Summary

Findings. Consumers are concerned about vaccine effectiveness due to reported COVID-19 vaccine breakthrough cases and are worried about CDC’s change in monitoring vaccine breakthrough cases. Polls and survey data suggest that some consumers who want to wait and see before vaccination might not trust CDC to provide scientifically reliable information. Consumers also don’t know if COVID-19 vaccines are effective — which undermines confidence in COVID-19 vaccines and the vaccination system. Misinformation is circulating online that people who previously had COVID-19 had severe side effects after vaccination and that natural immunity is the most effective way to protect oneself from COVID-19. Lastly, while much of the population returns to pre-pandemic life, consumers with compromised immune systems feel unprotected and vulnerable in the absence of safeguards like universal physical distancing and mask-wearing and feel uncertain how effective vaccines are for them.

Ways to take action. Federal, state, and local partners may wish to work together to disseminate messages about the effectiveness of COVID-19 vaccines, respond to gaps in information, and confront misinformation with science-based messaging. The goal of these efforts is to increase confidence in COVID-19 vaccines and expand vaccine uptake more broadly. Communication and outreach efforts should be expanded to address concerns and questions about vaccine breakthrough cases, natural immunity, and vaccine effectiveness for those with compromised immune systems.

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The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).
Aims and Methods

By rapidly reviewing and analyzing numerous sources and inputs (see Appendix), the biweekly COVID-19 State of Vaccine Confidence Insights Report emphasizes major themes that influence COVID-19 vaccine hesitancy and uptake. This is categorized by their level and type of threat to vaccine confidence, degree of spread, and directionality. By examining how consumers think and feel, social processes, and the practical issues around vaccination, the Insights Report seeks to identify emerging issues of misinformation, disinformation, and places where intervention efforts can positively impact vaccine confidence across the United States.

The information in this report is only a snapshot, and certain populations may be underrepresented. Images and quotes are illustrative examples and are not meant to be comprehensive of all content related to the highlighted themes.

Theme Classification

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<thead>
<tr>
<th>How do you classify this theme/information?</th>
<th>High risk</th>
<th>Moderate risk</th>
<th>Low risk</th>
<th>Positive sentiment</th>
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<tr>
<td></td>
<td>![Red Square]</td>
<td>![Orange Square]</td>
<td>![Yellow Square]</td>
<td>![Green Square]</td>
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<tr>
<td>May lead to vaccine refusals and decreased uptake</td>
<td>Potential to trigger hesitancy to vaccinate</td>
<td>Concerning, but low risk to vaccine confidence</td>
<td>Could increase vaccine confidence, intent, or motivation</td>
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<tr>
<td>Wide reach, pervasive</td>
<td>Moderate reach, modest dissemination</td>
<td>Limited reach, limited dissemination</td>
<td>Variable reach and dissemination</td>
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How has this theme/idea changed over time (since last report or over the course of multiple reports)?

<table>
<thead>
<tr>
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<th>Increasing</th>
<th>Stable</th>
<th>Decreasing</th>
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<tr>
<td>Information spreading rapidly</td>
<td>Information remaining constant at prior level</td>
<td>Information is not gaining further traction and there has been no indication of additional activity</td>
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Major Themes

Consumer concerns about vaccine effectiveness and breakthrough case reporting are fostering mistrust in COVID-19 vaccines and the U.S. vaccination system.

Consumers expressed concern on social media about COVID-19 vaccine breakthrough cases and vaccine effectiveness as media coverage highlighted breakthrough cases among high-profile people who were fully vaccinated and many people began to relax masking behaviors. At the same time, on social media and in news coverage, vocal vaccine deniers and some scientists noted apprehension regarding CDC's reporting change from monitoring all vaccine breakthrough cases among fully vaccinated people to investigating only those breakthrough cases resulting in hospitalization or death. Vocal vaccine deniers viewed the updated monitoring decision with suspicion and claimed that the intent of the updated policy is to exaggerate vaccine effectiveness by deflating case counts.

A recent poll found that over half of consumers wanting to 'wait and see' before getting deciding to get vaccinated do not trust CDC to provide accurate, scientifically reliable information. Additionally, according to recent survey data, 32% of those who are hesitant about getting vaccinated don't know if COVID-19 vaccination will work. Consumer perceptions of vaccine ineffectiveness and lack of trust in public health agencies may undermine confidence in the broader vaccination system and endanger vaccine uptake among this potentially reachable unvaccinated group.

Ways to act:

- Model and communicate estimated numbers of COVID-19 illness, medical visits, hospitalizations, and deaths prevented by COVID-19 vaccination in the United States. Such estimates will provide consumers a better understanding about how vaccination can reduce the burden of COVID-19 and can build trust in COVID-19 vaccines.
- Disseminate messages about the effectiveness of COVID-19 vaccines with updated effectiveness data since vaccine rollout began. Continue to provide updates about the effectiveness of current vaccines against common variants in the United States. Support trusted messengers to disseminate messages to people who may currently be distrustful of CDC and other health authorities.
- Amplify new evidence that vaccination likely results in less severe illness for those who are vaccinated and get infected with the virus that causes COVID-19, becoming a breakthrough case. Leverage data suggesting that COVID-19 vaccines offer protection against most variants of the virus that causes COVID-19 currently circulating in the United States.

