ACTIVE DESIGN GUIDELINES

PROMOTING PHYSICAL ACTIVITY AND HEALTH IN DESIGN

ACTIVE DESIGN 101

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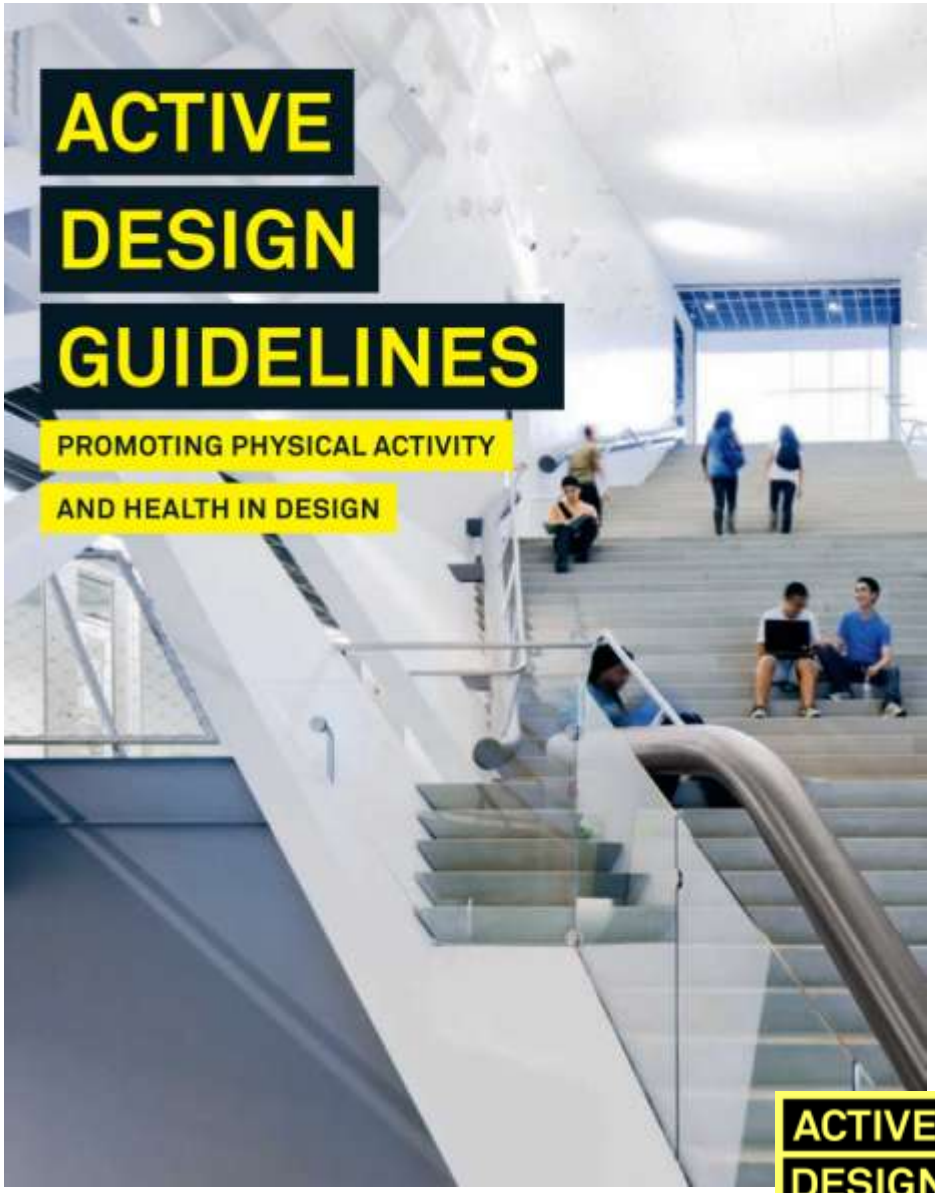
TRAINING COORDINATOR
NYC ACTIVE DESIGN PROGRAM

www.nyc.gov/adg

Interagency and Interdisciplinary

	Core Active Design Guidelines Team	Collaborators
City of New York	Department of Health and Mental Hygiene	Mayor's Office of Long Term Planning and Sustainability
	Department of Design and Construction	Department for the Aging
	Department of Transportation	Mayor's Office of People with Disabilities
	Department of City Planning	Parks and Recreation
	Office of Management and Budget	Housing Preservation and Development
		Department of Buildings
Academic Institutions	Department of Architecture, University of Texas San Antonio	Bloustien School of Planing and Public Policy, Rutgers University
	Department of Architecture, Georgia Institute of Technology	
Built Enviroment Non-profits	American Institute of Architects, New York Chapter	Transportation Alternatives
Built Environment Professionals		Hutton Associates
		1100 Architects
		Irene Cheng
		Marpillero Pollak Architects
Funders		Robert Wood Johnson Foundation Active Living Research Program
		Milbank Memorial Fund



Today's Agenda

Presentation: "Active Design 101"

1. Why Active Design?
2. Overview of the NYC Active Design Guidelines
3. NYC Policy Initiatives

Q&A

Group Discussion

Closing and Exit Questionnaires

ACTIVE DESIGN

Why Active Design?

- Brief History of Health and the Built Environment
- Today's Epidemics: Obesity and Chronic Disease
- Benefits of Physical Activity

History of health and the built environment

- 100+ years ago, urban conditions in NYC were a breeding ground for disease epidemics

Over-crowding:
By 1910, the average density in lower Manhattan was 114,000 people/ sq. mi; two wards reached densities > 400,000. (Today's density: 67,000/ sq. mi.)

+

Inadequate systems for garbage, water, and sewer, leading to pervasive filth and polluted water supplies.

Major epidemics:

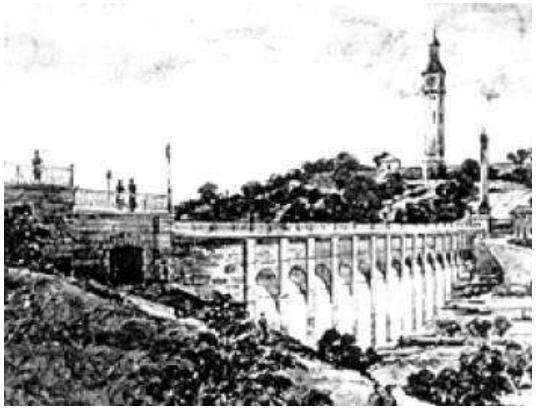
Air/droplet-borne diseases:
TB

Water-borne diseases:
Cholera

Vector-borne diseases:
Yellow-fever

ACTIVE DESIGN

The design response



1842 New York's **water system** established – an aqueduct brings fresh water from Westchester.

1857 NYC creates **Central Park**, hailed as "ventilation for the working man's lungs", continuing construction through the height of the Civil War

1881 Dept. of Street-sweeping created, which eventually becomes the **Department of Sanitation**

1901 **New York State Tenement House Act** banned the construction of dark, airless tenement buildings

1904 First section of **Subway** opens, allowing population to expand into Northern Manhattan and the Bronx

1916 **Zoning Ordinance** requires stepped building setbacks to allow light and air into the streets

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The results

Deaths	1880	1940
Infectious Diseases	**57.1%**	**11.3%**
- Contagion	12.5%	0.2%
- Diarrhea	9.6%	0.5%
- Tuberculosis (TB)	20.8%	5.0%
- Pneumonia	13.2%	5.6%
- Typhoid	1.0%	0.003%

Today, about 9% of deaths in NYC of are due to infectious diseases.

Chronic Disease accounts for 75% of deaths.

In 2005, **133 million Americans – almost 1 out of every 2 adults** – had at least one chronic illness.

Source: U.S. Centers for Disease Control and Prevention (CDC)

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Can urban design help address today's health epidemics?

THE 19th CENTURY:

Infectious disease

19th Century codes, planning and infrastructure as weapons in the battle against contagious disease

These strategies were built into the city fabric, and they were effective

THE 21st CENTURY:

Chronic Diseases, many of which are "**Diseases of Energy**"

The emerging design solutions for health parallel **sustainable design** solutions

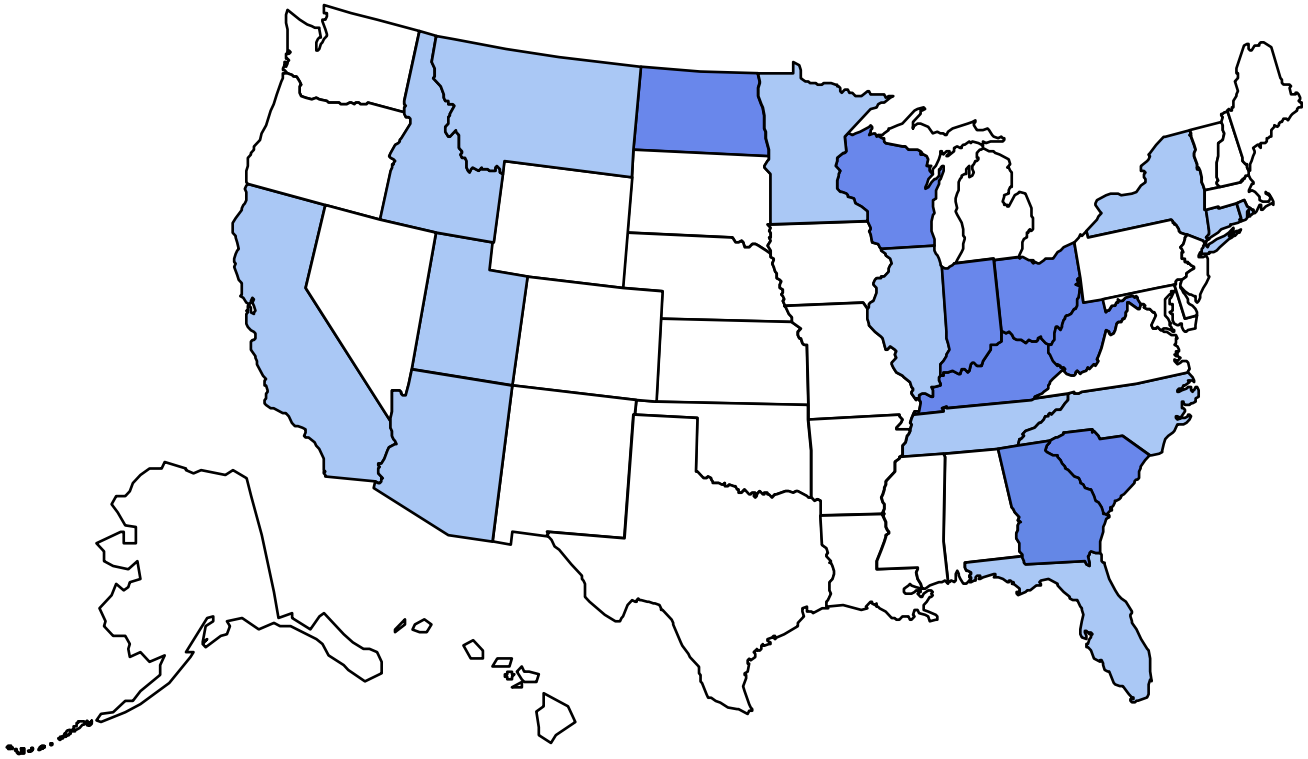
Effective designs will have to be an **invisible, pervasive, and inevitable** part of life

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)



No Data | <10% | 10%–14%

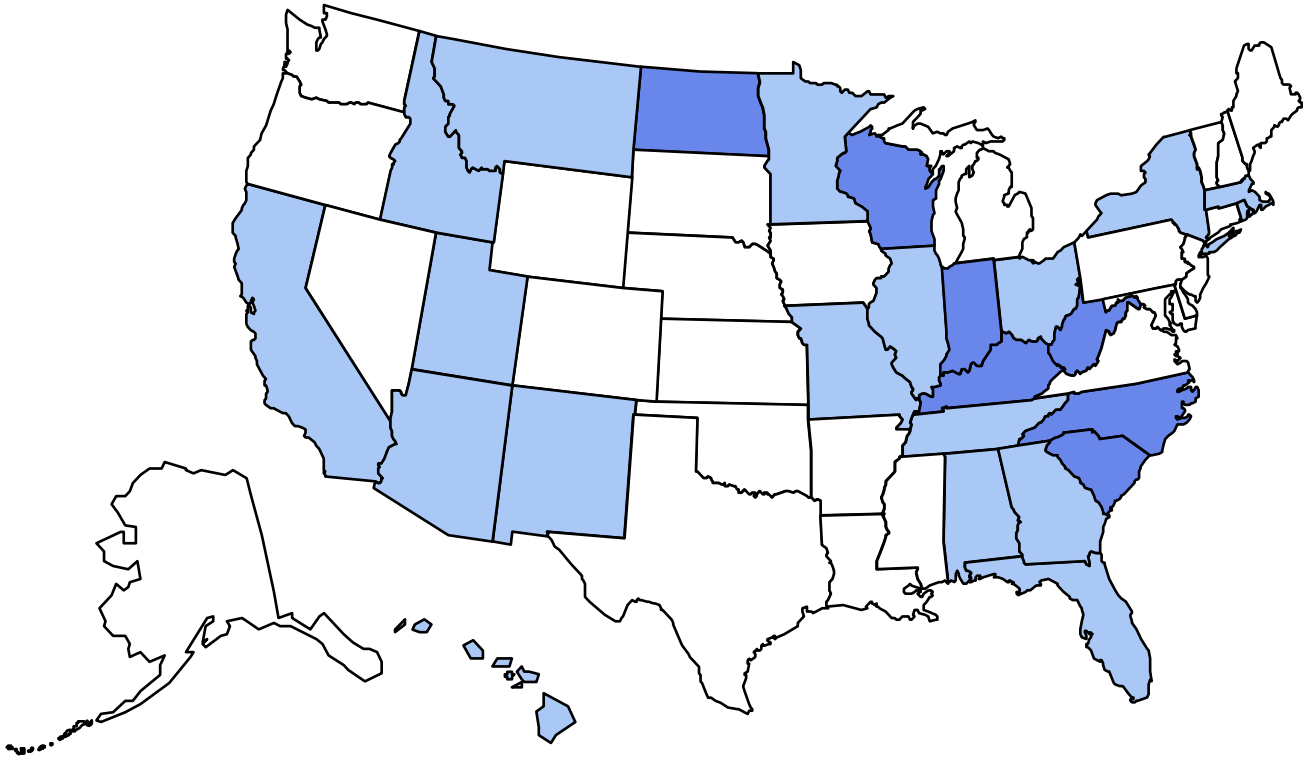
Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1986

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)



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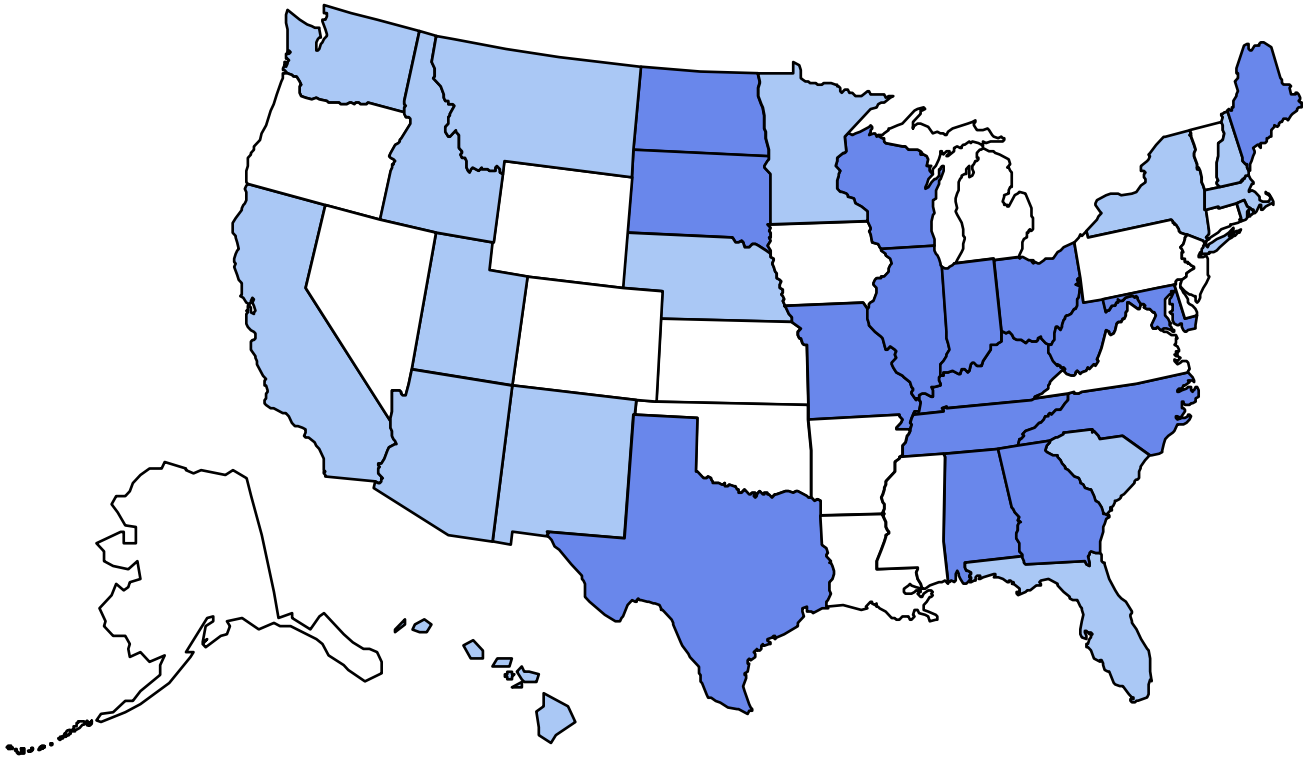
ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1987

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)



