

This is just an export of the website we are using for our process book.

Please go to the following url to see the process book: <https://sway.com/MuG5yRgnxRmMMLLV>

America's Obesity Epidemic

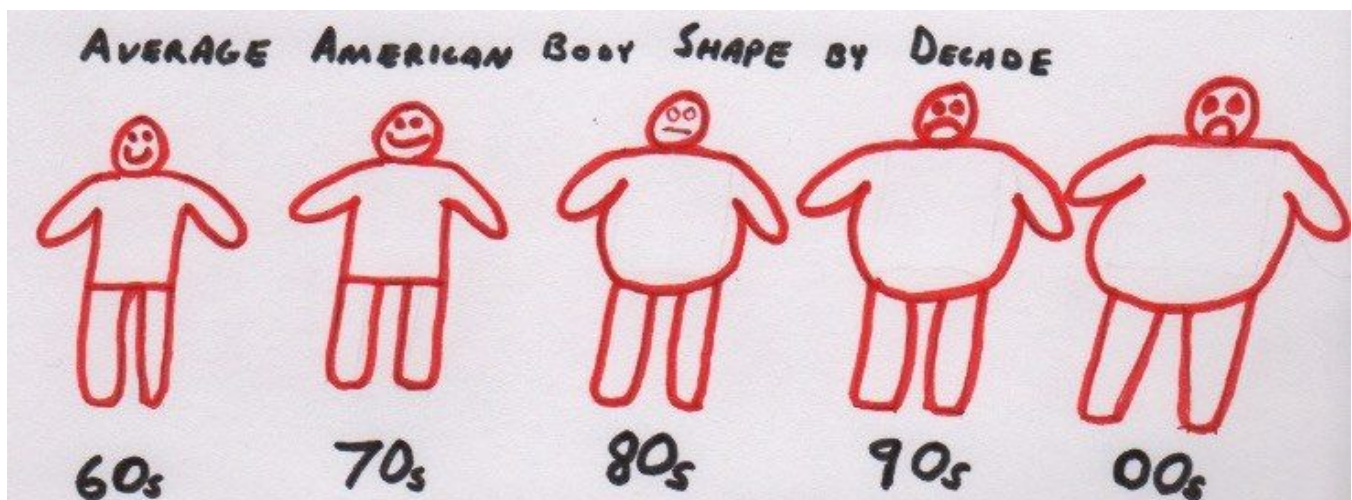
Team Members

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Jonathan Moon <jonnydmoon@gmail.com>

Thomas Musser <tmusser@dataxu.com>

Goals





Summary - The goal of this project is to raise awareness of this serious issue that affects people of all ages and demographics. We want to create a place where people can clearly see how the prevalence of obesity has changed over time, and what other factors are strongly associated with it.

The hope is that our project will reveal insightful and meaningful information that will lead to change for individuals and possibly for new policy changes in organizations. If just one person is affected from our project and alters his or her lifestyle as a result, enjoying a lifetime of healthy-weight benefits, we consider our project a success.

Related Work

There are a couple of websites dedicated to showing information about obesity. Some of the websites do better jobs than others at effectively communicating the main important facts about obesity. Most of the websites that we looked at were either very heavy in text or they only had charts without any explanations.

 Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People™

SEARCH 

CDC A-Z INDEX ▾

Division of Nutrition, Physical Activity, and Obesity

DNPAO Home

Division Information

Nutrition

Physical Activity

Overweight and Obesity ▾

Strategies to Prevent Obesity +

Adult Overweight and Obesity +

Children +

Data & Statistics -

Adult Obesity Facts

Childhood Obesity Facts

Data, Trends and Maps

Surveillance Systems

Resources & Publications +




Healthy Weight

Breastfeeding




IMMPaCt

[DNPAO Home](#) > [Overweight and Obesity](#) > [Data & Statistics](#)


Adult Obesity Facts

Obesity is common, serious and costly

- More than one-third (34.9% or 78.6 million) of U.S. adults are obese. [Read abstract [Journal of American Medicine \(JAMA\)](#) 
- Obesity-related conditions include heart disease, stroke, type 2 diabetes and certain types of cancer, some of the leading causes of preventable death. [Read [guidelines](#) 
- The estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008 U.S. dollars; the medical costs for people who are obese were \$1,429 higher than those of normal weight. [Read [summary](#) 


Obesity affects some groups more than others


[Read abstract [Journal of American Medicine \(JAMA\)](#) 

Non-Hispanic blacks have the highest age-adjusted rates of obesity (47.8%) followed by Hispanics (42.5%), non-Hispanic whites (32.6%), and non-Hispanic Asians (10.8%)

- Obesity is higher among middle age adults, 40-59 years old (39.5%) than among younger adults, age 20-39 (30.3%) or adults over 60 or above (35.4%) adults.

Obesity and socioeconomic status

[Read [CDC National Center for Health Statistics \(NCHS\) data brief](#)  [PDF: 1.07MB]



Obesity Prevalence Maps
Adult obesity prevalence by state and territory using self-reported information from the Behavioral Risk Factor Surveillance System.

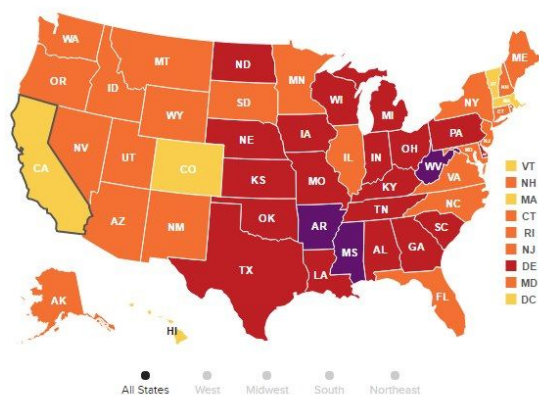
For example, the website <http://www.cdc.gov/> has a lot of information about obesity, but the visualizations are fairly limited in functionality and the website could do a better job at telling the story about obesity.

Adult Obesity Rate by State, 2014

Select years with the slider to see historical data. Hover over states for more information. Click a state to lock the selection. Click again to unlock.

Percent of obese adults (Body Mass Index of 30+)

0 - 9.9% 10 - 14.9% 15 - 19.9% 20 - 24.9% 25 - 29.9% 30 - 34.9% 35%+



All States West Midwest South Northeast

2005 - 2009

2010

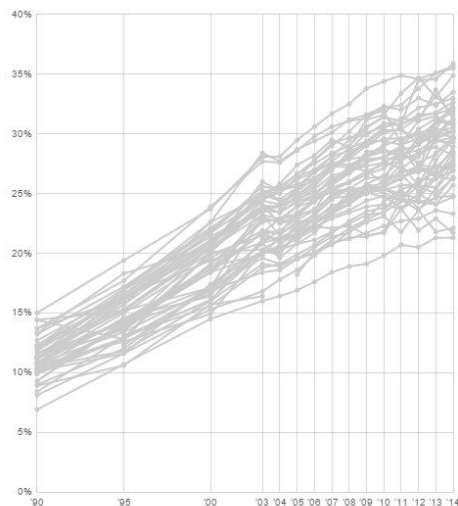
2011

2012

2013

2014

Adult obesity rates, 1990 to 2014



Rank	State	Adult Obesity Rate 2014	95% Confidence Interval	Trend 1990 - 2014
1	Arkansas	35.9%	+/- 2.1%	
2	West Virginia	35.7%	+/- 1.5%	
3	Mississippi	35.6%	+/- 2.1%	
4	Louisiana	34.9%	+/- 1.5%	
5	Alabama	33.5%	+/- 1.5%	
6	Oklahoma	33.0%	+/- 1.3%	

