

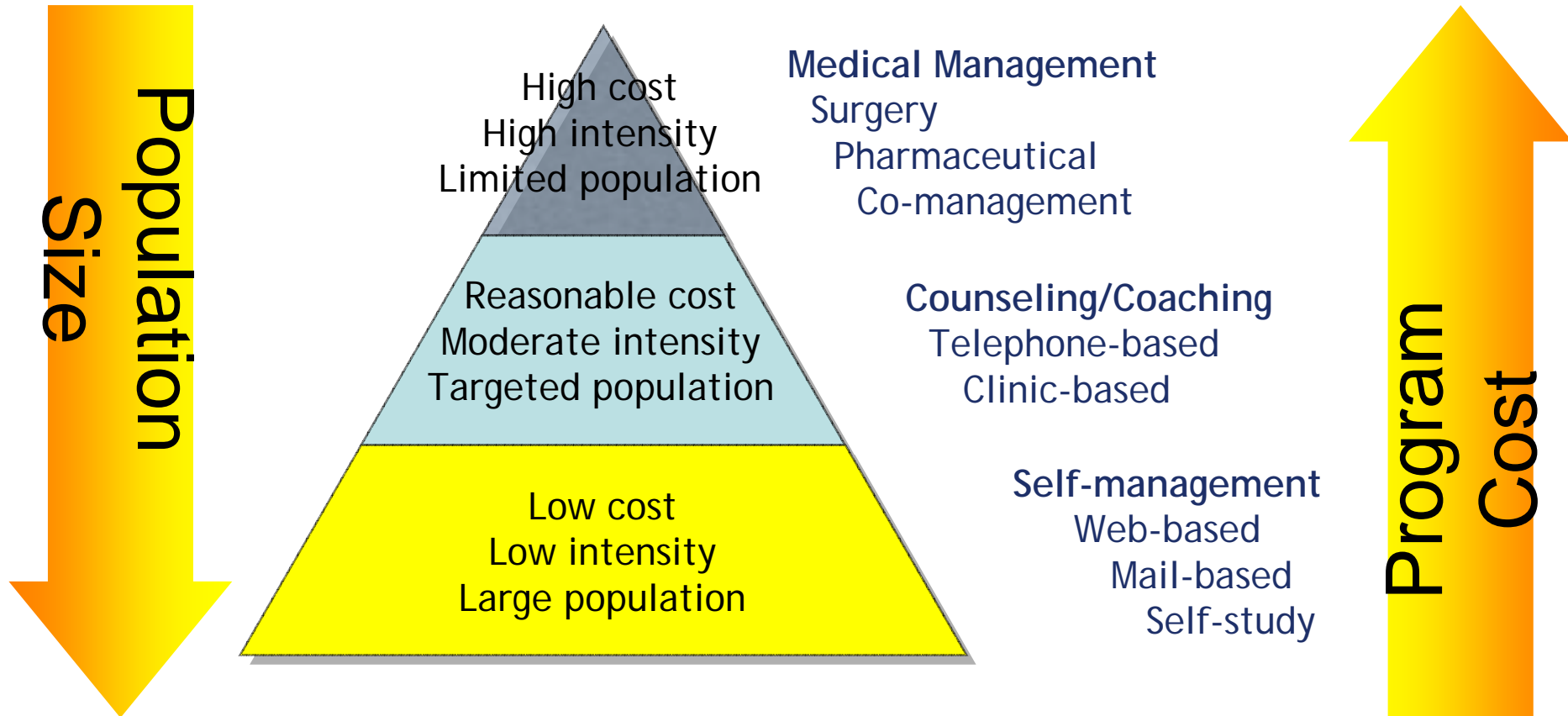
Web-Based Interactive Disease Management in a New Era of Patient Care

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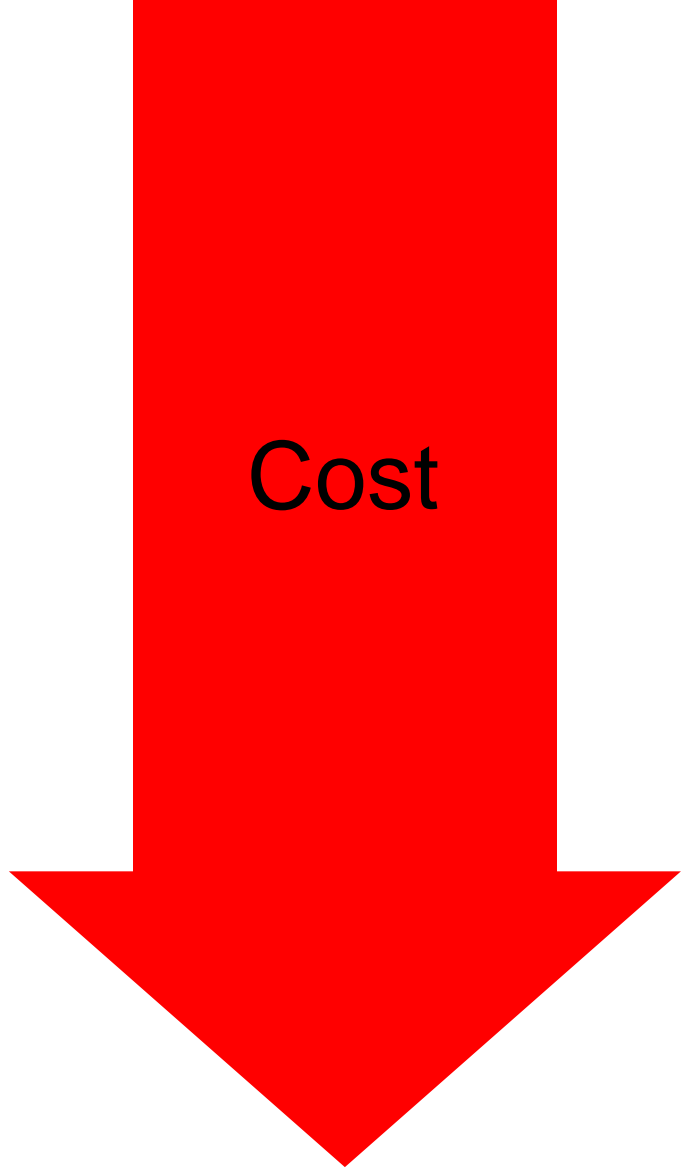
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Tiers of disease management



The goal:



Cost



High efficacy

High reach

10 leading causes of death in the United States

Cause	Deaths
	Estimated #
Heart disease	720,058
Cancer	505,322
Cerebrovasc. disease	144,088
Unintentional injuries	91,983
Chronic lung disease	86,679
Pneumonia/ Influenza	79,513
Diabetes	47,664
Suicide	30,906
Chronic liver disease	25,188
HIV infection	1,757,188

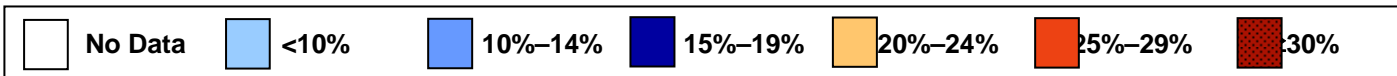
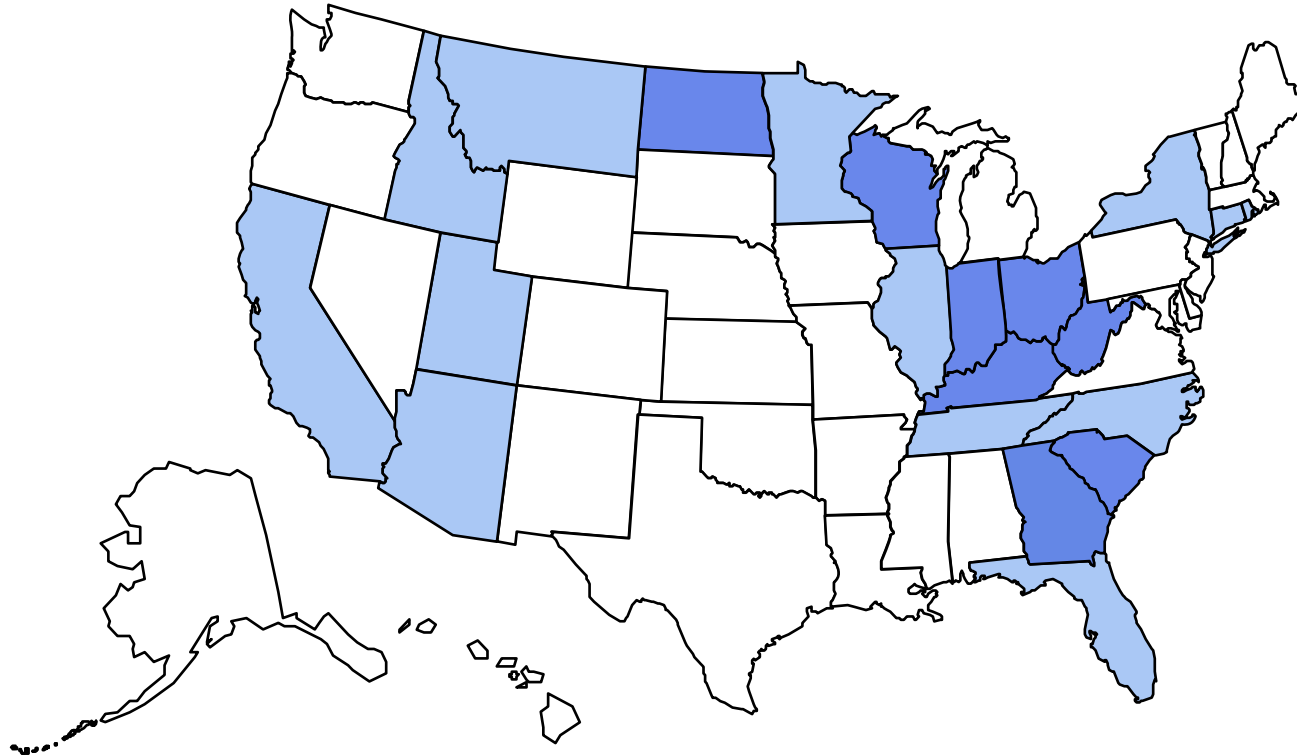
Actual causes of death in the United States

Cause	Deaths	
	Estimated #	% Total
Tobacco	400,000	19
Diet/ activity patterns	300,000	14
Alcohol	100,000	5
Microbial agents	90,000	4
Toxic agents	60,000	3
Firearms	35,000	2
Sexual behavior	30,000	1
Motor vehicles	25,000	1
Illicit use of drugs	20,000	<1
Total	1,060,000	50

Obesity Trends* Among U.S. Adults

BRFSS, 1985

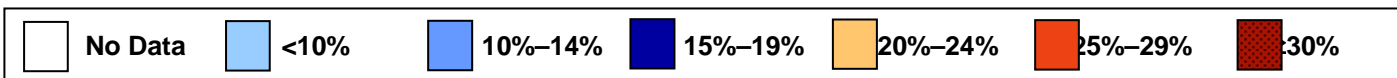
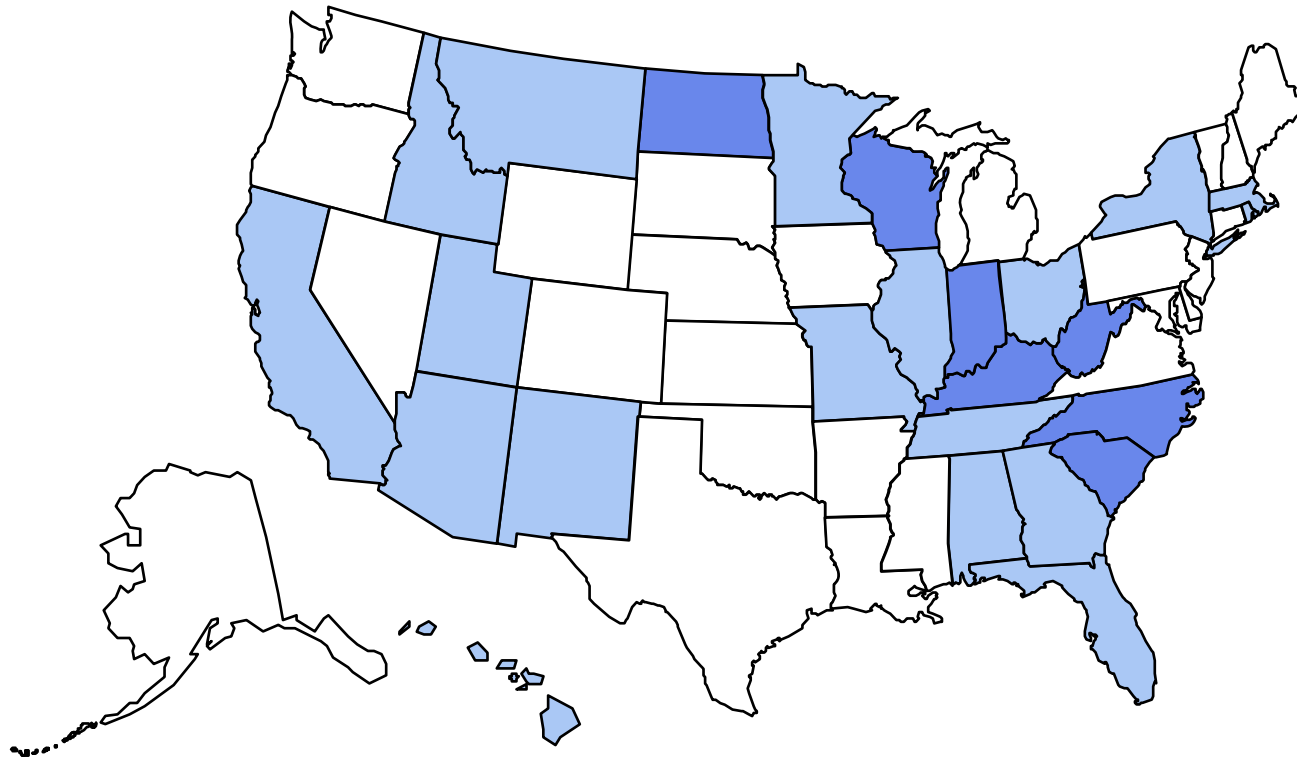
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1986

