

Diet and Nutrition in the Americas

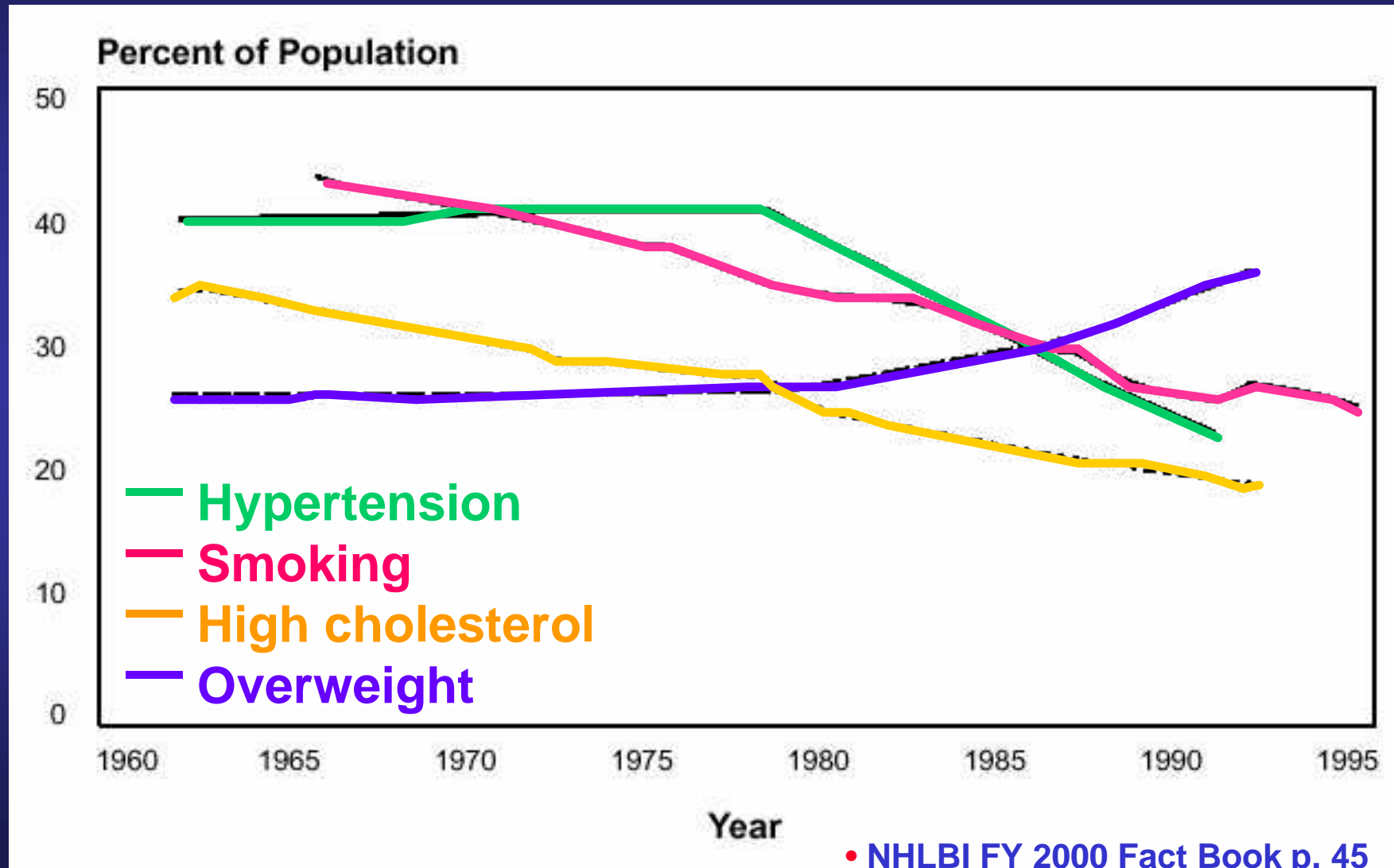
Sidney C. Smith, Jr. MD

Professor of Medicine

**Director, Center for Cardiovascular Science and Medicine
University of North Carolina at Chapel Hill**

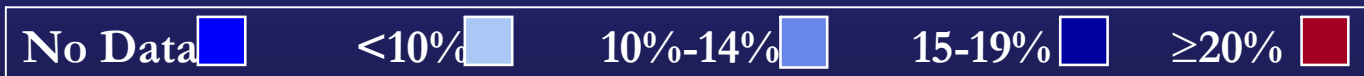
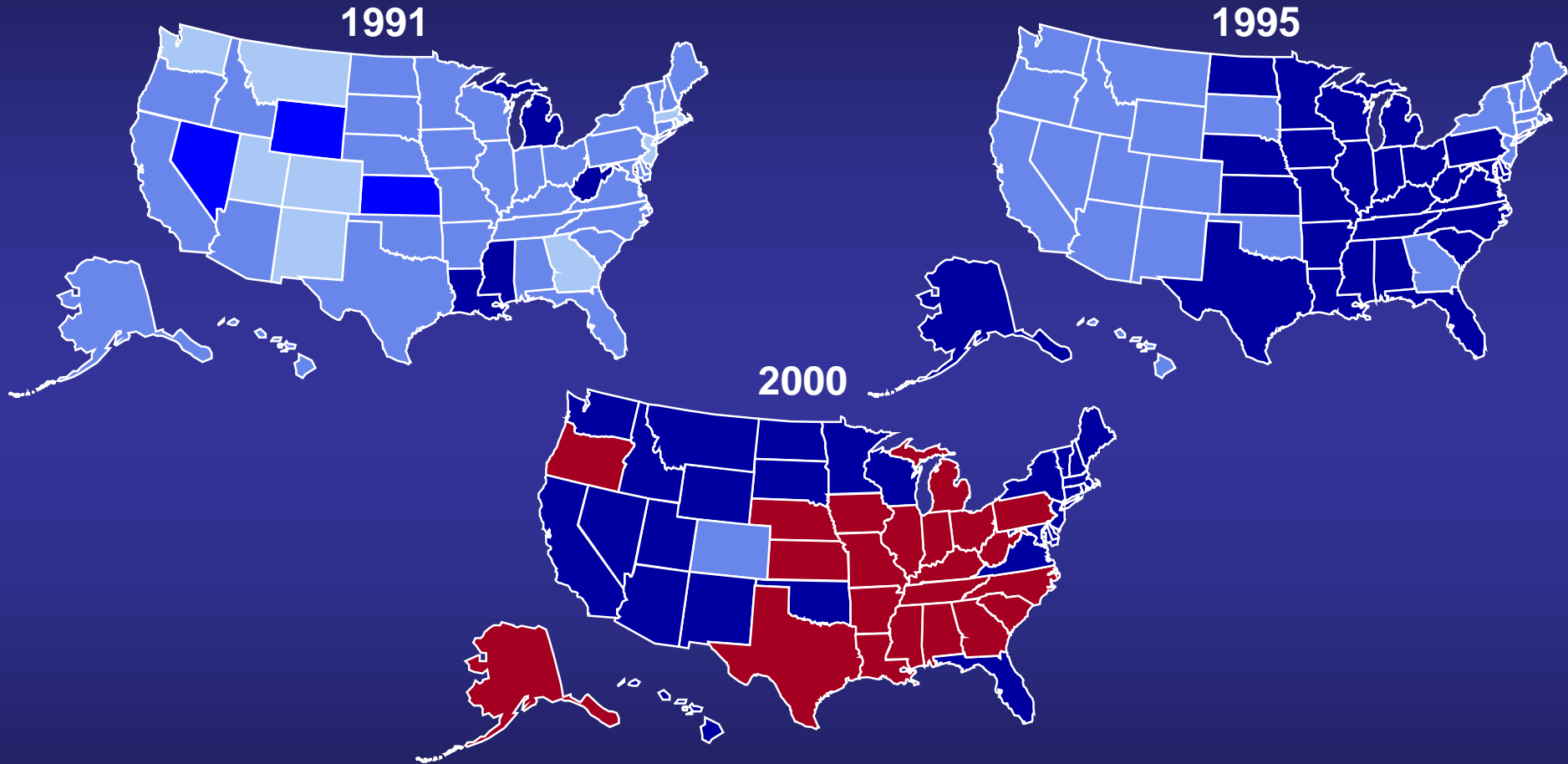
No Relationships with Industry exist related to this presentation

Prevalence of CVD Risk Factors 1961-1995



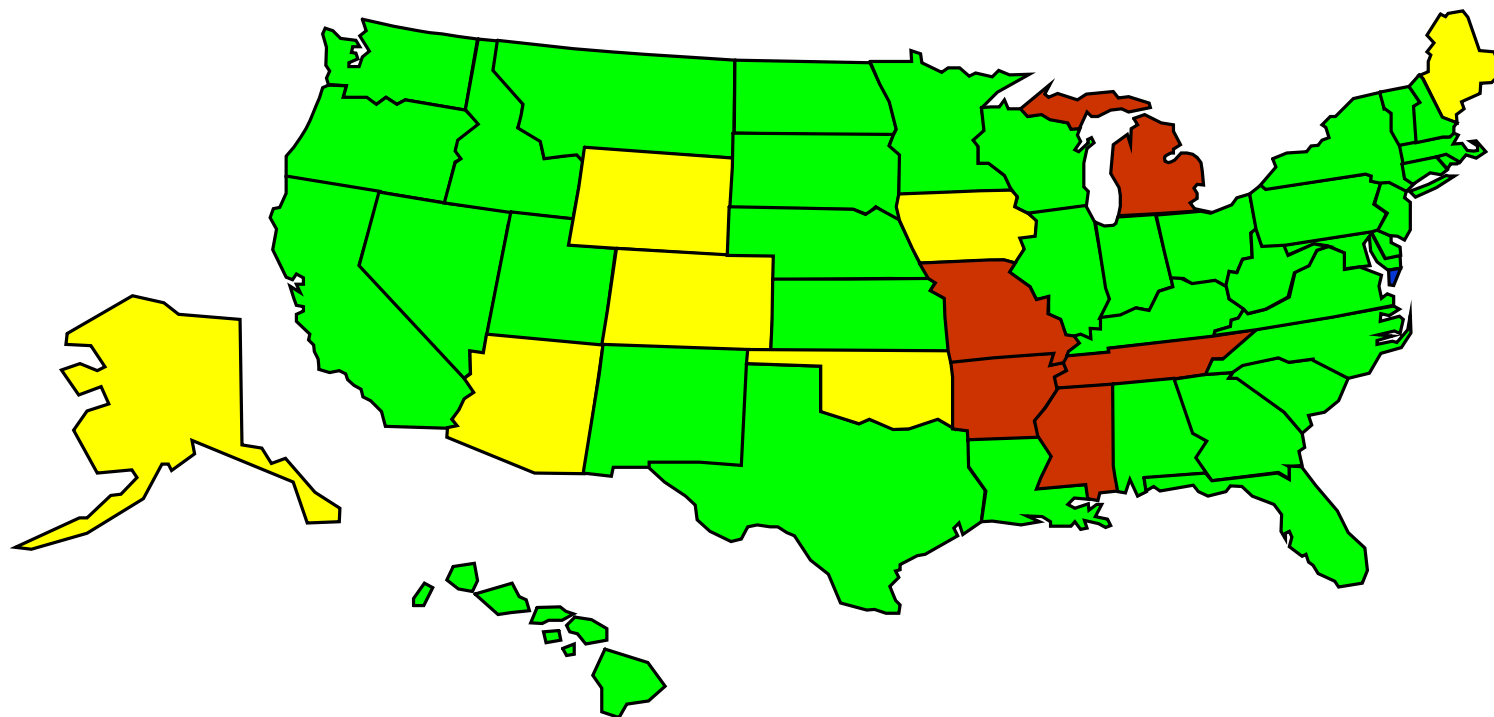
Obesity Trends* Among U.S. Adults BRFSS, 1991, 1995 and 2000