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Some consumers believe that natural immunity is as protective as COVID-19 vaccination against illness.

A high profile figure's announcement that he will not get a COVID-19 vaccine because he was previously sick with COVID-19 sparked a resurgence in conversations in news media and among consumers online regarding the role natural immunity plays in achieving population immunity and an individual's protection from COVID-19. CDC along with some news outlets and public health experts continued to promote vaccination as the safest way to build protection against COVID-19. However, vocal vaccine deniers amplified misinformation that vaccine-induced immunity is less effective than natural immunity in protecting against COVID-19. At the same time, other news outlets claimed people who were previously infected were at increased risk for experiencing severe side effects if they did get vaccinated.

Some news outlets and consumers online called for CDC and other health authorities to recognize natural immunity alongside vaccine-induced immunity as equally protective against COVID-19. Consumers online also highlighted the lack of guidance or clear direction so far from CDC about the role of natural immunity. The lack of acknowledgement of the contribution of natural immunity has led some consumers to declare that they now “identify as vaccinated.” Some of these consumers are using profile frames on Facebook to share their status as “naturally vaccinated” or “identifying as vaccinated” with others, which Facebook is working to remove. A related ‘challenge’ emerged on TikTok with unvaccinated consumers identifying themselves as future ‘lone survivors’ after all those who are vaccinated die as a result of vaccination. The lack of acknowledgment by health authorities of natural immunity has even led some consumers to claim that they are being discriminated against because their natural immunity status is not being recognized.

Ways to act:

- Conduct research to better understand the role that natural immunity plays in population immunity and the length and quality of protection that natural immunity might provide. Leverage this work to expand guidance as necessary in relation to vaccination and mitigation efforts.
- Amplify messages about the benefits of vaccination for those consumers previously infected with COVID-19. Specifically address the misinformation that people who previously had COVID-19 are at increased risk for severe side effects and what is known regarding the length and effectiveness of natural immunity to COVID-19.
- Equip healthcare providers and other trusted messengers with talking points for discussing vaccination with patients who previously had COVID-19. Expand resources to better support these crucial conversations between providers and their patients.
- Expand research to better understand the vaccine intentions and compliance with mitigation behaviors of consumers who were previously infected with COVID-19. Expand monitoring of vaccination coverage among people with previous COVID-19 infection.
Emerging Theme

Consumers with compromised immune systems feel unprotected and worry that COVID-19 vaccines are not effective for them.

Since CDC’s recommendation that fully vaccinated people can resume normal activities without masking or physical distancing did not specifically address those with compromised immune systems, questions remain for those who are immunocompromised or immunosuppressed about how to reenter prepandemic life.49,50 Consumers with compromised immune systems were largely excluded from COVID-19 vaccine clinical trials and it is currently unknown how much protection these groups receive from vaccination.51 New research suggests that COVID-19 vaccines might not work their best, or at all, against COVID-19 illness for these groups. In two studies, between one-half and three-quarters of organ transplant recipients did not mount an immune response after COVID-19 vaccination.52,53,54,55

In response to this new research and the CDC decision to lift masking and distancing recommendations for those who are fully vaccinated, many consumers with compromised immune systems expressed fear, isolation, and frustration on social media and in opinion articles.56,57,58,59 While much of the U.S. population increasingly returns to their regular routine, those with compromised immune systems feel unprotected and vulnerable in the absence of safeguards like universal social distancing and mask-wearing and feel uncertain how effective vaccines are for them.60,61,62

Ways to act:

- Expand content on vaccine effectiveness and the benefits of vaccination for persons who are immunocompromised or immunosuppressed. Amplify messages about the protection conferred from COVID-19 vaccination, and any potential side effects of vaccination for these groups. Additionally, provide further guidance to households that contain a person or people with compromised immune systems on how to best protect their family member.

- Partner with healthcare providers who care for patients who are immunocompromised or immunosuppressed. Work with these trusted messengers to amplify the benefits of vaccination and to ensure that the most recent data about COVID-19 illness and vaccination in persons with compromised immune systems is shared with patients and their families.

- Support evaluation efforts to better understand how immunocompromised and immunosuppressed groups consider the behavioral and social drivers of COVID-19 vaccination. Understanding how consumers with compromised immune systems think and feel about vaccination can inform strategies to increase vaccine confidence and vaccine uptake in this critical population.
Continuing and Evolving Themes

Themes below have been noted in previous reports and continue to undermine vaccine confidence. The information highlighted below focuses on what is new or different from previous reports. For additional context and previous recommendations on these themes see previous Insights Reports.