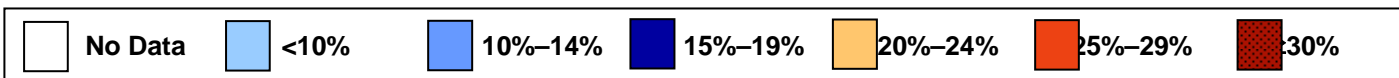
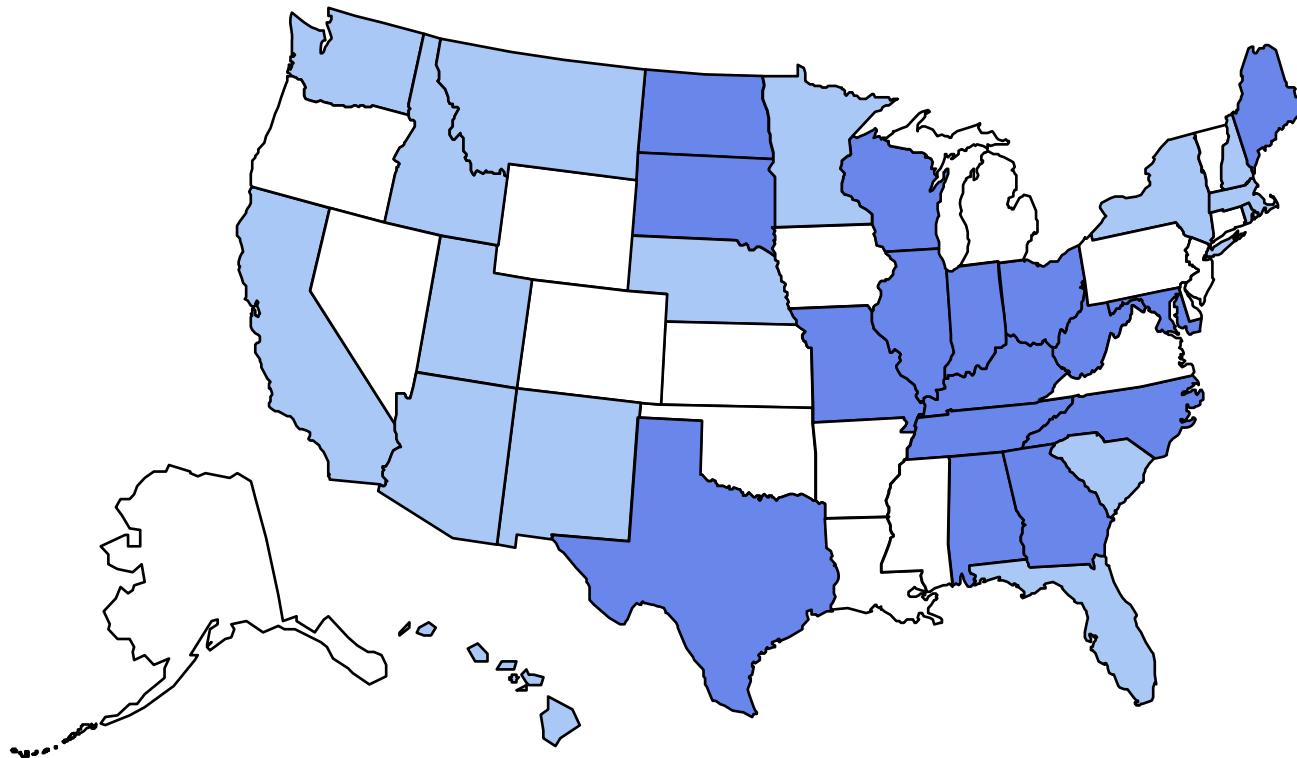
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Obesity Trends* Among U.S. Adults

BRFSS, 1987

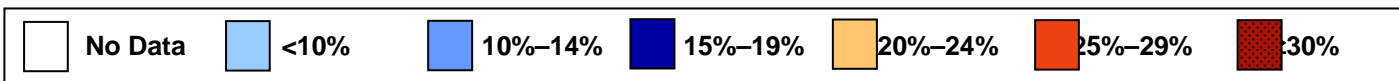
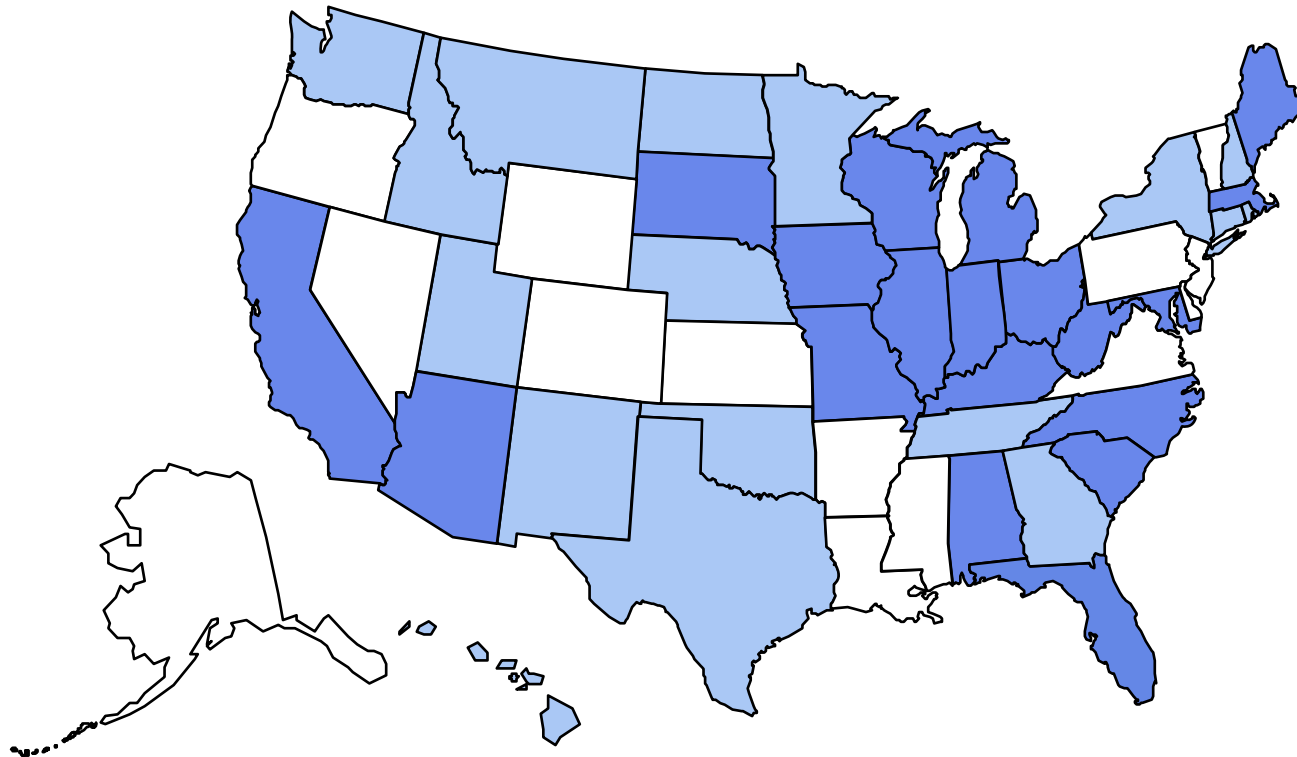
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1988

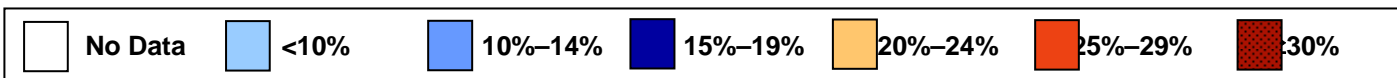
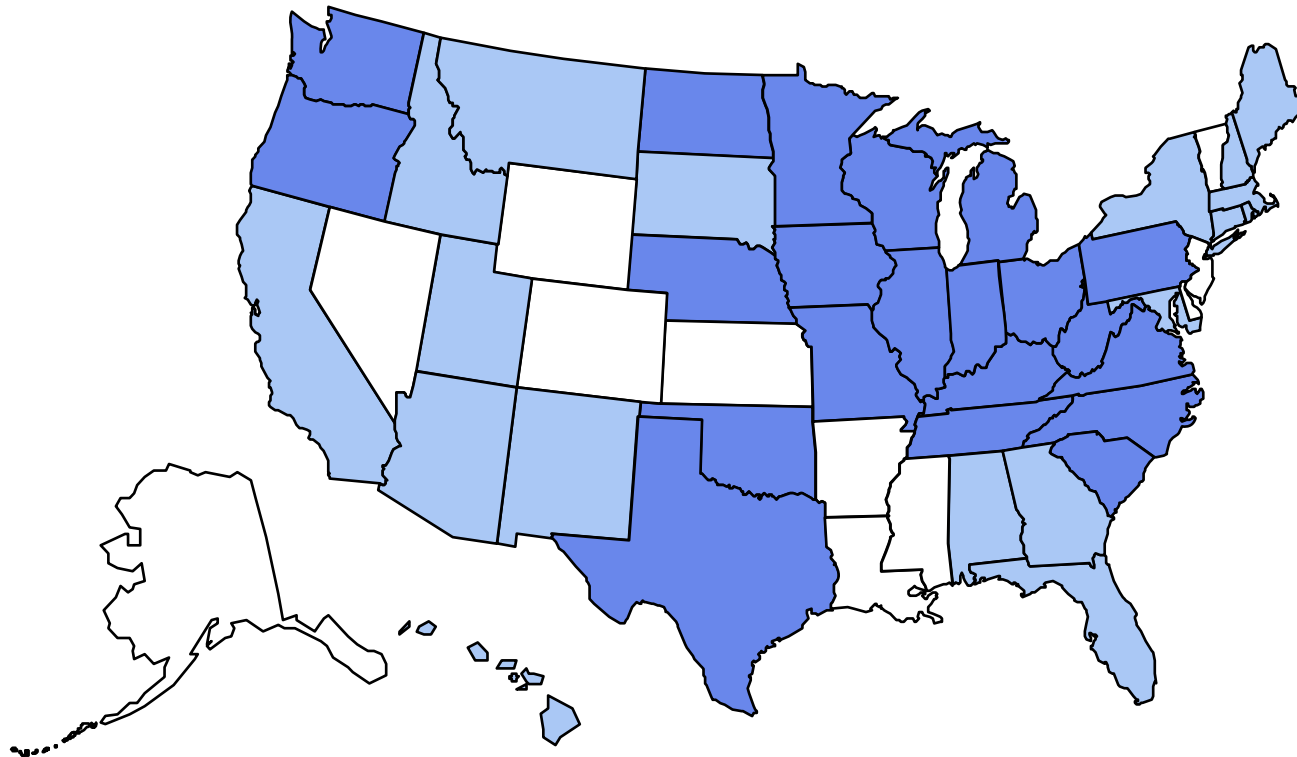
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Obesity Trends* Among U.S. Adults

BRFSS, 1989

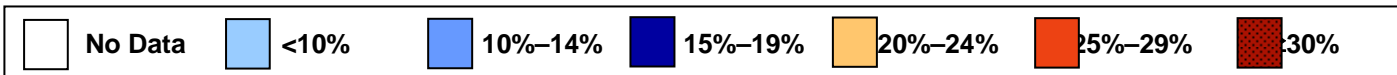
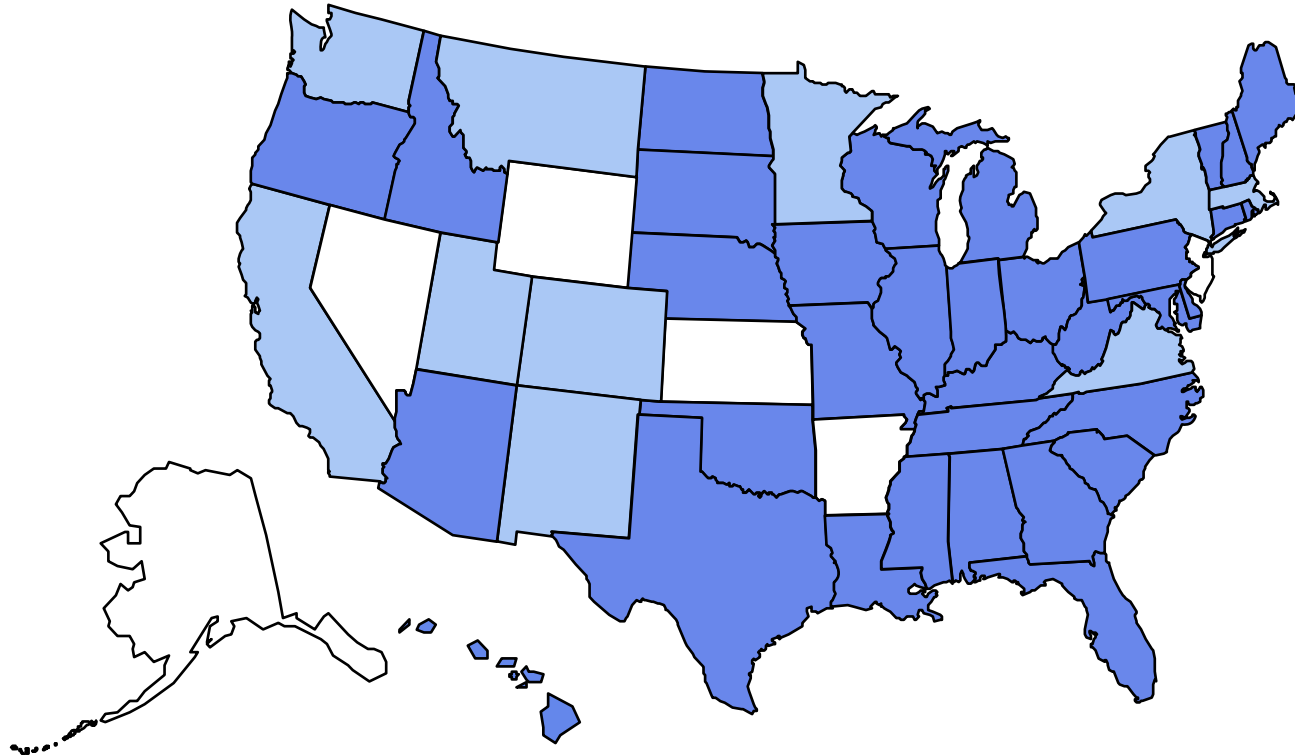
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Obesity Trends* Among U.S. Adults

