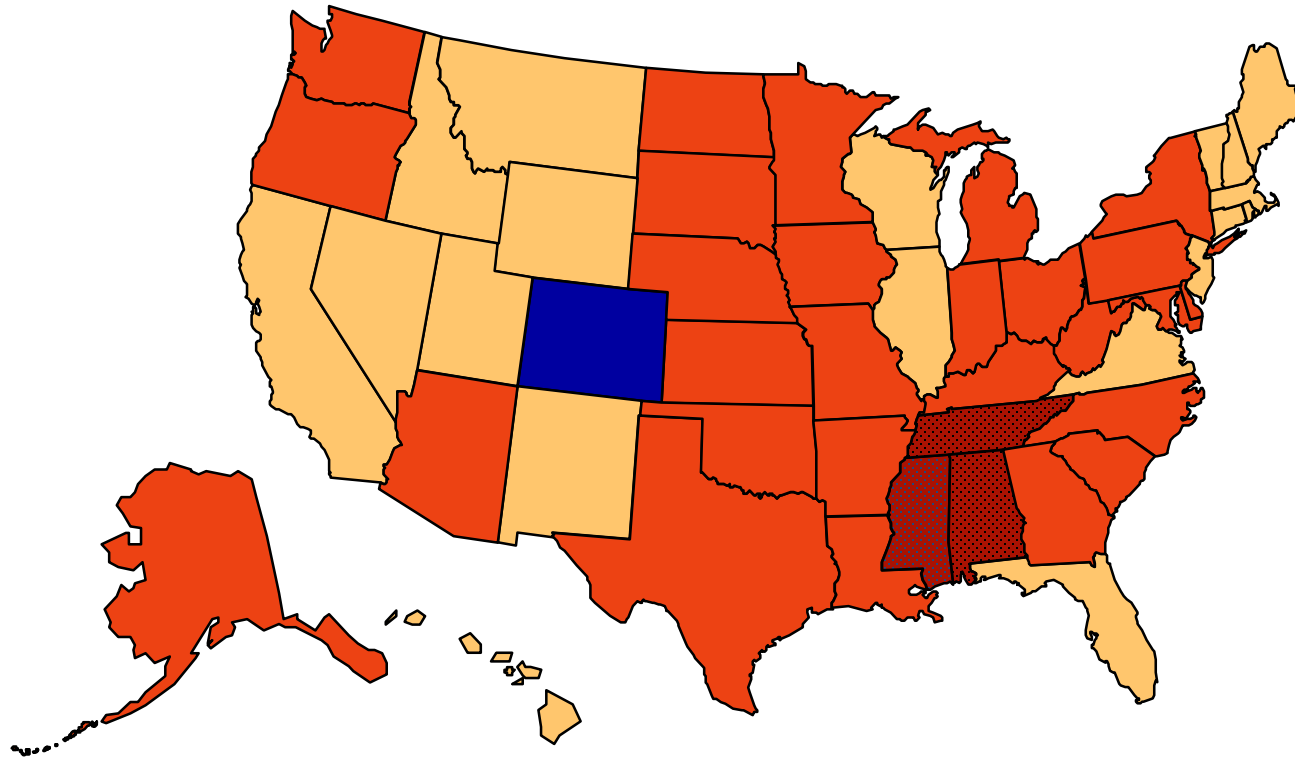
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Obesity Trends* Among U.S. Adults

BRFSS, 2007

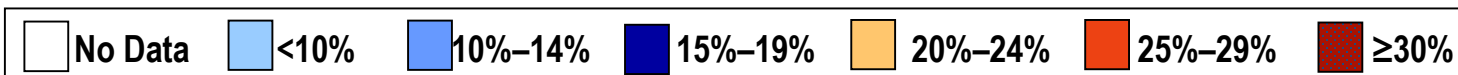
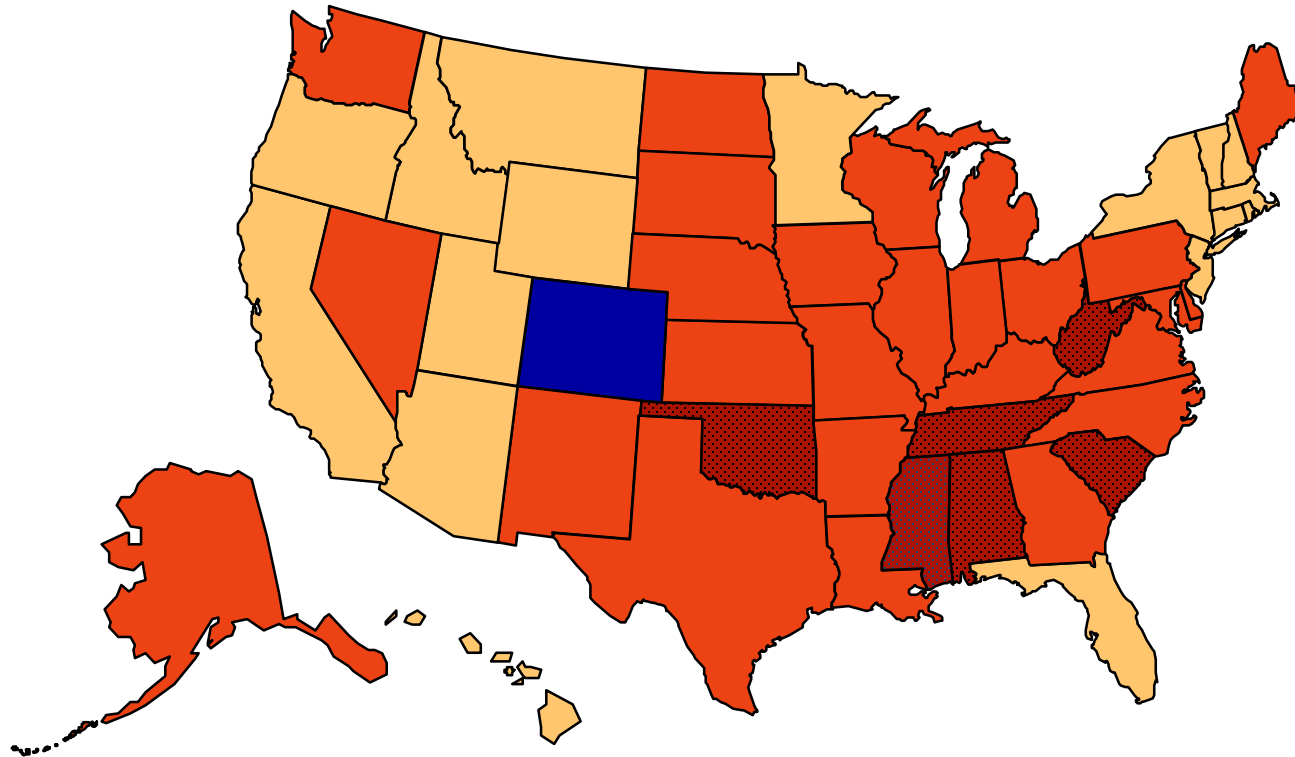
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2008

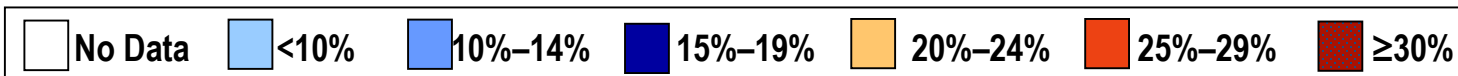
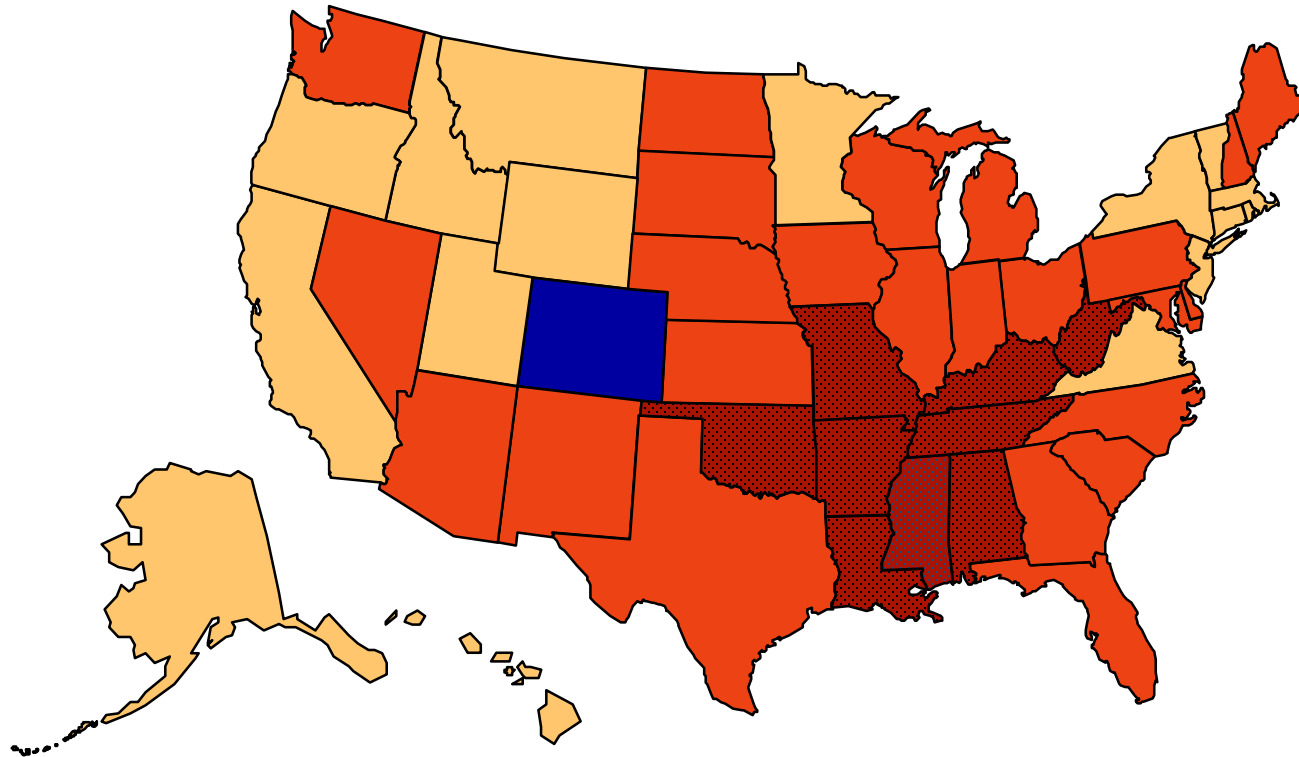
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2009

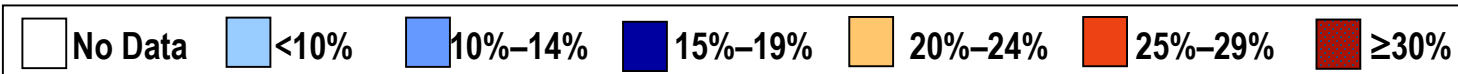
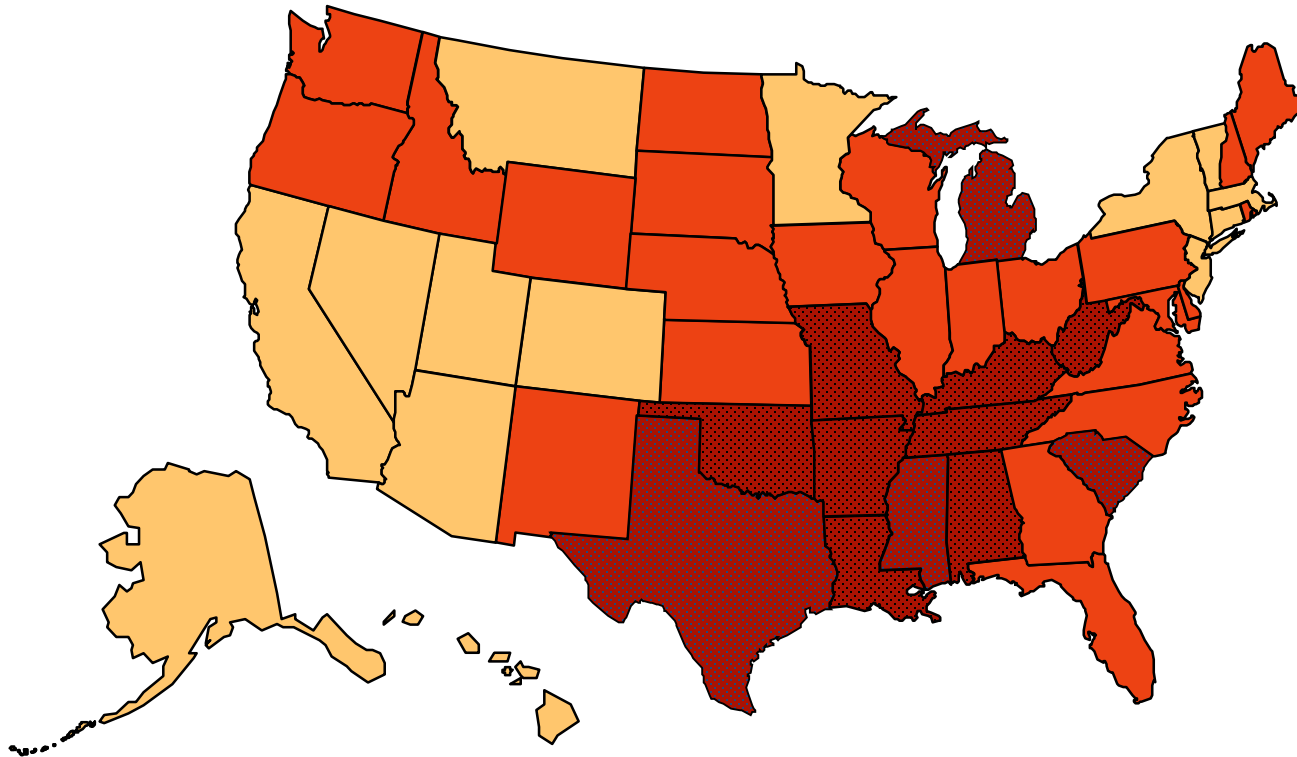
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



