

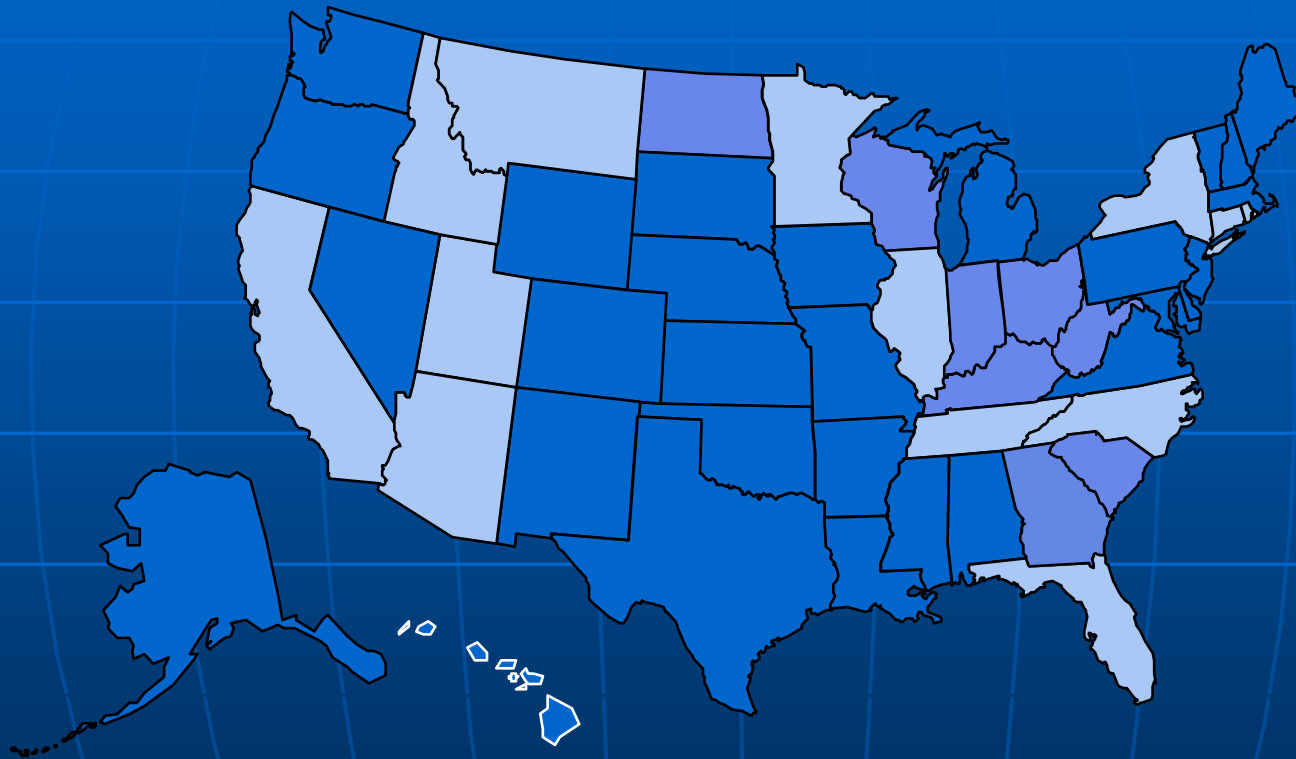
Obesity Trends in America

Adaptation of original presentation
developed by

Dr. Gil Wilshire, MD, FACOG,
President and Chief Scientific Officer at the
Carbohydrate Awareness Council (CAC)

