

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

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### Dr. Jim Painter, PhD, RD

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



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### 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)**

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Food and Health Survey 2016  
**INTERNATIONAL FOOD  
 INFORMATION COUNCIL**

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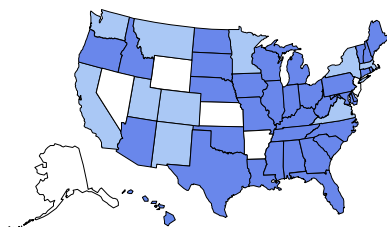
**4 out of 5 Americans are Trying to Lose Weight or Maintain their Current Weight**



Reprinted from the International Food Information Council Foundation, (2016)

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**Obesity Trends\* Among U.S. Adults**  
 BRFSS, 1990  
 (\*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)

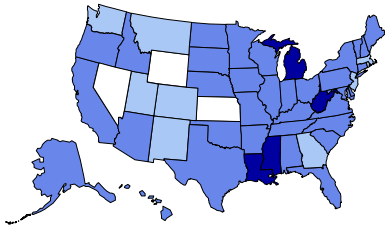


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Obesity Trends\* Among U.S. Adults

BRFSS, 1991

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



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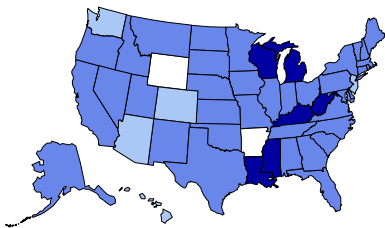
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Obesity Trends\* Among U.S. Adults

BRFSS, 1992

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



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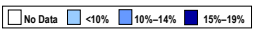
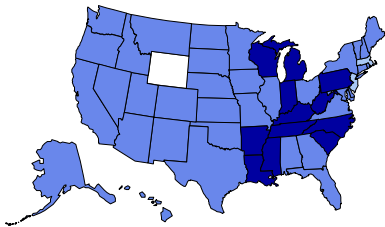
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Obesity Trends\* Among U.S. Adults

BRFSS, 1993

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



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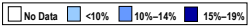
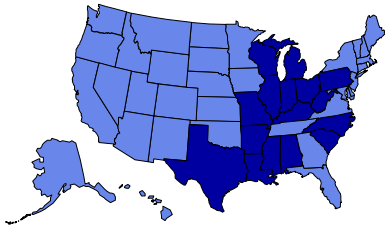
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Obesity Trends\* Among U.S. Adults

BRFSS, 1994

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



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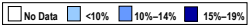
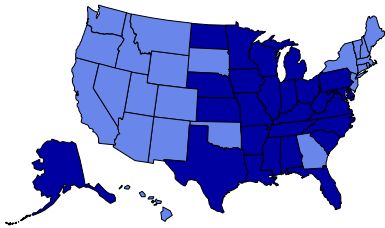
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Obesity Trends\* Among U.S. Adults

BRFSS, 1995

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



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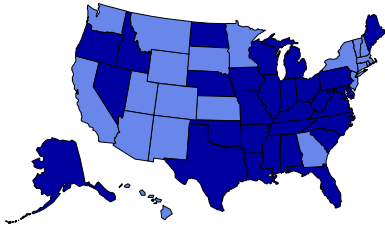
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Obesity Trends\* Among U.S. Adults

BRFSS, 1996

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



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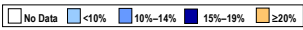
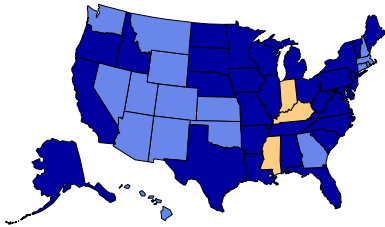
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Obesity Trends\* Among U.S. Adults

BRFSS, 1997

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



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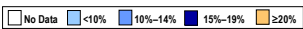
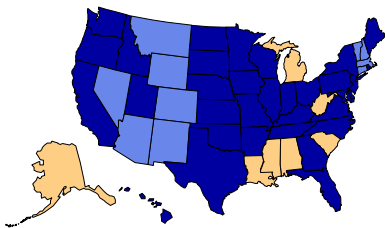
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Obesity Trends\* Among U.S. Adults

BRFSS, 1998

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



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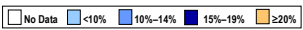
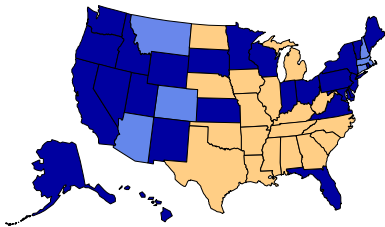
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Obesity Trends\* Among U.S. Adults