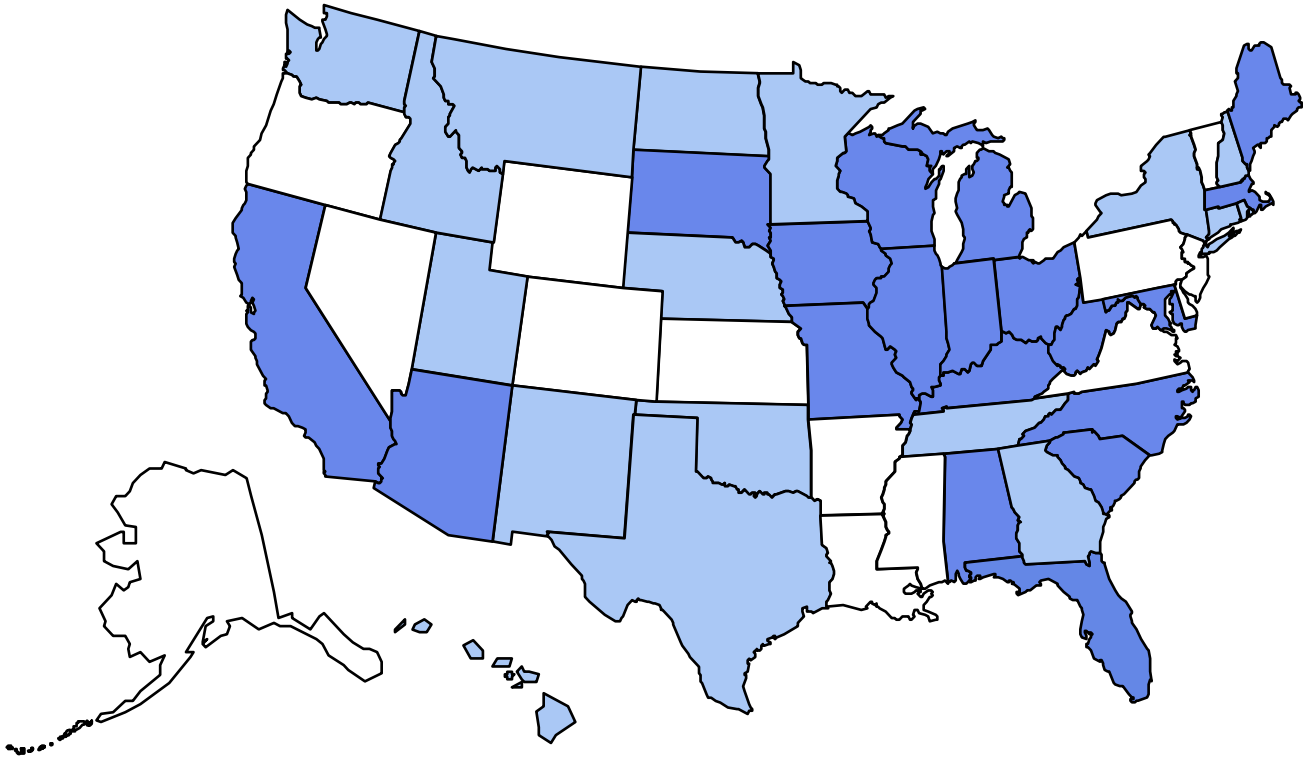
Source: U.S. Centers for Disease Control and Prevention (CDC)

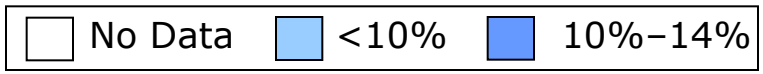
ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1988

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)





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ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1989

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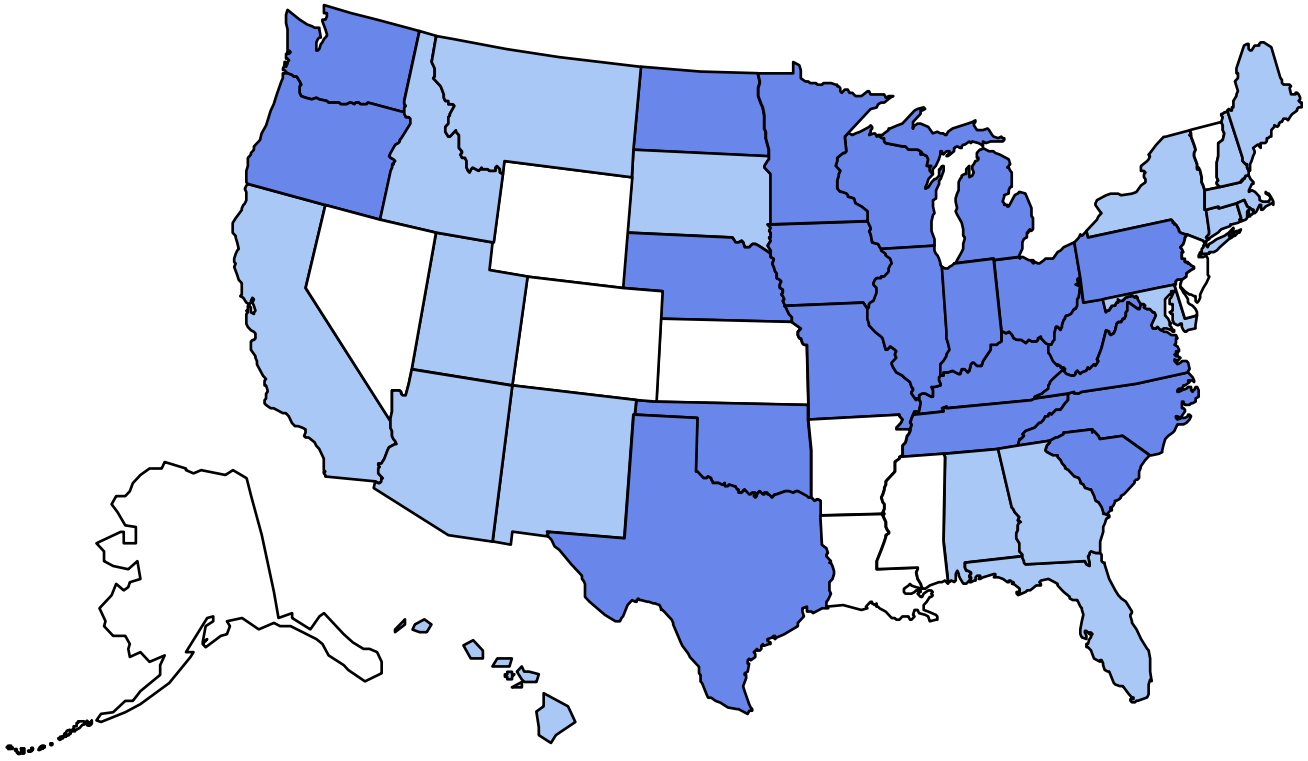

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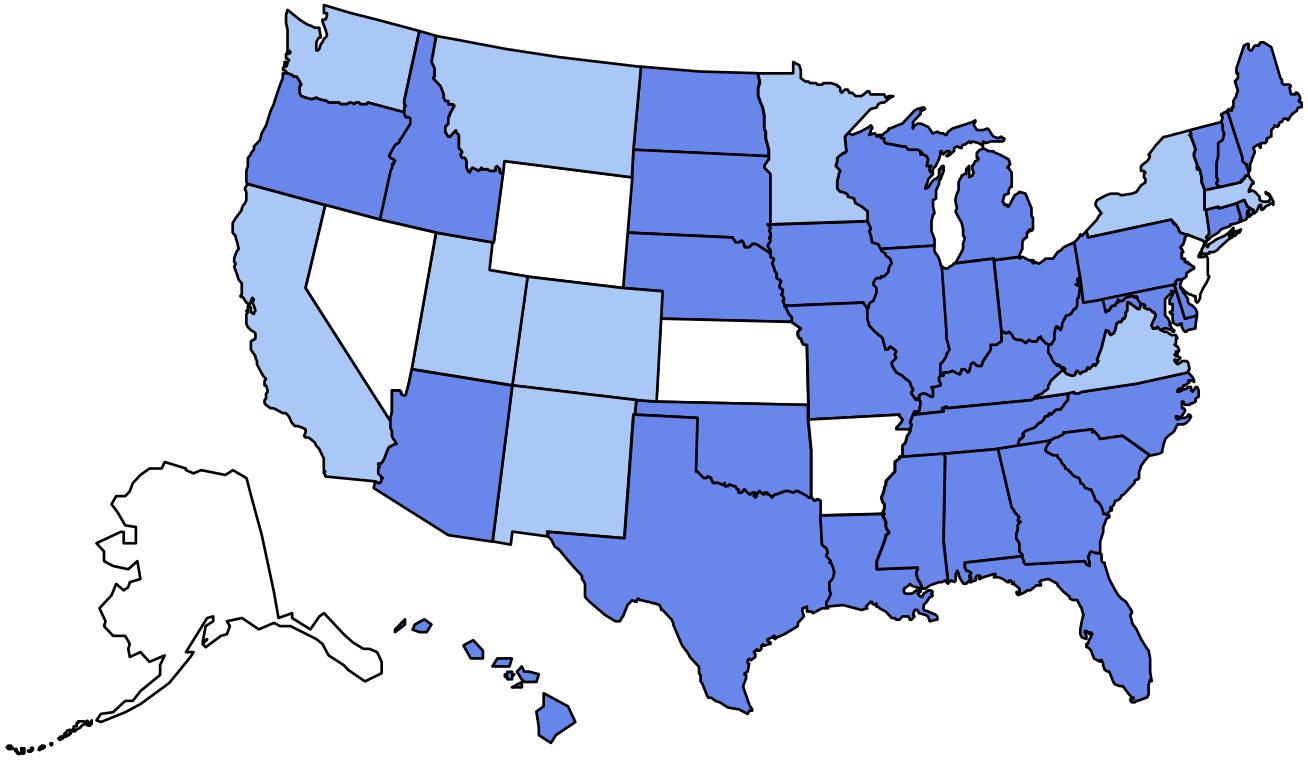

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ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1991

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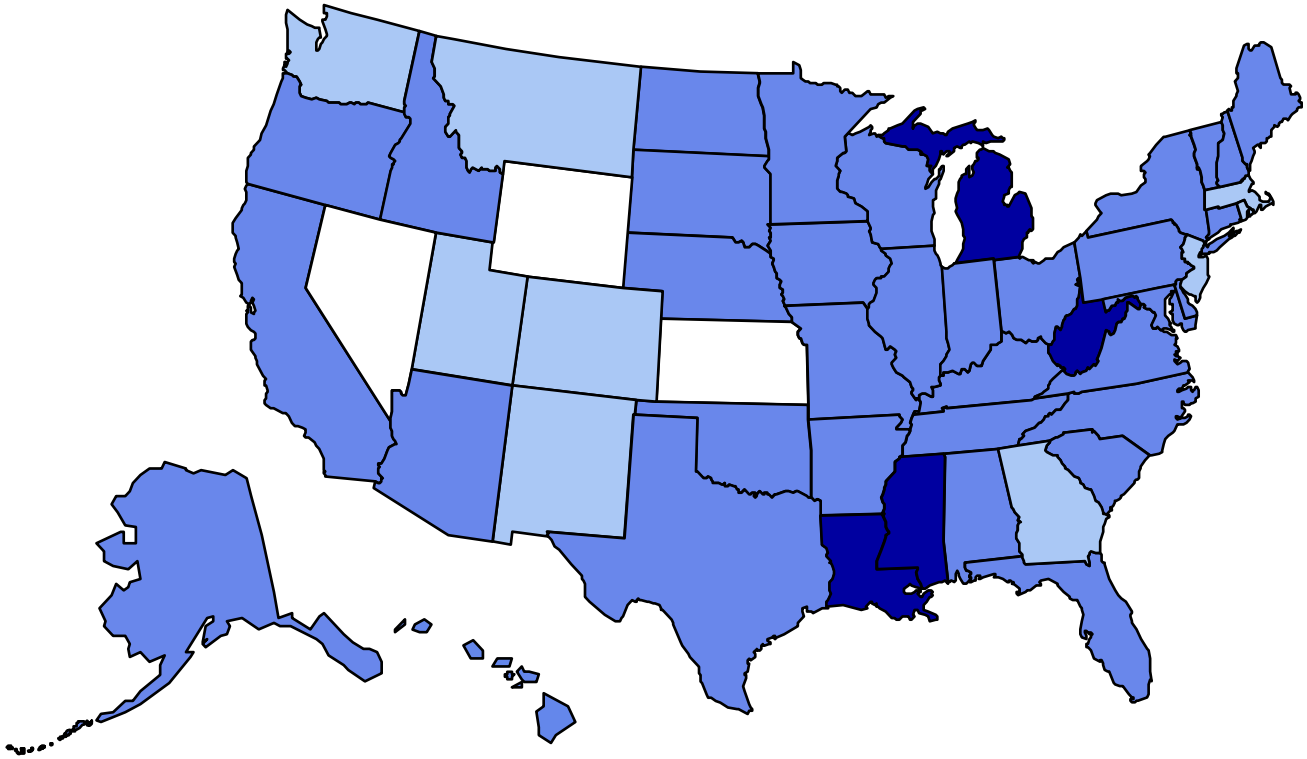

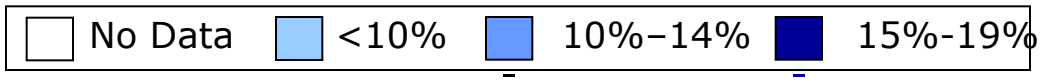

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Obesity Trends* Among U.S. Adults

BRFSS, 1992

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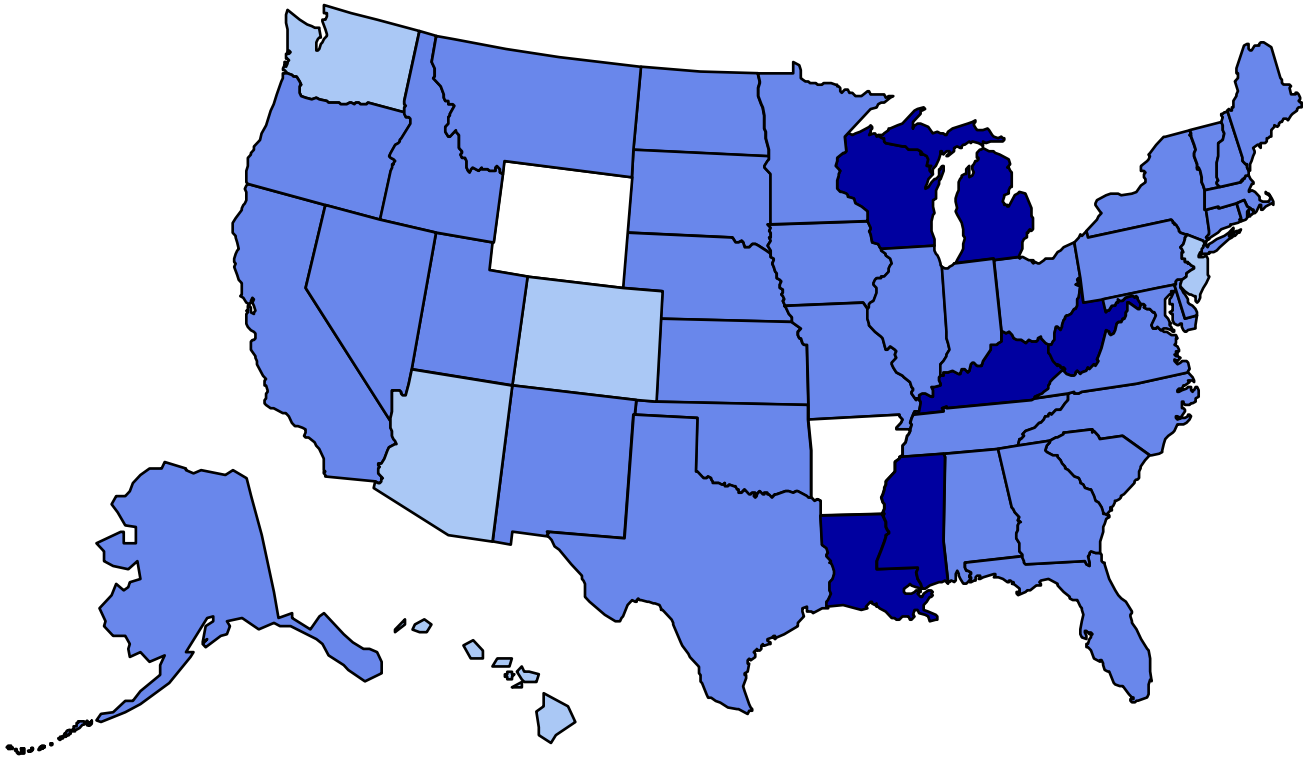

