

# PUBLIC HEALTH: Addressing health disparities

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# What is public health?

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Promotes health and prevents disease in the population as a whole—an environmental vs. an individual perspective

Emphasizes preventing disease before it occurs

Recognizes that social, cultural, economic, and political forces influence health behaviors and risk factors for disease (upstream causes)

# What is epidemiology?

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Branch of public health

Study of the distribution and causes of  
disease in populations

It's like a puzzle

Based on the word “epidemics”

# Public health versus clinical medicine

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## Public Health

- Emphasis on prevention
- Takes place in communities
- Focus on health of populations

## Clinical Medicine (Docs)

- Emphasis on treatment
- Takes place in hospitals and clinics
- Focus on health of individuals

# Public health contributions

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Name the great achievements in  
public health in the last century  
(1890-2000)

# Top ten achievements

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1. Vaccinations (polio, measles, mumps)
2. Control of infectious diseases (tuberculosis, diphtheria)
3. Automobile/vehicle safety (seat belts, safer cars, helmets)
4. Safer workplaces
5. Family planning
6. Fluoridation of drinking water( healthier teeth)
7. Healthier mothers and babies (medical care, nutrition)
8. Safer and healthier foods
9. Knowledge that smoking causes diseases
10. Knowledge of risk factors for heart disease and stroke

# Two main kinds of disease

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Infectious diseases transmitted by an organism  
(short term, you die or get well quickly)

Chronic diseases (last a long time)

Name some infectious and chronic diseases

Which kind was more common in the 1890s?

Which kind is more common now?

# Infectious disease examples

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Common cold, flu

AIDS

STDs

Chickenpox, measles, mumps

Tuberculosis

Pneumonia

Diphtheria



# Chronic disease examples

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Heart Disease

Stroke

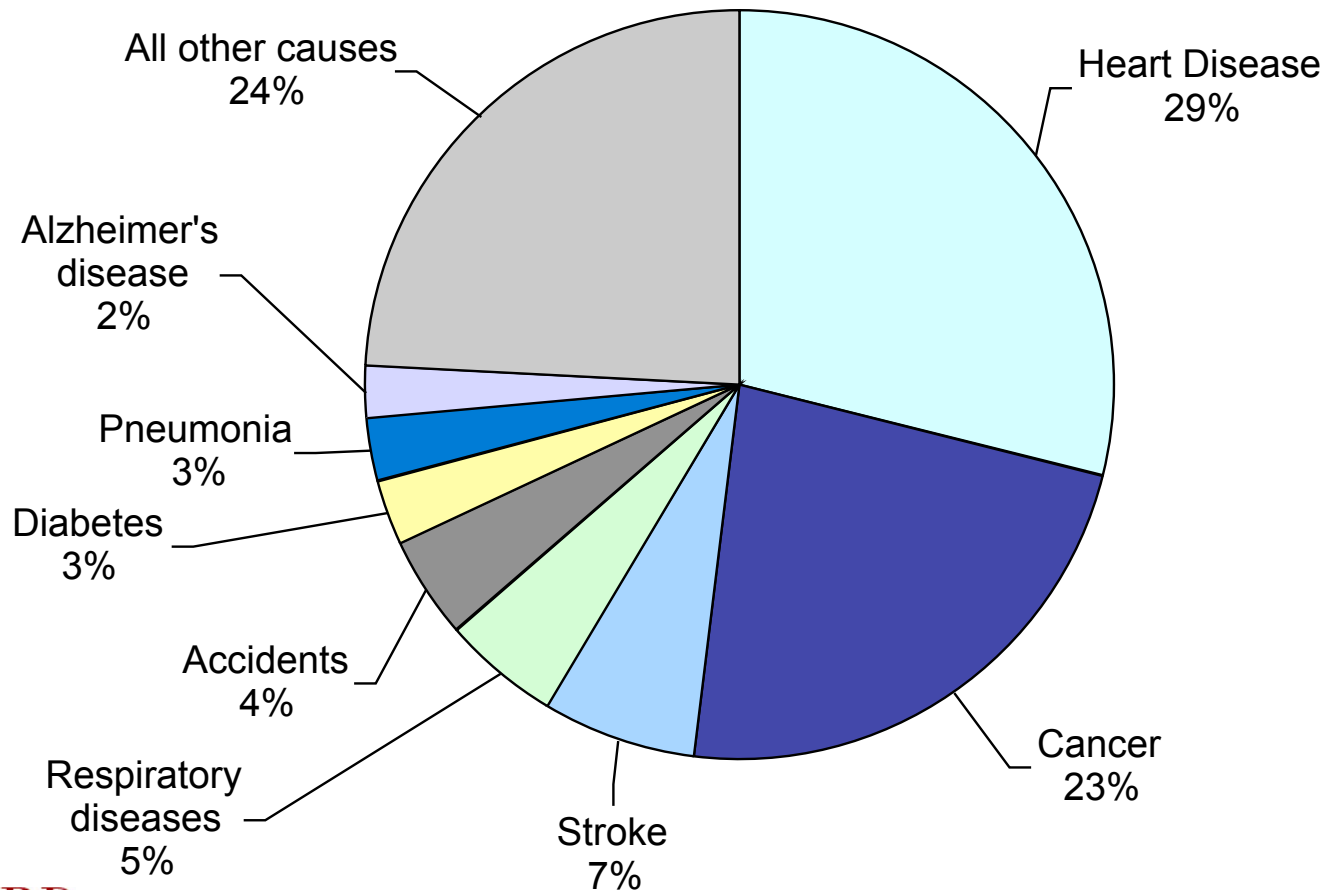
Cancer

Arthritis

Who knows someone with a chronic disease?

# Causes of death, U.S., 2001

CDC, National Vital Statistics Reports 52 (3), 9/18/03



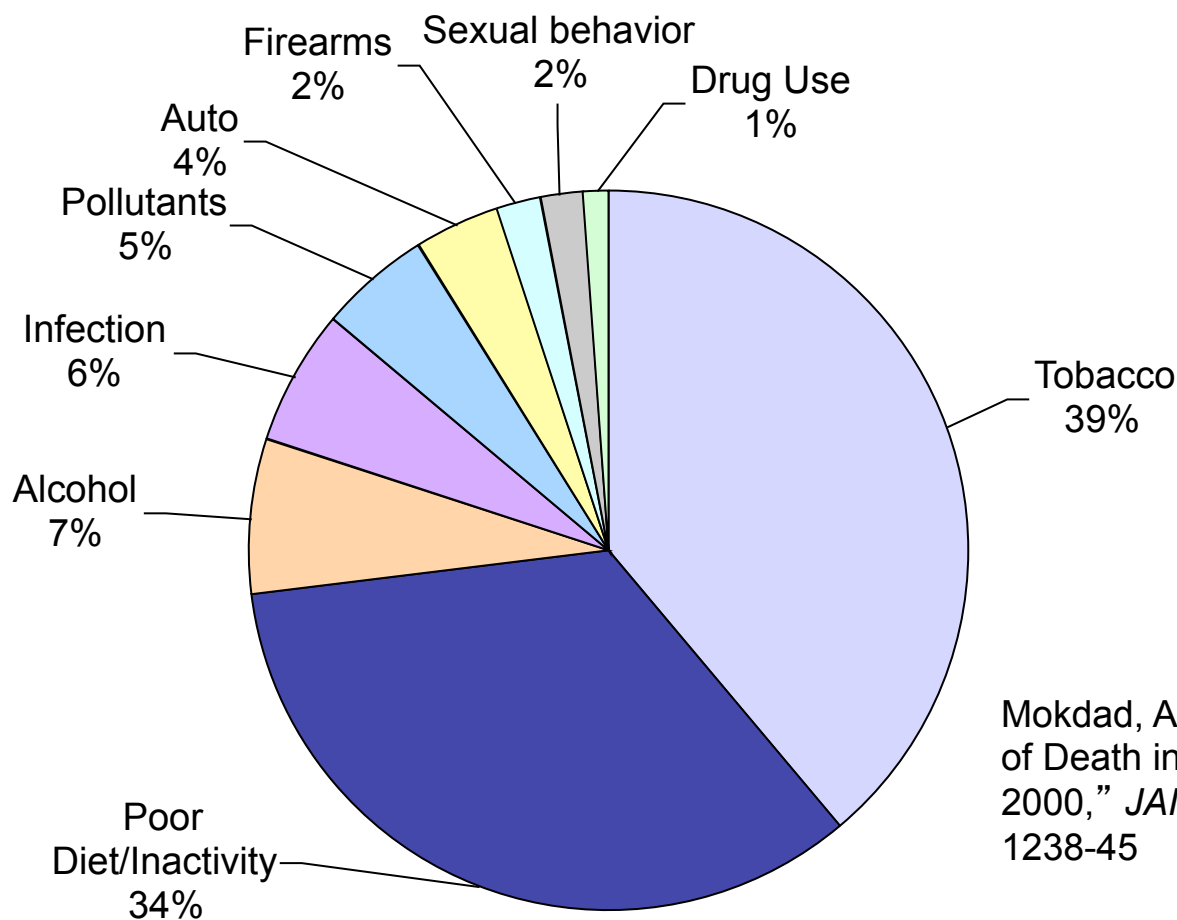
# Chronic disease risk factors: preventable and modifiable