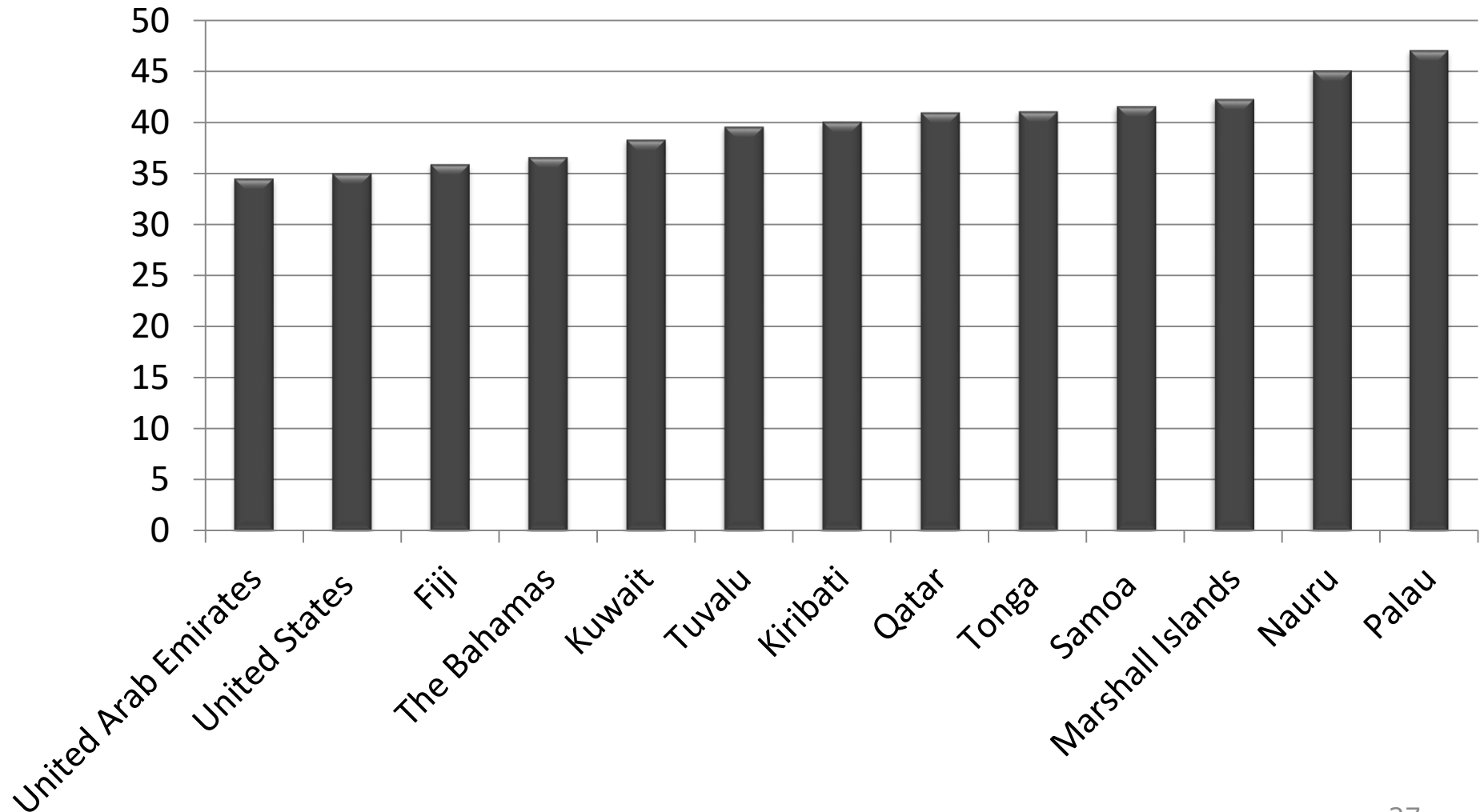
Obesity Trends* Among U.S. Adults

BRFSS, 2010

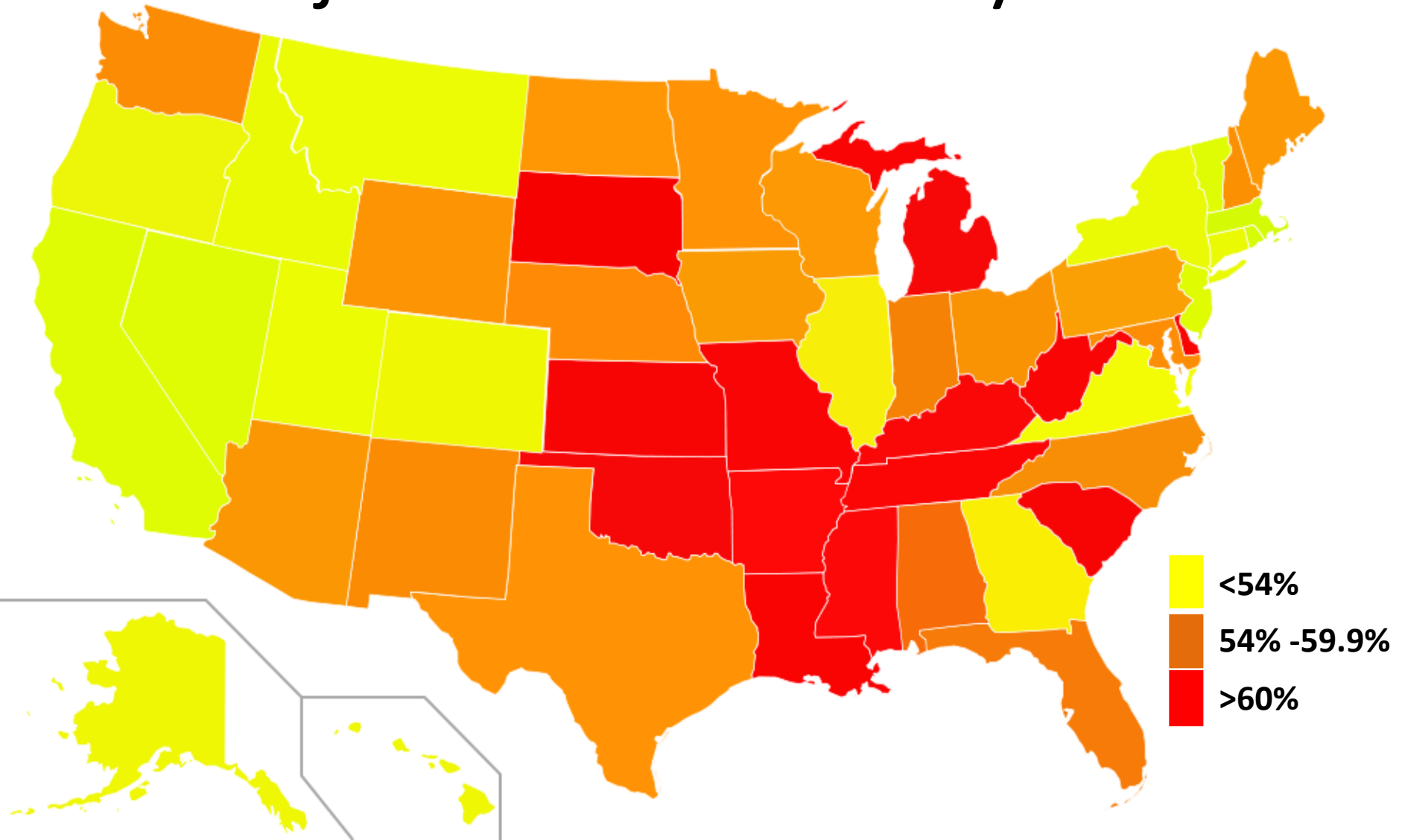
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Highest Percentage of Obesity by Countries, 2014



Projected 2030 Obesity Rates



National Heart Forum, Robert Wood Johnson Foundation, Trust for America's Health "F as in Fat: How Obesity Threatens America's Future 2012". Percentage of adult population projected to be medically obese in 2030.



STOP
Overeating

SPEARMINT

Control Your
Appetite
EFFECTIVE
IMMEDIATELY
No Caffeine

SPRAY
U
THIN

THE
90'S WAY
TO:

•LOSE WEIGHT
•CONTROL YOUR APPETITE
•FRESHEN YOUR BREATH

SPRAY-U-THIN[®]

**IT
WORKS!**

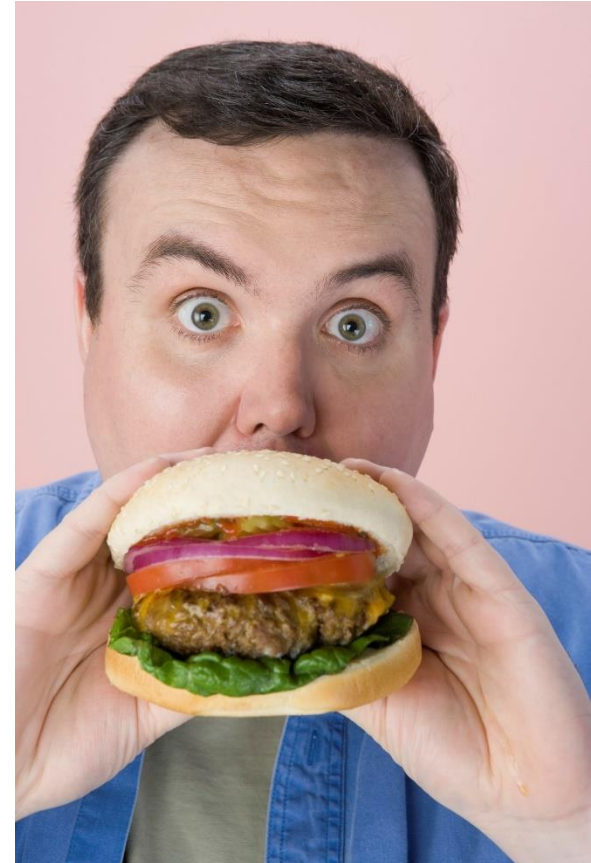
EASY TO USE **30** DAY SUPPLY
Net 1.5 fl oz (44 ml)

Are poor food choices the cause? Why are Americans gaining weight

- I. Lack of exercise
- II. Sedentary lifestyles
- III. Stress/pressure
- IV. Advertising
- V. Genetic
- VI. Deep emotional needs, Dr Phil
- VII. Haven't found the right diet

Premise for today!

- We lose track of how much we are eating



What Affects Consumer Choice?

1. Portion Size
2. Shape and Size
3. Visibility
4. Food Labels
5. Visual Cues
6. Suggestive Selling
7. Social Pressures



I. Portion size



1. Portion Distortion
2. Restaurants

Historical Glance

<u>Food/Bev</u>	<u>Introduction</u>	<u>Size at intro(oz)</u>	<u>2002 sizes</u>
Budweiser	1936	7.0	7, 12, 22, 40
Hershey bar	1908	0.6	1.6, 2.6, 4.0, 7.0, 8.0
BK fry	1954	2.6	2.6, 4.1, 5.7, 6.9
McD burger	1955	1.6	1.6, 3.2, 4.0, 8.0
Soda-BK	1954	12.0, 16.0	12.0, 16.0, 22.0, 32.0, 42.0

Then and Now... Average Cookies

- 20 years ago
 - 55 calories
 - 1.5 inch diameter
- Now
 - 275 calories
 - 3.5 inch diameter



