Life Expectancy Comparison by Gender:

1. Go to the WHO website: https://www.who.int/
2. Go to the "Data" drop down menu and choose the "Global Health Observatory."
3. Go to "Indicators" page and then scroll to the bottom and click on the link for accessing the "old" Global Health Observatory data. This link is directly under the list of indicators in the new system. If you cannot find the link to the old system, use this direct link:

   https://apps.who.int/gho/data/node.main

4. Click on "Mortality and global health estimates." Direct link:

   https://apps.who.int/gho/data/node.main.686?lang=en

Life Expectancy Comparison by Gender

~~Or simply open the following alternate link:~~

~~https://apps.who.int/gho/data/node.main.1?lang=en~~

The WHO system was completely redesigned so just open the following link:

https://www.worldometers.info/demographics/life-expectancy/

After you open it, copy and past the accessed data to your spreadsheet:

Countries ranked by life expectancy (2025)

(click on a country for more details)

Search...

Rank	Country	Life Expectancy (both sexes)	Females Life Expectancy	Males Life Expectancy
1	Hong Kong	85.77	88.39	83.1
2	Japan	85	88.03	81.99
3	South Korea	84.53	87.4	81.44
4	French Polynesia	84.31	86.74	82.03
5	Switzerland	84.23	86.06	82.34
6	Australia	84.21	85.97	82.43
7	Italy	84.03	86.01	81.94

Life Expectancy Comparison by Gender

Remove the columns you do not need:

	A	B	C
1	Country	Females Life Expect	Males Life Expect
2	Hong Kong	88.39	83.1
3	Japan	88.03	81.99
4	South Korea	87.4	81.44
5	French Polyn	86.74	82.03
6	Switzerland	86.06	82.34
7	Australia	85.97	82.43
8	Italy	86.01	81.94
9	Singapore	86.48	81.53
10	Spain	86.59	81.27
11	Réunion	86.57	80.81

Insert this equation to calculate the gender difference:

	A	B	C	D
1	Country	Females Life Expect	Males Life Expect	difference
2	Hong Kong	88.39	83.1	=b2-c2
3	Japan	88.03	81.99	
4	South Korea	87.4	81.44	
5	French Polyn	86.74	82.03	
6	Switzerland	86.06	82.34	
7	Australia	85.97	82.43	
8	Italy	86.01	81.94	
9	Singapore	86.48	81.53	
10	Spain	86.59	81.27	
11	Réunion	86.57	80.81	

Life Expectancy Comparison by Gender

Copy and paste the equation to the remaining rows:

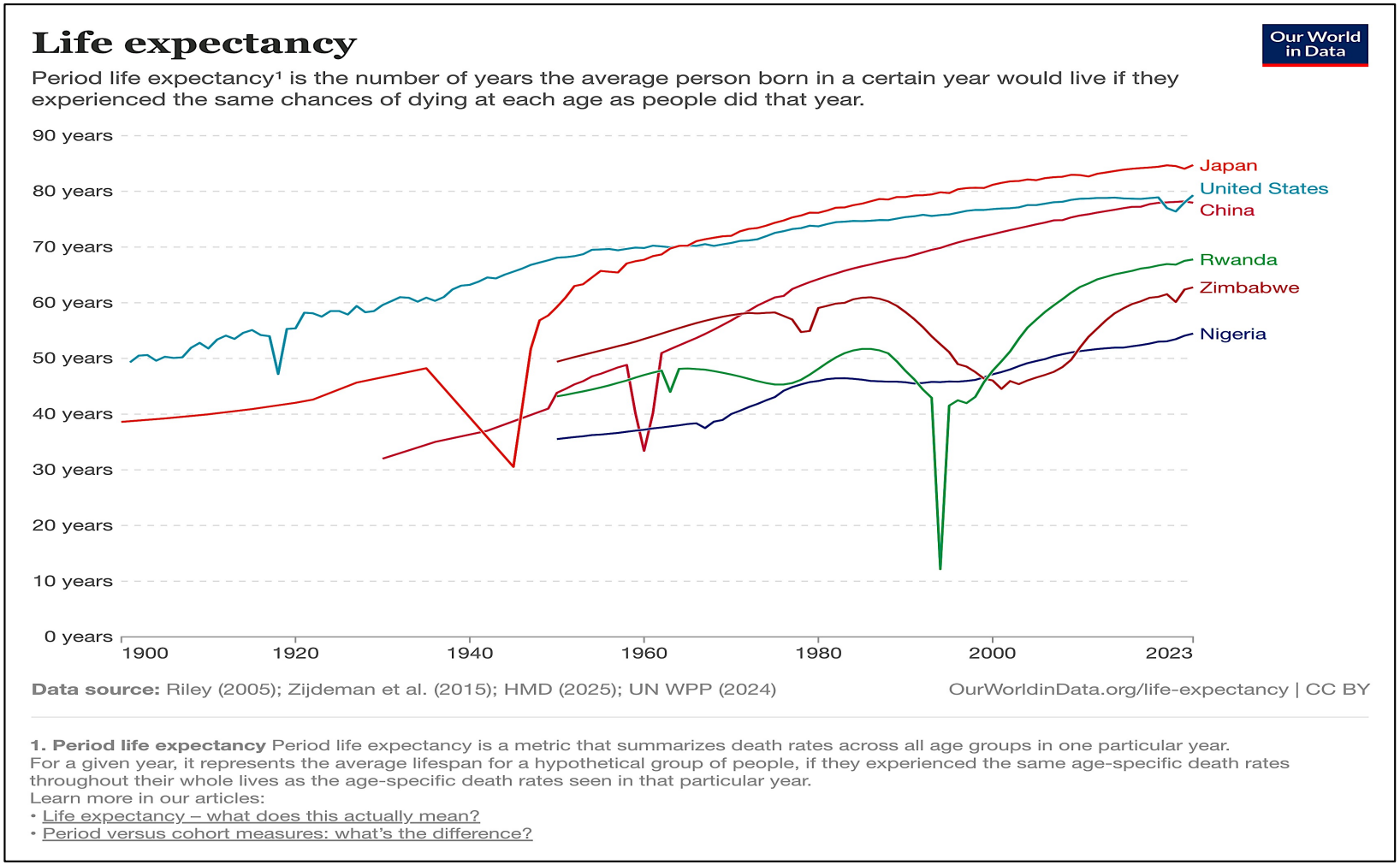
Country	Females Life Expect	Males Life Expect	difference
Hong Kong	88.39	83.1	5.29
Japan	88.03	81.99	6.04
South Korea	87.4	81.44	5.96
French Polyn	86.74	82.03	4.71
Switzerland	86.06	82.34	3.72
Australia	85.97	82.43	3.54
Italy	86.01	81.94	4.07
Singapore	86.48	81.53	4.95
Spain	86.59	81.27	5.32
Réunion	86.57	80.81	5.76

Sort the nations in order of life expectancy difference:

Country	Females Life Expect	Males Life Expect	difference
Togo	63.39	62.87	0.52
Nigeria	55.12	54.45	0.67
Bahrain	82.26	81.03	1.23
Qatar	83.6	81.96	1.64
Niger	62.66	60.69	1.97
United Arab E	84.44	82.37	2.07
Guinea	62.27	59.8	2.47
Kuwait	82.15	79.63	2.52
Liberia	63.8	61.14	2.66
Iceland	84.57	81.8	2.77

Life Expectancy by Nation 1900-2023

Open the link and graph the data for the US, China, Japan, Nigeria, Rwanda, and Zimbabwe from 1900-2023: https://ourworldindata.org/life-expectancy



