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**THE COVID STATES PROJECT:
A 50-STATE COVID-19 SURVEY
REPORT #75: ATTITUDES TOWARD
COVID-19 BOOSTERS**

USA, November 2021

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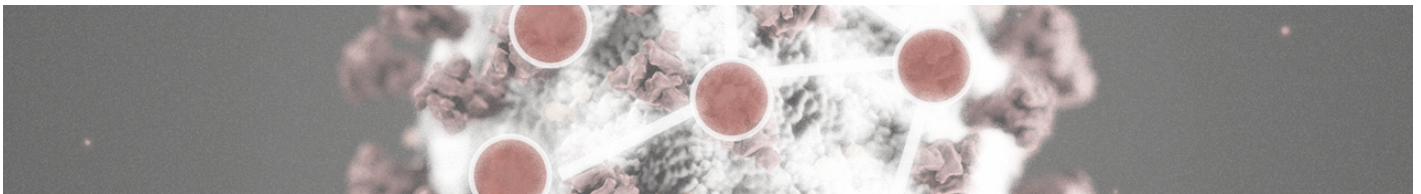
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Report of December 22, 2021, v.1

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

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Northeastern University
Network Science Institute



COVER MEMO

Summary Memo — December 22, 2021

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From April 2020 through September 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](https://www.covidstates.org).

Note on methods:

Between November 3 and December 2, 2021, we surveyed 22,277 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](https://www.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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Attitudes toward COVID-19 boosters, before and after Omicron

Recognizing that the protection conferred by COVID-19 vaccines may wane over time, the US Centers for Disease Control and Prevention (CDC) has encouraged adults in the United States to receive booster shots that can augment their immunity to the virus. While the Biden administration sought to encourage all adults to receive boosters, the CDC initially authorized the shots only for higher-risk individuals. Subsequently, authorization was broadened to all adults, although only higher-risk individuals were encouraged to pursue boosters. Most recently, after substantial criticism, the CDC changed its language to encourage all adults to receive boosters.

But regardless of the language, are US adults sufficiently convinced to seek booster shots? Will the same factors that contributed to COVID-19 vaccine hesitancy and vaccine resistance impact booster shots? The answers may have profound public health implications as the US enters the season during which respiratory viruses typically have the greatest impact, and the highly-transmissible Omicron variant rapidly becomes the dominant form of COVID-19, after being labeled a [variant of concern](#) by the World Health Organization on November 26th.

Between November 3rd and December 3rd, 2021, the [COVID States Project](#) asked 22,277 adults in all 50 US states and the District of Columbia about their attitudes and behaviors regarding COVID-19. In particular, we asked about whether people are vaccinated or intend to be vaccinated, and whether they had sought booster shots or intend to seek a booster shot. In this brief report, we examine attitudes toward COVID-19 booster shots, and whether they differ across particular groups of people. Since the survey was ongoing when news about Omicron emerged in the US, we also take an initial look at whether these attitudes have begun to shift along with perceptions of the threat posed by COVID-19 subsequent to the November 26th announcement.

Key Takeaways

- Overall, 30% of respondents indicated that they had received a COVID-19 booster shot.
- Older respondents are much more likely than their younger counterparts to have received a booster shot, with respondents over age 65 four times as likely as Gen Z respondents (ages 18-24), by 53% to 13%.

- Democrats are more likely than Republicans to have received a booster shot (33% vs. 27%). However, partisanship is a far less strong predictor of having received a booster shot – either nationally or comparing Democratic and Republican-leaning states, *contingent on having previously been vaccinated* – than of having been vaccinated in the first instance.
- As education increases, the probability of having received a booster increases (from 22% among respondents with a high school education or less to 46% among their counterparts with graduate degrees).
- We find only small differences in the probabilities of being vaccinated or having received a booster, as well as in respondents' reasons for getting a booster, before vs. after the WHO Omicron announcement.
- Nearly half (47%) of previously vaccinated respondents are booster hesitant or resistant.

