

# DIABETES IN WYOMING

## 2024 JOURNEY TO SUCCESS

★ Joesph Granpre, PhD

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## Joesph Granpre

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## LEADING CAUSES OF DEATH IN WY

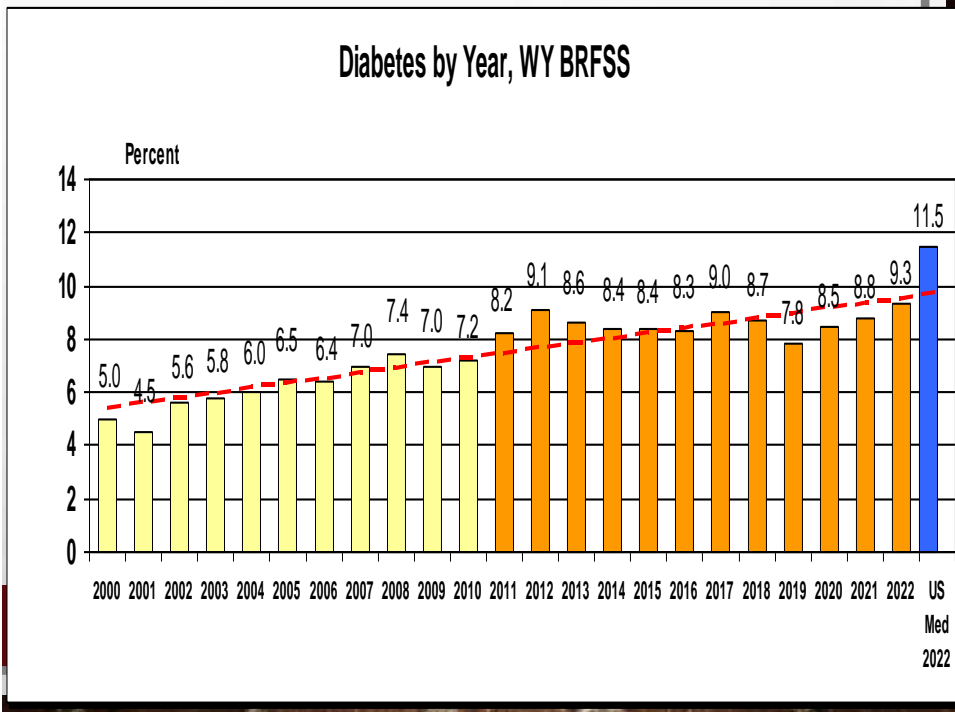
	<u>2021</u>	<u>2022</u>
<b>HEART DISEASE</b>	<b>1,115</b>	<b>1,153</b>
<b>CANCER</b>	<b>1,031</b>	<b>1,087</b>
<b>COVID-19</b>	<b>1,026</b>	<b>1,141</b>
<b>CHRONIC RESP.</b>	<b>355</b>	<b>355</b>
<b>ACCIDENTS/ADVERSE</b>	<b>380</b>	<b>414</b>
<b>STROKE</b>	<b>216</b>	<b>210</b>
<b>ALZHEIMER'S</b>	<b>208</b>	<b>240</b>
<b>DIABETES</b>	<b>172</b>	<b>181</b>

Wyoming Vital Records

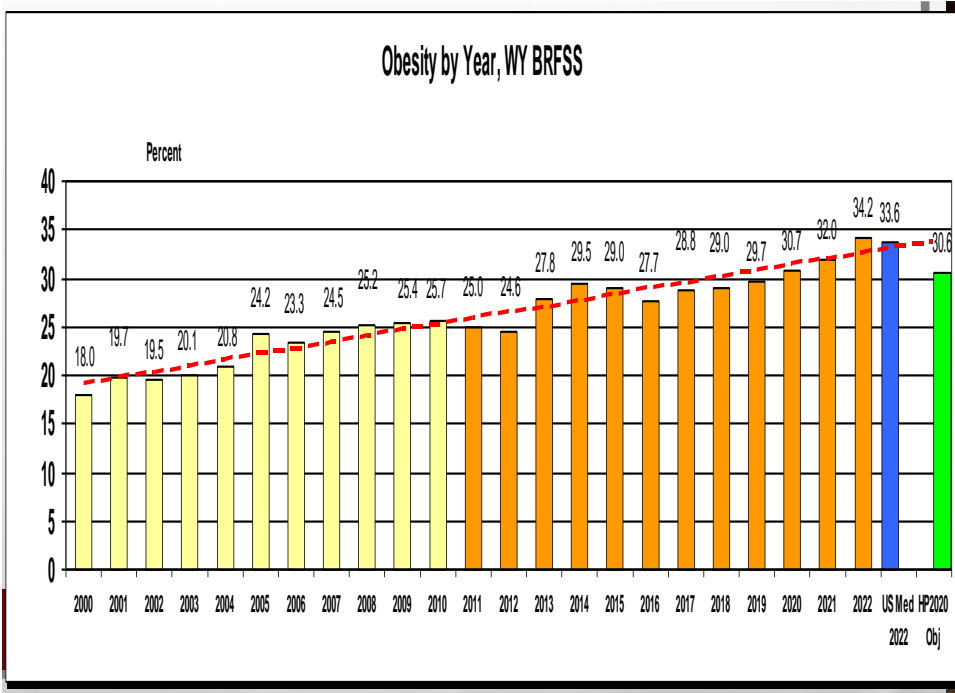
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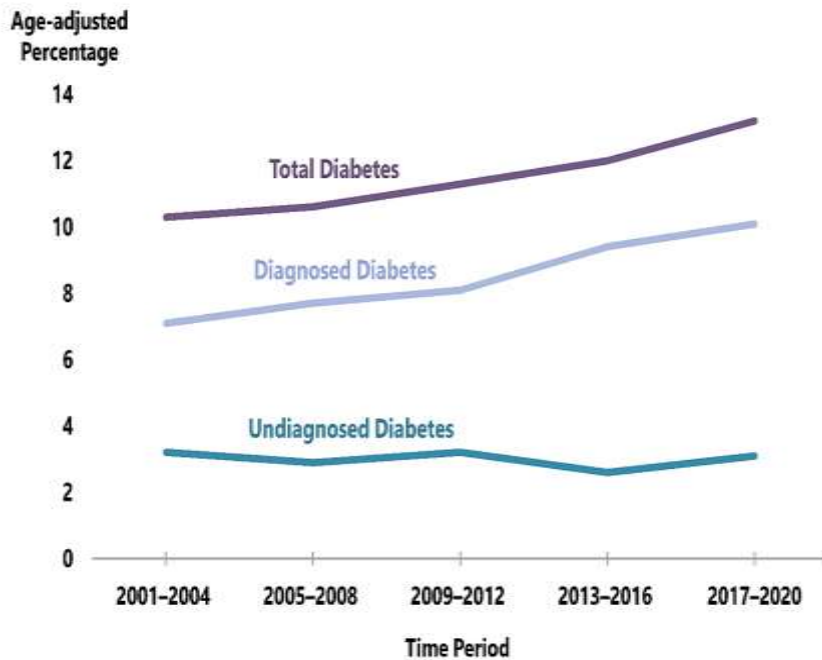
# DIABETES