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



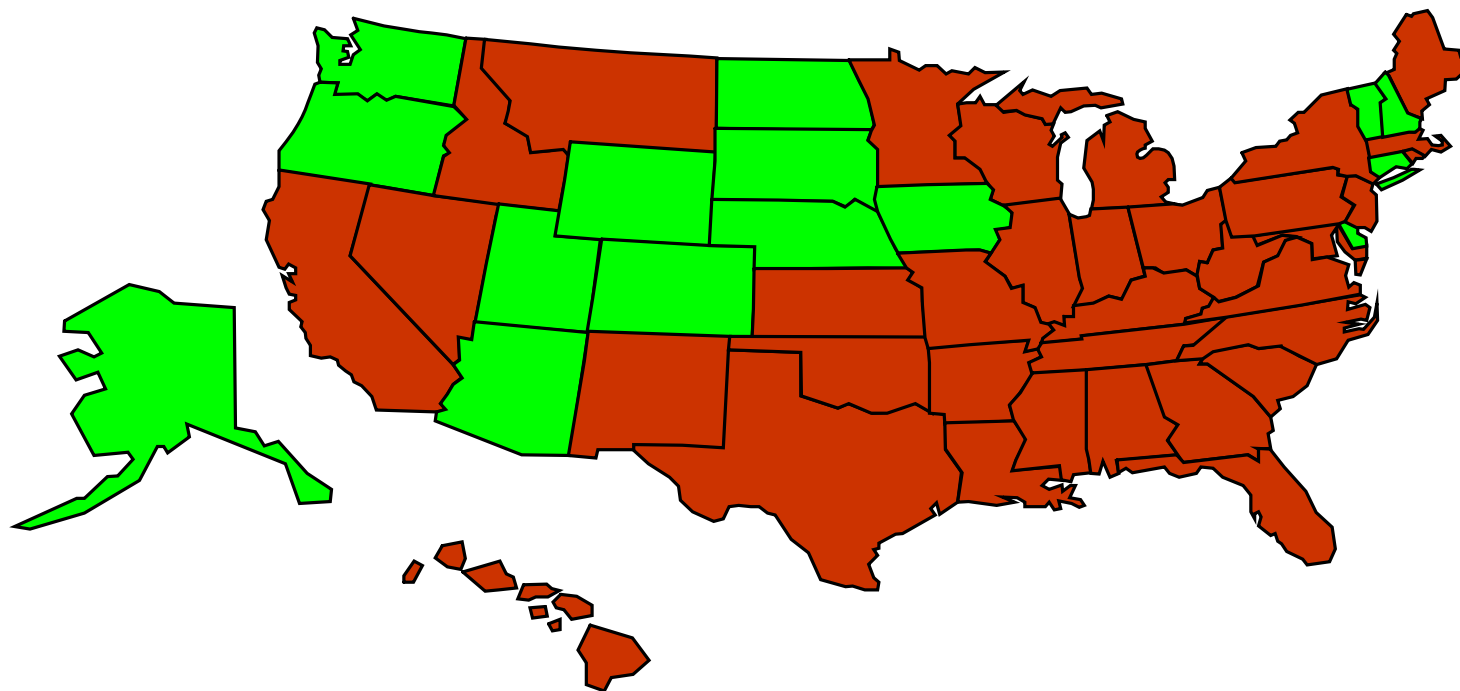
Source: Mokdad A H, et al. J Am Med Assoc 1999;282:16, 2001;286:10.

Prevalence of Diabetes Among U.S. Adults BRFSS, 1993-1994



 <4%  4-6%  >6%

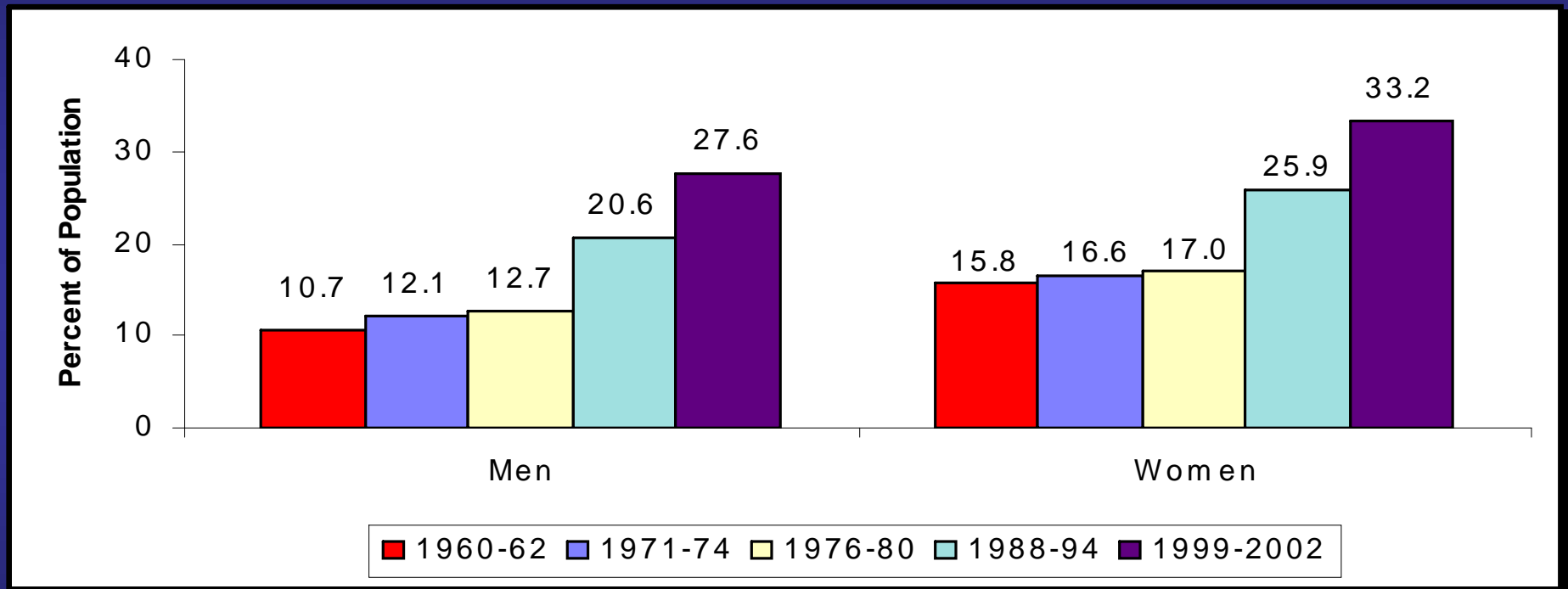
Prevalence of Diabetes Among U.S. Adults BRFSS, 1999



 <4%  4-6%  >6%

Age-Adjusted Prevalence of Obesity in Americans Ages 20-74 by Sex and Survey

NHES, 1960-62; NHANES, 1971-74, 1976-80, 1988-94 and 1999-2002

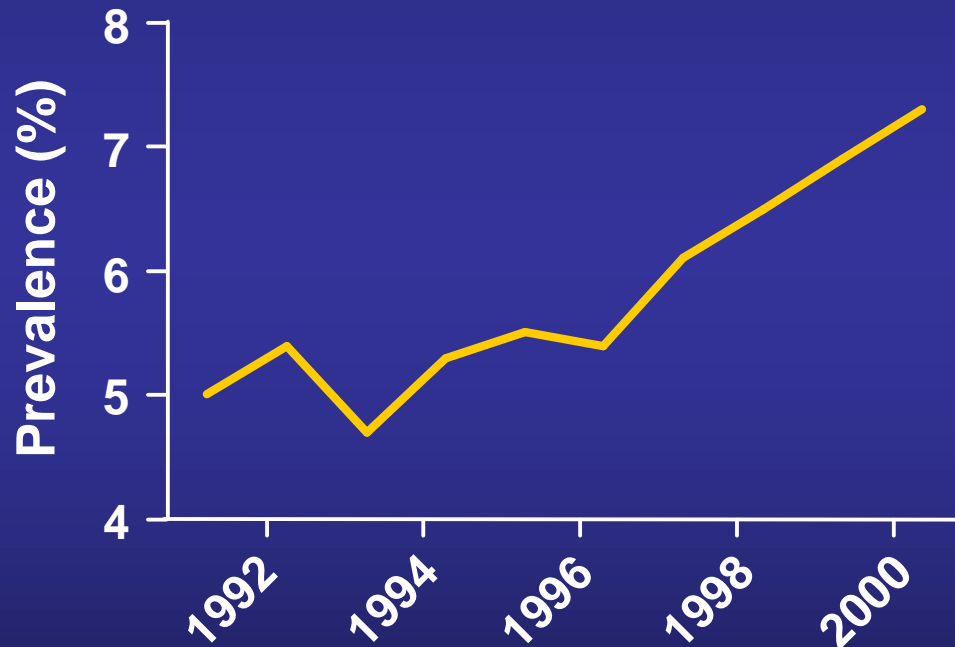


Note: Obesity is defined as a BMI of 30.0 or higher.