BRFSS, 1990

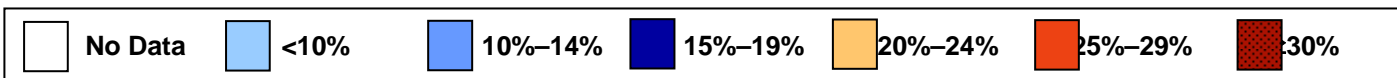
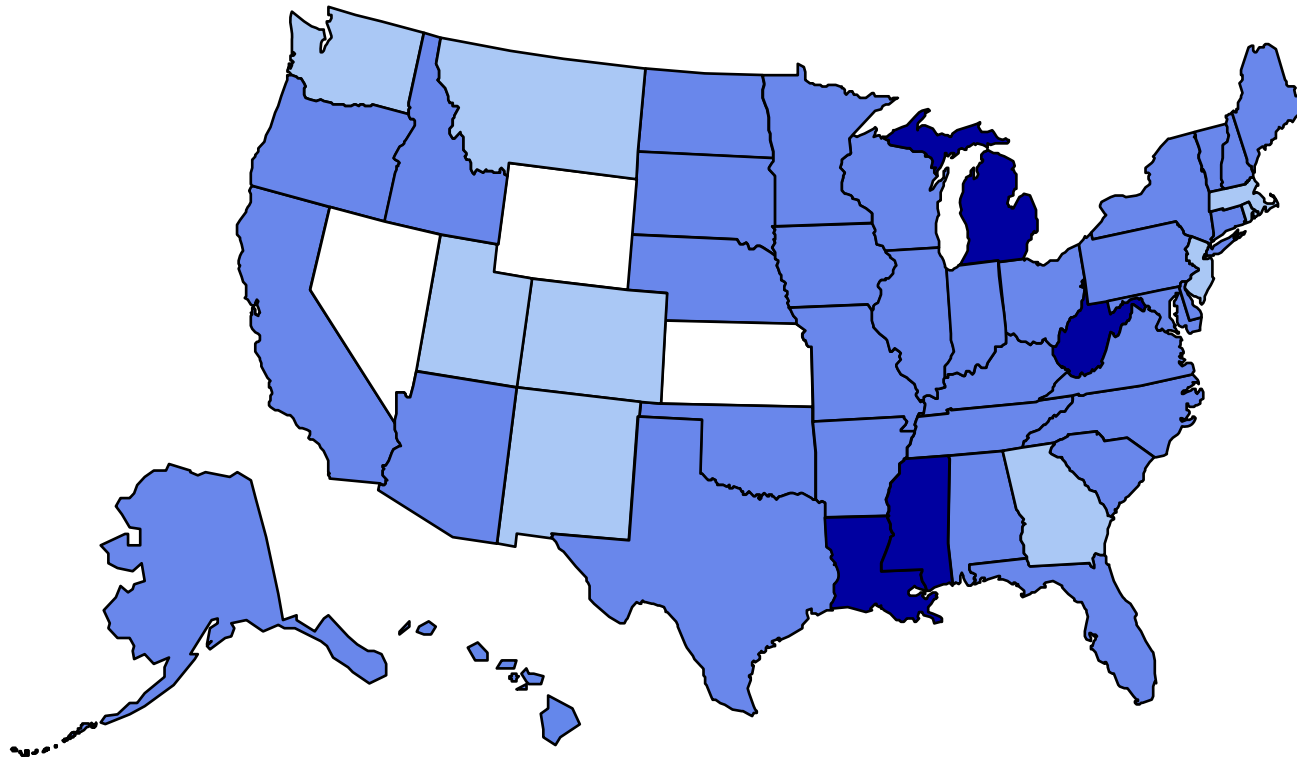
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Obesity Trends* Among U.S. Adults

BRFSS, 1991

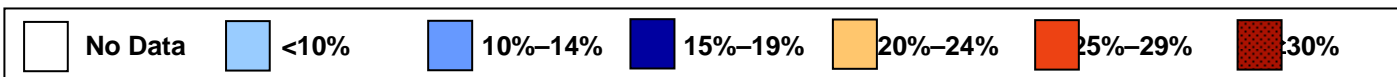
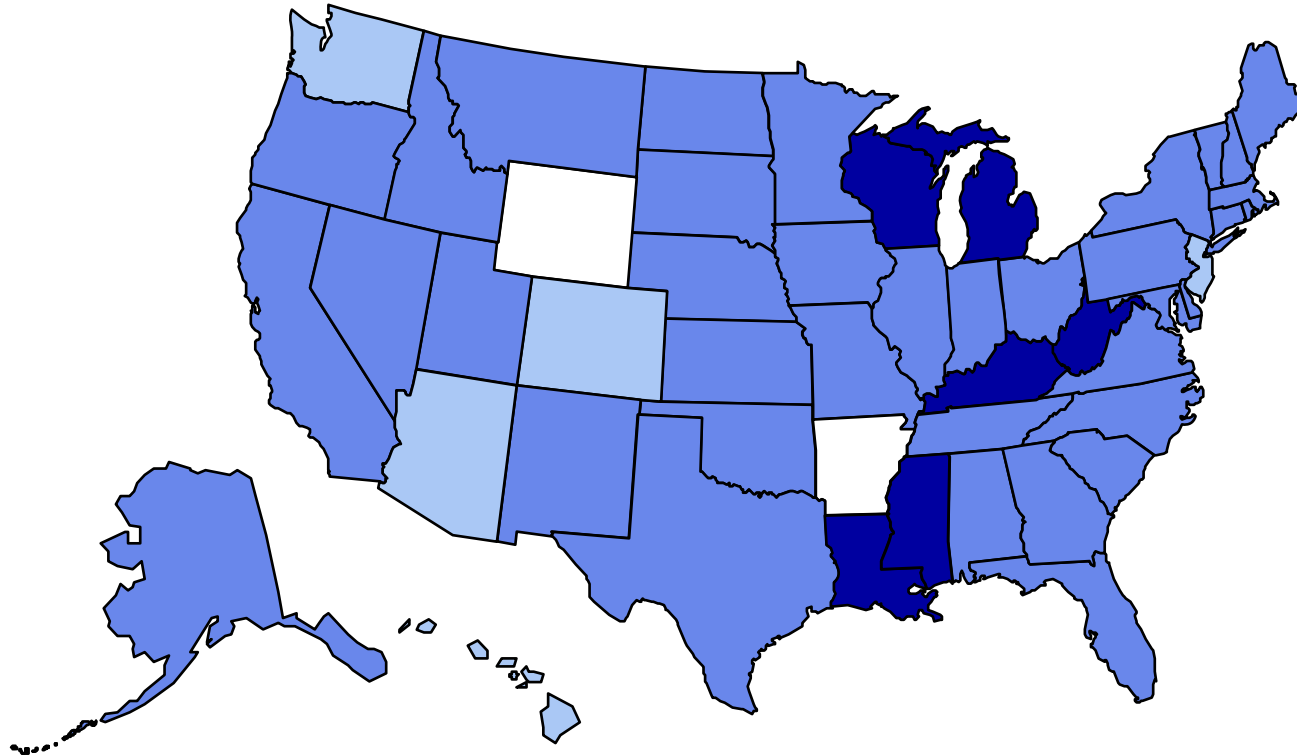
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Obesity Trends* Among U.S. Adults

BRFSS, 1992

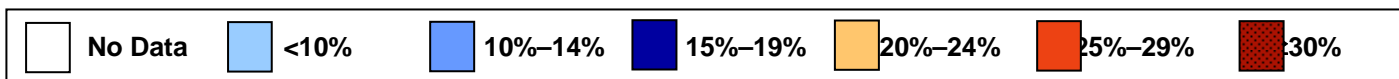
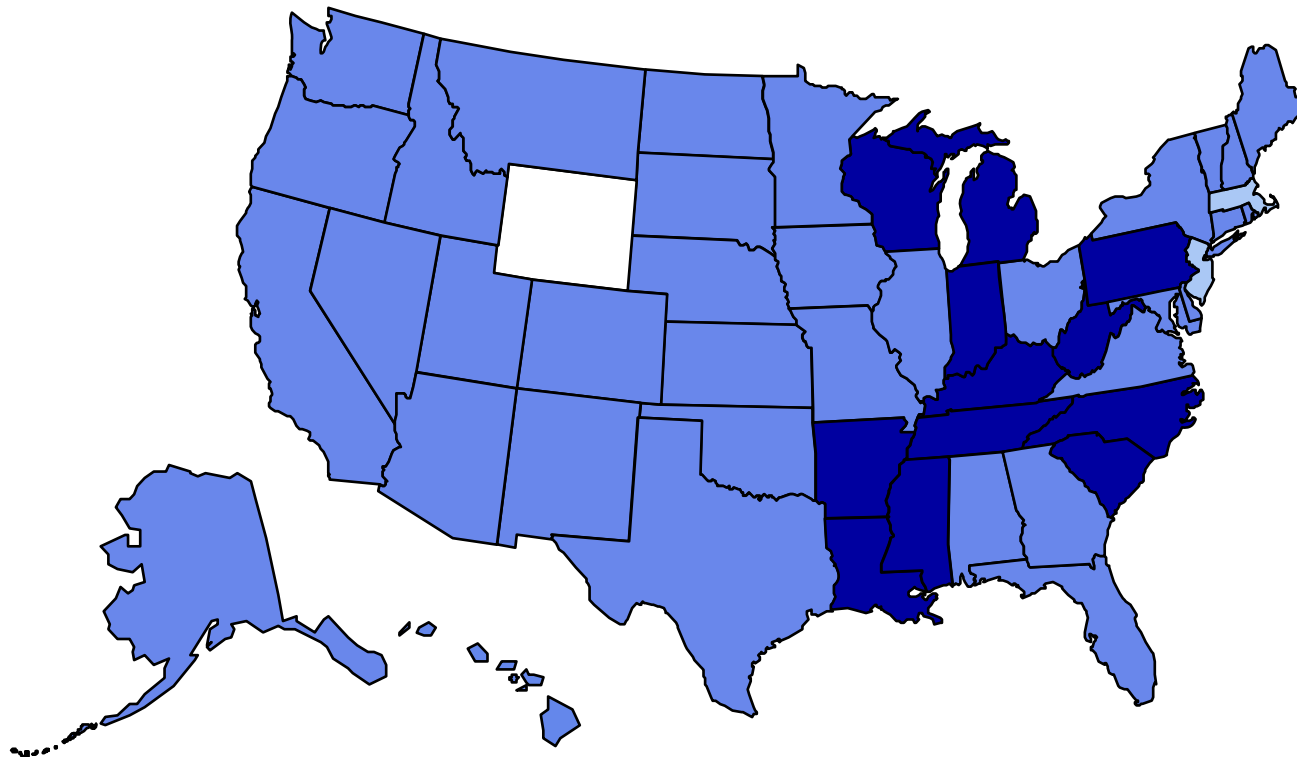
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1993