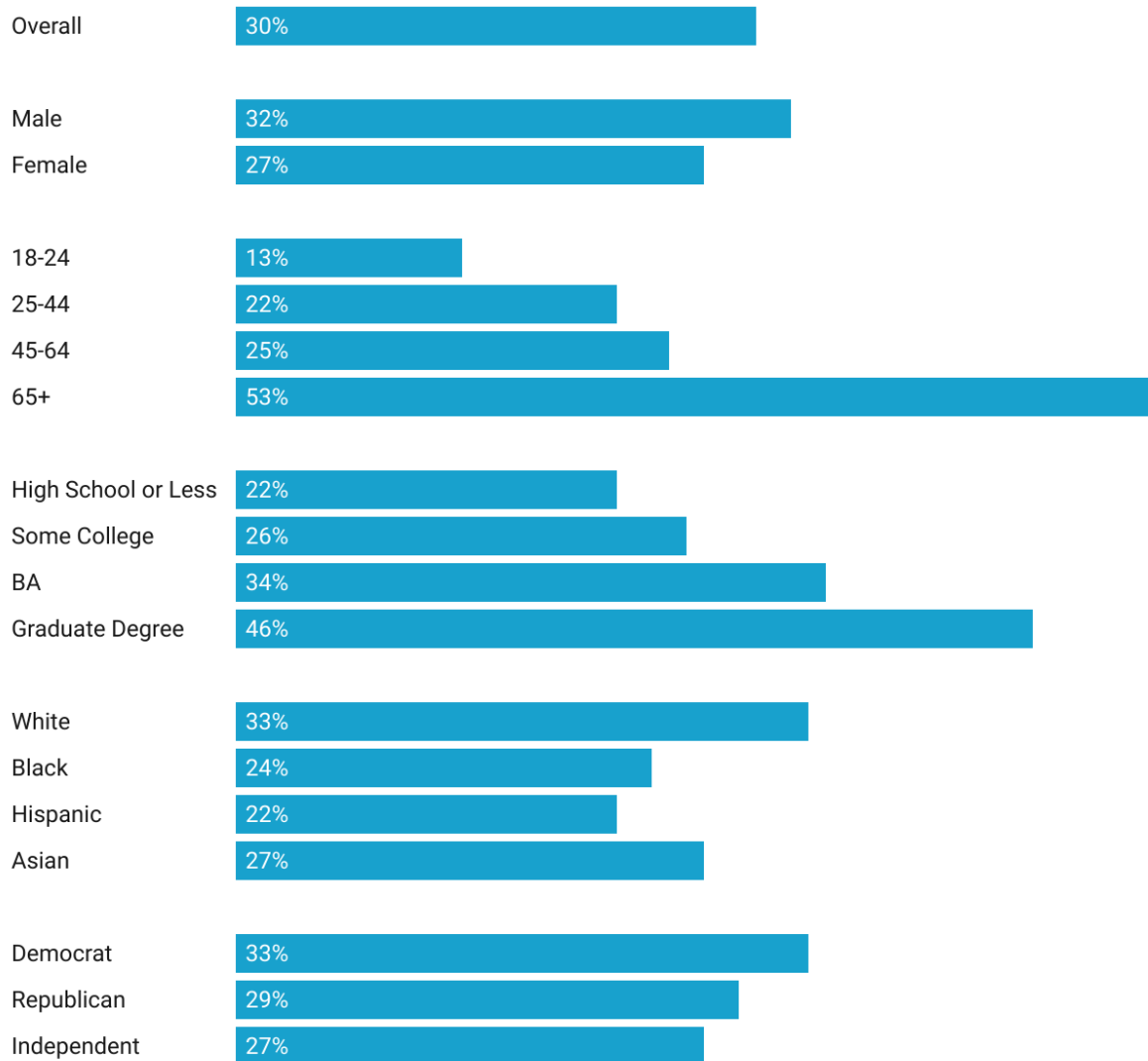
I. Booster Uptake

Among the 71% of respondents in our November wave who report having received at least one COVID-19 vaccine dose, 30% indicated that they have received a booster shot (Figure 1). The likelihood of having received a booster increases in a stepwise fashion with age, ranging from only 13% of Gen Z respondents (ages 18-24) to over half (53%) of respondents age 65 or older. We also see a stepwise increase in the likelihood of having received a booster as education increases, ranging from a low of 22% among respondents with a high school education or less to a high of 46% among respondents with graduate degrees.

Looking across racial and ethnic groups, Hispanic respondents are the least likely to report having received a booster (22%), followed by Black (24%) and Asian (27%) respondents, with White respondents at the high end (33%). Finally, we also see a partisan divide, but one that is far more modest than many COVID-related behaviors, with Democrats (33%) more likely than Independents (29%) or Republicans (27%) to have received a booster. (Of course, by examining only individuals who have already been vaccinated, we are likely over-sampling subsets of Americans – including partisans – who are more supportive of these interventions in general).

Have you received a COVID-19 booster shot (that is, an additional vaccine dose to increase immunity that may have waned over time)?