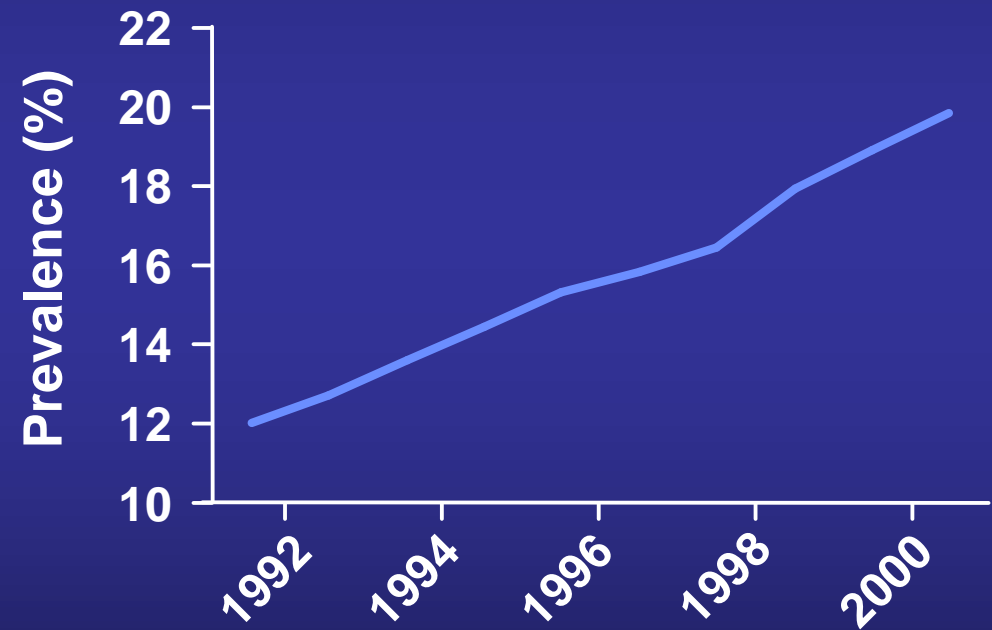
Source: CDC/NCHS.

Worsening Trends in Diabetes and Obesity

Diabetes

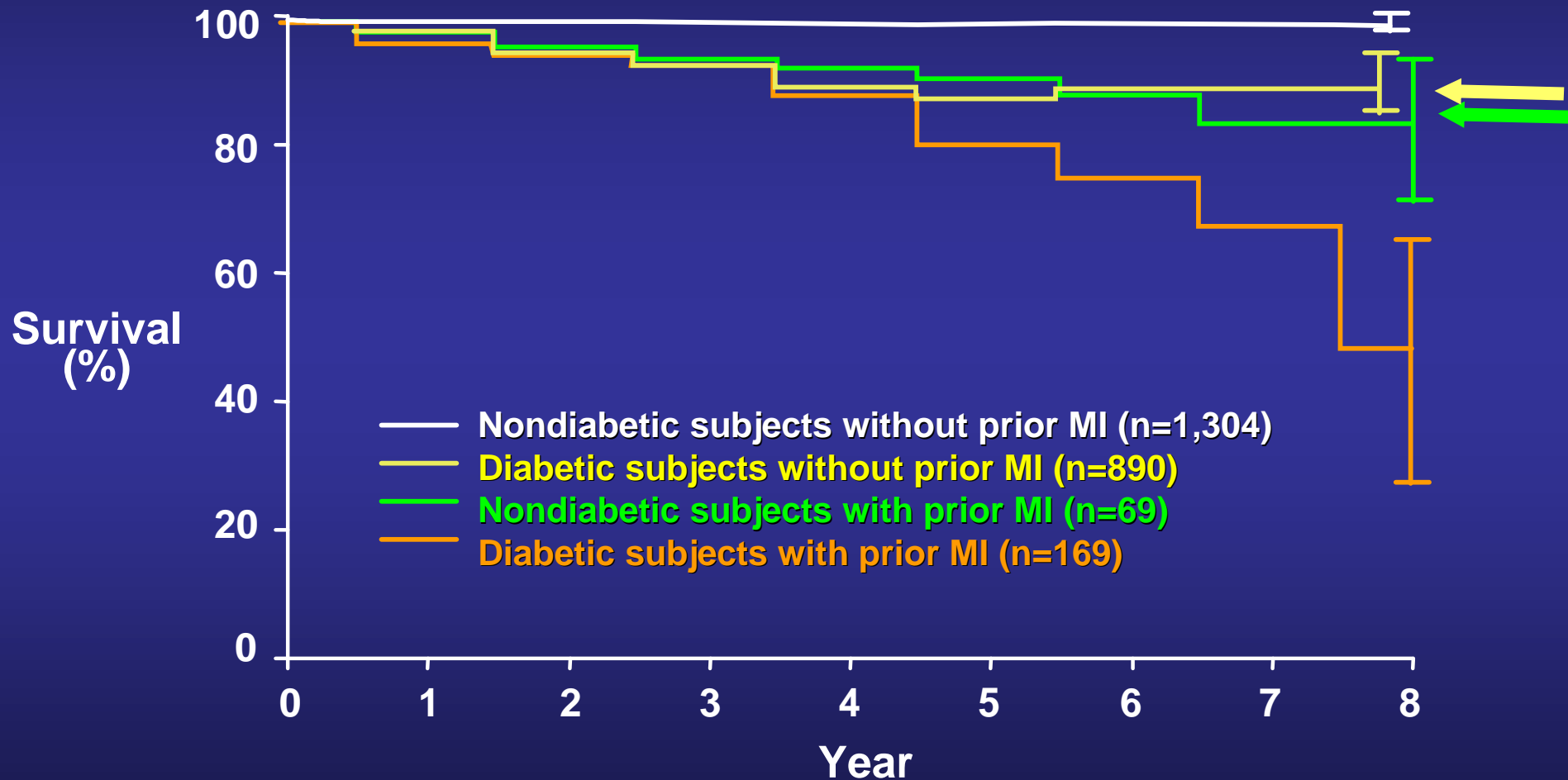


Obesity



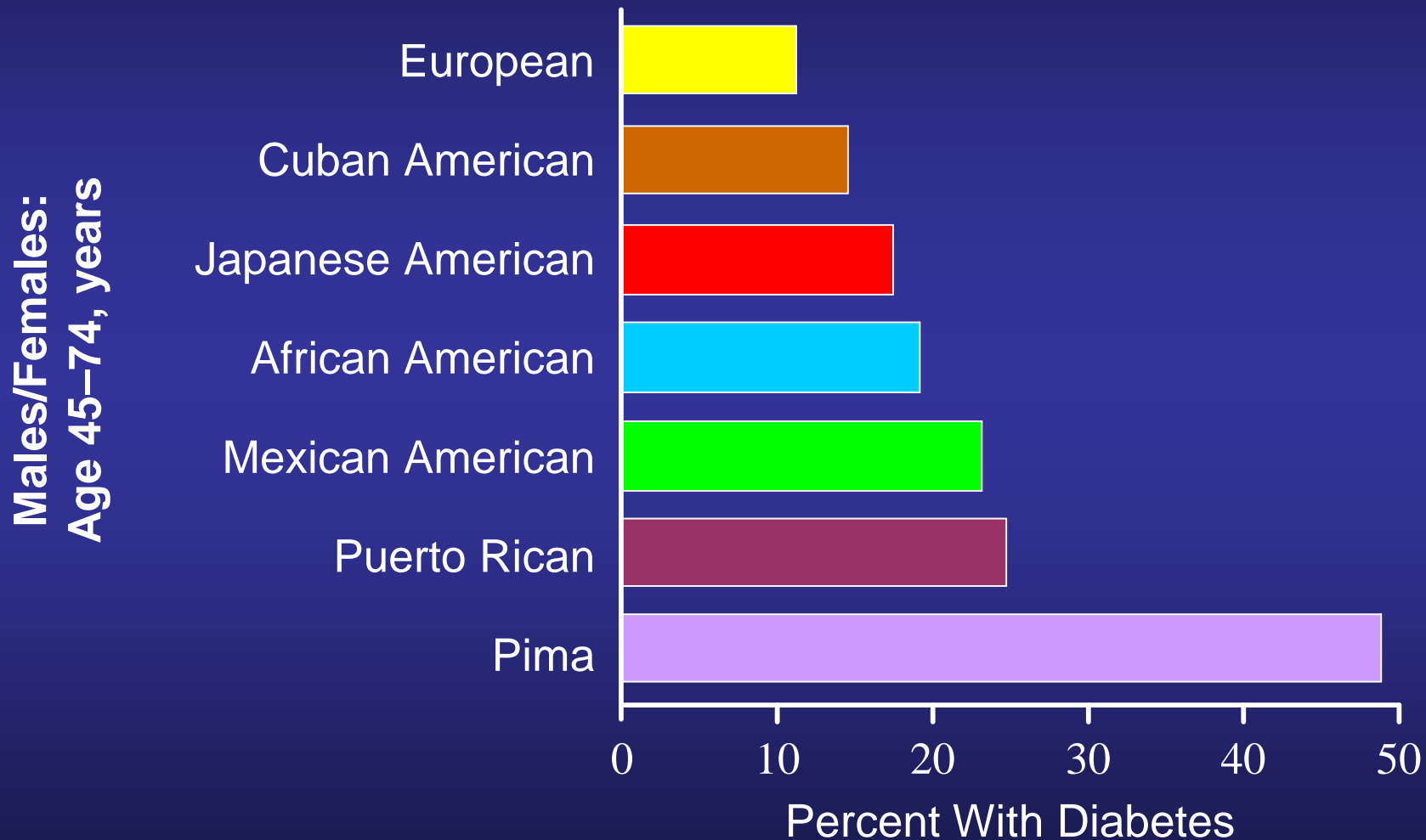
Mokdad et al. *JAMA*. 1999;282:1519; Mokdad et al. *Diabetes Care*. 2000;23:1278;
Mokdad et al. *Diabetes Care*. 2001;24:412; Mokdad et al. *JAMA*. 2001;286:1195;
Mokdad et al. *JAMA*. 2000;284:1650.

Risk Similar: Type 2 Diabetes Patients Without Prior MI vs. Nondiabetic Subjects With Prior MI



Haffner SM et al. *N Engl J Med.* 1998;339:229-234.

Prevalence of Diabetes in the U.S. by Ethnic Group



Adapted with permission from Carter JS et al. *Ann Intern Med.* 1996;125:221–232.

Impact of Obesity on Health Risk

**Obesity Emerges as the Leading
Cause of Preventable Death,
Eclipsing Cigarette Smoking in the
U.S. by 2005...**

USA Today referencing JAMA article on March 10, 2004

ATP III Identification of Metabolic Syndrome

Risk Factor	Defining Level
Abdominal obesity, given as waist circumference	
Men	>102 cm (>40 in)
Women	>88 cm (>35 in)
Triglycerides	≥150 mg/dL
HDL cholesterol	
Men	<40 mg/dL
Women	<50 mg/dL
Blood pressure	≥130/≥85 mm Hg
Fasting glucose	≥110 mg/dL

Diagnosis of metabolic syndrome requires **3** of the 5 characteristics

Abdominal obesity is more highly correlated with metabolic risk factors than is ↑BMI.