Then and Now... Average Cheesecake

- 20 years ago
 - 260 calories
 - 3 ounces
- Now
 - 640 calories
 - 7 ounces



Then and Now.... Average Muffins

- 20 Years Ago
 - 210 calories
 - 1.5 ounces
- Today
 - 500 calories
 - 4 ounces



Then and Now... Average Bagel

20 years ago

- 3 in diameter
- 140 calories



Today

- 6 in diameter
- 350 calories



Then and Now... Average Spaghetti

20 years ago

- 1 C. pasta and sauce w/ 3 meatballs
- 500 calories



Today

- 2 C. pasta and sauce w/3 meatballs
- 1,025 calories



Then and Now... Average Burger

20 years ago

- 333 calories



Then and Now... Average Burger

20 years ago

- 333 calories



Today

- 590 calories

Monster Burger

- 1420 calories



Then and now... Average Fries

20 years ago

- 2.4 oz
- 210 calories



Today

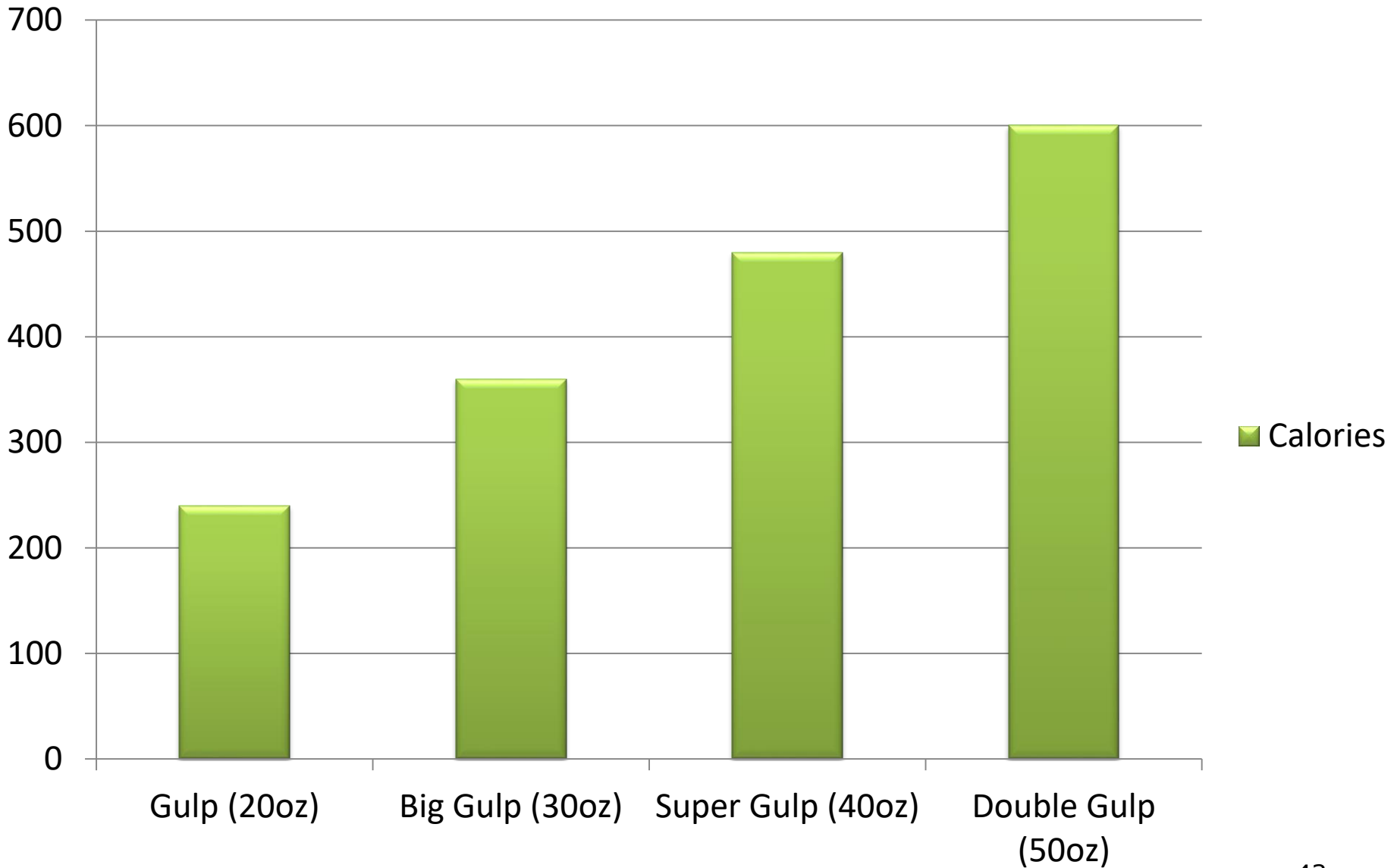
- 6.9 oz
- 610 calories



From the monster to the Riley burger



Calorie Comparison of 7-eleven Coke-a-Cola



Legislation on Portion Sizes: Bloomberg

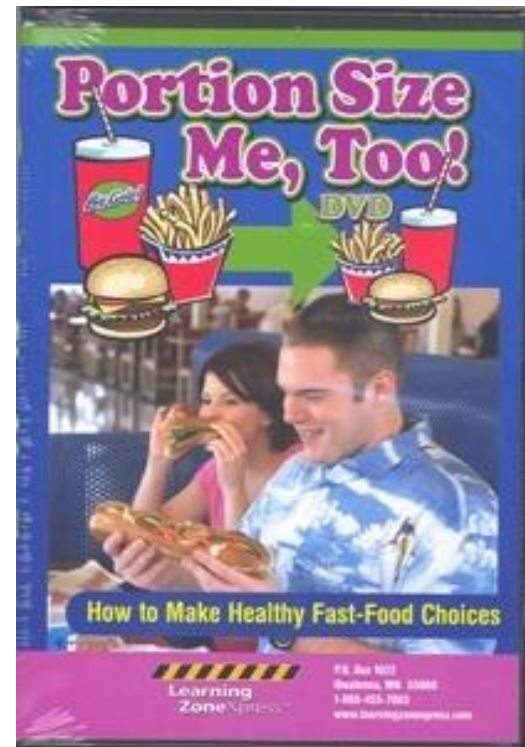
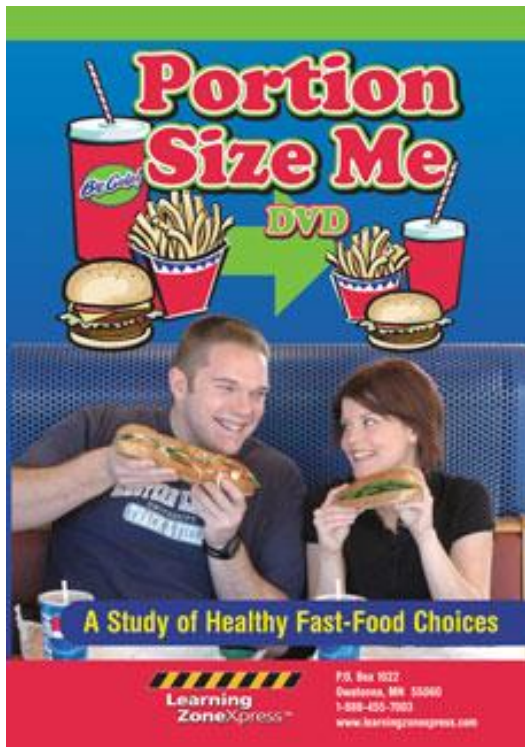
- New York state Supreme Court Judge Milton Tingling declared invalid Mr. Bloomberg's plan to prohibit selling sugary drinks in cups or containers larger than 16 ounces.
- Was to go in effect in March 2013

Other Trends

- Nestle Toll House cookies
 - recipe yields 60 vs. 100 when written in 1949



Super Size Me Documentaries

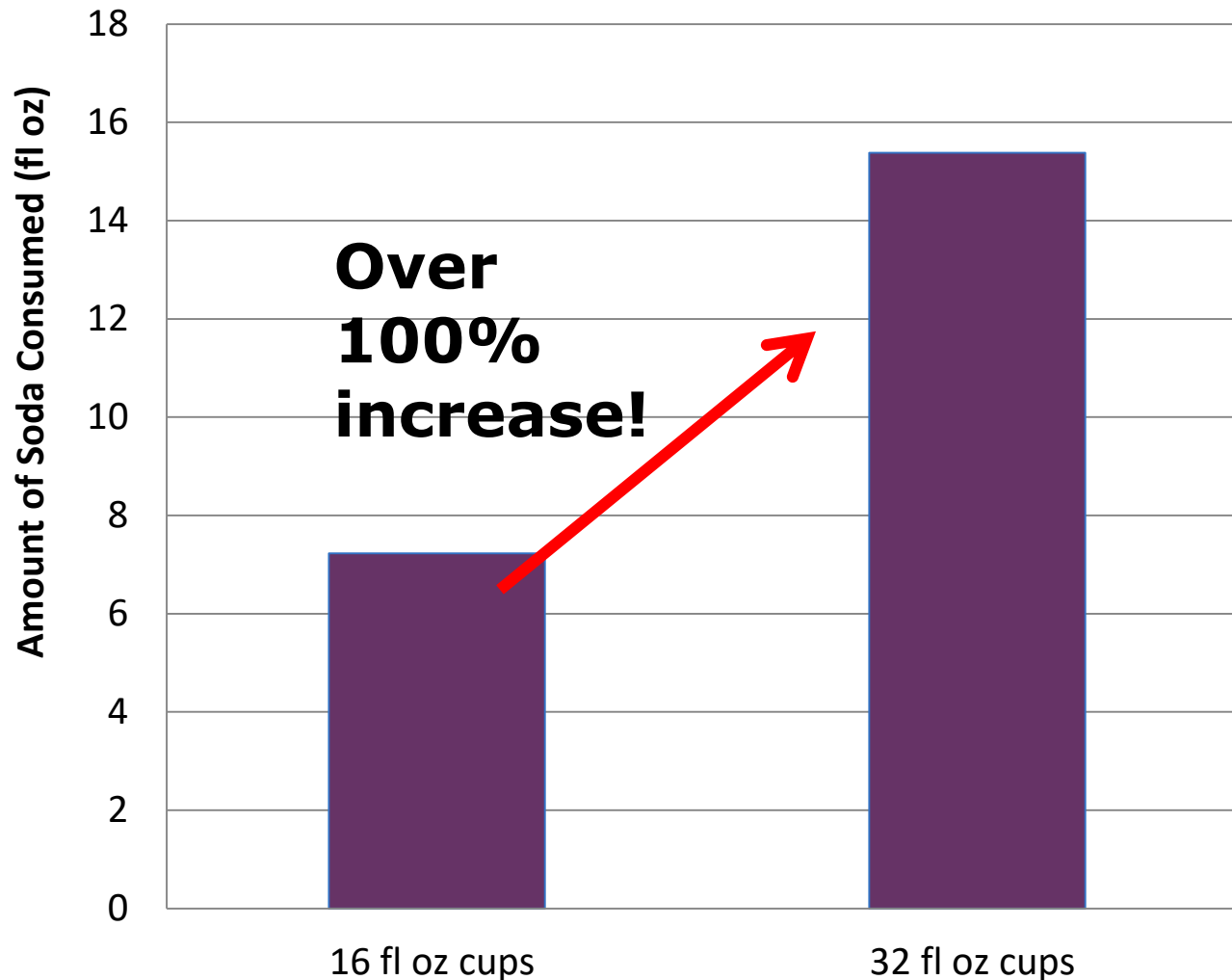


CBS Morning Show Features: Portion Size Me



Does Cup Size Increase Soda Consumption

Figure 1. Average Soda Consumption



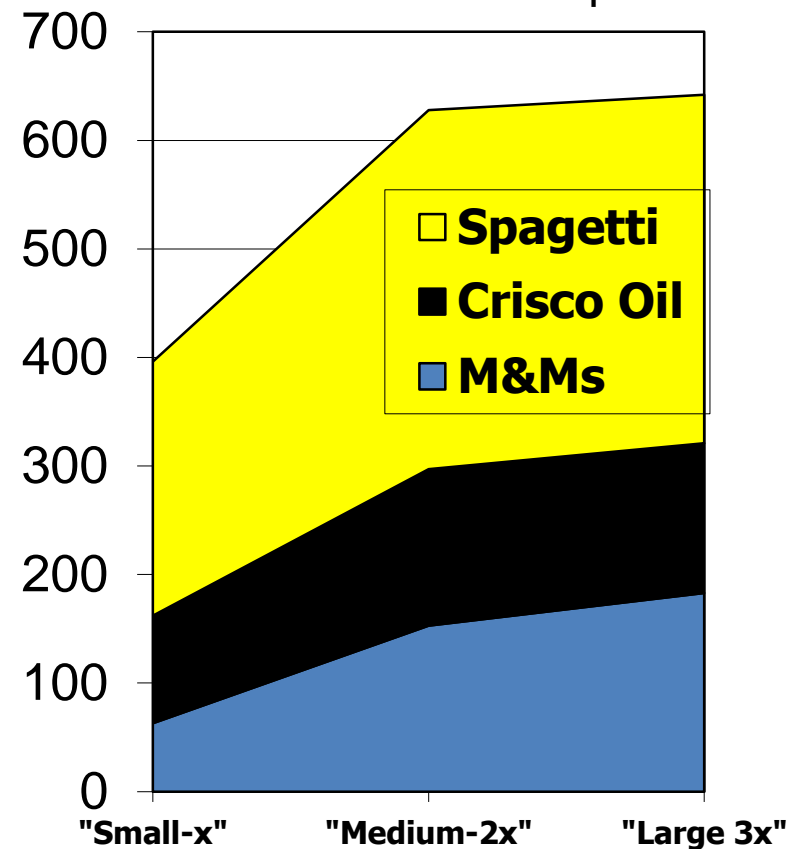
II. Size and Shape of Containers

- General Finding About Package Size . . .
- Study 1. Package Size
- Study 2. Portion Size
- Study 3. Serving Shapes
- Study 4. Shape Study #2