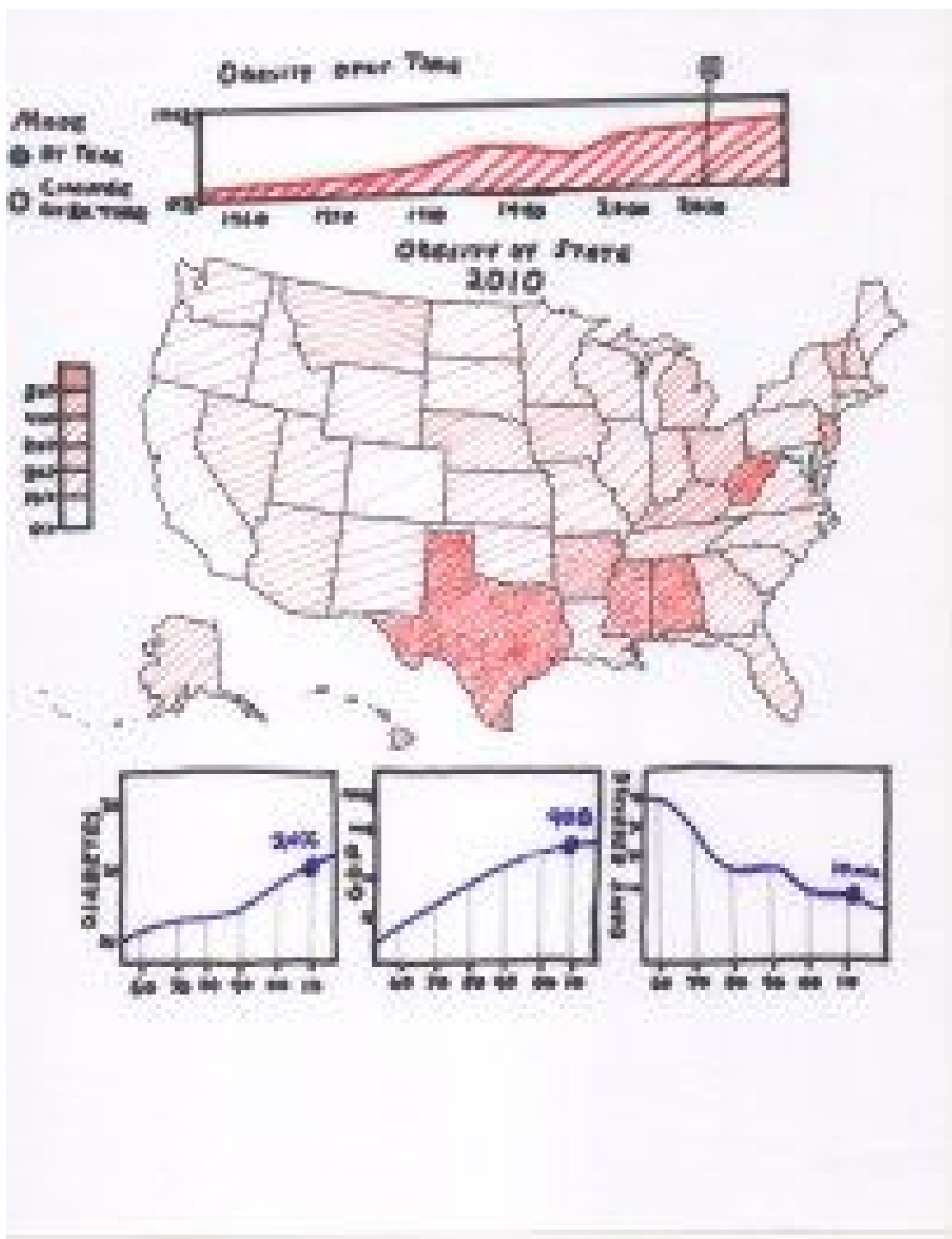
One website that has a nice visualization is <http://stateofobesity.org/adult-obesity/>. We like how it allows you to see obesity rates by state as well as the trends over the years.

Questions We had

When did obesity start becoming a problem?

It is hard to know if we are getting better as a nation unless we know how we have done in the past. We would like to know if there was a certain point in time when obesity became a problem. We would also like to know if it is getting better or worse. Being able to identify when it became a problem may highlight some other factors that may be associated with obesity.

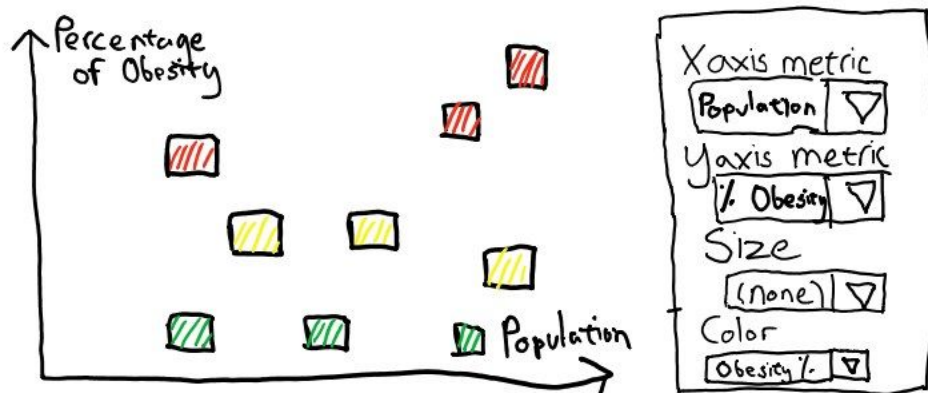
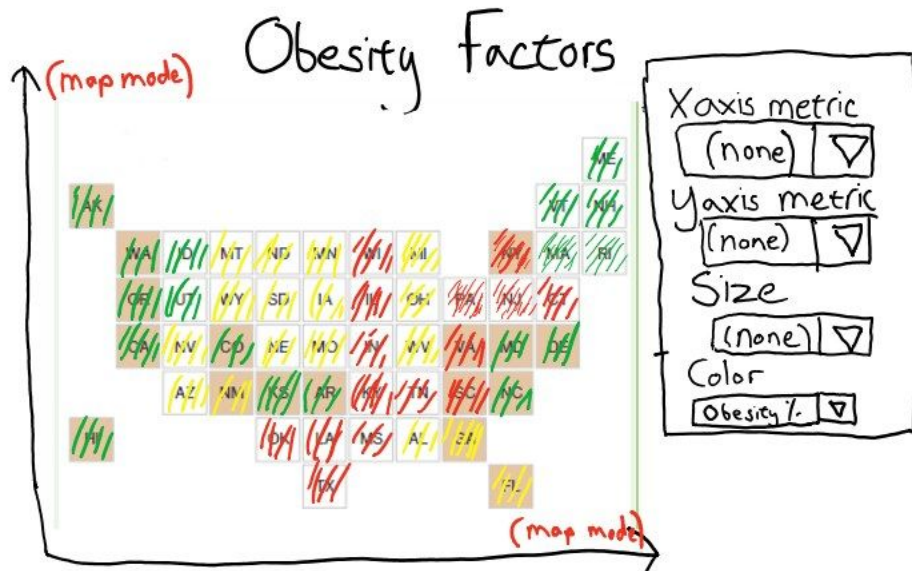
Initial Timeline Concept



We initially, wanted to capture quantitative data related to publication frequency but after discussion we are learning towards a timeline of related obesity events to support our message.