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- Cigarette smoking
- Physical inactivity
- Poor diet
- Overweight and obesity
- Diabetes
- High blood cholesterol
- High blood pressure

# Risk factors/health behaviors linked to causes of death (thousands), U.S., 2000



Mokdad, Alie et al, "Actual Causes of Death in the United States, 2000," *JAMA*, March 10, 2004, 1238-45

# Chronic disease health disparities

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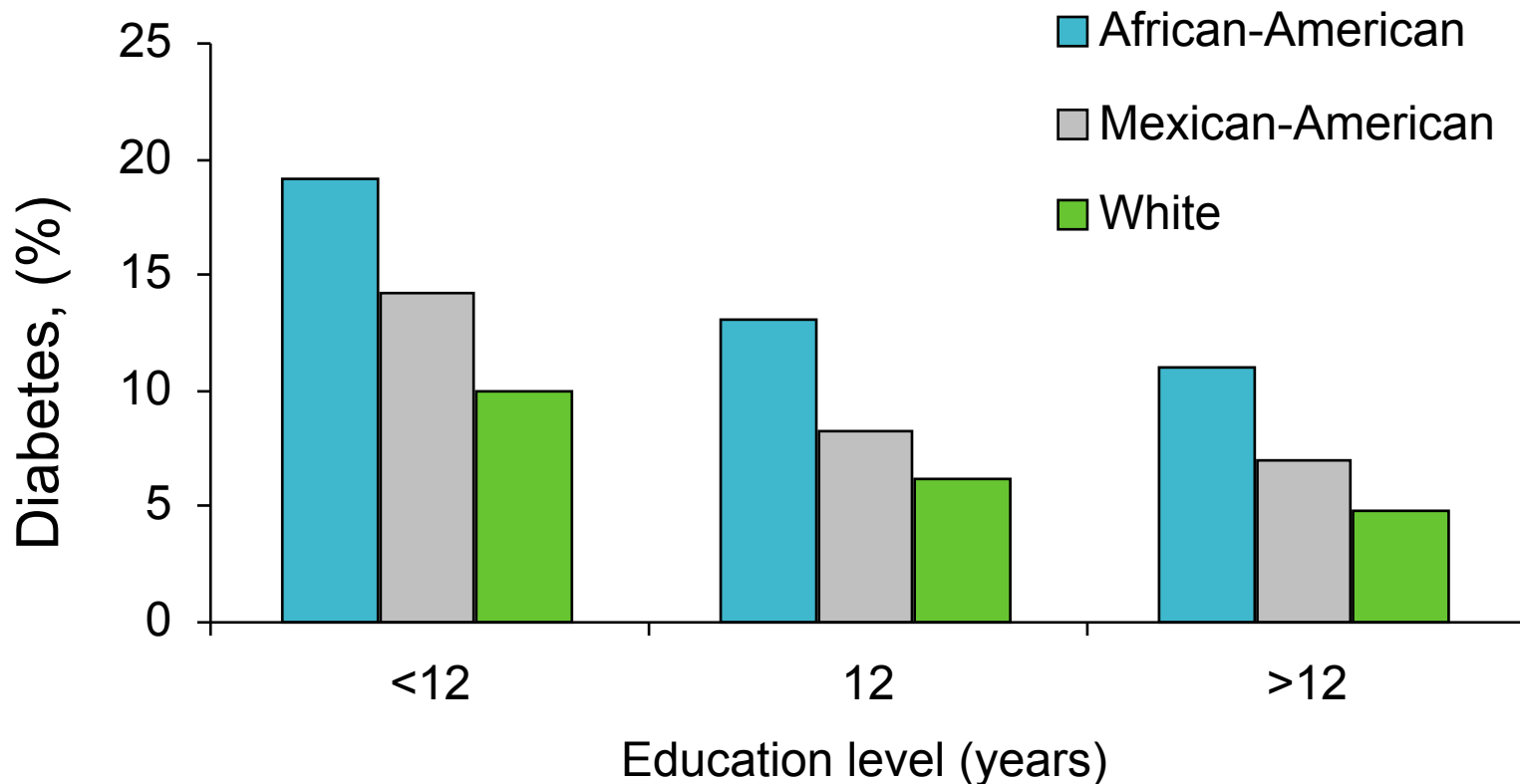
- On average, higher rates of almost all chronic diseases among:
  - Those with lower incomes
  - Those with lower educational attainment
  - Ethnic minority groups
- These disparities have existed for decades, in the U.S. and other countries

# Both ethnicity and education are important

## Disparities in Type II diabetes by ethnicity and level of education

Women, 25-64, adjusted for age

Winkleby, et al. *JAMA*, 1998;280:356-362



# Where do we stand?

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- Overall health for all has improved tremendously in last 50 years
- Large declines in chronic diseases across all educational, income, and racial/ethnic groups
- Efforts to reduce health disparities largely unsuccessful because responsibility for change remains with individuals
- Limited focus on broader societal factors

# Large declines in age-adjusted death rates, 1972 and 2002

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<u>Cause of Death</u>	<u>Deaths/100,000 Population</u>		1972-2002	Percent
	<u>1972</u>	<u>2002</u>	<u>Difference</u>	<u>Change</u>
All causes	1,214.8	846.8	-368.0	-30.3
CVD	695.4	318.7	-376.7	-54.2
Stroke	147.3	56.3	-91.0	-61.8

From: Morbidity and Mortality: 2004 Chart Book on Cardiovascular, Lung,  
and Blood Diseases, NHLBI



# Neighborhood characteristics and health



“Individual risk factors need to be contextualized into the individuals’ social condition to understand how they are shaped by social and economic conditions.” Link and Phelan

# People, places, and health

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- Health is shaped by influences at both the individual and neighborhood level.
- Initial programs provided *people* with information, and/or skills to avoid or modify high-risk behaviors.
- Now we also consider how the social and physical environment (*places*) affect individual health behaviors and disease outcomes.

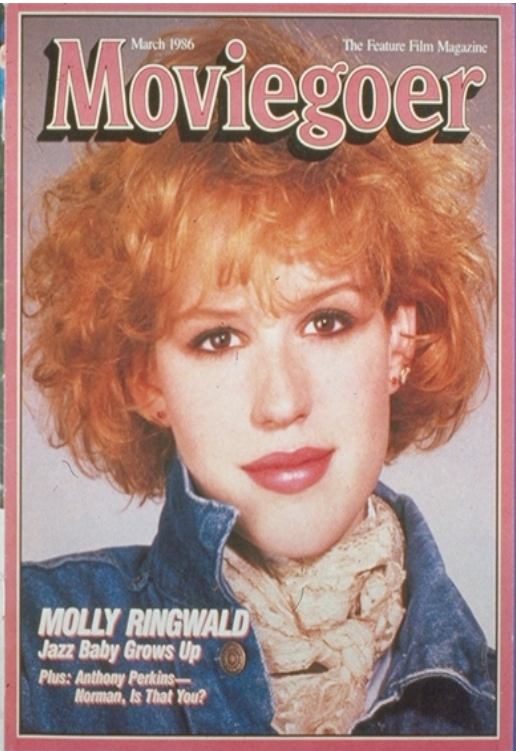
# How can one's environment influence health?

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- Exposure to cigarette advertising and promotions
- Exposure to high fat foods and large portion sizes
- Poor access to health care services
- Norms that counter healthy behaviors



# Tobacco advertising



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# Tobacco promotions



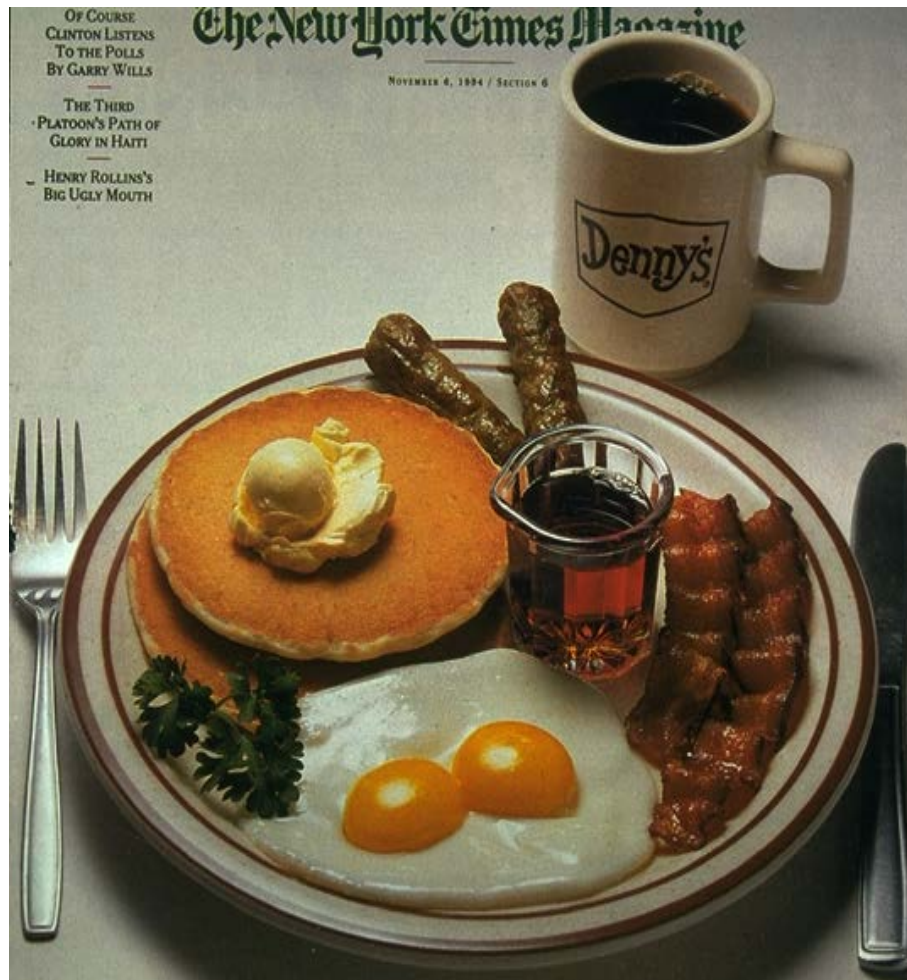


# How much does the tobacco industry spend on advertising and promotions?

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- \$8 billion or more a year
- \$3.5 billion spent on promotional items
- \$530 million on free giveaways
- \$428 million on magazine and newspaper ads
- More spent on tobacco ads in one day than on all of tobacco prevention in an entire year