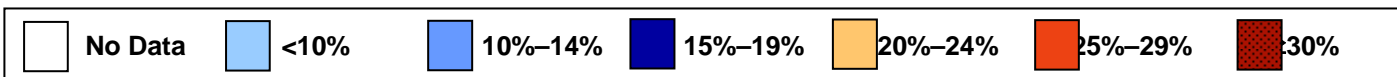
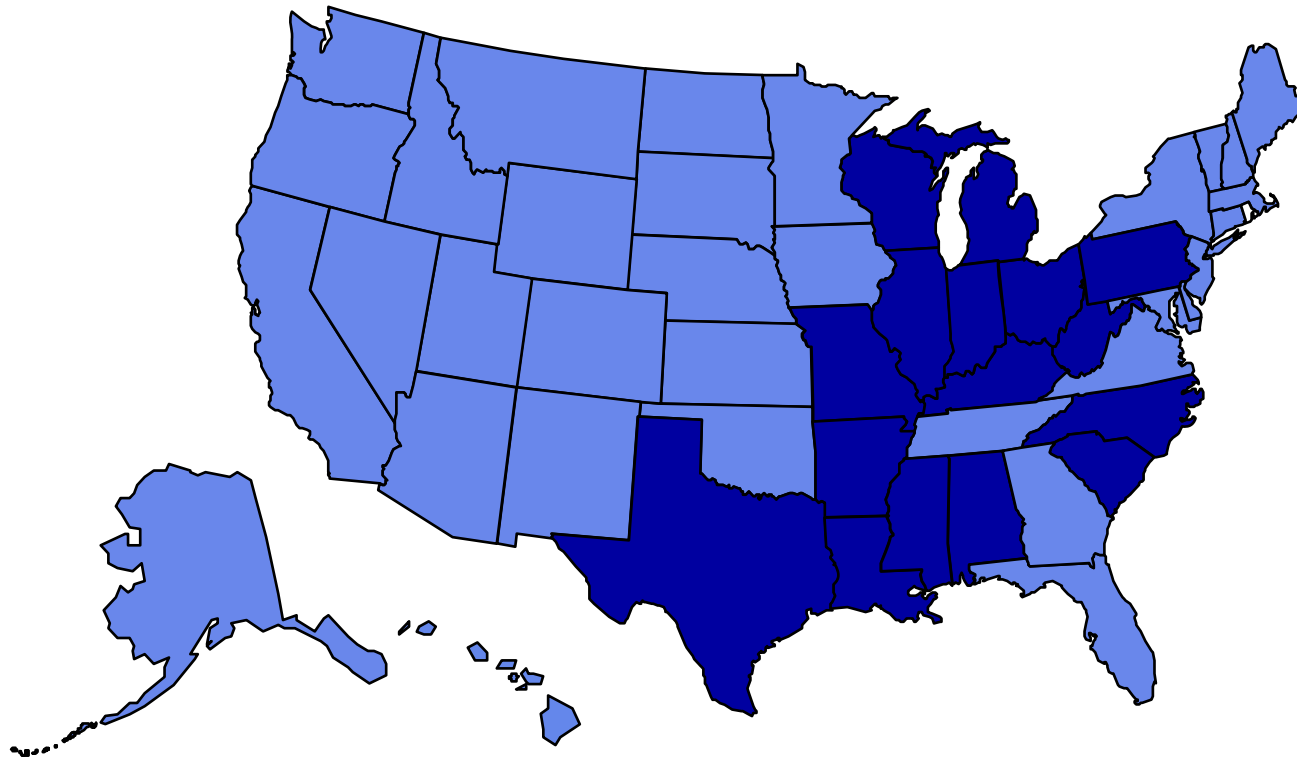
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1994

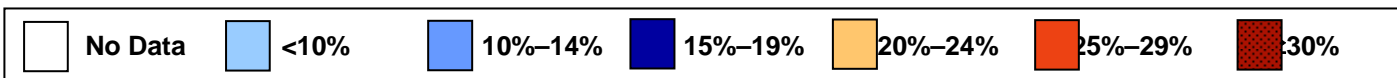
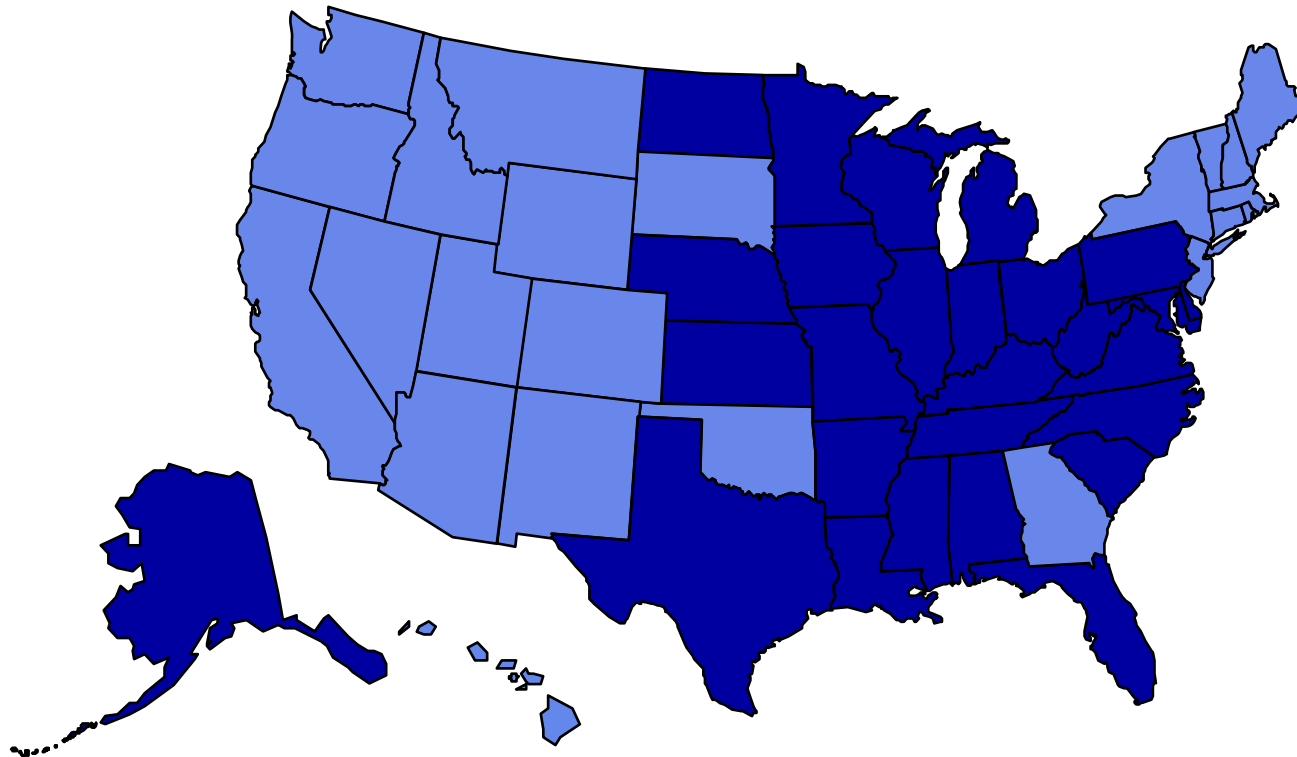
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1995

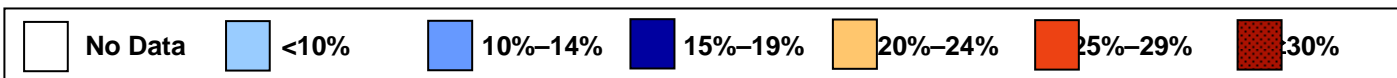
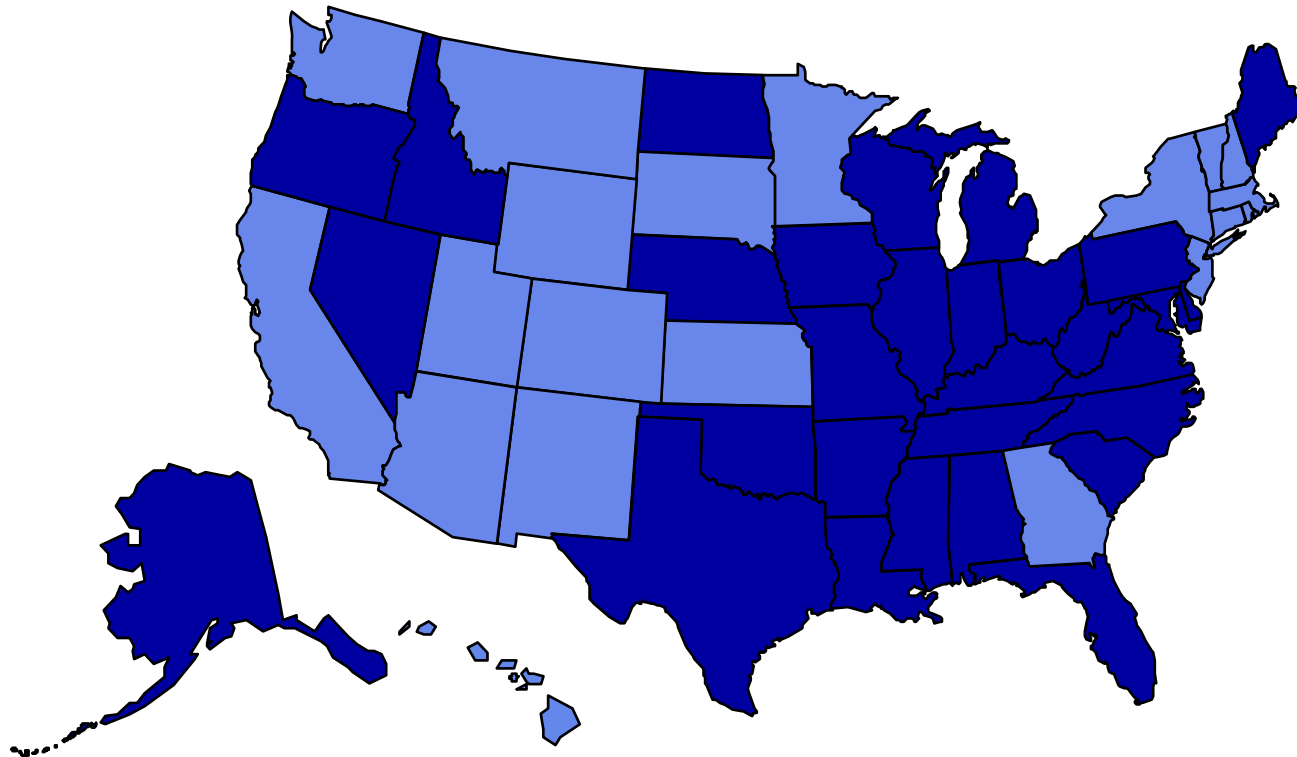
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1996

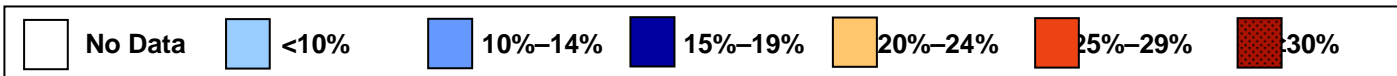
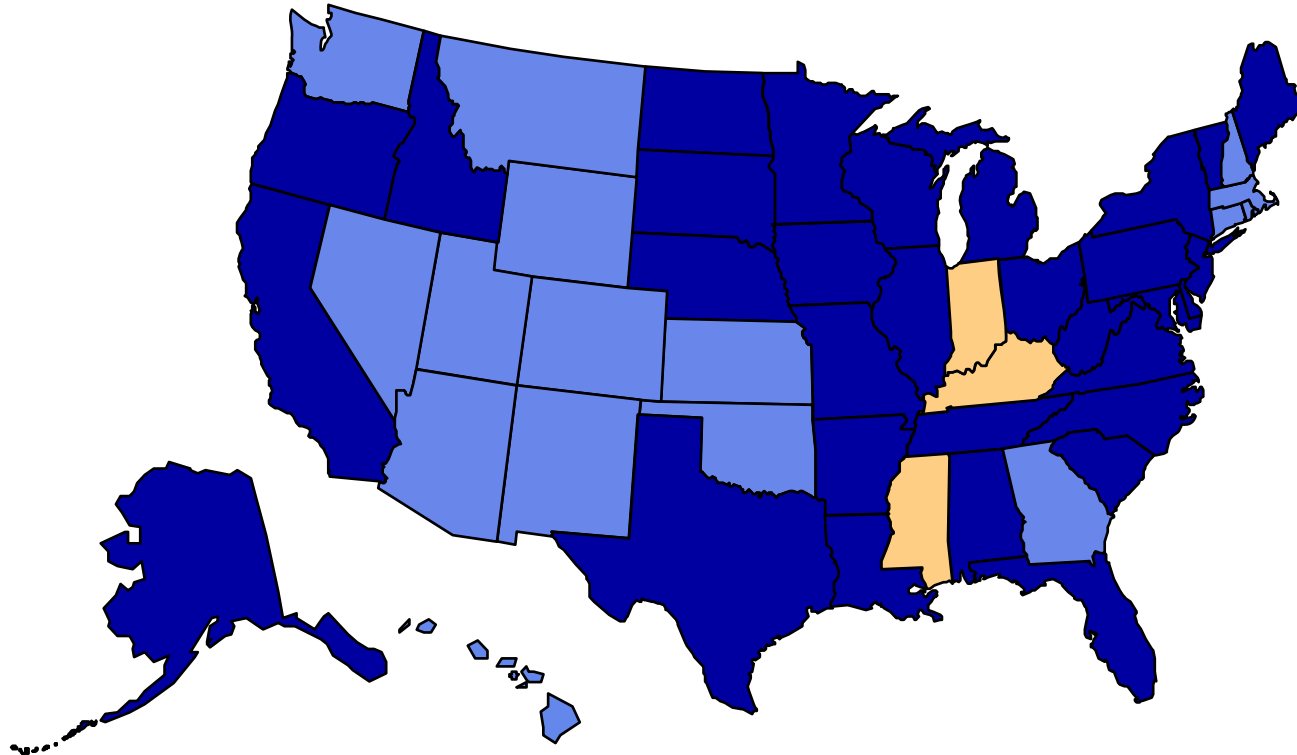
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1997