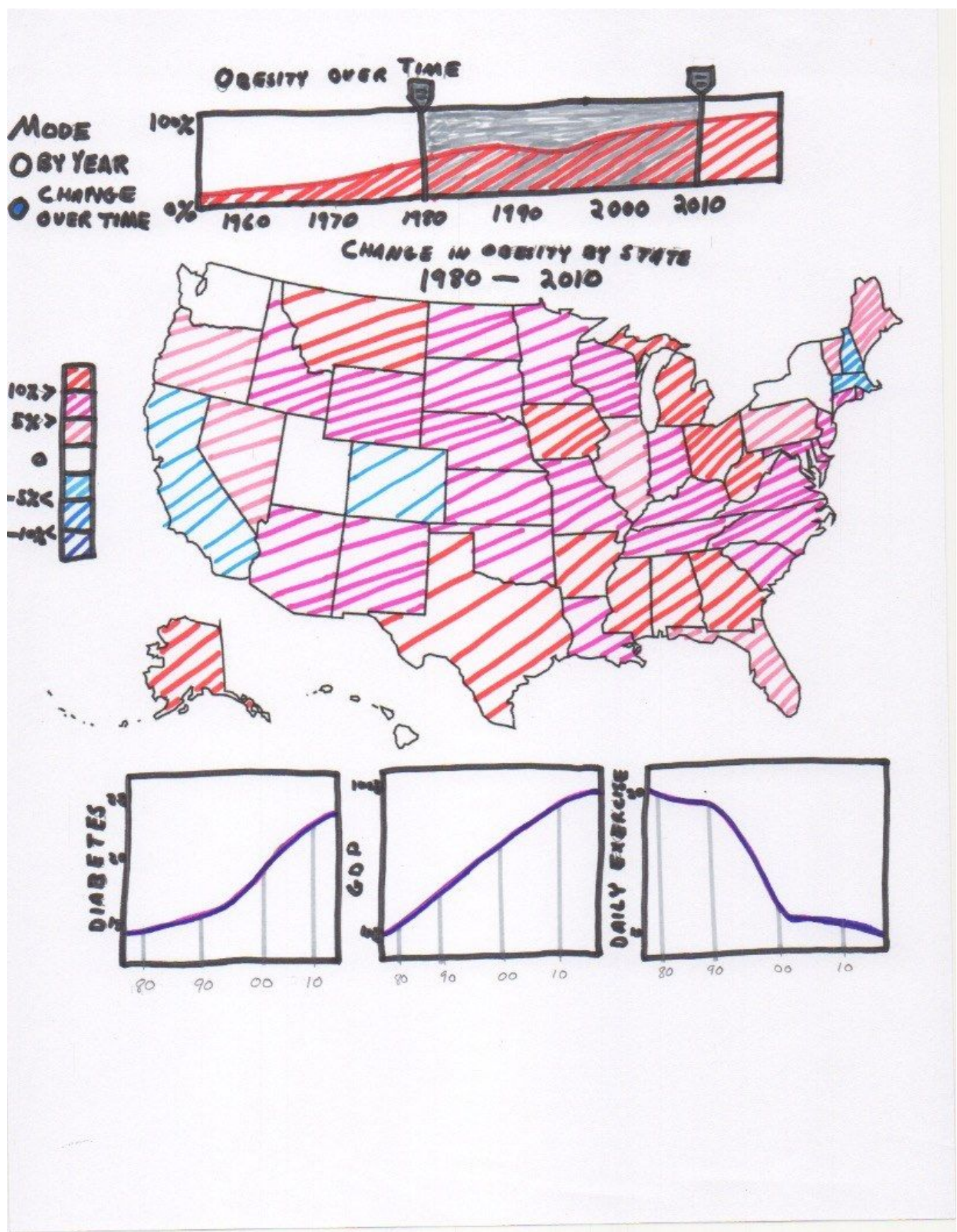
2. What factors are strongly correlated with obesity?

We would like to know if there are any factors that may look like leading causes of obesity. Some factors to consider are: physical activity, diets, and income. Knowing what factors are strongly related to obesity can help us make better decisions to fight obesity.



3. Where is obesity the most prevalent?

We would like to learn which states have the highest and lowest rates of obesity. The states with the highest and lowest rates may be able to indicate what other factors are related to obesity.

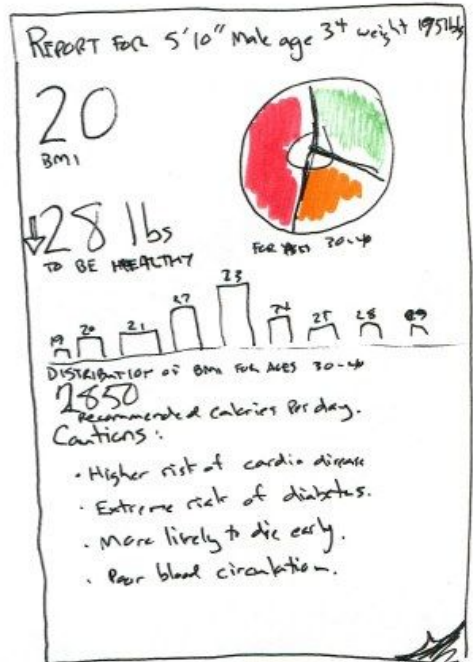
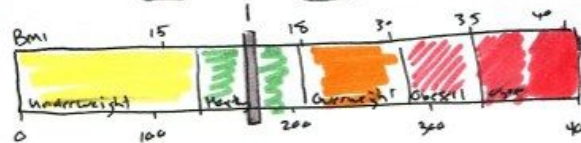
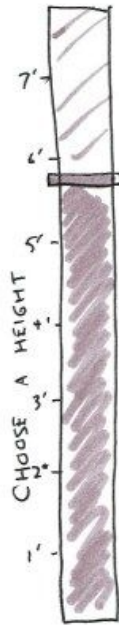


4. What are the consequences of obesity?

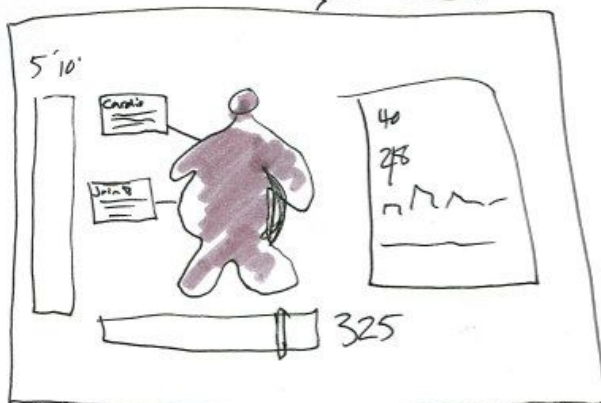
We would like to know what costs we are paying for obesity. Some possible topics include financial costs for healthcare, food, clothing, illnesses, mental and social issues. Understanding the issues caused by obesity can highlight the benefits we will receive if we can reduce the rate of obesity in our nation.

Male ▽ Age 34 ▽

5'10"



175 lbs

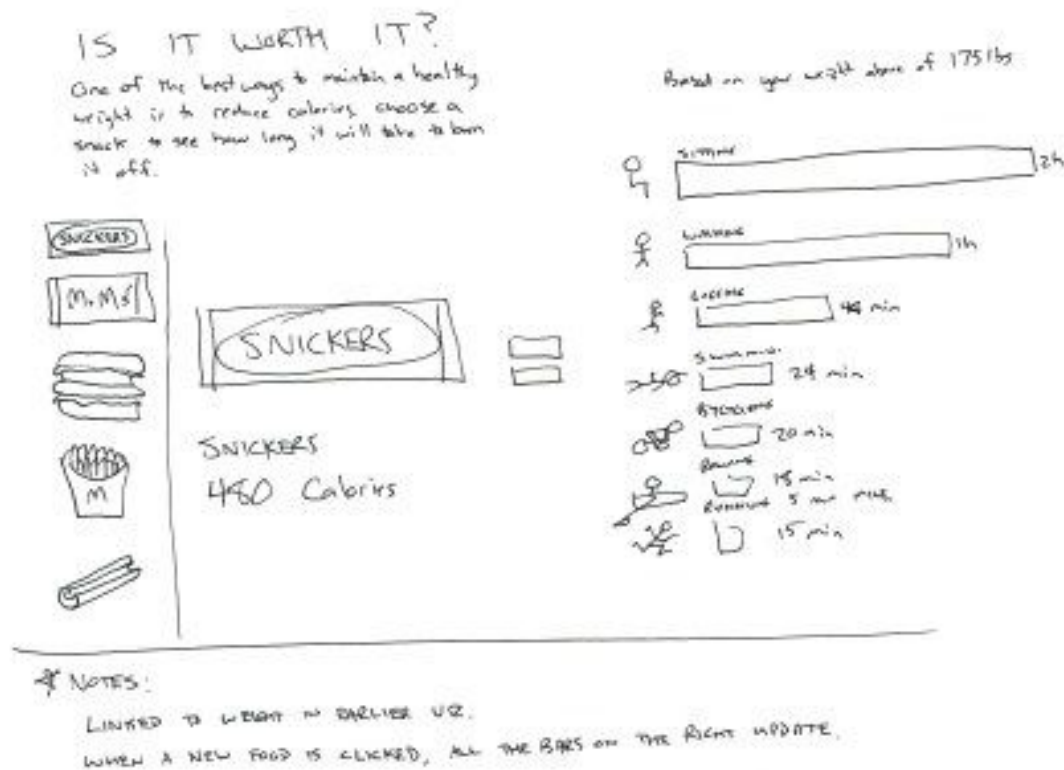


↑ INCREASE PERSON SIZE. Update info.
Have caution popups indicating possible issues.