# Exposure to high fat foods



# Large portion sizes: Big Macs—an increase in hamburger obesity

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1992



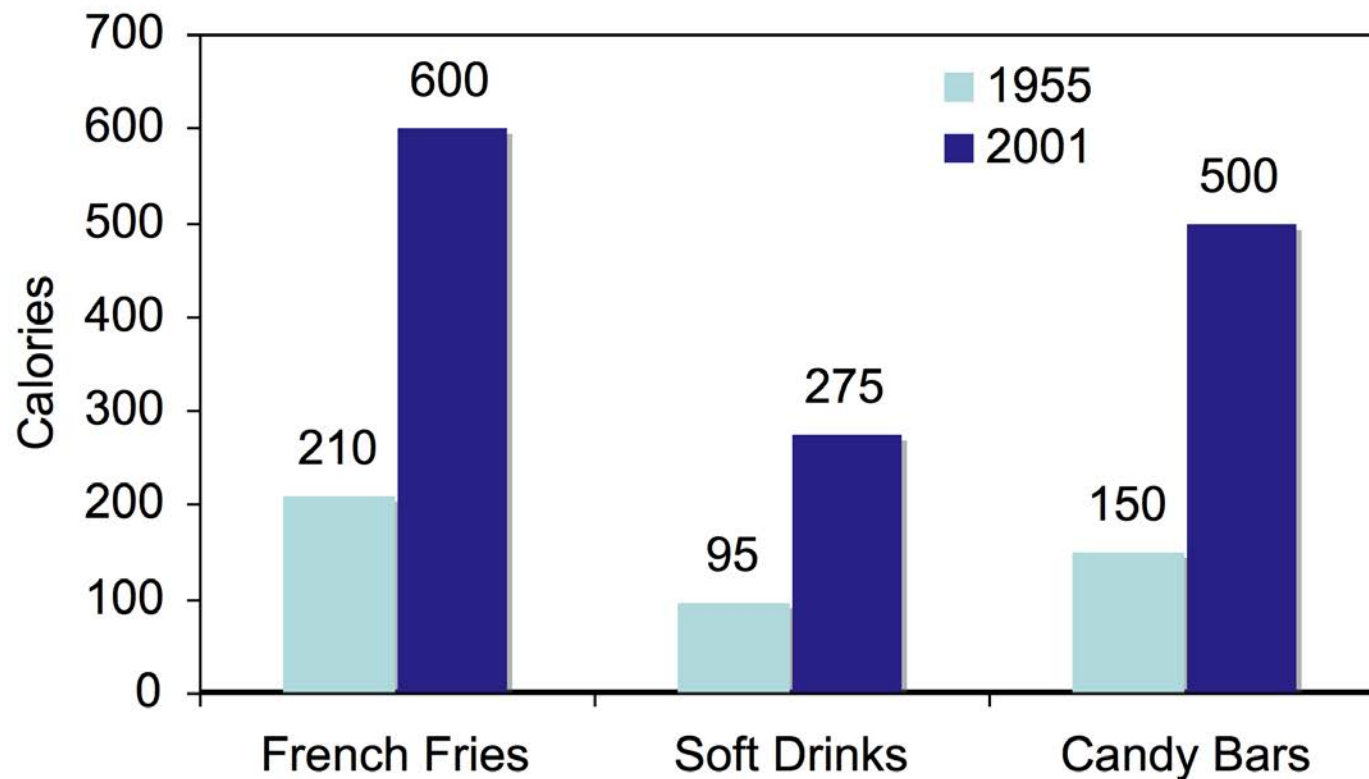
1997



2002



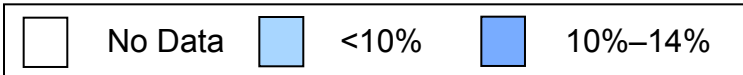
# Portion sizes have increased significantly 1955-2001



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How have changes in our  
environments influenced  
our health?

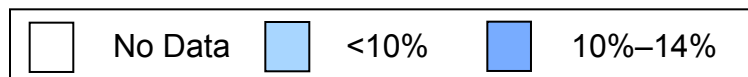
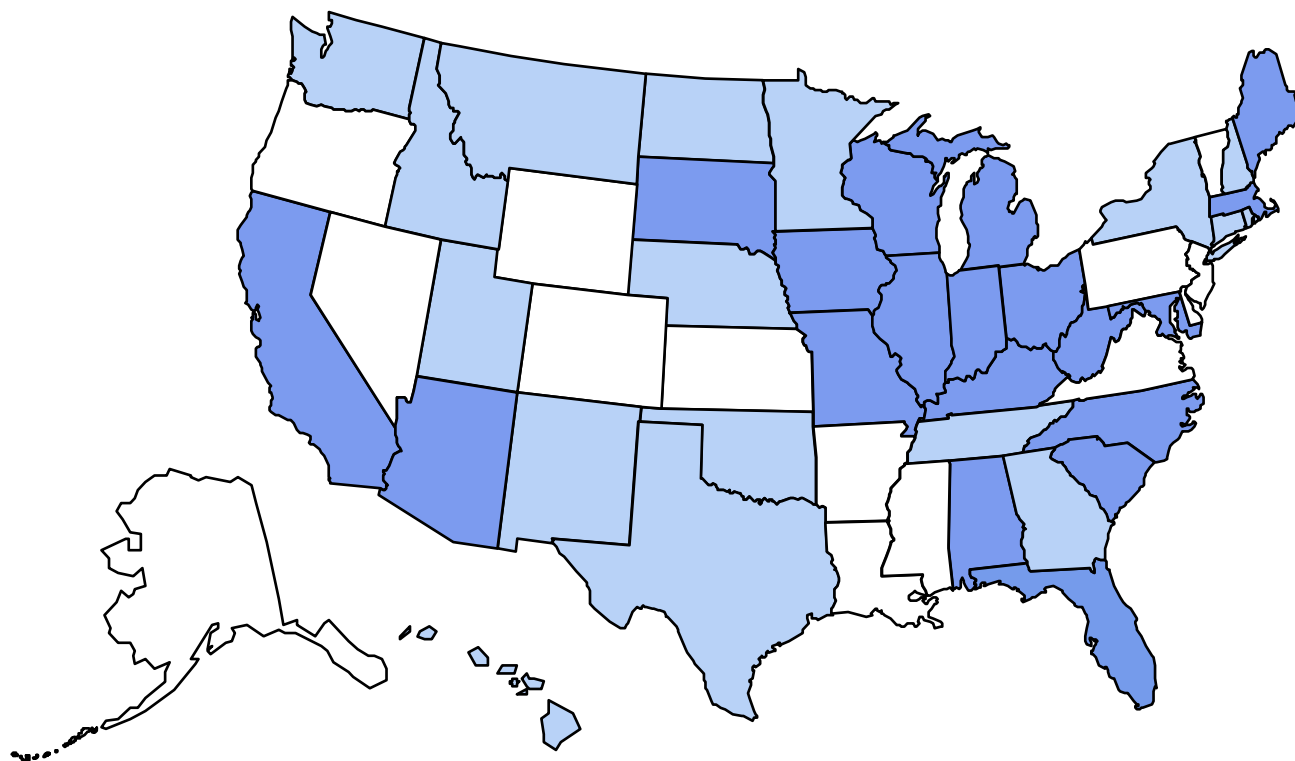
(\*BMI  $\geq 30$ , or ~ 30 lbs overweight for 5' 4" woman)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1988

