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**THE COVID STATES PROJECT:
A 50-STATE COVID-19 SURVEY
REPORT #35: PUBLIC ATTITUDES
TOWARDS COVID-19 VACCINES**

USA, January 2021

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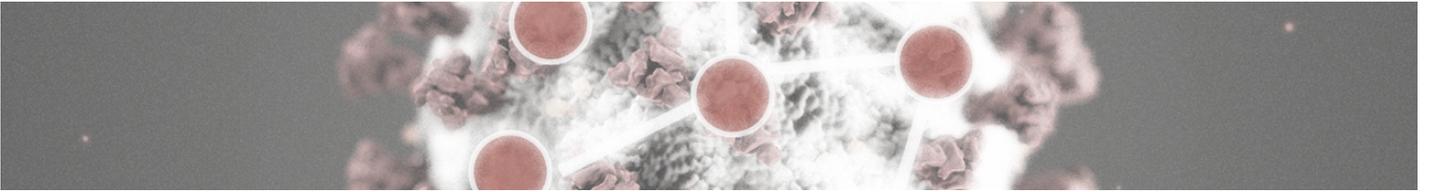
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Report of January 25, 2021, v.1

The COVID States Project

From: The COVID-19 Consortium for Understanding the Public’s Policy Preferences Across States

A joint project of:

Northeastern University, Harvard University, Rutgers University, and Northwestern University

Authors: Jon Green (Northeastern University); David Lazer (Northeastern University); Katherine Ognyanova (Rutgers University); Matthew A. Baum (Harvard University); James Druckman (Northwestern University); Adina Gitomer (Northeastern University); Matthew Simonson (Northeastern University); Jennifer Lin (Northwestern University); Roy H. Perlis (Harvard Medical School); Mauricio Santillana (Harvard Medical School); Alexi Quintana (Northeastern University), and Ata Uslu (Northeastern University)

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COVER MEMO

Summary Memo — January 25, 2020

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From April 2020 through January 2021, we conducted multiple waves of a large, 50-state survey, some results of which are presented here. You can find previous reports online at covidstates.org.

Note on methods:

Between December 16, 2020 and January 11, 2021, we surveyed 25,640 individuals across all 50 states plus the District of Columbia. The survey was conducted by PureSpectrum via an online, nonprobability sample, with state-level representative quotas for race/ethnicity, age, and gender (for methodological details on the other waves, see covidstates.org). In addition to balancing on these dimensions, we reweighted our data using demographic characteristics to match the U.S. population with respect to race/ethnicity, age, gender, education, and living in urban, suburban, or rural areas. This was the latest in a series of surveys we have been conducting since April 2020, examining attitudes and behaviors regarding COVID-19 in the United States.

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Public attitudes towards COVID-19 vaccines

Executive summary: We present a variety of descriptive results on attitudes and beliefs regarding COVID-19 vaccines. We find a notable consensus across population subgroups regarding order of prioritization for receiving vaccines, which roughly aligns with current policies. We additionally find that while there are generally positive attitudes and beliefs regarding vaccines, there are also some negative attitudes and misbeliefs that are especially common within certain demographics (political independents and, to a lesser extent, Republicans; Black respondents; and individuals ages 25-44).

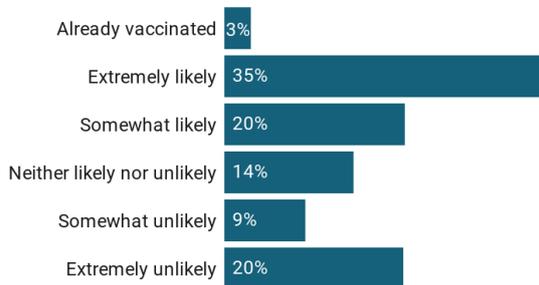
The reported results are based on data collected from 24,682 people between December 16, 2020 and January 10, 2021. For these descriptive analyses, we apply survey weights using national benchmarks for race, gender, age, education, Census region, and urbanicity.

Who wants to get vaccinated, and when?

We asked respondents about their preferences regarding their own vaccination in two ways. First, we asked a standard likelihood question, wherein respondents indicated how likely they were to get vaccinated against COVID-19 on a five-point scale from extremely unlikely to extremely likely. Second, we asked respondents *when* they would prefer to be vaccinated if it were up to them: as soon as possible, after some people they know had been vaccinated, after most people they know had been vaccinated, or never. The overall results are shown in Figure 1.

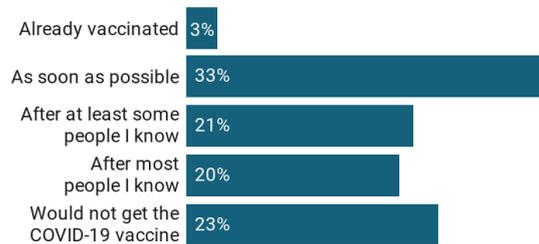
Likelihood of getting vaccinated

If a vaccine against COVID-19 was available to you, how likely would you be to get vaccinated?



When would you get vaccinated?

If you were able to choose when to get a COVID-19 vaccine, would you get it...



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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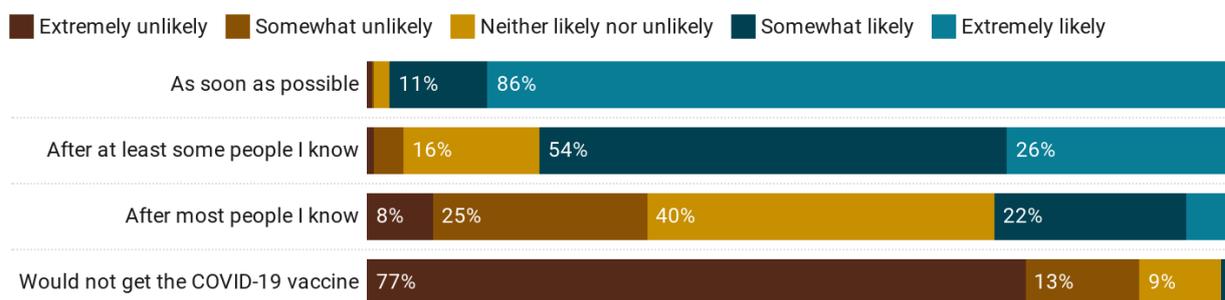
Figure 1.

We consider both of these questions because, taken together, they draw out an important distinction between vaccine “hesitancy” (defined as wanting to take the vaccine eventually, but not right away) and vaccine “resistance” (defined as not wanting to take the vaccine at any point). As other survey researchers have found, and as we replicate in Figure 2, those who report middling likelihoods of vaccination tend to be “hesitant” as opposed to “resistant”; those who report that they are “extremely unlikely” to take the vaccine represent the overwhelming majority (77%) of those who say they would prefer to never take it.

Vaccination timing and likelihood of getting a COVID-19 vaccine

Rows by vaccine timing: If you were able to choose when to get a COVID-19 vaccine, would you get it...?

Percent by likelihood: If a COVID-19 vaccine was available to you, how likely would you be to get vaccinated?



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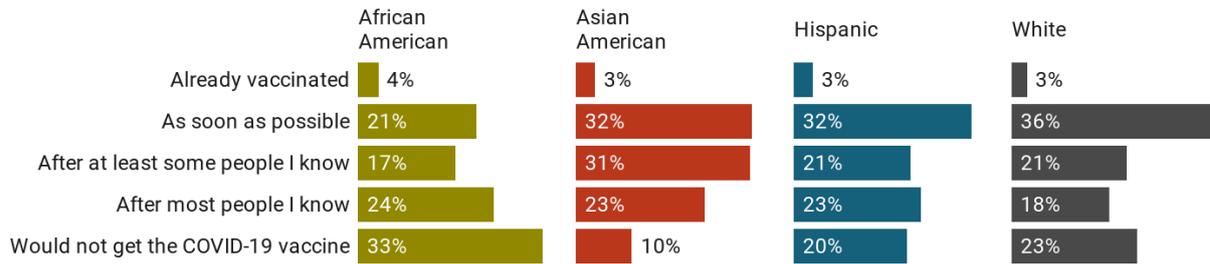
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Figure 2.