[Percent Responding "Yes"]



National sample of U.S. adults, Time period: 11/03/2021-12/03/2021, Sample size = 22,277

Chart: 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 1.

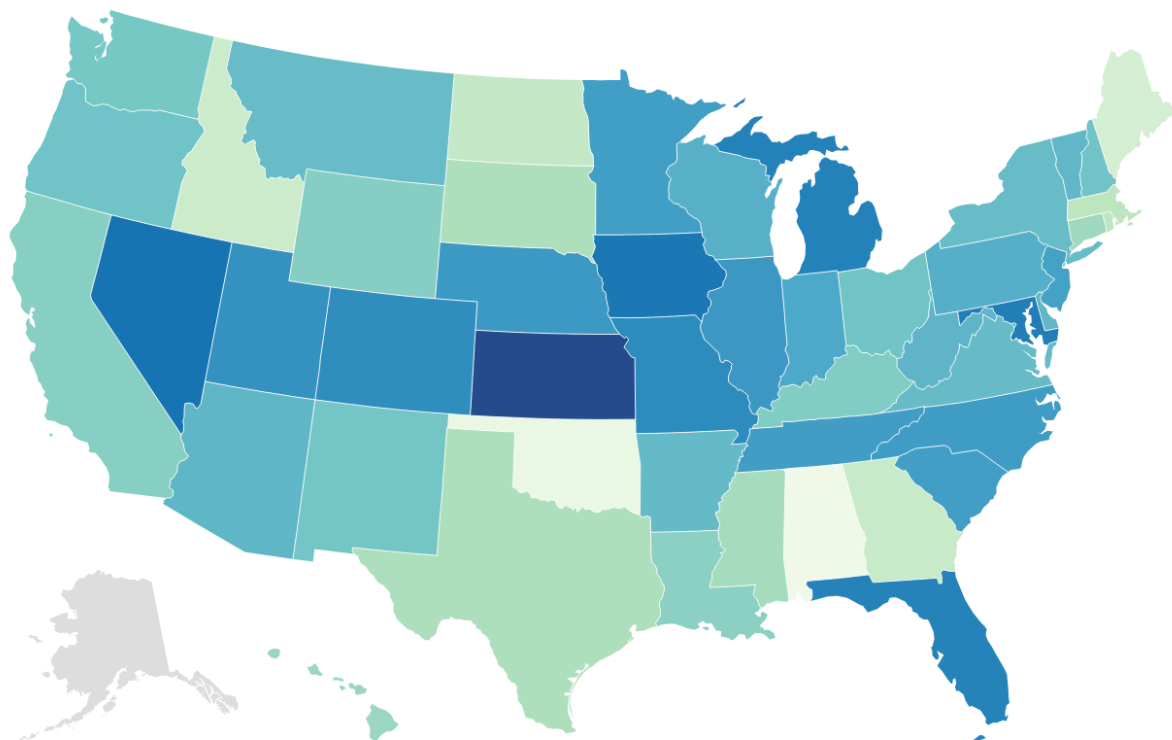
When we look across the states (Figure 2; see appendix for precise percentages and standard errors), we see a wide variations in booster uptake, from a low of about 22% in Alabama to a high of about 40% in Kansas. Booster uptake exceeds one-third of the vaccinated population in eight additional states, including Iowa, Maryland, Michigan,

Nevada, Florida, Missouri, Connecticut, and Utah. At the opposite extreme, less than a quarter of vaccinated respondents report having received a booster shot in seven additional states, including Massachusetts, Rhode Island, North Dakota, Georgia, Arkansas, Idaho, Maine, and Oklahoma.

One noteworthy difference between booster and vaccine uptake is the relative absence of a clear Red State/Blue State divide. In the case of vaccine uptake, our prior reports have consistently found mostly Democratic-leaning states at the high end and mostly Republican-leaning states at the low end. We see a much less stark partisan divide on booster uptake. Again, however, these results are conditional on already having been vaccinated.

Have you received a COVID-19 booster shot (that is, an additional dose to increase immunity that may have waned over time)?