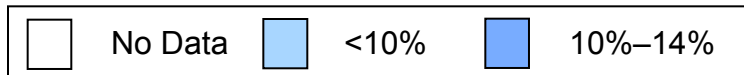
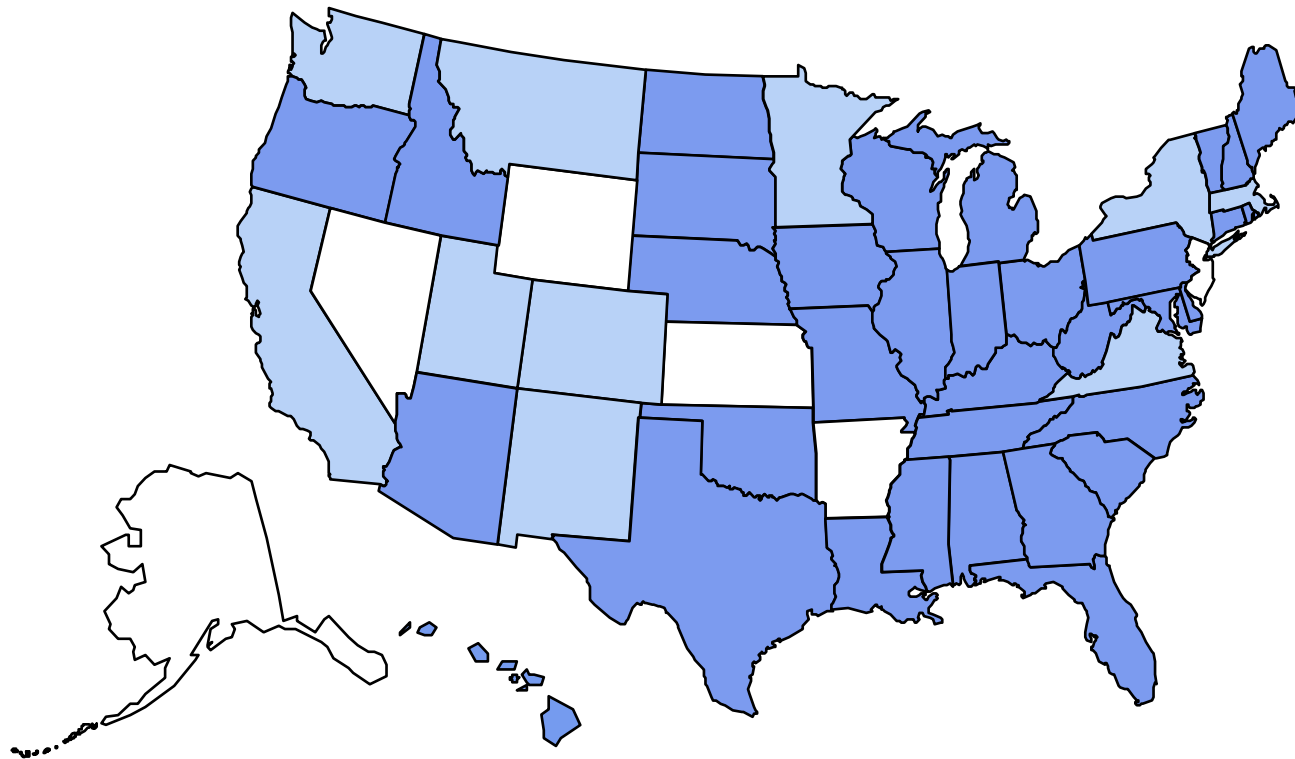
(\*BMI  $\geq 30$ , or ~ 30 lbs overweight for 5' 4" woman)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1990

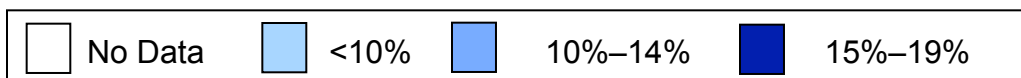
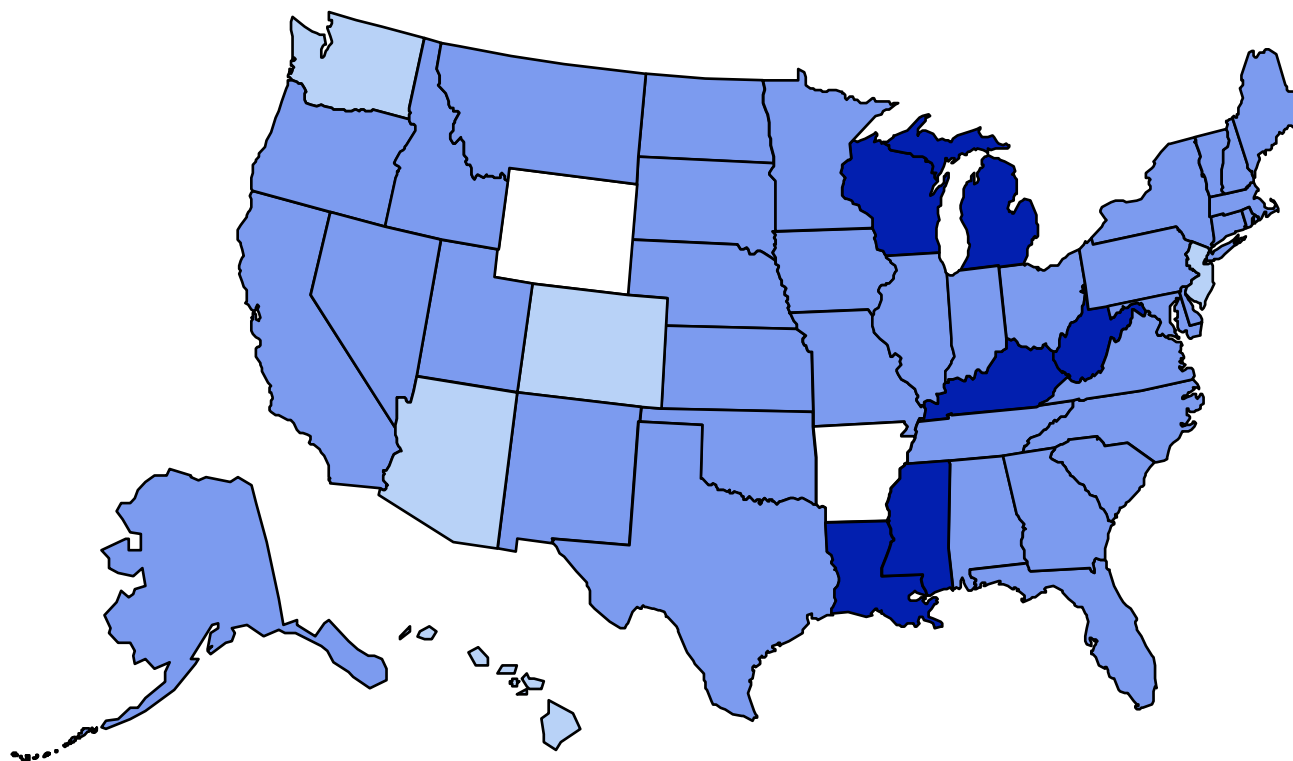
(\*BMI  $\geq 30$ , or ~ 30 lbs overweight for 5' 4" woman)



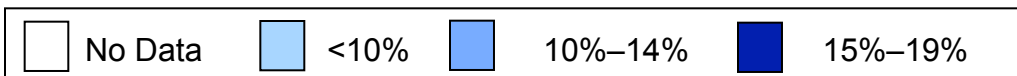
# Obesity Trends\* Among U.S. Adults

## BRFSS, 1992

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



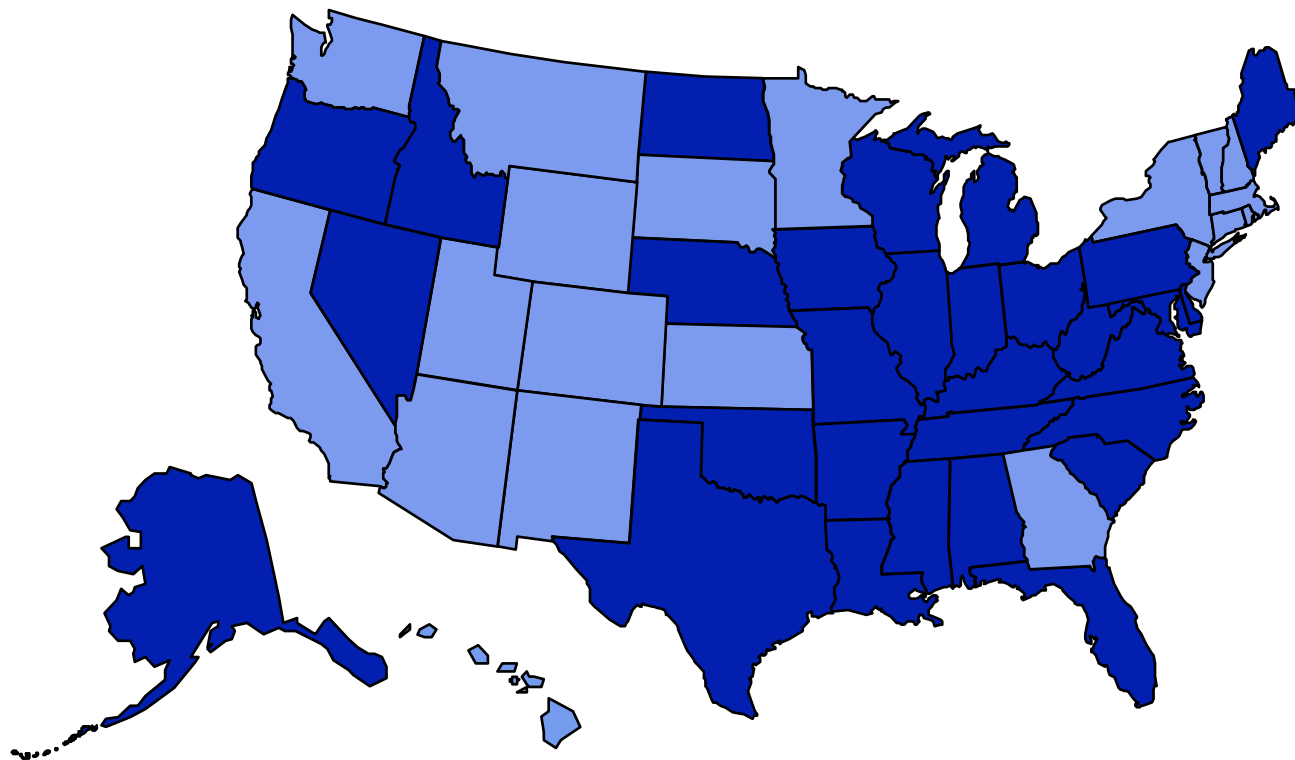
(\*BMI  $\geq 30$ , or ~ 30 lbs overweight for 5' 4" woman)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 1996