- AS OF 2019 – 37.3 MILLION HAVE DIABETES IN USA
  - 28.7 MILLION DIAGNOSED
  - 8.5 MILLION UNDIAGNOSED (23%)
  - 96 MILLION AGE 18+ HAVE PRE-DIABETES (38%)



CDC – National Diabetes Statistics Report

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# DIABETES

## 2022 WY BRFSS

- 9.3% OF WYOMING ADULTS DX DIABETES (42K)
- 8.4% HAVE PRE-DIABETES (38K)
- THOSE WITH DIABETES (2021)
  - 46.2% DIAGNOSED BEFORE AGE OF 50
  - 62.3% CHECK BLOOD GLUCOSE AT LEAST DAILY
  - 67% HAD A1C MEASURED AT LEAST TWICE IN LAST YEAR
  - 70.5% HAD PROFESSIONAL FOOT EXAM IN LAST YEAR
  - 64.2% HAD DILATED EYE EXAM IN LAST YEAR

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<\$25K	15.5	11.9-19.9
\$25K-\$49,999	11.2	9.2-13.5
\$50K-\$74,999	6.7	5.0-8.8
\$75K-<\$100K	8.5	6.2-11.5
\$100K+	6.9	5.3-8.9

## Diabetes 2022

Age (years)	Percent	95% CI
18-24	1.1	0.3-4.5
25-34	1.6	0.7-3.6
35-44	4.0	2.5-6.4
45-54	7.1	5.0-10.0
55-64	16.0	13.3-19.0
65+	19.0	16.9-21.3

Race/ethnicity	Percent	95% CI
White (non-Hispanic)	9.0	8.1-10.0
Hispanic	9.6	6.3-14.3
American Indian	19.4	11.2-31.5
Other	8.1	3.5-17.8

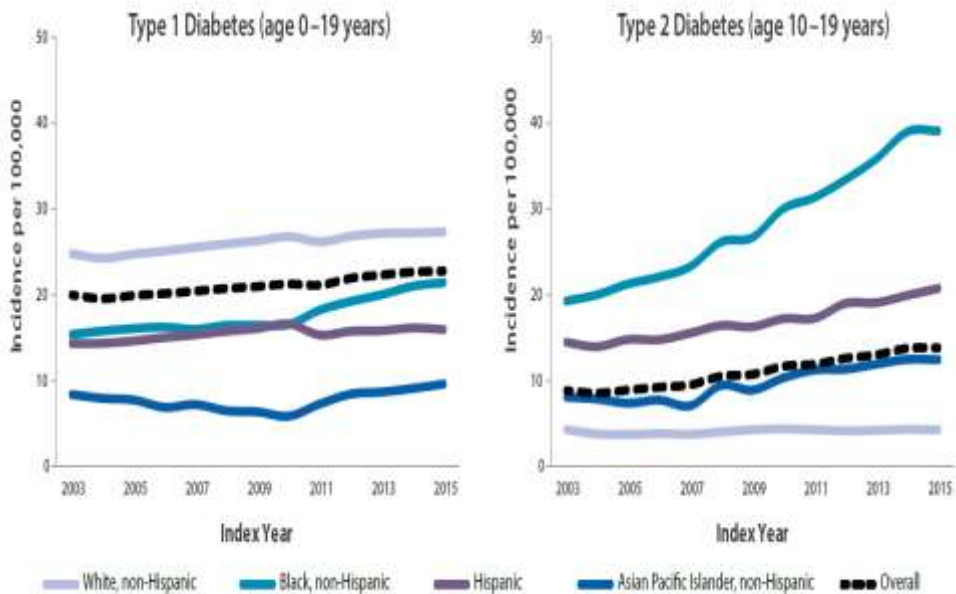
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- **ABOUT 193,000 PEOPLE UNDER 20 YEARS OF AGE HAVE DIABETES**
- **18,291 ARE DIAGNOSED WITH TYPE 1 ANNUALLY**
- **5,758 ARE DIAGNOSED WITH TYPE 2 ANNUALLY**

CDC – National Diabetes Statistics Report

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CDC – National Diabetes Statistics Report

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## Major Complications of Diabetes

### Microvascular

#### Eye

High blood glucose and high blood pressure can damage eye blood vessels, causing retinopathy, cataracts and glaucoma



#### Kidney

High blood pressure damages small blood vessels and excess blood glucose overworks the kidneys, resulting in nephropathy.



#### Neuropathy

Hyperglycemia damages nerves in the peripheral nervous system. This may result in pain and/or numbness. Feet wounds may go undetected, get infected and lead to gangrene.



### Macrovascular

#### Brain

Increased risk of stroke and cerebrovascular disease, including transient ischemic attack, cognitive impairment, etc.