BRFSS, 1999

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



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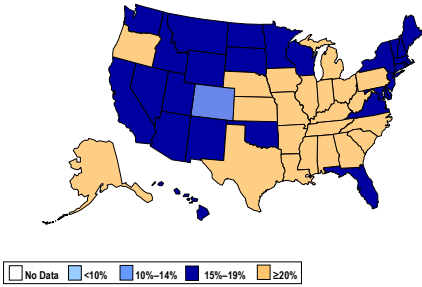
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2000  
(\*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)



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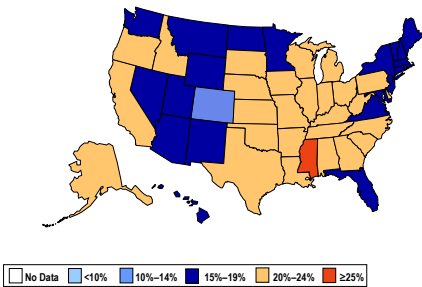
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2001  
(\*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)



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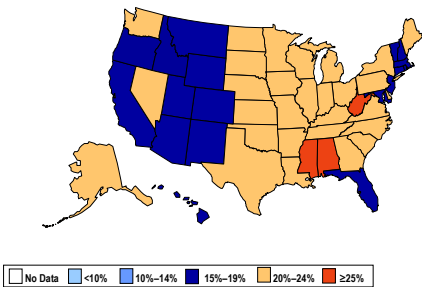
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2002  
(\*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)



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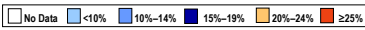
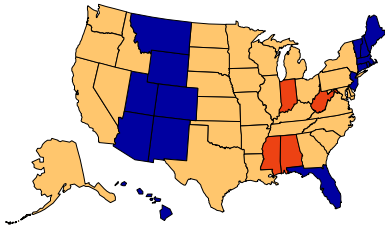
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2003

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



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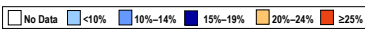
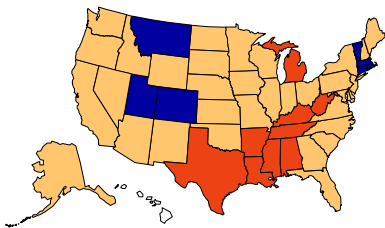
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2004

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



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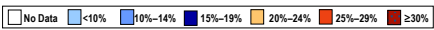
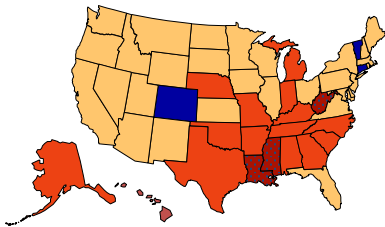
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2005

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



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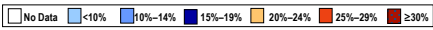
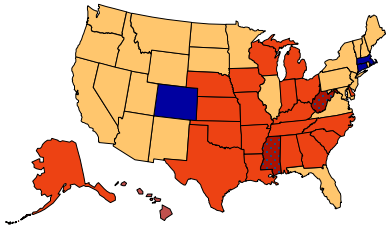
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2006

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



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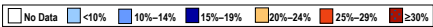
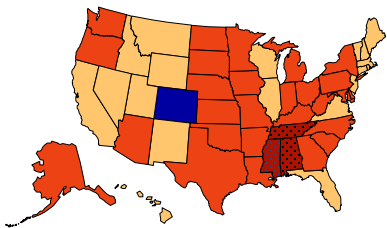
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2007

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



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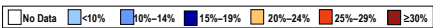
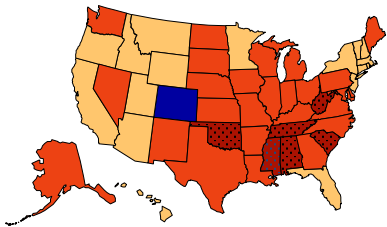
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Obesity Trends\* Among U.S. Adults  
BRFSS, 2008

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



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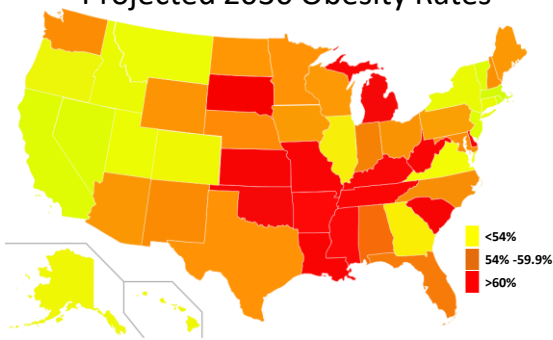
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### Projected 2030 Obesity Rates