FOLLOWUP: CAN WE FIGURE OUT THE
AVERAGE CALORIES CONSUMED FOR A GIVEN
WEIGHT?

5. Am I obese or overweight? (Optional Question)

We would like to know how we personally rate on the scale of obesity. We would like to know how much weight we can lose/gain to be in a healthy weight zone. This is beneficial for people to know how they personally are doing.



Week of the Project (Deliverable for 4/4)

Team Roles

Team Coordinator - Jonny

The team coordinator will submit assignments and coordinate meeting times and communications.

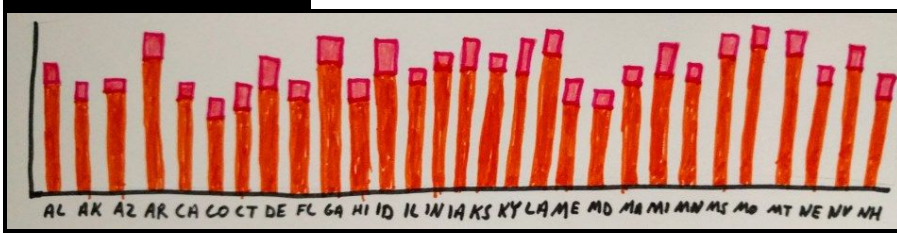
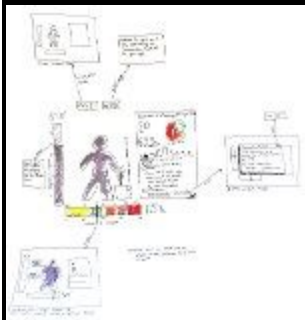
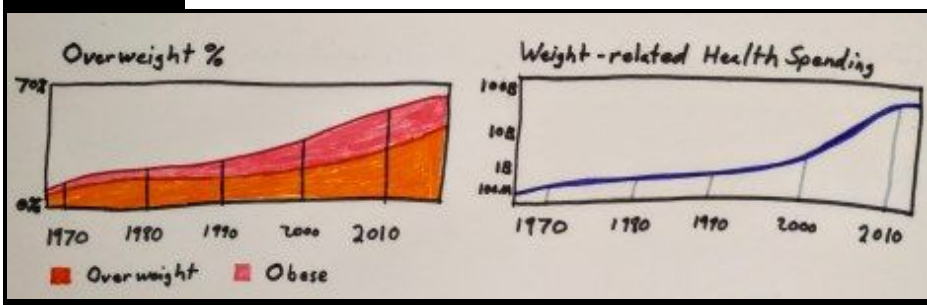
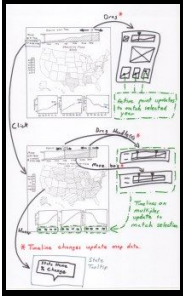
Visual Lead - Kevin

The visual lead will be responsible for the overall look of the project, ensuring that all the necessary sketches and storyboards are accounted for, and maintaining a unified look and experience from all the team members' contributions.

Data Wrangler - Thomas

The data wrangler is in charge of overseeing tasks related to the data, finding the proper data sets, and preparing it for use within the project.

Incremental Sketches



Web Layout Designs

America's Obesity Epidemic

10/10/2010

Obesity in the United States is a serious issue. According to the 7th edition of the textbook, you should understand the prevalence of obesity in the United States.

This resource is designed to help you understand the prevalence of obesity in the United States and what you can do to prevent obesity.



Is Obesity Improving?

Not Really, But Not Getting Worse?
Obesity rates have increased since the 1980s, but there is a long-term trend that suggests that obesity rates may be leveling off.

Obesity is Not Getting Worse?
The prevalence of obesity has increased since the 1980s, but there is a long-term trend that suggests that obesity rates may be leveling off.

What States Are Improving?
States that have seen a decrease in obesity rates since the 1980s include California, Colorado, and New York.



What other factors are related?

States that are more overweight
States that are more overweight include Mississippi, Louisiana, and West Virginia.

Not really, anymore?
Obesity rates have increased since the 1980s, but there is a long-term trend that suggests that obesity rates may be leveling off.

Less money = More Weight
States with lower income levels tend to have higher rates of obesity.

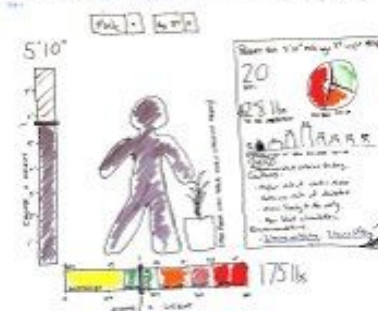


How do you measure up?

The Larger American
The average American is now 5'10" tall, up from 5'7" in 1960.

Every pound counts
For every pound of extra weight, the risk of heart disease increases by 1%.

How you eat?
The way you eat can affect your weight. Eating more fruits and vegetables can help you maintain a healthy weight.



What can you do?

Although there are many ways of losing weight, there are some principles that are common to all methods. For example, you should eat less and exercise more.

What can you do?
You can lose weight by eating less and exercising more. You can also lose weight by taking medication or surgery.

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You can lose weight by eating less and exercising more. You can also lose weight by taking medication or surgery.

When a person eats more calories than they burn, they gain weight. This is the basic principle of weight gain.



Is it worth it?

One of the best ways to lose weight is to eat less. The average person who eats less than 2,000 calories a day can lose 10 pounds in 10 weeks.

Is it worth it?
Losing weight can improve your health and reduce your risk of heart disease. It can also improve your appearance and boost your confidence.

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Going Forward

The fight against obesity is a long one. It will require the efforts of individuals, communities, and the government.

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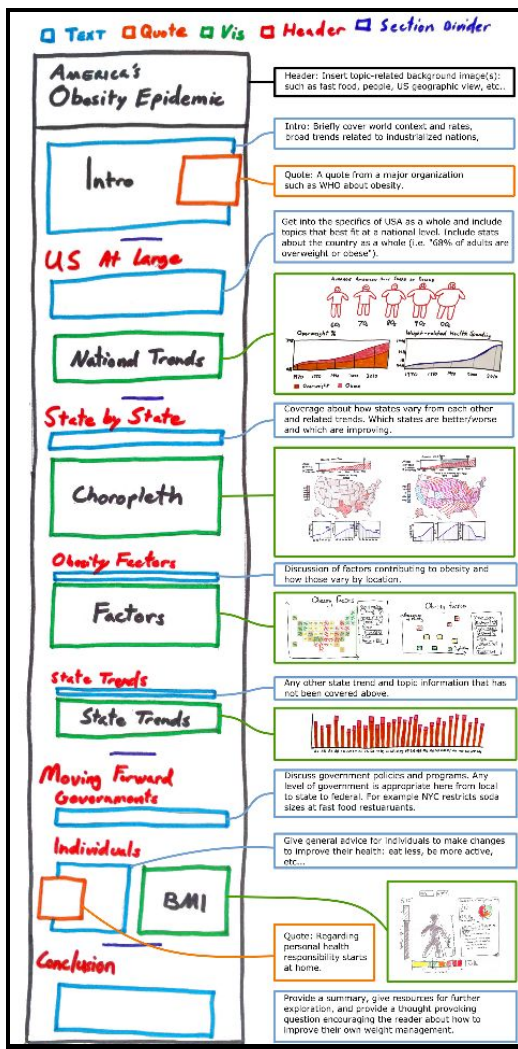
Going Forward
The fight against obesity is a long one. It will require the efforts of individuals, communities, and the government.