#### Heart

High blood pressure and insulin resistance increase risk of coronary heart disease

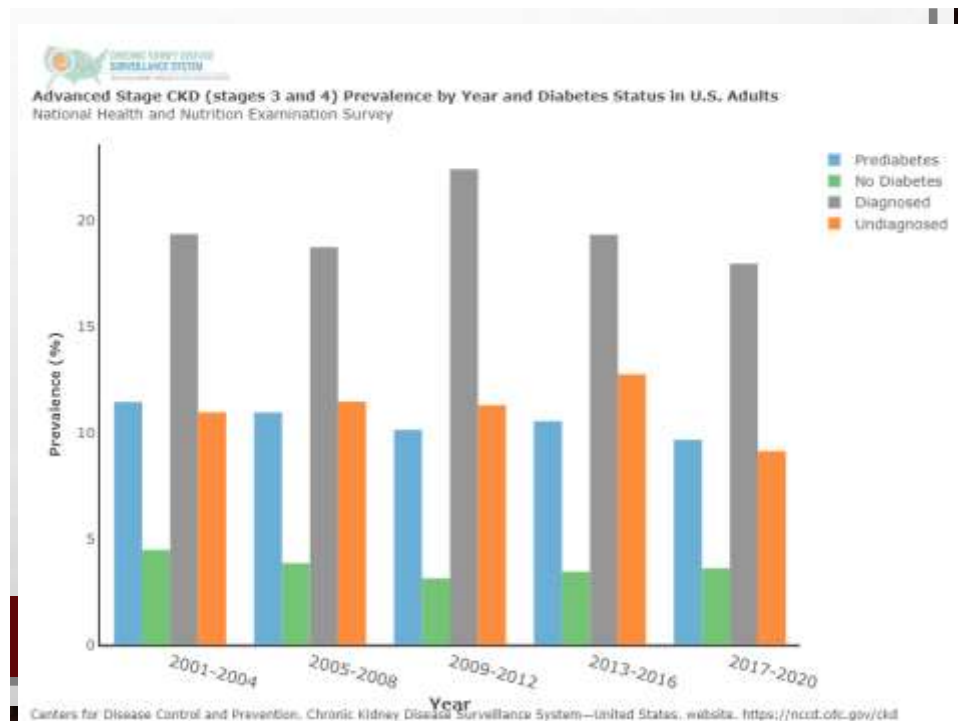


#### Extremities

Peripheral vascular disease results from narrowing of blood vessels increasing the risk for reduced or lack of blood flow in legs. Feet wounds are likely to heal slowly contributing to gangrene and other complications.



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## BABY BREAK



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## RISK FACTORS

- SEVERAL RISK FACTORS ASSOCIATED WITH ALL CD'S
  - PHYSICAL ACTIVITY (TOO LITTLE)
  - POOR NUTRITION
  - TOBACCO (SMOKING, SMOKELESS)
  - AGE

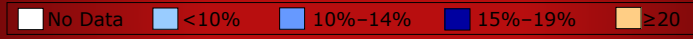
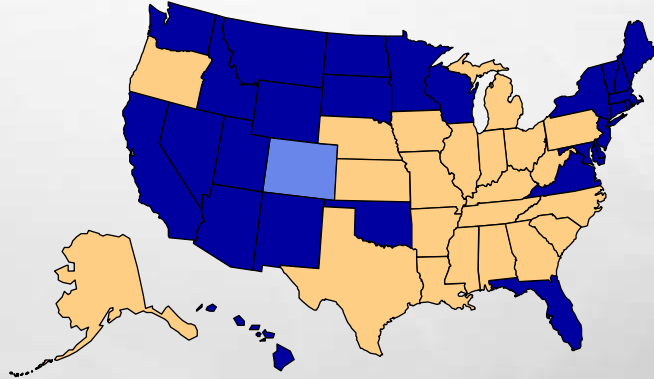


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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2000

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

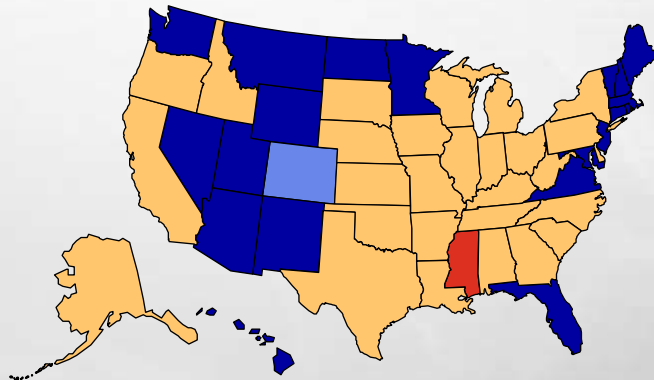


Source: Behavioral Risk Factor Surveillance System, CDC

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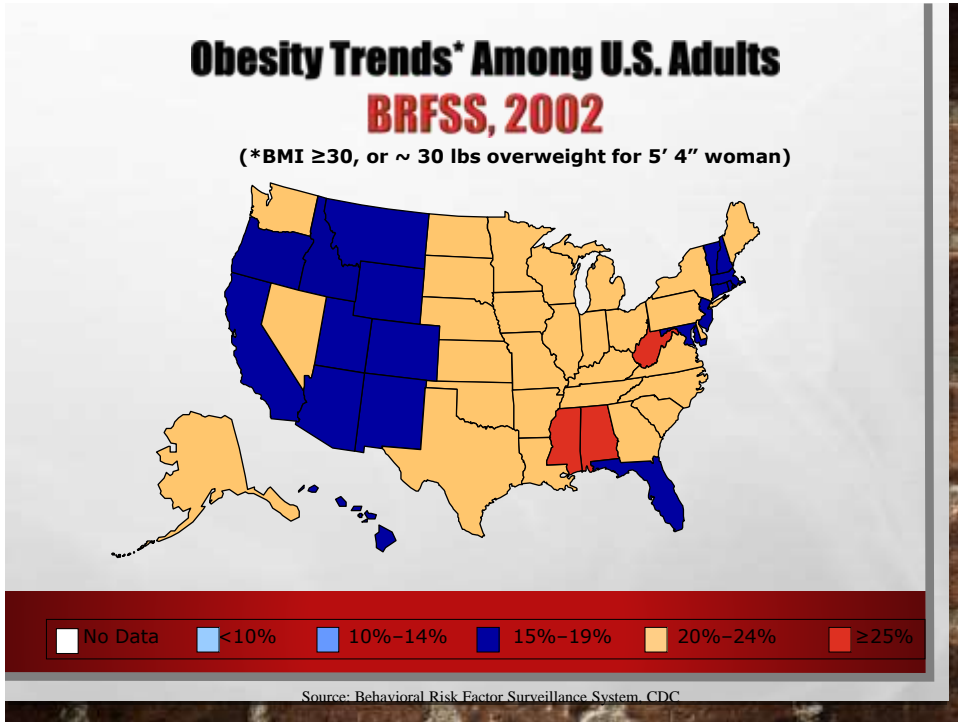
# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2001