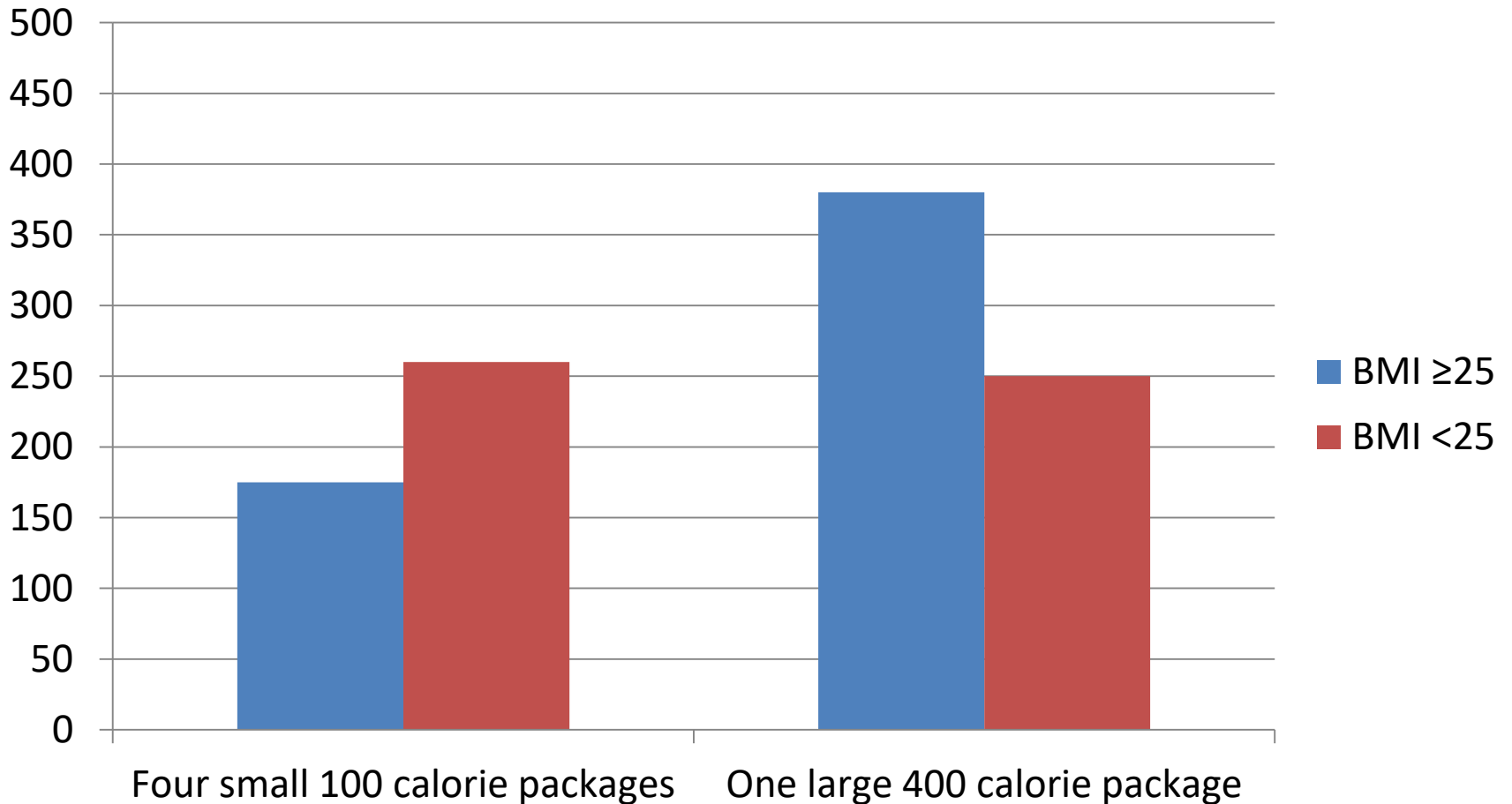
Package Size Increases Consumption

- People who pour from larger containers eat more than those pouring from small

General Finding:
Package Size Can
Double Consumption



The 100-Calorie Semi-Solution: Sub-Packaging Most Reduces Intake Among The Heaviest



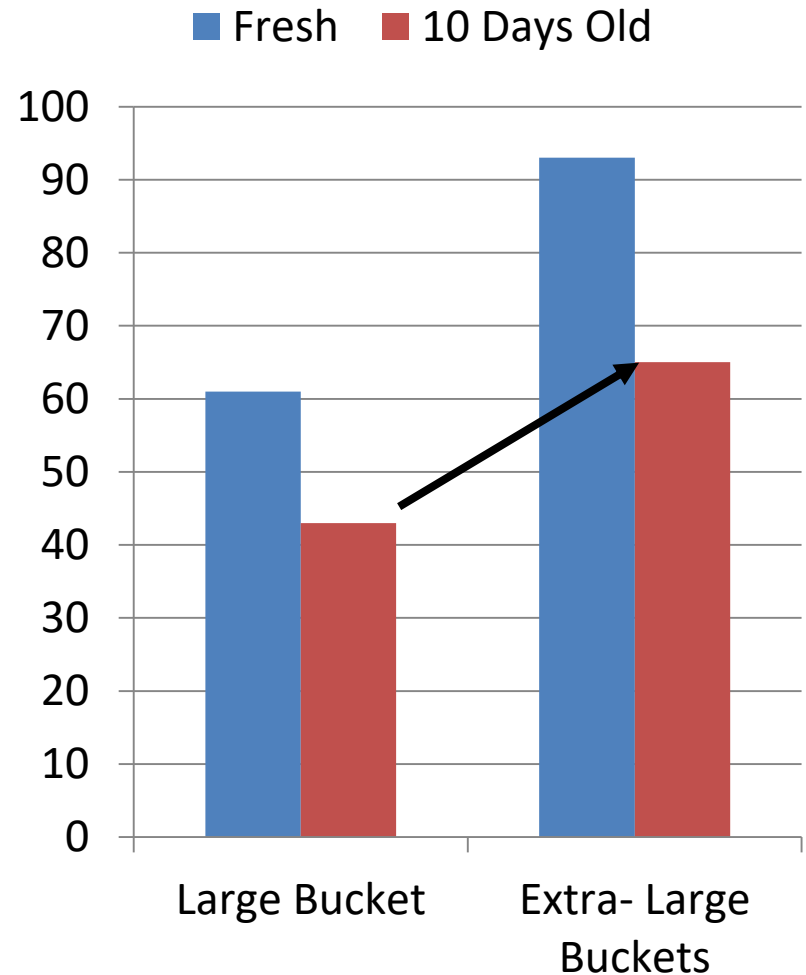
Hungry for Some Stale Movie Popcorn?

- Does portion size effect consumption?



We Eat Much More from Big Containers

- People eat 45-50% more from extra-large popcorn containers
- They still eat 40-45% more with stale popcorn

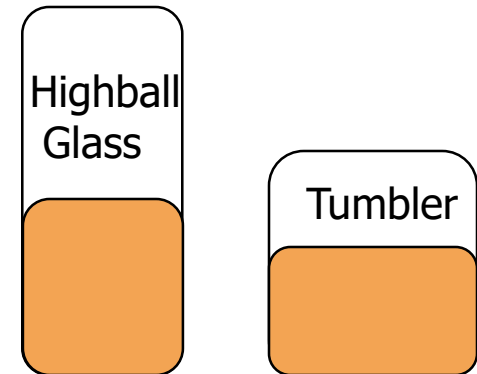




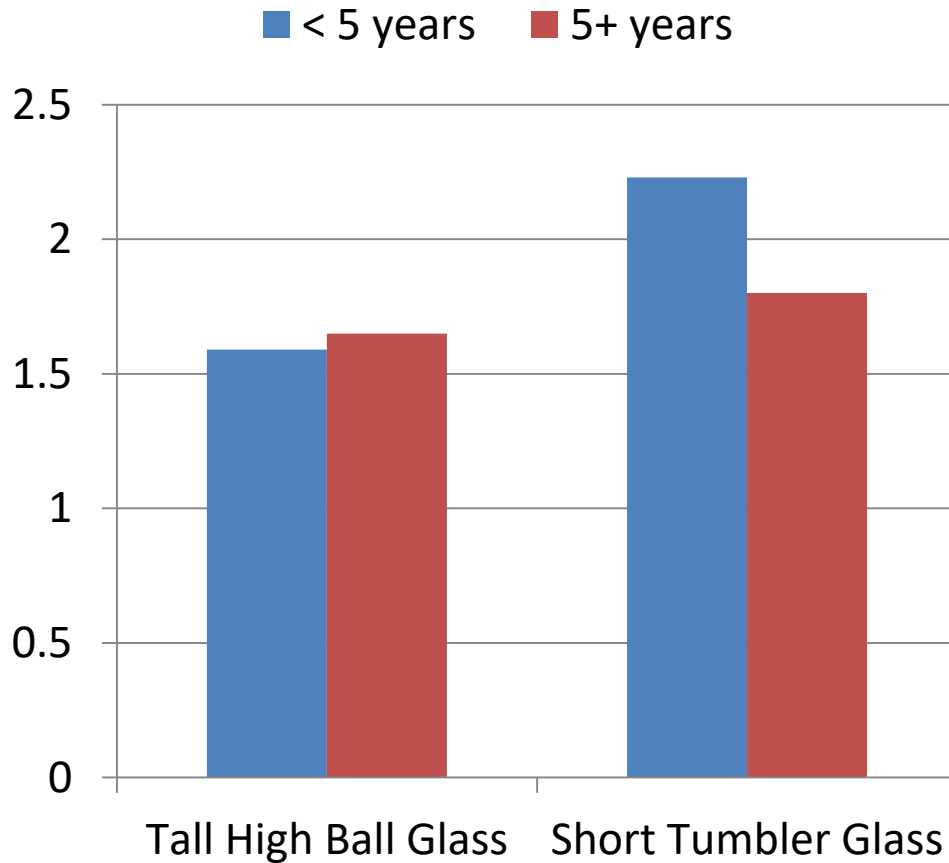
Do Peripheral Cues Influence Experts with Precise Target Volumes?

48 Philadelphia bartenders

- Given 4 tall, slender (highball) glasses or 4 short, wide (tumbler) glasses
- Split in to . . .
 - Less than 5 years experience
 - More than 5 years experience



“When in Philadelphia, Should I Ask for a Tumbler or a Highball Glass?”



- Bartenders poured 28% more alcohol into tumblers than highball glasses
- Experience doesn't eliminate bias



Do Serving Container Shapes Bias Consumption?

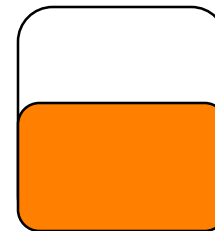
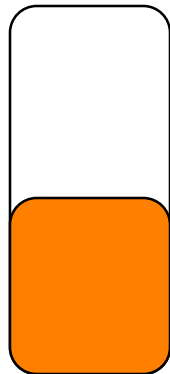


- Piaget's Conservation of Volume:
 - Kids think tall vessels hold more than wide vessels

Do Serving Container Shapes Bias Consumption?

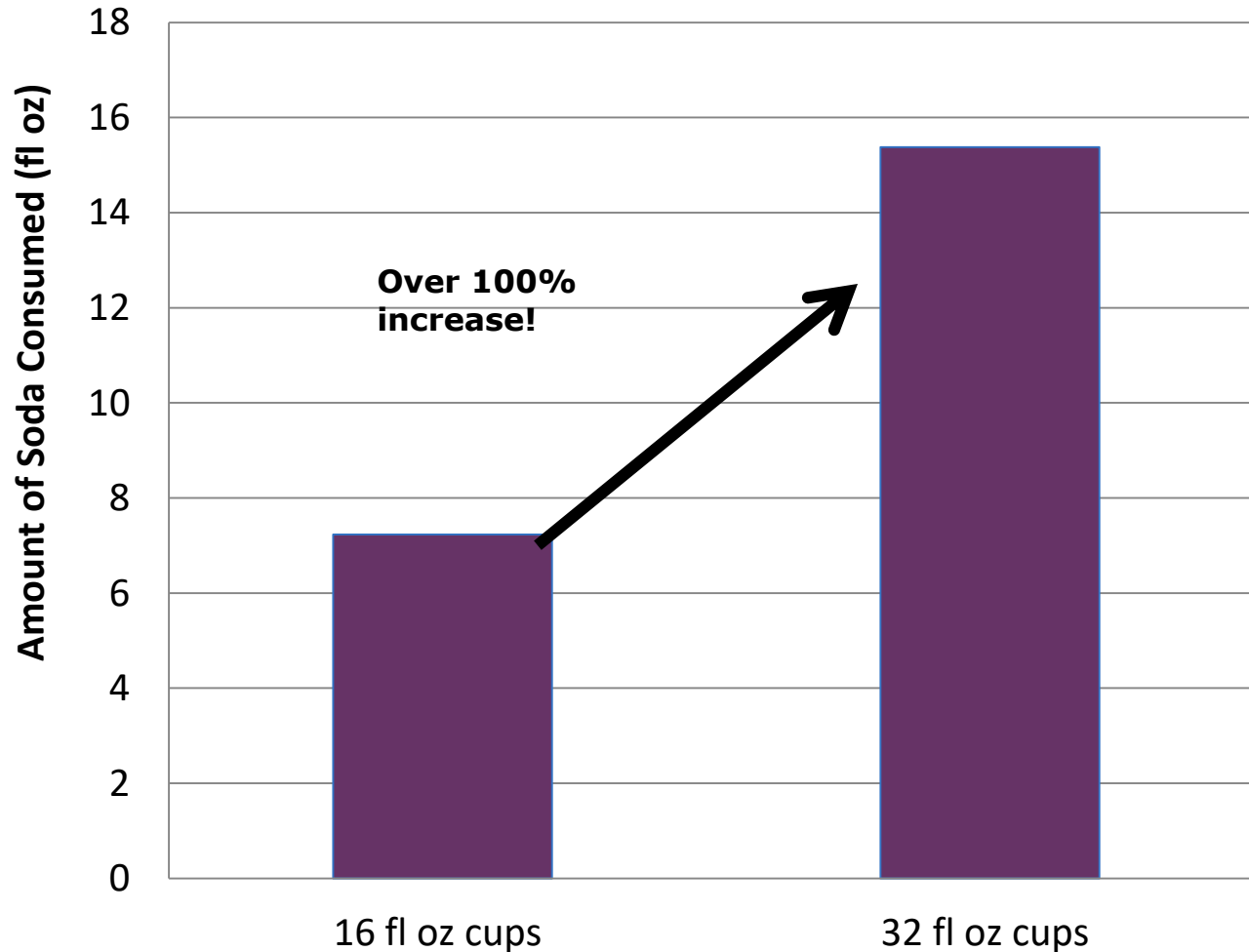


- 133 adolescents at a “Nutrition & Fitness Camp” in NH
- Cafeteria at breakfast time
 - Each was randomly given one glass when arriving
 - **Tall narrow** juice glass or a **Short wide** juice glass