While individuals and programs can make a difference, the most effective way to reduce obesity is to change the environment. This means creating a healthy environment where it is easy to make healthy choices.

Going Forward
The fight against obesity is a long one. It will require the efforts of individuals, communities, and the government.

Going Forward
The fight against obesity is a long one. It will require the efforts of individuals, communities, and the government.

Let's work together to make a difference.

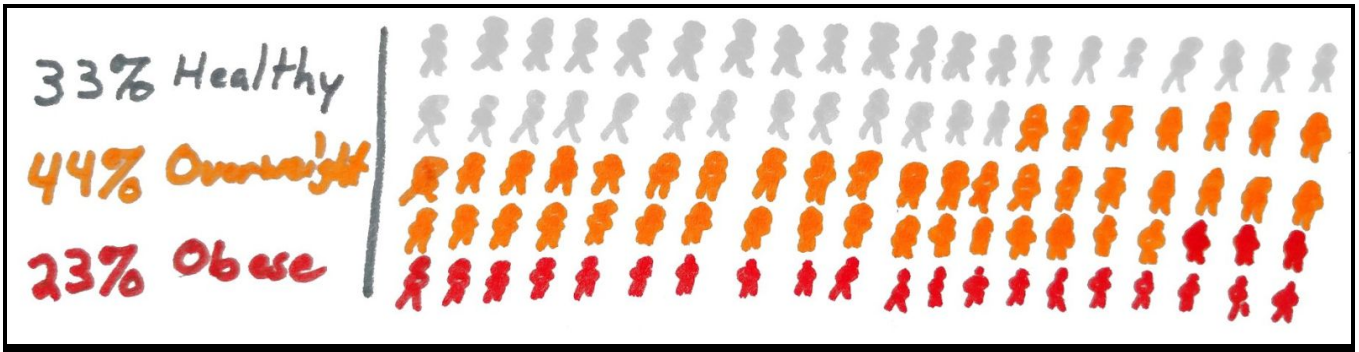
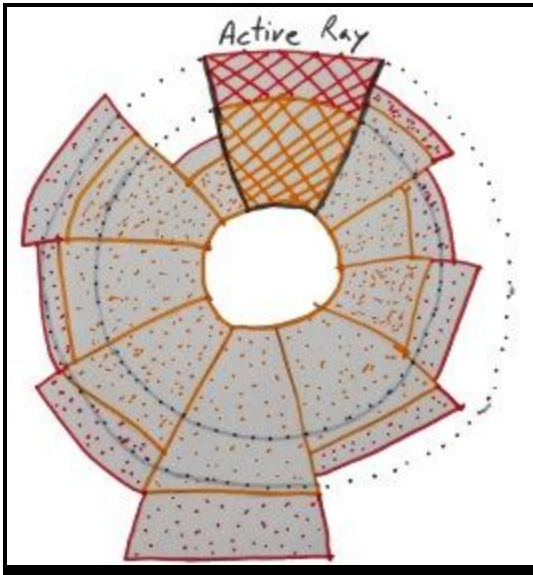


After Lecture 9 we implemented the following major changes:

Sunburst visualization incorporated to avoid the mundane stacked bar of state trends

Updates to the intro visualization to include figurines to display proportions of weight categories

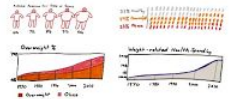
Redesign



Obesity Epidemic

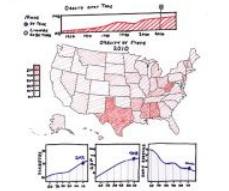
Obesity is the most common chronic disease in the United States. It is a leading cause of death and disability, and it is associated with many other health problems, including heart disease, diabetes, and certain cancers. Obesity is also a major risk factor for many other health problems, including heart disease, diabetes, and certain cancers. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.

Obesity has reached epidemic proportions globally.



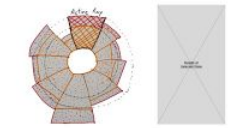
Obesity by State

Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.



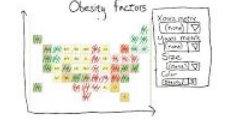
State Trends

Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.



Obesity Factors

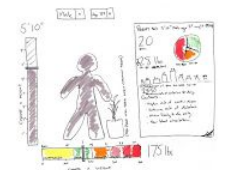
Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.



Individual Health

Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.

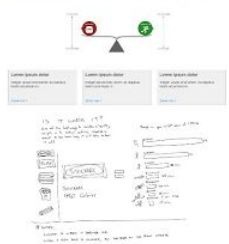
How do you measure up?



What can you do?

Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.

Physical fitness is not only one of the most important keys to a healthy body, it is the basis of dynamic and creative intellectual activity.



Conclusion

Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world. Obesity is a complex condition that is caused by a combination of factors, including genetics, environment, and lifestyle. It is a global health problem that is affecting more and more people around the world.

After feedback from Group 3 we will implement the following changes:

- Include filtering and sorting for the state trends visualization via the sunburst visualization

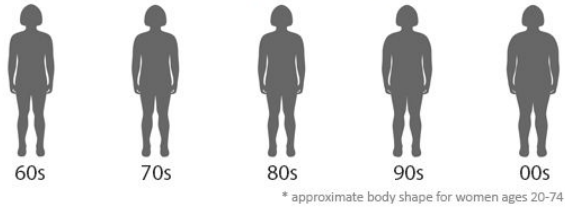
- Improve the interface for the factors chart and improve the labeling to be more accessible

- Enhance the BMI calculator graphic by including small icons/glyphs

Prototype V1

This week we split the website into 3 main sections and each team member took a section. We implemented the redesigned sketches from last week. The implementation has gone fairly smooth. We feel that a lot of it had to do with the well-formatted data and the clear vision we had from the sketches. It was also very effective to have the work divided evenly so that we could all work in parallel and not be blocked by each other.

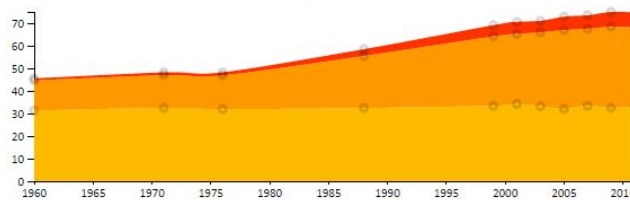
Average American Body Shape By Decade



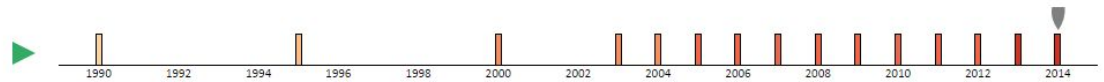
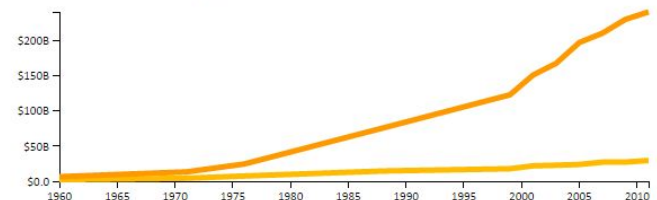
Weight Distribution of Americans