[Percent responding "yes"]



National sample of U.S. adults, Time period: 11/03/2021-12/03/2021, Sample size = 22,277

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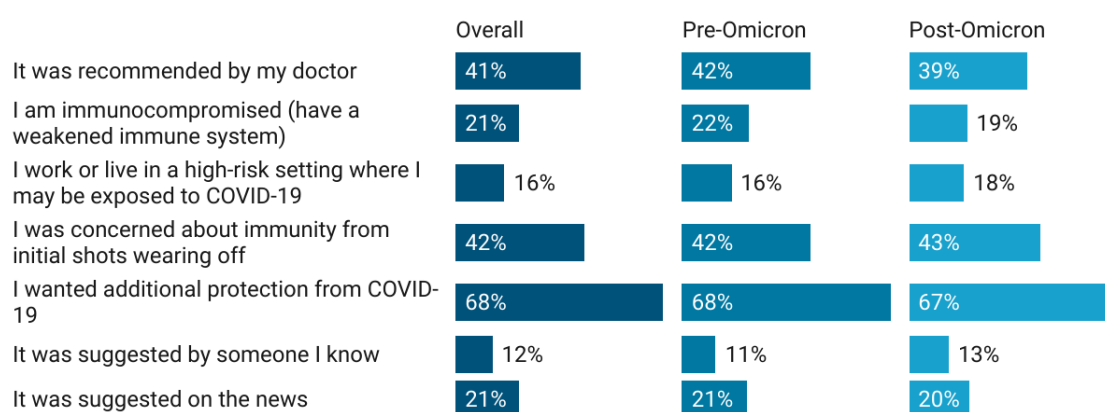
Figure 2.

II. Reasons for Seeking a Booster

When we asked respondents who had received a booster shot why they decided to do so (Figure 3), **the most common explanation was that they were seeking additional protection from COVID-19 (68%),** followed by concern over waning immunity from the initial vaccine (42%) and a recommendation from their doctor (41%).

Why did you decide to get a COVID-19 booster shot? (Please select all that apply.)

[Percent of respondents]



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Figure 3.

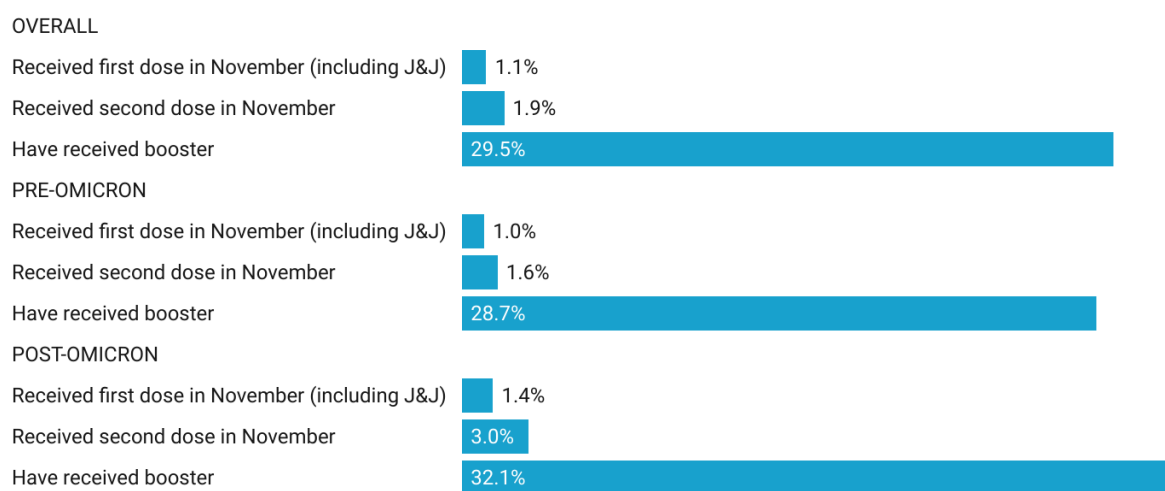
The reasons cited for seeking a booster varied very little following the public announcement of the emergence of the Omicron variant on November 26th. **Slightly fewer respondents report being motivated by a doctor's recommendation (39% vs. 42% prior to Omicron) or by their own immunocompromised status (19% vs. 22%) as the rationale.** The remaining explanations vary by two percentage points or less.

III. Omicron Effect on COVID-19 Vaccination and Booster Uptake

Again comparing the pre-Omicron and post-Omicron announcement periods (Figure 4), we also see modest differences in the distribution of vaccinations between first dose or second dose, and the probability of seeking a booster. Prior to the Omicron

announcement, 1% of respondents reported receiving their first vaccine dose in November/December, while another 1.6% reported receiving their second dose in November/December. Following the public announcement about Omicron, the corresponding percentages increased to 1.4% and 3%, respectively. **The probability of having received a booster also increased post-Omicron, by 3.4 percentage points, from 28.7% prior to the Omicron announcement, to 32.1% following the announcement.**

Percent of Respondents Receiving First or Second Vaccine Dose in November, or Booster, Overall and Pre- vs. Post-Omicron Announcement



National sample of U.S. adults, Time period: 11/03/2021-12/03/2021, Sample size = 22,277
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Figure 4.