OBESITY* TRENDS – US ADULTS

1985 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

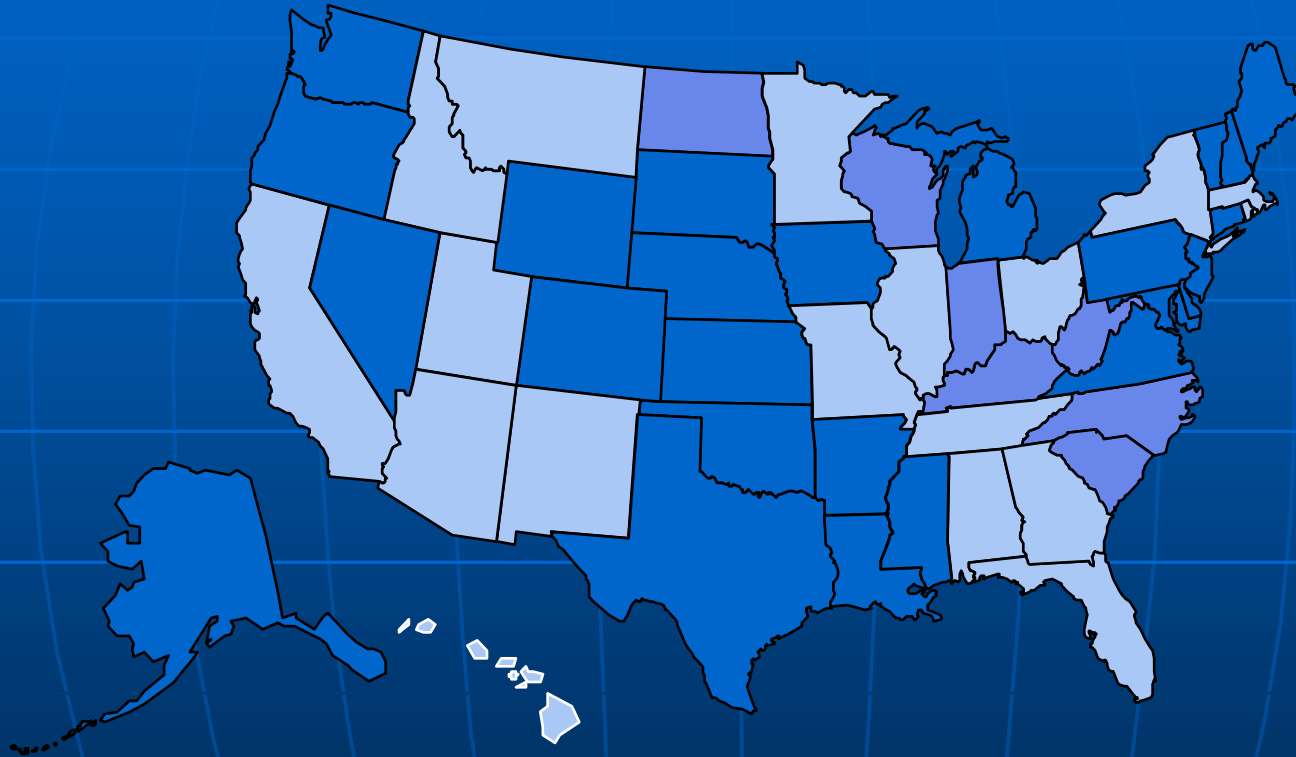


Source: Behavioral Risk Factor Surveillance System, CDC

■ No Data ■ <10% ■ 10%–14%

OBESITY* TRENDS – US ADULTS

1986 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

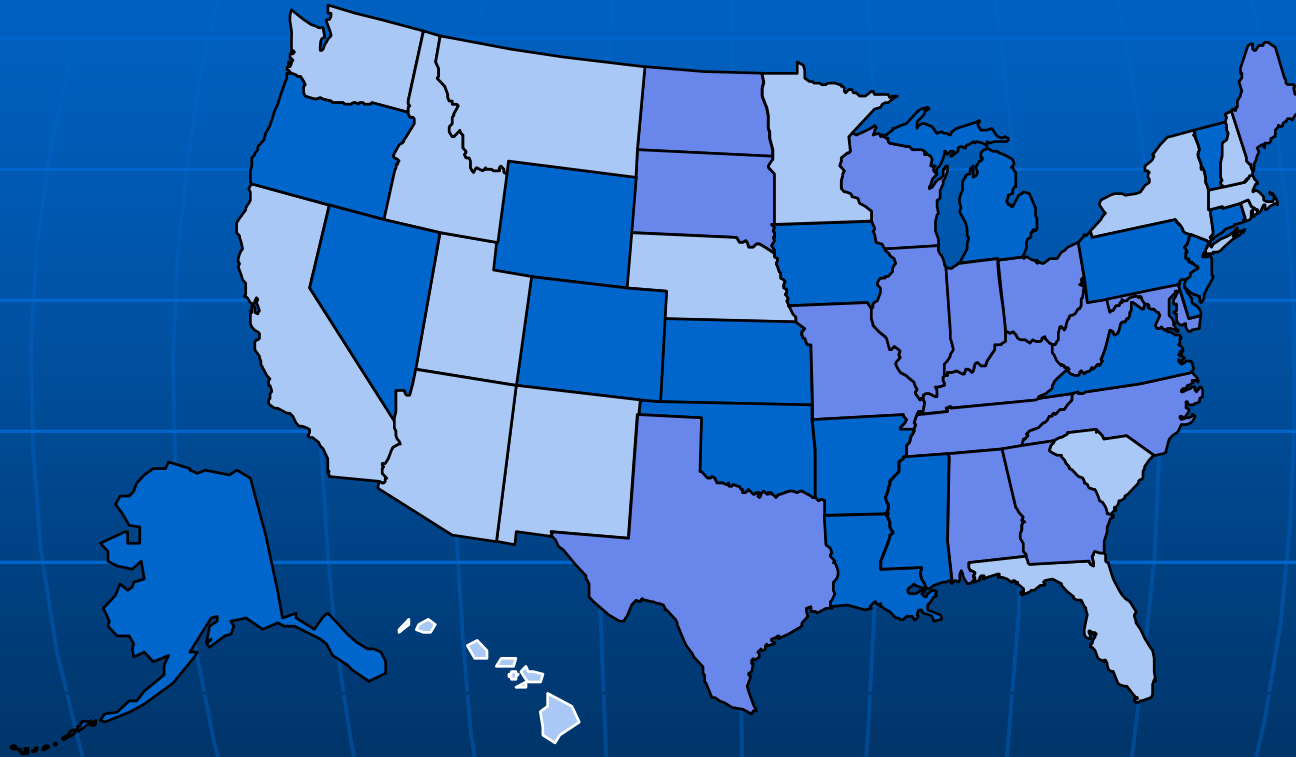


Source: Behavioral Risk Factor Surveillance System, CDC

■ No Data ■ <10% ■ 10%–14%

OBESITY* TRENDS – US ADULTS

1987 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

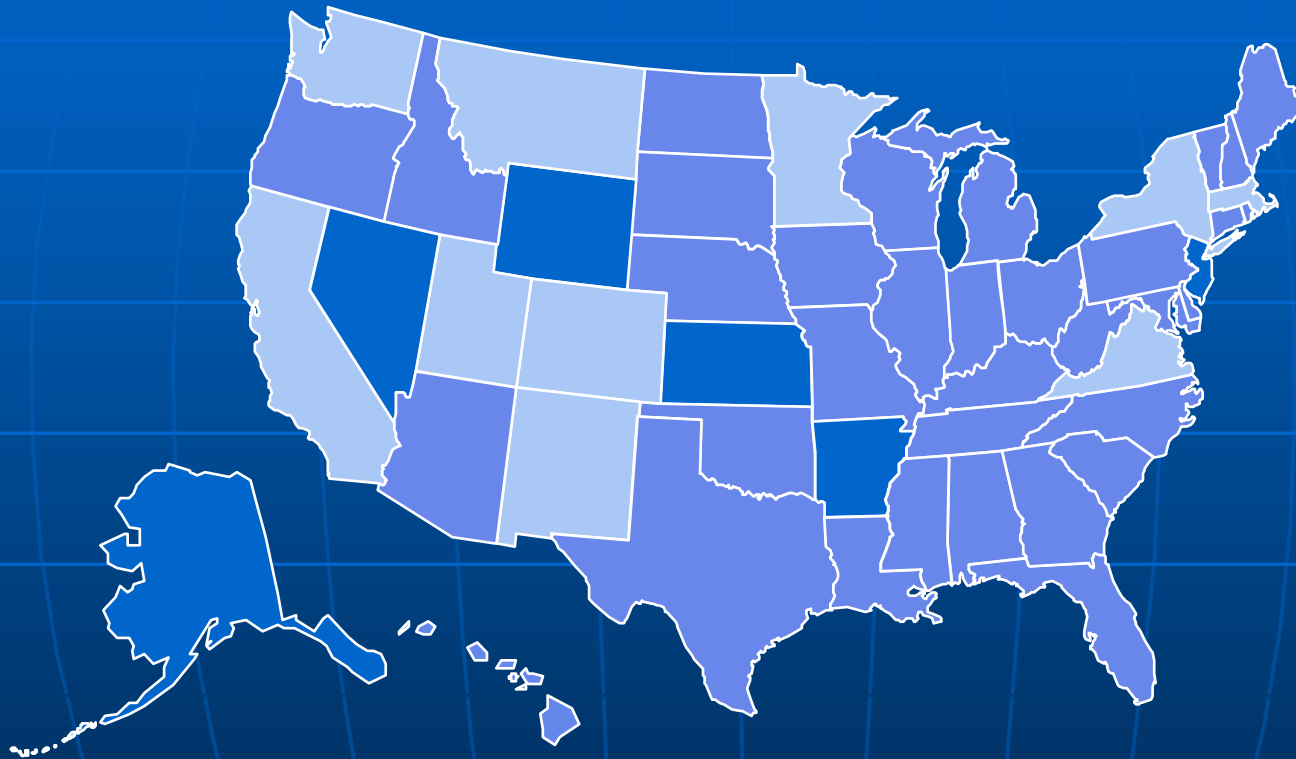


Source: Behavioral Risk Factor Surveillance System, CDC

■ No Data ■ <10% ■ 10%–14%