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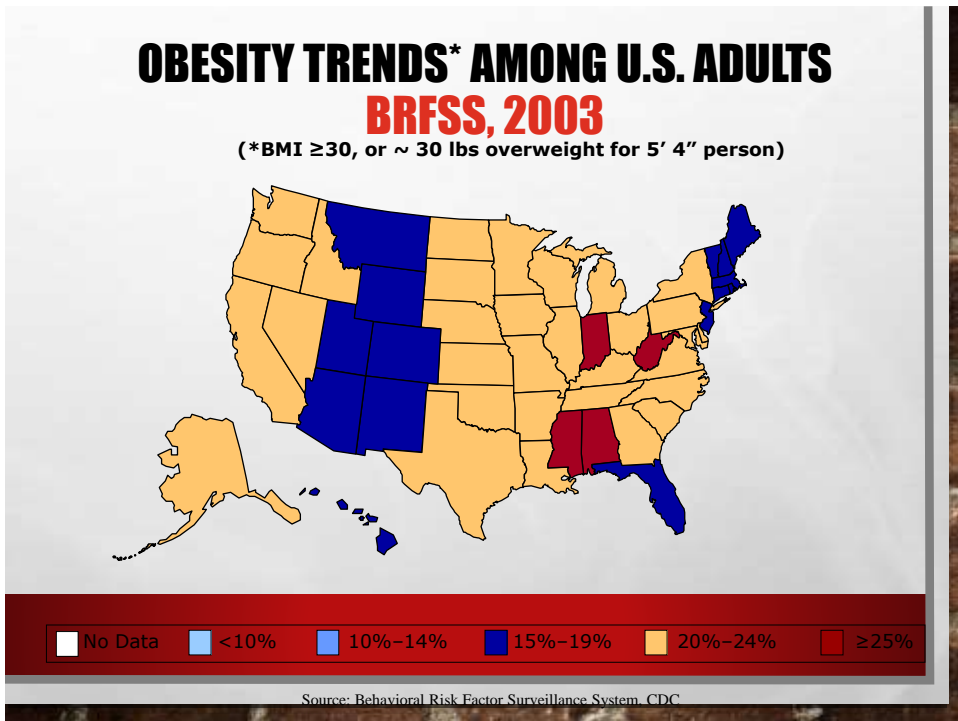


Source: Behavioral Risk Factor Surveillance System, CDC

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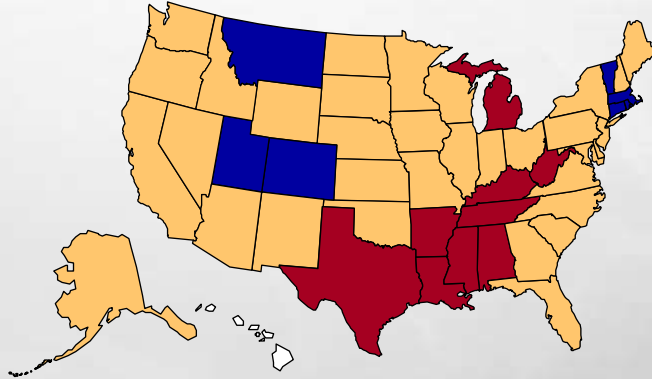
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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2004

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

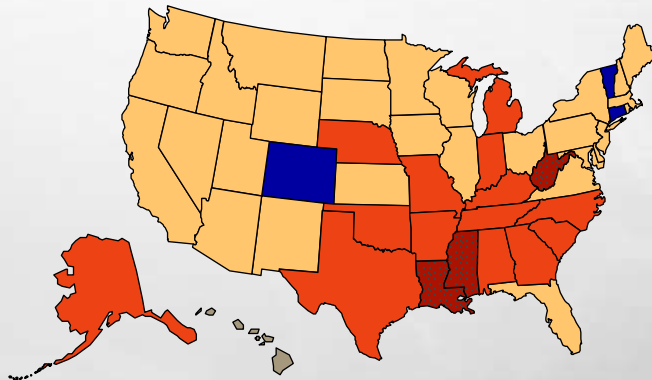


Source: Behavioral Risk Factor Surveillance System, CDC

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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2005

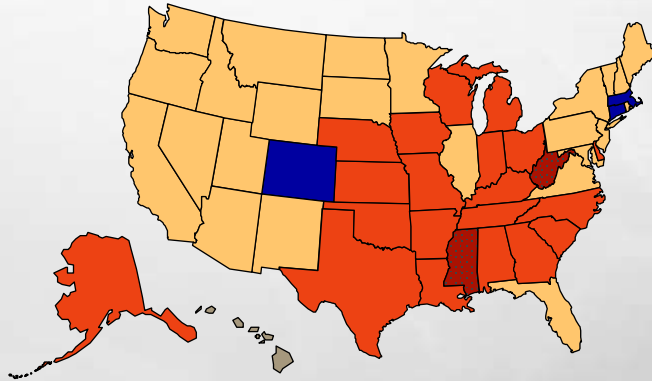
(\*BMI ≥30, or ~ 30 lbs overweight for 5' 4" person)



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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2006

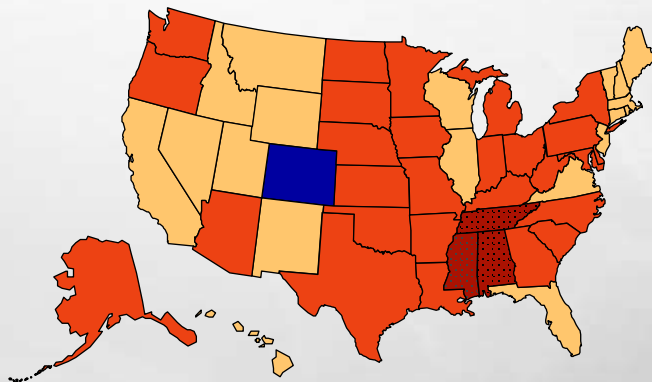
(\*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)



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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2007