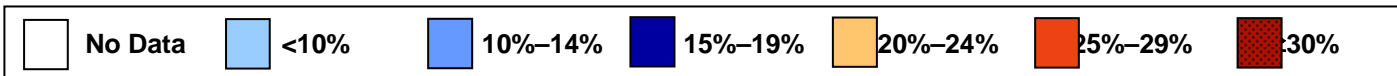
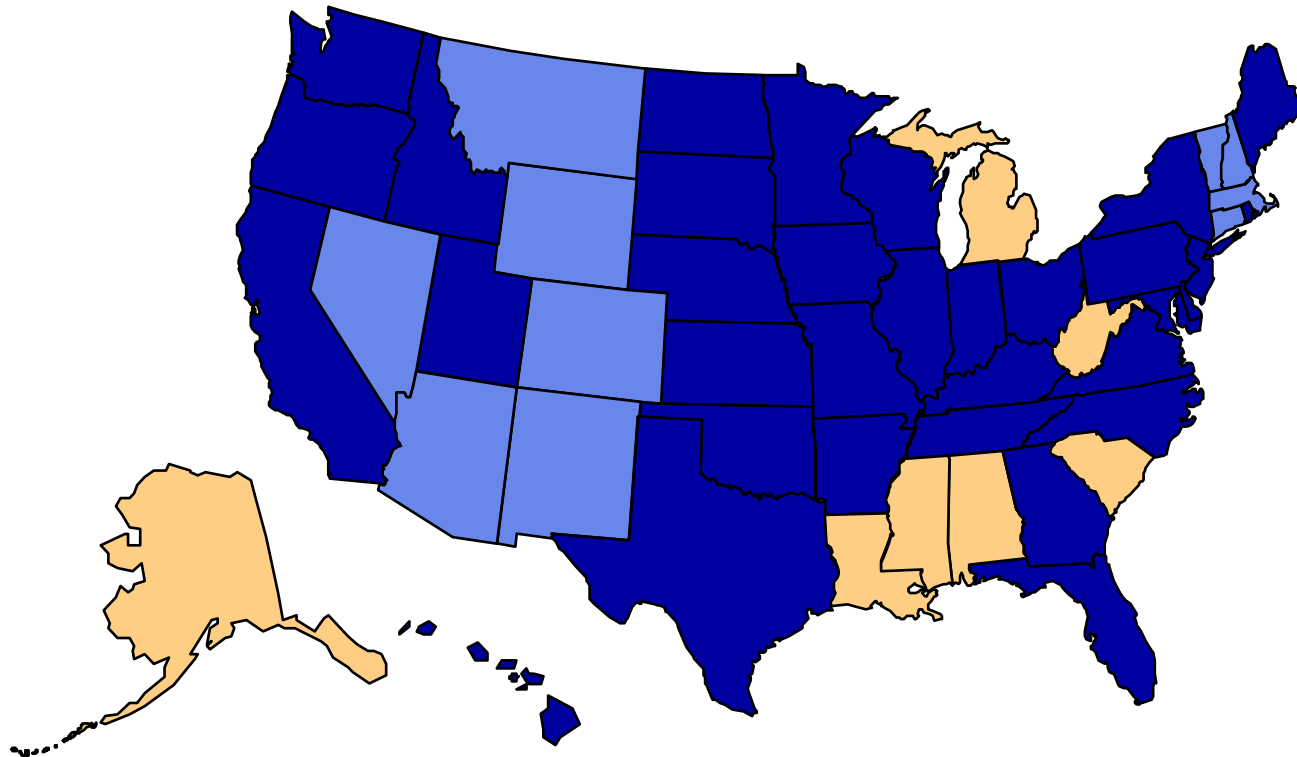
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1998

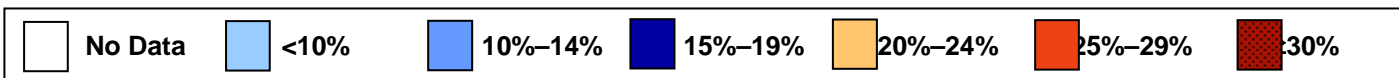
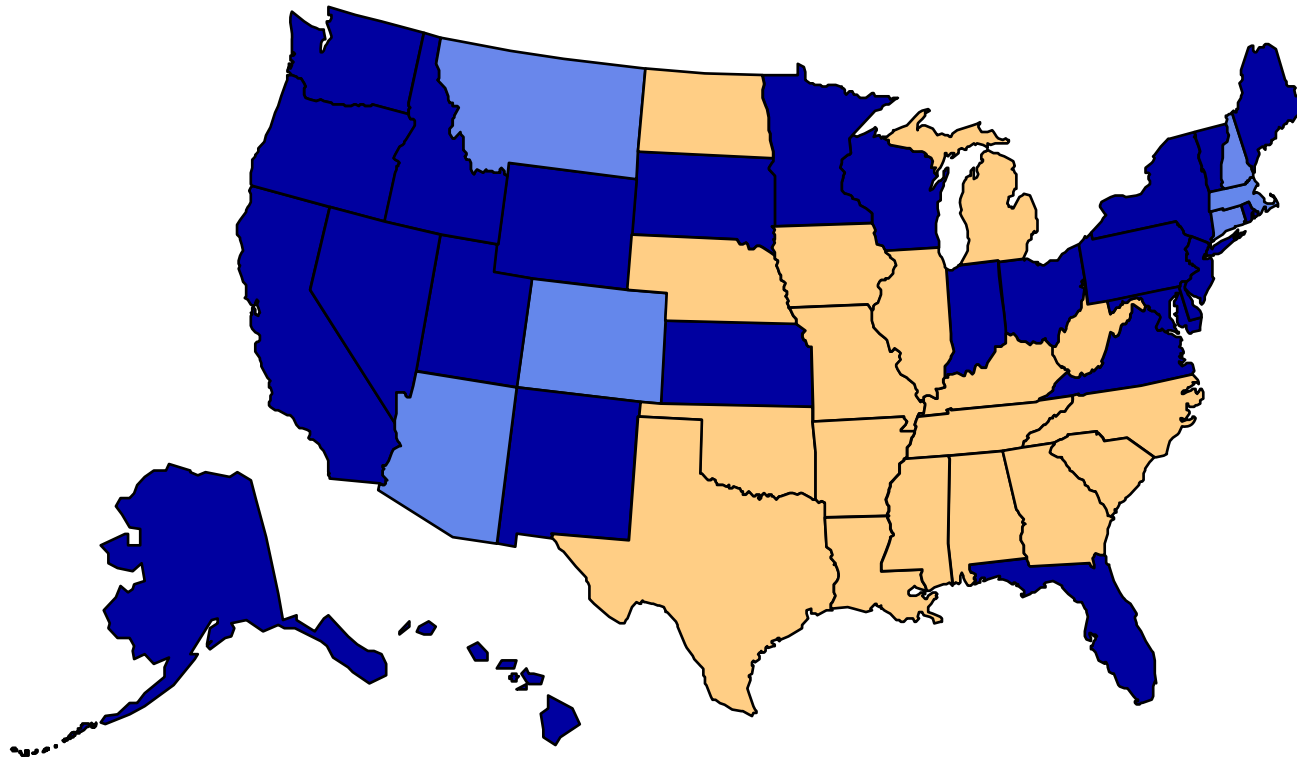
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 1999

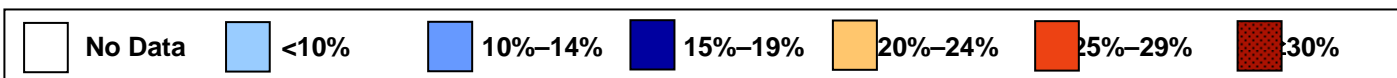
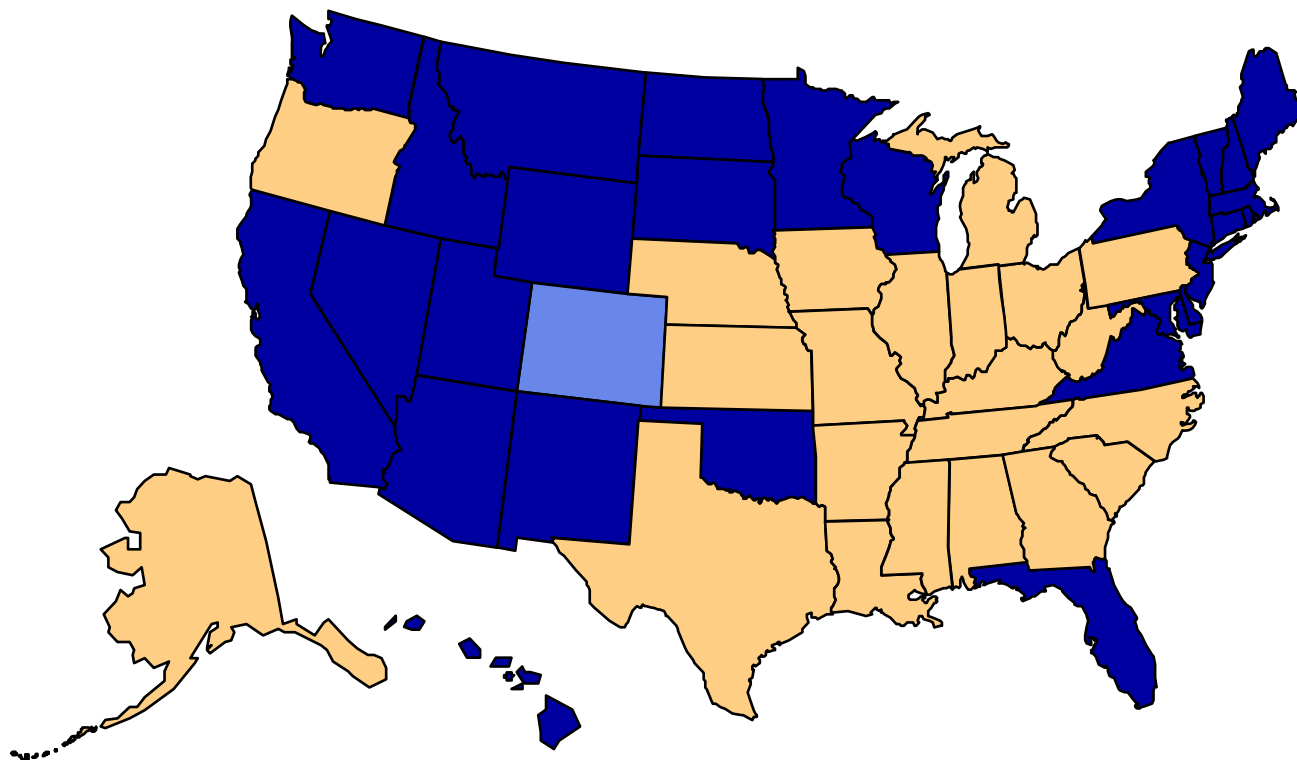
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2000

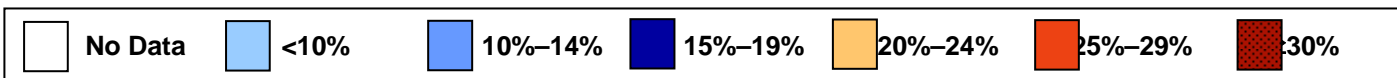
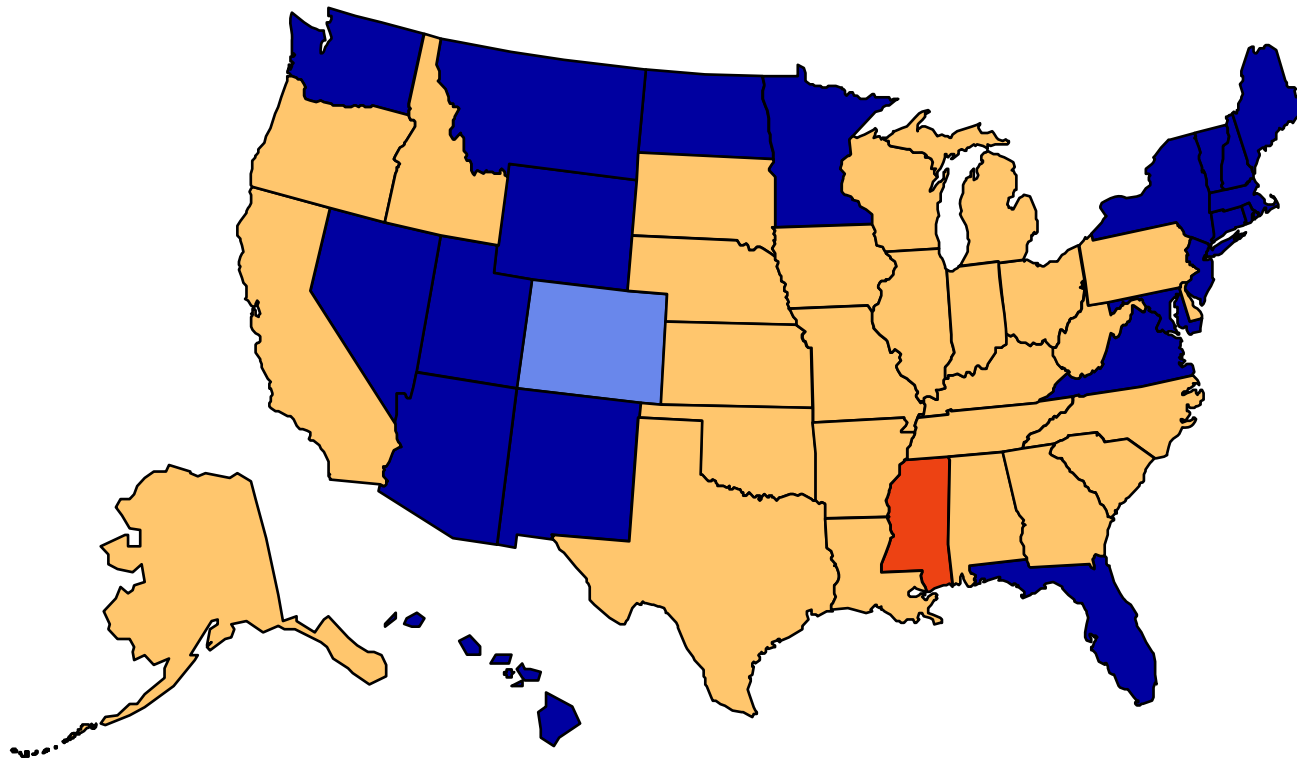
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2001