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. 28

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Used with permission from Gary Foster Penn State ADA

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### 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



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### 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



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### I. Portion size



1. Portion Distortion
2. Restaurants

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### 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

Young & Nestle, 2003. JADA Expanding Portion Sizes in the us Marketplace. (231-234)

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### Then and Now... Average Cookies

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



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/est-right/portion-distortion.htm>

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### Then and Now.... Average Cheesecake

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



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/est-right/portion-distortion.htm>

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### Then and Now.... Average Muffins

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



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/est-right/portion-distortion.htm>

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### Then and Now... Average Bagel

20 years ago

- 3 in diameter
- 140 calories



Today

- 6 in diameter
- 350 calories



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/est-right/portion-distortion.htm>

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### 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



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/est-right/portion-distortion.htm>

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### Then and Now... Average Burger

20 years ago

- 333 calories



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/est-right/portion-distortion.htm>

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### Then and Now... Average Burger

- 20 years ago
- 333 calories

- Today
- 590 calories

- Monster Burger
- 1420 calories



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/eat-right/portion-distortion.htm>

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### Then and now... Average Fries

- 20 years ago
- 2.4 oz
- 210 calories

- Today
- 6.9 oz
- 610 calories



Portion Distortion by the National Heart, Lung, and Blood Institute:  
<https://www.nhlbi.nih.gov/health/educational/wecan/eat-right/portion-distortion.htm>

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### From the monster to the Riley burger



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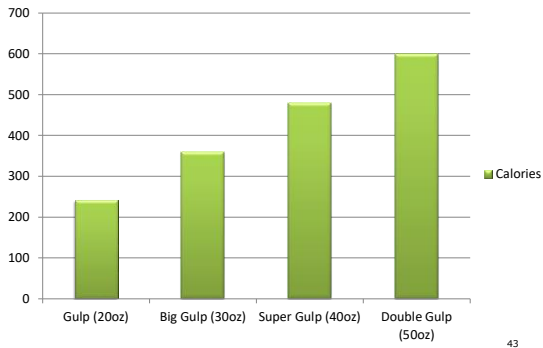
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### Calorie Comparison of 7-eleven Coke-a-Cola



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### 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

The Wall Street Journal. 2013. Judge Cans Soda Ban. Retrieved from <http://online.wsj.com/article/SB10001424127887323826704578354543929974294.html>

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### Other Trends

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



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## 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

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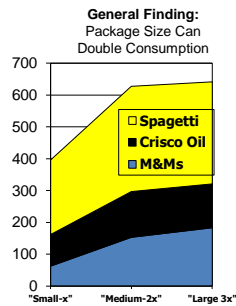
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### Package Size Increases Consumption

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



Wansink, Brian (1996), "Can Package Size Accelerate Usage Volume?" *Journal of Marketing*, Vol. 60:3 (July), 1-14.

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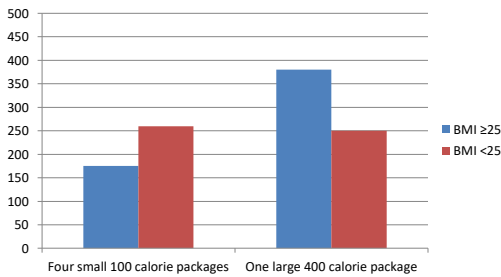
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### The 100-Calorie Semi-Solution: Sub-Packaging Most Reduces Intake Among The Heaviest



Wansink, B., Payne, C. R., & Shimizu, M. (2011). The 100-Calorie Semi-Solution: Sub-Packaging Most Reduces Intake Among The Heaviest. *Obesity*, 19(5), 1098-1100.

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## Hungry for Some Stale Movie Popcorn?

- Does portion size effect consumption?



Wansink, Brian and SeaBum Park (2001), "At the Movies: How External Cues and Perceived Taste Impact Consumption Volume," *Food Quality and Preference*, 12:1 (January), 69-74.

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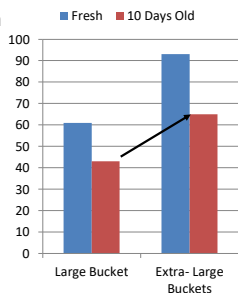
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## We Eat Much More from Big Containers

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



Wansink, Brian and SeaBum Park (2001), "At the Movies: How External Cues and Perceived Taste Impact Consumption Volume," *Food Quality and Preference*, 12:1 (January), 69-74.