Metabolic Syndrome: Prevalence of Components*

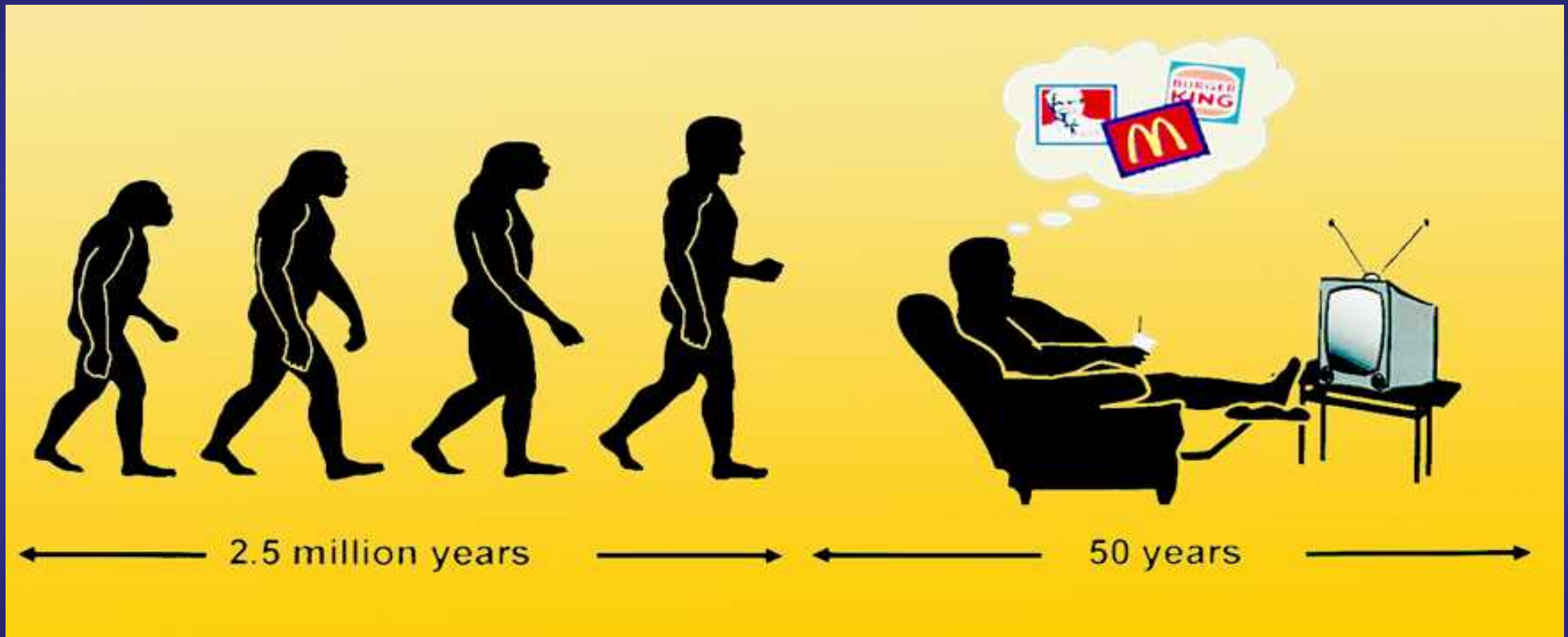
- Abdominal obesity 39%
 - Low HDL cholesterol 37%
 - High blood pressure or medication use 34%
 - Hypertriglyceridemia 30%
 - High fasting glucose or medication use 13%
- » ≥ 1 71%
- » ≥ 2 44%
- » ≥ 3 24% **47 MILLION US RESIDENTS**

*US adults age 20 and over (1988-94)
NCEP criteria

Ford et al. *JAMA*. 287:356-9, 2002.

Vital Statistic? Waist Circumference

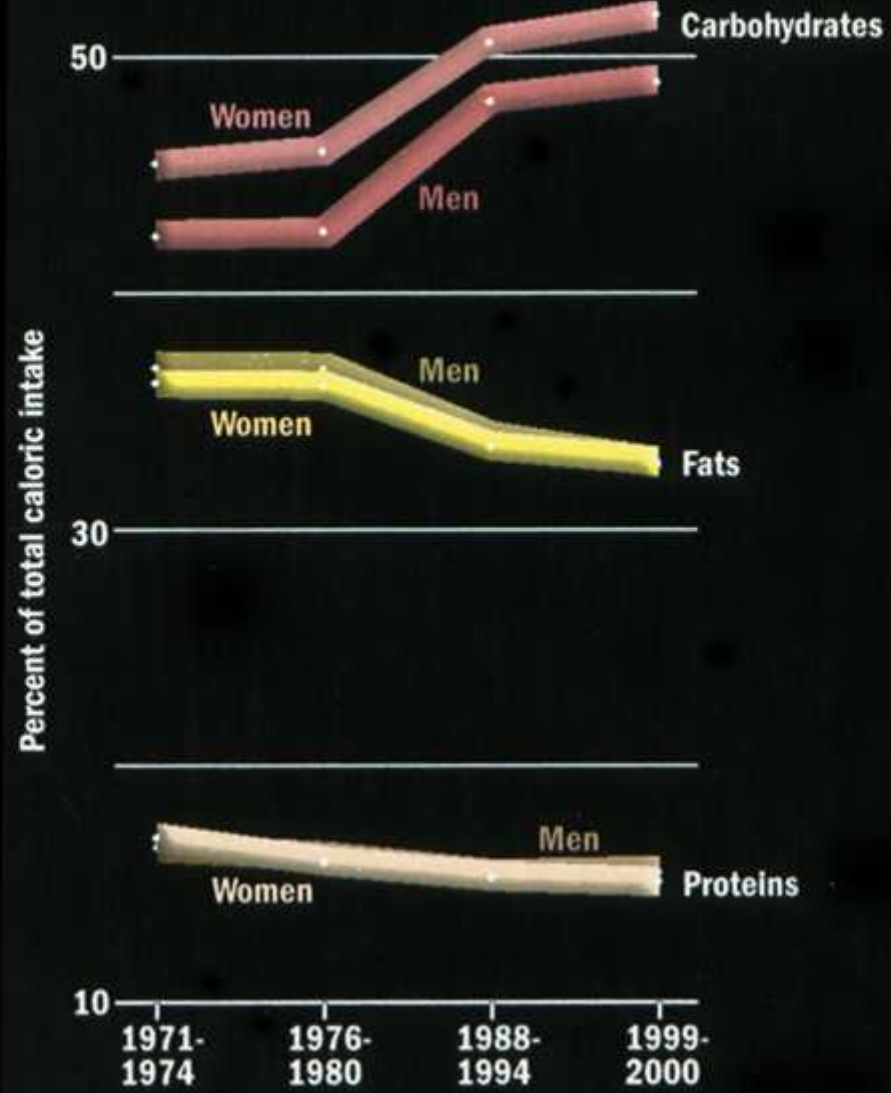




Dietary Patterns in the United States

- The number of eating occasions is increasing
- Portion sizes of actual meals consumed is increasing
- Away from home eating continues to increase
- The low fat revolution came with high refined carbohydrate and caloric sweetener increases
- Snacking has increased by 30% to about 25% of total kcal in 1996
- Increased density of fast food restaurants in lower socio-economic communities

CHOOSING CARBS OVER FATS



PORTION SIZE CHANGES

20 YEARS AGO

TODAY

Coffee with whole milk and sugar

Mocha with steamed milk and syrup

8-ounce Serving Size

16-ounce serving size

45 calories

350 calories

Difference: 305 Calories

Muffin

Muffin

1.5-ounce serving size

4-ounce serving size

210 calories

500 calories

Difference: 290 Calories

Pepperoni pizza

Pepperoni pizza

2 slices

2 slices

500 calories

850 calories

Difference: 350 Calories

Chicken Caesar salad

Chicken Caesar salad

1 1/2-cup serving size

3 1/2-cup serving size

390 calories

790 Calories

Difference: 400 Calories

Popcorn

Popcorn

5-cup serving size

11-cup serving size

270 calories

630 calories

Difference: 360 Calories

Chicken stir fry

Chicken stir fry

2-cup serving size

4 1/2-cup serving size

435 calories

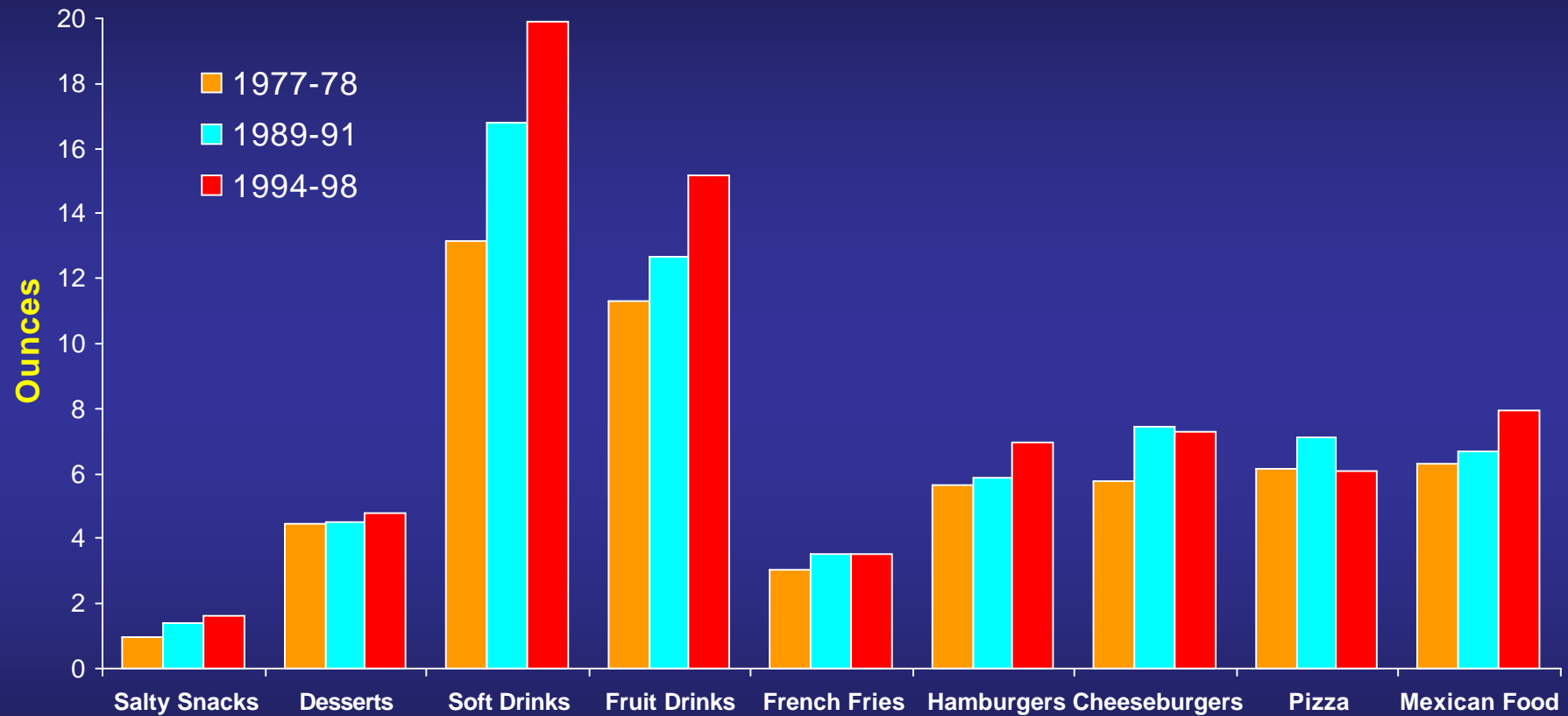
865 calories

Difference: 430 Calories

Source: National Heart, Lung, and Blood Institute Obesity Initiative, Portion Distortion II Interactive Quiz.