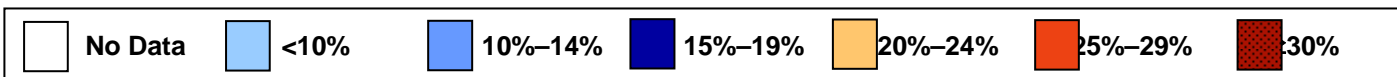
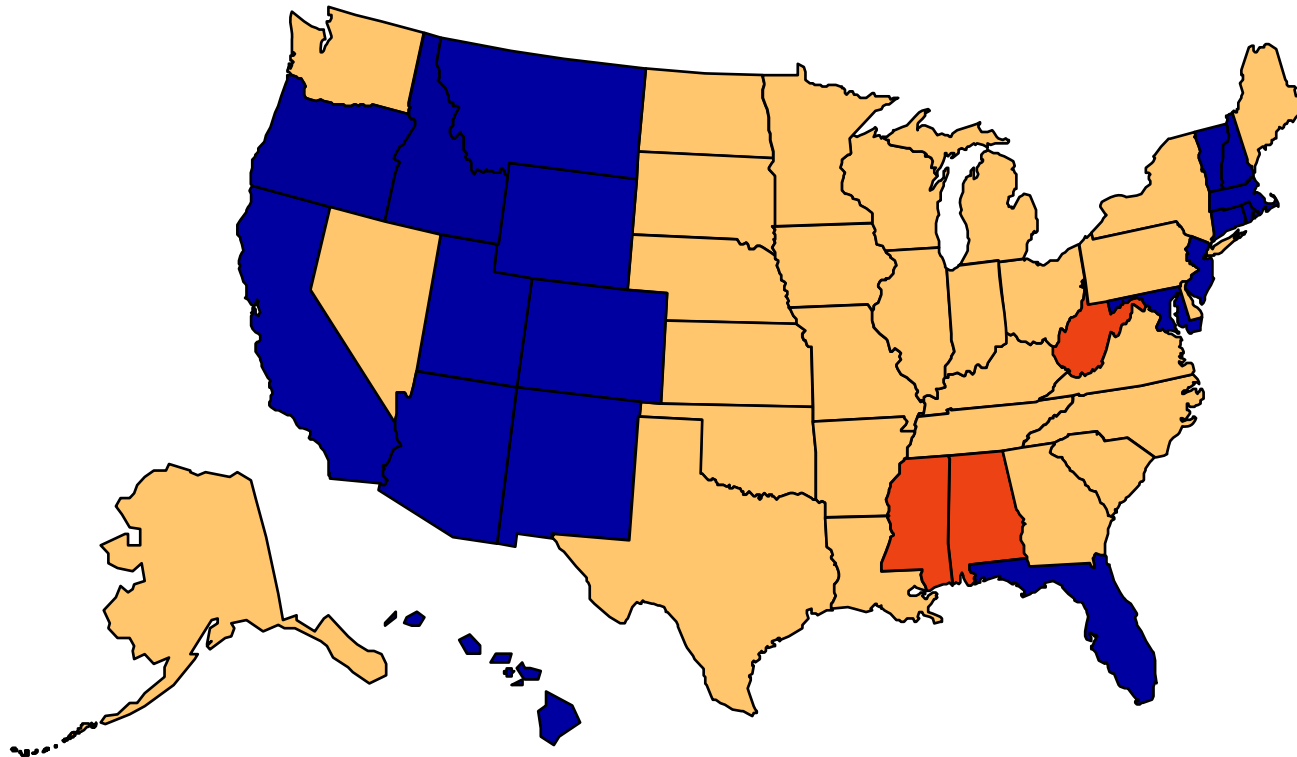
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2002

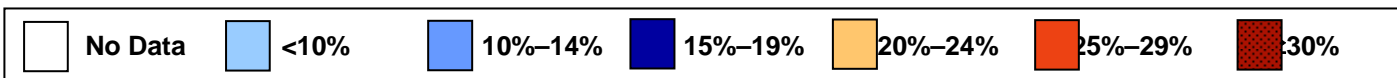
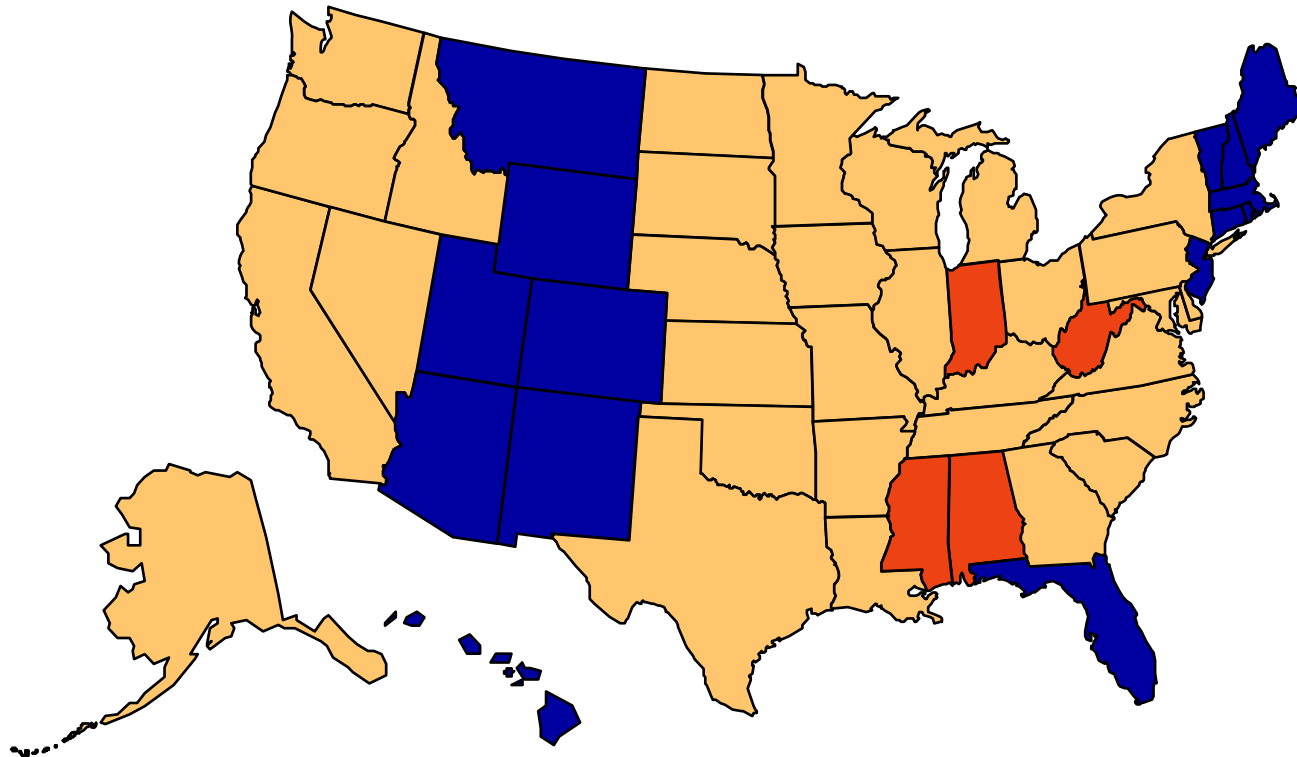
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2003

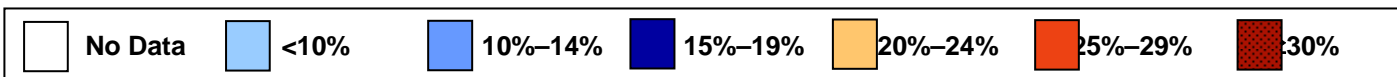
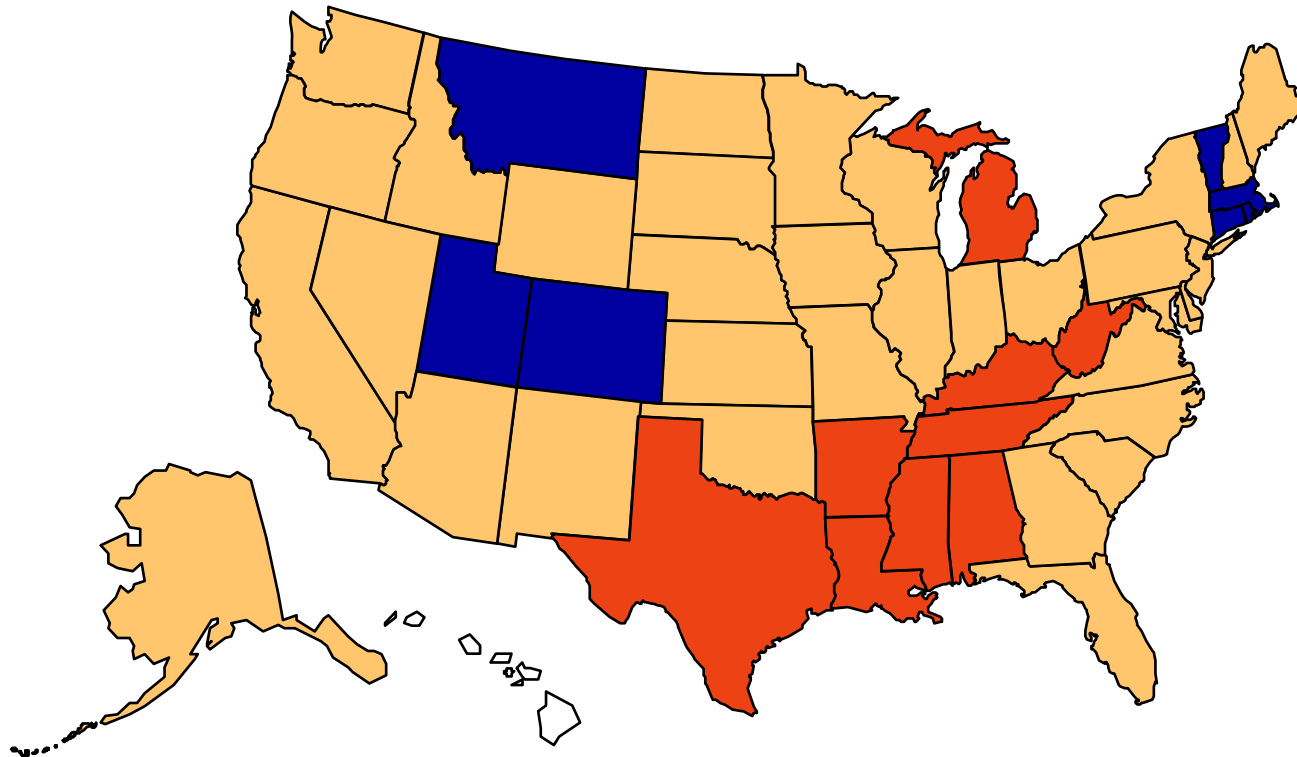
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2004

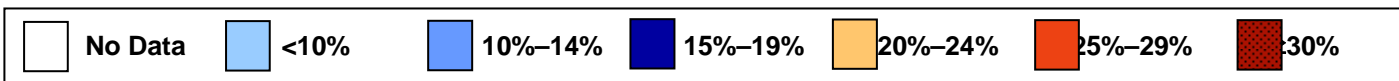
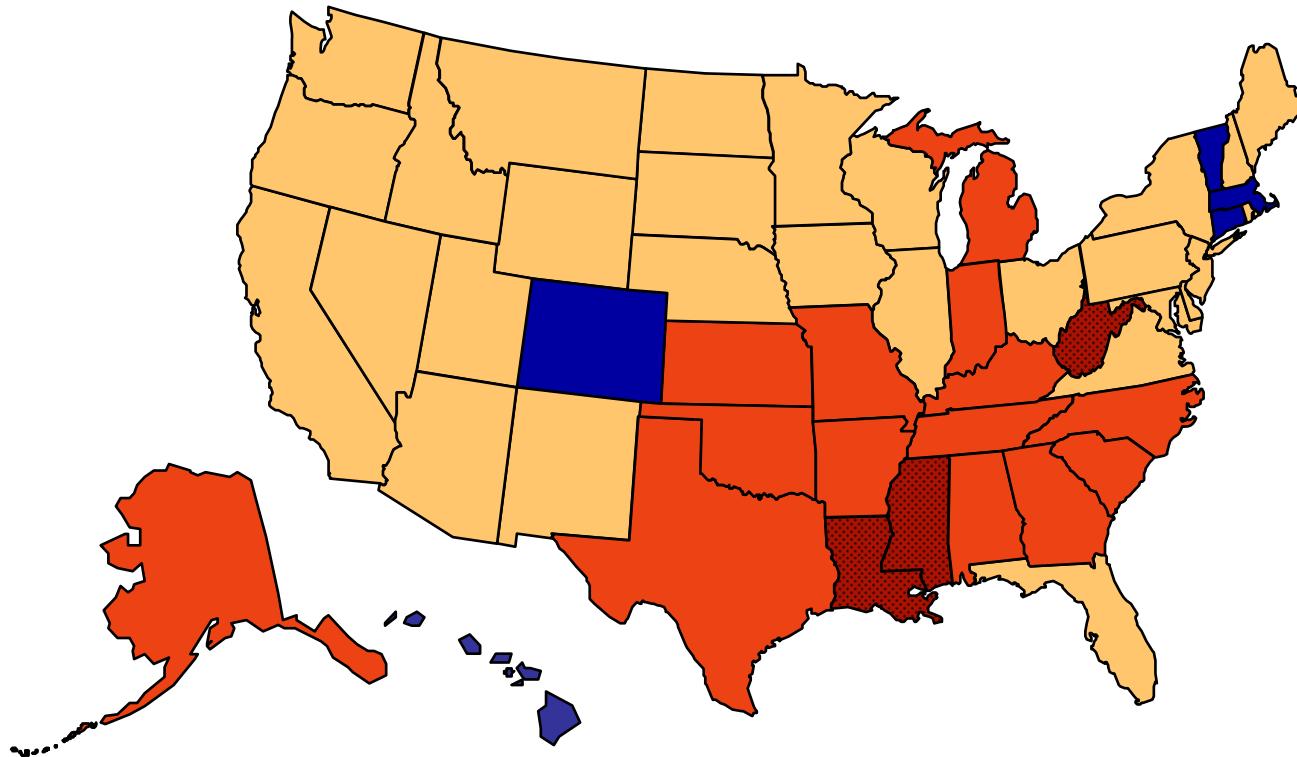
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2005