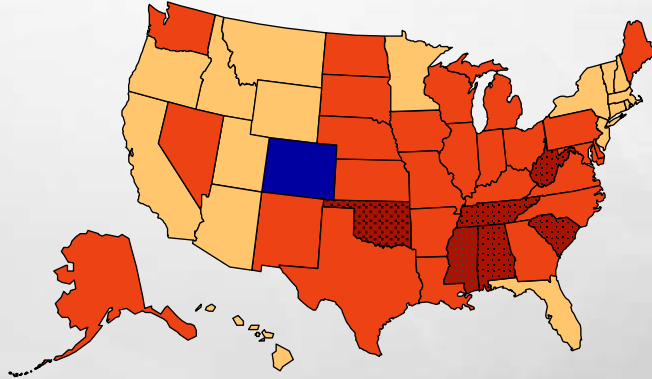
(\*BMI ≥30, or ~ 30 lbs. overweight for 5' 4" person)



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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2008

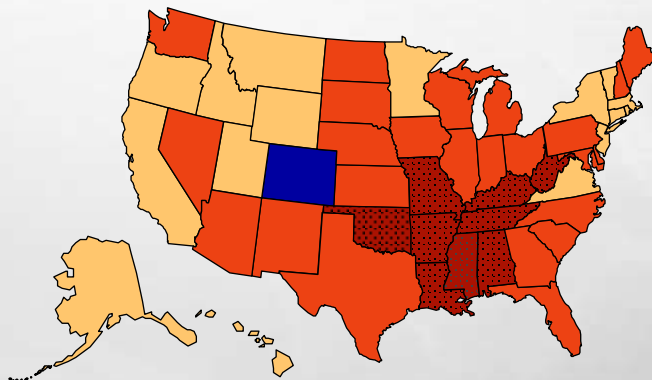
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2009

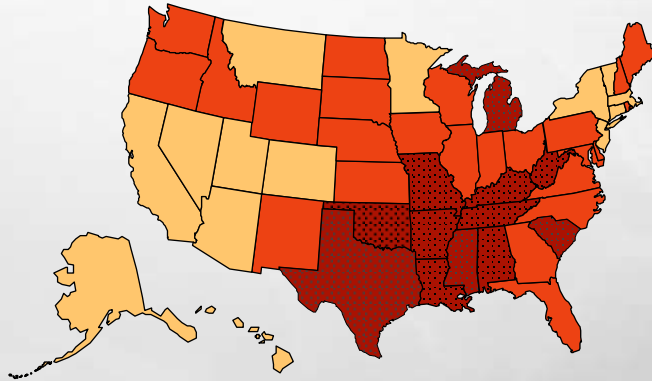
(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



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# OBESITY TRENDS\* AMONG U.S. ADULTS BRFSS, 2010

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



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## PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2011

<sup>1</sup> Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS,**

**2012**

<sup>1</sup> Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



<sup>1</sup> Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.



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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS,**

**2013**

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<sup>1</sup> Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.



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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2014**

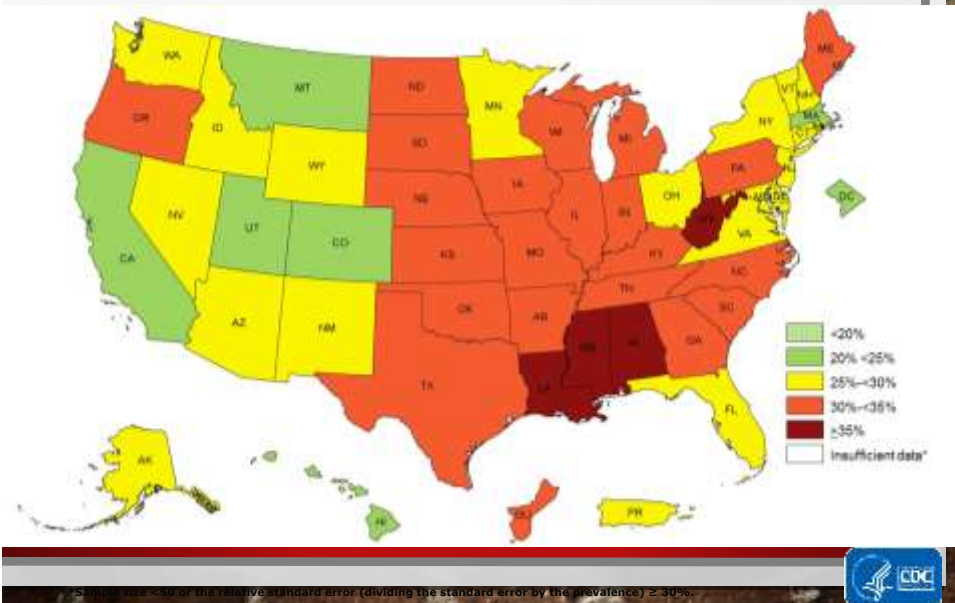
<sup>1</sup> Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2015**

<sup>1</sup> Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2016**

<sup>1</sup>Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.



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**Prevalence<sup>1</sup> of Self-Reported Obesity Among U.S. Adults by State and Territory, BRFSS, 2017**



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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2018**

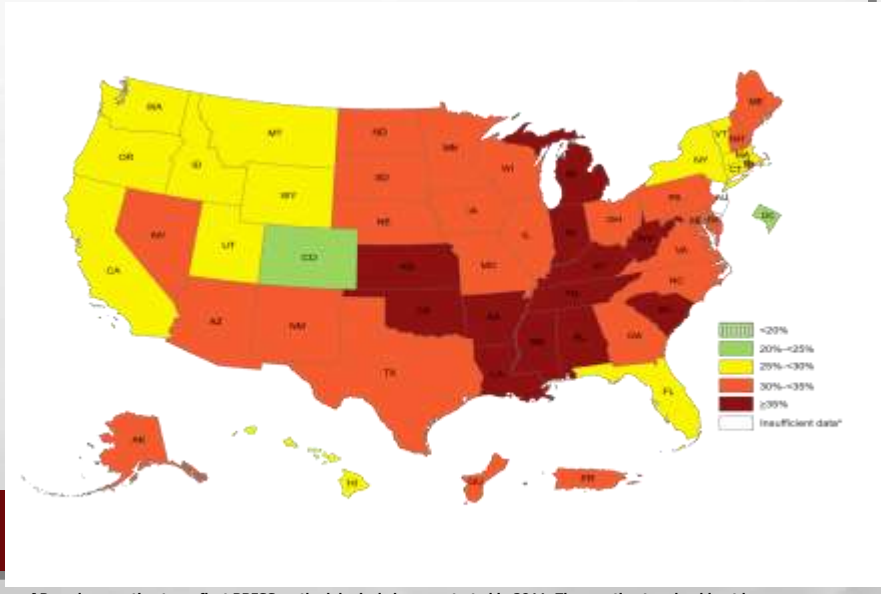


\*Sample size <50 or the relative standard error (dividing the standard error by the prevalence) ≥ 30%.