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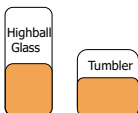
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## Do Peripheral Cues Influence Experts with Precise Target Volumes?

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



Wansink, B., & van Ittersum, K. (2003). Bottoms up! Peripheral cues and consumption volume. *Journal of Consumer Research*, 30(3), 455-463.

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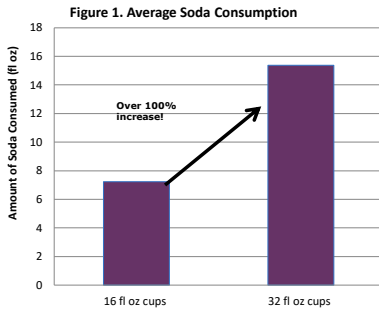
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## Does Cup Size Increase Soda Consumption



Schuster, M. J., Hetsler, L., Fink, J. N., Mackenzie, J. A., Carlson, J. R., Roche, J. D., & Painter, J. E. (2014). Does Larger Cup Size Increase Soda Consumption? *Journal of the Academy of Nutrition and Dietetics*, 114(9), A62.

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## 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



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## Research Questions

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

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**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)

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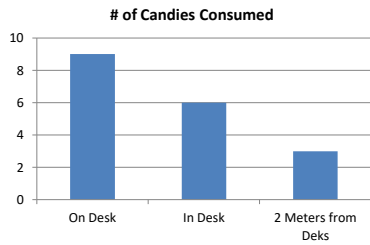
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61

**Amount of Candy Consumption According to Condition**



Painter, J., Wansink, B., Hieggelki, J. (2002). How Visibility and Convenience Influence Candy Consumption. *Appetite* 38, 237-238.

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

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### IV. Can Labels Change the Taste of Foods?

- Study 1. Descriptive Labels in the Cafeteria



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#### 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

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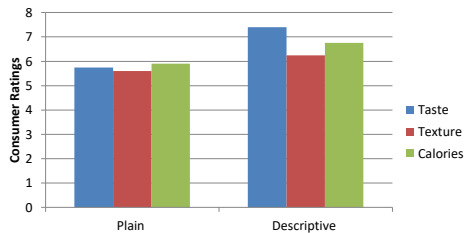
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### “Well, I know what I like” --> Maybe Not

People evaluate descriptive foods as more favorable



What We Say About Food Affects Our Perception of the Food

Wansink, Brian, James M. Painter, and Koert van Ittersum, (2001) "Descriptive Menu Labels' Effect on Sales." *Cornell Hotel and Restaurant Administrative Quarterly*, 42:4 (December), 68-72.

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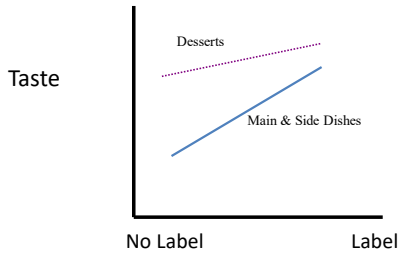
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**Results:  
Effects are Less Strong with Desserts**



Wansink, Brian, James M. Painter, and Koert van Ittersum. (2001) "Descriptive Menu Labels' Effect on Sales." *Cornell Hotel and Restaurant Administrative Quarterly*, 42:6 (December), 68-72. 70

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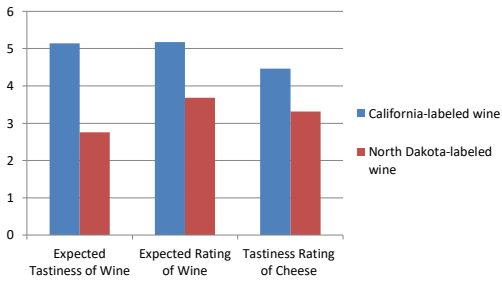
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**Fine as North Dakota Wine**



Wansink, B., Payne, C. R., & North, J. (2007). Fine as north dakota wine: Sensory expectations and the intake of companion foods. *Physiology & Behavior*, 90(5), 712-716. doi:10.1016/j.physbeh.2006.12.010 71

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**V. Visual cues**

1. Soup
2. Pistachios



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### Soup Study

- 54 participants
- ½ were give a normal bowl
- ½ were give a refillable bowl
- Details were not provided about the study

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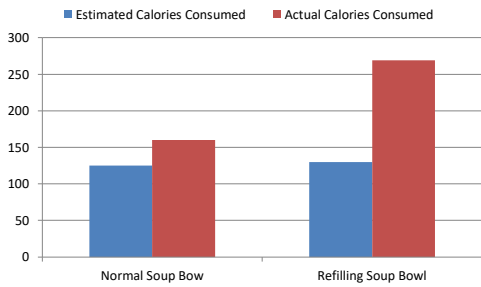
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73