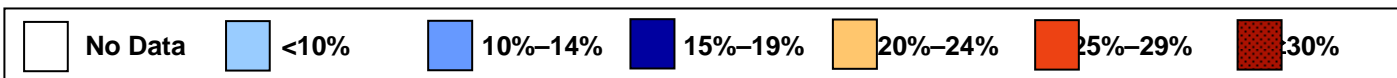
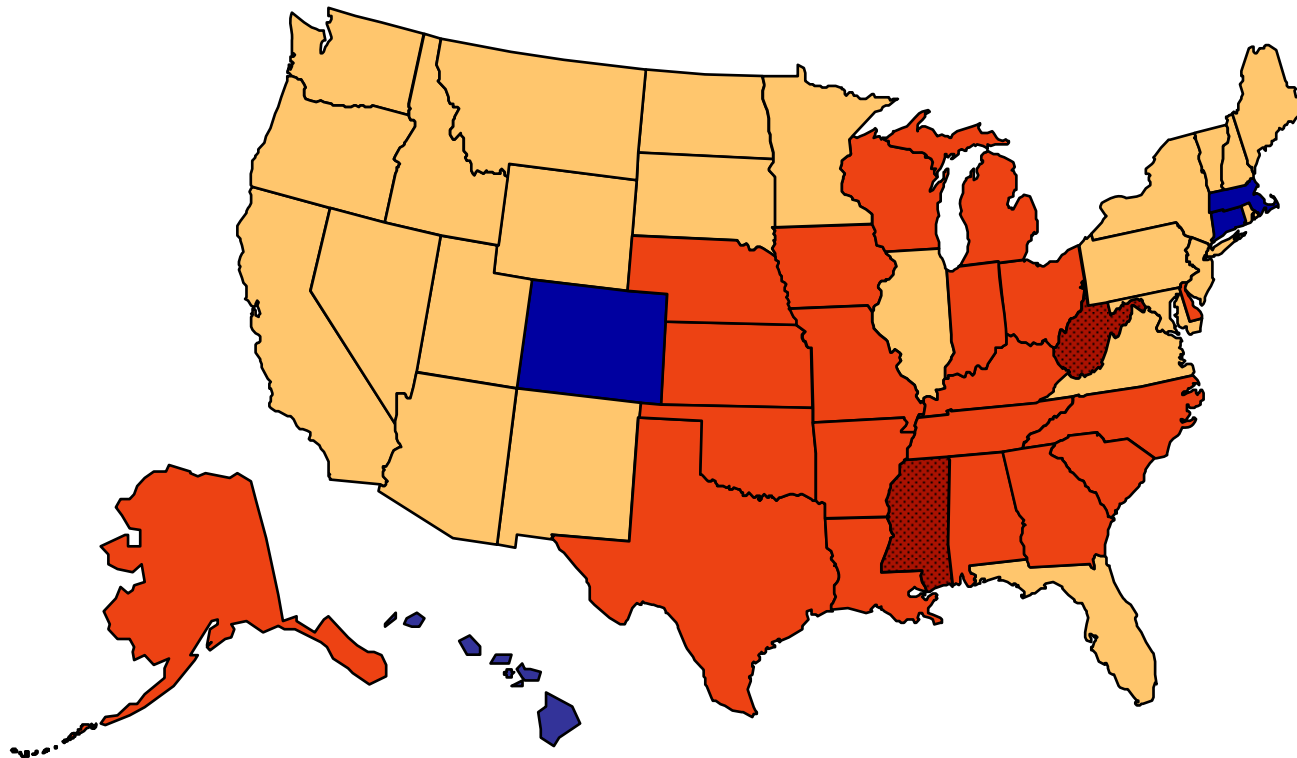
(*BMI ≥ 30 , or ~ 30 lbs. overweight for 5' 4" person)



Obesity Trends* Among U.S. Adults

BRFSS, 2006

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



* CANINE CONSTITUTIONAL



Tom Rowell / Dispatch

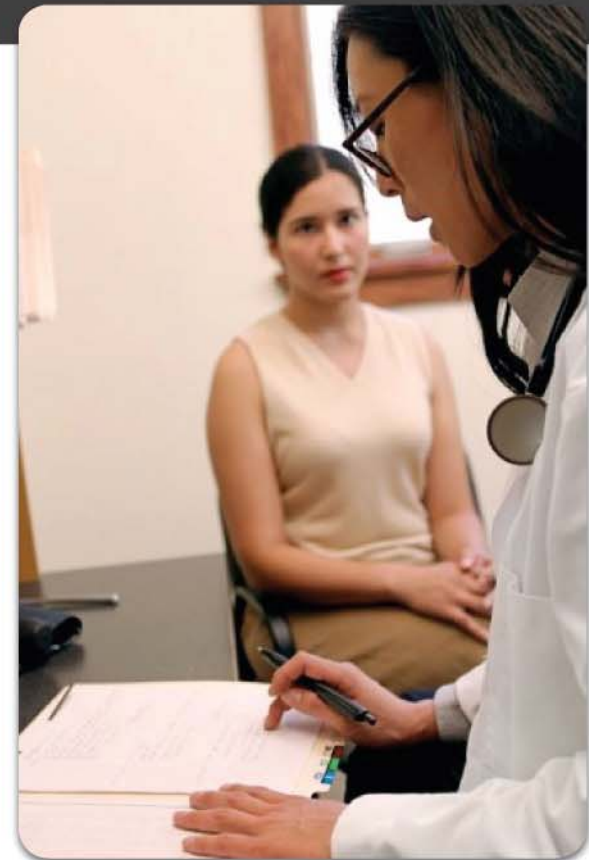
A brisk walk in the park keeps Macey II in shape between dog shows. His owner, Columbus resident Cathy Stumbo, got up early

to give her 3-year-old Doberman his regular workout. They typically log 10 miles in Berliner Park.

Behavior Change Intervention

“Modifying or changing an undesirable health-related behavior”

1. Effective **engagement**.
2. A **diagnosis** to understand a person’s unique motivation, confidence and change barriers.
3. A structured **treatment plan**.
 - Uniquely tailored to each individual
 - Longitudinal
 - Follows proven clinical guidelines
 - Incorporates proven behavioral science models
 - Offers tools and resources
4. Quantifiable **outcomes measures**.



Health & Wellness

- Health Risk Assessment
- Weight Management
- Walking/Exercise
- Smoking Cessation
- Stress Management
- Nutrition Counseling
- Back Pain Prevention
- Adolescent Health

Disease Management

- Chronic Illness Management
- Doctor-Patient & Pharmacist-Patient Relationships
- Management of secondary symptoms:
stress, depression, sleep, fatigue, pain
- Diabetes
- Pain Management
- Back Pain Treatment
- Hypertension
- Hyperlipidemia
- CAD/CHF
- Asthma
- Osteoporosis

Medication Adherence

- Compliance Risk Assessment
- Medication Compliance
- Custom solutions for:
 - Hypertension
 - Diabetes
 - Heart Disease
 - Osteoporosis
 - Hemophilia
 - NRT
 - HIV
 - Weight Loss

Behavioral Health

- Insomnia
- Depression
- Alcohol and Addiction
- Behavioral Health Risk Assessment
- Eating Disorders
- Grief
- Guilt
- Self-esteem
- Caring for Loved Ones
- HIV and Depression

TOOLS

Counselor Interface

Pedometer Interface

Complete Medical Library

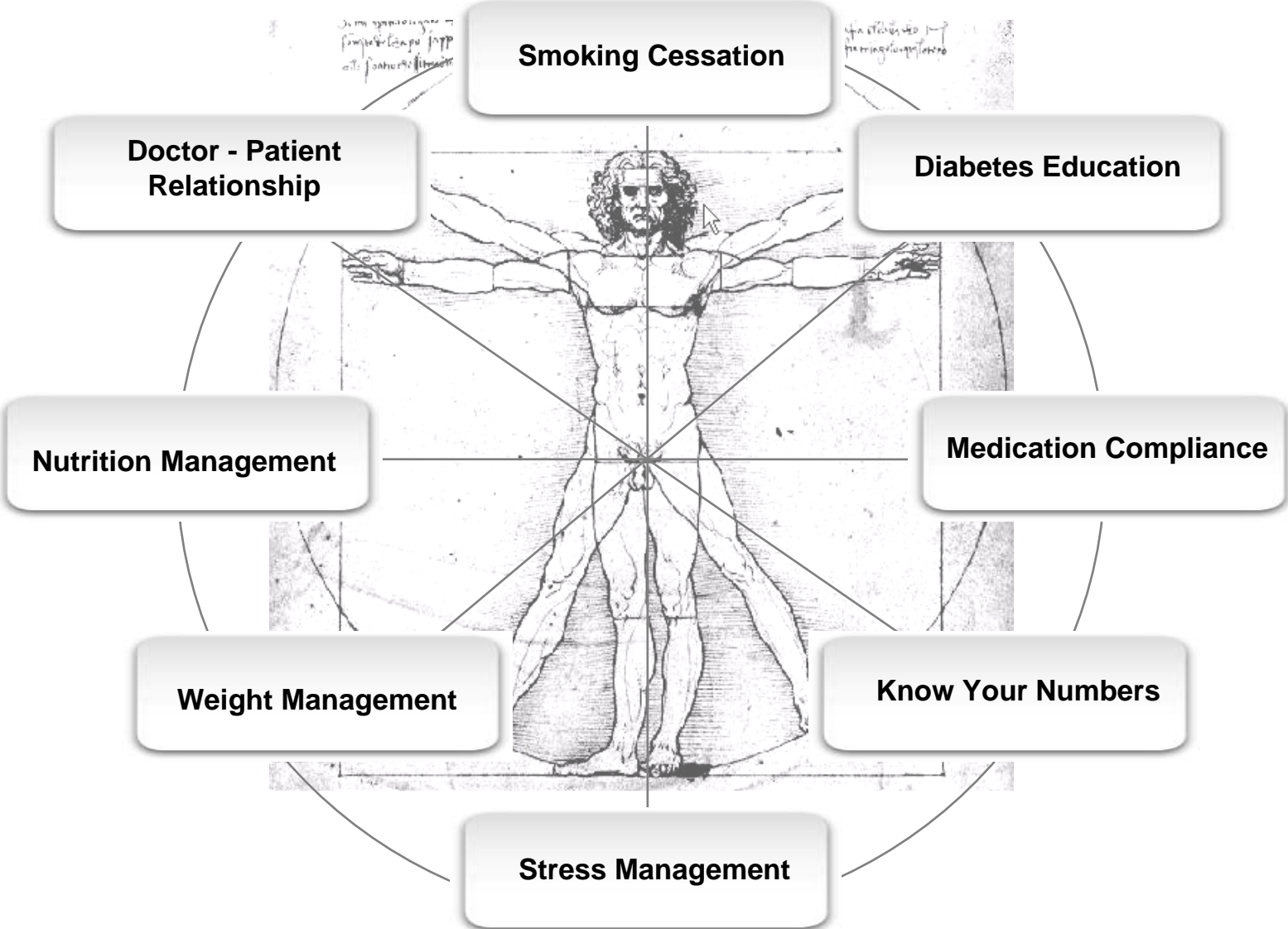
Video Library
(Exercise, Stress, Doctor-Patient Relationships)

Recipe Library

iPod Enablement

Goal Setting

Diabetes Management Solution





Welcome Mike,

Keep using your plan as a resource for managing your diabetes. You'll find more information as you read your plan again.

[View Your Personal Diabetes Plan >](#)

Diabetes Resources



[Doctor Appointment Reminder](#)

Never miss another doctor appointment again! Once you have reviewed your plan, use this reminder to keep track of your appointments.



[Prescription Refill Reminder](#)

Need help remembering your next prescription refill? After you have reviewed your plan try this handy tool.



[Education Center](#)

Visit the education center to learn more about diabetes. Check out the exercise and stretching videos.

Reminders

Dr. Appointments

- [Eye Exam 09/15/2006](#)
- [Dr. Tai 08/15/2006](#)

Refill Reminder

- [Avandia 08/01/2006](#)

[Set a Dr. Appt. Reminder >](#)

[Set a Refill Reminder >](#)

Lifestyle Solutions

Here's a look at the Lifestyle Solutions you have started.



[Manage Your Weight](#)

Remember you can find all your Lifestyle Solutions here. [View all Solutions >](#)

Know & Understand Your Numbers

Setting and Achieving Goals

Track Your Exams

Take care of Yourself

Goal



Blood Pressure Check

Every time you visit your healthcare provider



Blood Cholesterol Check

Year

You told us that you check your blood glucose when you think you need to. This is a good start. But unless you are testing frequently, it is hard to know how diet, exercise, or stress level may be affecting your blood glucose levels. Talk with your health professional to figure out how often and when you should be testing.

TIP: Print out the chart and put it on your refrigerator so you can update it daily.