<sup>1</sup>Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

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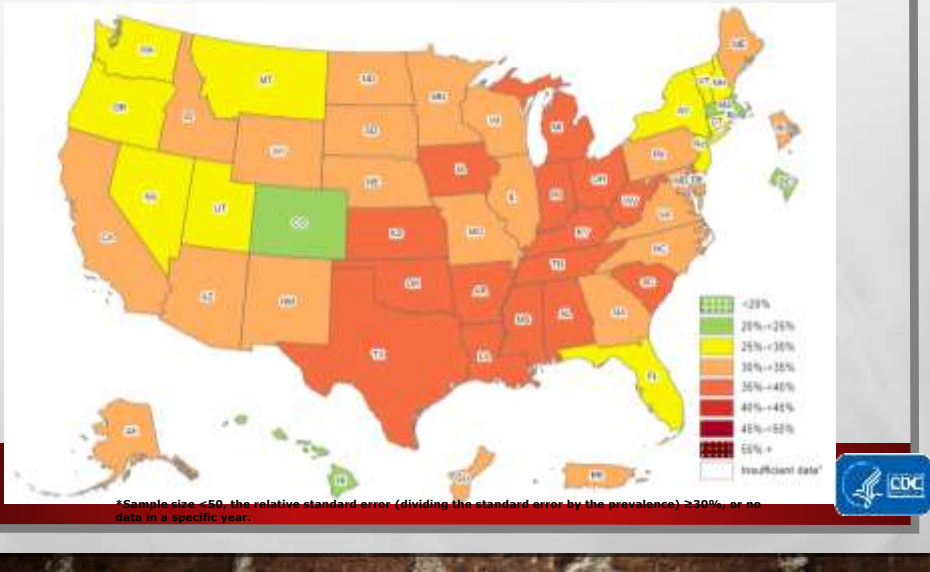
**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2019**



<sup>1</sup>Prevalence estimates reflect BRFSS methodological changes started in 2011. These estimates should not be compared to prevalence estimates before 2011.

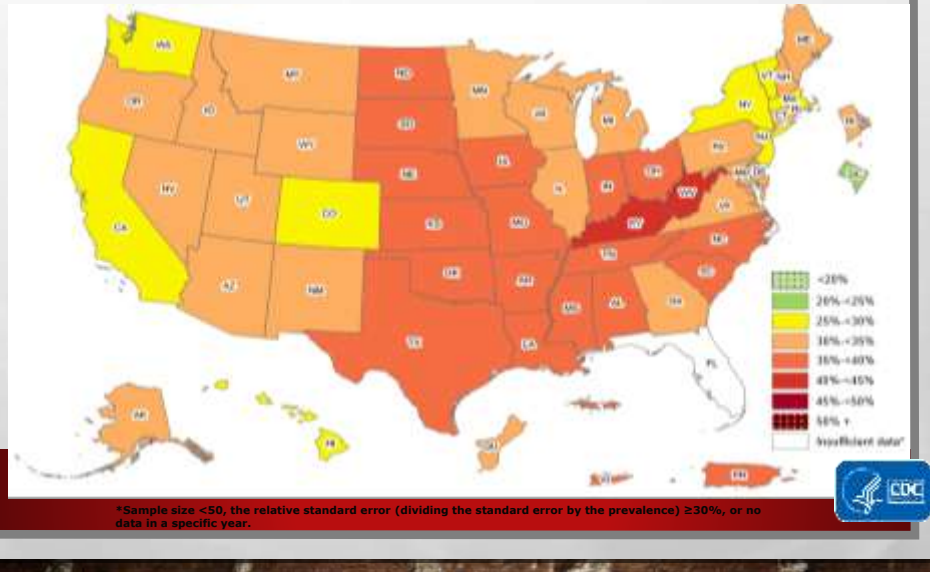
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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2020**



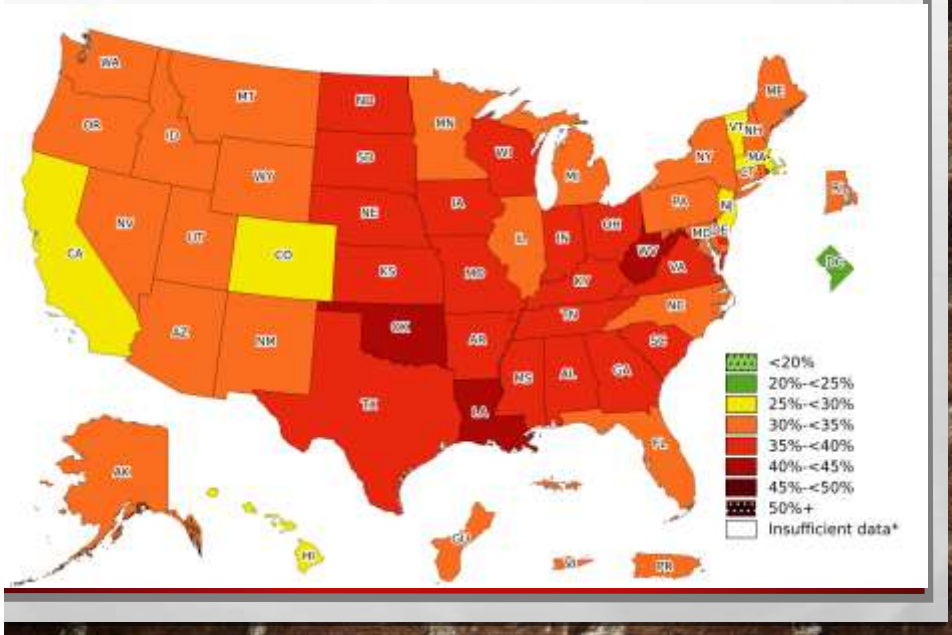
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**PREVALENCE<sup>1</sup> OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2021**