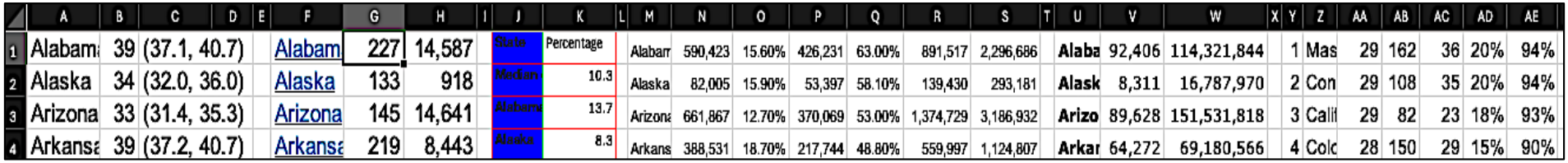
US Health Indicators Ranked by State

1. ~~Go to the Centers for Disease Control website: www.cdc.gov~~
2. ~~To collect data on risk factors, open the link for "**Data & Statistics**", then open the link for "**Overweight and Obesity**."~~
3. ~~Scroll down below the map to "**Additional Resources**" and then click on "**Behavioral Risk Factor Surveillance System (BRFSS).**"~~
4. ~~Under the heading for "**Prevalence Data and Data Analysis Tools**" open the link for "**Prevalence and Trends Data**." This takes you to an interactive website. Here is the direct link: https://www.cdc.gov/brfss/brfssprevalence/index.html~~

The CDC system was redesigned so just open the following links:
For smoking rates: https://www.lung.org/research/trends-in-lung-disease/tobacco-trends-brief/data-tables/ad-cig-smoking-state
For obesity rates: https://www.cdc.gov/obesity/data-and-statistics/adult-obesity-prevalence-maps.html
For hypertension rates: https://www.cdc.gov/nchs/state-stats/deaths/hypertension.html
For diabetes rates: https://gis.cdc.gov/grasp/diabetes/diabetesatlas-surveillance.html#
For heart disease rates: https://www.cdc.gov/nchs/state-stats/deaths/heart-disease.html
For exercise rates: https://www.valuepenguin.com/fittest-and-least-fit-states
For cancer rates: https://wonder.cdc.gov/cancer-v2022.html

US Health Indicators Ranked by State

Copy and paste the data from each website to your spreadsheets:



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE
1	Alabam	39	(37.1, 40.7)			Alabam	227	14,587		State	Percentage		Alabam	590,423	15.60%	426,231	63.00%	891,517	2,296,686		Alaba	92,406	114,321,844		1	Mas	29	162	36	20%	94%
2	Alaska	34	(32.0, 36.0)			Alaska	133	918		Median	10.3		Alaska	82,005	15.90%	53,397	58.10%	139,430	293,181		Alask	8,311	16,787,970		2	Con	29	108	35	20%	94%
3	Arizona	33	(31.4, 35.3)			Arizona	145	14,641		Alabama	13.7		Arizona	661,867	12.70%	370,069	53.00%	1,374,729	3,186,932		Arizo	89,628	151,531,818		3	Calif	29	82	23	18%	93%
4	Arkansa	39	(37.2, 40.7)			Arkansa	219	8,443		Alaska	8.3		Arkans	388,531	18.70%	217,744	48.80%	559,997	1,124,807		Arkar	64,272	69,180,566		4	Colo	28	150	29	15%	90%

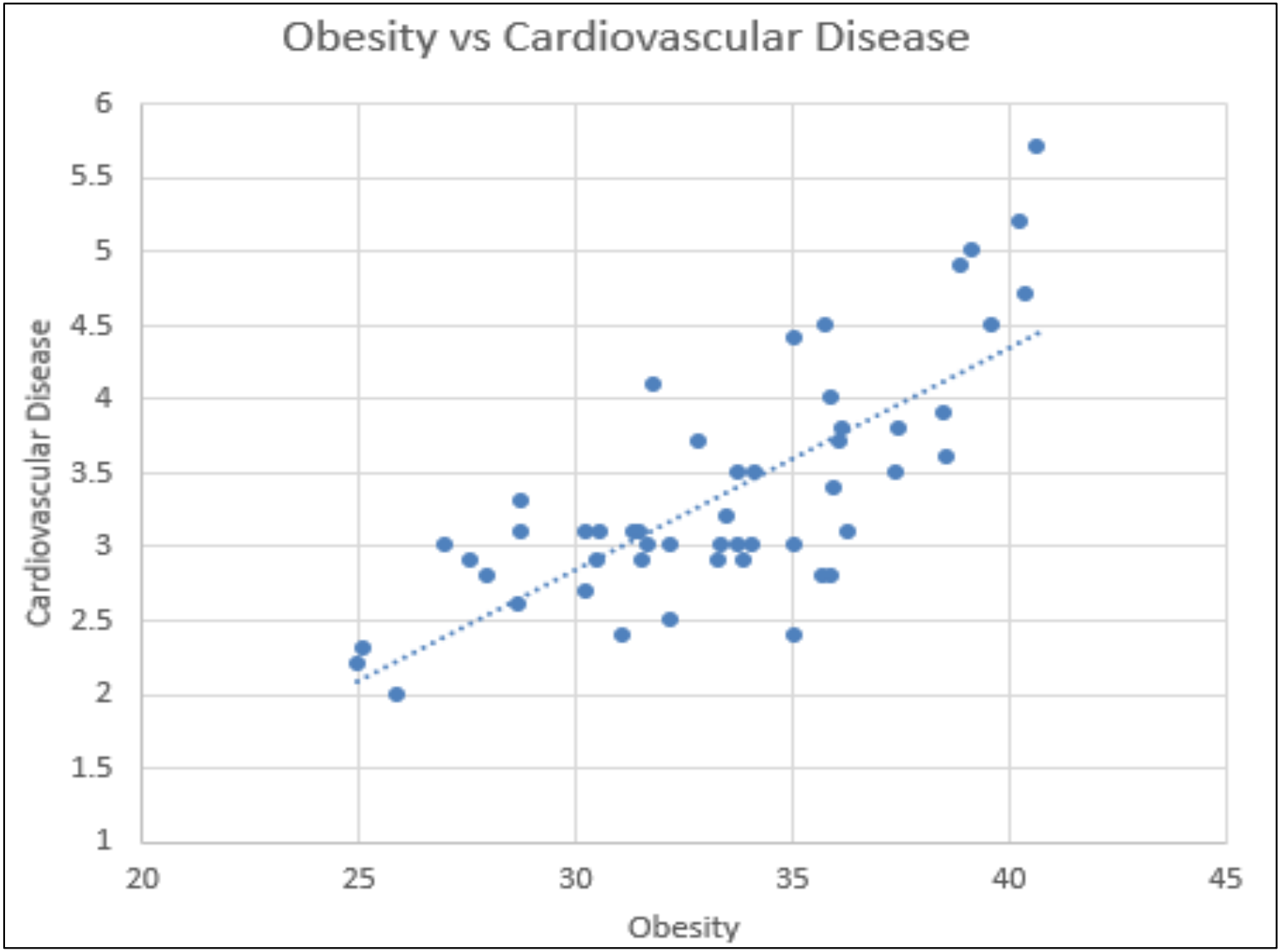
Remove unneeded columns, sort states in alphabetical order, and make sure all the states line up with each other:

Alabama	39	Alaban	227	Alabama	13.7	Alabama	16%	**Alaba**	68.4	Alabam	12	52	18	29%	61%
Alaska	34	Alaska	133	Alaska	8.3	Alaska	16%	**Alask**	62.8	Alaska	21	82	22	19%	100%
Arizona	33	Arizon	145	Arizona	9.8	Arizona	13%	**Arizo**	50.5	Arizona	23	84	20	21%	85%
Arkansas	39	Arkans	219	Arkansas	13	Arkansa	19%	**Arkar**	77.7	Arkansa	10	44	15	30%	64%