Track Your Numbers

Medical Check List	Goal	Most Recent	Next Results/Date
A1C	below 7%	Ask your health professional about having this checked.	
Blood Pressure	below 130/80	150/95	
Total Cholesterol	~170	220	
HDL	above 40	Ask your health professional about having this checked.	
LDL	below 100	Ask your health professional about having this checked.	
Triglycerides	below 150	165	



Date: _____
 Time: _____
 Result: _____ mg/L
 Notes: _____

- ✓ When and what you ate
- ✓ If you skipped a meal
- ✓ When and how long you exercised
- ✓ When and how much alcohol you drank
- ✓ When and how much you treated your low or high blood sugar episodes
- ✓ Be sure to talk to your doctor about what you've recorded

Medication Adherence

Behavior Modification

Motivational Interviewing



Mike, we want you to be successful at taking your diabetes medication. Our team of experts has carefully studied the research on motivation and self-confidence so we can determine where you are now and how you can make progress. Based on what we know about your motivation and confidence scores, you are at Step 2 on the path to success. When it comes to motivation and confidence to take your medication, you're off to a good start. Your next destination, Step 3, is just around the corner.

Health Belief Model Self Confidence

Social Cognitive Theory

You want to take your medication. And you have some confidence that you can do it. In other words, you're saying, "I really want to take my medication regularly but I need to believe I can." As the image above shows, this places you at Step 2 on the path to success.

Weight Management



Initially, the pressure from others motivated you to manage your weight. You will also need motivation from within to stay on track and reach your goal.

You tried to lose weight in the past, but weren't able to. That doesn't mean you won't be successful this time. Your mind plays an important role here. Changing the way you think can make losing weight easier for you. It may take some work at first, but we have tips to help you succeed.



Stress doesn't have to sabotage your weight management goals.

- Although adding anything to your schedule may seem like too much to handle when you are stressed, find the time to get some exercise. It actually reduces stress.
- Choose foods that are crunchy when you are angry or tense. Try carrots or pretzels.
- If you are seeking comfort, try something soft and creamy like sugar-free frozen yogurt.



Mike,

You've tried to lose weight this past year, and that's a great first step. Every attempt teaches you something. It's time to work on making some smart changes that will last. You're feeling a little unsure that you can stay on track in challenging situations, like when you are upset, stressed, sad, or bored. Is that affecting your motivation to manage your weight? Read on. There are many useful ideas for you ahead.

TRY THIS COMBINATION:

If you could give up that medium order of french fries...
(saving you about 460 calories)



AND walk at a brisk pace for 20 minutes a day...
(burning 170 calories)



RESULT: You would lose about one pound a week!

Nutrition Management



It is **very hard to know** what a 1/2 cup or 3 ounces really is. A trick to make it easier for you is to learn some everyday objects that are the same size of common serving sizes. Below are some examples.



One serving of fruits and vegetables is 1/2 cup. 1 **tennis ball**.

keeping nutrition simple

setting smart goals

Good goals are smart:

- **S**imple
- **M**easurable
- **A**ttainable
- **R**ealistic
- **T**ime-defined

Improving a daily habit has a lot to do with setting goals and seeking support. The same is true of changing your eating habits. Knowing what you want to accomplish and having someone to encourage you will significantly improve your chances of making healthy changes that last.

what's on your plate?

You're doing well with whole grains, fruits, protein, calcium, fats, limiting treats, and limiting sweet drinks. However, you could boost your intake of vegetables. We've calculated how many servings you need as a 52-year-old very active male.



grains

You eat 6+ servings, including 6+ whole grain servings.

Recommended for you: 11 grain servings, including 3+ from whole grains.

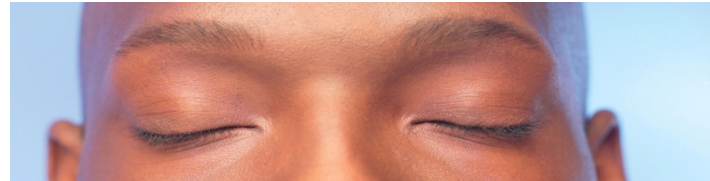
Stress Management



SOURCES

The greatest source of your tension is stress from your health concerns. Managing your diabetes alone can add a lot to what you already have going on in your life. But you can develop strategies that help you work towards better health.

Adding to the stress you have about your health, you also have some stress from your daily work and your relationships. You mentioned that you have difficulty keeping up with all of the demands in your life. It must feel like too much to handle at times. Having other sources of stress, even when they aren't as much of a problem as the stress from your health concerns, can make it feel like you can't gain any control.



How do you cope?

Everyone uses their own strategies to cope with stress. Some are healthier and more productive than others. Use this chart to write down some healthy coping strategies you are willing to try next time you feel stressed from your daily work and your relationships.

We also have listed some of your not-so-helpful strategies that you should try to use less. Which of these are you willing to tackle first?

+

What healthy coping strategies are you willing to try? Write them down in a journal.

-

- get irritable and take it out on others
- drink more alcohol
- drink coffee, tea, or other caffeinated beverages

What makes you stressful?

- feeling rushed
- not having enough sleep
- having a routine disrupted
- managing diabetes
- taking out stress on other people
- drinking more alcohol than usual



Smoking Cessation

your tools to succeed



Everyone knows how hard it can be to quit smoking. But what are some of the factors that will be an advantage to you in your effort to quit? You are in a better position to succeed because older adults are more likely to be ready to quit and men tend to have fewer and less intense withdrawal symptoms. Let's look at some other tools you have.

Quitting Experience. This is your first attempt to quit smoking. With this plan, you have the benefit of learning from the efforts of millions of others who have quit before you.

Coping with Stress. Low stress and good coping skills can help you in your effort to quit smoking. Managing your stress can reduce the number of times you feel the need to smoke. And being confident in your ability to handle problems can increase the likelihood that you will stay away from cigarettes in the toughest situations.

welcome



Congratulations! You've decided to quit. Being prepared, having strong support, learning how to cope, and making changes in your daily routine will all make it easier for you to kick the smoking habit. Our mission is to help you accomplish your goal of becoming smoke free for the rest of your life. Let's begin by understanding who you are.

Created specifically for you. There are details about your smoking habit, social environment, reasons for smoking, and motives for wanting to quit that make your needs unique. To help you quit, you need information that focuses on the specific issues you face as a man who has been smoking for 25 years. Let's highlight what we know.



Working through Withdrawal. The following tips will help you handle some of the more common withdrawal symptoms.

- *Headaches.* Take a warm bath or shower; practice relaxation techniques; massage your scalp
- *Constipation.* Eat raw vegetables, and bran; drink at least 8 glasses of water each day; exercise regularly
- *Sore or dry throat/Coughing.* Sip cold water or fruit juice; chew sugar-free gum; use cough drops or hard candy

Diabetes Education



Hypoglycemia

Definition

Hypoglycemia occurs when your blood sugar, called glucose, is abnormally low. Insulin shock is used to describe severe hypoglycemia that results in unconsciousness.

Alternative Names

Insulin shock, Low blood sugar

Causes

Hypoglycemia results when your body's glucose is used up too rapidly, or glucose is released into the bloodstream too slowly, or when too much insulin is released into the bloodstream. Insulin is a hormone that reduces blood glucose produced by the pancreas in response to increased glucose levels in the blood.

Hypoglycemia is relatively common in diabetics. It occurs when too much oral and/or diabetic medication is taken, not enough food is eaten, or from an increase in the amount of exercise without an increase in food intake.

Relative hypoglycemia, where a newborn's blood glucose is low, is fairly common. Severe hypoglycemia may occur in an infant born to a woman with diabetes during pregnancy (caused by pregnancy) diabetes. In these cases, the child is said to have an IDDM (infant of diabetic mother).

If, during the pregnancy, the mother's blood sugar is persistently high, the pancreas assists in controlling the excess blood sugar by producing extra insulin. When the infant is born, it no longer gets the mother's glucose, but still produces large amounts of insulin, which drives the infant's blood sugar down to low levels. This is a medical emergency that may result in seizures and damage to the baby's nervous system if not treated.

Sometimes the cause of hypoglycemia is unknown (idiopathic). In these cases, the people who are not diabetic and who do not have another known cause.

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Monitor blood glucose

Part 1

Carrying case, Lancing device, Lancet, Control solution, Test strip, Self-test logbook, Meter

Set up the meter according to the specific directions that come with your meter. Get the supplies ready, including a new test strip and disposable lancet. Place the lancet into the lancing device.

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Diabetes - type 2

Highlights

Drug Approvals

- Esenatide (Byetta) is a new type of injectable drug for patients who cannot control their blood sugar with oral drugs. Approved in 2005, Esenatide is used in combination with oral medication.
- Exubera, an inhaled insulin, was approved in 2006. It is the first non-injected form of insulin.
- Framlintide (Symlin) is a new injectable drug that is taken in combination with insulin. Approved in 2005, it is only for patients who cannot control their blood sugar with insulin therapy alone.

Drug Warning

Rosiglitazone (Avandia) may cause or worsen swelling in the macular region of the eye's retina. Most patients who experience this problem also had swelling in their retina. Such as sitagliptin (Osetron) and sitagliptin (Januvia) are a new type of drug showing promise in late-stage clinical trials. Researchers are studying them in combination with metformin or thiazolidinediones.

Diabetes and High Blood Pressure

- A thiazide-type diuretic works as well as an ACE inhibitor or calcium channel blocker for controlling blood pressure in patients with diabetes and high blood pressure, according to results from the 2005 Antihypertensive and Lipid Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). However, ACE inhibitors and angiotensin-receptor blockers (ARBs) have special benefits for protecting the kidneys in patients with diabetes.
- Some types of high blood pressure drugs may increase the risk for developing diabetes in patients with pre-diabetes, suggests several 2006 studies.

Diabetes and Cholesterol

ADAM Navigator

In-Depth Reports

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- Diabetes diet

Encyclopedia

- Diabetes
- Type 2 diabetes

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Motivation

Medication
Adherence

Self-Efficacy
and Lifestyle
Management

Motivation
and Self
Efficacy

Personal
Health
History

Medication
Routine

Daily
Routine

Time
Management

Diabetes
Diagnosis

You told us that you're highly motivated to manage your diabetes, yet you sometimes miss a dose of your medication. In addition, you don't feel you can eat healthy and exercise on a regular basis. So, while you're willing to manage your diabetes you're actually struggling to do the things needed to take care of yourself. You've also been diagnosed with high blood pressure, high cholesterol, and heart disease. Did you know that managing your high blood pressure and eating healthy can help improve your type 2 diabetes and your heart disease? Now, let's focus on taking charge of your diabetes. It's morning, the time you usually take your diabetes medication. Before you leave for the day, there's a lot you need to do: Eat breakfast, take your vitamins and take a shower - sometimes you might not know where to start. You probably thought you already had enough to do in the morning, but you have to fit managing your type 2 diabetes into your routine as well. So, it's not surprising that sometimes you rush out the door and forget to take your medication. Try these strategies to remember your medication every day:

1. Tape a note to your bathroom mirror.
2. Put your medication bottle on the kitchen counter where you'll see it in the morning.
3. Place your medication bottle next to your vitamins.

The screenshot shows a user interface for a diabetes management program. At the top, it says "You are logged in as MPHILLIPS1. My Account | Log Out" and "HealthMedia care™ for Your Diabetes". Below this is a navigation bar with "My Home", "Learn More", "Diabetes Plan", "Education Center", and "Lifestyle Solutions". The main content area is titled "Care for Your Diabetes" and includes a "Your Tailored Guide" section with links like "Diabetes and You", "Chart Your Progress", "Day to Day", "Want to—can do!", "Motivation 101", "Understanding Your Obstacles", "Working Through Barriers", "Your Healthcare Team", "A Little Help from Your Friends", "Learning More", and "Printer Friendly Plan". There are also sections for "Education Center", "Refill Reminder", "Appointment Reminder", "View Your Questionnaire", and "About Care for Your Diabetes". On the right, a "Day to Day" section features an image of an alarm clock and text: "Are you ready to get started, Mike? Before we go any further, let's talk about your motivation to manage your diabetes. Give yourself a pat on the back. You told us that you're highly motivated to manage your diabetes yet you sometimes miss a dose of your medication. In addition, you don't feel you can eat healthy and exercise on a regular basis. So while you're willing to manage your diabetes, you're actually struggling to do the things needed to take care of yourself. It's things like taking your medication, exercising, and eating right that play an important role in helping to manage your blood glucose. It's also important not to forget that you may have other health concerns besides type 2 diabetes. You've also been diagnosed with obesity, high blood pressure, and high cholesterol. Did you know that losing weight, managing your high blood pressure, and eating healthy can help improve your type 2 diabetes? After you finish this program, you'll have a chance to take advantage of some lifestyle management programs that can help you eat better, exercise regularly, and manage your stress successfully. Lifestyle changes can play an important role in managing your diabetes."

TOOLS

Counselor
Interface

Pedometer
Interface

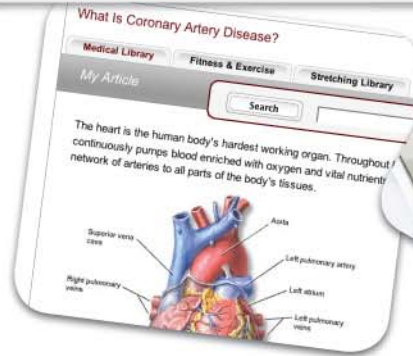
Complete
Medical
Library

Video Library
(Exercise, Stress,
Doctor-Patient
Relationships)

Recipe
Library

iPod
Enablement

Goal
Setting



- Keeps the participant **connected**
- Provides the **support and freedom** needed for daily activities
- Uses **multiple technologies** to deliver and collect information

Traditional 1st Generation Wellness & Disease Management



supported by



Onsite
Support

Print
Materials

Web
Content

New Generation Online Wellness & Disease Management



supported by



Onsite
Support

Print
Materials



Web-Based Interactive Disease Management in a New Era of Patient Care

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Thank you!