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

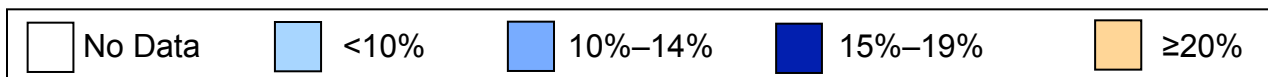
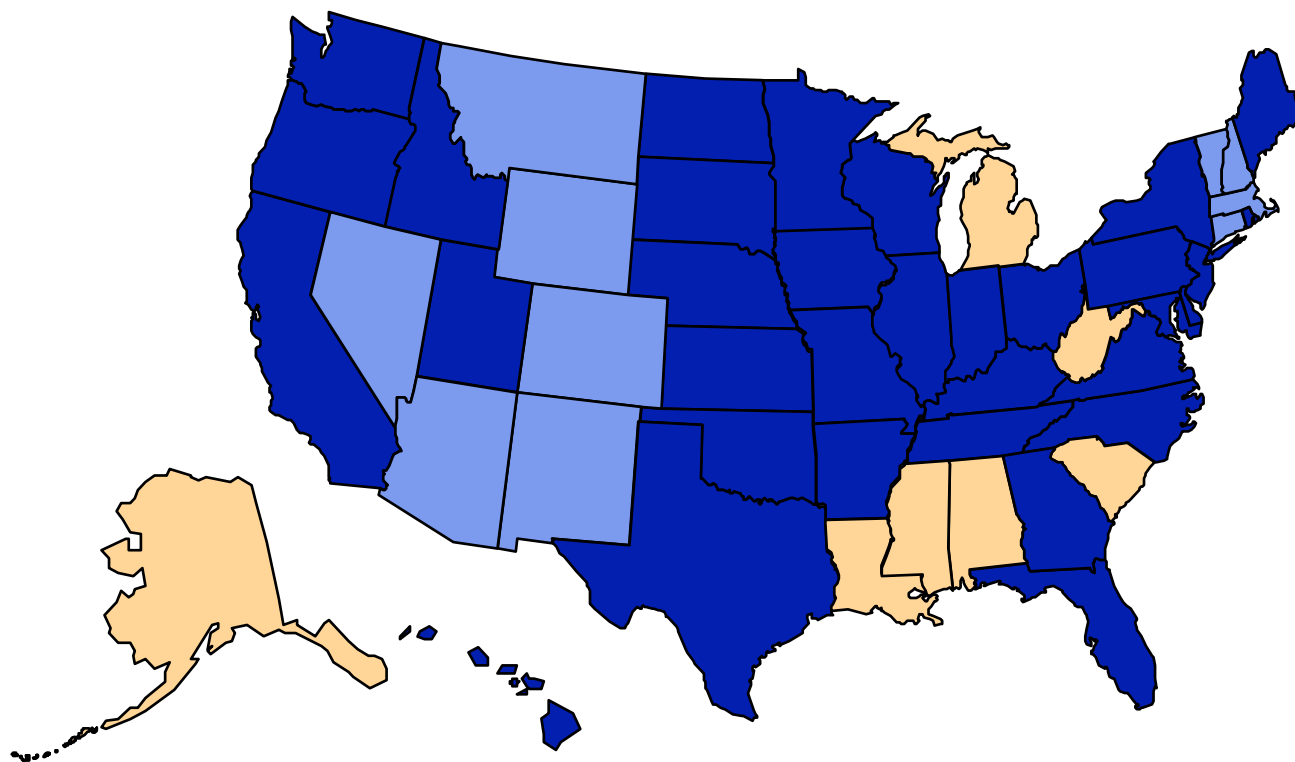




# Obesity Trends\* Among U.S. Adults

## BRFSS, 1998

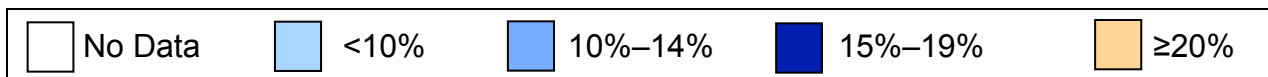
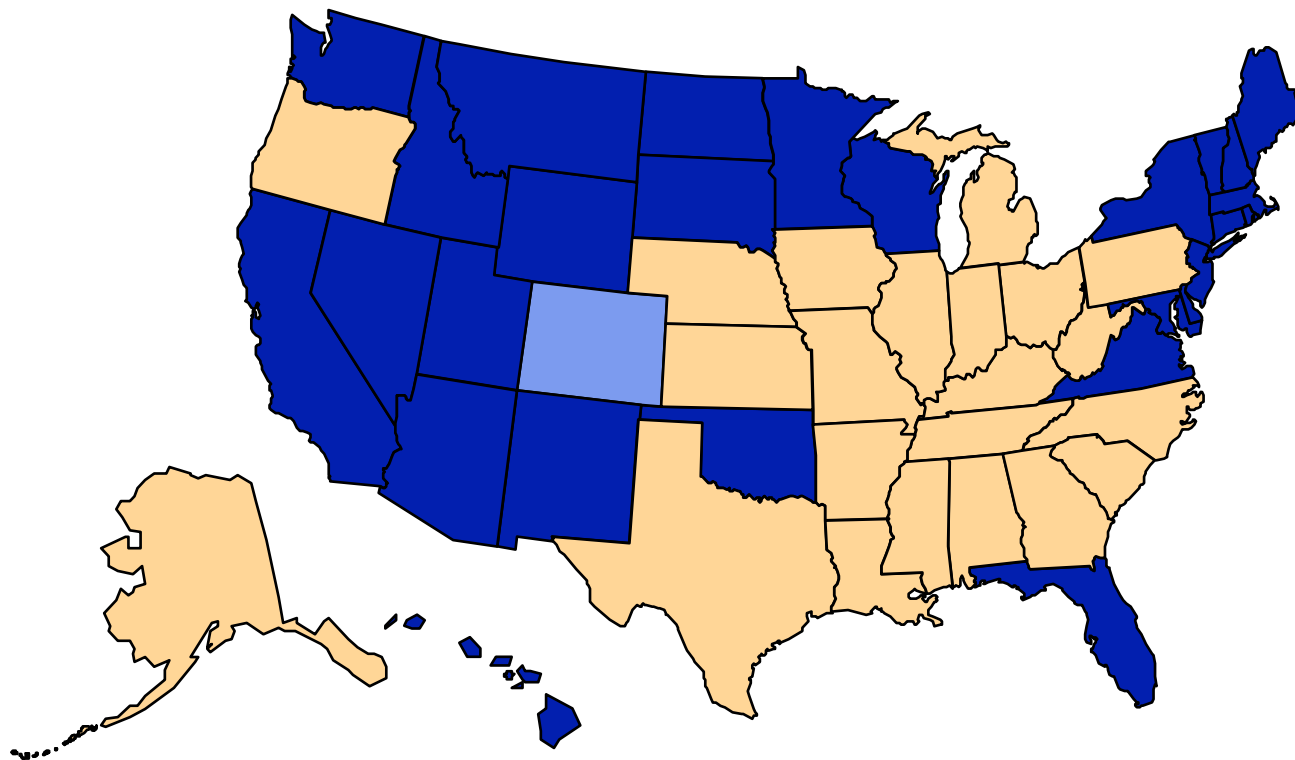
(\*BMI  $\geq 30$ , or ~ 30 lbs overweight for 5' 4" woman)