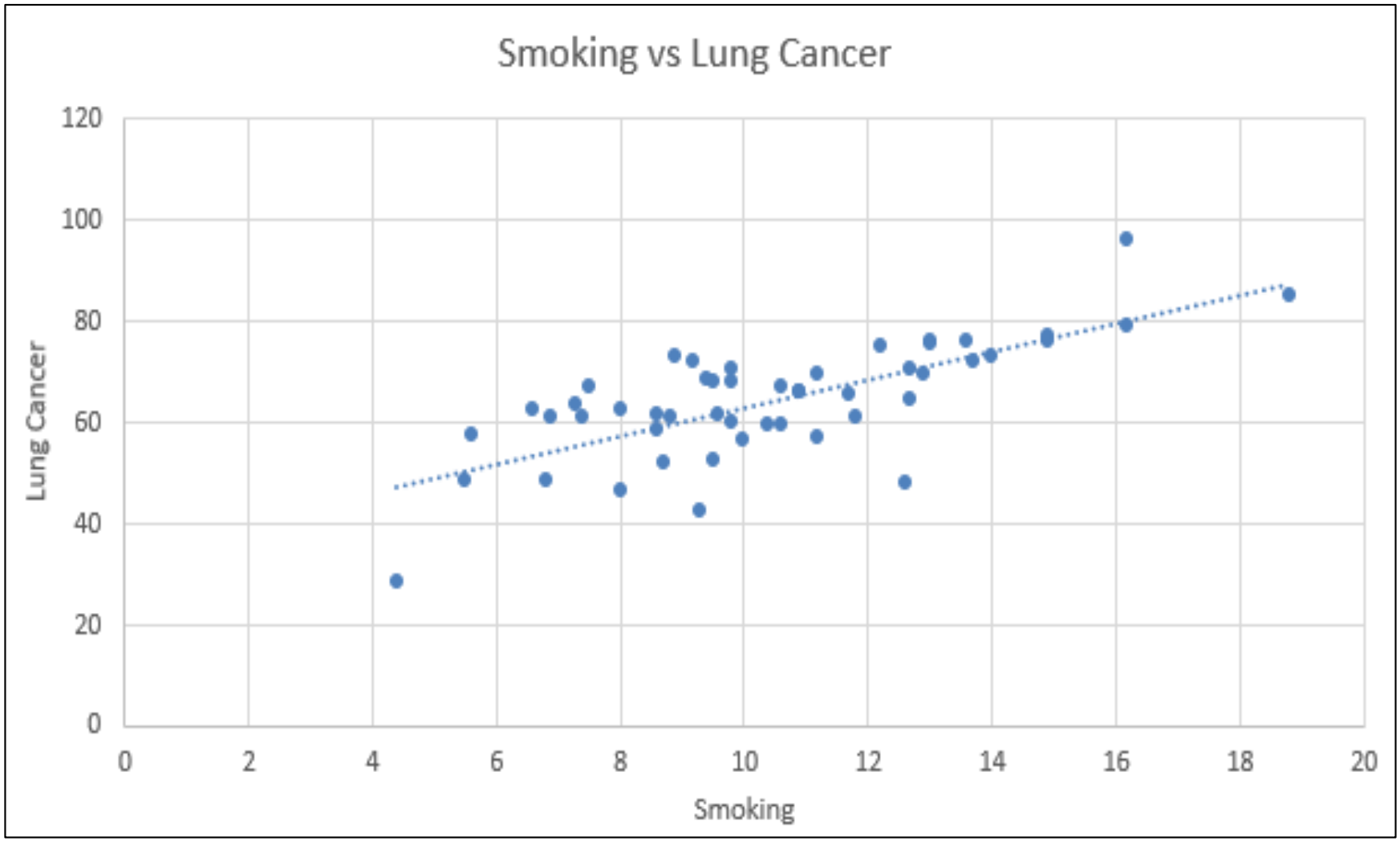
Label each column and use this data for making scatterplots:

state	% obese	cardio death /100K	% diabetes	% smoke	lung cancer /100K	health score	fitness wrkrs / 100K	gyms / 100K	% phys inactive	% exerc access
Alabama	38.9	227	13.7	15.6%	68.4	12	52	18	29%	61%
Alaska	34	133	8.3	15.9%	62.8	21	82	22	19%	100%
Arizona	33.3	145	9.8	12.7%	50.5	23	84	20	21%	85%
Arkansas	38.9	219	13	18.7%	77.7	10	44	15	30%	64%

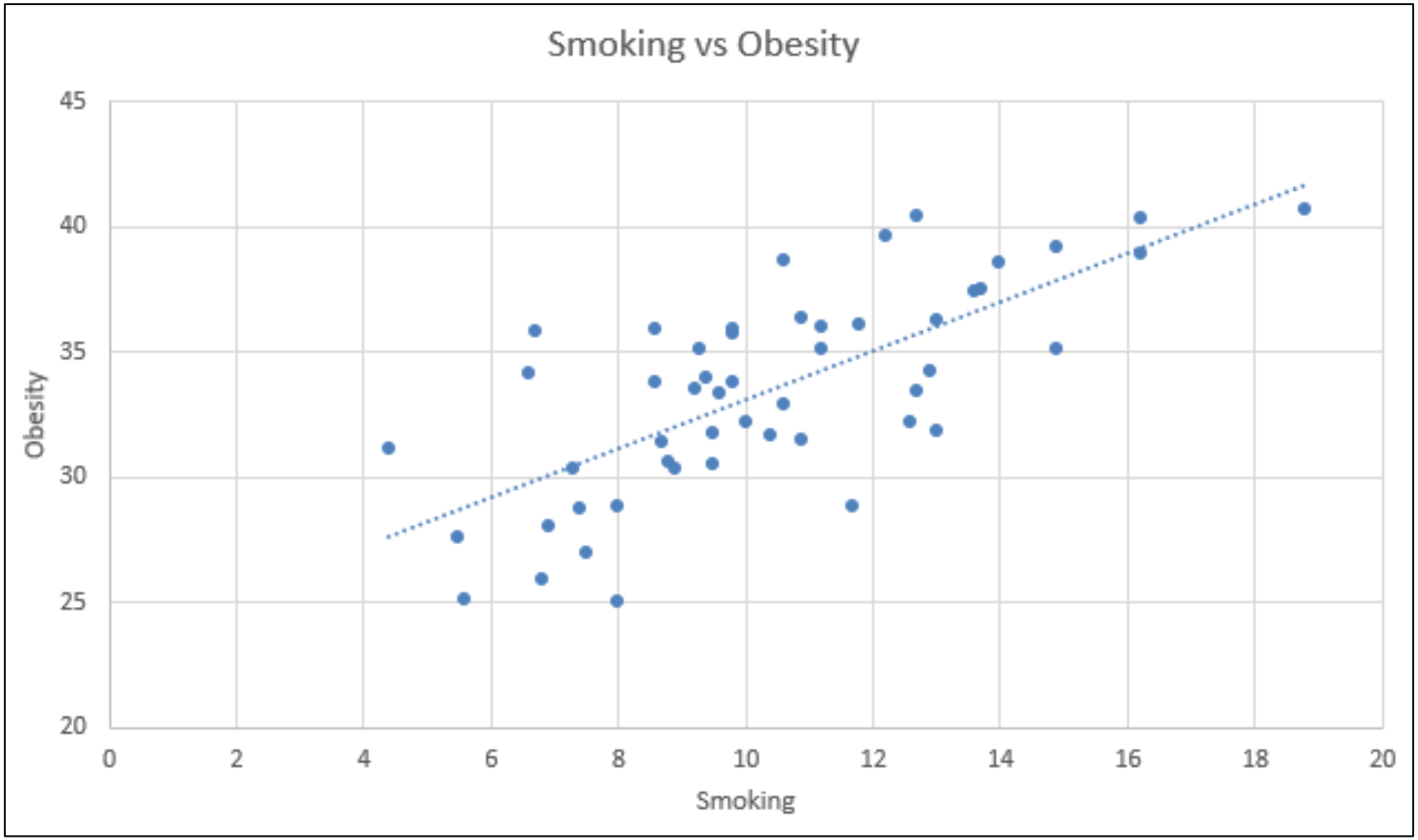
Scatterplot Sample 1: Cause & effect?