OBESITY* TRENDS – US ADULTS

1990 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

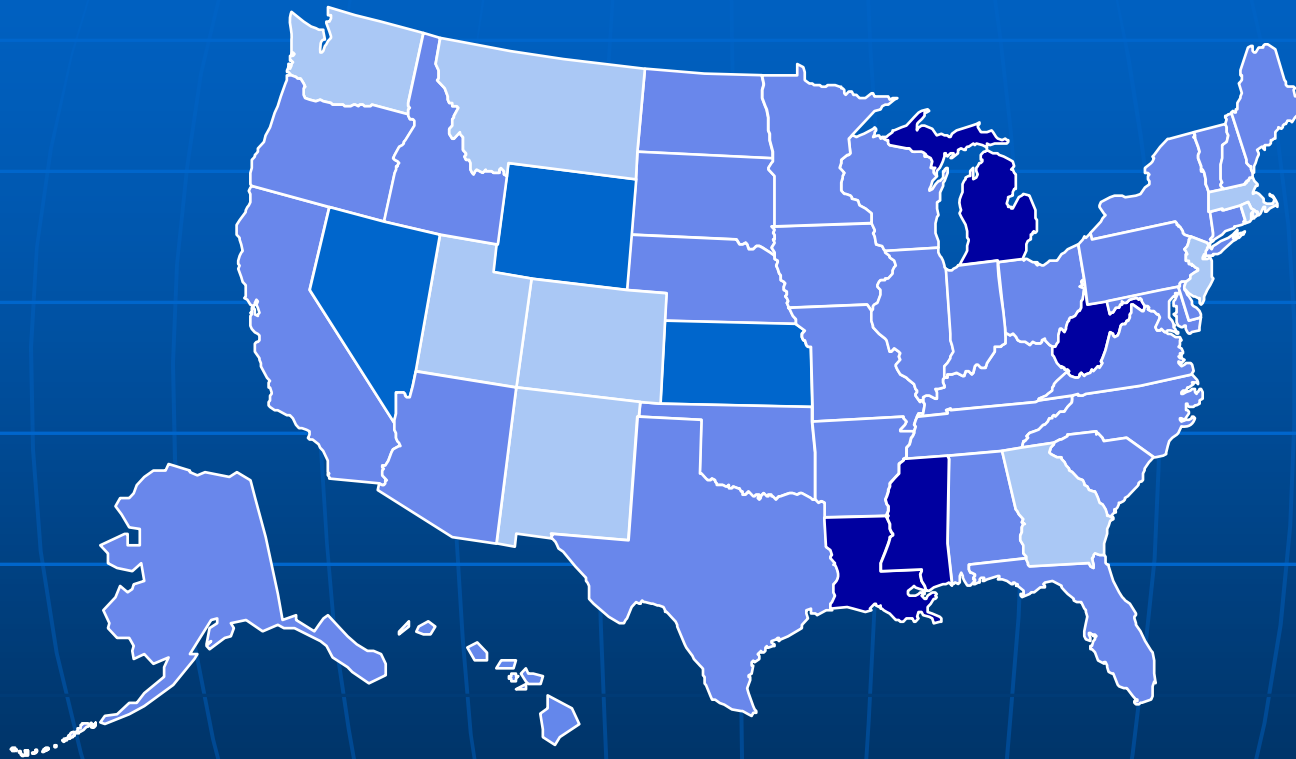


Source: Behavioral Risk Factor Surveillance System, CDC

■ No Data ■ <10% ■ 10%–14%

OBESITY* TRENDS – US ADULTS

1991 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

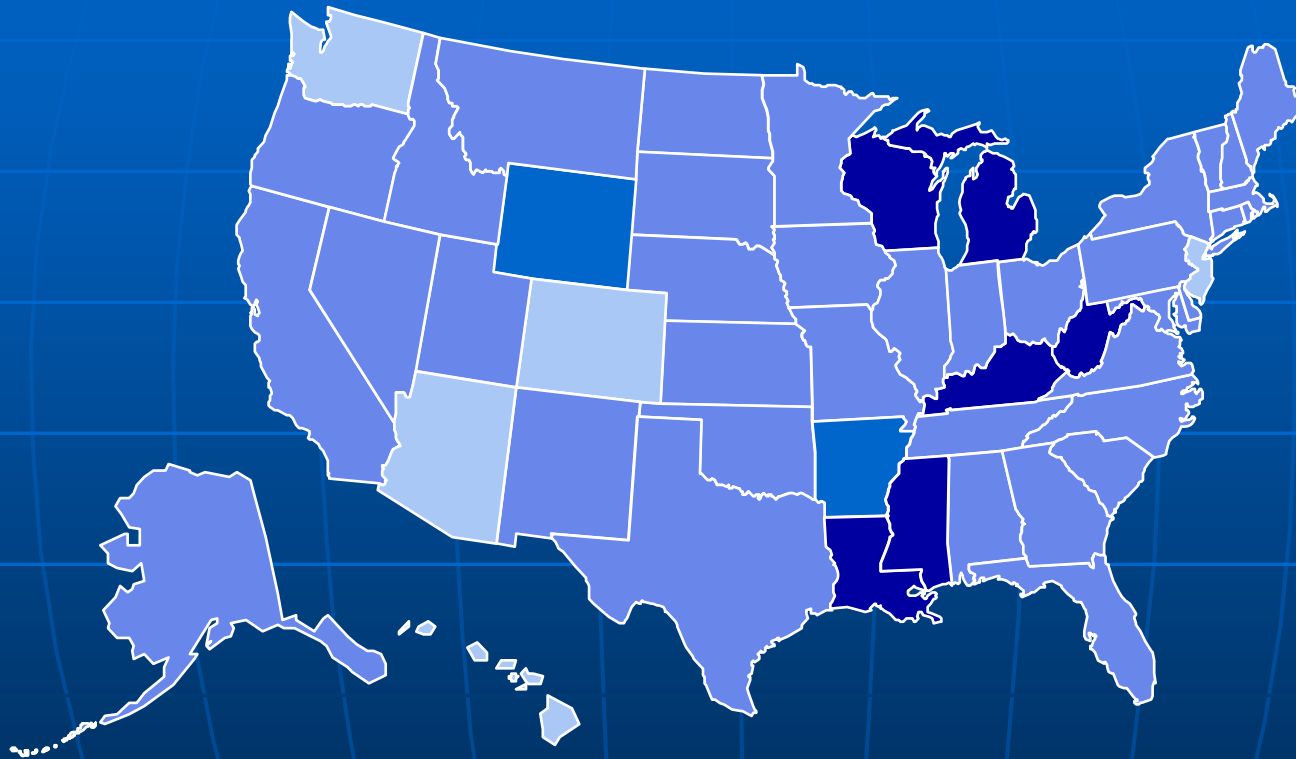


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

1992 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

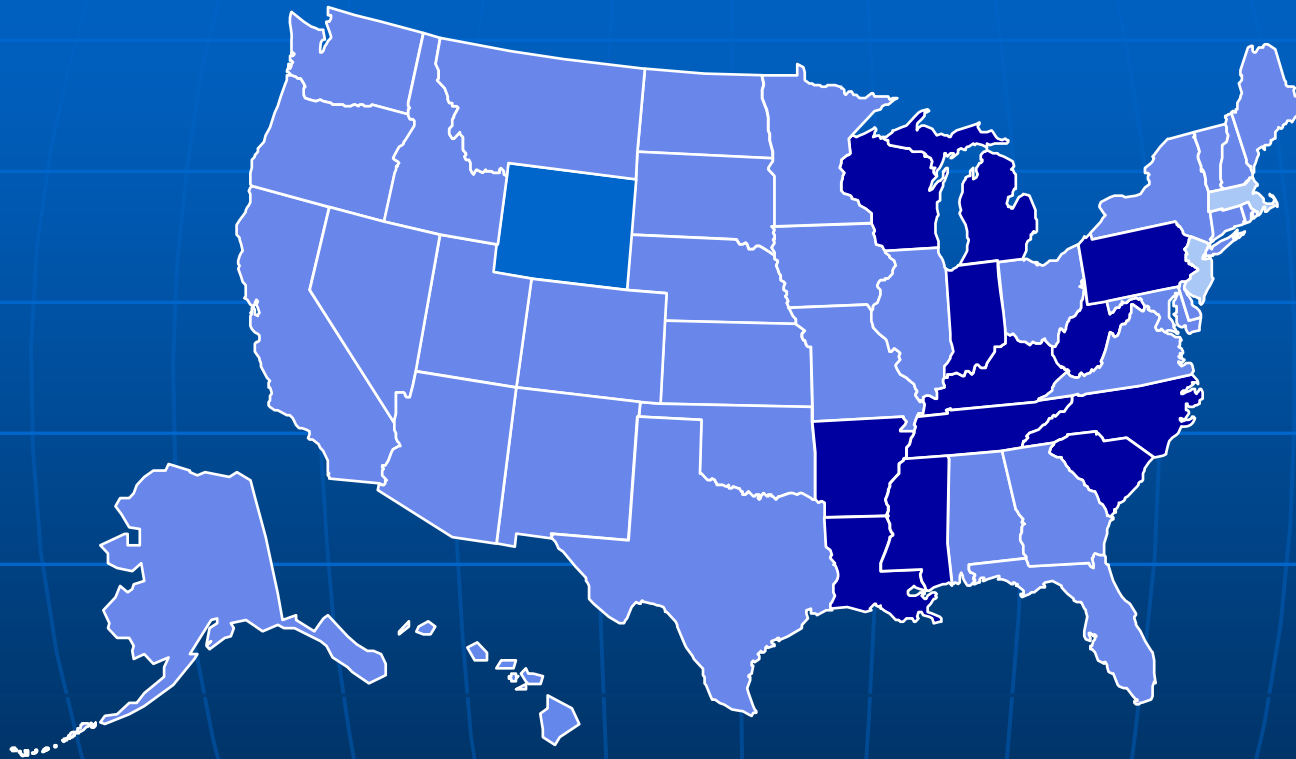


Source: Behavioral Risk Factor Surveillance System, CDC

■ No Data ■ <10% ■ 10%–14% ■ 15%–19%

OBESITY* TRENDS – US ADULTS