Does Cup Size Increase Soda Consumption

Figure 1. Average Soda Consumption



III. The Effect of Visibility and Convenience on Dietary Consumption

- The Past.....
 - Gas stations
 - Someone else pumped the gas
 - Fast food
 - You had to go into the restaurant



Research Questions

1. Do people eat more when food is in sight?
2. Do people eat more when food is within reach?

METHODS

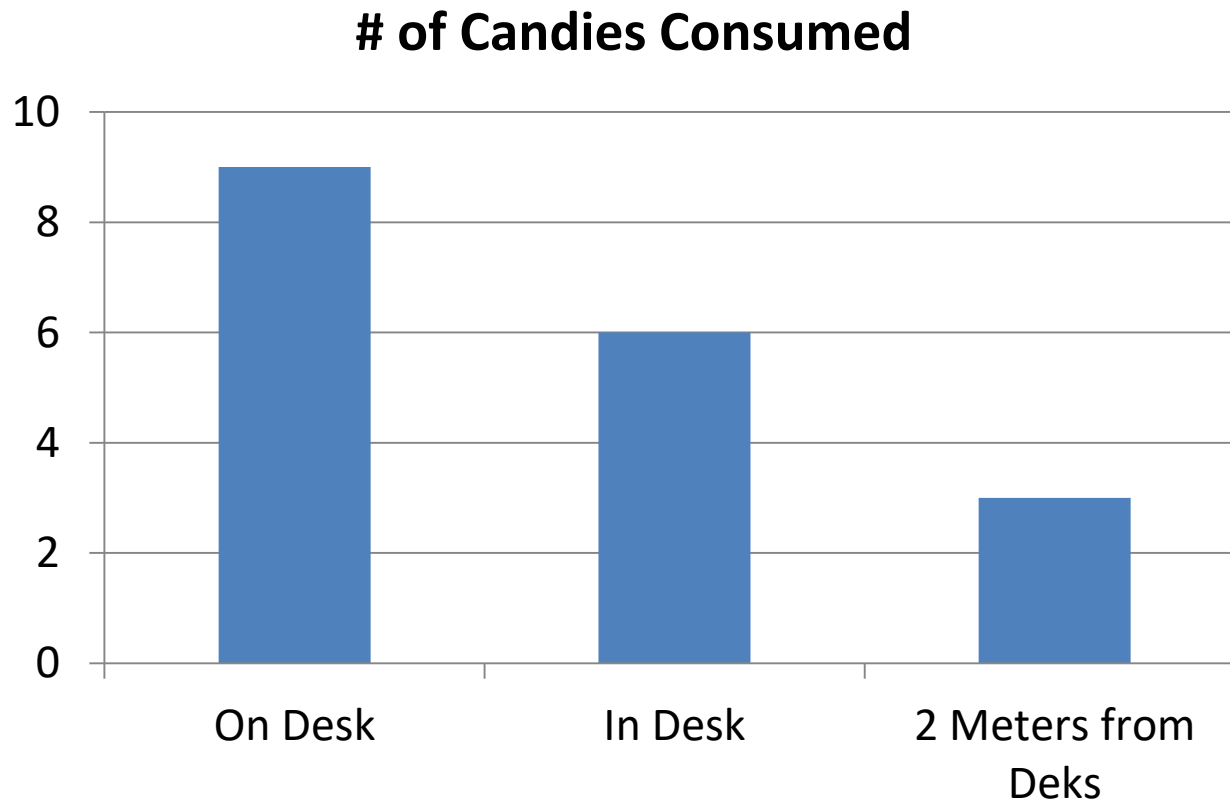
Intervention:

- Closed candy container containing 30 Hershey kisses replenished daily

Three conditions:

- On top of the desk (visible & convenient)
- In a desk drawer (not visible & convenient)
- Away from desk (inconvenient)

Amount of Candy Consumption According to Condition



**Would this be seen with
other types of foods?**

Methods

Study design:

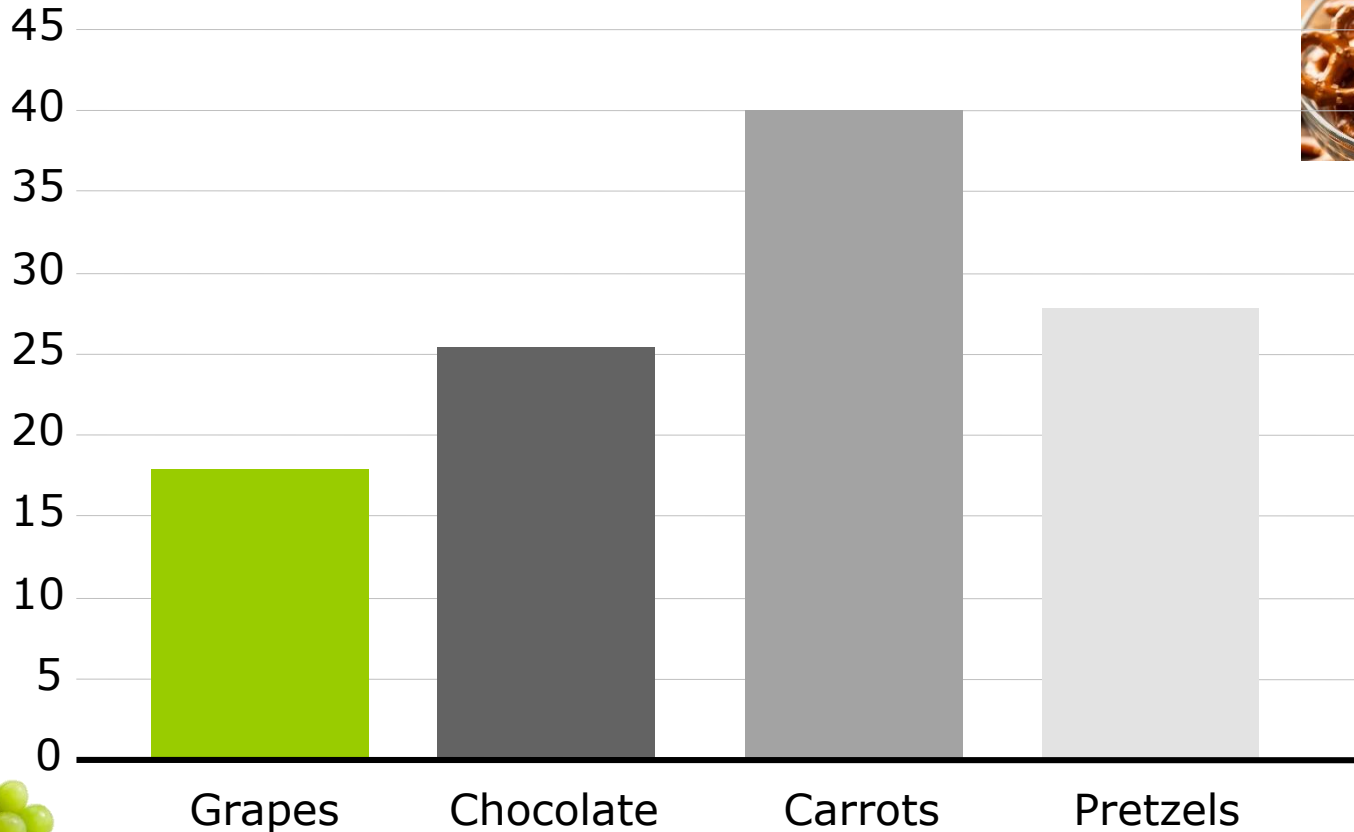
- 4 foods, grapes, chocolate, carrots & pretzels, were placed in one of 2 conditions

Two conditions:

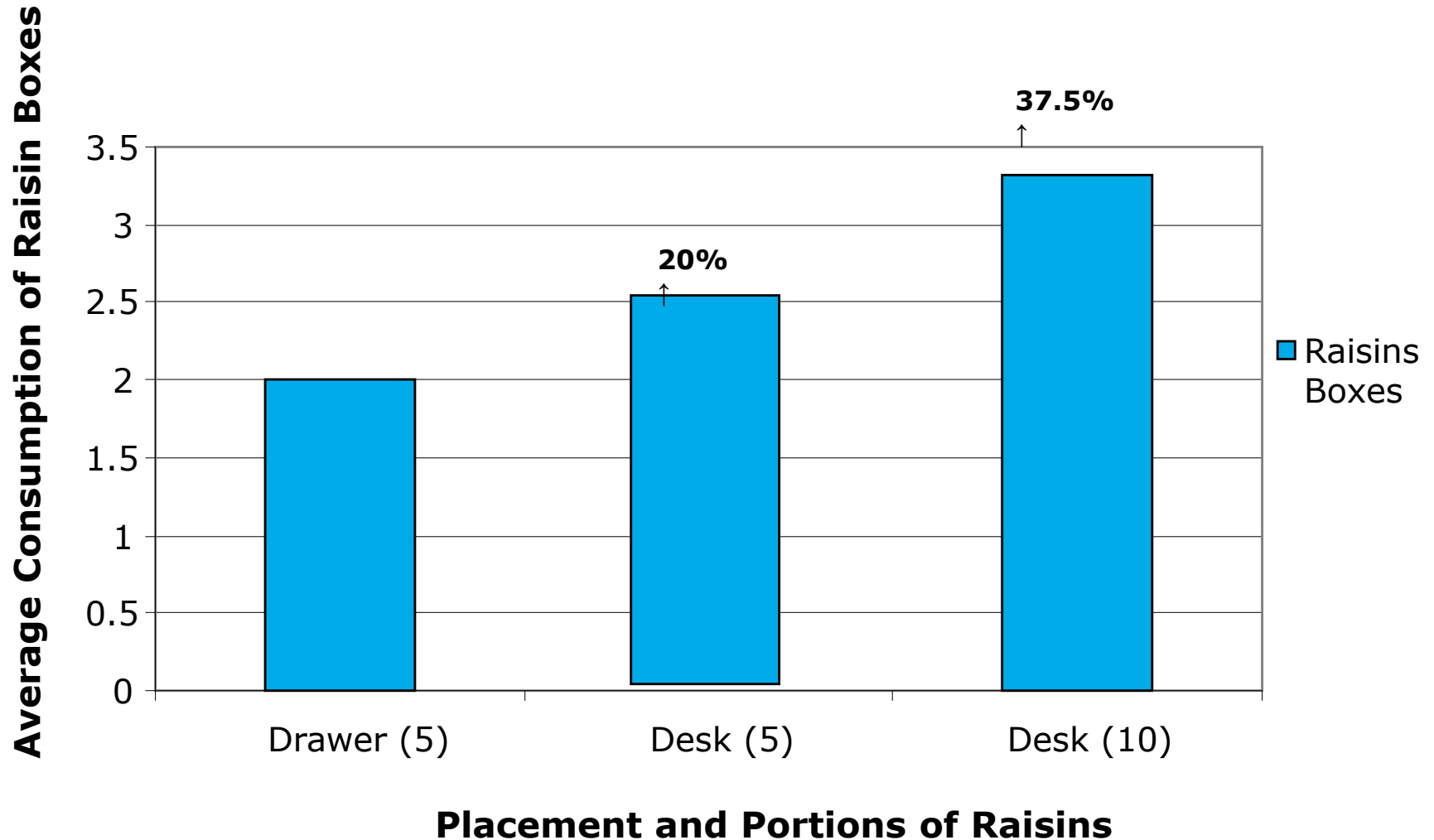
- On top of the desk (visible & accessible)
- In a desk drawer (not visible & inaccessible)

Increase in Dietary Intake When Food is Visible (on desk) Compared to Invisible (in desk)