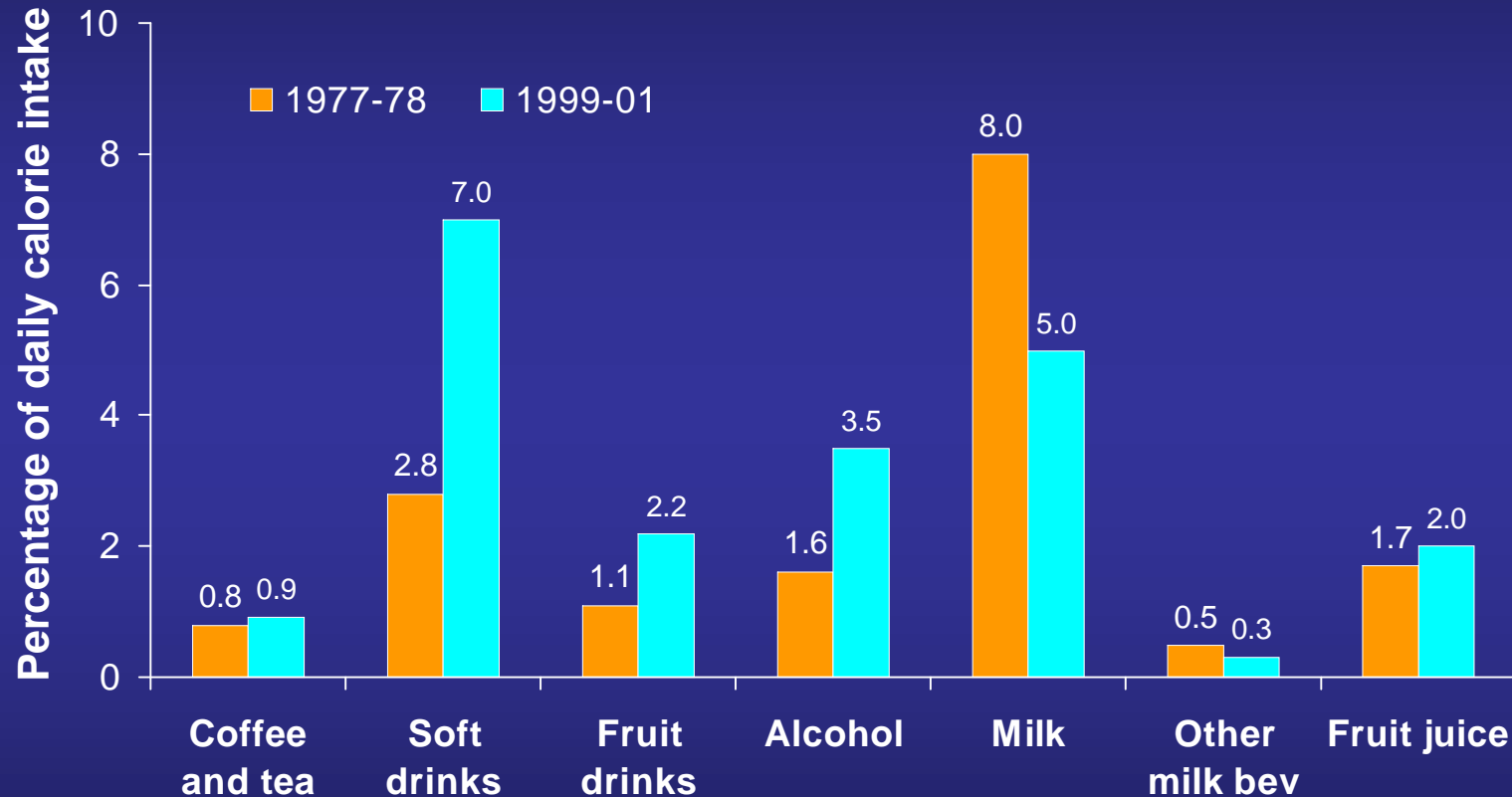
Accessed at: http://www.hin.nhlbi.nih.gov/oei_ss/PDIII/download/odf/PD2.pdf

Portion Sizes for Selected Foods for Individuals Aged 2 and Older, USA 1977-1998



Nielsen & Popkin 2003 JAMA 289:450-453.

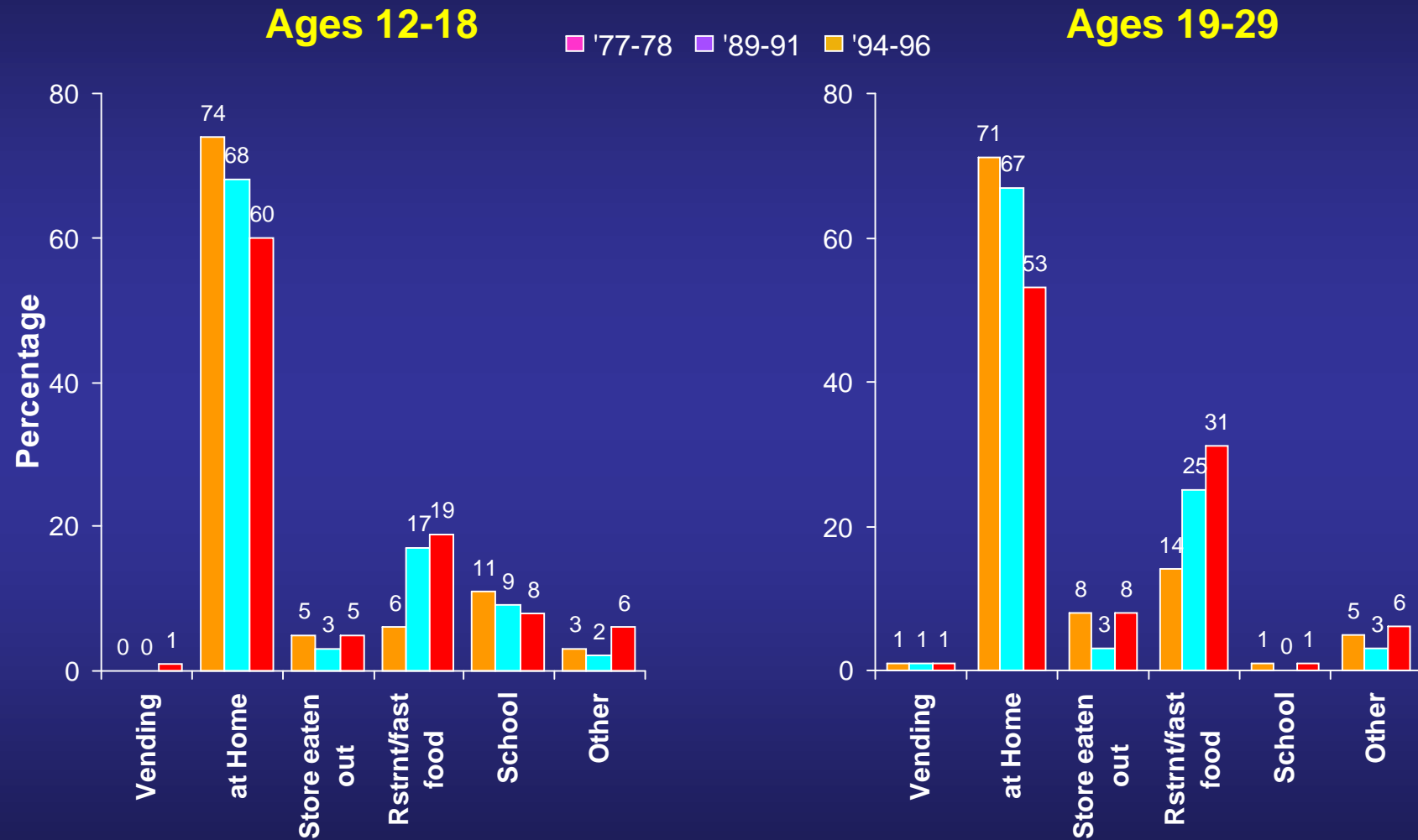
Trends in Beverage Consumption Between 1977 and 2001 (% total daily calorie intake from each beverage for all Americans ≥ 2 yrs)



Source: Source: Nielsen & Popkin 2004 Am J Prev Med 27: 205-10.