Scatterplot Sample 2: Cause & effect?

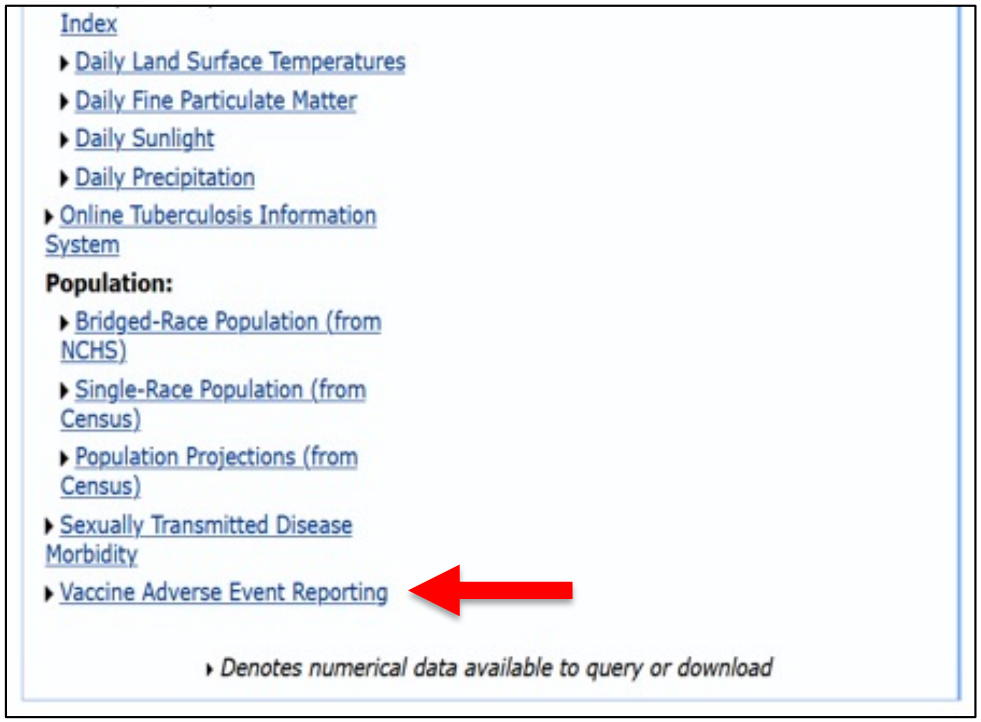


Scatterplot Sample 3: Cause & effect???



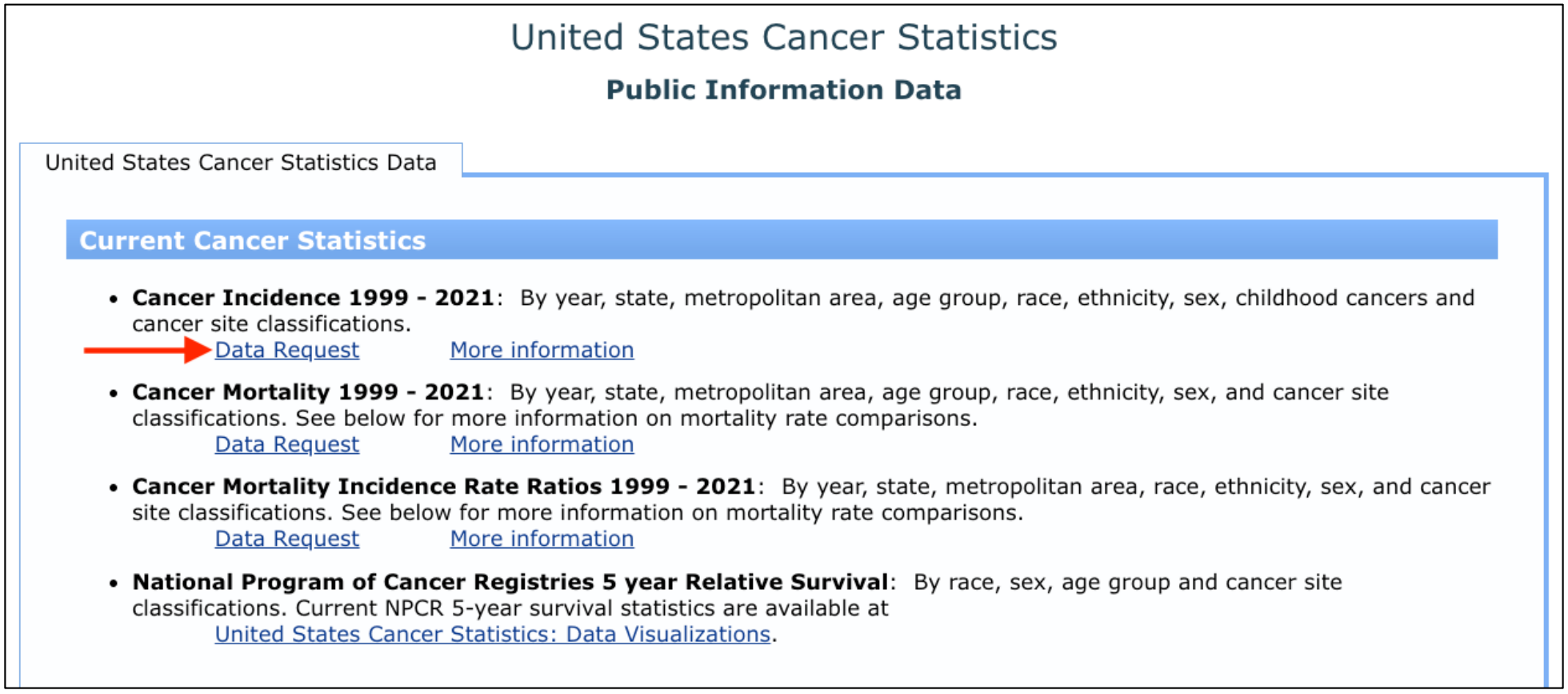
CDC "Wonder" Navigation

1. Open this link: https://wonder.cdc.gov/
2. Use this link for exploring cancer data.
3. Use this link for exploring data from vaccine adverse events.