Demographic breakdowns of responses to the vaccine timing question are shown in Figures 3-6. We find that vaccine resistance is higher among Black respondents, as well as respondents in other racial minority groups, compared to white, Latino, and Asian respondents (Figure 3). This is consistent with [prior findings](#) in vaccine attitudes, and is likely attributable to longstanding and [persistent inequalities](#) in access to health care and institutions. Turning to age (Figure 4), we find that seniors exhibit the least resistance and greatest enthusiasm for getting vaccinated; by contrast, those in the youngest age group (18-24) are the most hesitant, though this could reflect an acknowledgement that they are at less risk from COVID-19 and should therefore be assigned lower priority in vaccination policy. The 25-44 age group is the most resistant to vaccination, meaning it has the highest proportion of respondents who say they would not get a vaccine. Again keeping with [previous surveys](#), we also find that men report higher rates of enthusiasm/lower rates of resistance toward taking the COVID-19 vaccine compared to women (Figure 5). Finally, Democrats report higher enthusiasm and less resistance regarding the vaccine than their Republican/Independent counterparts.

Preferred vaccine timing by race

If you were able to choose when to get a COVID-19 vaccine, would you get it...



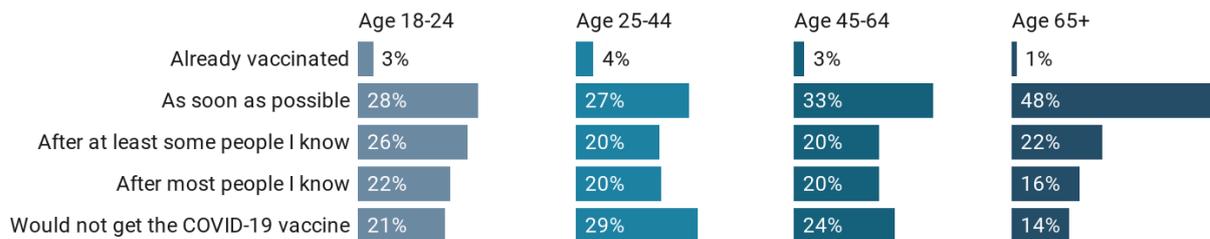
National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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Figure 3.

Preferred vaccine timing by age

If you were able to choose when to get a COVID-19 vaccine, would you get it...



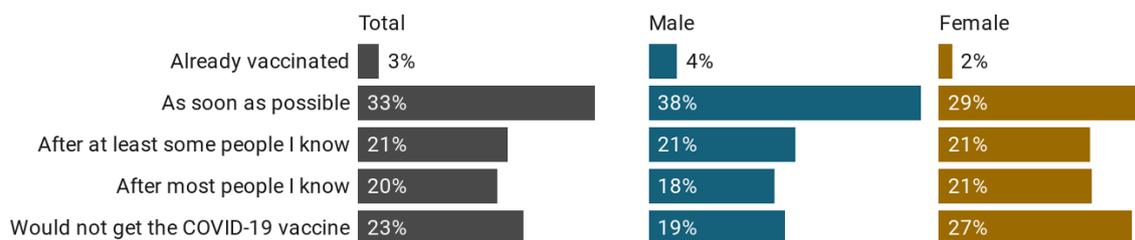
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Figure 4.

Preferred vaccine timing by gender

If you were able to choose when to get a COVID-19 vaccine, would you get it...



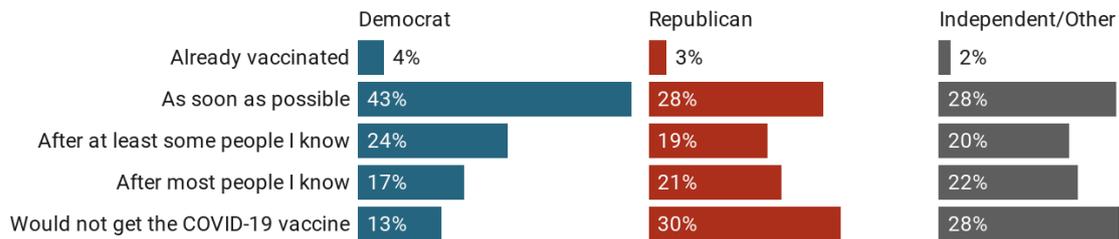
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Figure 5.

Preferred vaccine timing by party

If you were able to choose when to get a COVID-19 vaccine, would you get it...



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

Source: The COVID-19 Consortium for Understanding the Public's Policy Preferences Across States (A joint project of: Northeastern University, Harvard University, Rutgers University, and Northwestern University) www.covidstates.org
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Figure 6.

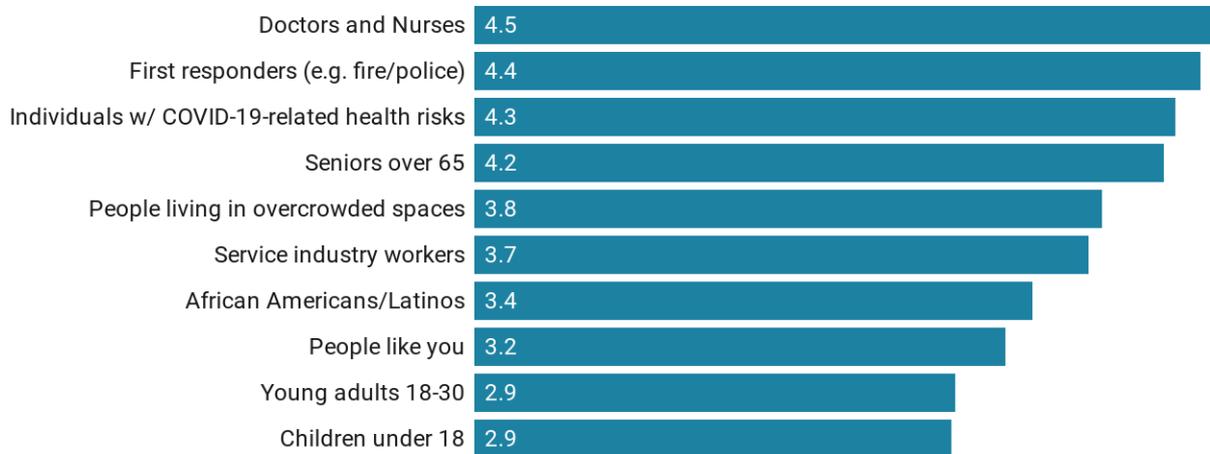
Who should be prioritized?

We first show results regarding who respondents think should be prioritized for COVID-19 vaccination. The relevant survey item presented respondents with a series of groups, and asked respondents to prioritize each group on a 5-point scale from 1 (very low priority) to 5 (very high priority). Respondents were not required to rank-order groups relative to each other, but were shown all groups at the same time so as to discourage them from giving all groups similar prioritization.

We find that preferences with respect to who should receive COVID-19 vaccines first generally align with current prioritization [recommendations](#) (Figure 7): medical professionals, first responders, and those at highest risk from exposure to COVID-19 are given higher priority, while younger people are given lower priority. We note that this generally corresponds to the priority actually given to these groups in official vaccine distribution plans, though these results do not speak to whether the plans reflect public opinion, or whether public opinion is responding to the plans being put in place. This preference ordering is generally robust across different population subgroups, such as partisan identity (Figure 8), race (Figure 9), and age group (Figure 10), although there are inter-group differences beyond mere rank. For example, Democrats assign higher priority than Republicans to every group, even as their aggregate rank-ordering between target groups is identical.