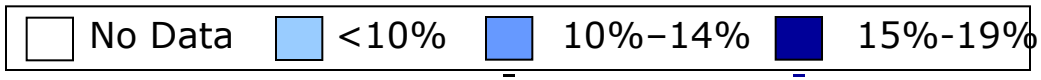

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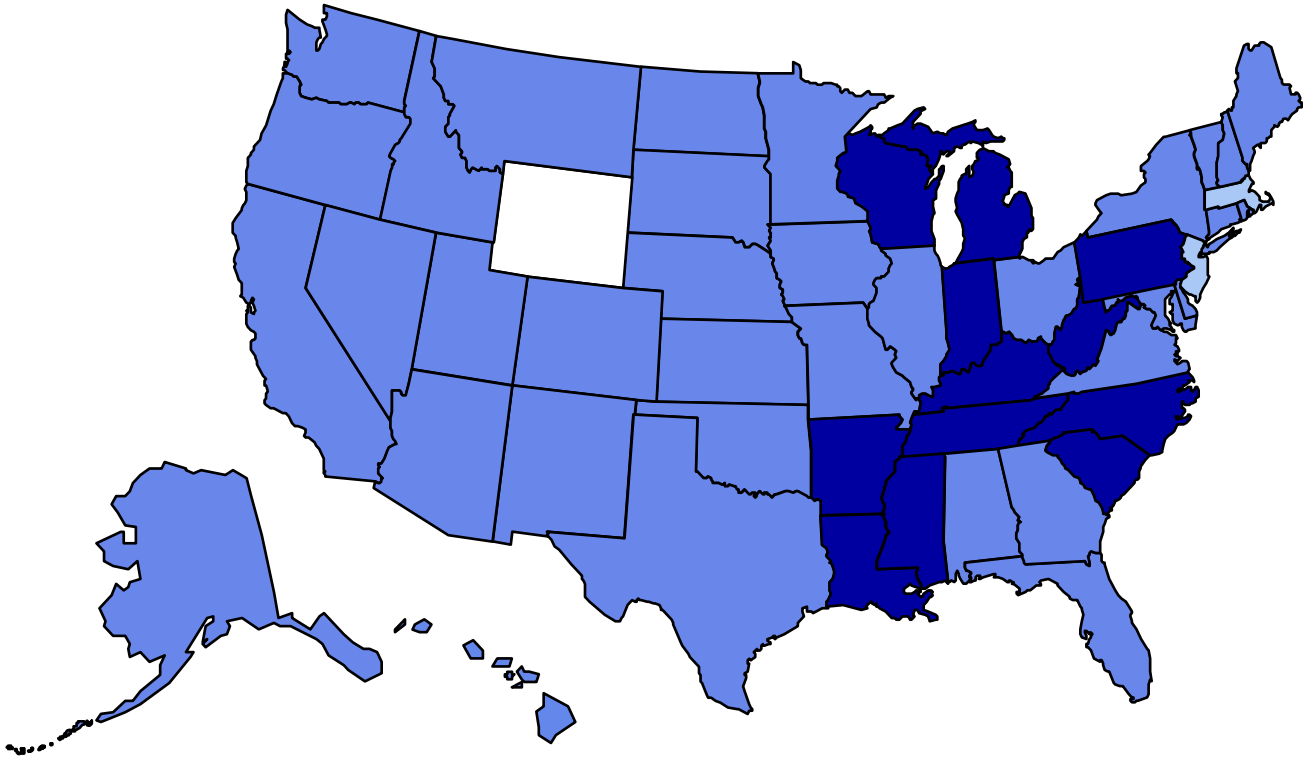

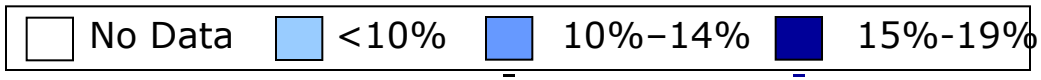

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ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1994

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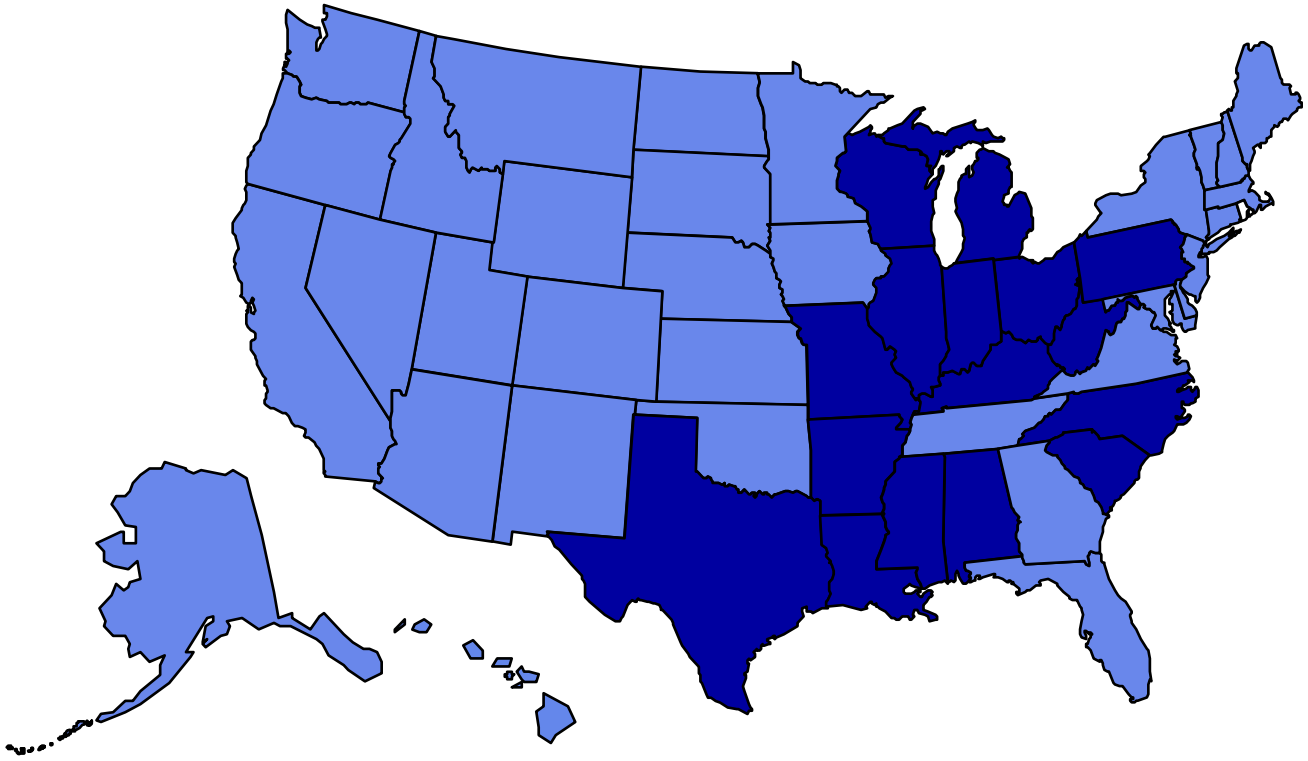

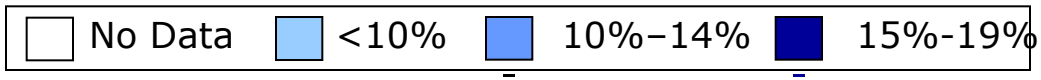

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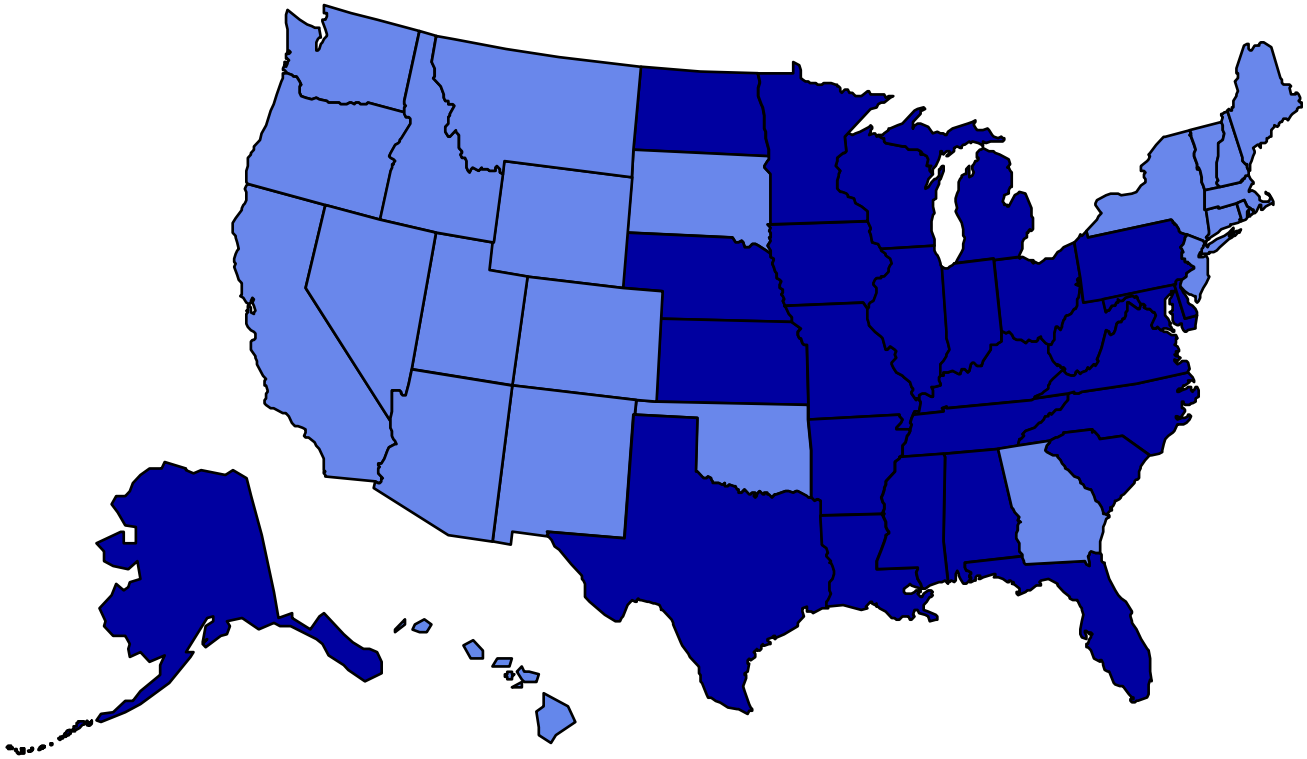
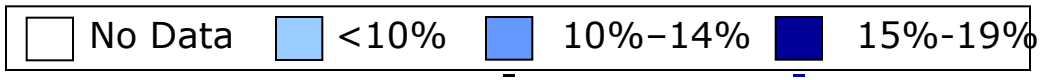
ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1995

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)





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ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 1996

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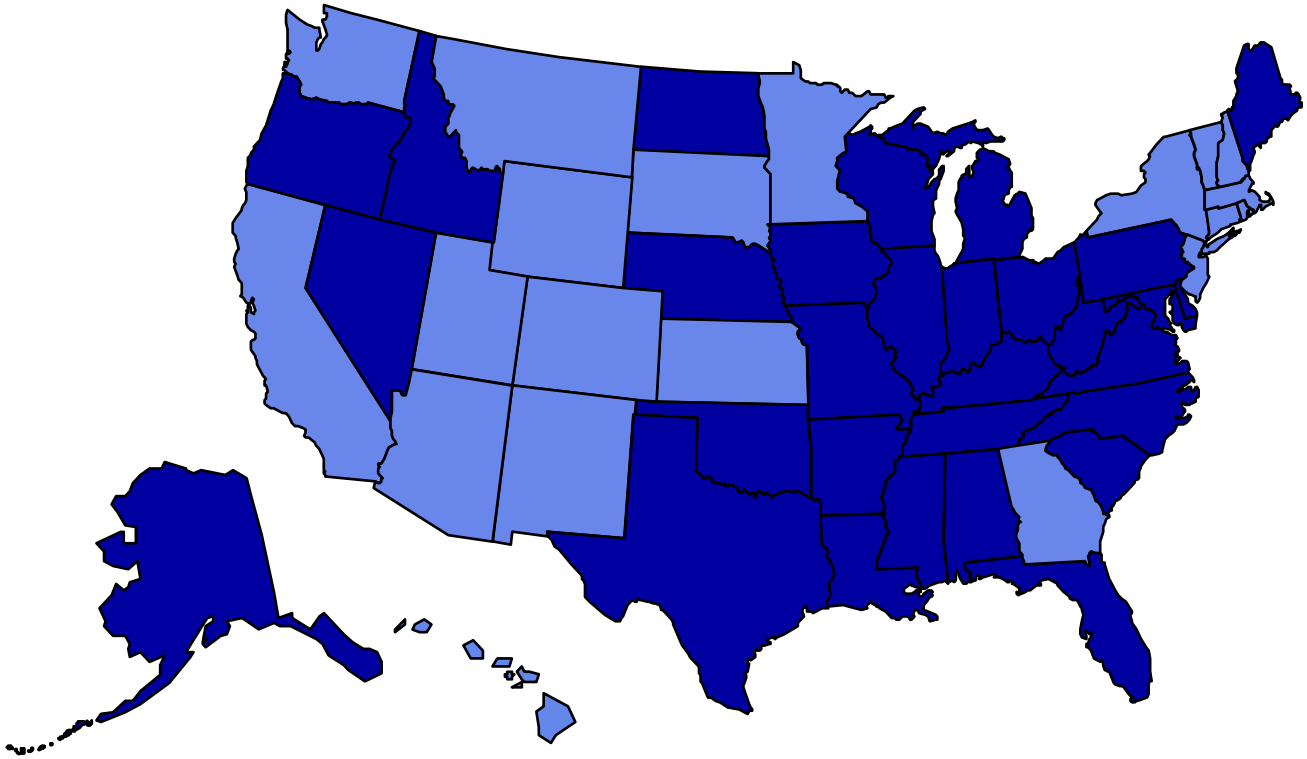

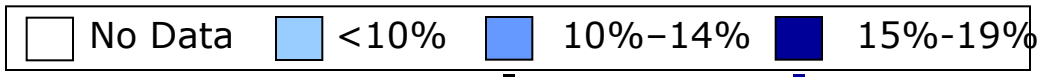

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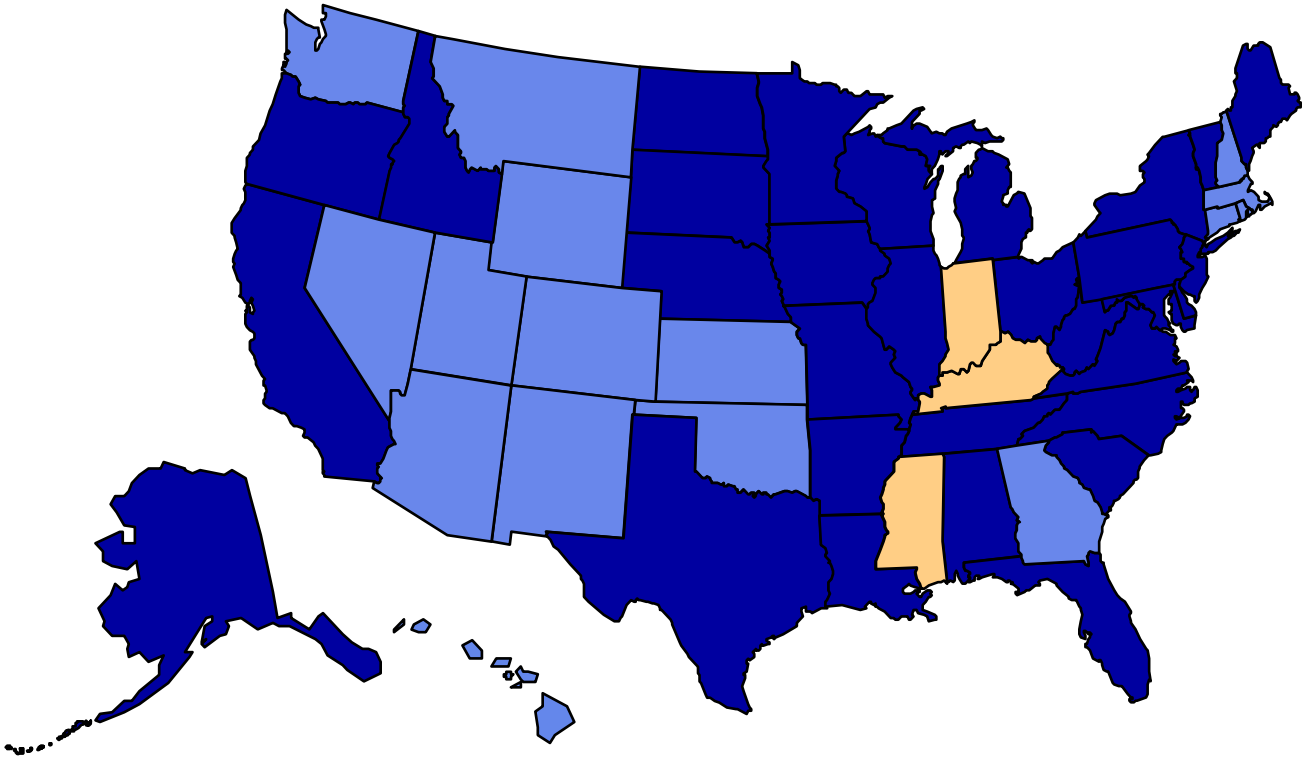

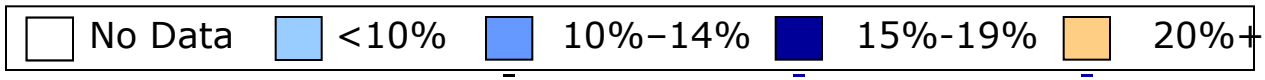

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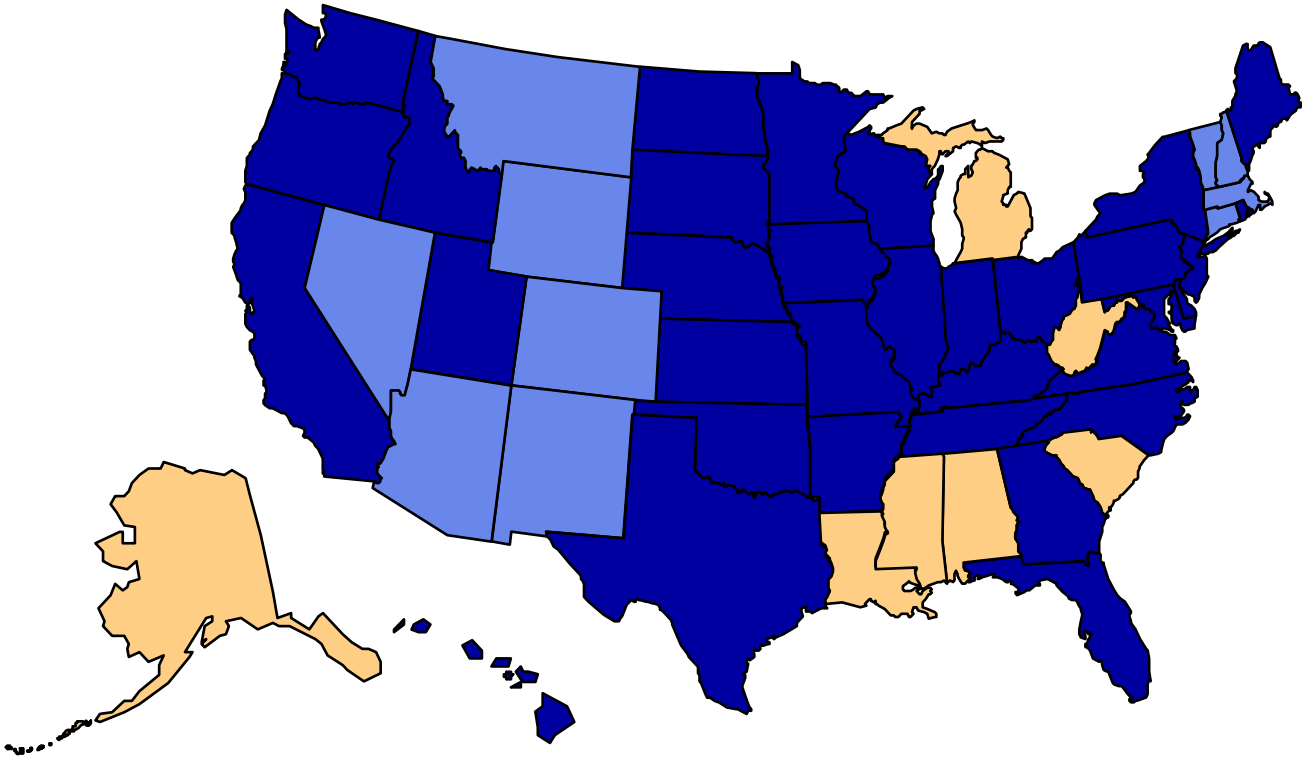