CDC “Wonder” Navigation: Exploring Cancer

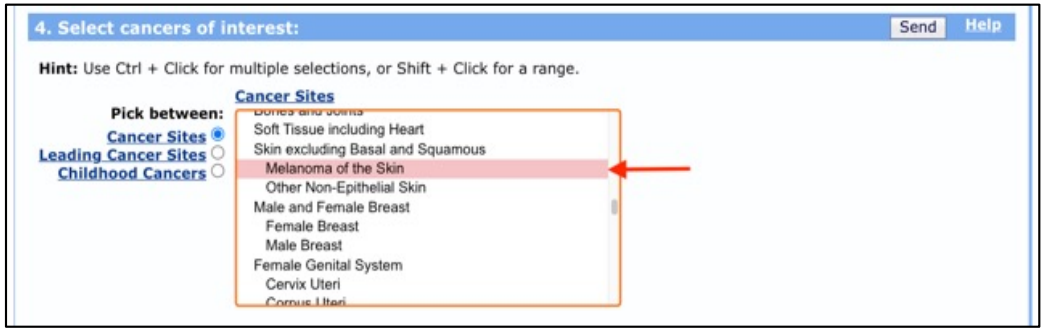
Open this link to explore data on cancer:



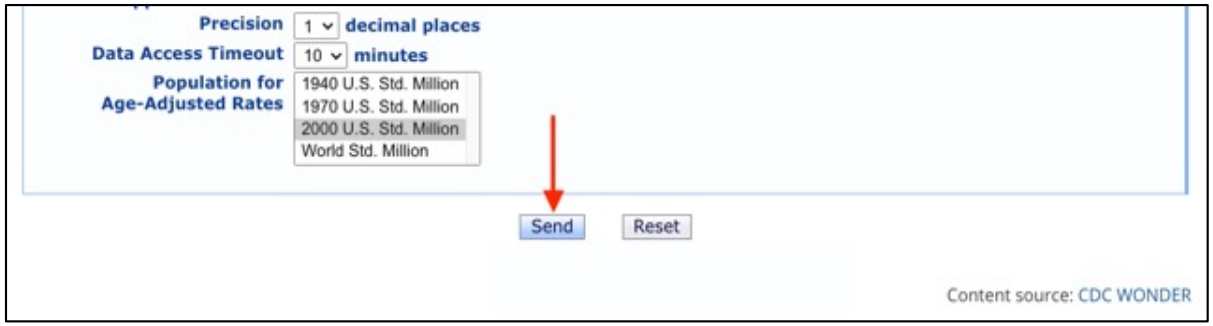
CDC “Wonder” Navigation: Exploring Cancer

1. State your query by choosing ”race” and “age adjusted” in box 1.

2. Choose “melanoma” in box 3.



3. Click on “send” to access your data.



CDC "Wonder" Navigation: Exploring Cancer

Use the interactive website to explore melanoma, myeloma, prostate cancer (males), breast cancer (females), and liver cancer in "white, black/African-American, and Asian/Pacific Islander:

Melanoma

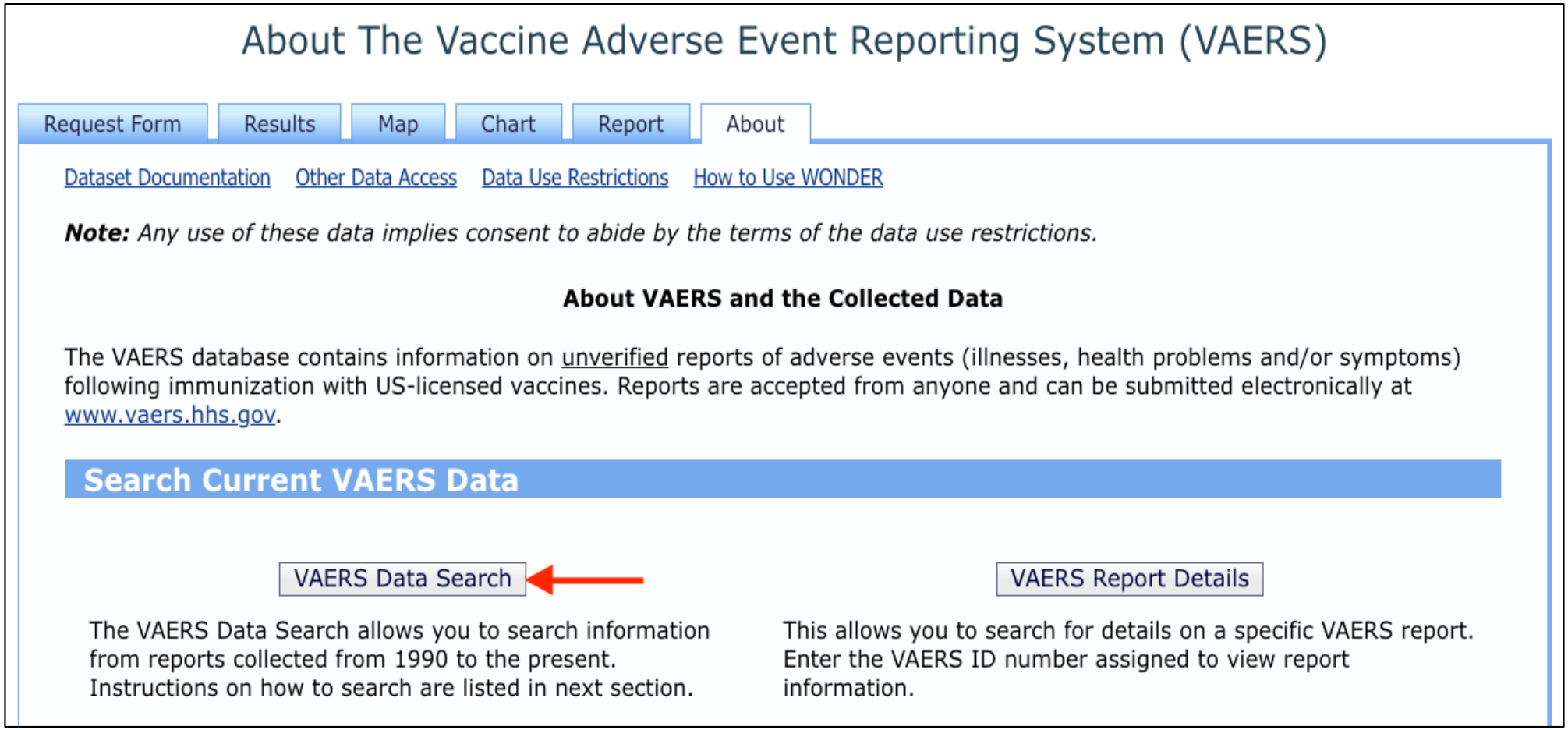
Race	Count	Population	Age-Adjusted Rate Per 100,000
American Indian or Alaska Native	3,347	83,367,774	5.6
Asian or Pacific Islander	4,227	351,236,144	1.4
Black or African American	7,147	867,585,718	1.0
White	1,327,330	5,094,629,001	23.2
Other Races and Unknown combined	46,732	Not Applicable	Not Applicable
Total	**1,388,783**	**6,396,818,637**	**20.3**

Myeloma

Race	Count	Population	Age-Adjusted Rate Per 100,000
American Indian or Alaska Native	2,639	83,367,774	4.9
Asian or Pacific Islander	10,896	351,236,144	3.8
Black or African American	89,751	867,585,718	12.9
White	348,346	5,094,629,001	5.8
Other Races and Unknown combined	4,086	Not Applicable	Not Applicable
Total	**455,718**	**6,396,818,637**	**6.5**

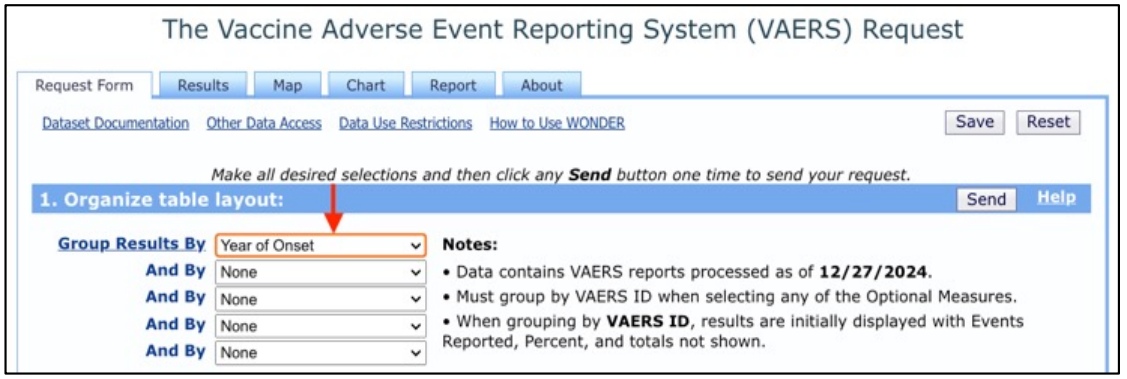
CDC “Wonder” Navigation: Exploring VAERS