*All changes significant at the 0.01 level between 1977-78 and 1999-2001

Total Energy Intake by Location, 1977- 96



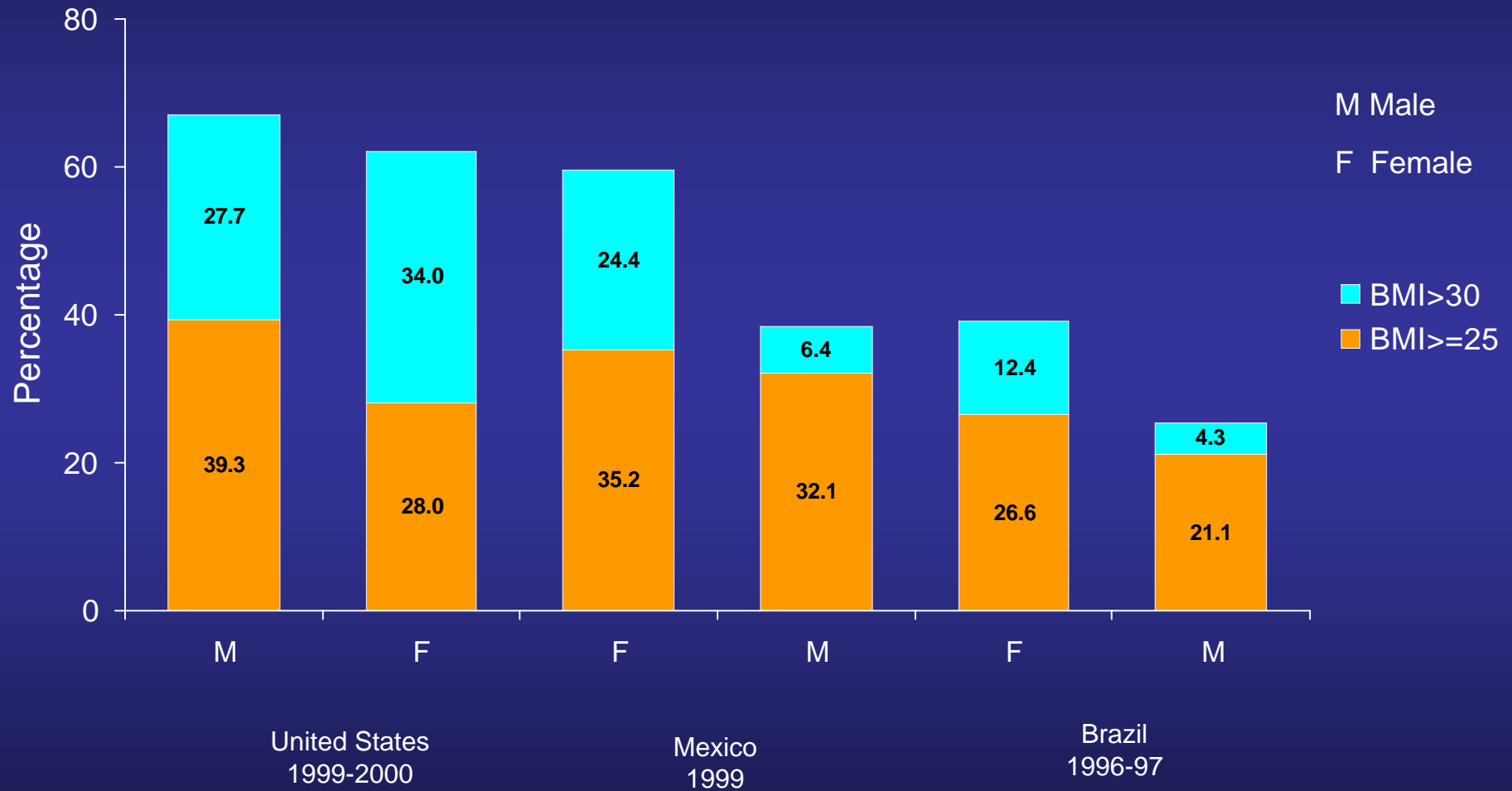
Nielsen et. Al. (2002). Obesity Research 10: 370-378.

U.S. Trends in Overweight Children and Adolescents (slide 1 of 2)

Age, sex, race, and Hispanic origin ¹	1963–65 1966–70 ²	1971–74	1976–80 ³	1988–94	1999–2002
	Percent of Population (standard error)				
6–11 years of age					
Both sexes ⁴	4.2	4.0	6.5	11.3 (1.0)	15.8 (1.1)
Boys	4.0	4.3	6.6	11.6 (1.3)	16.9 (1.3)
Not Hispanic or Latino:					
White only	--	--	6.1	10.7 (2.0)	14.0 (1.5)
Black or African-American only	--	--	6.8	12.3 (1.4)	17.0 (1.5)
Mexican	--	--	13.3	17.5 (2.4)	26.5 (2.2)
Girls ⁵	4.5	3.6	6.4	11.0 (1.4)	14.7 (1.6)
Not Hispanic or Latino:					
White only	--	--	5.2	*9.8 (2.0)	13.1 (2.3)
Black or African-American only	--	--	11.2	17.0 (1.6)	22.8 (2.5)
Mexican	--	--	9.8	15.3 (2.5)	17.1 (2.0)

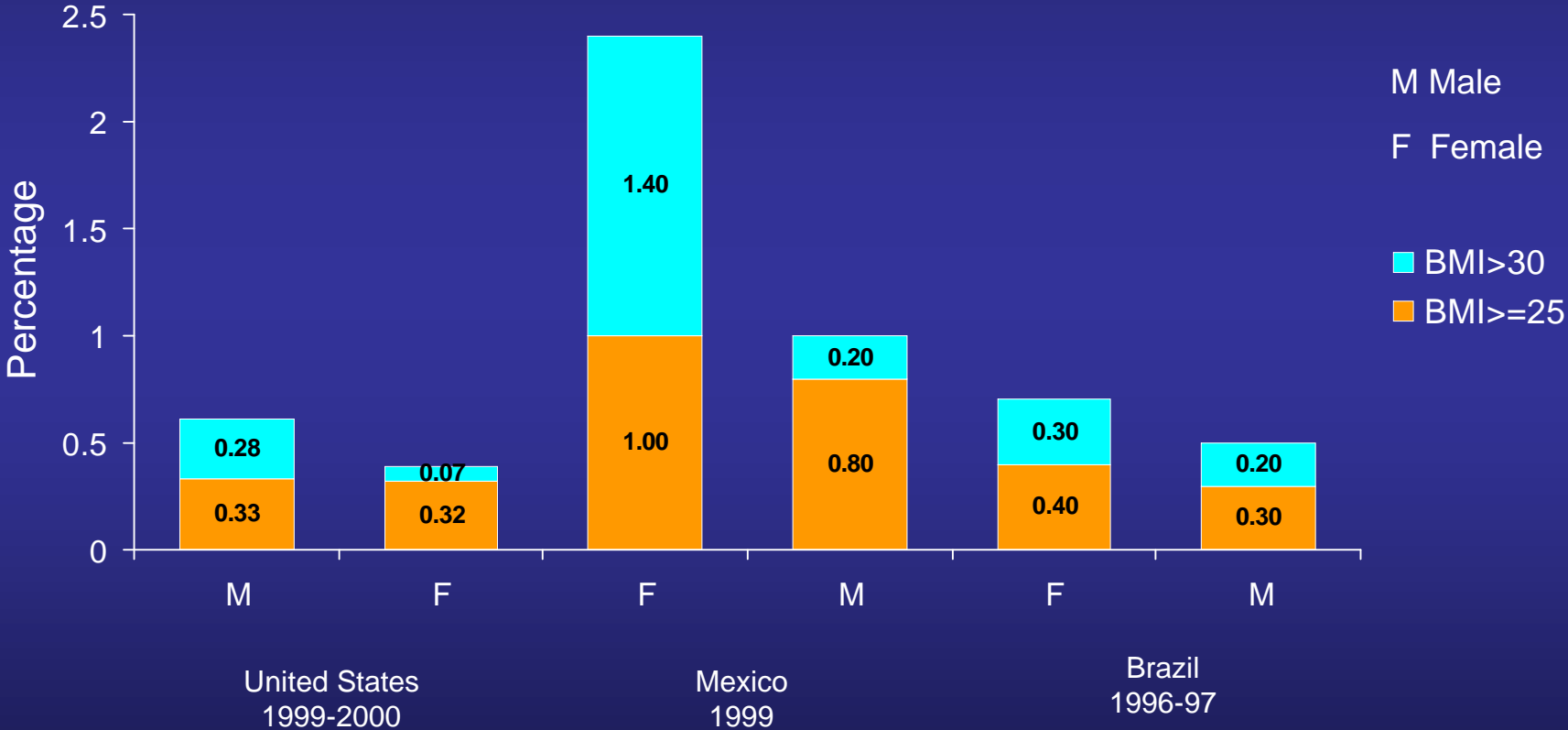
*Estimated are considered unreliable. Data preceded by an asterisk have a relative standard error of 20% to 30% -- Data not available ¹ Persons of Mexican origin may be of any race ² Data for 1963–65 are for children 6–11 years of age; data for 1966–70 are for adolescents 12–17 years of age, not 12–19 years ³ Data for Mexicans are for 1982–84 ⁴ Includes persons of all races and Hispanic origin, not just those shown separately ⁵ Excludes pregnant women starting with 1971–74. Pregnancy status not available for 1963–65 and 1966–70.

Obesity Patterns in the Americas



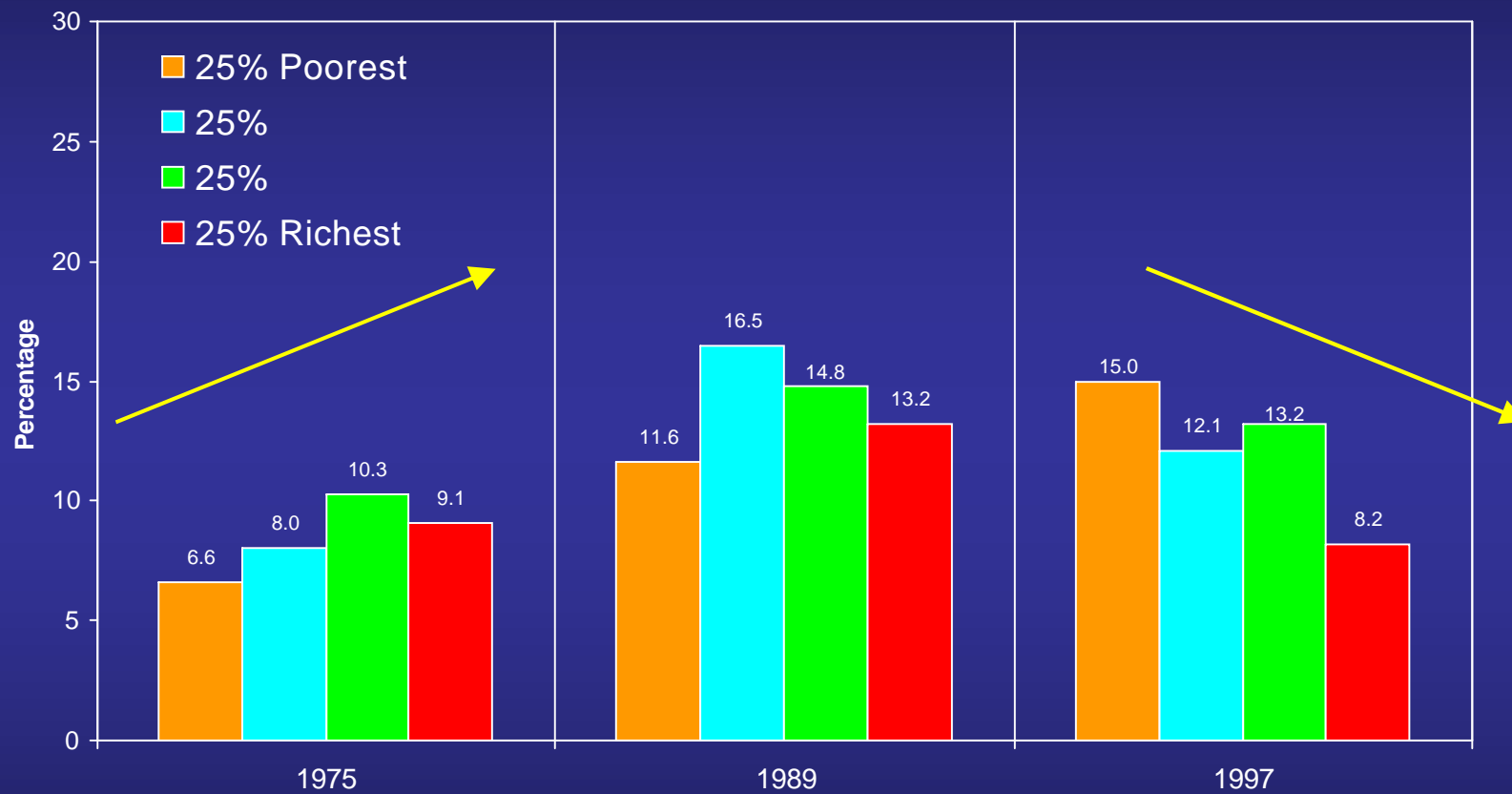
Obesity Trends Among Adults in the Americas