Preferred vaccine prioritization

If an effective COVID-19 vaccine was available, what priority should each of the following groups have in receiving that vaccine? [Mean score on 1-5 scale where 1 is very low priority, 5 is very high priority]



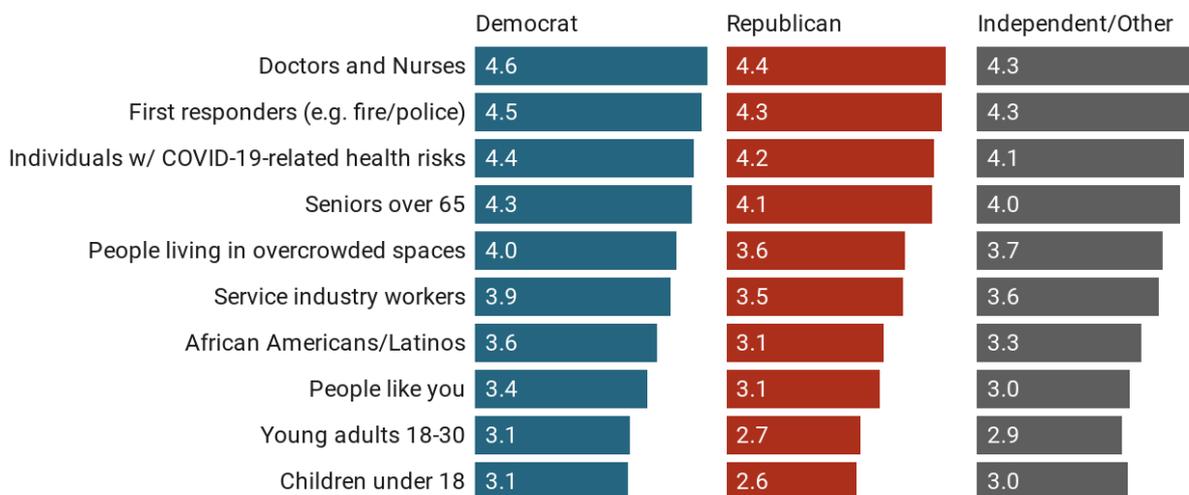
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Figure 7

Preferred vaccine prioritization by party

If an effective COVID-19 vaccine was available, what priority should each of the following groups have in receiving that vaccine? [Mean score on 1-5 scale where 1 is very low priority, 5 is very high priority]



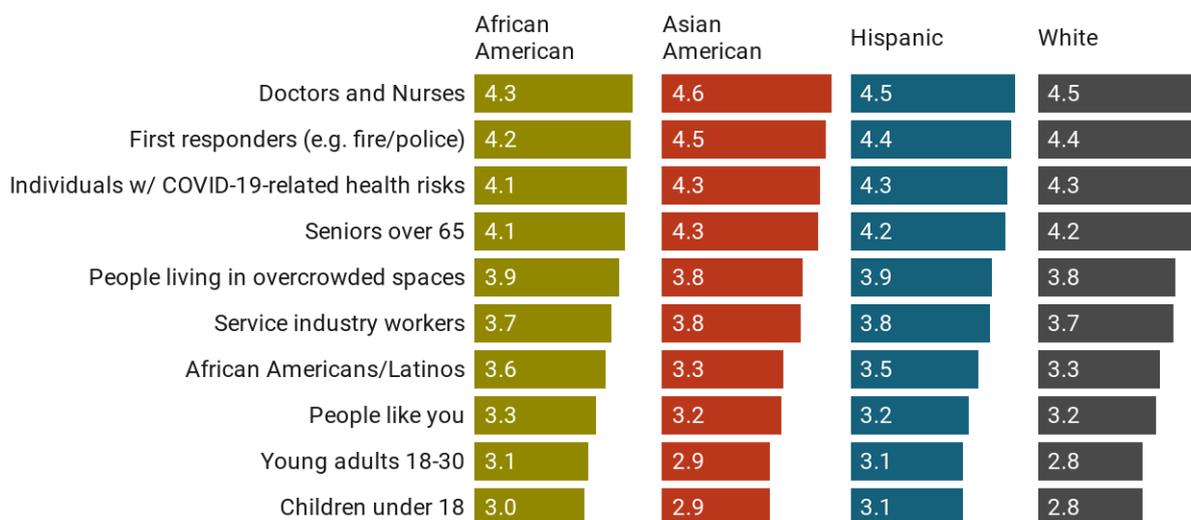
National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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Figure 8.

Preferred vaccine prioritization by race

If an effective COVID-19 vaccine was available, what priority should each of the following groups have in receiving that vaccine? [Mean score on 1-5 scale where 1 is very low priority, 5 is very high priority]



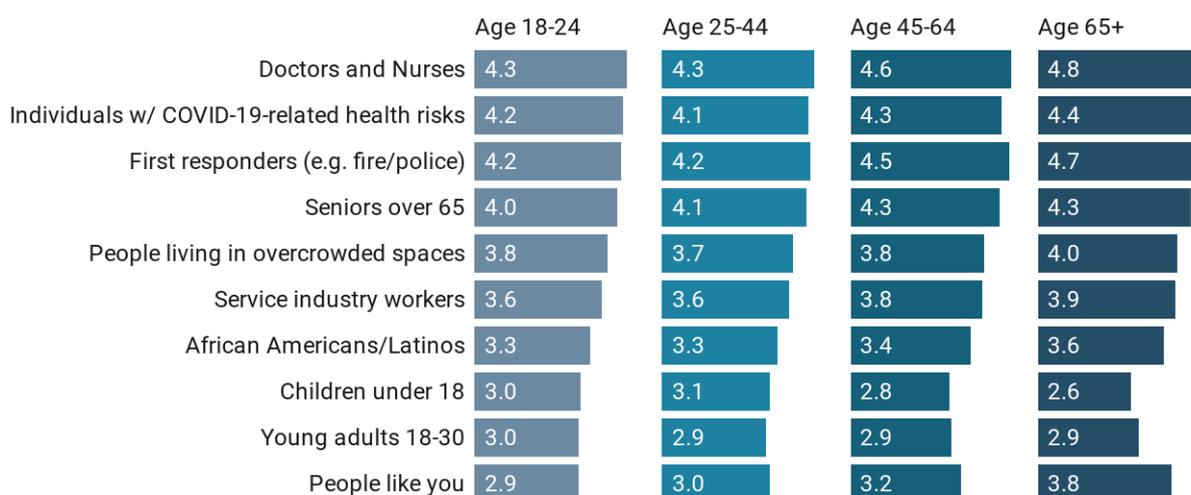
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Figure 9.

Preferred vaccine prioritization by age

If an effective COVID-19 vaccine was available, what priority should each of the following groups have in receiving that vaccine? [Mean score on 1-5 scale where 1 is very low priority, 5 is very high priority]



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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Figure 10.

Attitudes regarding vaccines

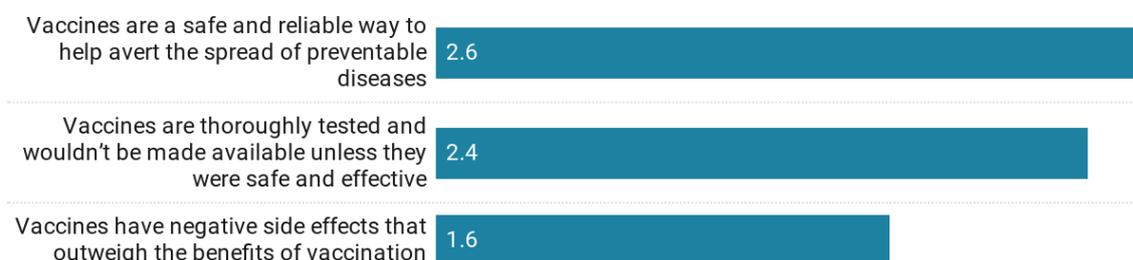
We also asked respondents to indicate their levels of agreement with a handful of statements concerning vaccines in general. The two pro-vaccine statements, which argue the vaccines are safe and effective, generally received higher levels of agreement than the one anti-vaccine statement we tested (see Figure 11).

The average difference in agreement between the pro- and anti-vaccine statements are roughly one point on a 5-point scale. There is slightly more skepticism regarding vaccines – measured via agreement with the anti-vaccine statement – among Black respondents (Figure 12), political Independents (Figure 13), and, to a lesser extent, Republicans (also Figure 13).

Here we again note that negative attitudes regarding vaccines, and associated skepticism regarding the safety of the COVID-19 vaccine among Black respondents may be attributable to longstanding and [persistent inequalities](#) in access to health care and institutions. With respect to age (Figure 14), there is an inverse U-shaped relationship to vaccine skepticism: the highest levels of enthusiasm are among the oldest and youngest respondents, and the lowest levels are among those in the central 25-44 age bracket (perhaps due to [targeting](#) of anti-vaccine information at young parents, which we explore further in a subsequent section).