1993 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

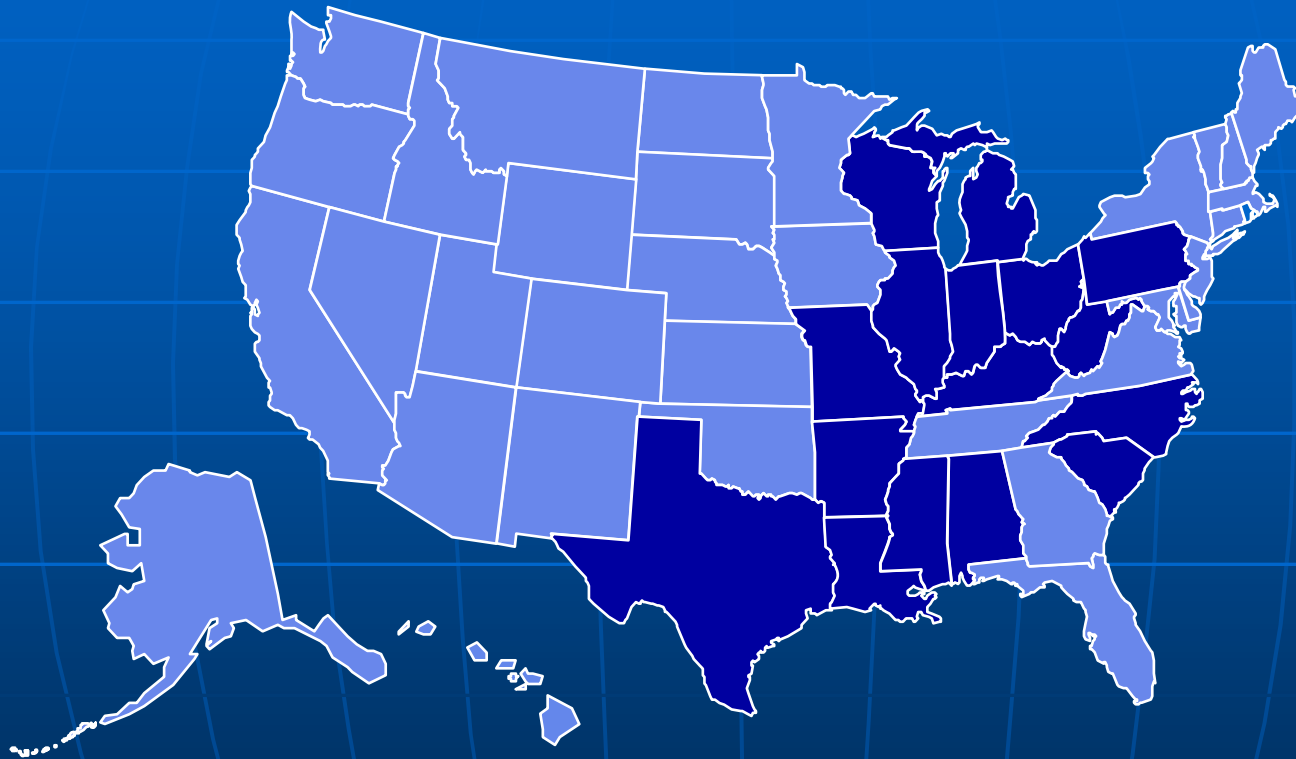


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

1994 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

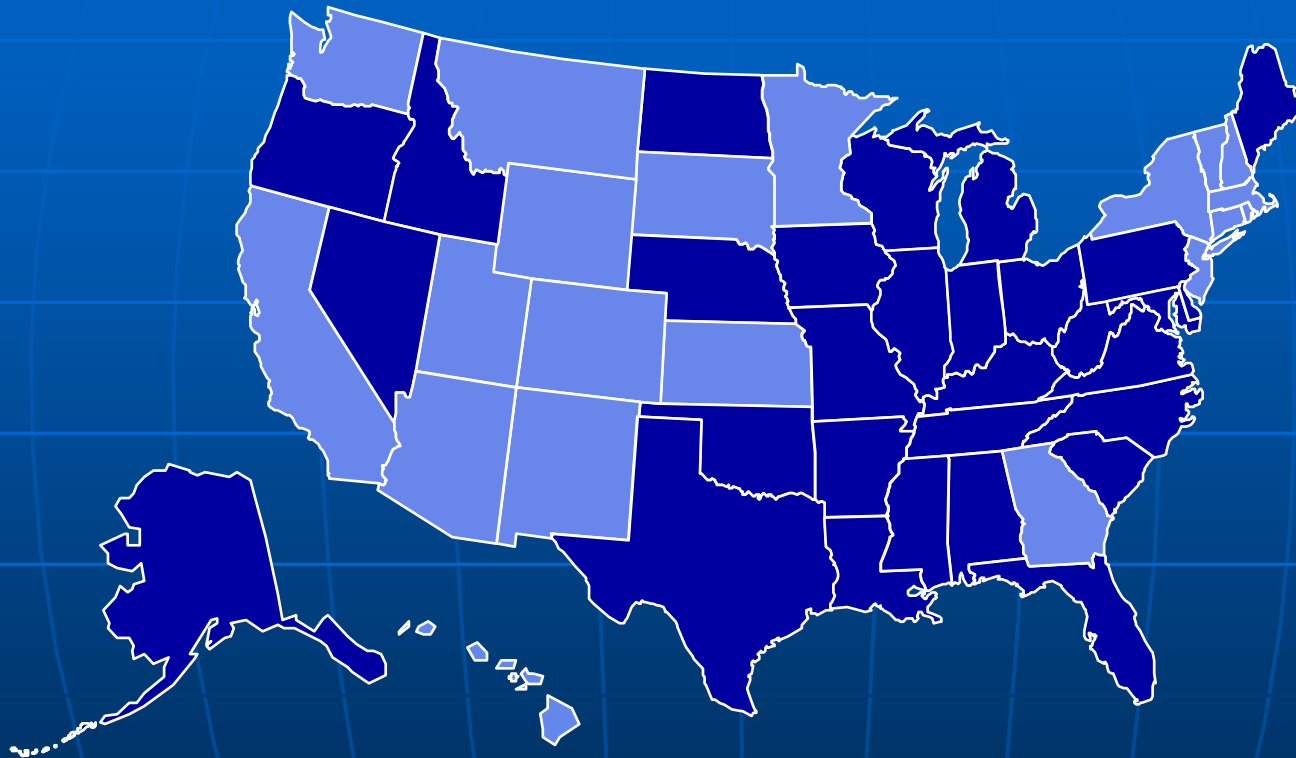


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

1996 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

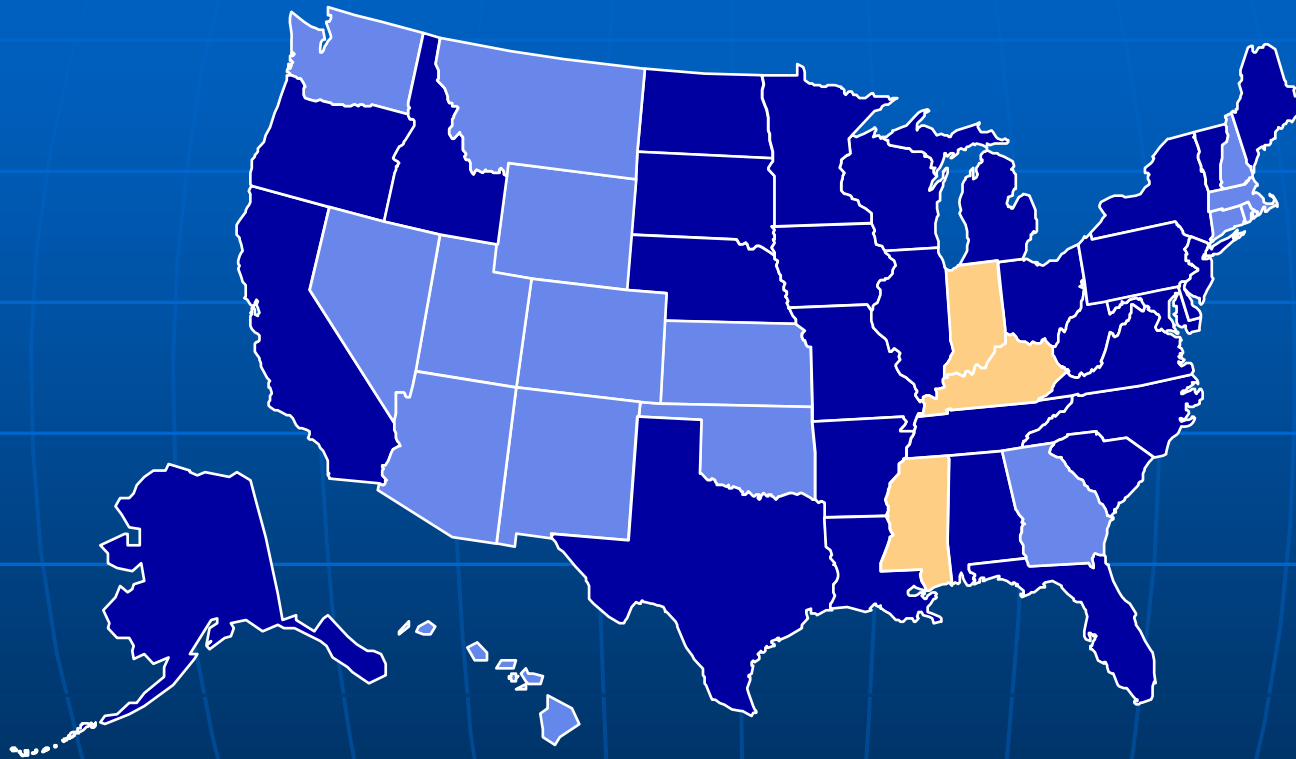


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

1997 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

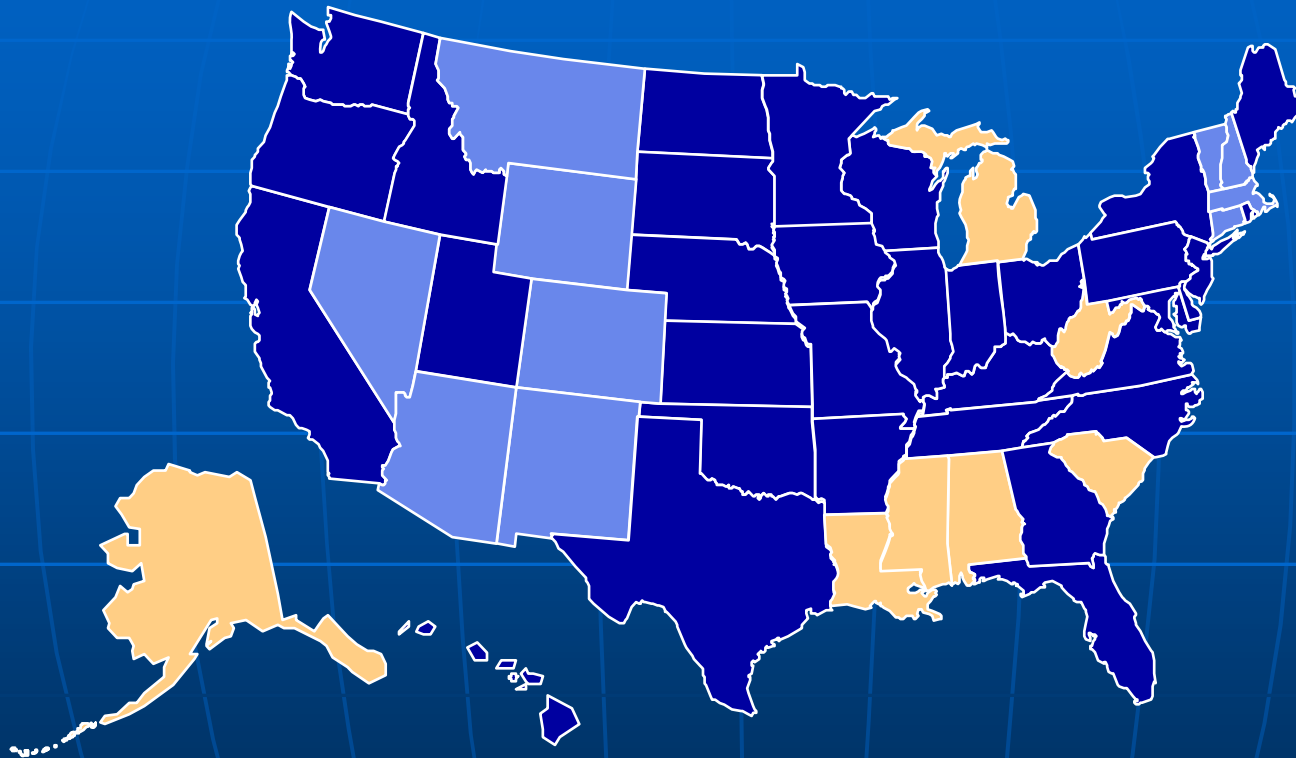


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

1998 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