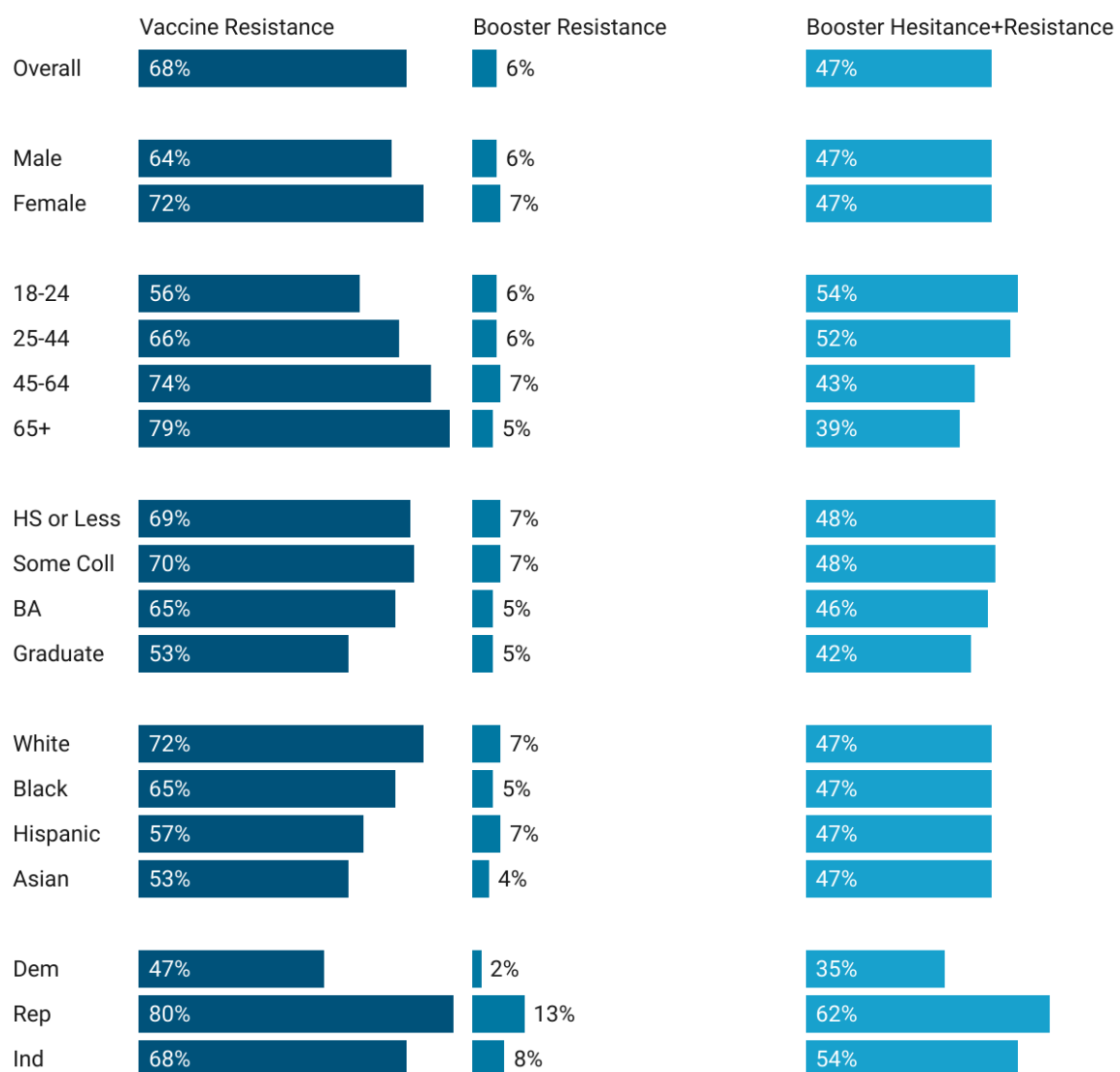
IV. COVID-19 Vaccine and Booster Resistance

Overall, among unvaccinated respondents, over two-thirds (68%) are vaccine resistant (i.e., indicate that they “would not get the COVID-19 vaccine”) (Figure 5). Unvaccinated women are more likely than men to be vaccine-resistant (72% vs. 64%). Looking across age cohorts, unvaccinated Gen Z respondents (ages 18-24) are least vaccine-resistant (56%), while unvaccinated respondents between ages 45 and 64 are most resistant (74%). The most highly educated respondents – those with graduate degrees – are least resistant among the currently unvaccinated (53%), while respondents with some college education are most resistant (70%).