Overweight and Obesity Over Time

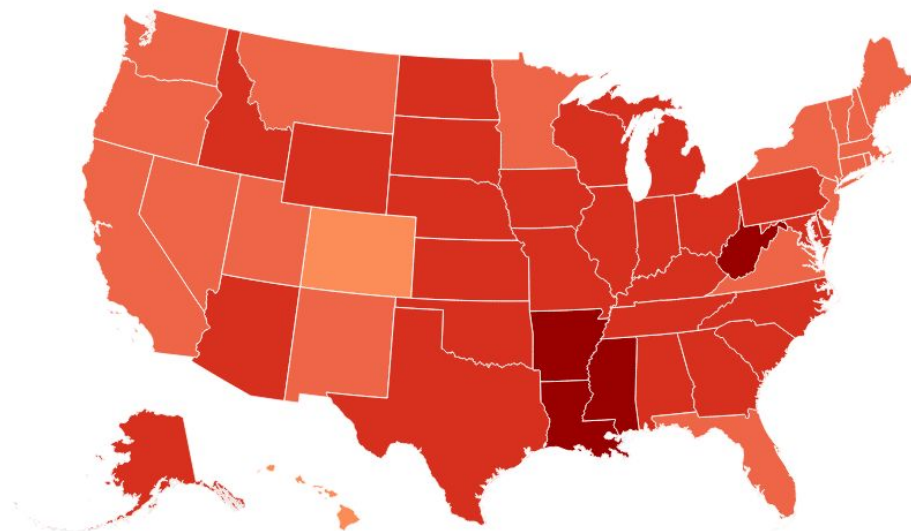


Health Spending Over Time



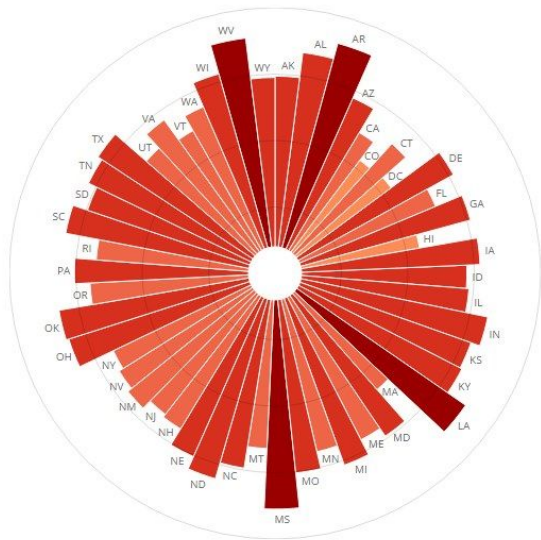
Mode

- Obesity Rates
- Change Over Time



State Trends

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States that sit more, weigh more.

States with high levels of sedentary living have the highest rates of obesity.

Show me >

Fast food, anyone?

States where fast food was consumed the highest led to higher rates.

Show me >

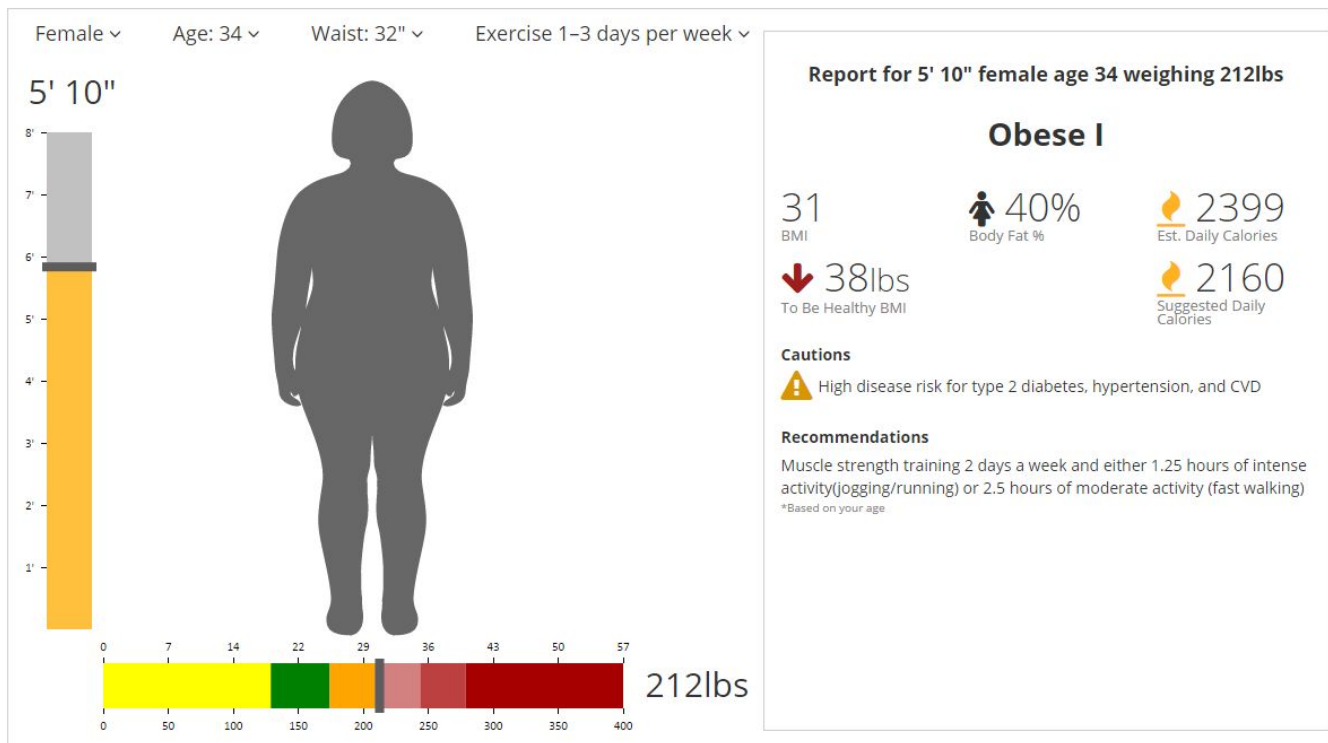
Less money = More Weight

States with lower incomes have higher rates of obesity.

Show me >

Obesity Factors Cartoid/Scatter





Prototype V2

This week we focused on refining the visualizations and creating consistent interface. Some examples of item that we recognized that could be changed to create a more uniform look include:

- Using the same colors for all the visualizations on the page. This allows a user to easily identify the data being encoded in new visualizations lower on the page.

- Using the same dropdowns between visualizations. Once again, this creates a uniform look for the page.

- Updating the tooltips to match.

- Updating the selection mode of states between the visualizations.

- Updating the icons to be from the same icon set.

We also added some "Show Me" sections to some of the visualizations. These sections allow a user to view pre-configured states of the visualizations which highlight important aspects of the data being displayed. For example, the choropleth visualization now has a "Show Me" box with the following: "In 2011, all states were over 20% obesity rate. The last hold out, Colorado, increased from 19.8% in 2010 to 20.7% in 2011. > Show Me". When the user clicks show me, the choropleth displays the 2011 rates.

Some other updates include:

We also added additional snacks to the snacks visualization to make it more informative.

Added the male body shape to the BMI calculator.

Revised the selection modes for the Obesity factors section. We found that the selecting states could be confusing. We opted for a simpler method of modifying the state selection.

We changed the default view of the Detailed State viz to be by Obesity Rate instead of Alphabetical.

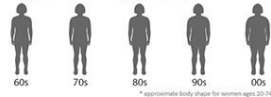
This makes it easier to quickly identify which states are the best and which are the worst.

We added legends to the choropleth, detailed states, and obesity factor visualizations.

In addition, we fine tuned the interactions to have more intuitive interactions.

Below are the updated visualizations.

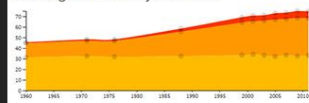
Average American Body Shape By Decade



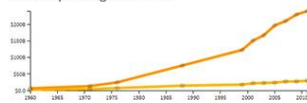
Weight Distribution of Americans



Overweight and Obesity Over Time



Health Spending Over Time



2004 Obesity Rate Drop

In 2004 rates dropped (compared to 2003) in more states than any other time period in our data set. The national average still had a minor increase.

Show me >

2011: All states over 20%

In 2011, all states were over 20% obesity rate. The last hold out, Colorado, increased from 19.8% in 2010 to 20.7% in 2011.

Show me >

Rates over Time

Watch as rates over increase across the country. Pay special attention to regional patterns such as in the South. (Auto-plays below.)