Percent increase

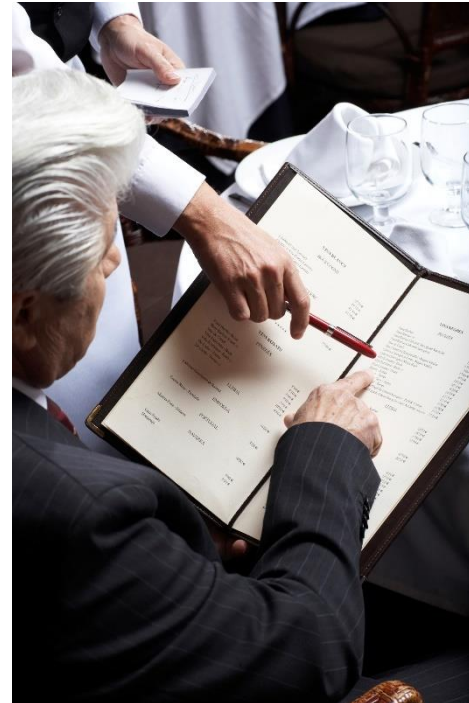


Accessibility and Visibility of Raisins



IV. Can Labels Change the Taste of Foods?

- Study 1. Descriptive Labels in the Cafeteria



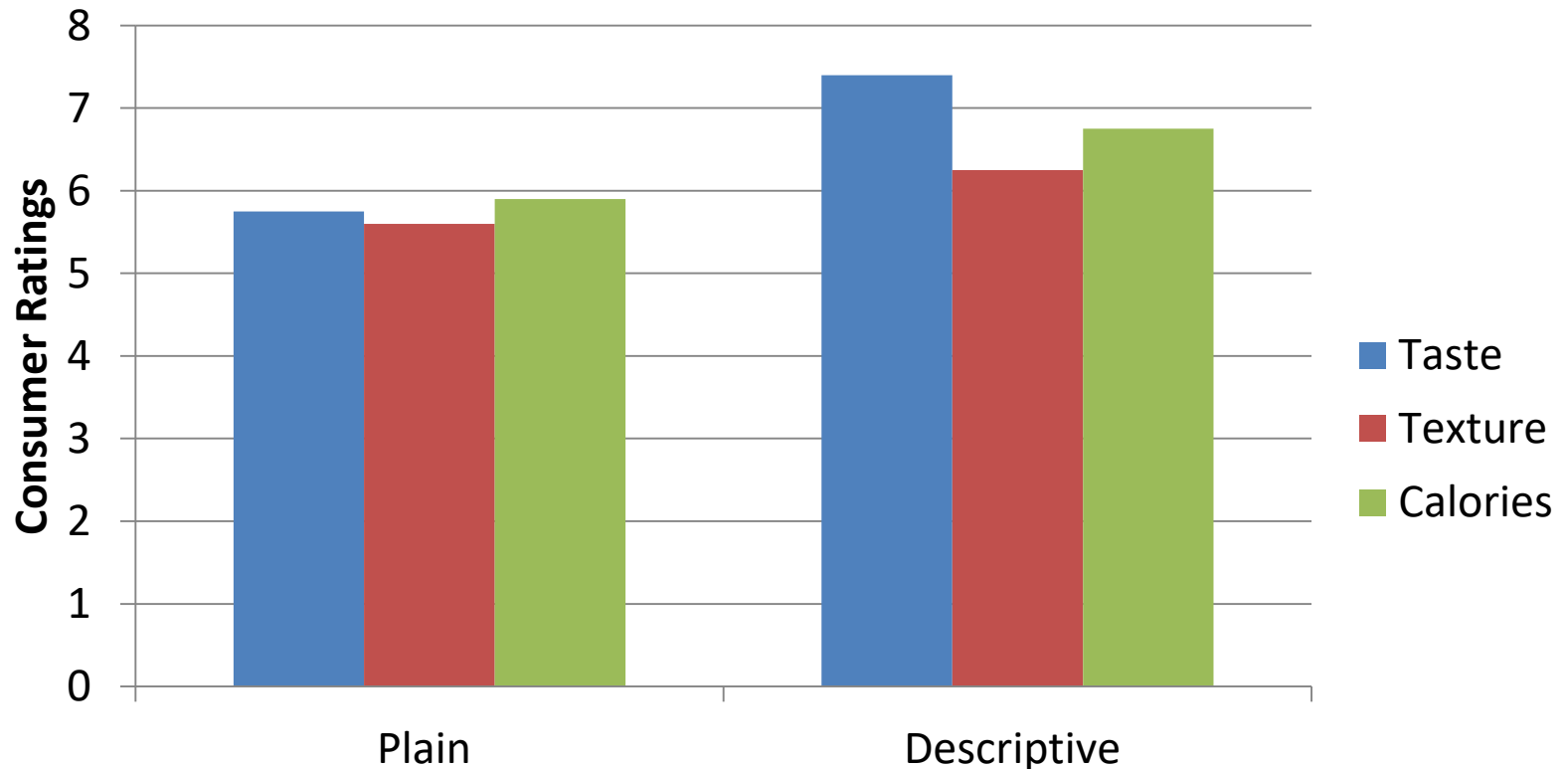
Menu Items Used

- Red beans & rice
- Seafood filet
- Grilled chicken
- Chicken Parmesan
- Chocolate Pudding
- Zucchini cookies
- Traditional Cajun Red beans & rice
- Succulent Italian Seafood filet
- Tender Grilled chicken
- Home-style Chicken Parmesan
- Satin Dutch Chocolate Pudding
- Grandma's Zucchini cookies

“Well, I know what I like”