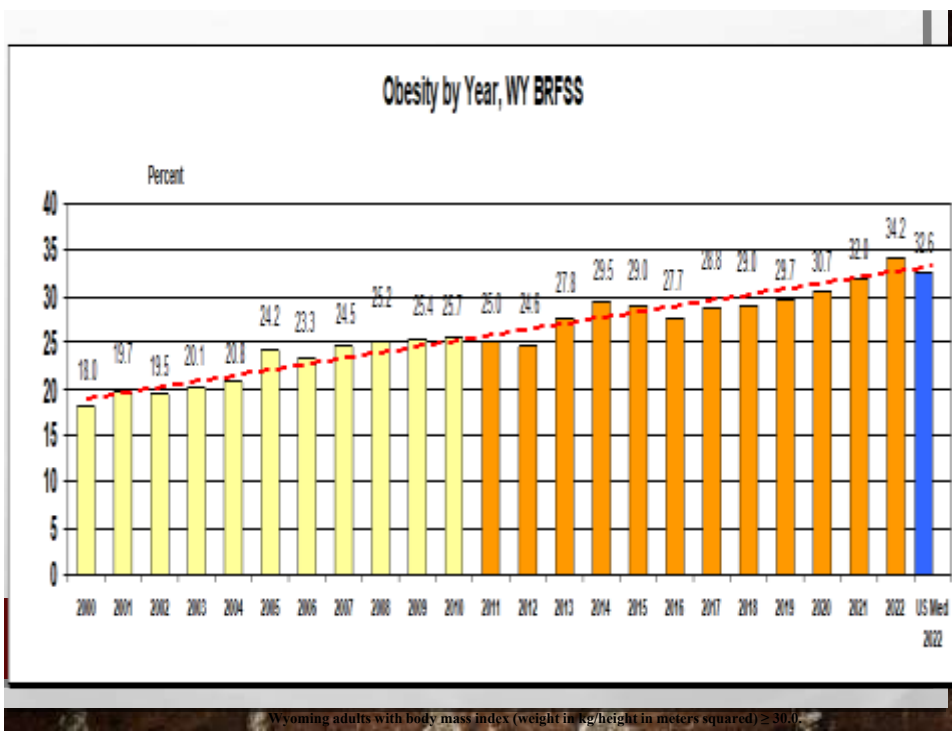


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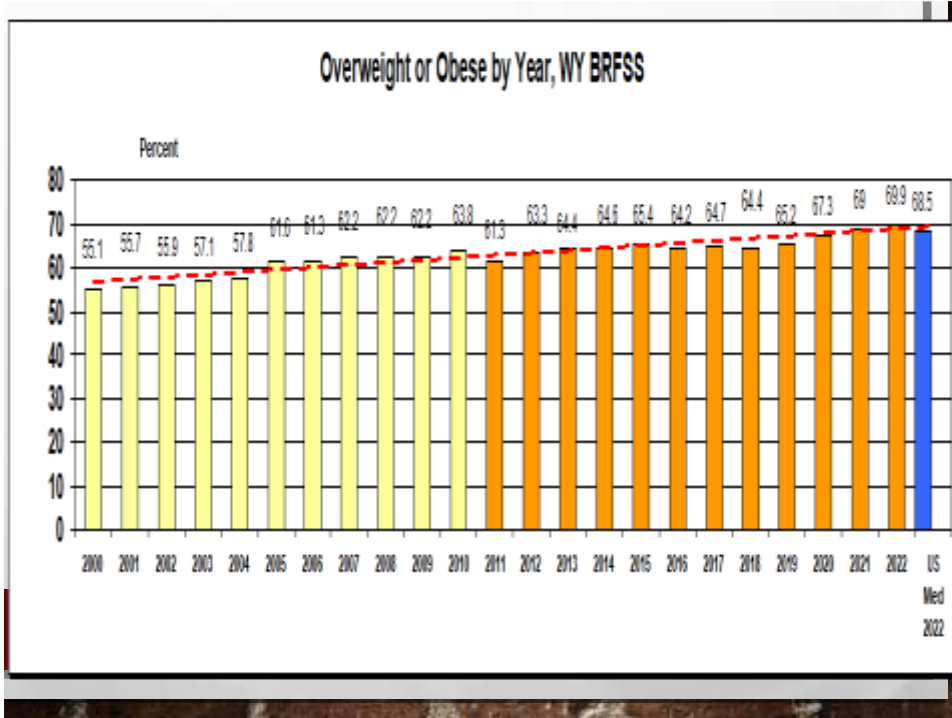
Prevalence of Obesity Based on Self-Reported Weight and Height Among U.S. Adults by State and Territory, BRFSS, 2022