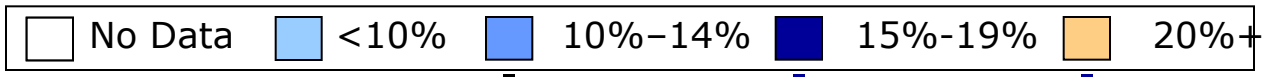

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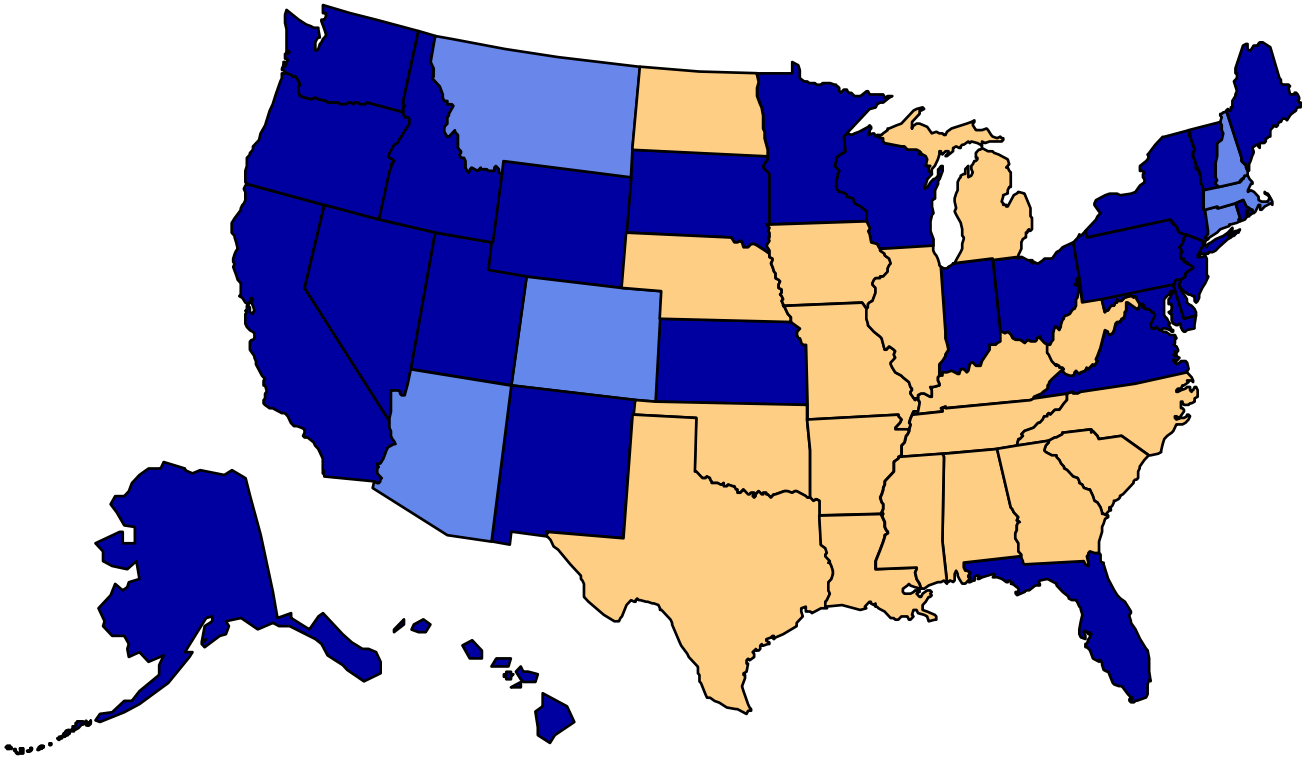

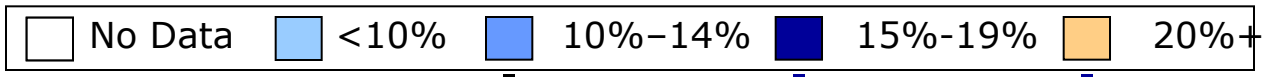

Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2000

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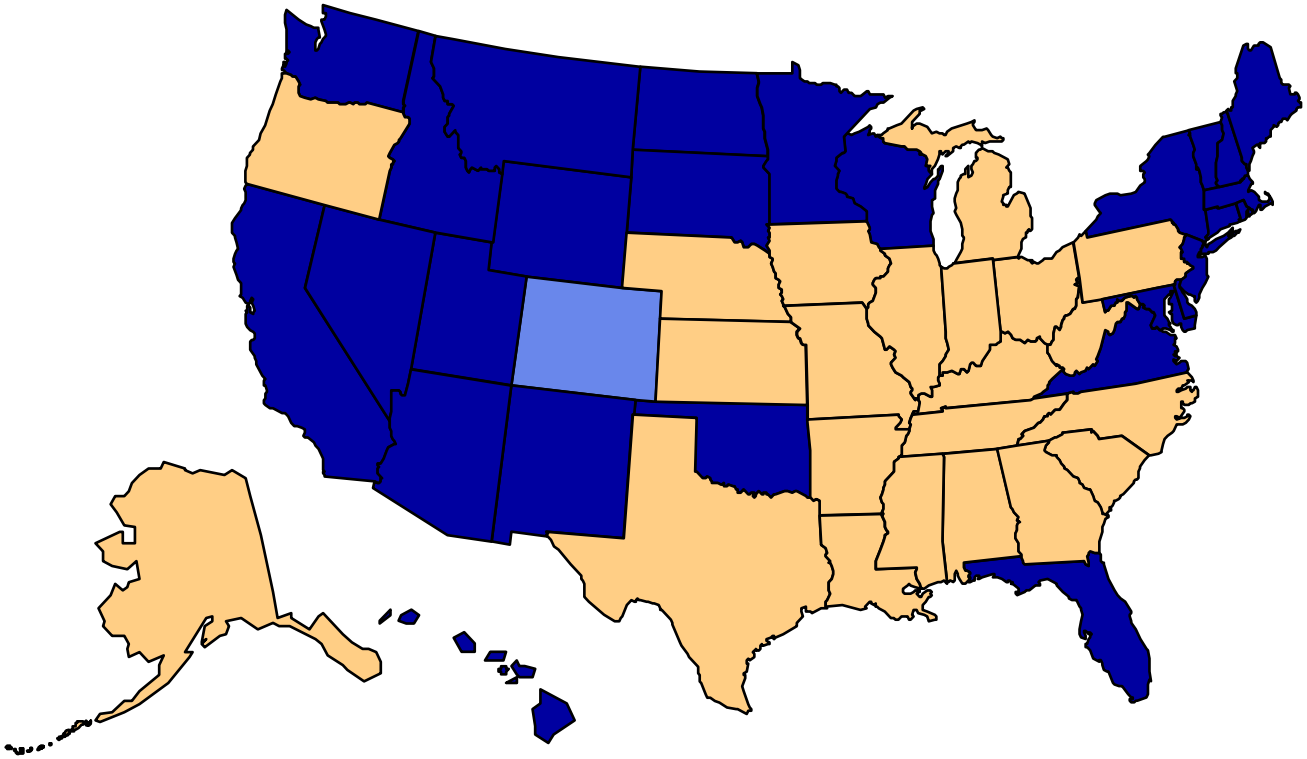
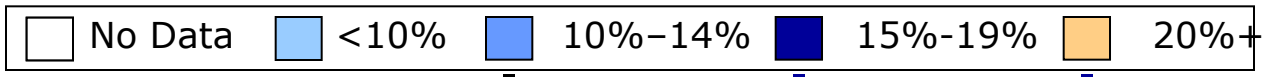




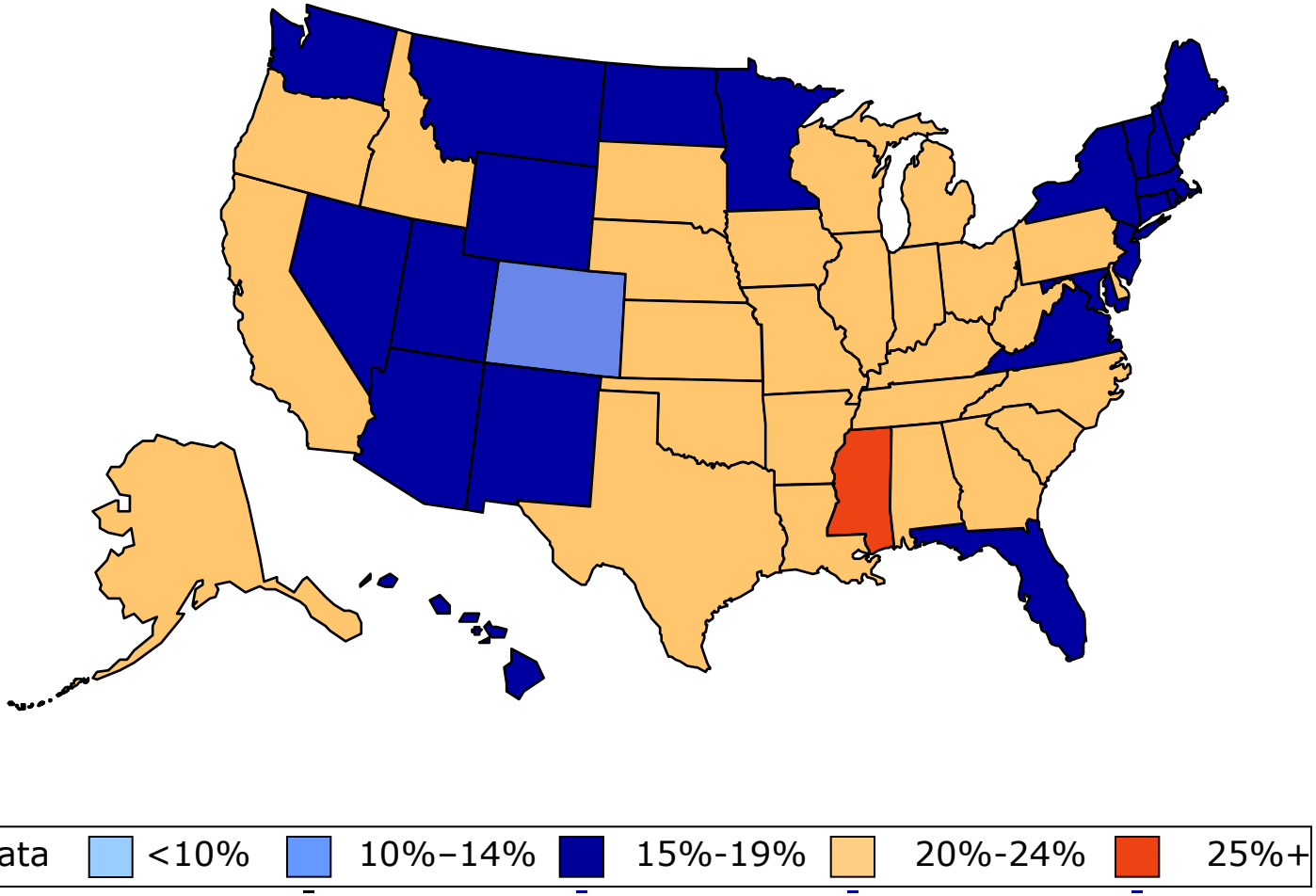
Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2001

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



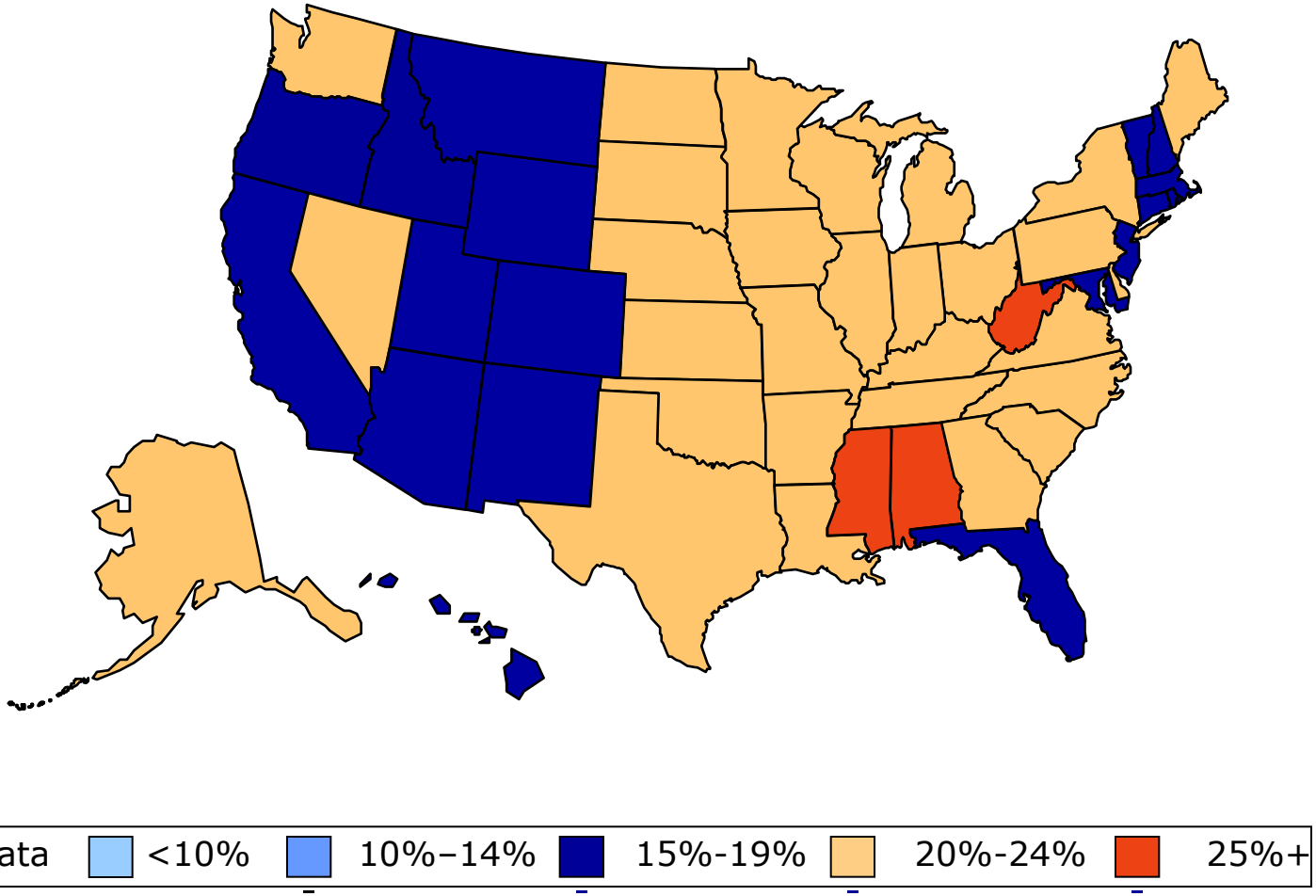
Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2002