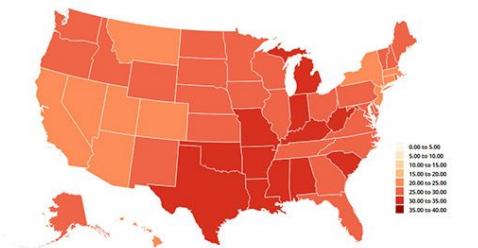
Show me >

Mode

- Obesity Rates
- Change Over Time

Ends of the Spectrum

- CO: 20.7% MS: 34.9%
- HI: 21.8% LA: 33.4%
- MA: 22.7% WY: 32.4%
- DC: 23.7% AL: 32%
- NJ: 23.7% MI: 31.3%



Sort

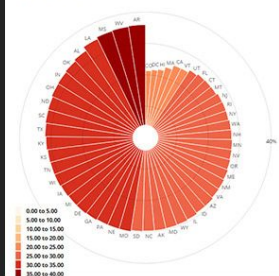
- Obesity Rate
- State Name (Alphabetical)

Year

2010

Location

Select Regions / States



← Hover over the diagram to explore details.

States that sit more, weigh more.

States with the highest proportions of adults who engage in no physical activity during their leisure time have the highest rates of obesity.

Show me >

Put Down the Soda

States with the highest soda consumption had the most prevalent rates of obesity. This is the strongest positive association in this dataset.

Show me >

Less money = More Weight

When looking at the bottom quintile of income: states with lower incomes have higher rates of obesity.

Show me >



The larger American

From about 1960 to 2000, females ages 20 - 74 increased in BMI from 24.9 to 28.2. This has also raised numerous health risks.

Show me >

Every pound counts

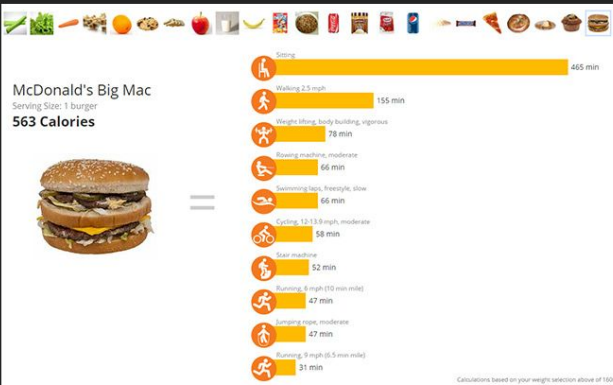
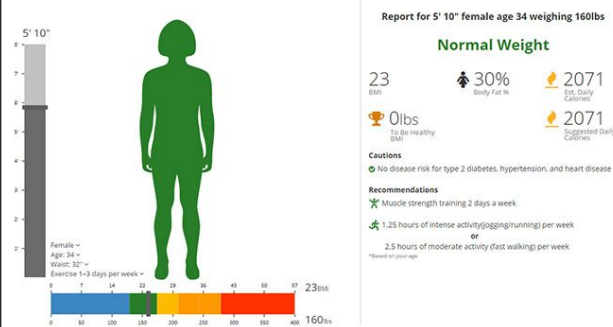
Losing 5 to 10 percent of your weight can produce health benefits in blood pressure, blood cholesterol, and blood sugars.

Show me >

Middle Age Weight Gain

Americans gain about 1-2 pounds each year during their middle ages. See how an average man in his 20s will change by his 40s if he gains about 1 pound each year.

Show me >

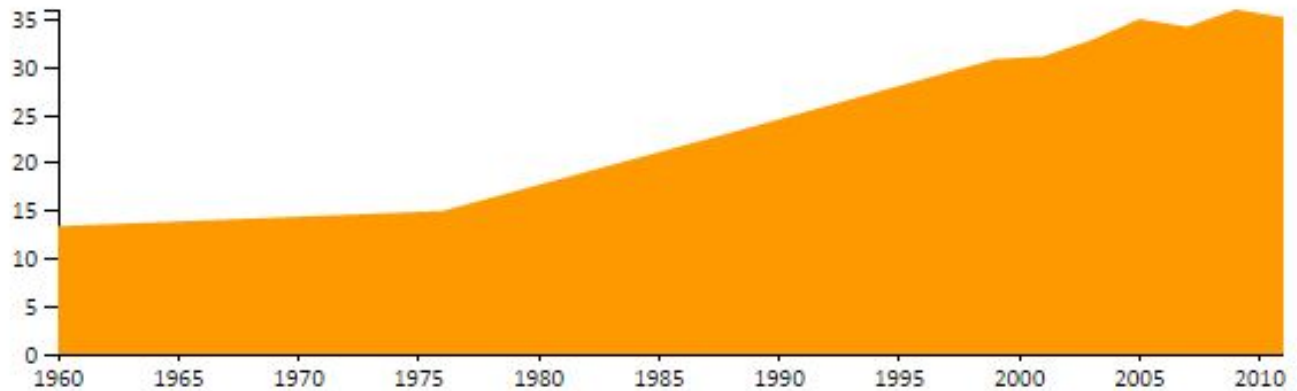


Evaluation

Using our visualizations has revealed some interesting details about obesity in the United States.

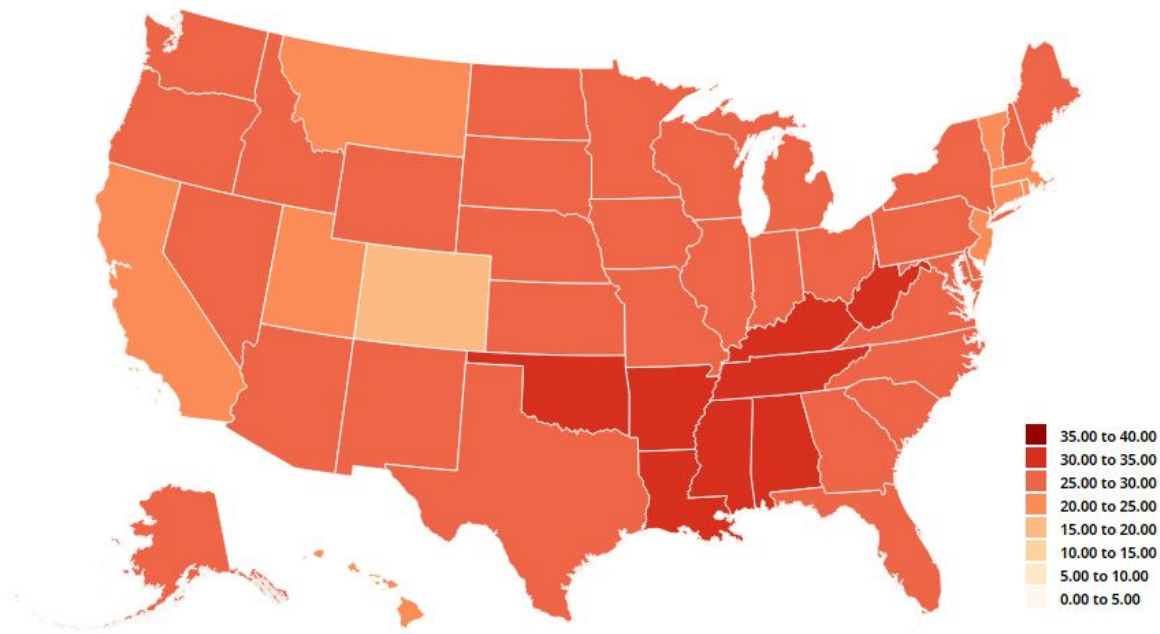
Some details that we found are below. We have organized them by the original questions we created when we started this project.