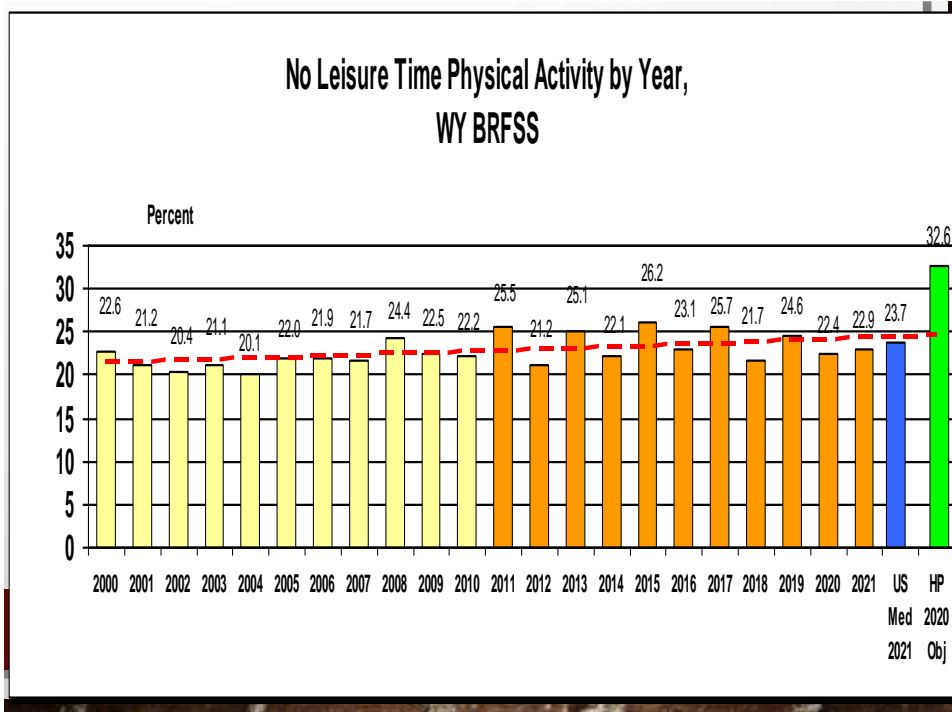
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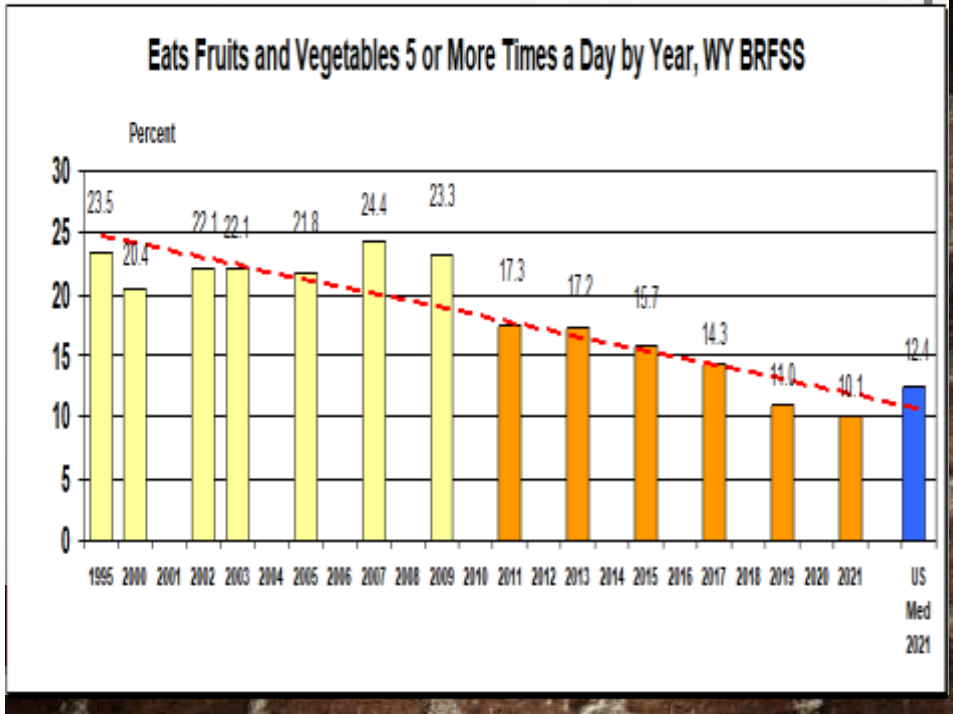
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## Portion Distortion

20 YEARS AGO	TODAY	DIFFERENCE
<p><b>333 Calories</b></p> <p>Lifting weights for <b>1 HOUR AND 30 MINUTES</b> burns approximately 257 calories* *Based on 130-pound person</p>	<p><b>590 Calories</b></p>	<p><b>257 MORE CALORIES</b></p>
<p><b>500 Calories</b></p> <p>Playing golf (while walking and carrying your clubs) for <b>1 HOUR</b> burns approximately 350 calories* *Based on 160-pound person</p>	<p><b>850 Calories</b></p>	<p><b>350 MORE CALORIES</b></p>
<p><b>500 Calories</b></p> <p>Housecleaning for <b>2 HOURS AND 35 MINUTES</b> burns approximately 525 calories* *Based on 130-pound person</p>	<p><b>1,025 Calories</b></p>	<p><b>525 MORE CALORIES</b></p>
<p><b>45 Calories</b></p> <p>Walking <b>1 HOUR AND 20 MINUTES</b> burns approximately 305 calories* *Based on 130-pound person</p>	<p><b>350 Calories</b></p>	<p><b>305 MORE CALORIES</b></p>
<p><b>210 Calories</b></p> <p>Vacuuming for <b>1 HOUR AND 30 MINUTES</b> burns approximately 290 calories* *Based on 130-pound person</p>	<p><b>500 Calories</b></p>	<p><b>290 MORE CALORIES</b></p>
<p><b>55 Calories</b></p> <p>Washing a car for <b>1 HOUR AND 15 MINUTES</b> burns approximately 220 calories* *Based on 130-pound person</p>	<p><b>275 Calories</b></p>	<p><b>220 MORE CALORIES</b></p>

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## PORTION SIZE



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## The Portion Size Illusion

Which plate contains the most food?

Think about it before looking at the answer below

There is exactly the same amount of food on each plate

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United States – GA – 1947 Family of Four



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# UNITED STATES



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# GERMANY



49

# MEXICO



50

# ENGLAND



51

# FRANCE



52

# EGYPT



53

# CHINA



54

# JAPAN



55

# INDIA



56

# BHUTAN



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# ECUADOR



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## FY2022 HOSPITAL DISCHARGE

	INPATIENT		ER or URGENT	
	# Discharges	Charges	# Discharges	Charges
<b>HEART DISEASE</b>	10,770	\$600,907,655.47	3,547	\$35,593,594.53
<b>CANCER</b>	1,912	\$94,757,397.37	1,377	\$10,268,851.99
<b>COPD</b>	6,398	\$308,069,164.19	6,427	\$40,431,213.73
<b>DIABETES</b>	7,021	\$370,946,078.41	7,689	\$53,966,817.45
<b>STROKE</b>	1,351	\$75,566,023.77	898	\$10,309,703.40
<b>TOTAL</b>	<b>27,452</b>	<b>\$1,450,246,319.21</b>	<b>19,938</b>	<b>\$150,570,181.10</b>

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# QUESTIONS

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