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



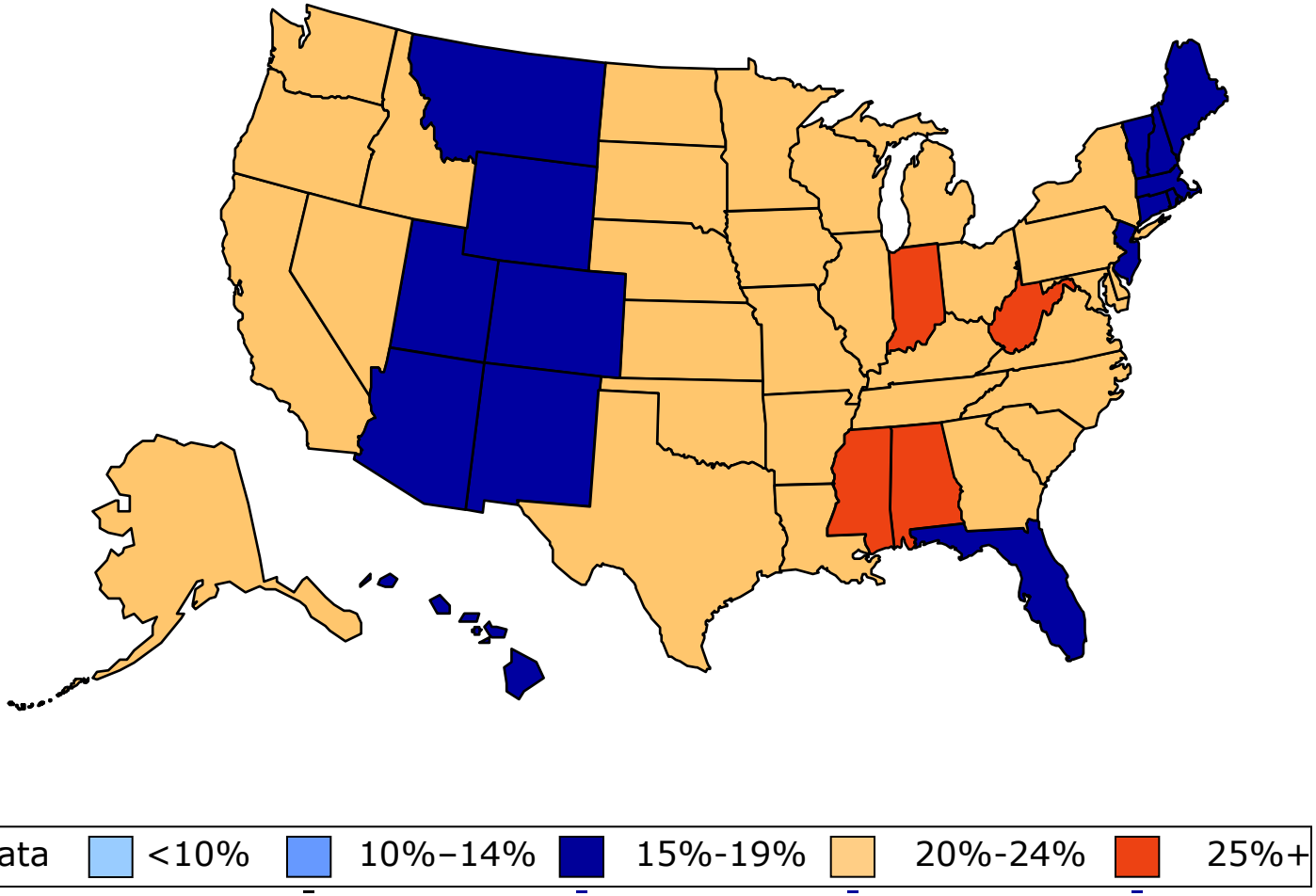
Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2003

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



Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2004

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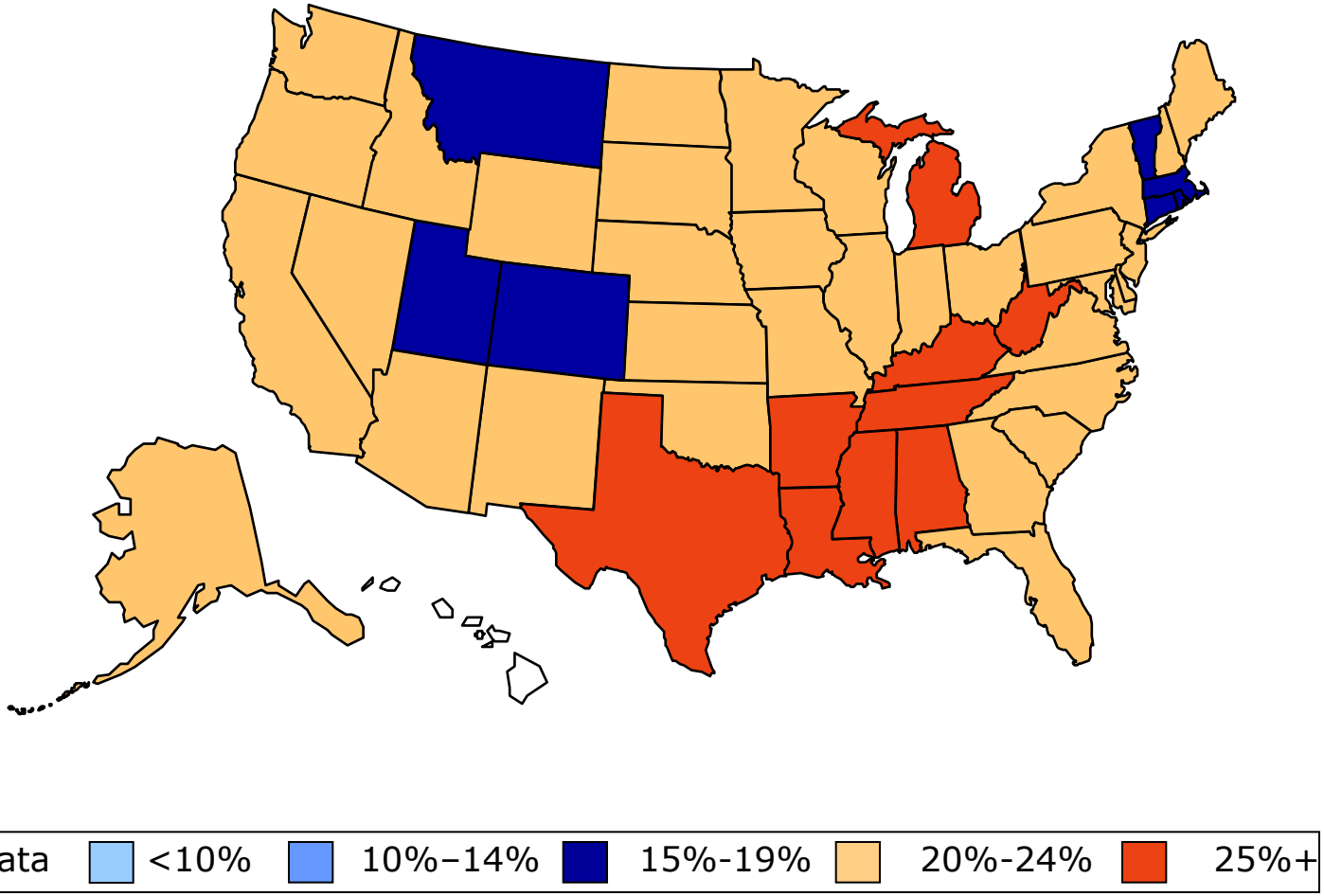

Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2005

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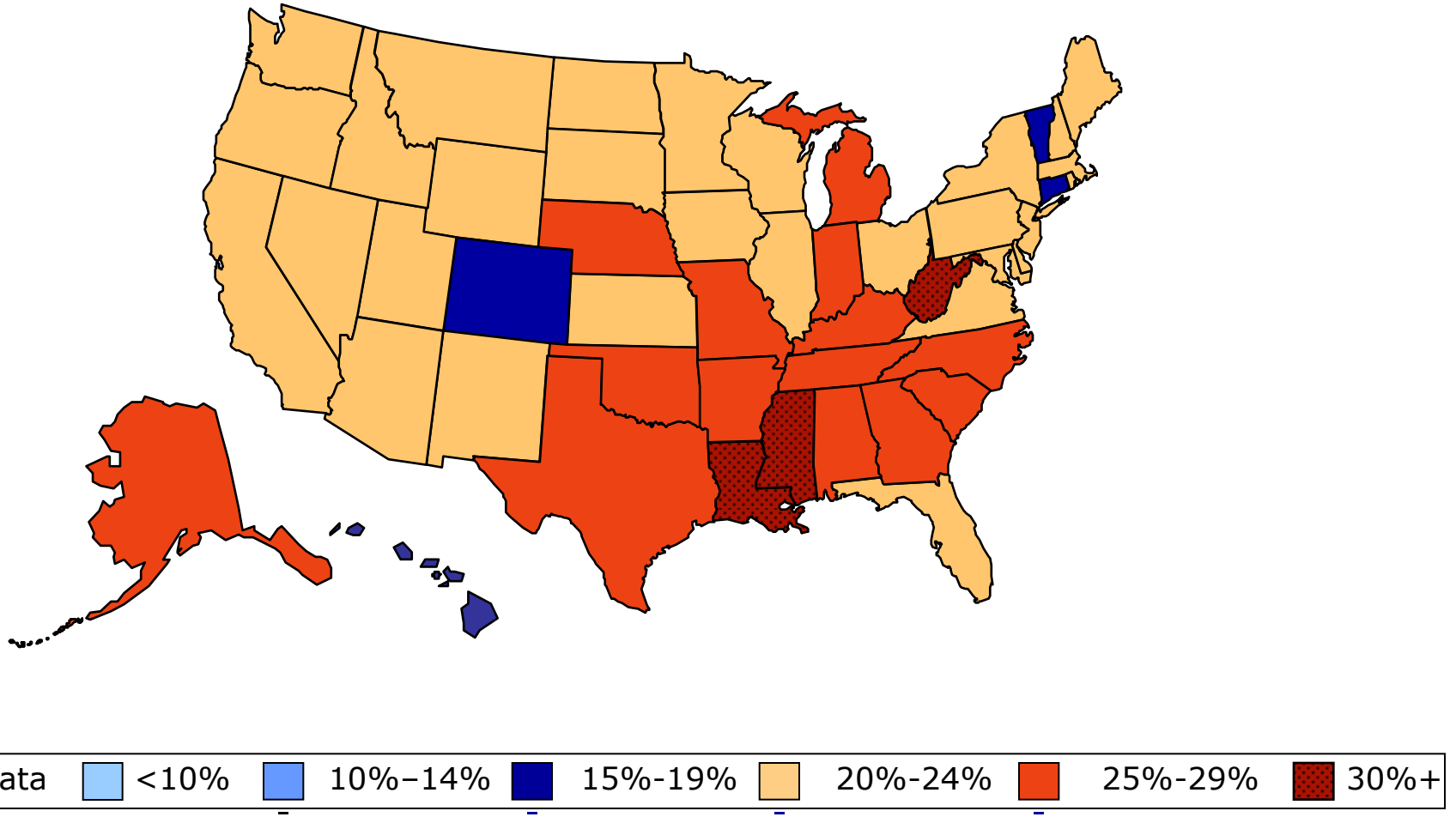

Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2006

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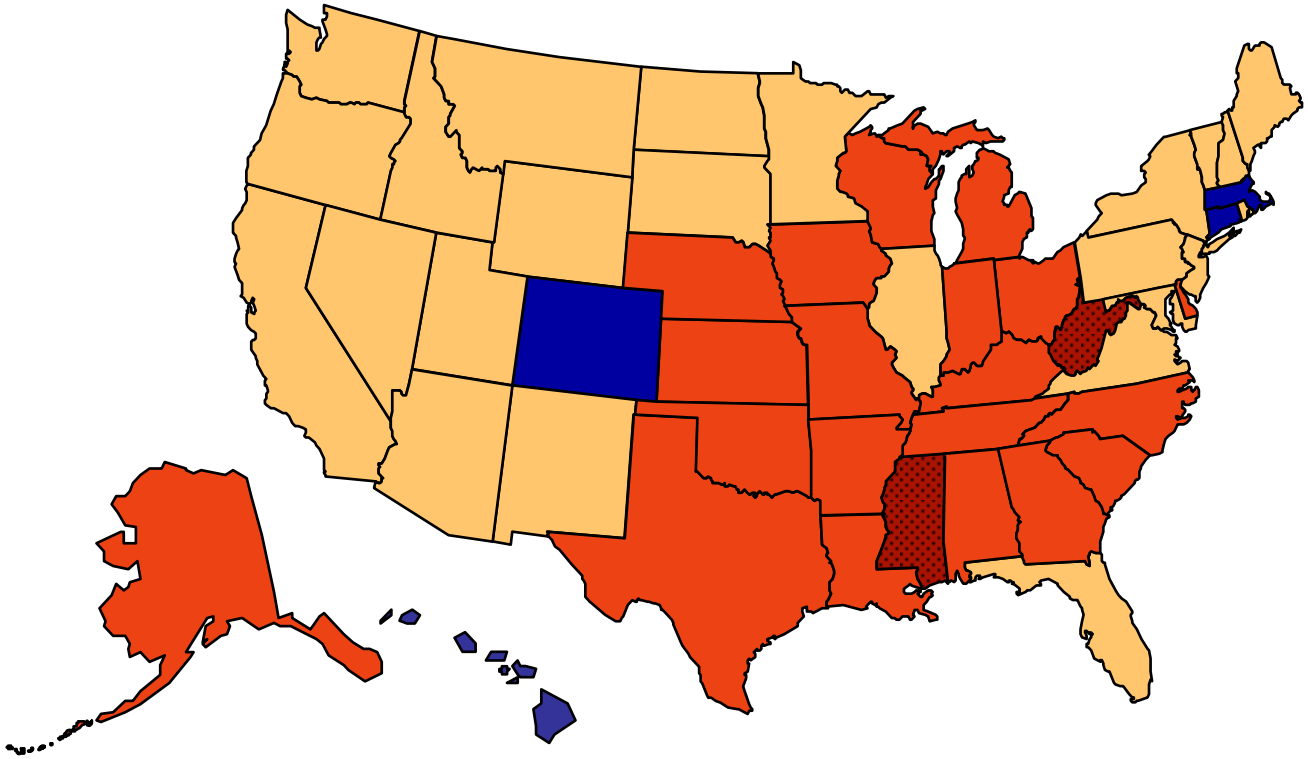

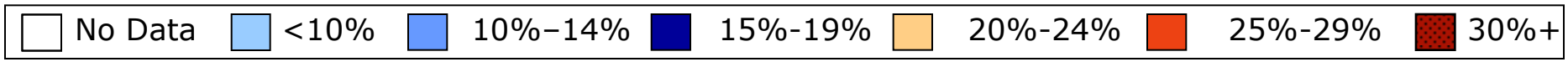

Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2007

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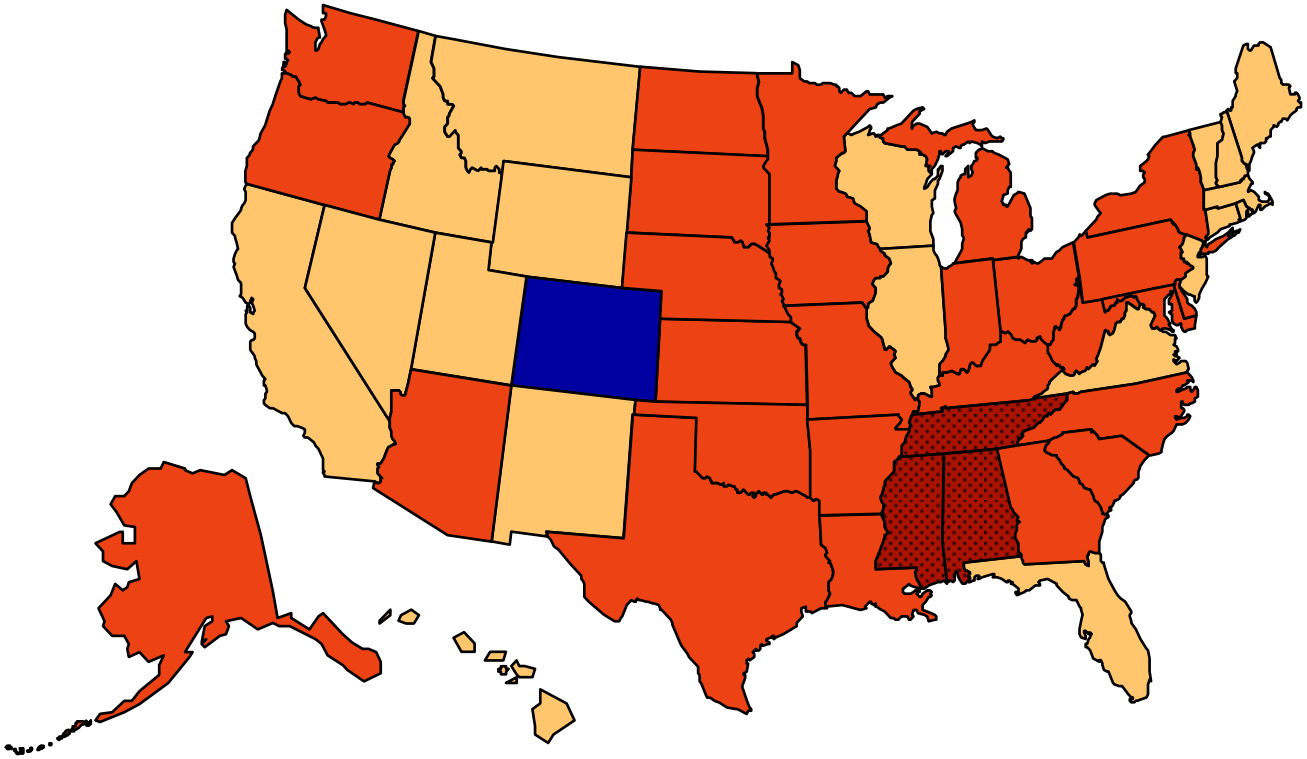
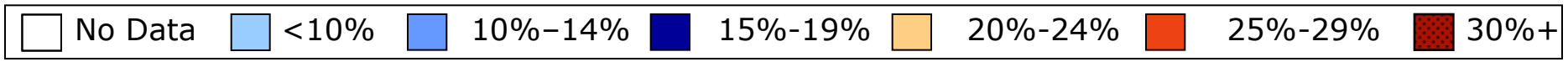