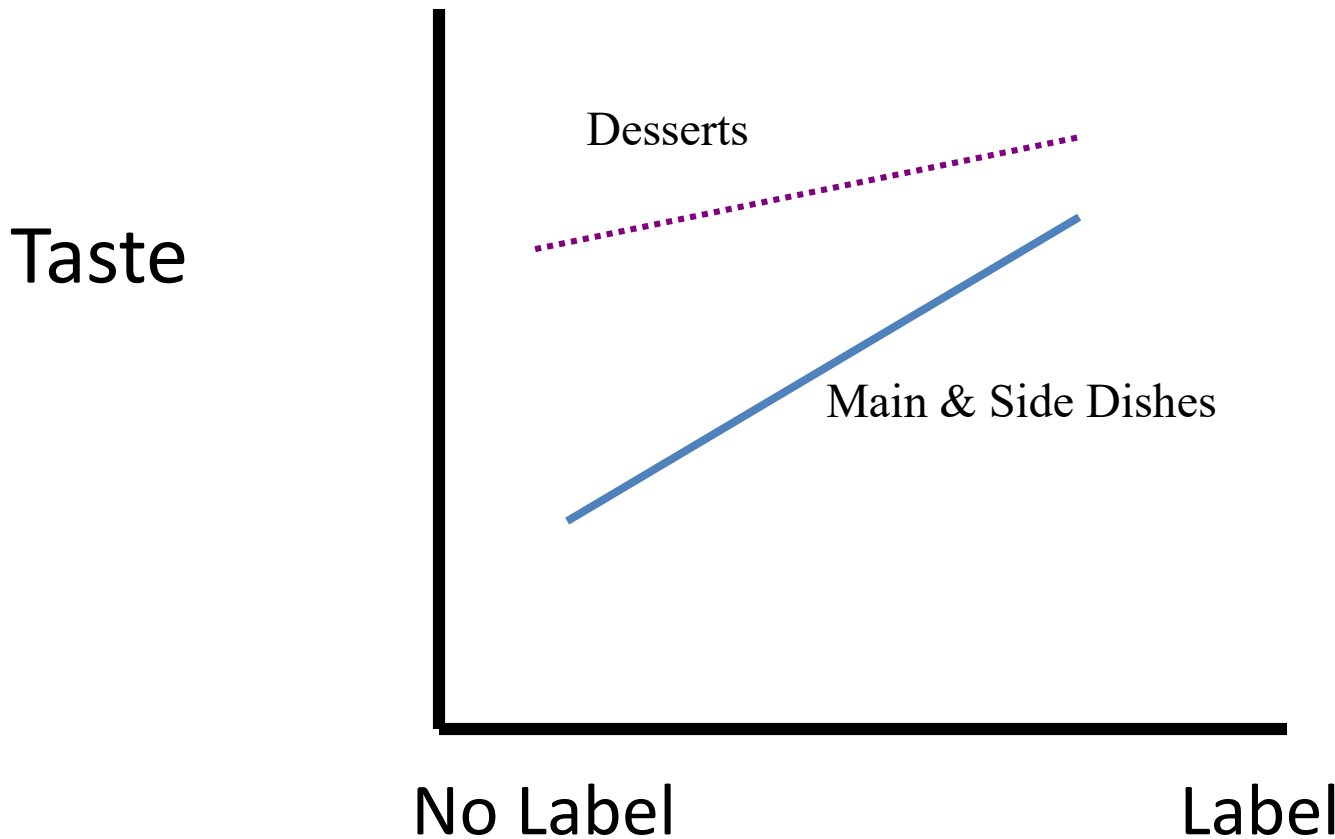
--> **Maybe Not**

People evaluate descriptive foods as more favorable

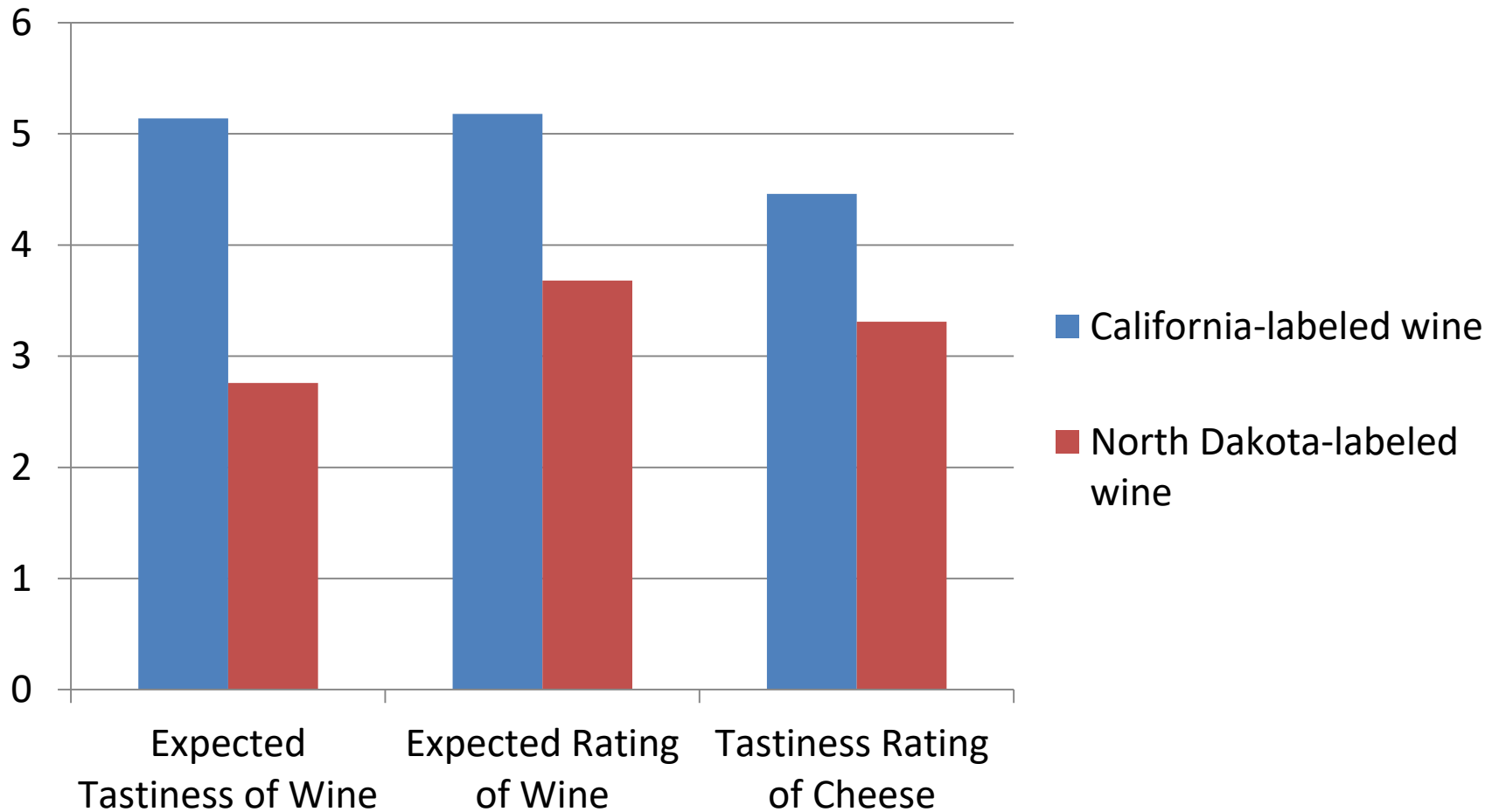


What We Say About Food Affects Our Perception of the Food

Results: Effects are Less Strong with Desserts



Fine as North Dakota Wine



V. Visual cues

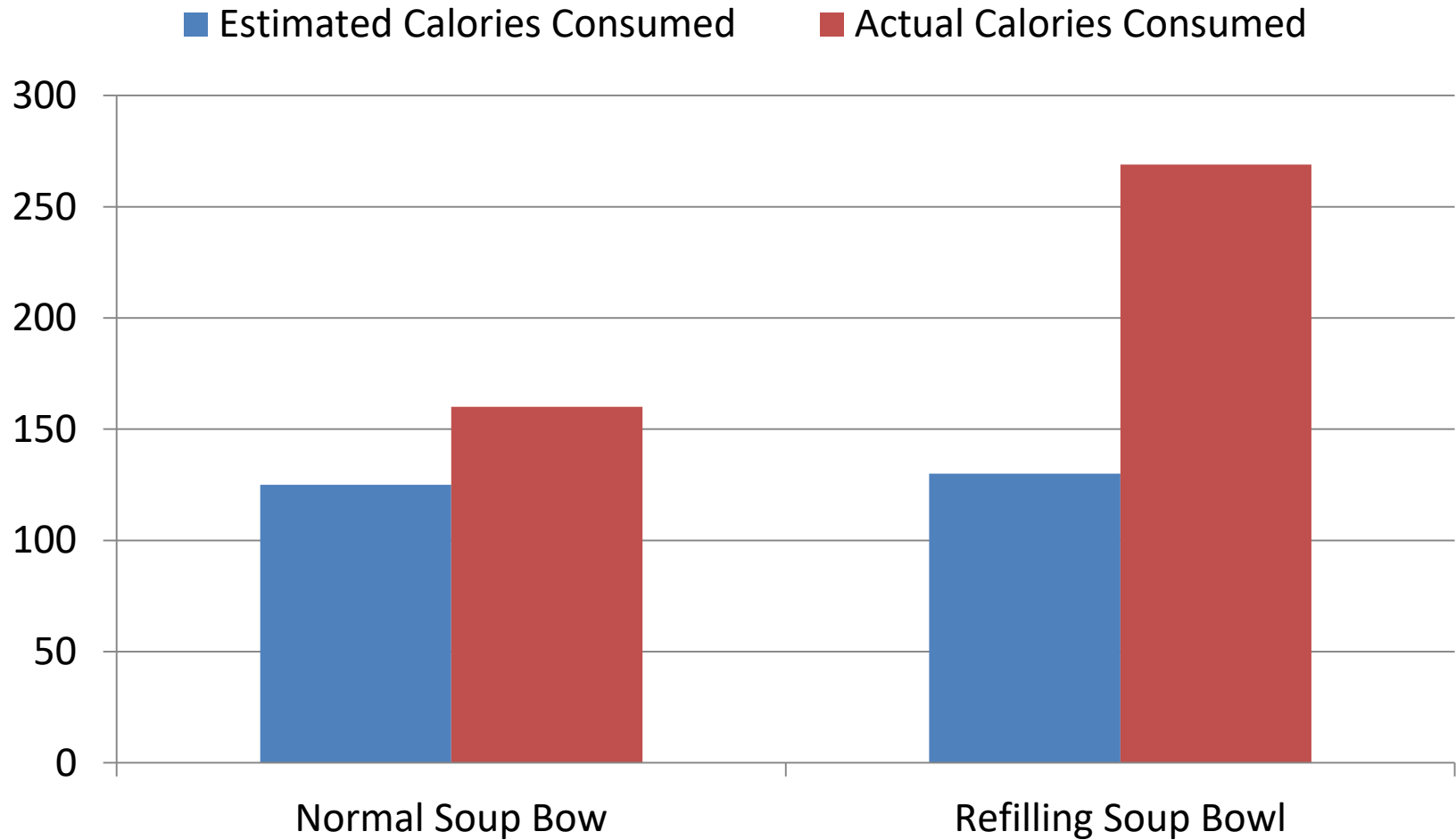
1. Soup
2. Pistachios



Soup Study

- 54 participants
- $\frac{1}{2}$ were give a normal bowl
- $\frac{1}{2}$ were give a refillable bowl
- Details were not provided about the study

Refillable Soup Bowls Increase Consumption, but Not Perception of Consumption



Key Thoughts:

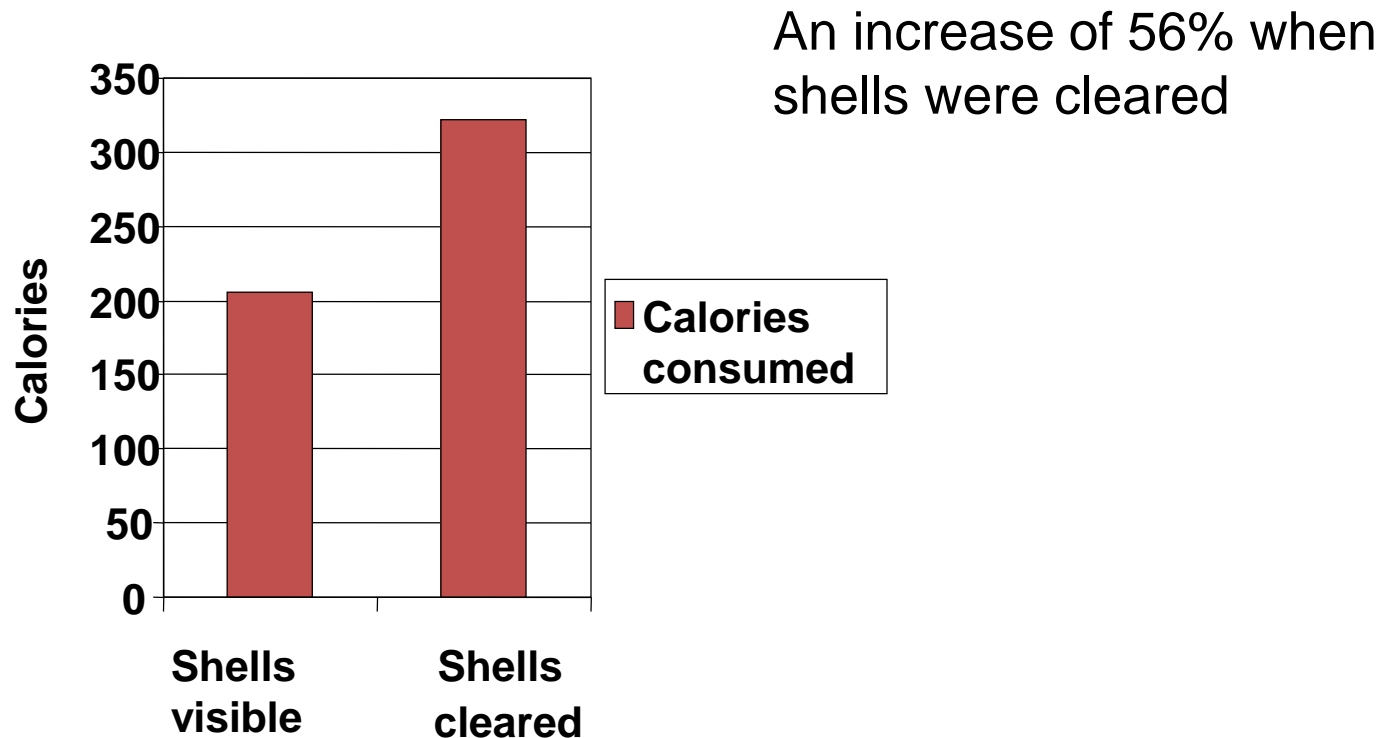
- Don't overhaul your life –make small changes
- Don't make huge changes all at once, just small changes consistently
- A lifestyle change, not a diet, works in the long-term

Study 2

- Will the presence of the empty shells reduce consumption?
- Methods:
 - Population 17 faculty & staff
 - Two conditions
 - Empty shells left on table (visible)
 - Empty shells were cleared

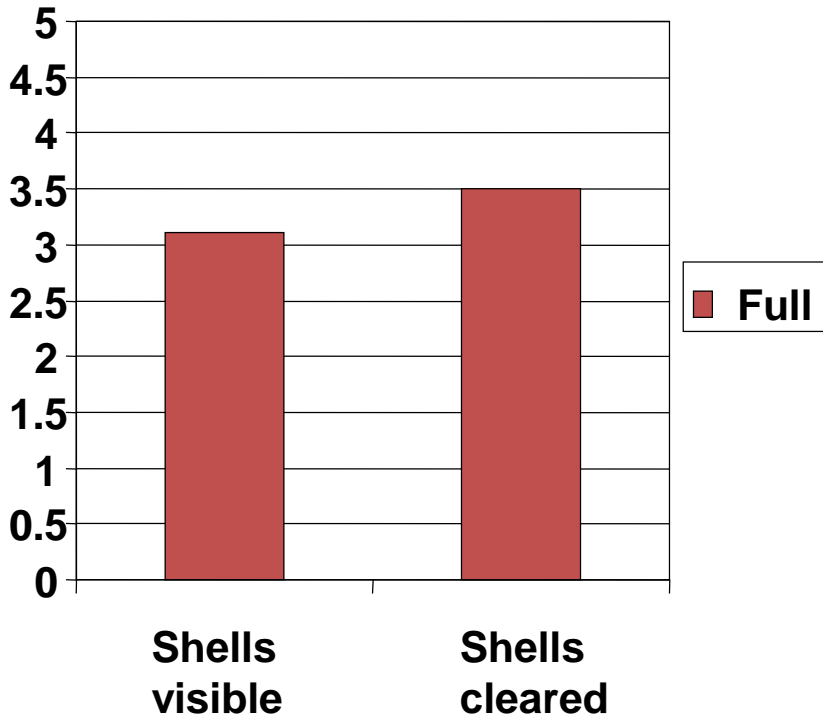
Calorie Consumption Comparing Empty Shells Visible to Shells Cleared

Differences were significant $p \leq .01$



Satiety of Portions **

No significant differences, $p \geq .01$



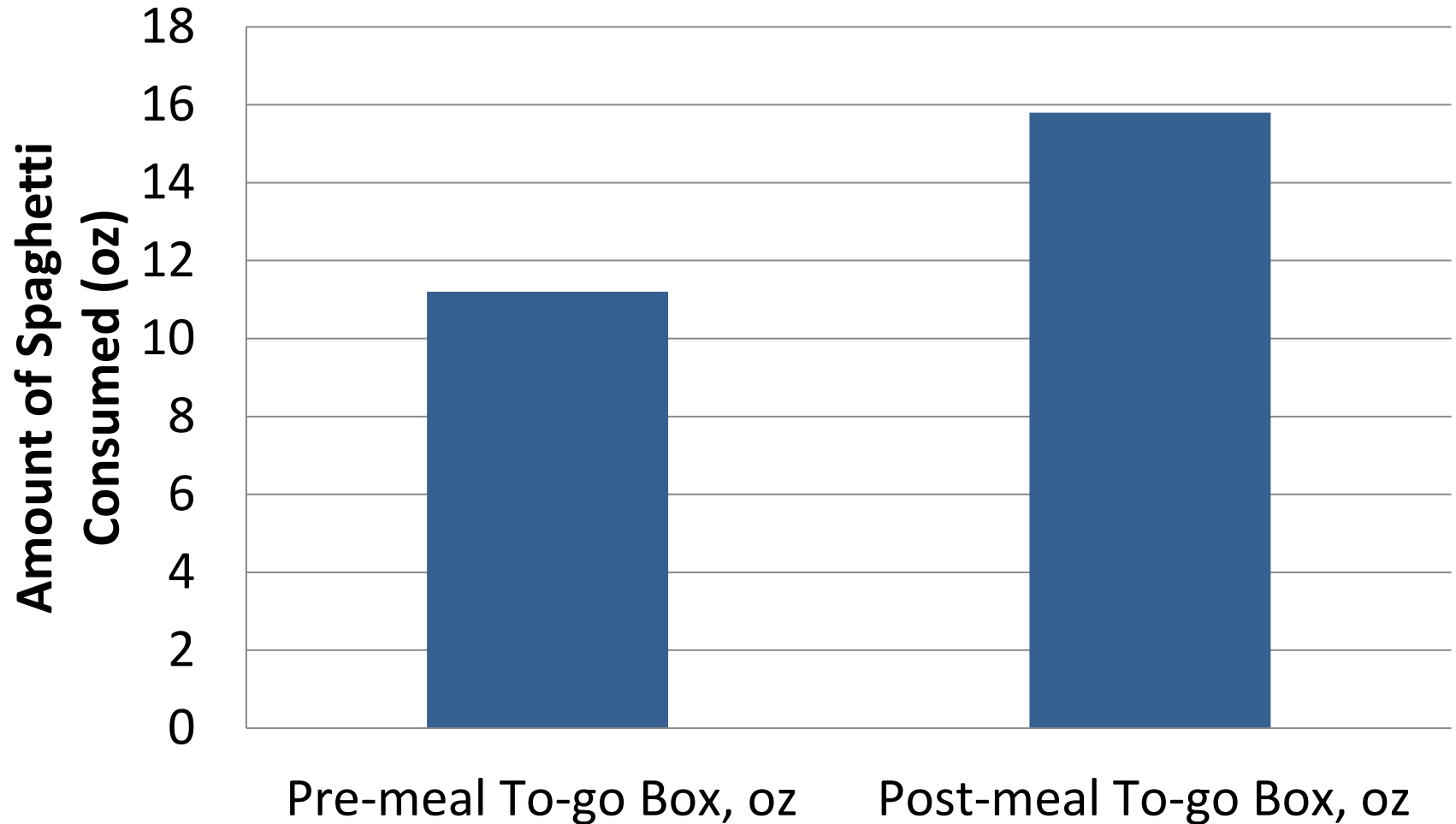
Even though consumption increased by 56%, there was no significant difference in satiety

** Fullness Scale (1) very Hungry – (5) very full

Do Pre-Meal To-Go Boxes Affect the Amount of Food Consumed in a Restaurant Setting?