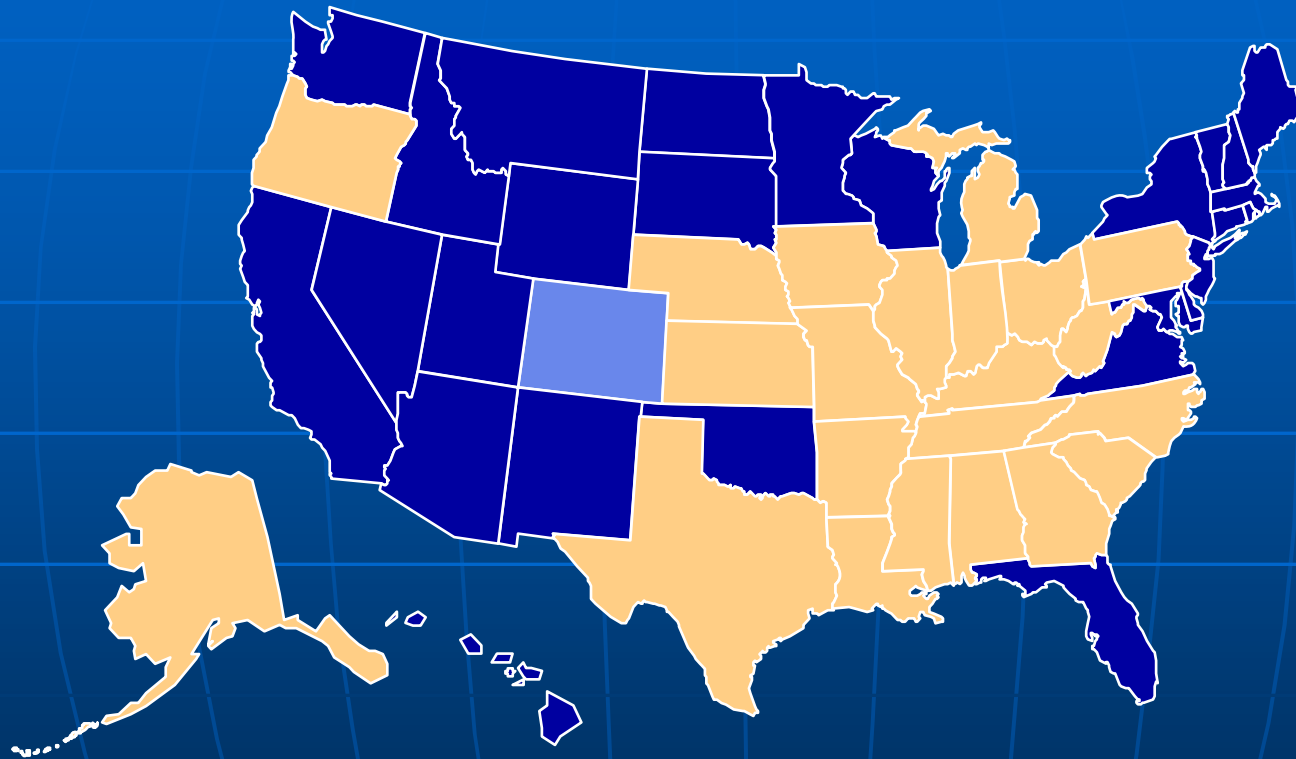


Source: Behavioral Risk Factor Surveillance System, CDC

■ No Data ■ <10% ■ 10%–14% ■ 15%–19% ■ 20%–24%

OBESITY* TRENDS – US ADULTS

2000 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

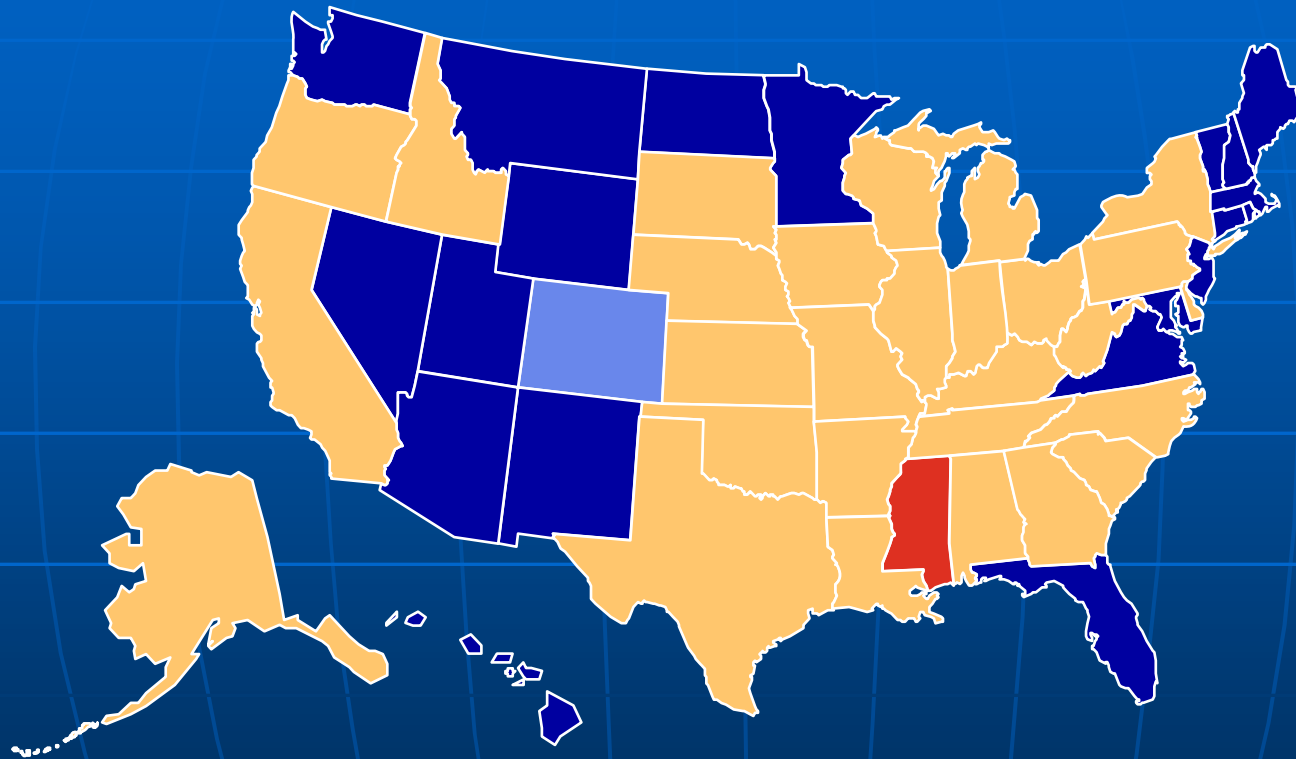


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

2001 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)

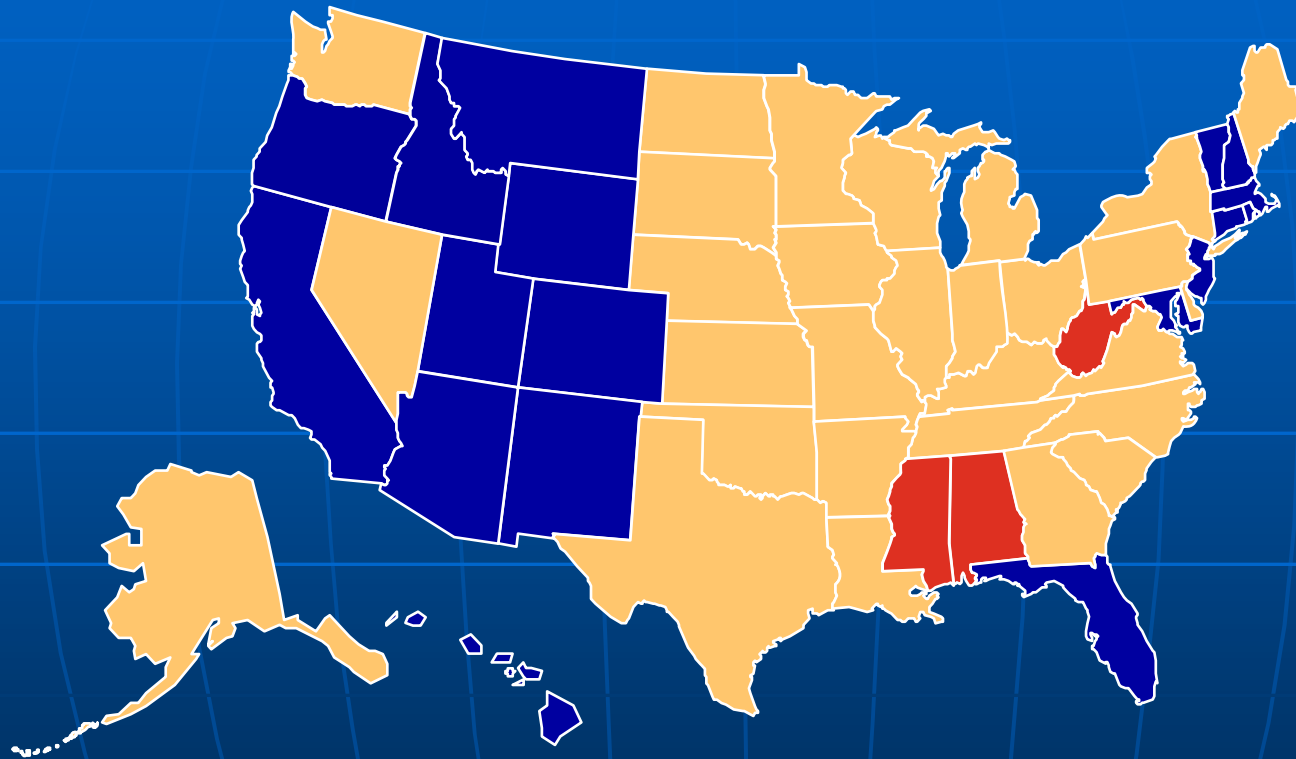


Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY* TRENDS – US ADULTS

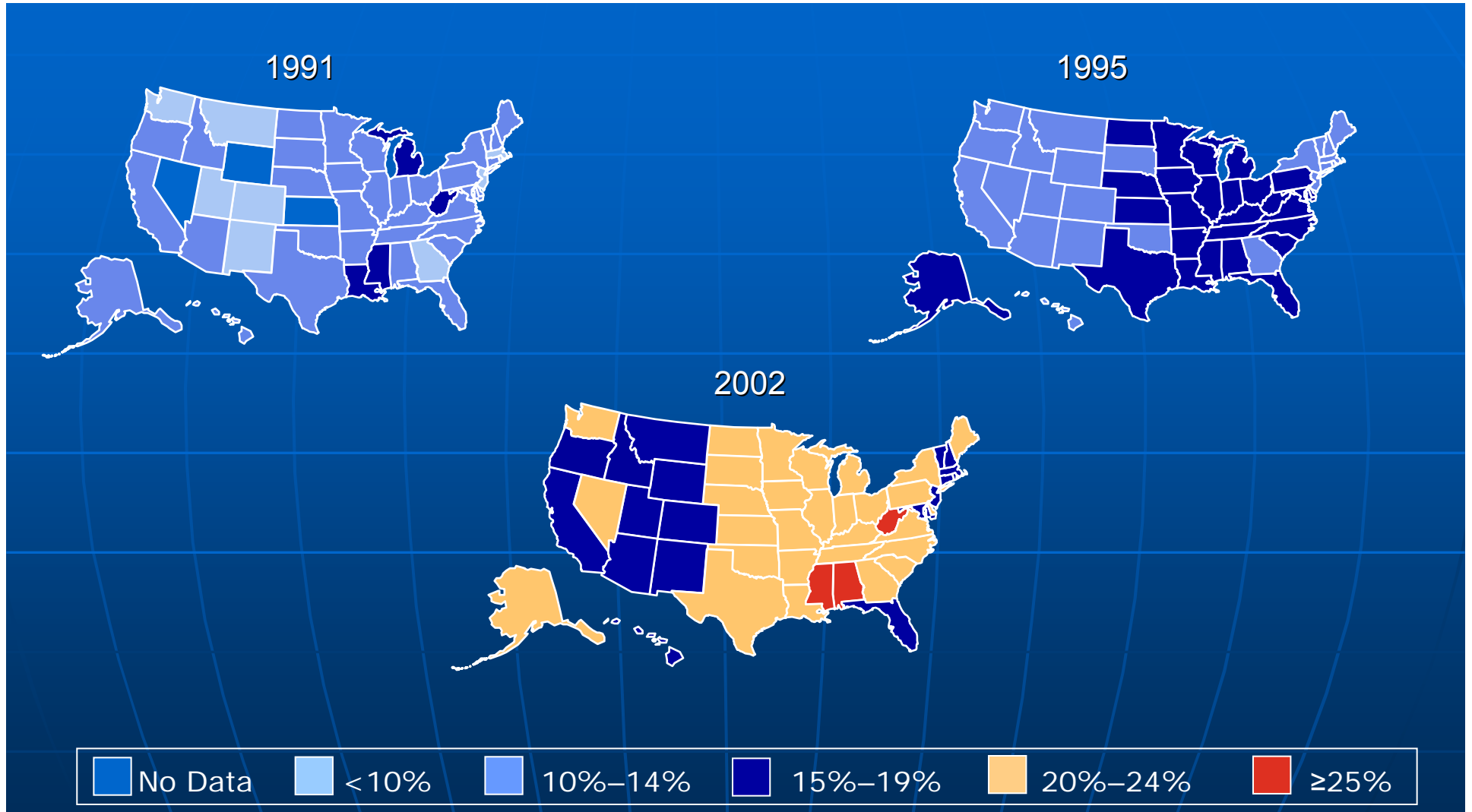
2002 (*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)



Source: Behavioral Risk Factor Surveillance System, CDC



OBESITY TRENDS: CDC STATISTICS



One Definition:



Insanity =

Doing the Same Thing
Over and Over...

and Expecting Different
Results

Albert Einstein (attributed)

THE OBESITY EPIDEMIC: Observations of Associations

- Obesity is now a “Poor Man’s” Disease⁽¹⁾
- Not Exclusive, but Appears to be *Associated* with Lower Incomes (Mississippi 1st, W. Virginia 4th, Alabama 5th – US Census Ranking)
 - *Associated* with U.S. Dietary Guidelines⁽²⁾
 - *Associated* with Low-Fat Diets and/or Yo-Yo Dieting⁽³⁾
 - *Associated* with Increased Use of High Fructose Corn Syrup⁽⁴⁾

Does This Prove The Relation of
Cause & Effect?