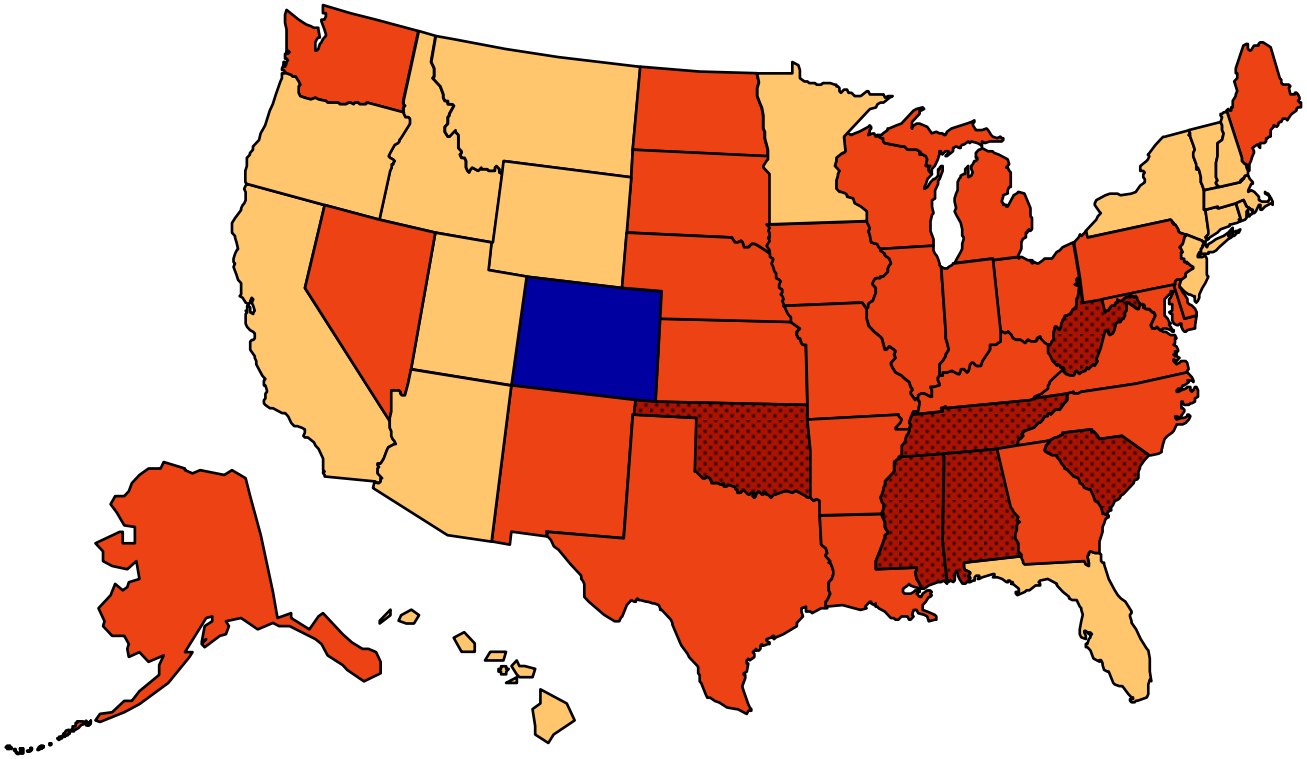
Source: U.S. Centers for Disease Control and Prevention (CDC)

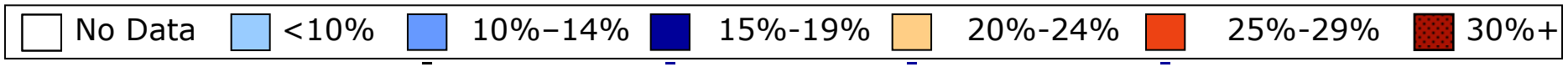
ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2008

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





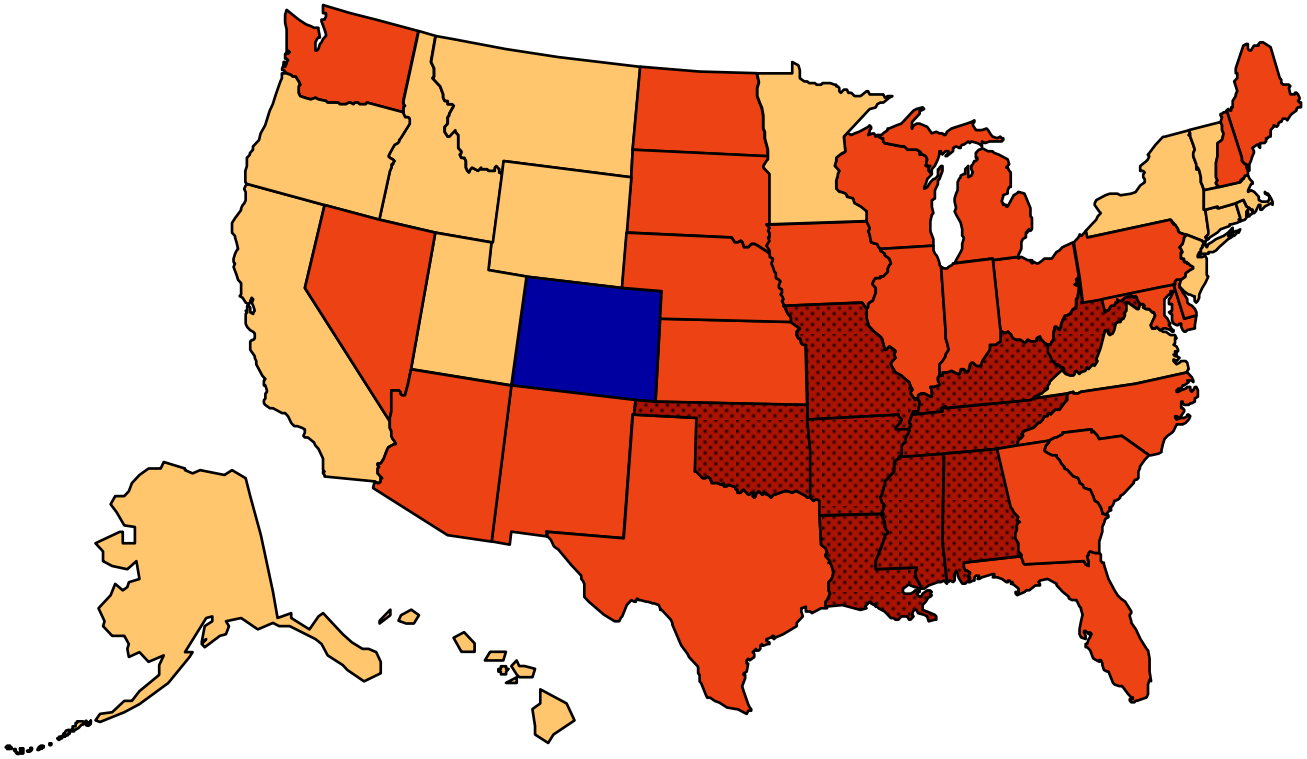
Source: U.S. Centers for Disease Control and Prevention (CDC)

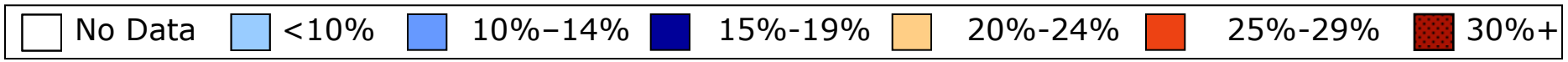
ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2009

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





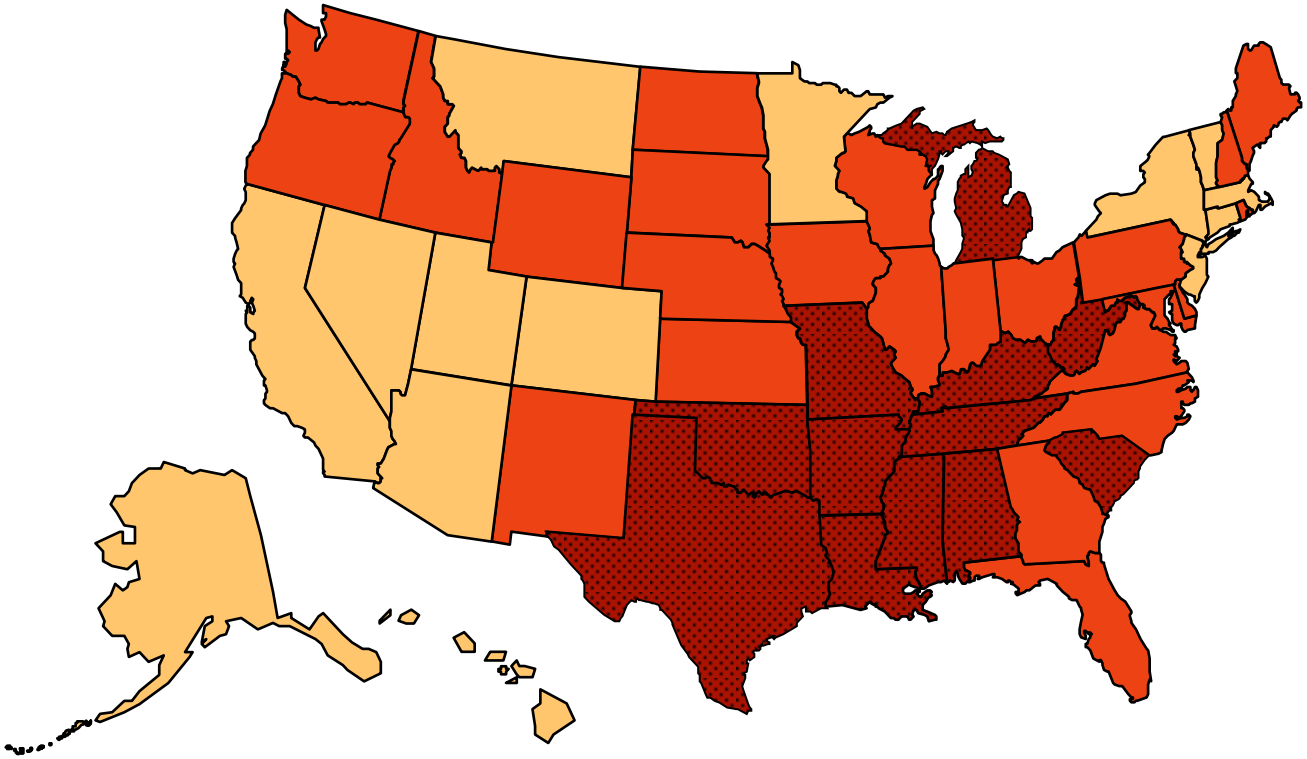
Source: U.S. Centers for Disease Control and Prevention (CDC)

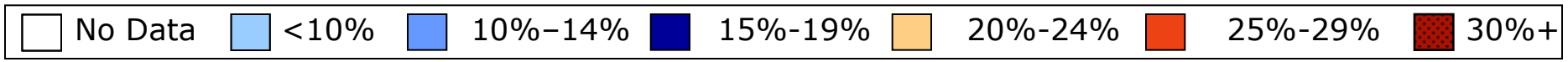
ACTIVE DESIGN

Obesity Trends* Among U.S. Adults

BRFSS, 2010

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)





Source: U.S. Centers for Disease Control and Prevention (CDC)

ACTIVE DESIGN

The costs of obesity

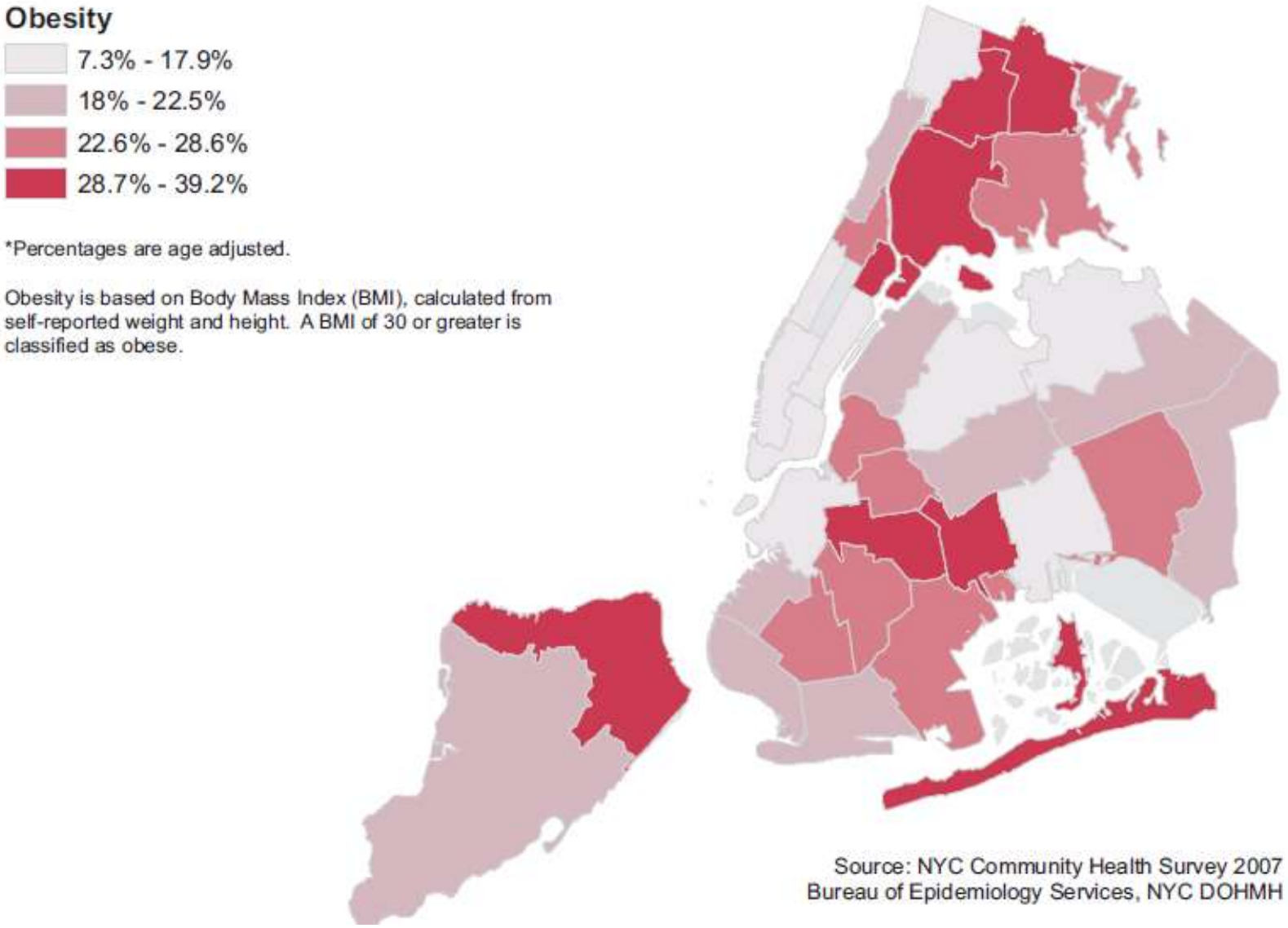
- According to the CDC, the medical costs attributable to obesity in the U.S. are estimated to be **$147 billion per year.**

- **By 2030**, if obesity trends continue as shown, **86% of adults** will be overweight or obese and total attributable health-care costs will be **$860-956 billion per year.**

- City of Dallas: medical costs of an obese city employee are up to **6 times** that of a normal weight employee.

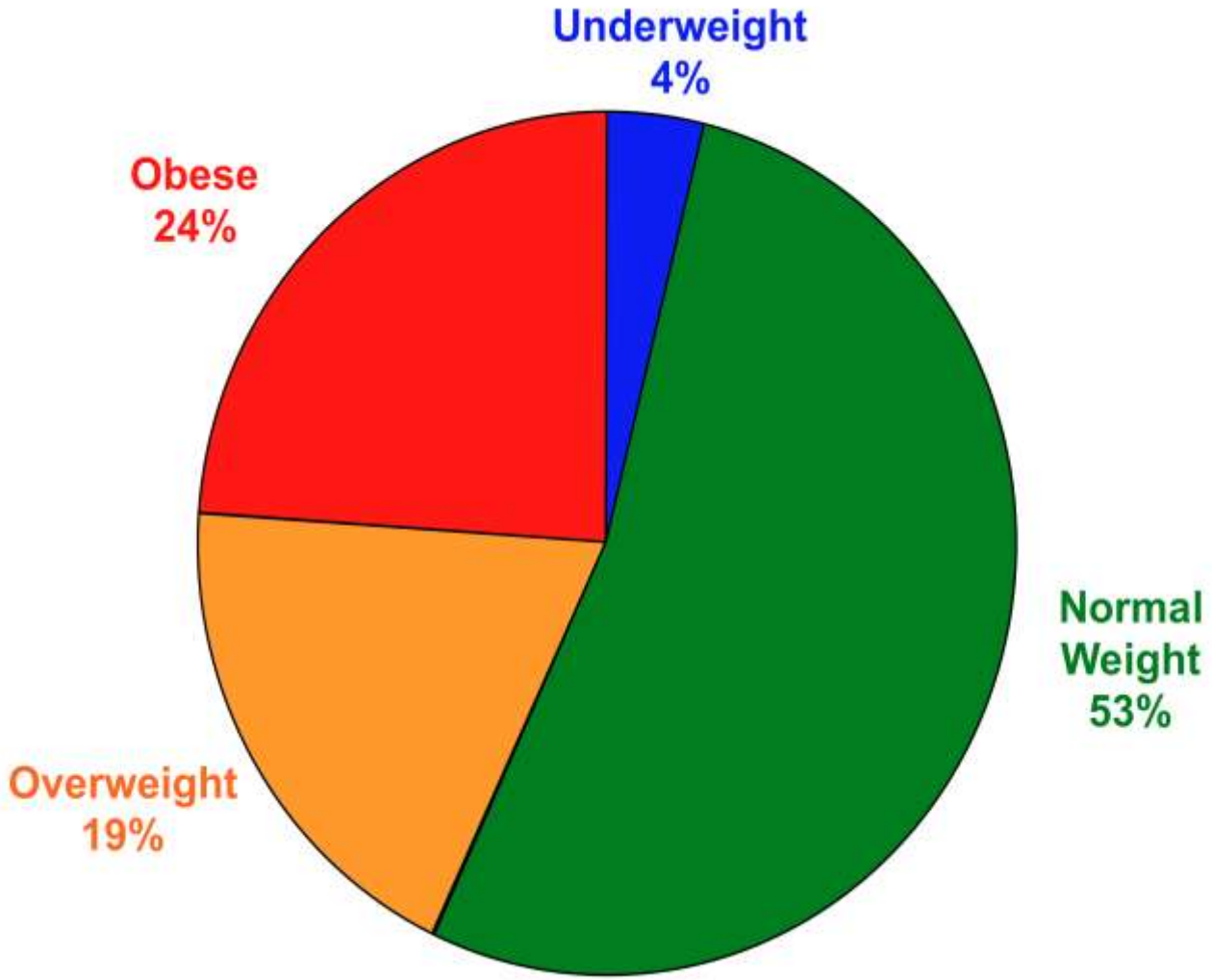
ACTIVE DESIGN

Obesity in New York City



ACTIVE DESIGN

Only half of NYC elementary school children are at a healthy weight



Source: *NYC Department of Health and Mental Hygiene, NYC Vital Signs, 2003.*

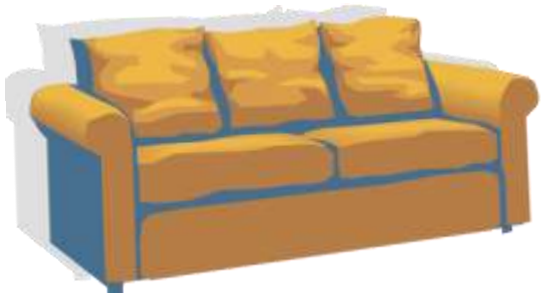
ACTIVE DESIGN

Risk factors contributing to obesity and chronic disease

In NYC, about 60% of adults and 40% of children are overweight or obese

Risk Factors must be addressed:

- **Poor diets (food and beverages)**
- **Physical inactivity**
- **TV viewing**
- **Not breastfeeding**



Benefits of physical activity

- Prevention of weight gain
- Weight loss (when combined with diet)
- Lowers risk of type-2 diabetes
- Lowers cardiovascular disease risk factors (high blood pressure, cholesterol, etc)
- Decreased risk of colon and breast cancers (up to 32% and 55%, respectively, in community-based physical activity programs)
- Reduced depression
- Better cognitive function (older adults)
- Lowers risk of falls by improving balance
- Strengthens bones
- Increases life expectancy (3.5-3.7 years)

Source: U.S. Department of Health and Human Services and Physical Activity Guidelines for Americans. [cited 2009 January 27]; Available from: http://www.health.gov/PAGuidelines/factsheetprof.aspx

ACTIVE DESIGN

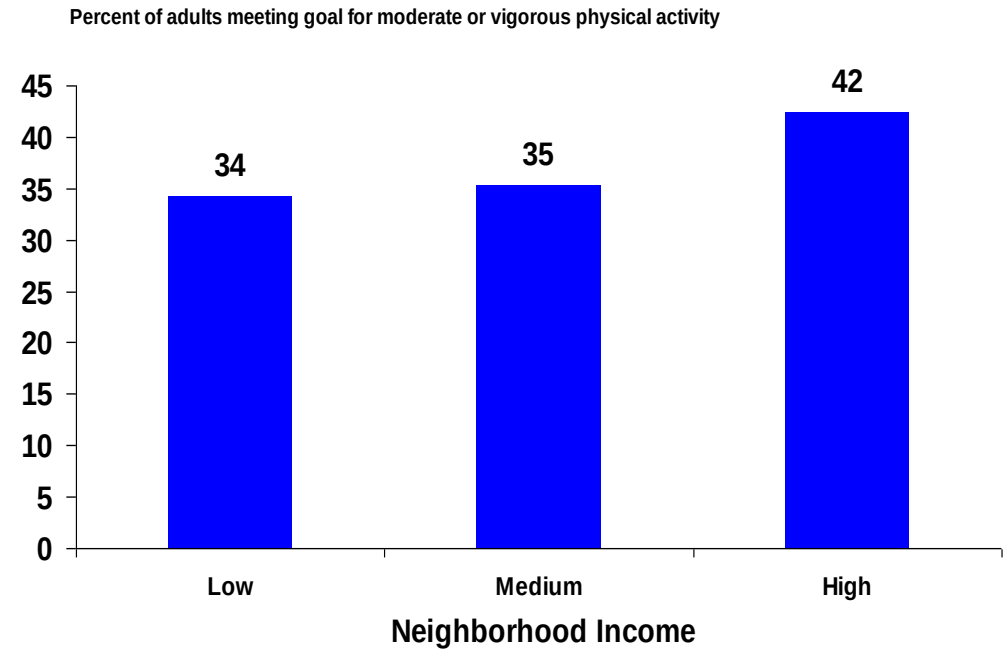
Physical activity recommendations

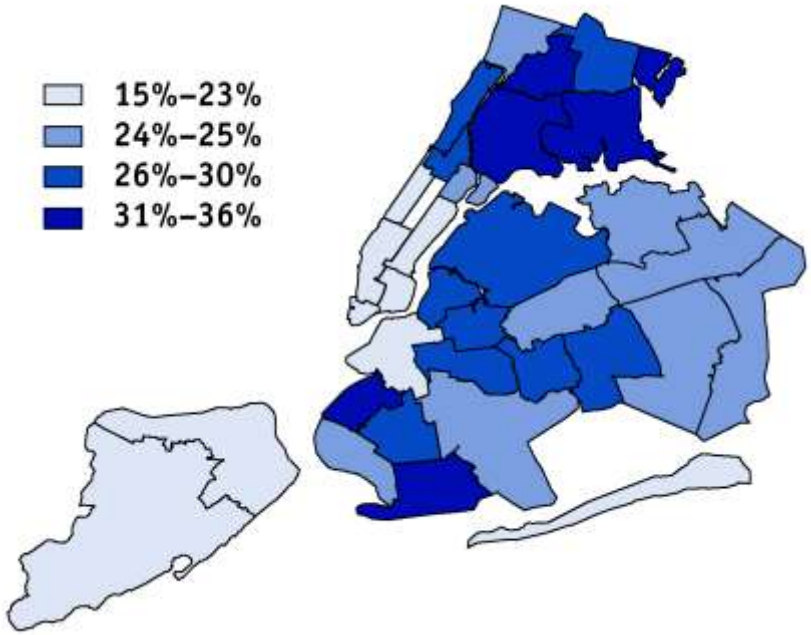
- **Recommendations:**
  - Adults: **150 minutes of moderate activity** or **75 minutes of vigorous activity** per week
  - Children: 60+ minutes of physical activity daily

- **Less than half** of US adults meet recommendations

ACTIVE DESIGN

Most New Yorkers do NOT meet these recommendations





No exercise in the past 30 days

NYC Department of Health and Mental Hygiene, Community Health Survey, 2005

ACTIVE DESIGN

People have not changed – our environment has

If you go with the flow, you get overweight or obese

ACTIVE DESIGN

Design and physical activity

Encouraging stair use & active transportation

• Just **2 minutes** (about 6 floors) of stair climbing a day burns enough calories to prevent average U.S. adult annual weight gain.

• Men climbing 20-34 flights of stairs per week have a **29% lower risk of stroke.**

• Just **15 minutes of cycling** (2.5 miles) twice a day burns the equivalent of 10 lbs per year.

•Each hour spent in a car contributes a 6% increase in risk of obesity and chronic disease while **each km walked contributes a 5% decrease in risk**

Design and physical activity

Creating or improving access to places for physical activity

- Can result in **25% increase** in number of people who exercise at least 3 times per week

Creating a more enticing and walkable public realm

- Can result in **161% increase** in physical activity (e.g. walking and biking)

Co-Benefits: Promote environmental sustainability

Active transportation

Active play

Active vertical circulation

ACTIVE DESIGN

Co-Benefits: Promote environmental sustainability


Cooper Union in NYC by Morphosis

A typical, **non-regenerative elevator uses 3-5% of a buildings energy**, ~15,000 kWh/year, the equivalent of electrically heating a 1,900sf home

A **20HP escalator** operating 24hrs a day, will use 28,000 kWh annually, **generating 43,000 pounds of CO_2 each year, equivalent to the emissions of four cars**

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Co-benefits: Reduce infrastructure costs

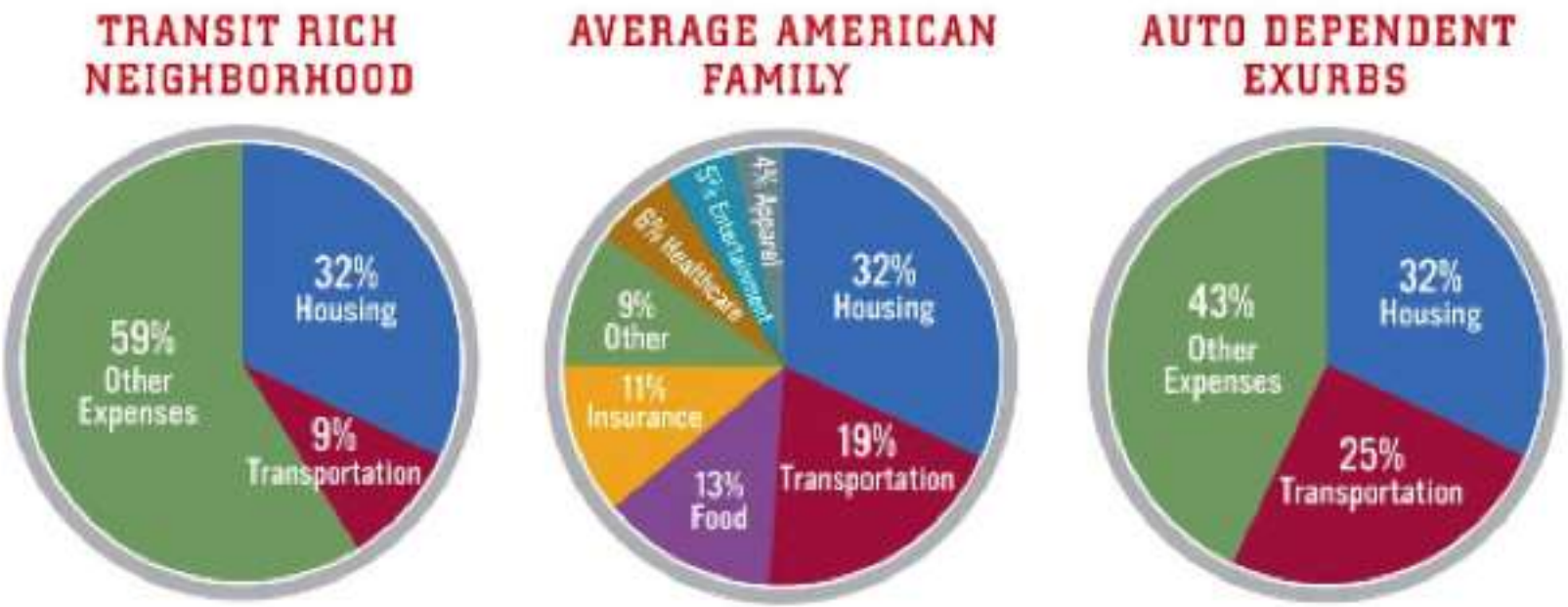
More compact development patterns help save money on infrastructure costs

	Water & Sewer Laterals Required	Water & Sewer Costs (billions)	Road Lane Miles Required	Road Land Miles Costs (billions)
Sprawl Growth Scenario	45,866,594	$189.8	2,044,179	$927.0
Compact Growth Scenario	41,245,294	$177.2	1,855,874	$817.3
Savings	**4,621,303**	**$12.6 (10.1%)**	**188,305**	**$109.7 (6.6%)**

Sprawl Costs: Economic Impacts of Unchecked Development, Robert W. Burchell, Anthony Downs, Barbara McCann and Sahan Mukherji, Island Press, 2005

ACTIVE DESIGN

Co-benefits: Save people money



People in walkable, transit-rich neighborhoods spend only 9 percent of their monthly income on transportation costs; those in auto-dependent neighborhoods spend 25 percent.

Source: Center for Transit-Oriented Development

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Co-benefits: Promote universal accessibility

- Creating safer places to walk & for wheelchair travel
- Making elevators more available for those who need them

ACTIVE DESIGN

Overview of the Active Design Guidelines

- Creation of the Guidelines
- Urban Design Strategies
- Building Design Strategies

ACTIVE DESIGN

Fit-City: Promoting Physical Activity Through Design

ACTIVE DESIGN

Process

Testing the guidelines through an interactive and interdisciplinary **Design Charrette**

Participants:
Agencies/ Developers/ AIA/ APA/ ASLA/Engineers

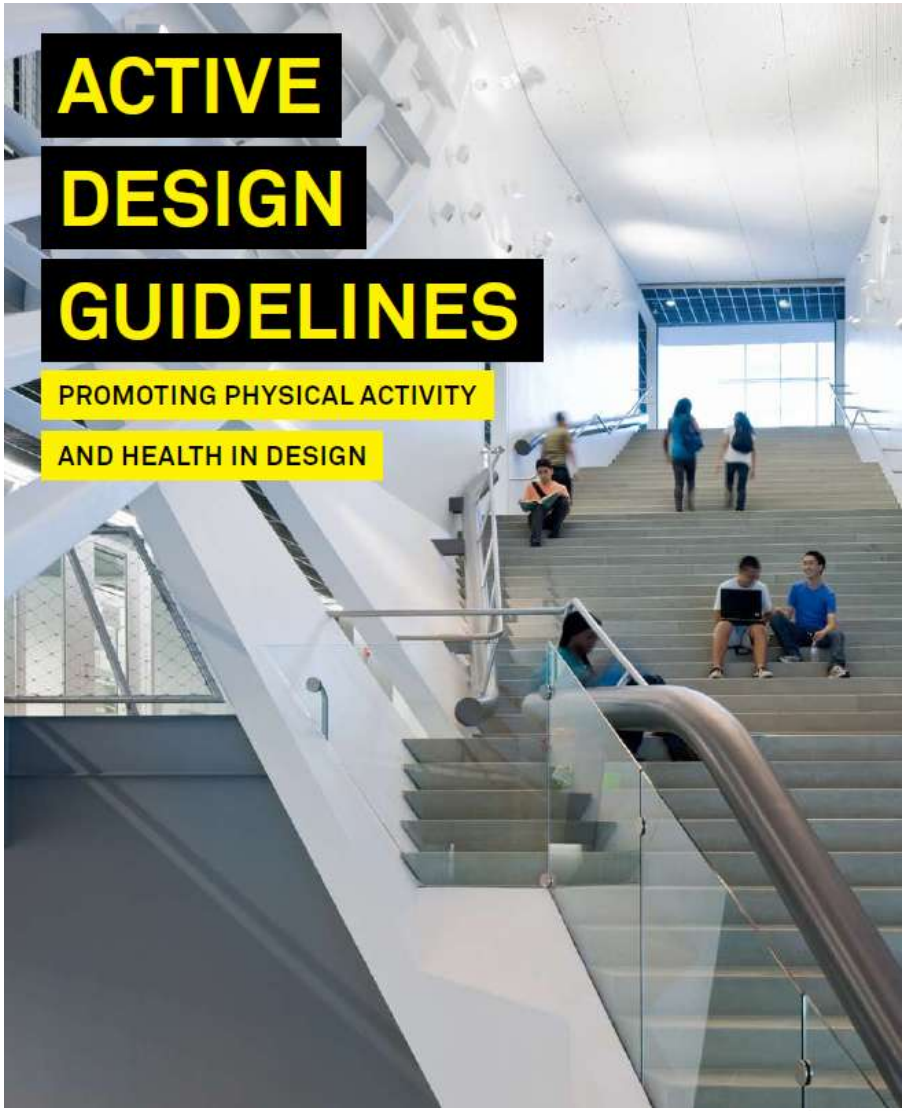
ACTIVE DESIGN

Content

Chapters

1) Environmental Design and Health: Past and Present
2) Urban Design: Creating an Active City
3) Building Design: Creating Opportunities for Daily Physical Activity
4) Synergies with Sustainable and Universal Design

www.nyc.gov/adg



Urban Design Strategies

- Land Use Mix
- Parks / Play Areas / Plazas
- Transit Access
- Pedestrian Environment
- Bicycle Network and Infrastructure

Land Use Mix

Take advantage of New York's **rich mix of uses**

Adjacency of offices and residences to services & amenities **promotes local walking**

Supermarkets and farmers markets encourage **healthy nutrition**

ACTIVE DESIGN

Parks/ Play Areas/ Plazas

Convenient parks and plazas encourage **active utilization**

Design parks for **local cultures** and for **range of age groups**

Attractive plazas have **mix of trees, lighting, water fountains & movable/ fixed seating**

Transit Access

Provide **attractive and sheltered seating areas** to encourage use of transit routes

Separate **bus lanes from traffic** to make transit more convenient

ACTIVE DESIGN

Pedestrian Environment / Traffic Calming

Create **safe and attractive** spaces for walking and sitting

Reduce crossing distances with **median refuge islands**

ACTIVE DESIGN

Pedestrian Environment / Streetscape

Provide places of rest to complement **active walking and jogging**

Enliven the sidewalk with **street cafes**

Integrate **public art** into the streetscape

ACTIVE DESIGN

Bicycle Network and Infrastructure

Encourage use through development of **interconnected bikeways**

Provide attractive **signage**, **wayfinding, and secure bike parking**

ACTIVE DESIGN

Building Design Strategies

- Bicycle Parking and Storage
- Recreational Programming
- Promoting Stair Use
- Building Exteriors