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2000

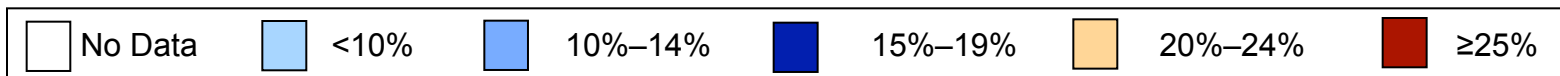
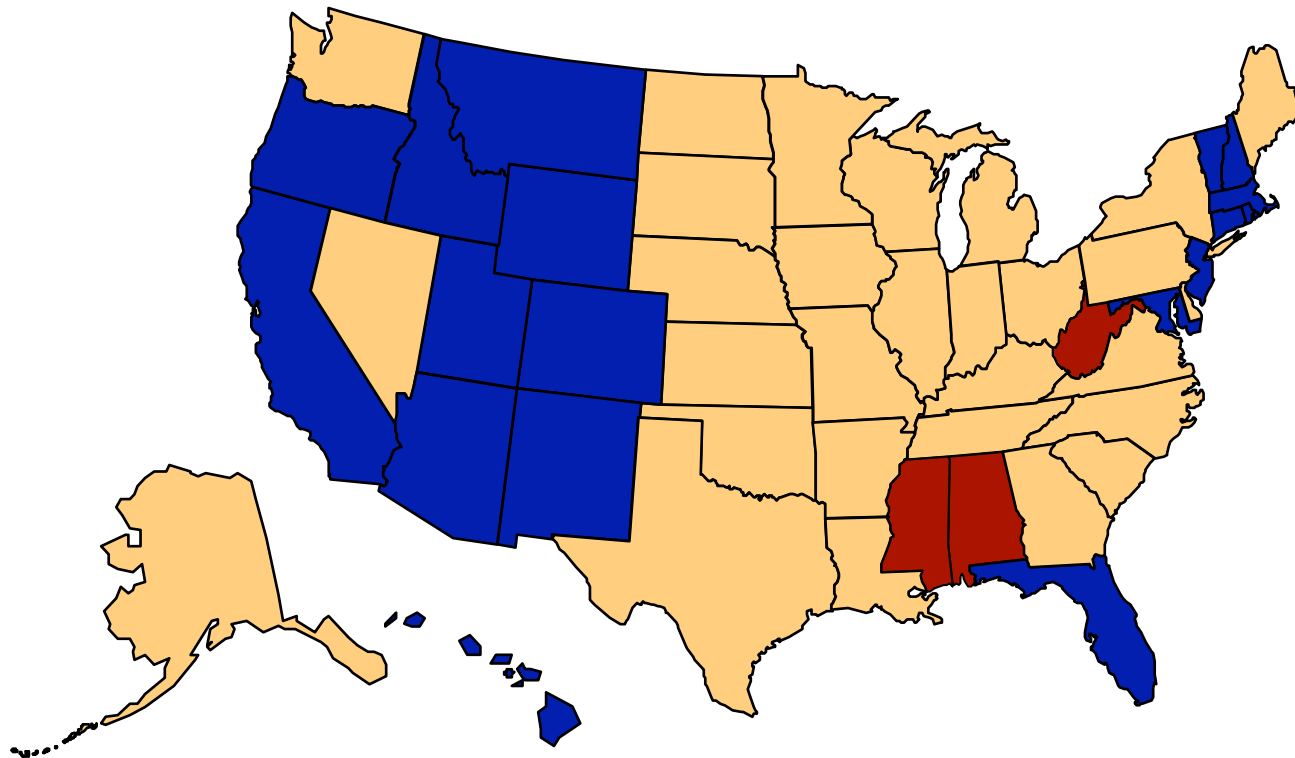
(\*BMI  $\geq 30$ , or ~ 30 lbs overweight for 5' 4" woman)



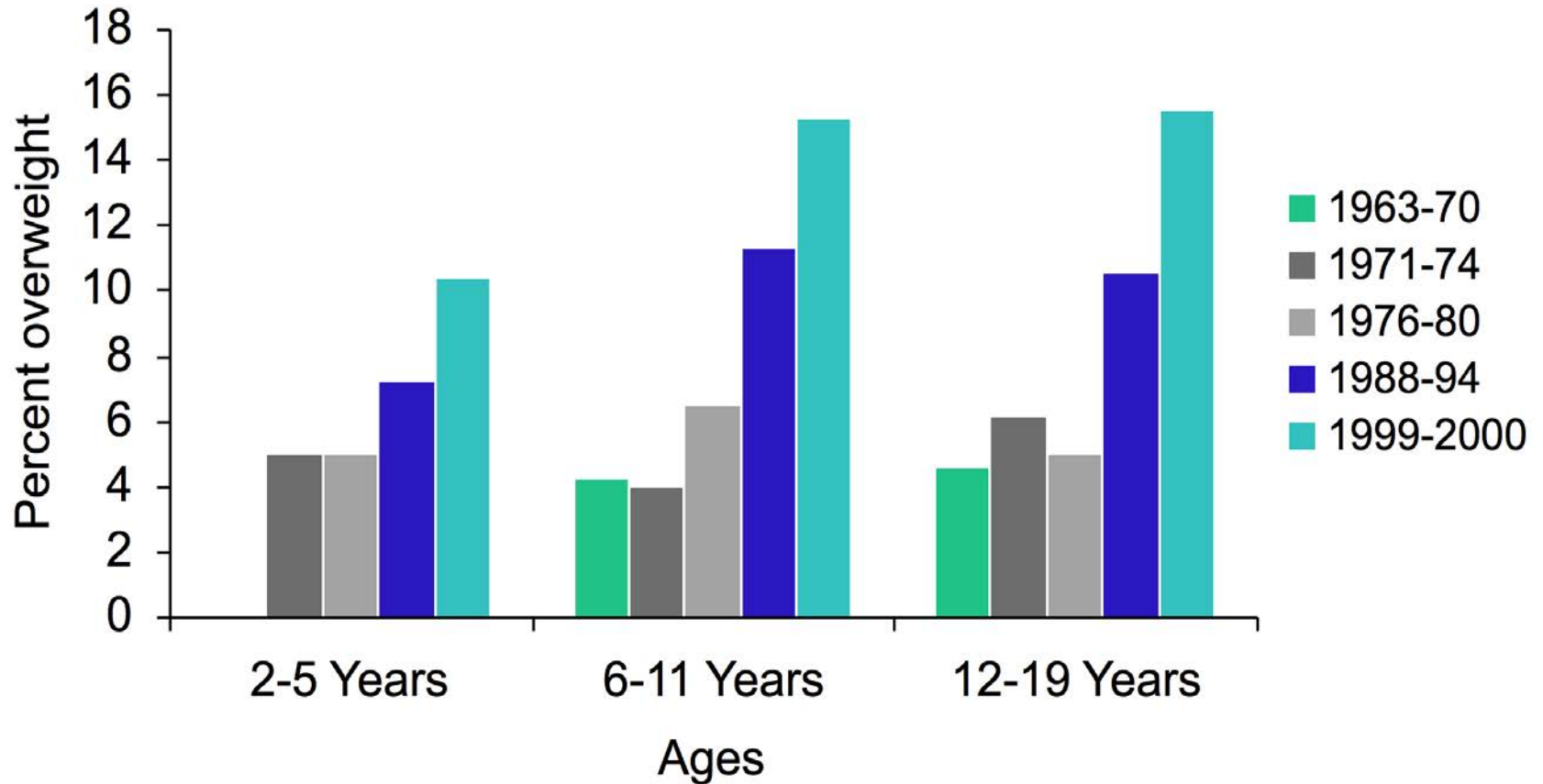
## Obesity Trends\* Among U.S. Adults

### BRFSS, 2002

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



# Dramatic increases in children's weight



# What can public health professionals do to improve health?

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- *Tailored approach*

Develop tailored programs for subgroups to provide the most suitable strategies and messages.

- *Population-wide approach*

Develop programs for everyone in population to create a consensus for healthy lifestyles and a healthy environment.

- *Neighborhood/policy approaches*

Change environments in which people live to enhance health.

# The power of education and income on health

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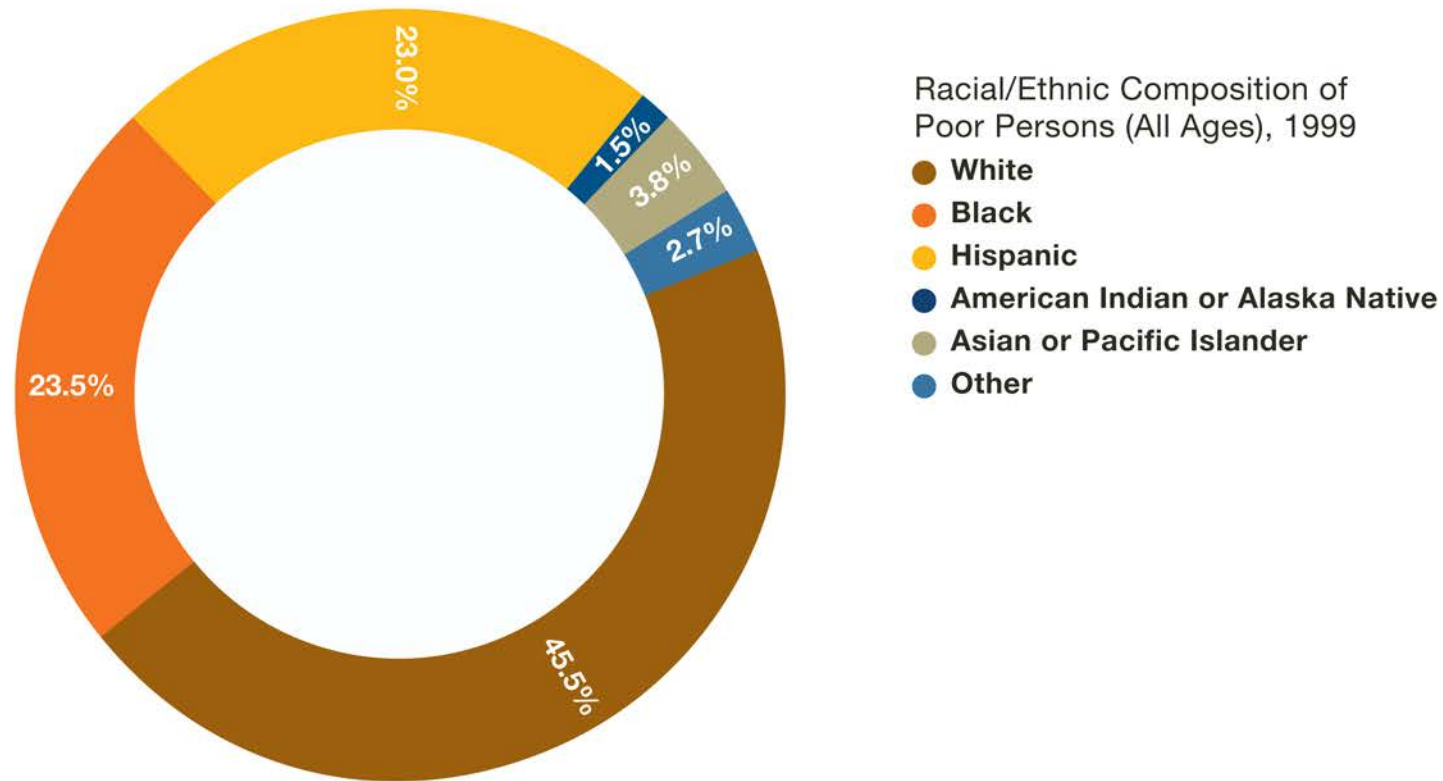
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# Whites Are the Largest Racial or Ethnic Group Among Poor Americans