Open this link to explore data from vaccine adverse event reporting:

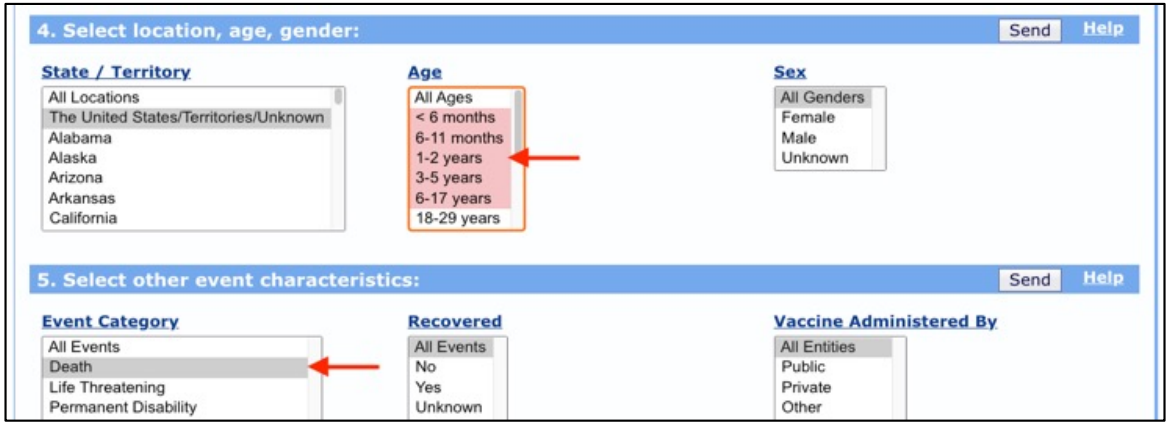


CDC “Wonder” Navigation: Exploring VAERS

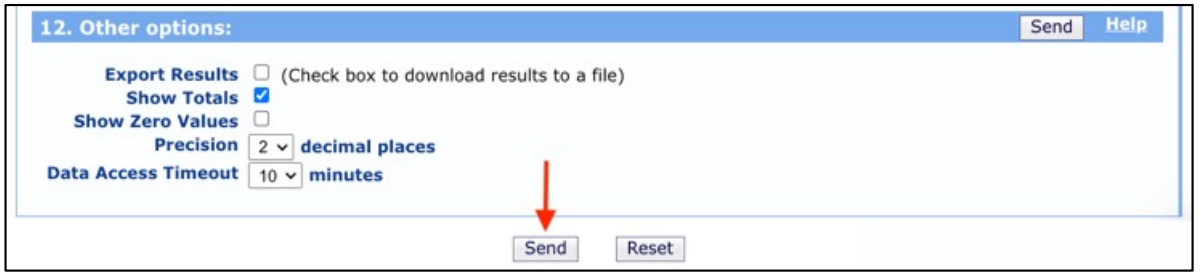
1. State your query by choosing ”year of onset” in box 1.



2. Choose ages 0-17 in box 4 and “death” in box 5.



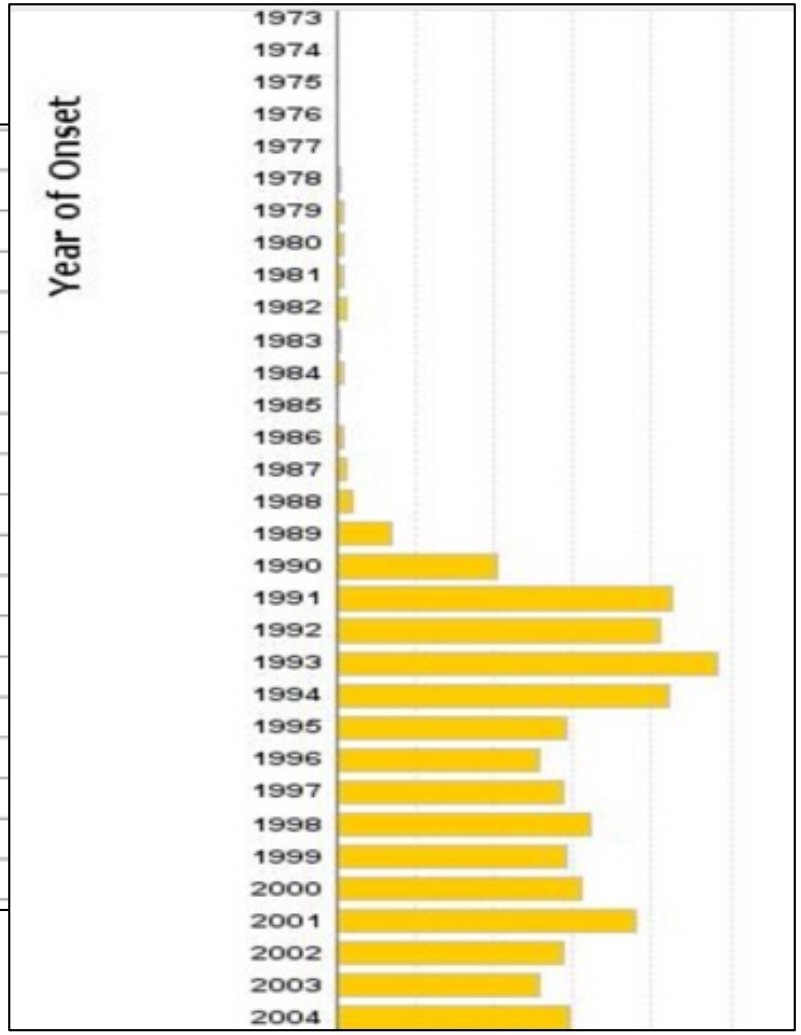
3. Click on “send” to access your data.