Another Common Error



Association NOT = Cause & Effect

Qualities That Strengthen Possible Causality Include:

- Temporality
- Dose-Response Relationship
- Biological Plausibility
- Strength of Association
- Consistency
- Effect Specificity
- Collateral Evidence

Good for Hypothesis Generation, However!

Basic Nutritional Requirements: Level 1 Evidence



- Water
- Protein
 - Essential Amino Acids
 - Deficiency = Kwashiorkor
- Fats / Oils
 - Essential Fatty Acids
 - Deficiency = Neuro/Immuno-Dysfunction
- Micronutrients
 - Vitamins + Minerals
 - Deficiencies = Scurvy, Anemia's, etc.

Carbohydrates are ABSENT



The “A – Z” Weight Loss Study

Prospective, Randomized Trial

NIH-Sponsored at Stanford

N = 311 (77, 79, 79, 76)

Duration = 1 year

Findings:

- Atkins Superior to All Others
- No Adverse Metabolic Effects



Eat Whole Foods

- **Meat**

- Game Animals (large and small)
- Fish, Bivalves, Crustaceans
- Bugs, Grubs, Organs – OPTIONAL!

- **Plants**

- Vegetables/Roots
- Leafy Greens
- Fruits (in season), Avoid High GL if losing weight
- Nuts / Seeds

- **Make CHO-Based Foods a Treat, not a Staple**

What Are We Supposed to Eat ?



What is Our Evolutionary History?

Our Hunter-Gatherer Ancestors Left
Unmistakable Evidence.....

Prehistoric "MENU"

	MOUS	POISS	ALPAG	CHEVAL	BOVINS	OVINS	CANIS	PROCTER
A								
B								
1								
2								
C								
1								
2								
D								
1								
2								



Human's Evolved Eating **Whole Foods**

- **Meat** (45-65% energy)
 - Game Animals (large and small)
 - Fish, Bivalves, Crustaceans
 - Bugs, Grubs, Random Stuff
- **Plants**
 - Vegetables/Roots
 - Leafy Greens
 - Fruits (in season)
 - Nuts / Seeds



“Paleo Diets”

Probably Most Appropriate
Reference for
Null Hypothesis

Food Pyramid – The “Smoking Gun” of Obesity

Fats, Oils, and Sweets
USE SPARINGLY

KEY

■ Fat (naturally occurring and added)

▼ Sugars (added)

These symbols show fat and added sugars in foods.

Milk, Yogurt, and Cheese Group
2-3 SERVINGS



Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts Group
2-3 SERVINGS



Vegetable Group
3-5 SERVINGS



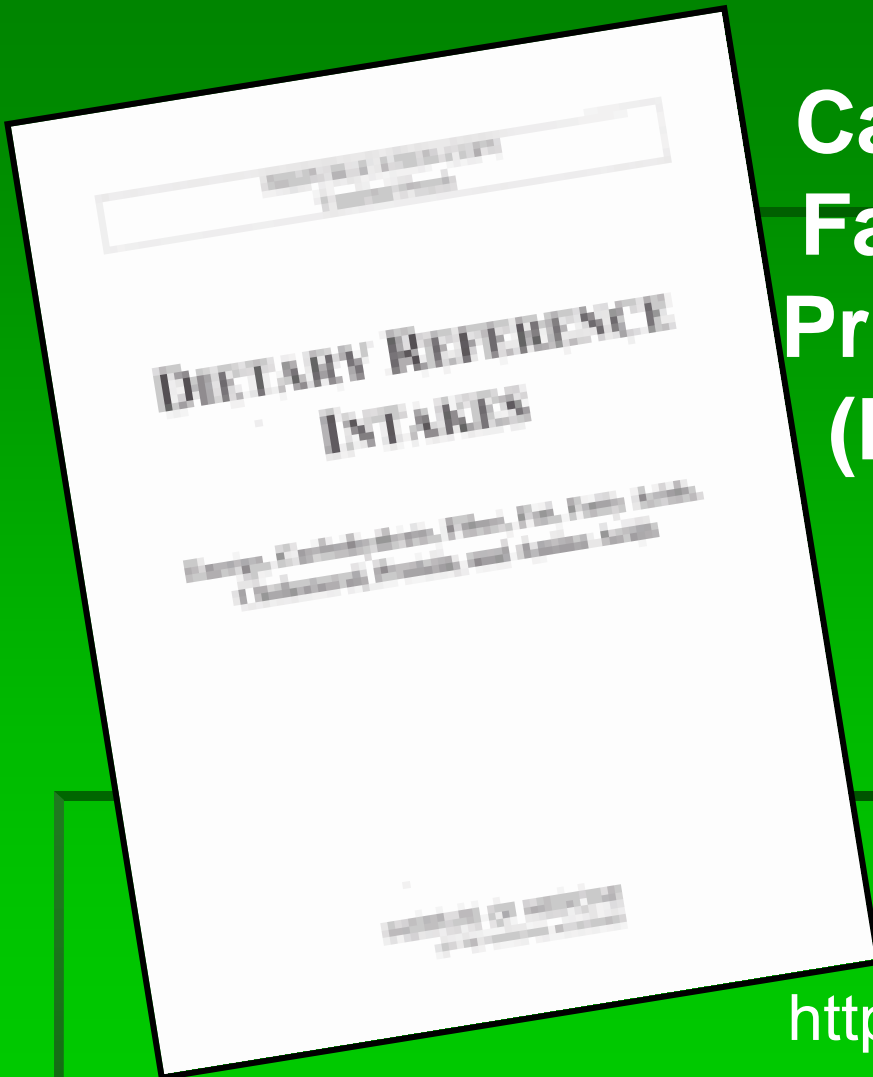
Fruit Group
2-4 SERVINGS



Bread, Cereal, Rice, and Pasta Group
3-11 SERVINGS



Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (Macronutrients) (2002)



<http://books.nap.edu/books/0309085373/html/207.html>

MENU COMPARISON

Menu A: Food Pyramid-Based Menu – 2000 Calorie

Breakfast

English muffin with 4 TBS low-fat Cream Cheese, 2 TBS All-Fruit Strawberry Topping
Medium banana, 1 cup of skim milk

Lunch

½ cup of vegetable soup
Whole wheat pita stuffed with 2 ounces of chicken breast meat, 1 TBS of fat free mayonnaise, lettuce and tomato
Single-Serve Bag Pretzels

Snack(s)

Medium apple

Dinner

1 Cup Romaine, 2 Cherry Tomatoes, 2 TBS Reduced Calorie Italian Dressing
2 ounces grilled Chicken Breast
1 cup of pasta twists tossed with ½ Cup Low-Sodium Tomato Sauce & 1 TBS Grated Parmesan Cheese
Whole-grain dinner roll with 1 TBS margarine
Cola-Type Soda (12-oz Can)

Dessert

1/2 cup of frozen fat free chocolate yogurt topped with 2 tablespoons of chocolate sauce, and 2 tablespoons of light cool whip

2013 Calories – 55g Fat, 313g Carbohydrate, **16g Fiber**, 75g Protein

MENU COMPARISON

Menu B: Controlled-Carb Nutritional Approach – 2000 Calorie

Breakfast

1 cup plain yogurt, 1/2 cup Blueberries

Snack(s)

1oz cashews

Lunch

Chef Salad - 3 cups romaine, 6 cherry tomatoes, 1/4 cup shredded red cabbage, 1/2 cup sliced cucumbers, 1 TBS chopped pecans, 1oz roast beef, 1oz turkey breast, 1oz slices ham, 1oz cheddar cheese shredded, 1 Large Hard-Cooked Egg (chopped), 3 TBS blue cheese dressing

Multigrain Roll with 1 teaspoon butter

V-8 Juice

Dinner

1 Cup Romaine, 2 Cherry Tomatoes, 1 TBS Dressing

Veal in mustard cream sauce (veal, crème fraiche, stone ground mustard, plum tomatoes, onions, white wine, olive oil)

1 Cup Steamed Broccoli

1/2 Cup Brown & Wild Rice

Iced Tea with Fresh Lemon

Dessert

3/4 Cup strawberries, 1oz cheddar cheese, 1oz Dark Chocolate

2071 Calories – 125g Fat, 137g Carbohydrate, 26g Fiber, 117g Protein

MACRONUTRIENT COMPARISON

Menu A: Food Pyramid

Grains - 6 Servings

Vegetables – 3 Servings

Fruits – 2 ½ Servings

Milk/Dairy – 3 Servings

Meat/Poultry/Fish/Legumes – 2 Servings

Menu B: Controlled Carbohydrate

Grains - 2 Servings

Vegetables – 8 Servings

Fruits – 2 ½ Servings

Milk/Dairy – 2 Servings

Meat/Poultry/Fish/Legumes – 5 Servings

NUTRITIONAL COMPARISON – KEY DIFFERENCE!