(the annual percentage point increase in prevalence)



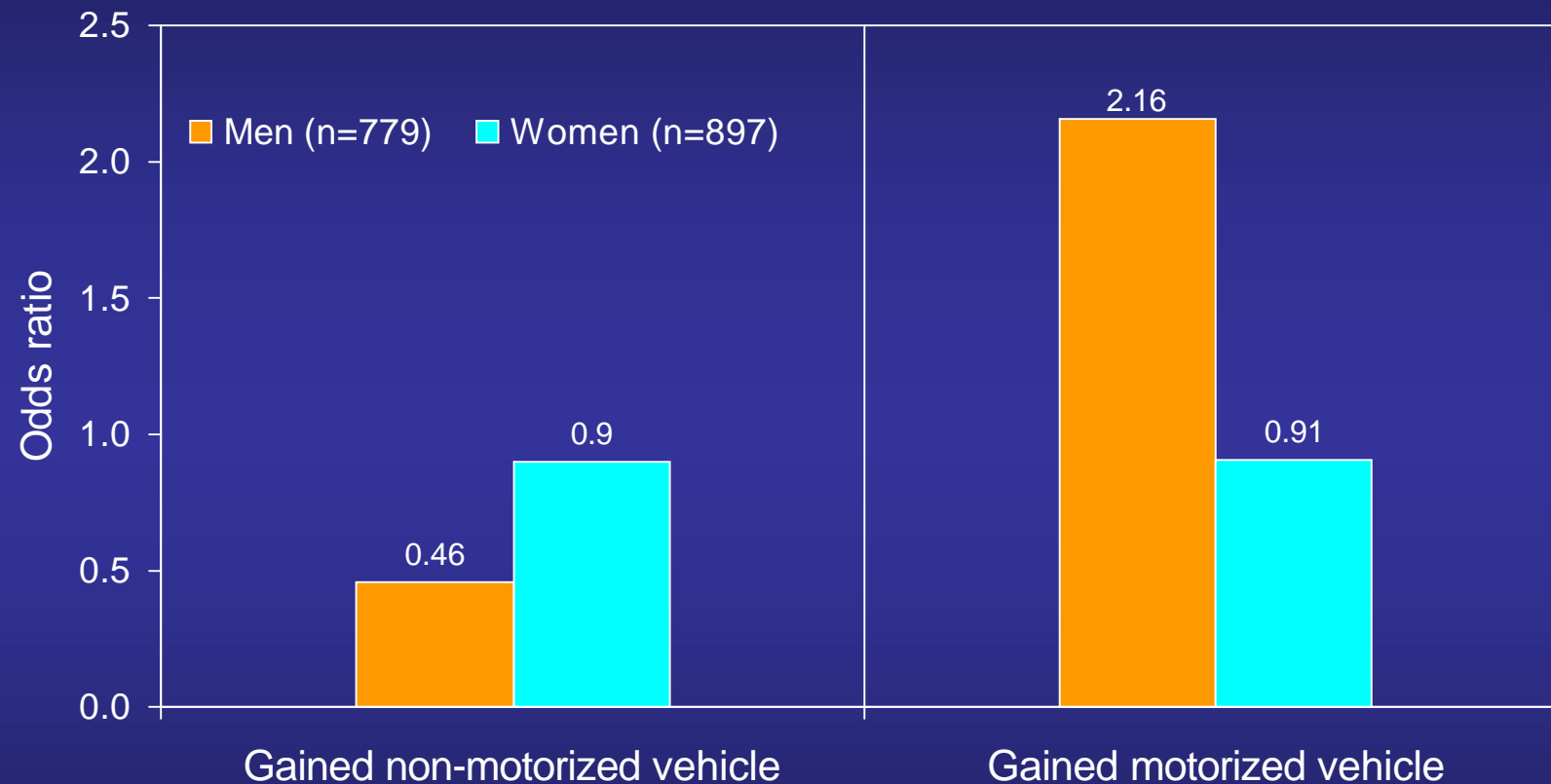
Source: Popkin (2002) Pub Health Nutr. 5 :93-103.

The Shifting of Obesity Toward the Poorest Women In Southeast Brasil



Source: Monteiro, Conde and Popkin 2002 - Pub Health Nut 5(1A): 105-112

Odds of Becoming Overweight/obese According to Household Vehicle Acquisition: 1989 to 1997

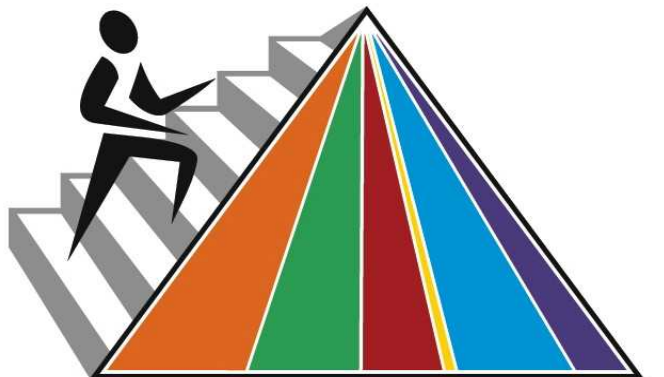


No change in vehicle ownership was the referent category. Adjusted for baseline age, weight, education, urban residence and change in work-related activity, energy intake, smoking status, alcohol consumption, income, and television ownership. Those who were obese in 1989 were excluded.



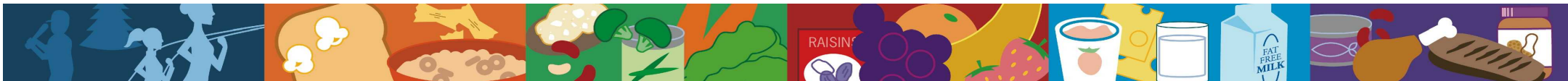
MyPyramid

USDA's New Food Guidance System



MyPyramid.gov
STEPS TO A HEALTHIER YOU





Mix up your choices within each food group.



Focus on fruits. Eat a variety of fruits—whether fresh, frozen, canned, or dried—rather than fruit juice for most of your fruit choices. For a 2,000-calorie diet, you will need 2 cups of fruit each day (for example, 1 small banana, 1 large orange, and ¼ cup of dried apricots or peaches).



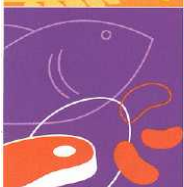
Vary your veggies. Eat more dark green veggies, such as broccoli, kale, and other dark leafy greens; orange veggies, such as carrots, sweetpotatoes, pumpkin, and winter squash; and beans and peas, such as pinto beans, kidney beans, black beans, garbanzo beans, split peas, and lentils.



Get your calcium-rich foods. Get 3 cups of low-fat or fat-free milk—or an equivalent amount of low-fat yogurt and/or low-fat cheese (1½ ounces of cheese equals 1 cup of milk)—every day. For kids aged 2 to 8, it's 2 cups of milk. If you don't or can't consume milk, choose lactose-free milk products and/or calcium-fortified foods and beverages.



Make half your grains whole. Eat at least 3 ounces of whole-grain cereals, breads, crackers, rice, or pasta every day. One ounce is about 1 slice of bread, 1 cup of breakfast cereal, or ½ cup of cooked rice or pasta. Look to see that grains such as wheat, rice, oats, or corn are referred to as "whole" in the list of ingredients.



Go lean with protein. Choose lean meats and poultry. Bake it, broil it, or grill it. And vary your protein choices—with more fish, beans, peas, nuts, and seeds.

Know the limits on fats, salt, and sugars. Read the Nutrition Facts label on foods. Look for foods low in saturated fats and *trans* fats. Choose and prepare foods and beverages with little salt (sodium) and/or added sugars (caloric sweeteners).

Key food group messages from the Dietary Guidelines and MyPyramid:

Focus on fruits.

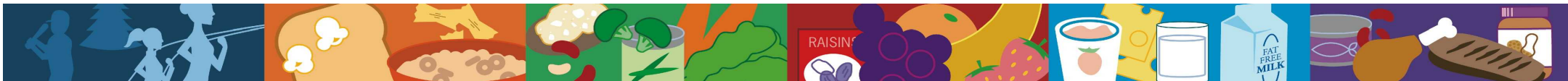
Vary your veggies.

Get your calcium-rich foods.

Make half your grains whole.

Go lean with protein.