Although blacks and Hispanics have higher rates of poverty, whites are the largest racial or ethnic group among poor Americans.



Prepared for the Robert Wood Johnson Foundation by the Center on Social Disparities in Health at the University of California, San Francisco.

Source: Census 2000 Summary File 4 (SF4).

'Other' includes people of two or more races. All racial groups exclude Hispanic.

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[www.commissiononhealth.org](http://www.commissiononhealth.org)

# Education: one of the most powerful predictors of health

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Low levels of education strongly related to: high rates of infectious and chronic diseases, shorter survival when sick, and shorter life expectancy.

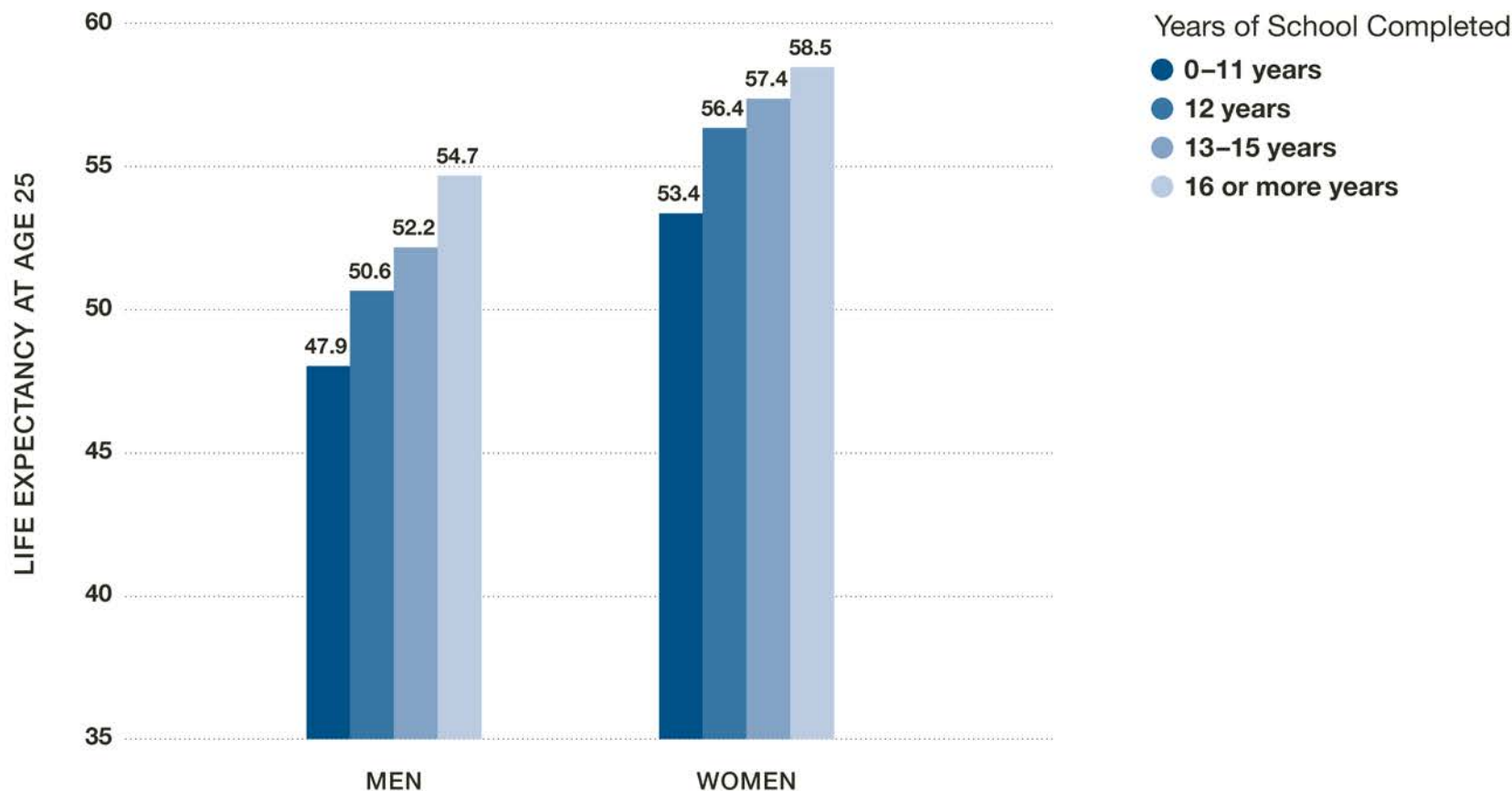
Differences remain even after health behaviors are taken into account (e.g., cigarette smoking, high blood pressure, high cholesterol, obesity).



# More Education, Longer Life

For both men and women, more education often means longer life.\*

College graduates can expect to live at least five years longer than individuals who have not finished high school.



Prepared for the Robert Wood Johnson Foundation by the Center on Social Disparities in Health at the University of California, San Francisco; and Norman Johnson, U.S. Bureau of the Census.

\*This chart describes the number of years that adults in different education groups can expect to live *beyond age 25*. For example, a 25-year-old man with 12 years of schooling can expect to live 50.6 more years and reach an age of 75.6 years.

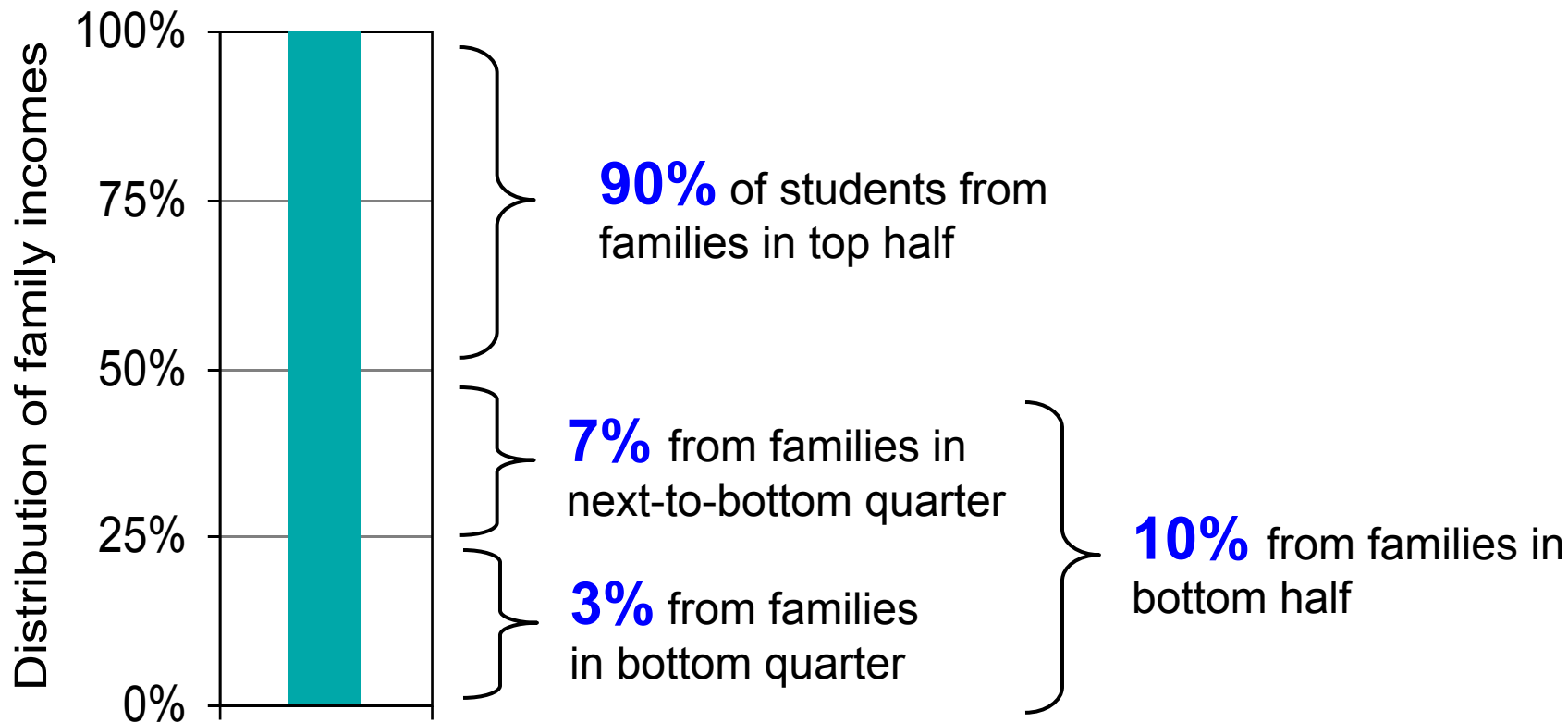
Source: National Longitudinal Mortality Study, 1988–1998.