Average Spaghetti Consumption



VI. People around you when eating

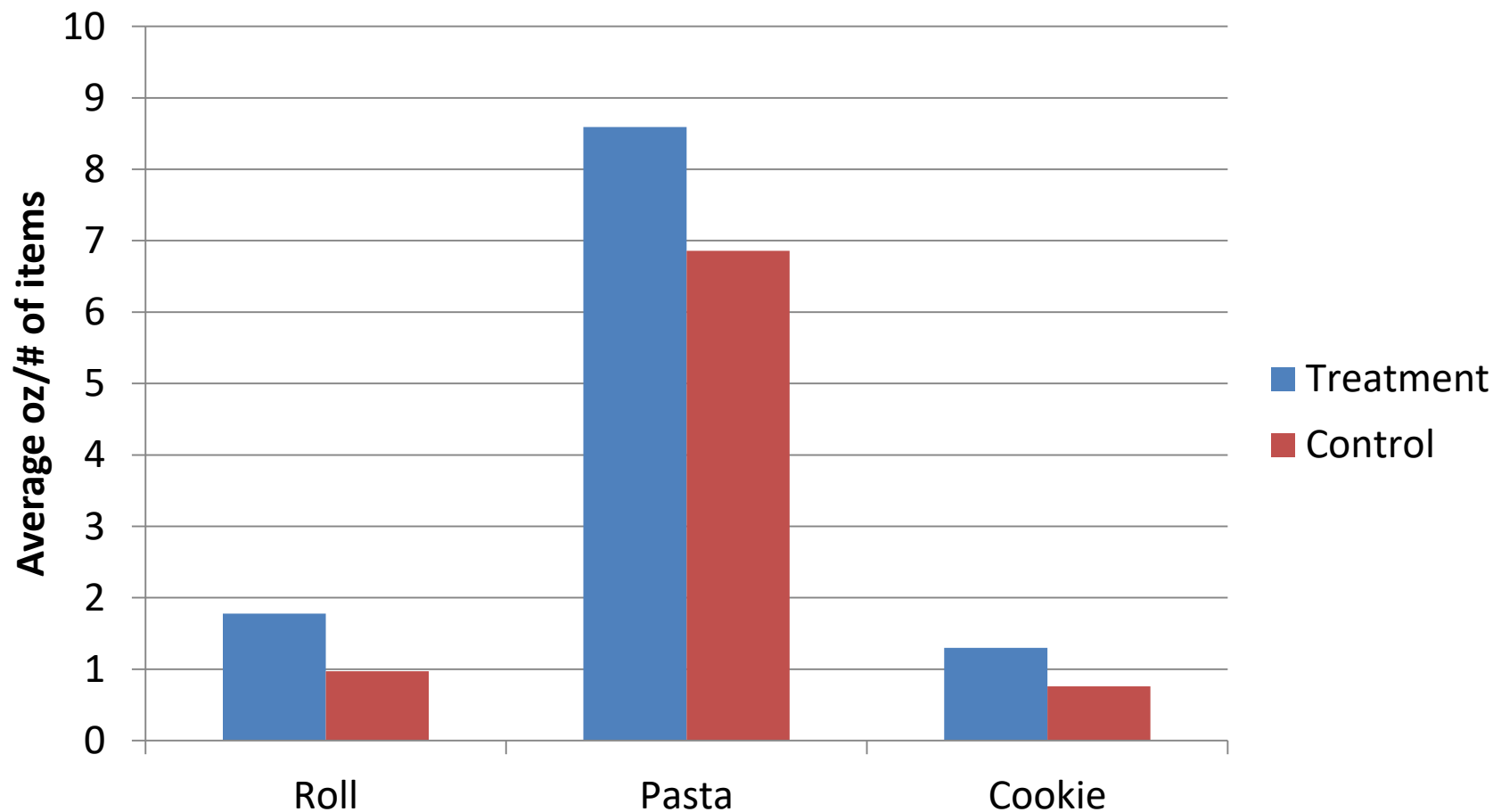
- **The Effects of Suggestive Selling by Wait Staff on Food Consumption**
- Social Pressures on Consumption



Materials and Methods

- Subjects
 - Eastern Illinois University Students
- Restaurant Setting:
 - Served initial serving of a beverage, a roll, soup, pasta and a cookie

Comparison of Food Items Significantly Differs Between Groups



VI. People around you when eating

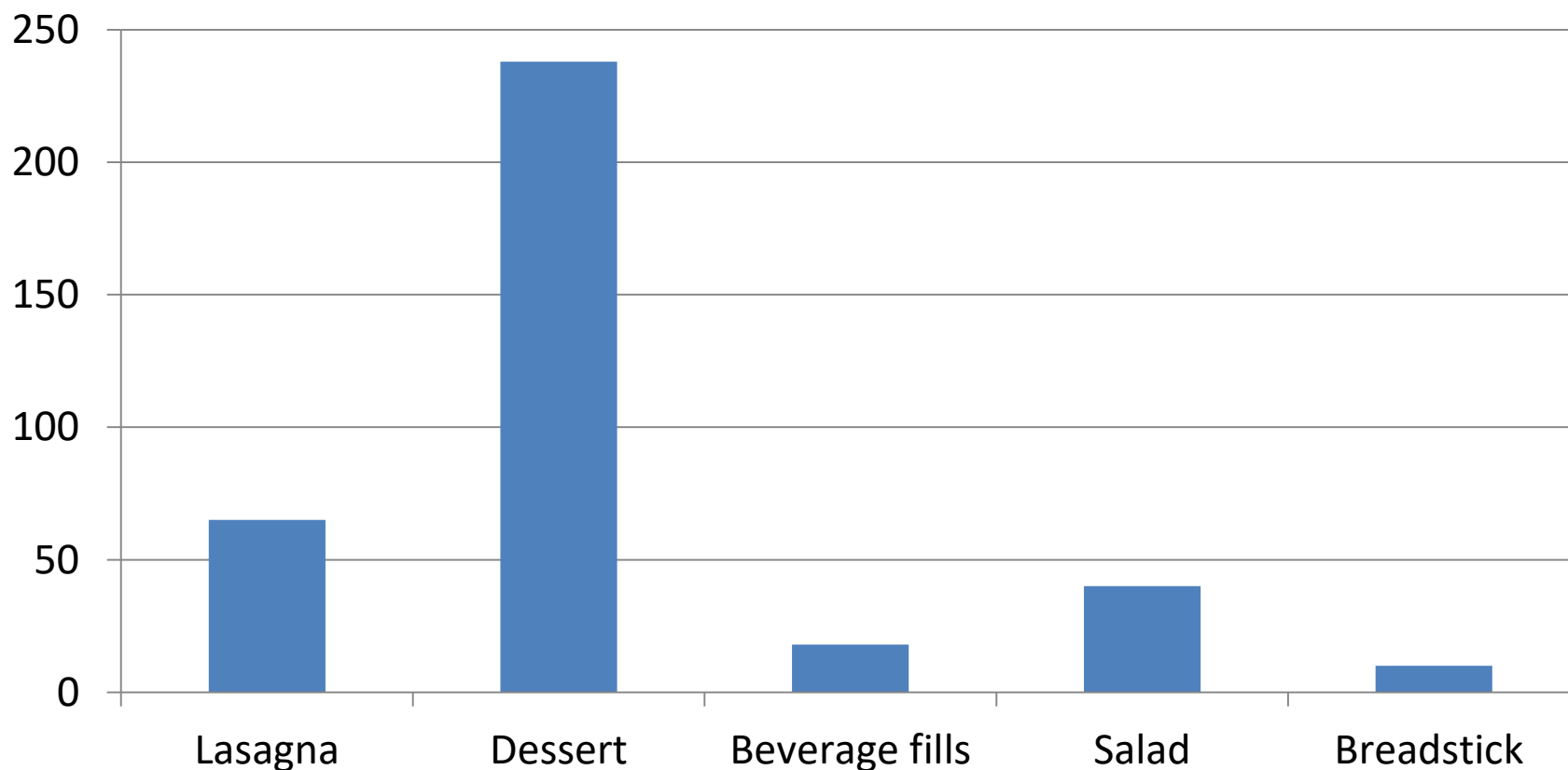
- The Effects of Suggestive Selling by Wait Staff on Food Consumption
- **Social Pressures on Consumption**

The Effect of Social Pressure On The Eating Habits of College Students in a Restaurant Environment

- Treatment: Research Assistant said “yes” to 2nd portion
- Control: Research Assistant said “no” to 2nd portion.

The Effect of Social Pressure On The Eating Habits of College Students in a Restaurant Environment

% of Increase in Each Food Item



Applications for Your Clients

- I. Choose smaller portions
 - I. Value priced meals are not good for your waistline
- II. Smaller containers & packages decreases consumption
 - I. People eat 92% of what is served on their plate
 - II. Best strategy: serve less in the first place!

Applications for Your Clients, cont.

III. Use smaller eating utensils

- I. Using smaller plates, bowls, cups and silverware decrease consumption without decreasing satiety

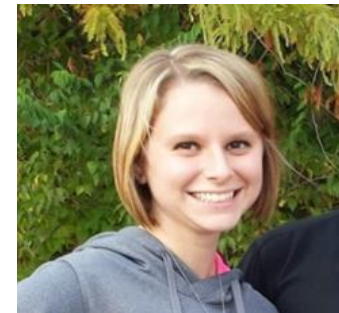
IV. Visual cues influence consumption

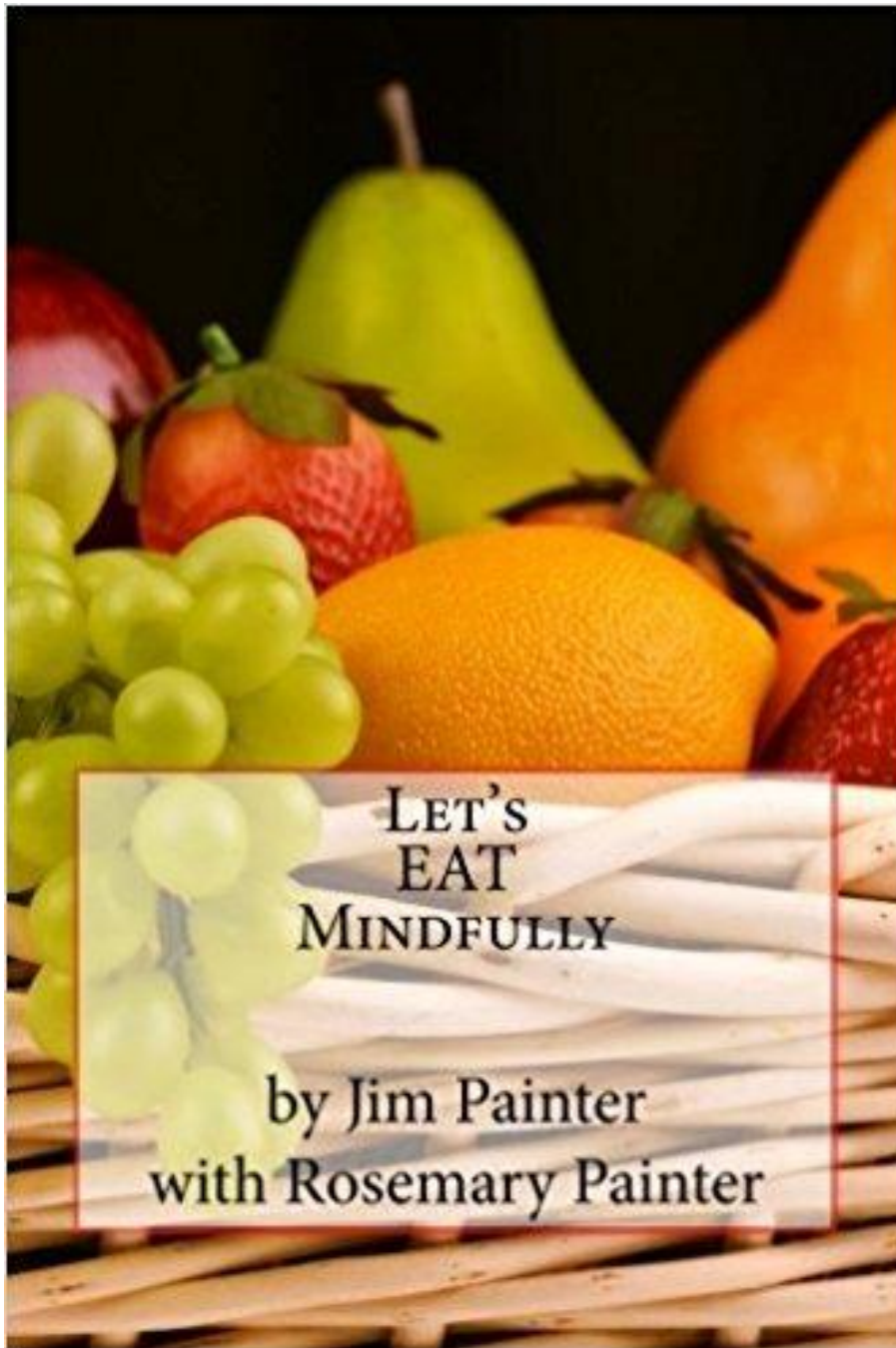
- III. Make small changes in presentation, garnishes and description you give the family to make healthier more appealing

Applications for Your Clients, cont.

- V. Less visible & convenient = less consumption
 - I. Foods to eat more –make them visible & convenient
 - II. Foods to eat less –make them hard to see and inconvenient
- VI. Be aware of the influence of those you eat with
 - I. Check with your hunger and how much you have eaten before saying “yes” to more foods

Thank You!





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