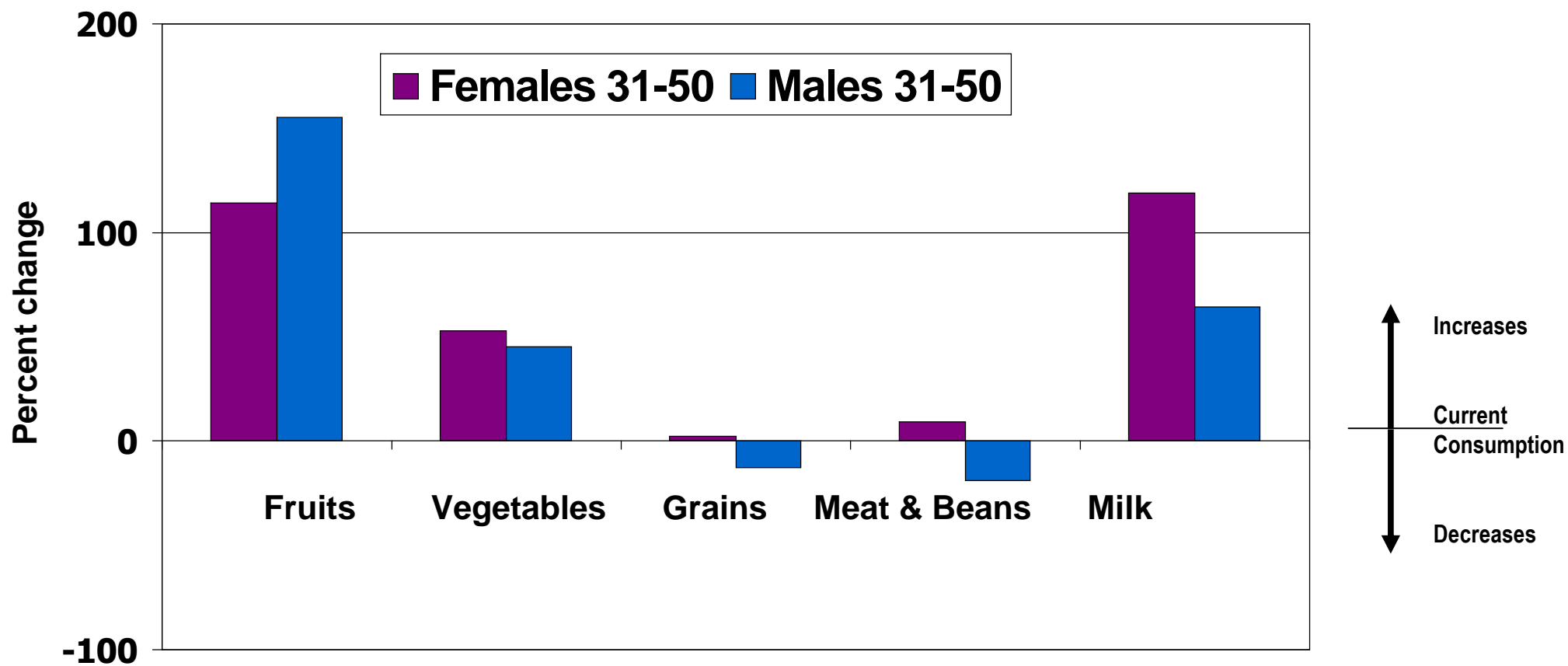
Know the limits on fats, salt, and sugars.



MyPyramid

Recommendations Compared to Consumption

Bars show percent change needed in consumption to meet recommendations

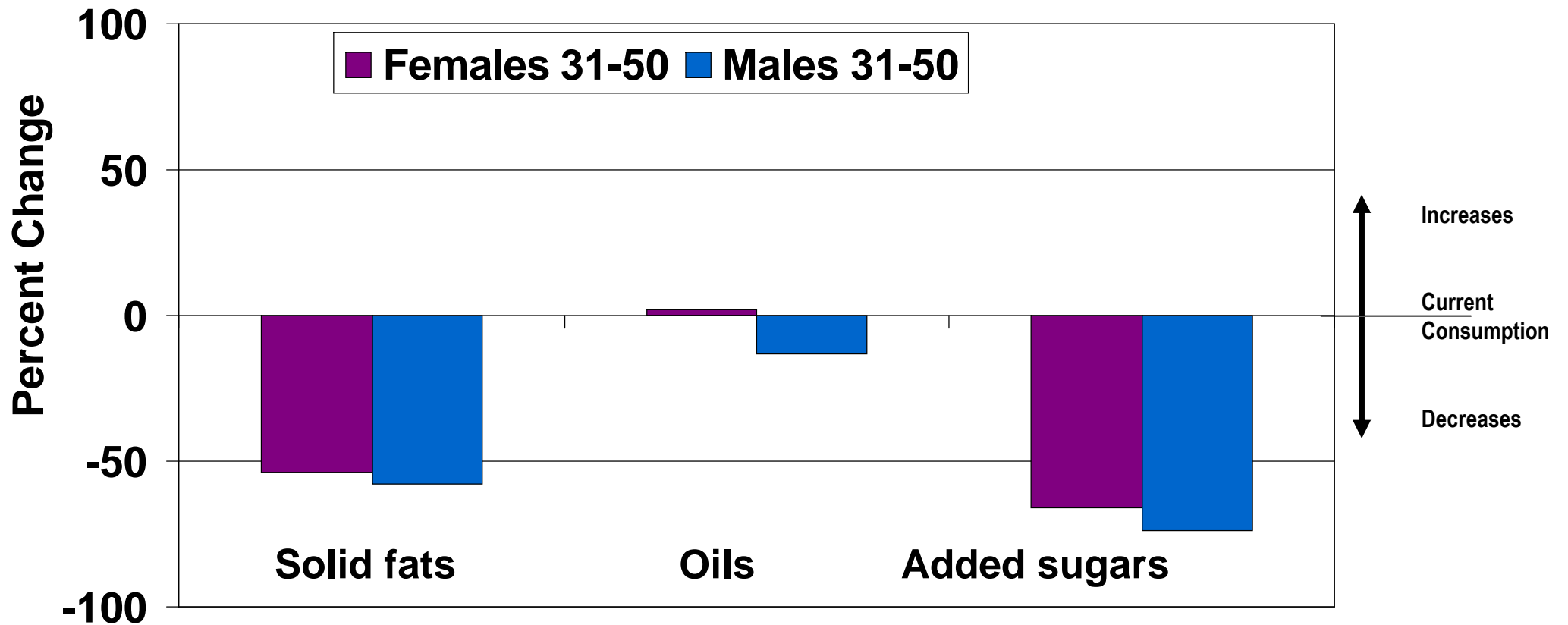




Fat, Oil & Added Sugars

Allowances Compared to Consumption

Bars show percent change needed in consumption to meet recommendations



Inside the Pyramid



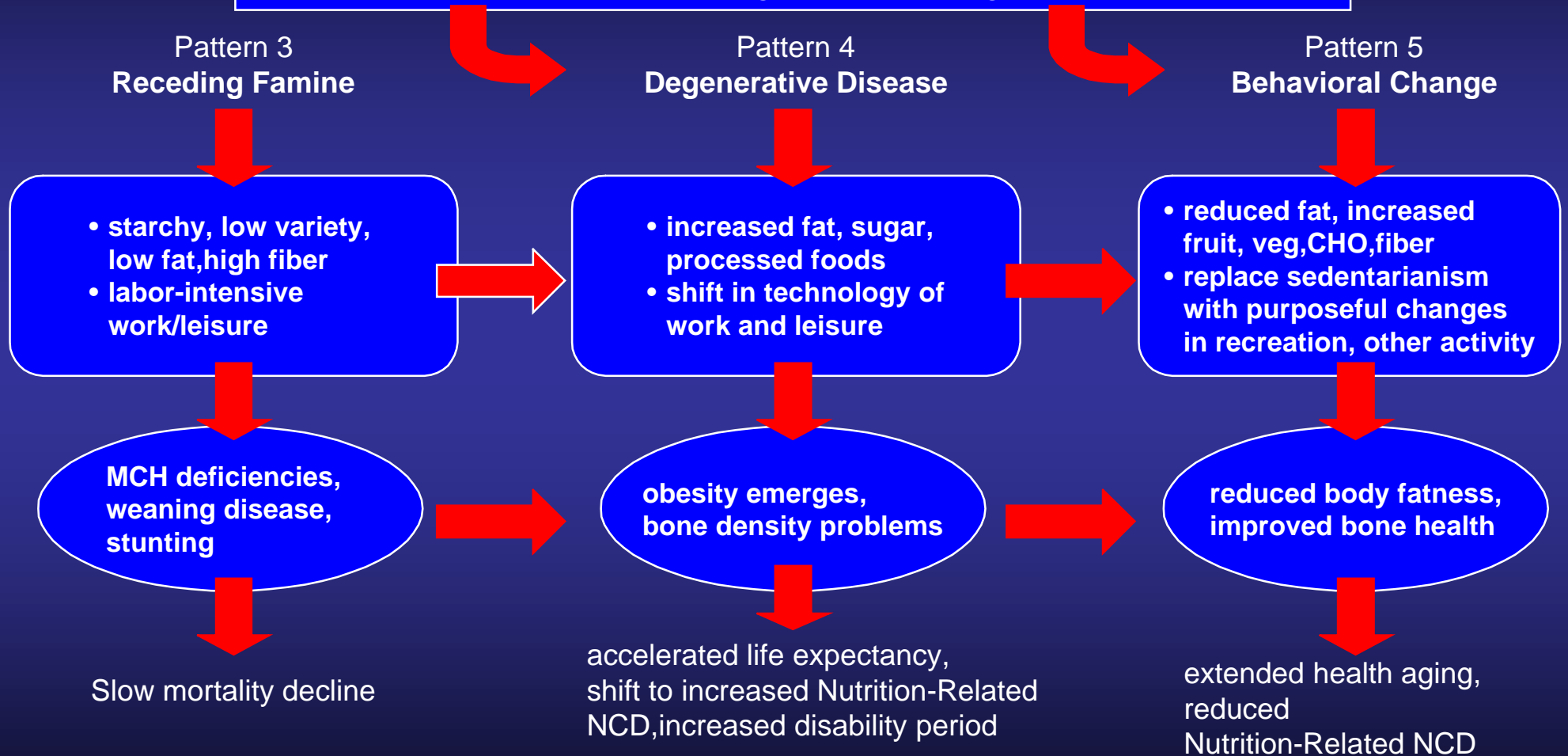
How much physical activity is needed?

At a minimum, do *moderate* intensity activity for 30 minutes most days, or preferably every day. This is in addition to your usual daily activities. Increasing the intensity or the amount of time of activity can have additional health benefits and may be needed to control body weight.

About 60 minutes a day of moderate physical activity may be needed to prevent weight gain. For those who have lost weight, at least 60 to 90 minutes a day may be needed to maintain the weight loss. At the same time, calorie needs should not be exceeded. Children and teenagers should be physically active for at least 60 minutes every day, or most days.

Later Stages of the Nutrition Transition

Urbanization, economic growth, technological changes for work, leisure, & food processing, mass media growth



Source: Popkin (2002). Pub. Health Nutr 5:93-103.

MIKE SMITH USA TODAY 2002
UNITED FEATURE SHIP
SMITHTOONS.COM

We finally found the
Weapons of Mass
Destruction!



By Mike Smith, Las Vegas Sun, for USA TODAY