Overweight and Obesity Over Time



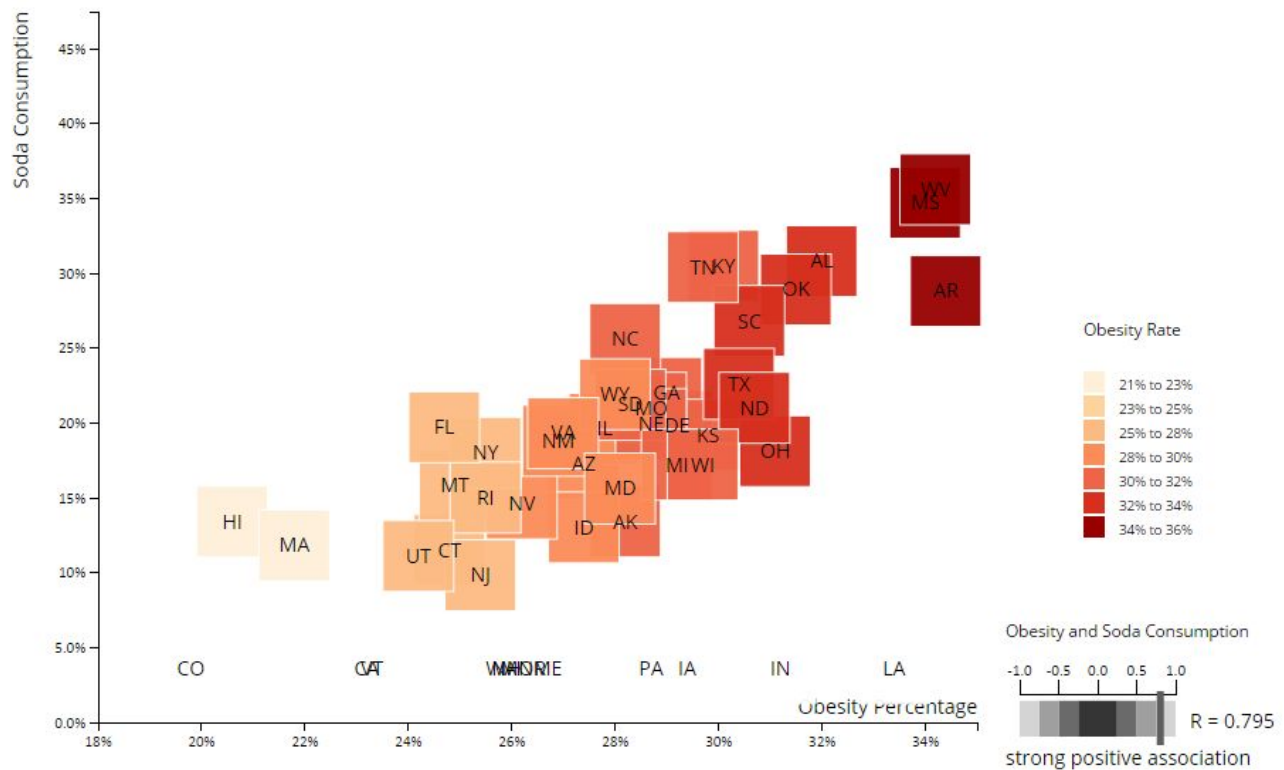
Question 1: When did obesity start becoming a problem?

This chart shows how obesity rates started to rise in about 1975.



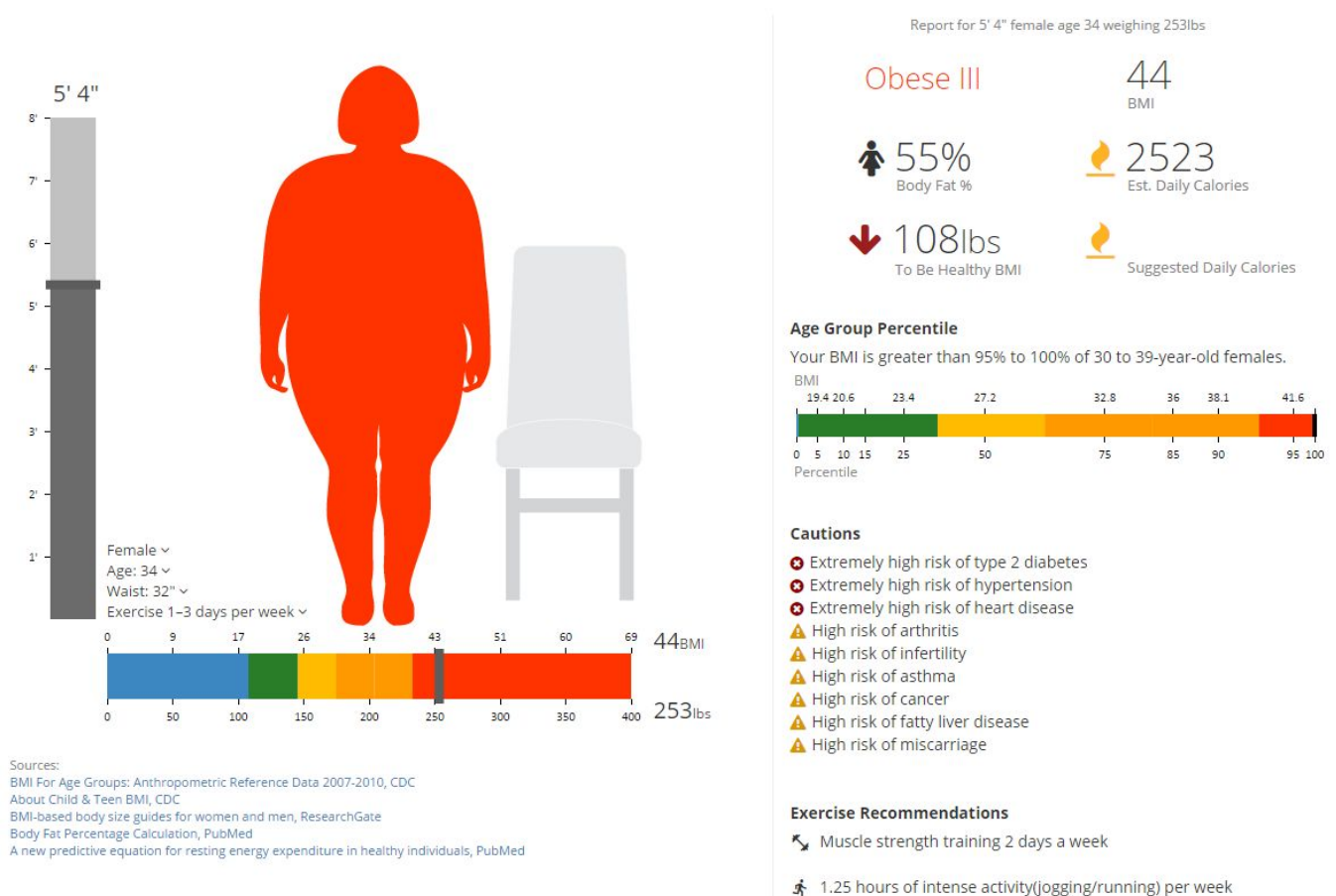
Question 2: Where is obesity the most prevalent?

The choropleth visualization reveals how the South is the area of the country that has struggled the most with increasing obesity rates.



Question 3: What factors are strongly correlated with obesity?

The Obesity Factors visualization reveals what factors are highly correlated with obesity. From this visualization we discovered soda has strongest positive association with obesity from our dataset.



Questions 4 and 5: What are the consequences of obesity? Am I obese or overweight?

This health report visualization gives detailed information based on an individual's information. It shows the consequences of being overweight and obese, based on an individual's BMI, age, and waist measurement.

Two small enhancements that were added from Prototype V2 were the chair in the background and the Age Group percentile.

The chair is present to give context as to how big the person is. As the user slides the height slider, the chair grows or shrinks, giving the impression that the person is smaller or bigger.

The Age Group Percentile allows a user to know how they personally compare to other people about their same age. This addition adds more value to the personalized health report.

We feel that the visualizations do a good job in answering our questions and enhancing our story. They seem to be easy to use and

clearly highlight the significant points to users. We also feel that the "Show Me" boxes are effective in guiding users through exploring the data and helping them understand how to comprehend the visualizations.

One future improvement that was beyond the scope of this project would be to connect the data so that it could always be up-to-date. For example, the website could dynamically load the data sets from data providers about the current obesity rates and other related factors. Unfortunately, there does not seem to be APIs for all the information that we need for the website.

Additionally, having access to a more granular resolution of the obesity data, county-level for instance, would have offered an additional view to drill into data and allow for more interaction within the interfaces for the choropleth, polar area and the carto-scatter plot. Another aspect of the data that would have been nice to explore, if we could find it, would have been plotting the interest in obesity via google and twitter data but they were too sparse to represent anything meaningful.