### Refillable Soup Bowls Increase Consumption, but Not Perception of Consumption



Wansink, B., Painter, J.E., North, J. 2005. Bottomless Bowls: Why Visual Cues of Portion Size May Influence Intake. Obesity Research, 13,1, 93-100. 74

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### 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

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75



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



Schuster, M. J., Carlson, J. R., Mackenzie, J. A., Roche, J. D., Brooks, T. L., & Painter, J. E. (2014). Do Pre-Meal To-Go Boxes Affect the Amount of Food Consumed in a Restaurant Setting?. *Journal of the Academy of Nutrition and Dietetics*, 114(9), A62. 79

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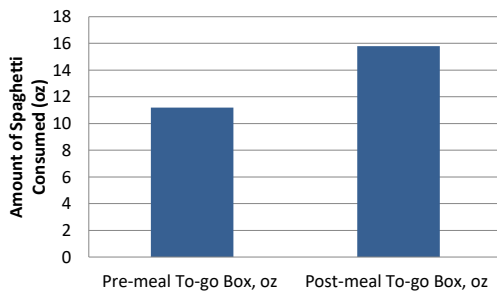
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### Average Spaghetti Consumption



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### VI. People around you when eating

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



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## Materials and Methods

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

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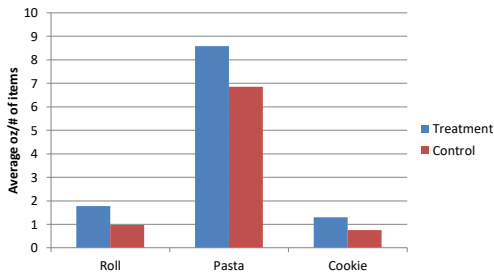
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Zumwalt, G. (2008). The effect of suggestive selling by wait staff on food consumption.

82

## Comparison of Food Items Significantly Differs Between Groups



Zumwalt, G., K Kennedy-Hagan, C Honselman, K Rhodes, and J Painter. "The Effect of Suggestive Selling by Wait Staff on Food Consumption." *Journal of the American Dietetic Association*, 108.9 (2008): A39.

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## VI. People around you when eating

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

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84

**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.

Wilcox, D., Kennedy-Hagan, K., Rhodes, K., Wilkinson, R., & Painter, J. (2008). The effect of social pressure on the eating habits of college students in a restaurant environment. *Journal of the American Dietetic Association, 108*(9), A40. 85

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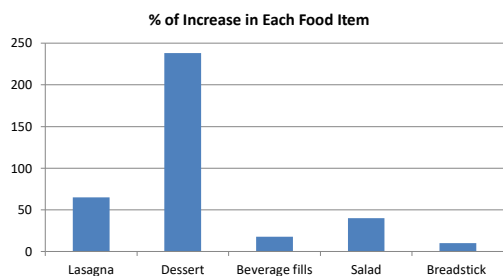
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**The Effect of Social Pressure On The Eating Habits of College Students in a Restaurant Environment**



Wilcox, D., Kennedy-Hagan, K., Rhodes, K., Wilkinson, R., & Painter, J. (2008). The effect of social pressure on the eating habits of college students in a restaurant environment. *Journal of the American Dietetic Association, 108*(9), A40. 86

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**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!

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## 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

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## 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

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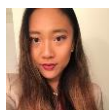
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### Thank You!



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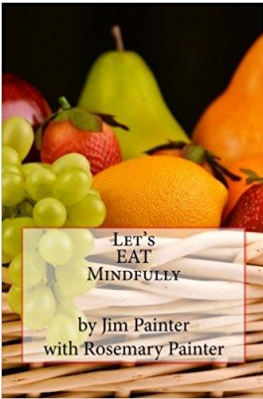
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**@DrJimPainter**

**[jimpainterphd@gmail.com](mailto:jimpainterphd@gmail.com)**

**[www.DrJimPainter.com](http://www.DrJimPainter.com)**

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You must complete a brief evaluation of the program in order to obtain your certificate. The evaluation will be available for 1 year; you do not have to complete it today.

**Credit Claiming Instructions:**

1. Log in to [www.CE.TodaysDietitian.com](http://www.CE.TodaysDietitian.com) and go to "My Courses" and click on the webinar title.
2. Click "Take Course" on the webinar description page.
3. Select "Start/Resume Course" to complete and submit the evaluation.
4. Download and print your certificate.

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