CDC “Wonder” Navigation: VAERS Sample Data

Vaccine deaths reported for ages 0-17

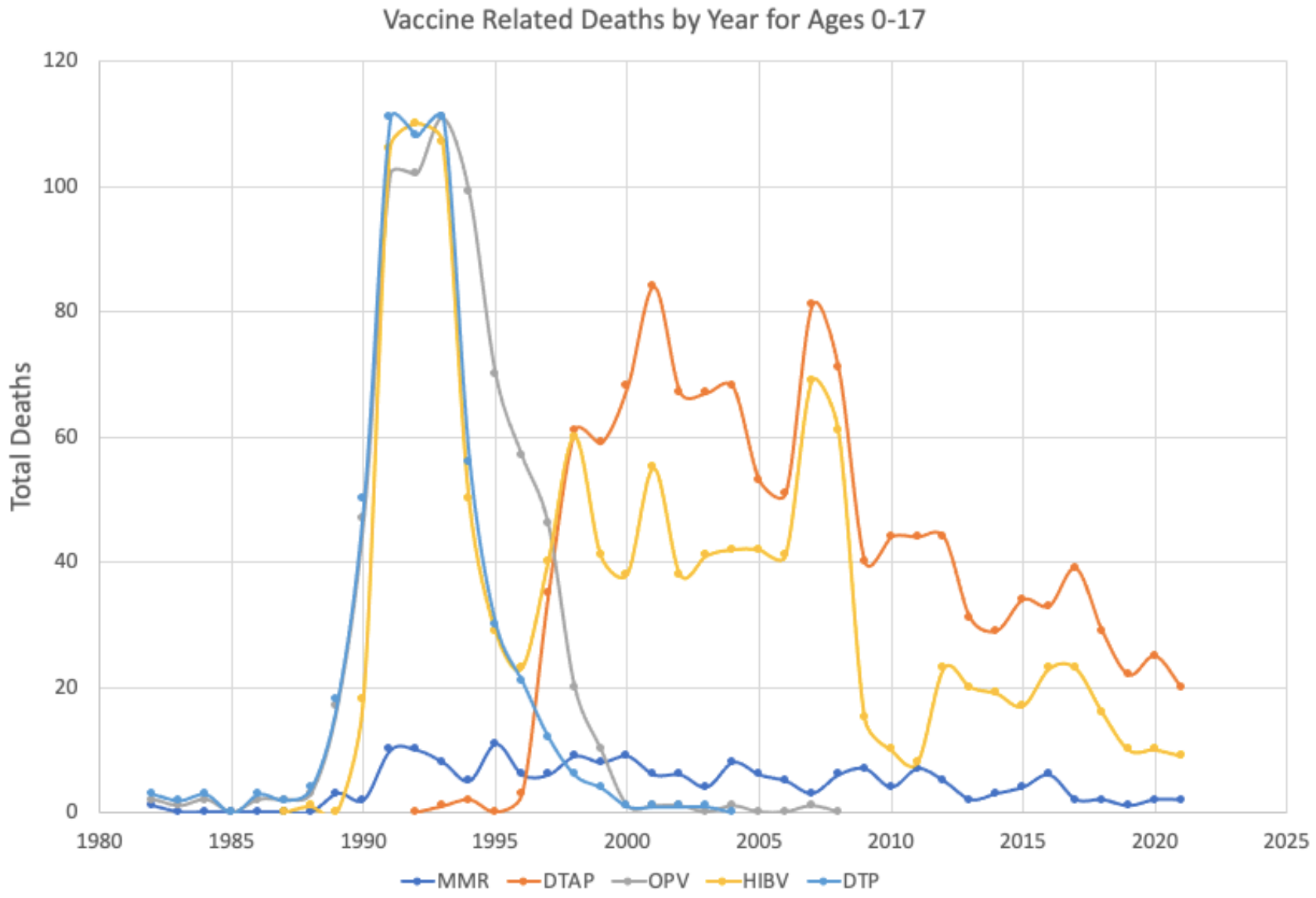
1978	2
1979	3
1980	3
1981	3
1982	4
1983	2
1984	3
1986	3
1987	4
1988	6
1989	21
1990	62
1991	130
1992	125
1993	147
1994	128
1995	89
1996	78
1997	88



H.R.5546 - National Childhood Vaccine Injury Act of 1986

99th Congress (1985-1986)

CDC “Wonder” Navigation: Using Excel to Get a Closer Look at the Data for Ages 0-17 (optional)



Dear Mr. Chaves,

Thank you for contacting CDC and sharing your search results.

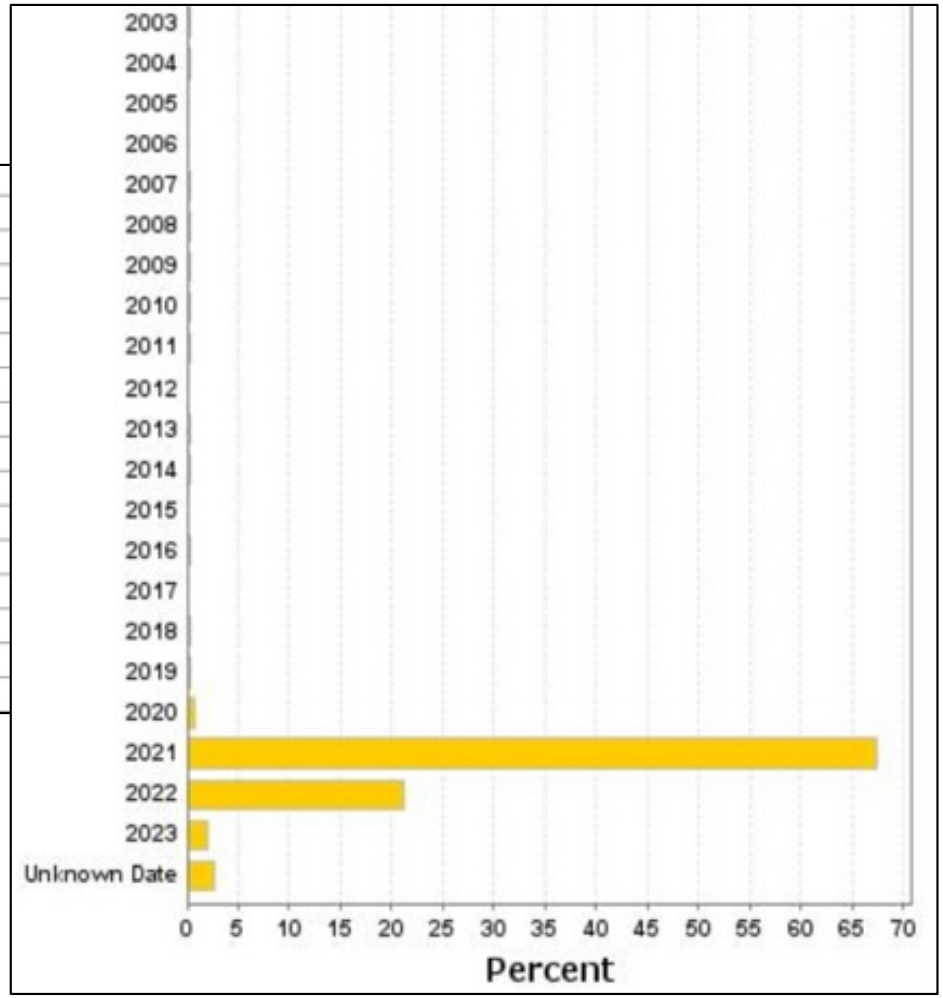
VAERS did not start receiving reports until mid-1990. People can submit a report any time after experiencing an adverse event after vaccination. This is why VAERS has reports for adverse events (including deaths) prior to 1990, but not as many as post-1990.

Deaths following vaccination are extremely rare. CDC and the Food and Drug Administration (FDA) monitor reports of adverse events and deaths that occur after vaccination using several different systems including the Vaccine Adverse Event Reporting System (VAERS). VAERS is a surveillance system co-administered by CDC and FDA that accepts reports of adverse health events (possible side effects) following vaccination. The system is not designed to determine whether a reported adverse event was caused by vaccination, but it does identify signals or trends that warrant further study. Since VAERS data cannot determine causality, we cannot use it to provide numbers of severe injuries or deaths caused by vaccination. VAERS is the frontline system for vaccine safety monitoring and is part of CDC's vaccine safety infrastructure which involves multiple complementary monitoring systems: (https://www.cdc.gov/vaccinesafety/index.html).

CDC “Wonder” Navigation: VAERS Sample Data

Vaccine deaths reported for ages 18 and up

2007	53
2008	42
2009	73
2010	62
2011	49
2012	32
2013	37
2014	41
2015	36
2016	44
2017	23
2018	41
2019	37
2020	118
2021	11,931
2022	3,745



Dear Mr. Chaves,

Thank you for contacting CDC with your question about the increase in VAERS reports received in 2021.

The frontline system used to collect data and monitor adverse events that occur after vaccination is the Vaccine Adverse Event Reporting System (VAERS). VAERS is a national vaccine safety monitoring system managed by CDC and FDA. VAERS accepts reports of possible side effects (also called "adverse events") following vaccination. The system is not designed to determine whether a reported adverse event was caused by the vaccine but serves as an early warning system and helps CDC and FDA identify areas for further study.