Attitudes toward vaccines in general

How much you agree or disagree with the following statements about vaccines in general?
[Mean score on 0-4 scale where 0 is strongly disagree, 4 is strongly agree]



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

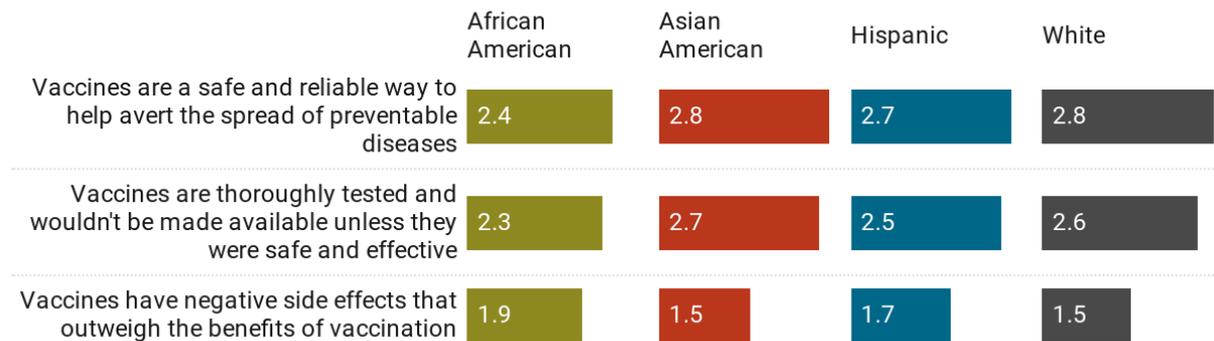
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Figure 11.

Attitudes toward vaccines in general by race

How much you agree or disagree with the following statements about vaccines in general?
 [Mean score on 0-4 scale where 0 is strongly disagree, 5 is strongly agree]



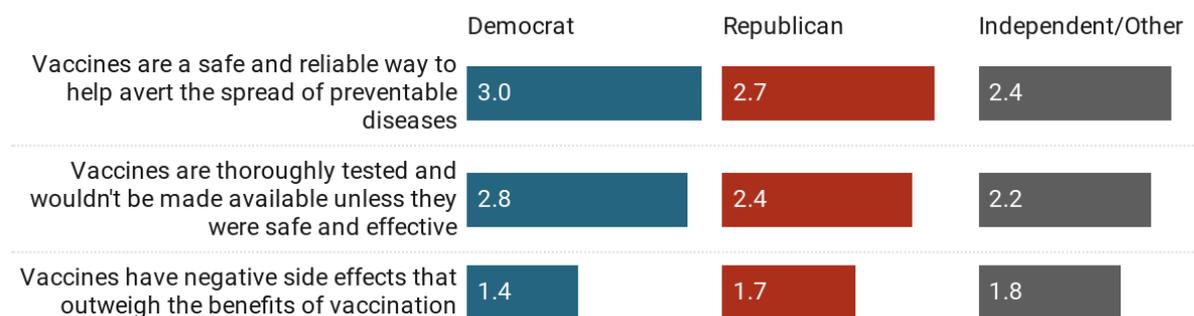
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Figure 12.

Attitudes toward vaccines in general by party

How much you agree or disagree with the following statements about vaccines in general?
 [Mean score on 0-4 scale where 0 is strongly disagree, 5 is strongly agree]



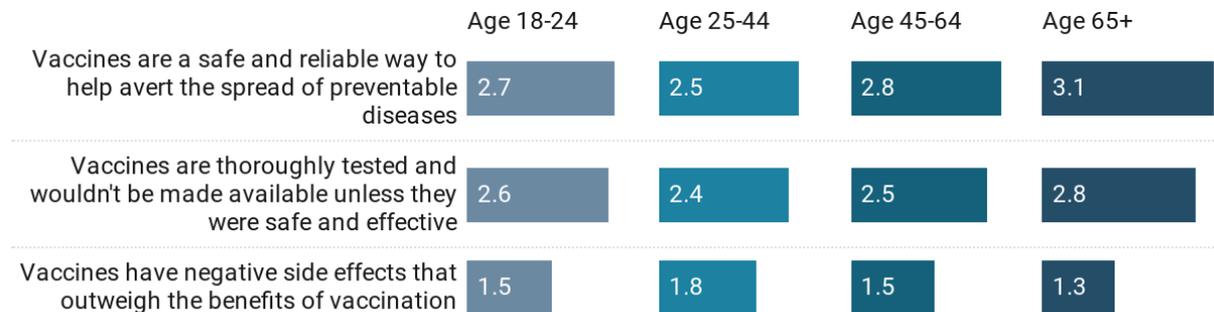
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Figure 13.

Attitudes toward vaccines in general by age

How much you agree or disagree with the following statements about vaccines in general?
 [Mean score on 0-4 scale where 0 is strongly disagree, 5 is strongly agree]



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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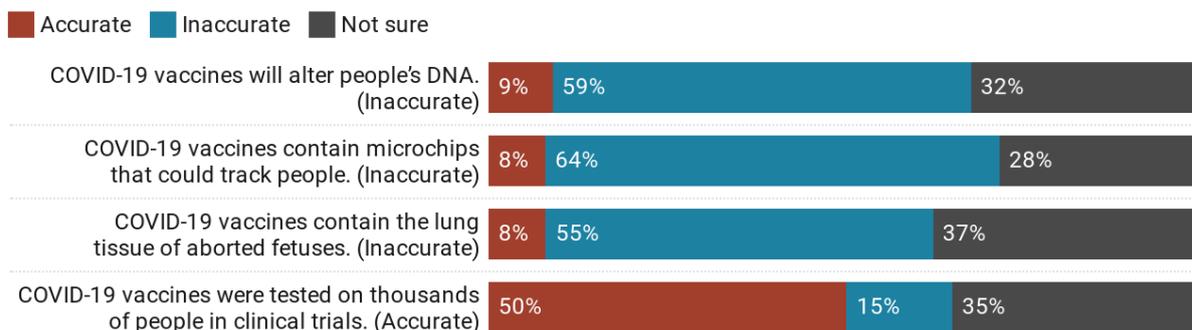
Figure 14.

Beliefs regarding vaccines

Finally, we asked respondents to rate the accuracy of four statements – three of which are false, and one of which is true – concerning the COVID-19 vaccine. (Note: We debriefed respondents immediately after evaluating these statements to clarify which were false, and to provide correct information.)

Belief in vaccine misinformation

Below are some statements about the COVID-19 vaccines that are currently being distributed. To the best of your knowledge, are those statements accurate or inaccurate?



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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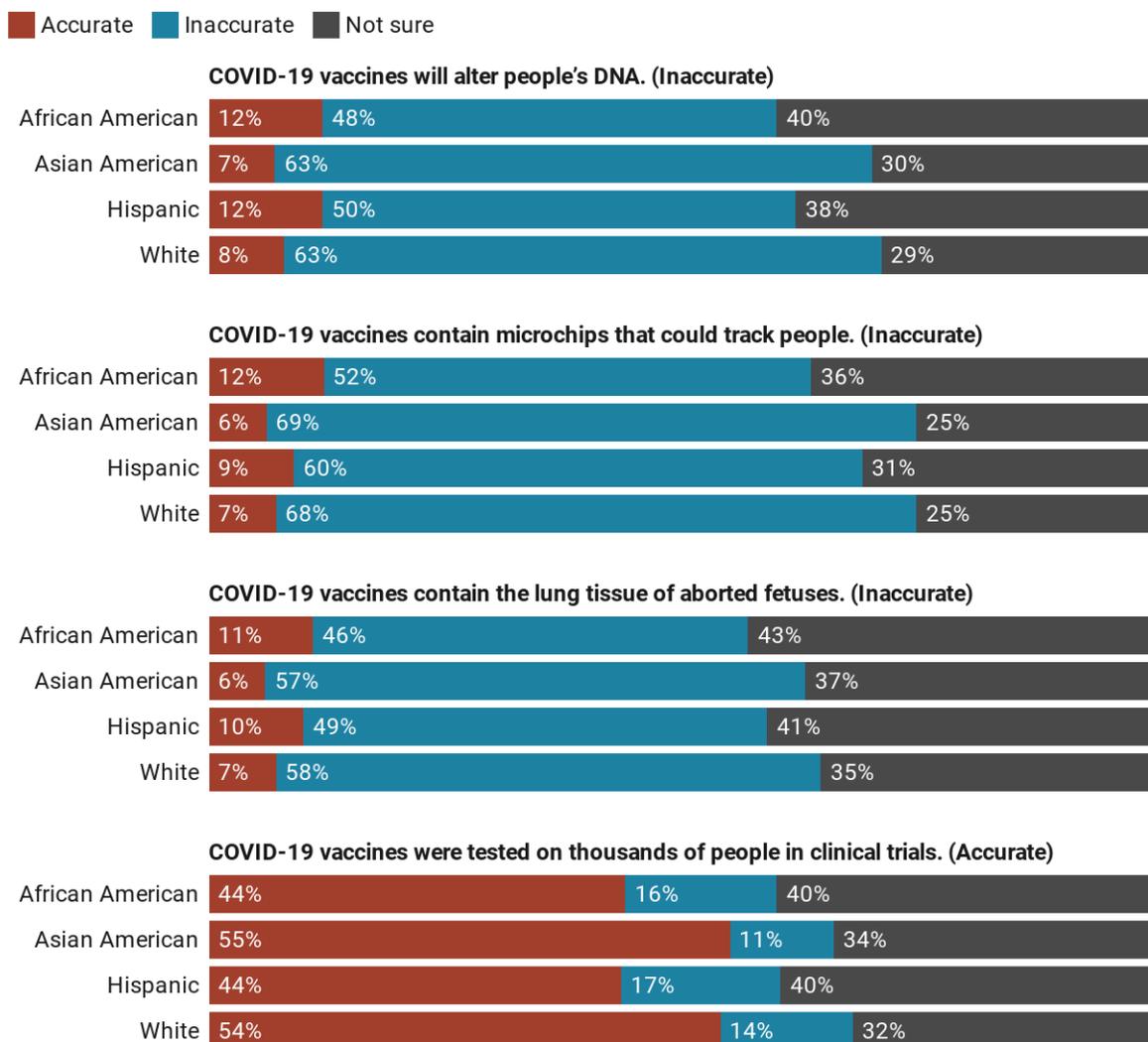
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Figure 15.