Bicycle parking + storage

Secure bike storage with **easy access**

ACTIVE DESIGN

Recreational programming

Provides **fun and affordable** recreational opportunities

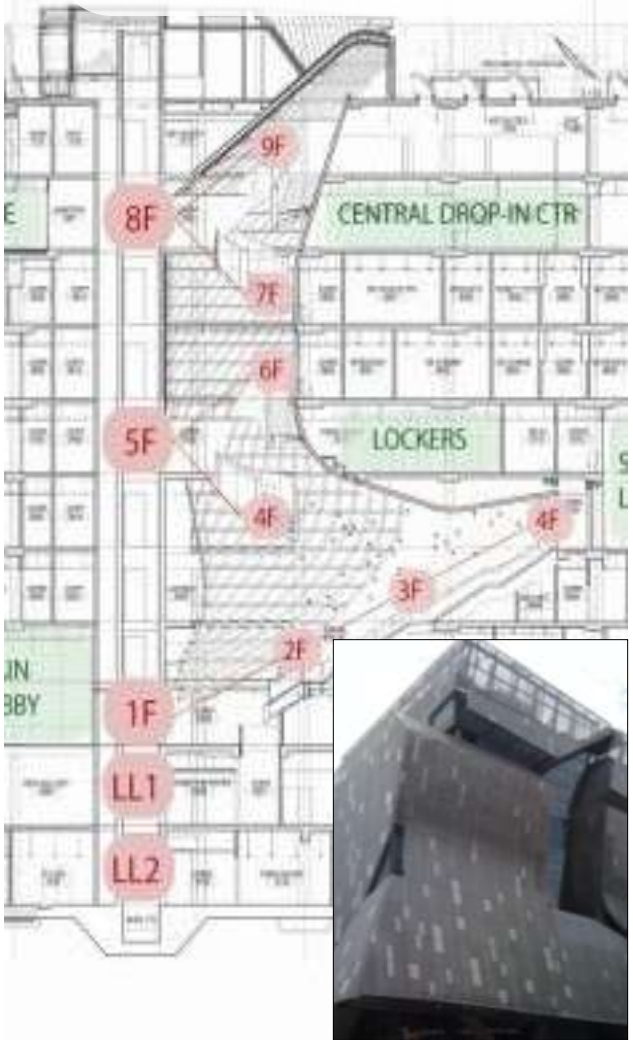
- Mary Walton Children's Center
- Public School 64, Queens
- 10 West End Ave, Manhattan

ACTIVE DESIGN

Stairs: accessibility, visibility, convenience

Stair of **prominence** and **visual interest**

Skip stop elevators to increase stair use



Enclosed stairs that use **fire rated glass** to **increase visibility**

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Stairs: aesthetics

Stairs to receive plenty of **natural daylight**

Art in stairs to **increase visual interest**

Stairs **designed to invite** users

ACTIVE DESIGN

Stairs: signage and prompts

Motivational Signage placed at points of decision

ACTIVE DESIGN

Building Exteriors: contributing to the pedestrian environment

Maximize **variety, detail, texture and continuity** on the **lower 1-2 floors** of the building facade

Soho, NYC

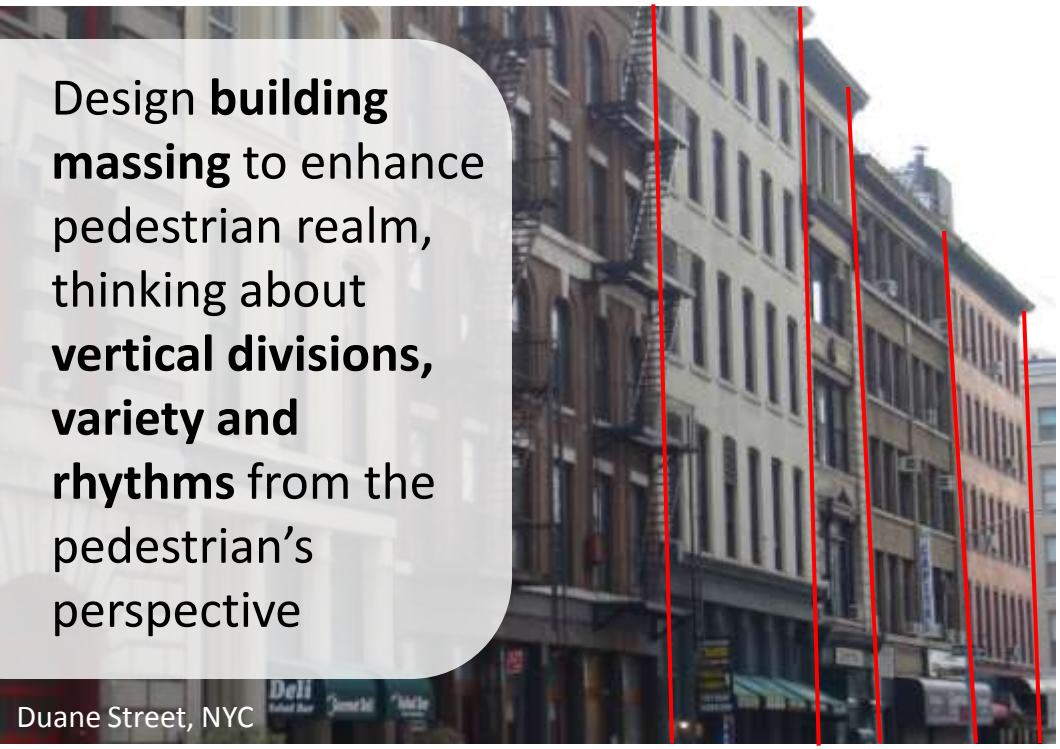
Broadway, UWS, NYC

Provide **multiple entries and appropriate transparency** along the street to help enliven the pedestrian environment

ACTIVE DESIGN

Building Exteriors: contributing to the pedestrian environment

Design **building massing** to enhance pedestrian realm, thinking about **vertical divisions, variety and rhythms** from the pedestrian's perspective



Duane Street, NYC

14 Townhouses, Brooklyn, Rogers Marvel

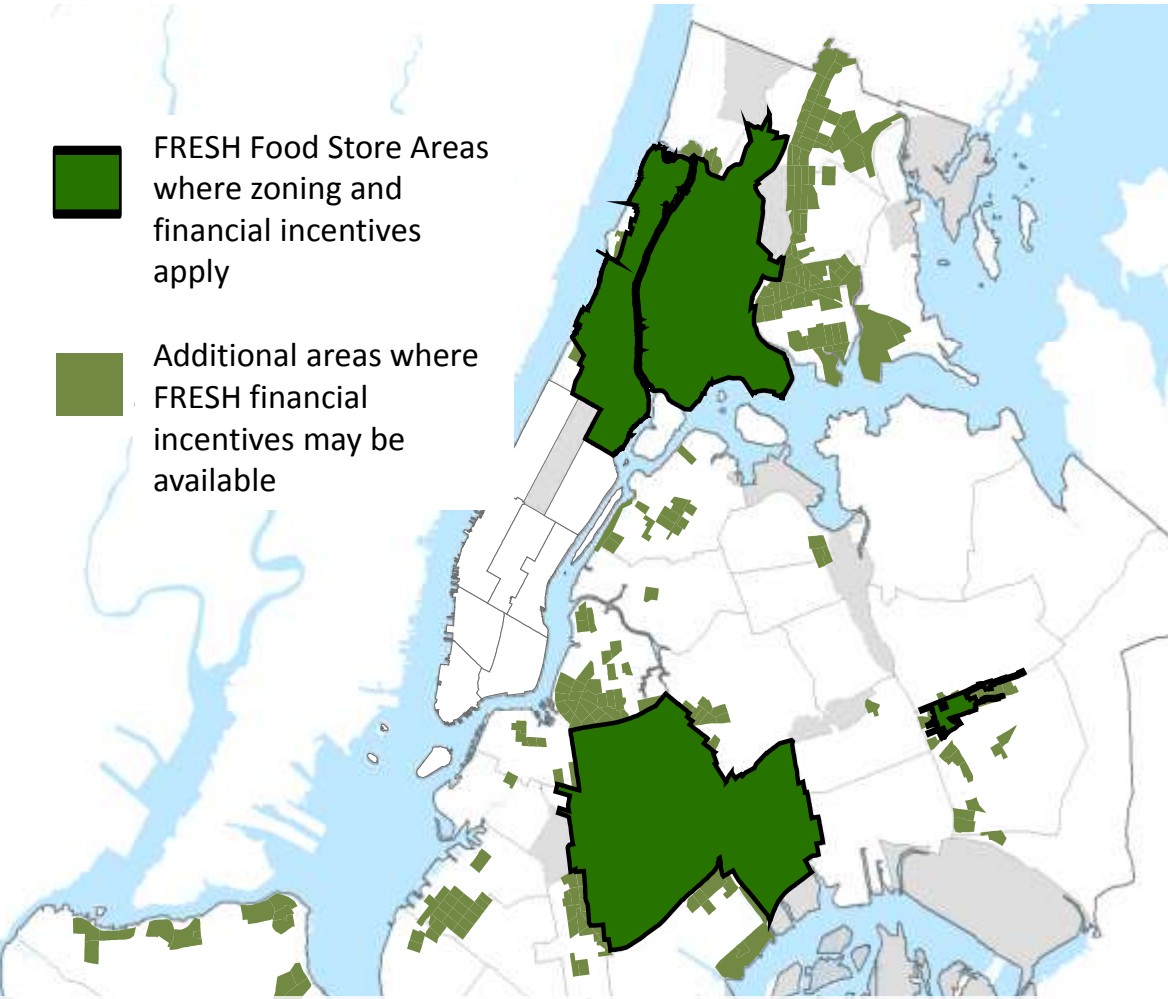
Carefully incorporate **stairs and ramps** into building design features when needed

Diana Center, Barnard College, Weiss/Manfredi

ACTIVE DESIGN

City Policy Initiatives

NYC FRESH Program

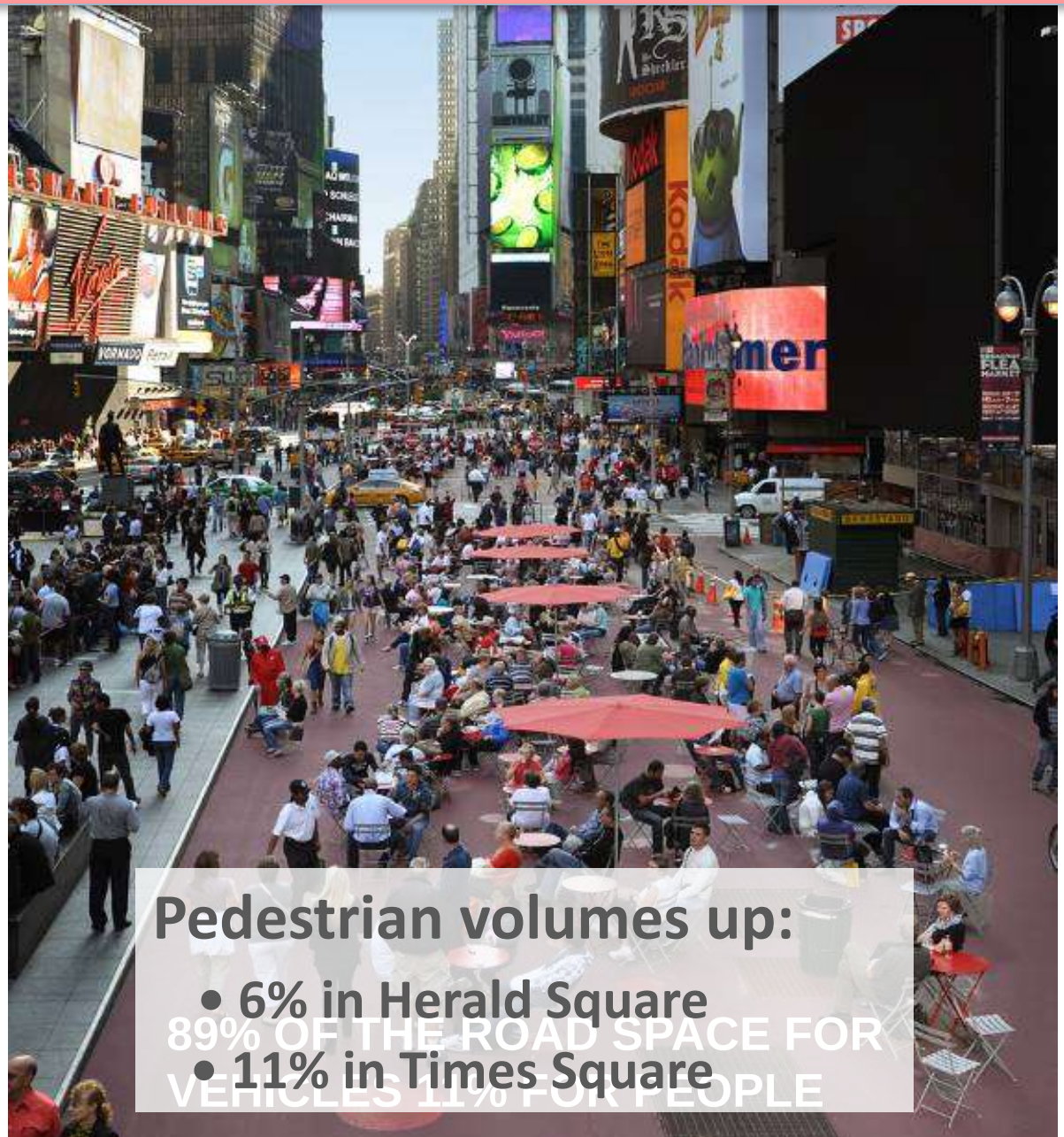


Zoning and tax **incentives for** providing **fresh food** options in the city's underserved areas with high health needs

ACTIVE DESIGN

Vision 2020: Comprehensive Waterfront Plan

Changing the form of the Public Right of Way



ACTIVE DESIGN

Zoning for Bicycle Parking

Zoning for Bicycle Parking to **increase active transport** by providing safe and secure parking for bike commuters

Bicycling

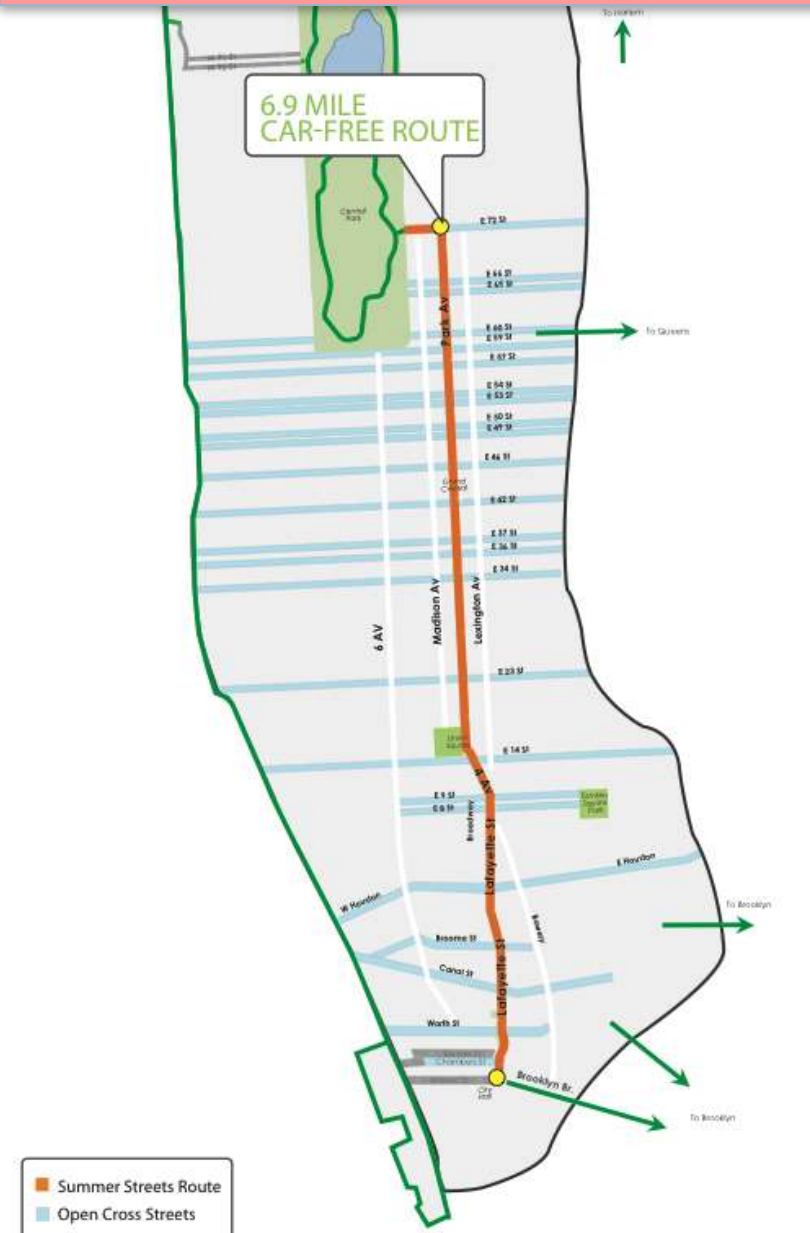
Annual NYC bicycle counts 2000-2010:

262%

the city's fasted growing mode of transportation

ACTIVE DESIGN

Programming: Summer Streets and PlayStreets



Results in New York City from 2000 to 2010

30% reduction in traffic fatalities

10% growth in bus and subway ridership

262% increase in commuter cycling

5% reduction in motor vehicle registrations

25% decline in citywide traffic volumes (2000-2009)

ACTIVE DESIGN

CDC-Funded Partner Communities Effort

Boston MA ~ Cherokee Nation OK ~ Chicago IL ~ Cook County IL ~ Douglas County NE ~ Jefferson County AL ~ King County WA ~ Louisville KY ~ Miami-Dade County FL ~ Multnomah County OR ~ Nashville TN ~ Philadelphia PA ~ Pima County AZ ~ San Diego CA

ACTIVE DESIGN

What can you do today?

- Download and read the complete Active Design Guidelines **www.nyc.gov/adg**

- **Spread the word!** Discuss with colleagues, clients, professional associations. Consider ways to incorporate health and physical activity into your projects

- Stay in the loop about Active Design. Complete the **pink Interest Card** if you're interested in guidance about specific issues
  - **Training and curriculum development**
  - **Site-specific outreach / strategies for existing buildings**
  - **Plan review for future developments**
  - **Assistance with LEED Innovation Credit**
  - **Assistance with FRESH program**

ACTIVE DESIGN

Thank you!

- Q&A
- Group Discussion
- Closing and Exit Questionnaires

Group Discussion

Questions to Consider:

1. What **opportunities** do you see for integrating Active Design into your work?

2. What **constraints** do you see that could make implementation of Active Design challenging?