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[www.commissiononhealth.org](http://www.commissiononhealth.org)

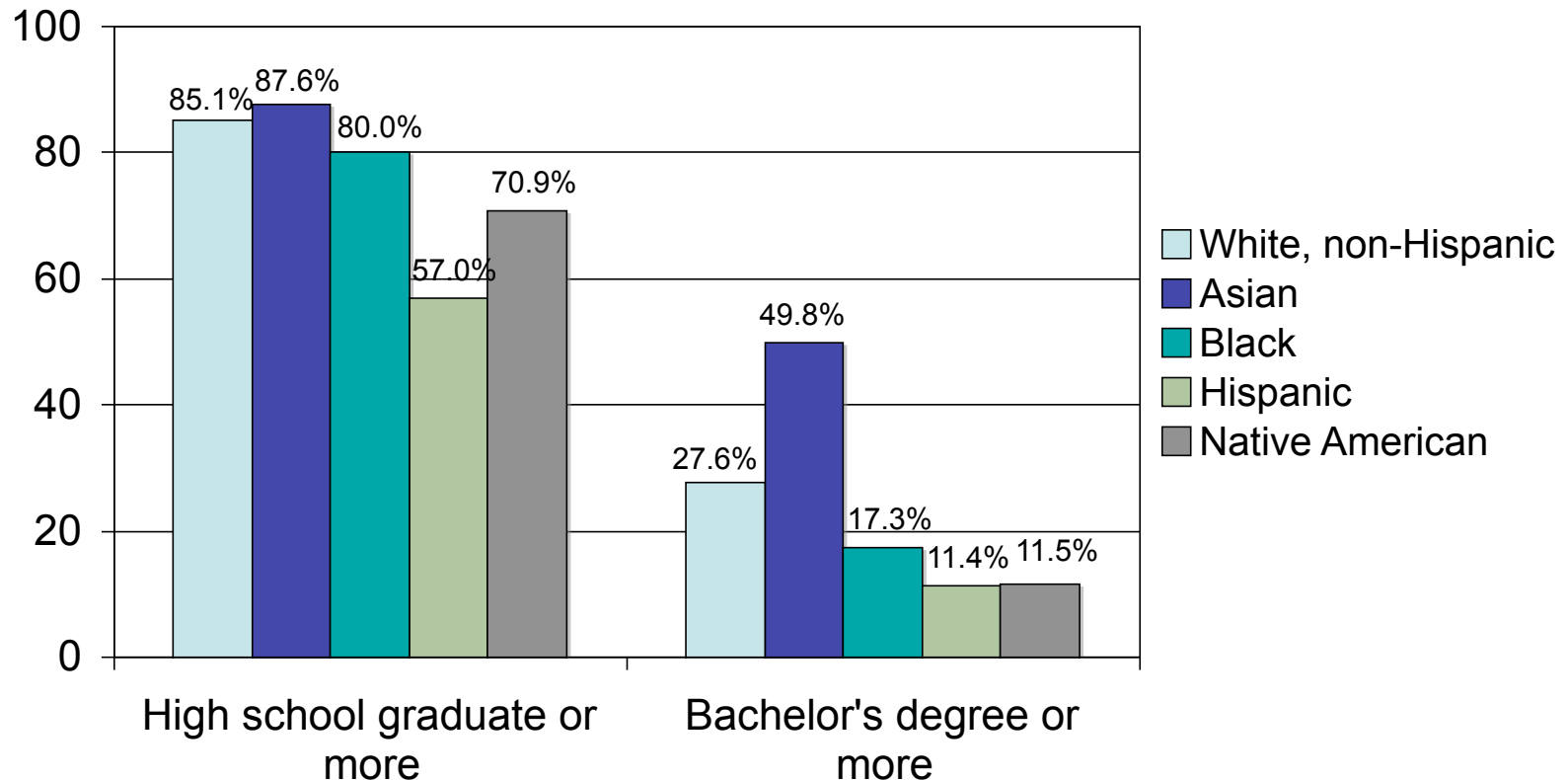
# If education is so important, shouldn't we all have the opportunity--who goes to college?

Students at the top 146 U.S. colleges by family income



Adapted from "The Perks of Privilege.  
How the Rich get Richer." *Mother*  
Jones, May/June 2006, p. 24.

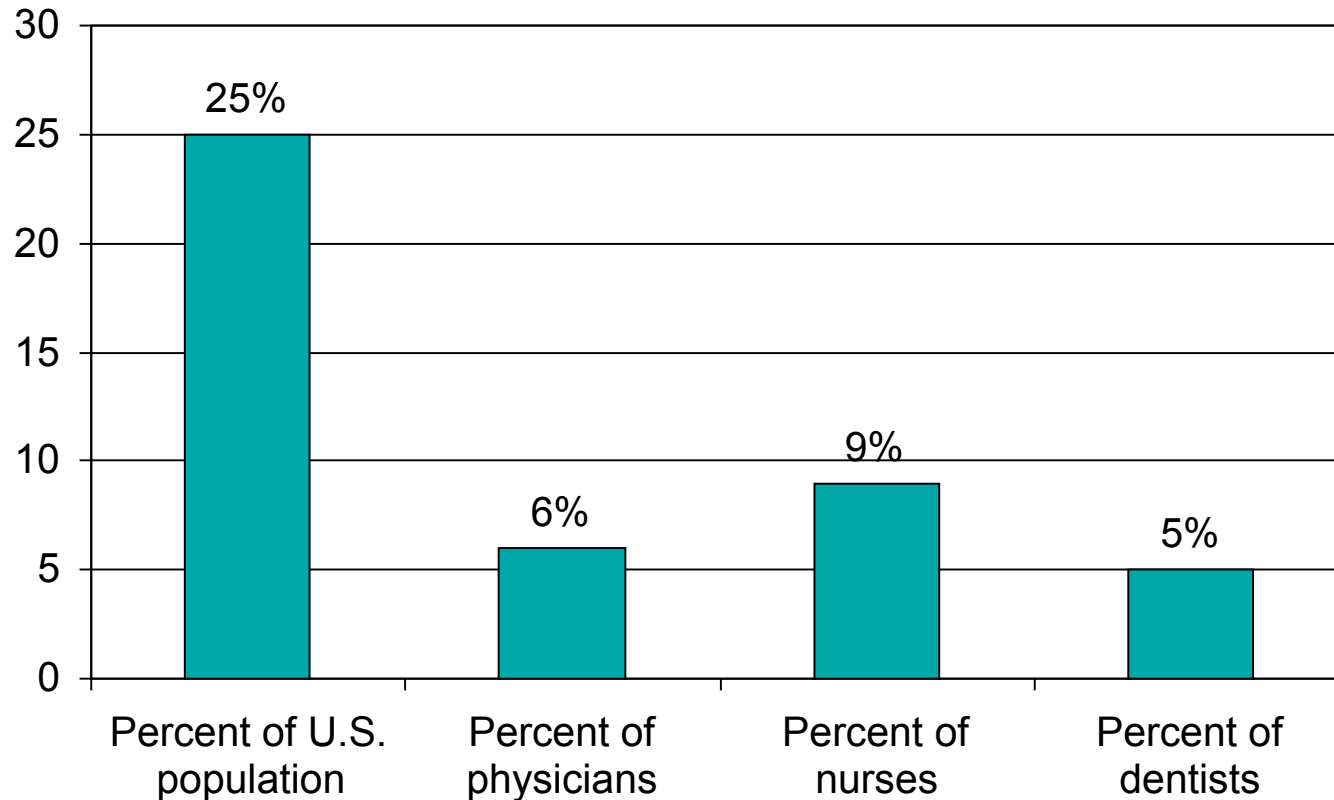
# Educational attainment: U.S. population 25 years and over, 2003



U.S. Census Bureau, "Educational Attainment in the U.S.," 2003; "The status of Native Americans in science and engineering" Commission on Professionals in Science & Technology, 2005

# Ethnic minority health professionals:

African-Americans, Latinos, and Native Americans combined



Sullivan Commission, "Missing persons:  
Minorities in the health professions," 2004

# Public health needs diversity!

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We need you, your ideas, and  
your contributions

# How do you become a public health professional?

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School of Public Health (versus a School of Medicine)

B.S.: Some colleges offer undergrad degree

MPH: Masters in Public Health or

Ph.D.: Doctorate in Public Health

Focus on any of these different careers/health professions:

Behavioral science and health education

Environmental/occupational health

Maternal and child health

Epidemiology/biostatistics

Health services/policy