Menu A: Food Pyramid

Nutrient	Units	Intake	RDA	% RDA
<i>Fat-Soluble Vitamins</i>				
Vitamin A	mcg_RE	661	800	82.62
Vitamin D	mcg	0	5	0
Vitamin E	mg_ATE	6.64	8	82.99
Vitamin K	mcg	10.56	65	16.25
<i>Water-Soluble Vitamins</i>				
Vitamin C	mg	48.95	60	81.58
Thiamin	mg	1.46	1.1	132.38
Riboflavin	mg	1.66	1.1	150.71
Vitamin B-6	mg	1.7	1.3	130.7
Vitamin B-12	mcg	2.22	2.4	92.67
Niacin	mg	18.27	14	130.48
Folate	mcg	402.7	400	100.68
<i>Trace Minerals</i>				
Iron	mg	14.33	15	95.56
Zinc	mg	7.32	12	60.98
Selenium	mcg	84.04	55	152.81
<i>Major Minerals</i>				
Calcium	mg	1053.9	1000	105.39
Phosphorus	mg	1329.3	700	189.9
Magnesium	mg	311.77	320	97.43

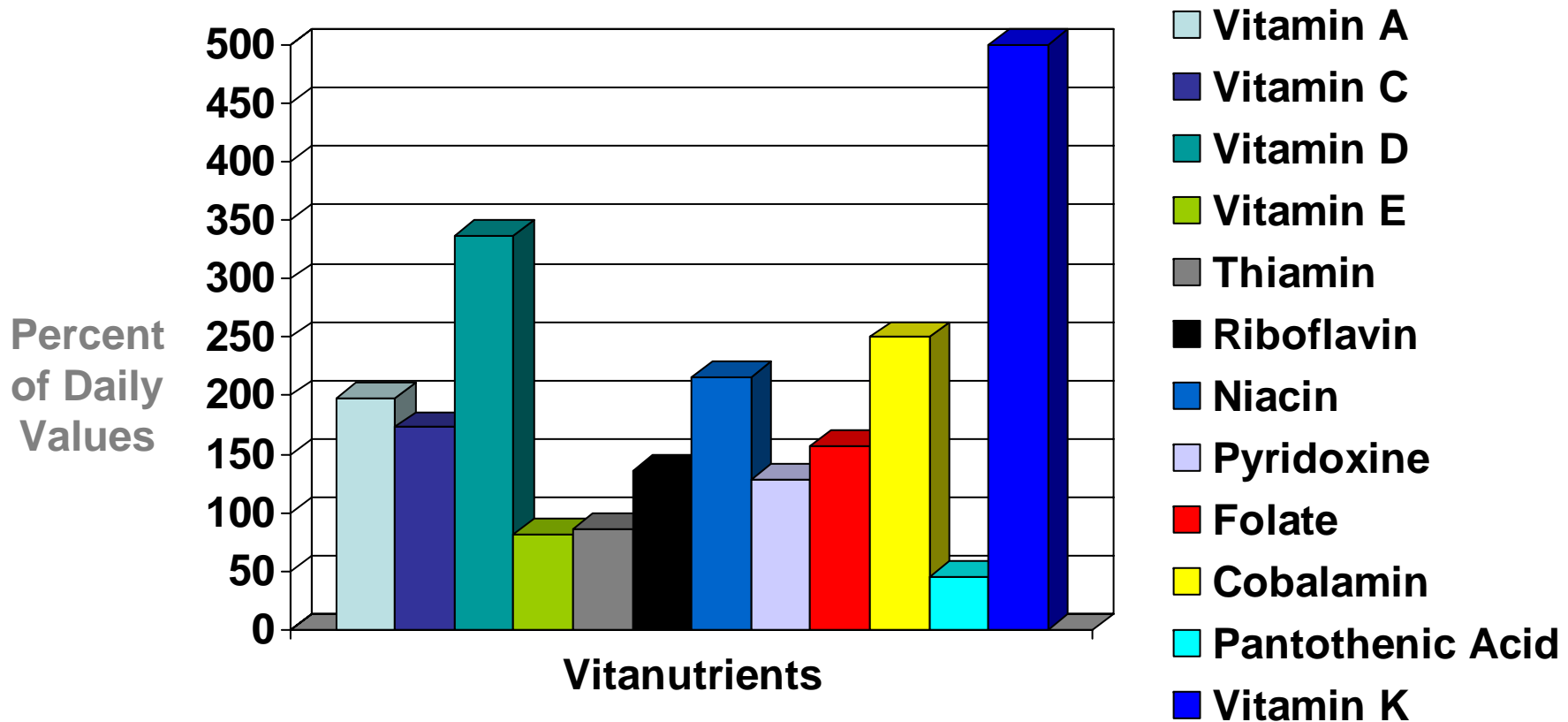
Menu B: Controlled-Carb

Nutrient	Units	Intake	RDA	% RDA
<i>Fat-Soluble Vitamins</i>				
Vitamin A	mcg_RE	1408.8	800	176.1
Vitamin D	mcg	0.24	5	4.8
Vitamin E	mg_ATE	15.91	8	198.9
Vitamin K	mcg	486.72	65	748.8
<i>Water-Soluble Vitamins</i>				
Vitamin C	mg	352.26	60	587.1
Thiamin	mg	1.23	1.1	112.23
Riboflavin	mg	2.37	1.1	215.21
Vitamin B-6	mg	1.95	1.3	150.2
Vitamin B-12	mcg	5.96	2.4	248.41
Niacin	mg	23.72	14	169.46
Folate	mcg	557.21	400	139.3
<i>Trace Minerals</i>				
Iron	mg	15.15	15	100.18
Zinc	mg	19.63	12	163.55
Selenium	mcg	71.09	55	129.25
<i>Major Minerals</i>				
Calcium	mg	1100.7	1000	110.07
Phosphorus	mg	1758.5	700	251.21
Magnesium	mg	395.03	320	123.45

Nutrient Analysis of Sample Menu With 20 Grams of Carbohydrate Based on Daily Values/RDI

Dr. Atkins was on the Right Track!

2,000-Calorie Diet



Common criticism relates to high saturated fat/cholesterol

- **What they tell you:**

- ↑ LDL-cholesterol will go up
- ↑ Insulin resistance will increase
- ↑ Inflammation will rise

- **What they don't tell you:**

- Not all SFA have this effect (stearic and palmitic acid)
- Change depends on intake of linoleic acid
- ↑ HDL (Good Cholesterol) and ↓ TAG (Triglycerides go down)
- ↑ LDL ('Bad Cholesterol') increases in size (a good thing!)
- Foods rich in SFA also rich in MUFA
- ↑ Insulin resistance increases only when sugar consumption is increased too!
- Processing of SFA is entirely different when carbs are low

Want Proof?

You are invited to review the following research studies which support the information in this presentation.

Thanks for watching!

<http://jama.ama-assn.org/cgi/reprint/291/10/1193.pdf>

<http://www.cdc.gov/nchs/pressroom/02news/obesityonrise.htm>

<http://www.cdc.gov/brfss/>

<http://www.ajcn.org/cgi/reprint/79/4/537?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=1&andorexacttitle=and&titleabstract=High+Fructose+Corn+Syrup&andorexacttitleabs=or&andorexactfulltext=and&searchid=1&FIRSTINDEX=0&sortspec=relevance&resourcetype=HWCIT>

<https://content.nejm.org/cgi/content/abstract/348/21/2082?ck=nck>