We find that beliefs in conspiratorial vaccine misinformation are generally quite low, though there is a significant amount of uncertainty regarding all four statements, meaning active rejection of misinformation is also disturbingly low (see Figure 15). General uncertainty is higher among Black and Latino respondents than among white and Asian respondents (Figure 16). Uncertainty is also higher among political independents (Figure 17) and the 25-44 year old age group (Figure 18). While low overall, younger adults (especially respondents in the 25-44 age group) – as well as Black and Latino respondents – reported that the false statements were accurate at relatively higher rates.

Belief in vaccine misinformation by race

Below are some statements about the COVID-19 vaccines that are currently being distributed. To the best of your knowledge, are those statements accurate or inaccurate?



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

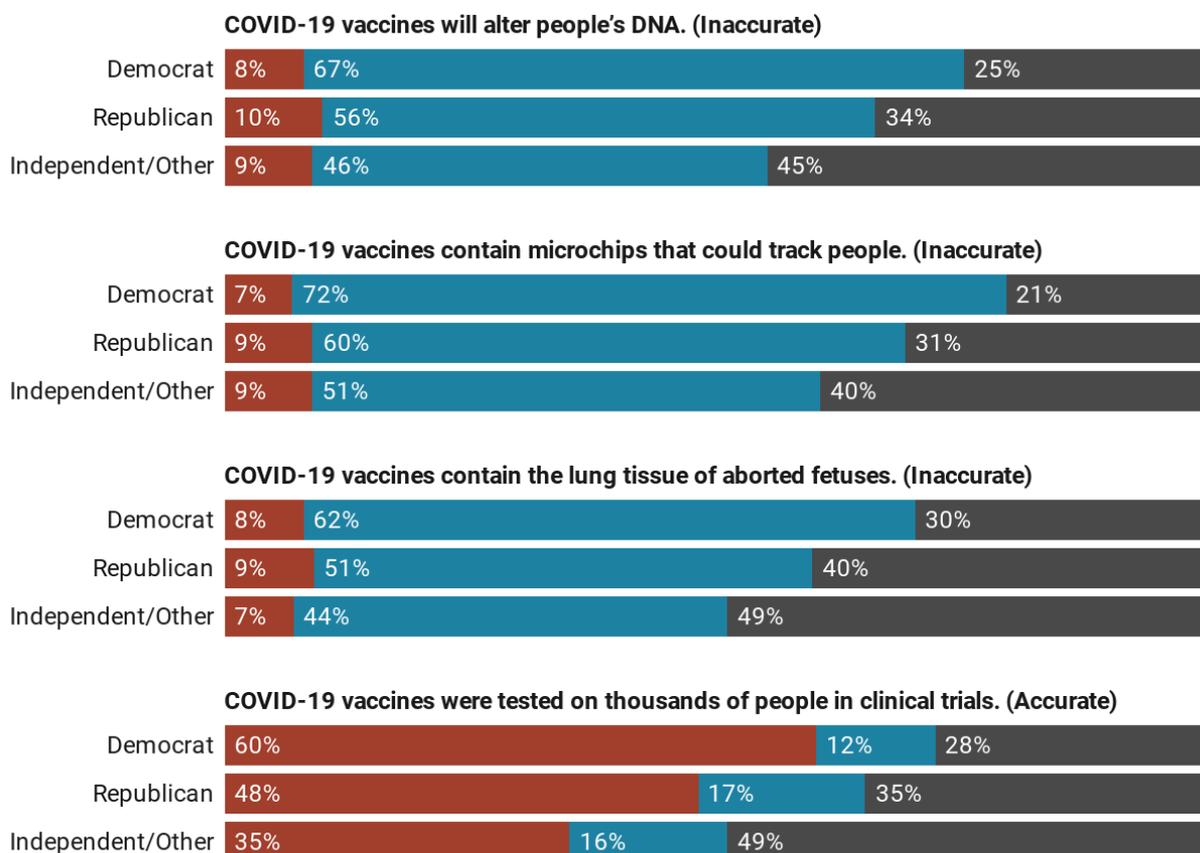
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Figure 16.

Belief in vaccine misinformation by party

Below are some statements about the COVID-19 vaccines that are currently being distributed. To the best of your knowledge, are those statements accurate or inaccurate?

■ Accurate ■ Inaccurate ■ Not sure



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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Figure 17.

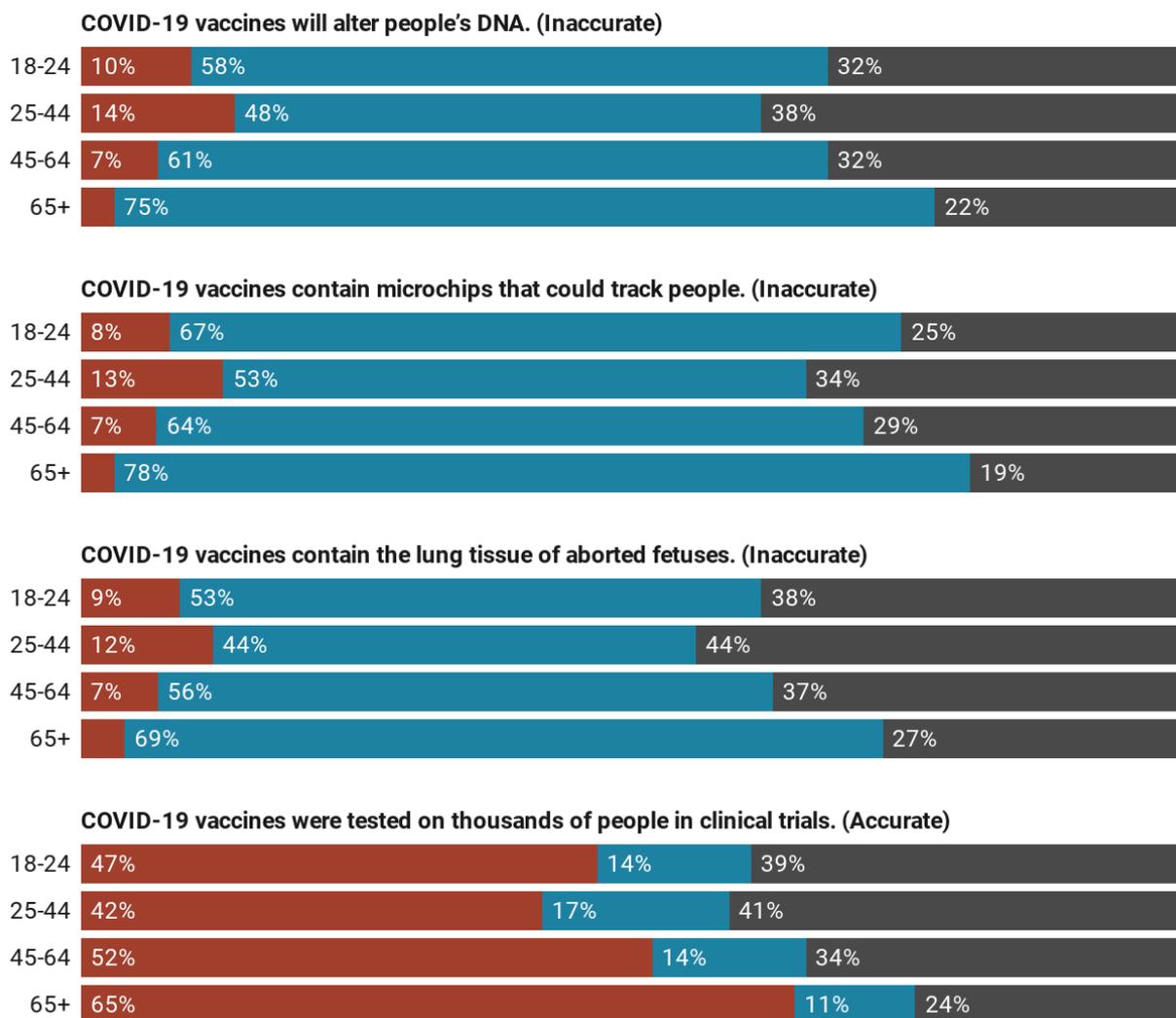
It is important to note a difference between respondents who are “uninformed” and those who are “misinformed” regarding vaccines. While we note the relatively low rates of being “misinformed” regarding the COVID-19 vaccine, as evidenced by few respondents indicating that conspiratorial claims regarding the vaccine are accurate, rates of being “uninformed” – defined as being unsure whether such claims are true or false – are much higher. While majorities of respondents indicated that these conspiracy theories were inaccurate, these majorities were not overwhelming: just 55% of respondents correctly indicated that the claim that the COVID-19 vaccine contains lung tissue from aborted fetuses was inaccurate, with 37% saying they were unsure (Figure 15).