Unvaccinated White respondents are most resistant (72%), while their Asian counterparts are least resistant (53%). Finally, we also see a vast partisan divide in vaccine resistance among the currently unvaccinated: 47% of Democrats, compared to 80% of Republicans and 68% of Independents.

Vaccine and Booster Resistance and Hesitance

["If you were able to choose when to get a COVID-19 vaccine, would you get it...I would not get the COVID-19 vaccine" OR "If a COVID-19 vaccine booster shot were available to you, how likely would you be to get it?" (extremely unlikely=resistant; somewhat likely, neither likely nor unlikely, somewhat unlikely, or extremely unlikely = hesitant+resistant)] (Vaccine resistance is percent of respondents not yet vaccinated; Booster resistance and hesitance are percent of respondents already vaccinated)



National sample of U.S. adults, Time period: 11/03/2021-12/03/2021, Sample size = 22,277

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Figure 5.

When we asked already vaccinated respondents about their likelihood of seeking a booster, resistance is unsurprisingly far more modest, with between 4% and 7% of nearly all subgroups indicating that they were extremely unlikely to get a booster shot. The one exception is partisanship: only 2% of currently vaccinated Democrats expressed booster resistance, compared to 13% of vaccinated Republicans and 8% of vaccinated Independents.

But when we examine the broader category of booster hesitancy – individuals who describe themselves as, at best, somewhat likely to seek a booster, and inclusive of those who are neither likely nor unlikely, somewhat unlikely, or extremely unlikely, to seek a booster – more substantial differences emerge. Overall, nearly half (47%) of those who were previously vaccinated (but not yet boosted) remain booster-hesitant. This is despite emerging evidence of [waning efficacy over time for the initial vaccine course and substantially lower efficacy against Omicron of the two-dose regimen absent a booster](#). We do not see gender effects, nor race and ethnicity effects.

On the other hand, booster hesitancy decreases markedly with age - from 54% in those ages 18-24, to 39% in those age 65 or older. It also decreases with education, from 48% in the least educated to 42% in the most. And differences by partisan affiliation are stark: 62% of Republicans and 54% of Independents are hesitant, compared to 35% of Democrats. While we cannot determine this from our survey questions, it is possible that some of these hesitant and resistant individuals were required to be vaccinated because of employment or other mandates, but remain opposed to or wary of such interventions.

Appendix: State-Level Booster Uptake

Table 1. Booster uptake by state

State	Percent	Std. Err.
AK	24.08%	4.50%
AL	22.06%	3.14%
AR	29.42%	3.82%
AZ	29.76%	2.82%
CA	27.35%	1.75%
CO	33.62%	3.01%
CT	26.32%	3.08%
DC	31.08%	4.10%
DE	29.68%	3.66%
FL	34.66%	2.33%
GA	24.18%	2.50%
HI	26.39%	3.20%
IA	35.75%	3.89%
ID	23.97%	3.87%
IL	32.59%	2.61%
IN	31.00%	3.35%
KS	40.13%	3.85%
KY	27.60%	3.29%
LA	27.13%	3.92%
MA	24.72%	2.44%
MD	35.17%	3.07%
ME	23.54%	3.10%
MI	34.75%	2.97%
MN	32.07%	3.01%
MO	33.82%	3.21%
MS	25.90%	3.87%
MT	29.22%	3.99%
NC	32.28%	2.83%
ND	24.36%	3.59%
NE	32.53%	3.92%
NH	28.52%	3.51%
NJ	31.68%	2.62%
NM	28.23%	3.36%
NV	36.16%	3.93%
NY	29.20%	2.04%
OH	28.46%	2.45%
OK	22.38%	3.23%
OR	28.51%	3.10%
PA	30.41%	2.66%
RI	24.72%	3.53%
SC	32.02%	3.53%
SD	25.47%	3.66%
TN	32.11%	3.10%
TX	25.49%	1.96%
UT	33.28%	3.61%
VA	29.26%	2.56%
VT	29.64%	3.96%
WA	28.05%	3.05%
WI	30.30%	3.03%
WV	29.81%	3.64%
WY	27.37%	4.86%