VAERS accepts all reports of adverse events after vaccination, without regard to whether or not the vaccine caused the event. Because of this and other limitations, data in VAERS generally can't be used to determine if a vaccine caused the adverse event (including deaths). Importantly, reported events and deaths are not necessarily "due to vaccines".

VAERS received 49,674 reports in 2020; 752,541 reports in 2021; and 246,500 in 2022.

The authorized and approved COVID-19 vaccines have been administered under the most comprehensive and intensive vaccine safety monitoring effort in U.S. history. It is important to note that VAERS is only one system among many that monitor the safety of US-licensed or authorized vaccines. Each system has different strengths and weaknesses.
For a list of CDC safety monitoring systems, please see COVID-19 Vaccine Safety Reporting Systems | Vaccine Safety Systems | CDC .

Death Rate Comparison by Age and by Year

1. Open this link: https://www.ssa.gov/oact/STATS/table4c6.html
2. Copy and paste the data for ages 20-84 in 2010.
3. Remove columns C to G and label columns A and B.

Period Life Table, 2010, as used in the 2014 Trustees Report

	Male			Female		
Exact age	Death probability [a]	Number of lives [b]	Life expectancy	Death probability [a]	Number of lives [b]	Life expectancy
0	0.006680	100,000	76.10	0.005562	100,000	80.94
1	0.000436	99,332	75.62	0.000396	99,444	80.39
2	0.000304	99,289	74.65	0.000214	99,404	79.43
3	0.000232	99,259	73.67	0.000162	99,383	78.44
4	0.000172	99,235	72.69	0.000132	99,367	77.46

	A	B	C	D	E	F	G
1	20	0.00109	98,731	57	4E-04	99,105	61.63
2	21	0.00121	98,624	56.06	4E-04	99,066	60.66
3	22	0.0013	98,505	55.13	5E-04	99,024	59.68
4	23	0.00135	98,376	54.2	5E-04	98,979	58.71
5	24	0.00135	98,244	53.27	5E-04	98,932	57.74
6	25	0.00134	98,111	52.34	5E-04	98,883	56.77

	A	B
1	Age	Death Rate 2010
2	20	0.00109
3	21	0.00121
4	22	0.0013
5	23	0.00135
6	24	0.00135
7	25	0.00134

Death Rate Comparison by Age and by Year

4. Repeat this for death rates for years 2016, 2020, and 2021.
5. Insert these equations into next three columns to calculate percent change since 2010 for years 2016, 2020, and 2021.
6. Copy and paste these equations all the way down to age 84.

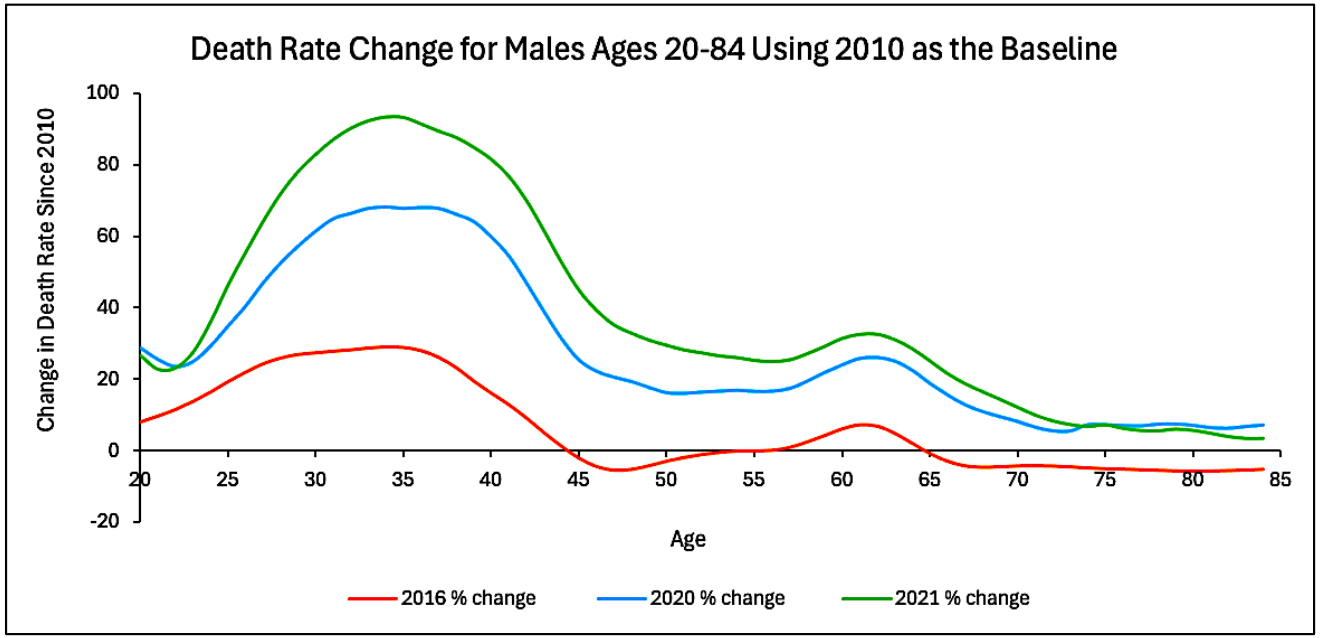
Age	Death Rate 2010	Death Rate 2016	Death Rate 2020	Death Rate 2021
20	0.00109	0.001173	0.0014	0.00137
21	0.00121	0.001331	0.00152	0.00149
22	0.0013	0.001455	0.00161	0.00161
23	0.00135	0.001531	0.00168	0.00171
24	0.00135	0.001572	0.00175	0.00184
25	0.00134	0.001602	0.00181	0.00196

Age	Death Rate 2010	Death Rate 2016	Death Rate 2020	Death Rate 2021	2016 % change	2020 % change	2021 % change
20	0.001	0.001	0.001	0.001	=100*(C2-B2)/B2	=100*(D2-B2)/B2	=100*(E2-B2)/B2
21	0.001	0.001	0.002	0.001			
22	0.001	0.001	0.002	0.002			
23	0.001	0.002	0.002	0.002			
24	0.001	0.002	0.002	0.002			
25	0.001	0.002	0.002	0.002			

Death Rate Comparison by Age and by Year

7. Highlight columns A, F, and H to compare ages 20-84 with changes in 2016, 2020, and 2021.
8. Choose the scatterplot line graph.

	A	B	C	D	E	F	G	H
1	Age	Death Rate 2010	Death Rate 2016	Death Rate 2020	Death Rate 2021	2016 % change	2020 % change	2021 % change
2	20	0.001	0.001	0.001	0.001	8	29	27
3	21	0.001	0.001	0.002	0.001	10	26	23
4	22	0.001	0.001	0.002	0.002	12	24	23
5	23	0.001	0.002	0.002	0.002	14	25	27
6	24	0.001	0.002	0.002	0.002	16	29	36
7	25	0.001	0.002	0.002	0.002	19	35	46



Supplement for broken links in the document:

Traffic fatality rates:
https://www.who.int/data/gho/data/indicators/indicator-details/GHO/estimated-road-traffic-death-rate-(per-100-000-population)

Indoor pollution death rates:
https://www.who.int/data/gho/data/indicators/indicator-details/GHO/household-air-pollution-attributable-death-rate-(per-100-000-population-age-standardized)

Polluting fuel use per household:
https://www.who.int/data/gho/data/indicators/indicator-details/GHO/gho-phe-population-with-primary-reliance-on-polluting-fuels-and-technologies-for-cooking-proportion

Obesity rates:
https://www.who.int/data/gho/data/indicators/indicator-details/GHO/prevalence-of-obesity-among-adults-bmi-=-30-(age-standardized-estimate)-(-)

Suicides rates:
https://worldpopulationreview.com/country-rankings/suicide-rate-by-country