While only 8% of respondents were unambiguously misinformed regarding this claim (i.e., indicated that it is accurate) this does not rule out the need for continued communication efforts to combat vaccine misinformation.

Belief in vaccine misinformation by age

Below are some statements about the COVID-19 vaccines that are currently being distributed. To the best of your knowledge, are those statements accurate or inaccurate?

■ Accurate ■ Inaccurate ■ Not sure



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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Figure 18.

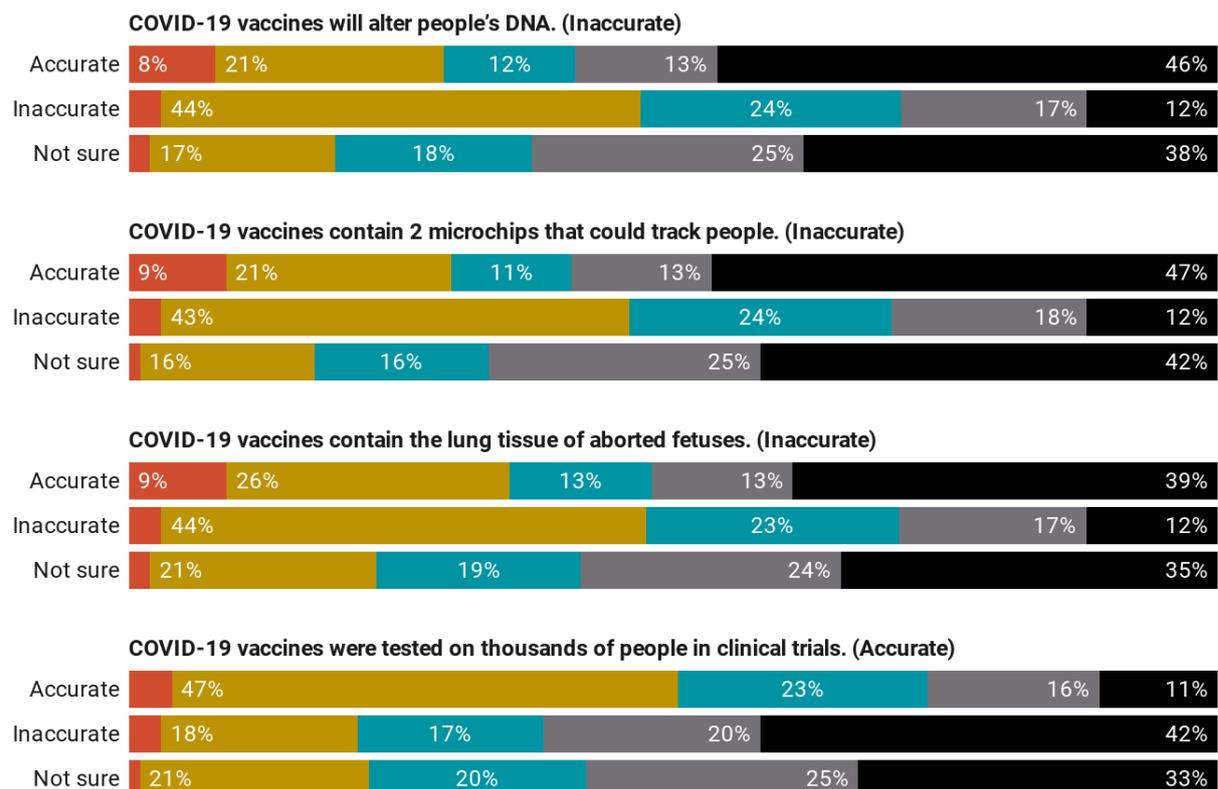
This need is further made apparent in Figure 19, which demonstrates the relationship between respondents' vaccine timing preferences and how they rated each of the four claims. As the figure shows, the modal timing preference among the informed for a given statement – those who rated a true statement as accurate or a false statement as inaccurate – is to be vaccinated as soon as possible. However, the modal response preference of respondents who were unsure – for both the accurate *and* inaccurate claims – is to not get vaccinated, followed by waiting until most people they know have been vaccinated.

Misinformation and vaccination timing preference

Below are some statements about the COVID-19 vaccines that are currently being distributed. **To the best of your knowledge, are those statements accurate or inaccurate?**

The percents shown are based on preferred vaccine timing within statement accuracy response. **If you were able to choose when to get a COVID-19 vaccine, would you get it...**

■ Already vaccinated
 ■ As soon as possible
 ■ After at least some people I know have already received it
 ■ After most people I know have already received it
 ■ I would not get the COVID-19 vaccine



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

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Figure 19.

A brief note on parents

Recent [reporting](#) and expert [commentary](#) place a particular focus regarding vaccine misinformation on parents. In light of this and the above data showing vaccine misinformation as being especially prevalent in the 25-44 age group, we examine misinformation within this age group by respondents' gender and whether children are present in their household. While this is not a perfect measure of parental status within this age group – for example, the respondent may not have any parental responsibilities for the children in their household – it provides some indication as to how misinformation beliefs in our data speak to vaccine attitudes by parental status.

This analysis is shown in Figure 20, which splits the 25-44 age group (aggregate results in Figure 18) by respondent gender and estimated parental status. As the figure shows, for all four claims, respondents in this age group with children in their household – both men and women alike – are less likely than their counterparts without children to choose the right answer, and more likely to choose the wrong answer.

We also note a gender difference, [consistent with previous findings in survey research](#), where men report lower uncertainty and are more likely to rate both true and false statements as accurate or inaccurate, while women are more likely to report uncertainty. In short, the higher rates of vaccine misinformation in the 25-44 age group does indeed appear to be driven by particularly high rates of uncertainty and beliefs in false claims among parents with children at home.

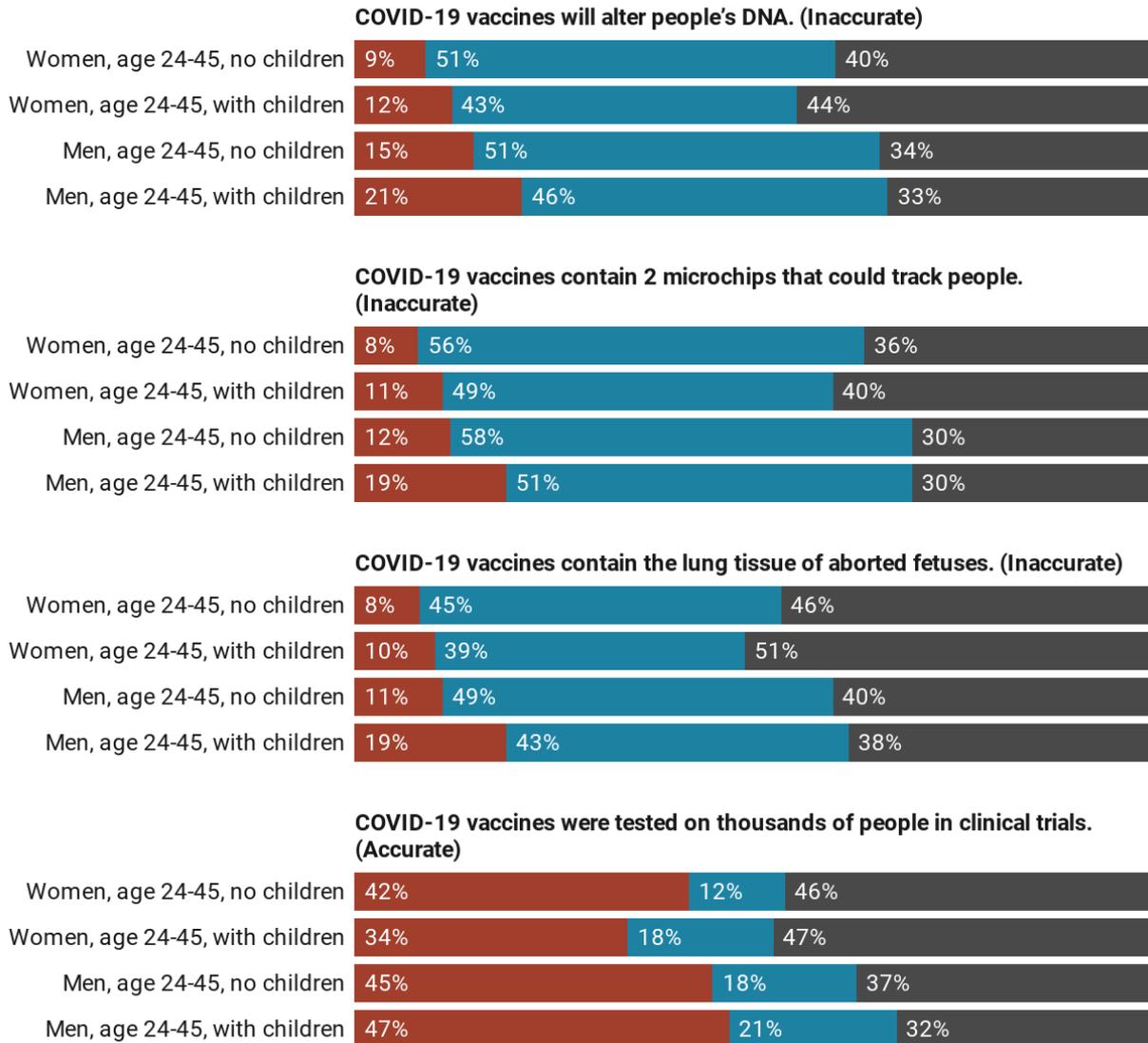
These differences based on 25-44 year olds' gender and whether they have children in their household are notable because they do not obviously translate to all of the other outcomes we tested, such as vaccine prioritization, as is shown in Figures 21 and 22.

Instead, we find little difference in average prioritization across all priority groups (Figure 21), and little difference in agreement with statements about vaccines in general (Figure 22).

Belief in vaccine misinformation by gender and children

Below are some statements about the COVID-19 vaccines that are currently being distributed. To the best of your knowledge, are those statements accurate or inaccurate?

■ Accurate ■ Inaccurate ■ Not sure



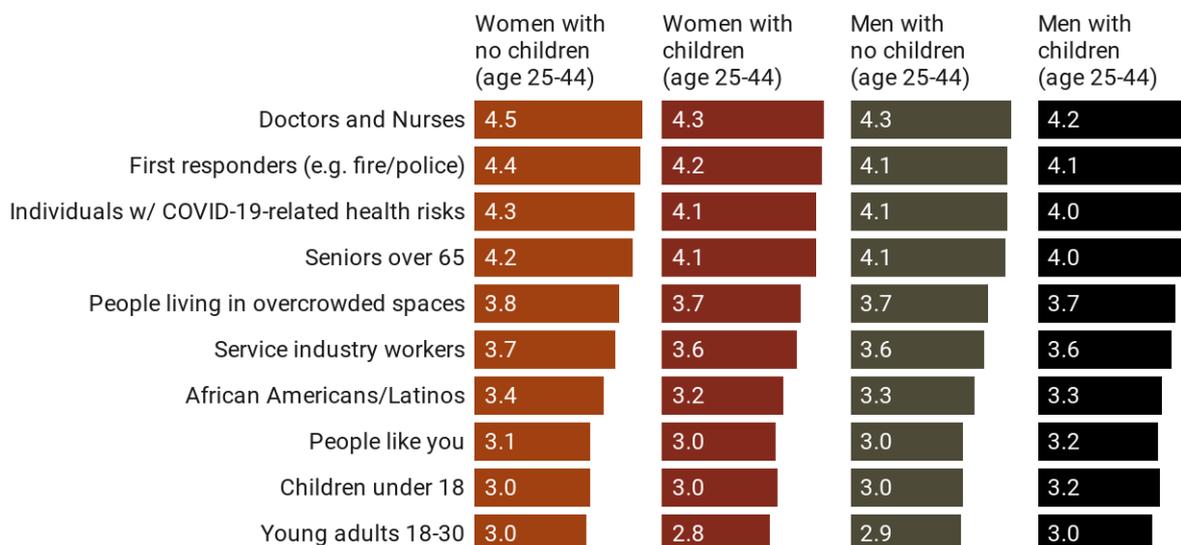
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Figure 20.

Preferred vaccine prioritization by gender and children

If an effective COVID-19 vaccine was available, what priority should each of the following groups have in receiving that vaccine? [Mean score on 1-5 scale where 1 is very low priority, 5 is very high priority]



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

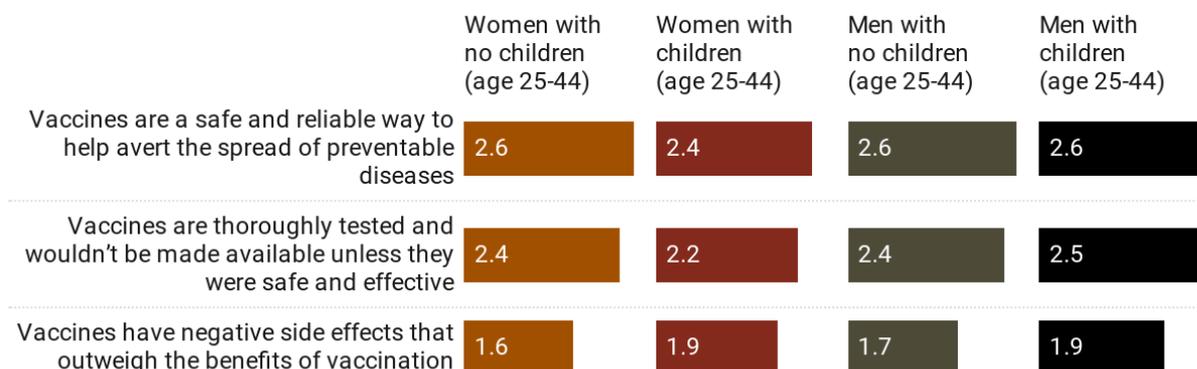
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Figure 21.

Attitudes towards vaccines by gender and children

How much you agree or disagree with the following statements about vaccines in general? [Mean score on 0-4 scale where 0 is strongly disagree, 5 is strongly agree]



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

Source: The COVID-19 Consortium for Understanding the Public's Policy Preferences Across States (A joint project of: Northeastern University, Harvard University, Rutgers University, and Northwestern University) www.covidstates.org

• Created with Datawrapper

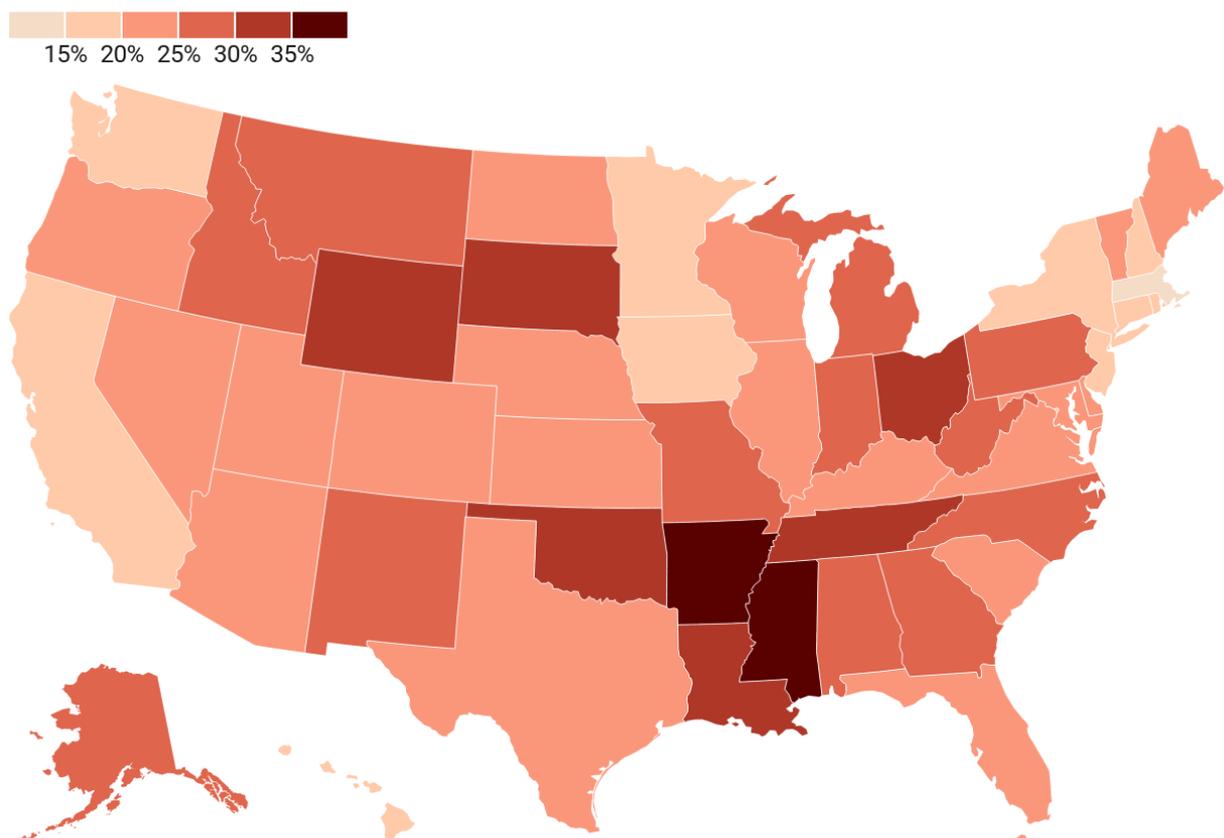
Figure 22.

Vaccine resistance by state

Finally, we also examined the percent of respondents who reported they would not get vaccinated against COVID-19 by state (Figure 23). Geographic areas where a high percent of residents are resistant to the idea of getting a vaccine could be at a higher risk of future COVID-19 outbreaks. Eight of the states in our data scored particularly high on COVID-19 vaccine resistance, with over 30% of respondents reporting they would not get vaccinated. In ascending order, these are Ohio, Tennessee, South Dakota, Wyoming, Louisiana, Oklahoma, Arkansas, and Mississippi. The states with the lowest numbers of respondents unwilling to be vaccinated (18% and lower) are Massachusetts, Hawaii, New York, California, New Jersey, Rhode Island, and Connecticut. Additional state-based results are given in Appendix A.

Americans who say they would not get a COVID-19 vaccine

If you were able to choose when to get a COVID-19 vaccine, would you get it...
[Percent respondents who say "I would not get the COVID-19 vaccine]



National sample, N = 25,640, Time period: 12/16/2020-01/10/2021

Source: The COVID-19 Consortium for Understanding the Public's Policy Preferences Across States (A joint project of: Northeastern University, Harvard University, Rutgers University, and Northwestern University) www.covidstates.org
• Created with Datawrapper

Figure 23.

Takeaways

Generally speaking, these results suggest broad similarities in how different population subgroups think and feel about vaccines, independent from their personal willingness to get vaccinated. There is a general public consensus regarding the relative priority that ought to be given to different groups for vaccination – with medical professionals, first responders, and those at greatest medical risk from COVID-19 being put at the front of the line – which corresponds to the prioritization plans that are currently being implemented. In addition, we find that the public and all demographic subgroups we examined hold pro-vaccine attitudes in general, agreeing with pro-vaccine statements and disagreeing with an anti-vaccine statement on average. However, these pro-vaccine net differences are not as large as one might hope. Belief in COVID-19 vaccine misinformation is low overall, albeit higher in the 25-44 age group generally, and even higher for 25-44 year olds with children in their households. On the whole, it still poses challenges to a successful vaccination campaign.

Appendix A

Vaccine acceptance, hesitancy, and resistance by state

If you were able to choose when to get a COVID-19 vaccine, would you get it...

State	Already vaccinated	As soon as possible	After at least some people I know	After most people I know	Would not get the COVID-19 vaccine	Error Margin	N
National	2.9	33.2	21	19.6	23.2	0.7	25558
AK	4.6	27.9	18.1	24.2	25.2	5.4	408
AL	2	28.4	19.5	20.6	29.4	5.1	450
AR	2.3	28.2	14.6	19.4	35.5	5.6	471
AZ	2.5	32.5	19.3	20.9	24.8	5	468

CA	1.8	39	19.1	22.9	17.3	4.9	568
CO	2.7	37.3	21.9	15.2	22.9	5.2	500
CT	3.9	37.3	21.9	18.6	18.3	4.9	510
DC	5.6	42.8	18.8	17.4	15.4	5.3	435
DE	1.5	34.7	20.2	19	24.6	4.8	540
FL	2.5	34.1	20.8	18.9	23.7	4.4	552
GA	2.3	27.2	16.9	24.3	29.1	4.8	495
HI	1.7	33.3	24	25.7	15.4	5	602
IA	3.2	37.1	21	19.7	19	5.2	437
ID	2.1	28.8	18.7	21.8	28.6	4.5	568
IL	6.7	30	22.7	20.4	20.3	4.7	540
IN	2.9	28.3	20.9	19.9	28	4.5	484
KS	3.3	39.2	19.9	14.5	23	4.9	488
KY	2.4	31.9	22.4	19.4	24	4.9	448
LA	1.9	24.6	18.4	23.1	32	5.1	488
MA	3.4	44.2	23.8	15.8	12.7	4.8	518
MD	5	31.3	22.4	21	20.3	4.5	507
ME	1.4	36.7	20.8	19.3	21.7	4.7	599
MI	2	32.6	19.3	19	27.1	4.5	497
MN	2	39.6	21.7	17.5	19.1	4.6	514
MO	3.2	25.9	21.1	20.4	29.4	4.5	493
MS	1.8	31.4	16.4	14	36.4	5.8	513
MT	3.6	28.7	21.6	17.2	28.9	4.6	539
NC	3.4	27.5	18.2	22.6	28.2	4.2	529
ND	2.9	32.4	20.3	21.4	23.1	5	505

NE	1.3	35.7	22.2	18.1	22.7	4.7	595
NH	2.6	40.1	21.3	16.7	19.3	4.5	566
NJ	3.3	35	24.6	19.8	17.3	4.8	465
NM	2.2	35	16.6	20.4	25.7	6	482
NV	1.4	28.3	21.6	27.6	21.1	4.8	488
NY	4.8	37.5	20.8	21.1	15.8	4.6	521
OH	1.7	27	18.7	21.8	30.8	4.6	493
OK	2.2	32.5	15.6	17.5	32.2	5	501
OR	1.4	37.9	22.7	16.3	21.7	4.5	544
PA	3.5	31.2	18.6	21.5	25.2	4.4	483
RI	3.3	36	23.7	18.8	18.2	4.9	542
SC	4	28.7	19.3	23	24.9	4.9	452
SD	1.8	28.7	20.3	17.9	31.3	4.8	499
TN	2.3	34	17.6	15.7	30.5	4.7	518
TX	2.3	31.5	23.6	19.2	23.3	4.4	560
UT	2.6	36.8	20.7	17	22.9	4.6	488
VA	2.7	36.6	20.4	18.2	22.1	5	447
VT	2.7	33.2	23.5	19	21.5	5.5	411
WA	2.8	33.6	26.3	17.4	19.9	4.4	526
WI	2.5	35.9	18.3	18.5	24.8	4.8	516
WV	1.9	30.6	24	17.9	25.6	5.1	449
WY	2.5	24.5	21.6	19.6	31.8	6	346