- **Misinformation.** The ‘magnet challenge’ arose on social media platforms during the report period and encouraged vaccinated people to put a magnet to their vaccination site as “proof” that the shots injected a microchip or metal into their bodies.\[^{63,64}\] While this claim was quickly debunked by fact checkers,\[^{65,66,67}\] it continues to circulate. Additional circulating misinformation includes:
  - Claims that the Connecticut Department of Public Health confirmed that the Moderna COVID-19 Vaccine contained a deadly toxin within the lipid coat of the mRNA component.\[^{68}\]
  - Claims that vaccine development processes skipped animal trials as it was found to cause death to animals.\[^{69,70}\]

**New Ways to Act**

- Continue to disseminate messages about the ingredients in COVID-19 vaccines, what makes them safe, and how they work inside the body.
- Continue to amplify messages about how COVID-19 vaccines were evaluated and continue to be monitored for safety and effectiveness.

- **Incentives.** Recent poll data indicated that CDC’s updated guidance allowing fully vaccinated people to discontinue wearing masks had little to no effect on vaccination plans for people wanting to wait and see, for people who would only get vaccinated if required, and people who did not plan to get vaccinated.\[^{71}\] However, another poll found that financial incentives would encourage people who remain unvaccinated to get vaccinated and could have the ability to increase vaccine uptake.\[^{72}\]
  The Ohio Department of Public Health saw an increase in vaccination rates following the announcement of their ‘Vax-a-Million’ lottery.\[^{73}\]

![Large Majority Of Those Who Have Not Been Vaccinated Say Updated CDC Guidance On Activities For Vaccinated Individuals Has No Effect On Their Own COVID-19 Vaccination Plans](https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-may-2021/)

**Adverse event reporting.** New guidance from the Occupational Safety and Health Administration (OSHA) stipulated that employers would be liable for any adverse reactions experienced by employees as a result of COVID-19 vaccines if vaccination was employer mandated.\[^{74}\] Many vocal vaccine deniers and leading conservative voices applauded the decision on social media, and perpetuated the claim that vaccines are “experimental.”\[^{75,76}\] Later, OSHA reversed the rule and announced a new guideline indicating that adverse vaccine reactions are exempt from employer reporting requirements, sowing further distrust and suspicion.\[^{77,78}\] Such a reversal reinforces mistrust in government for those already prone to mistrusting such systems.
Continuing and Evolving Themes (cont.)

- **Proof of vaccination.** As a result of CDC’s updated guidance for people who are fully vaccinated, consumers and employers expressed confusion in response to news articles and on social media about whether businesses can ask for proof of COVID-19 vaccination and whether they need proof to require it to protect clients and patrons.\(^{79,80,81}\) Many consumers believed that the Health Insurance Portability and Accountability Act (HIPPA) protected consumers from having to share identifying health information — but this law only applies to entities like insurance providers and healthcare providers sharing that information.\(^{82,83}\)

- **Long COVID.** A new study in preprint reported that among participants suffering from long COVID, 56% experienced an overall improvement in their symptoms after receiving mRNA COVID-19 vaccination.\(^{84,85,86}\) Although the reasons for the improvement are still unclear and authors note that it is unknown how long such relief will last, many on social media signaled hope in response to study findings.\(^{87}\)

> "There’s not one long-COVID treatment that’s going to fix everyone – but the fact that one treatment does fix something means that there’s bound to be other treatments out there that will fix others."

-Dr. David Strain, study author and lecturer at the University of Exeter

## Appendix: Inputs and Sources

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<thead>
<tr>
<th>Type</th>
<th>Input</th>
<th>Cadence</th>
<th>Sources</th>
<th>Tactics for Utilization</th>
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<td><strong>Social Media Listening &amp; Media Monitoring</strong></td>
<td>Communication Surveillance Report</td>
<td>Daily, weekdays</td>
<td>• Google news&lt;br&gt;• Meltwater&lt;br&gt;• CrowdTangle&lt;br&gt;• Native platform searches</td>
<td>• Share of voice topic analysis to identify themes&lt;br&gt;• Emerging topics</td>
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<td>Meltwater</td>
<td>Daily</td>
<td>• Facebook, Twitter, Instagram&lt;br&gt;• Blogs&lt;br&gt;• News media&lt;br&gt;• Online forums</td>
<td>• Share of voice topic analysis&lt;br&gt;• Emerging theme topics&lt;br&gt;• Identify high reach/velocity topics</td>
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<td>• Sprout Social&lt;br&gt;• Native OADC account analytics</td>
<td>• Analyze # of posts, topics&lt;br&gt;• Success of messages, # of impressions, reach, # engagements</td>
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<tr>
<td>OADC Channel Comment Analysis</td>
<td>Daily, weekdays</td>
<td>• Native platform searches</td>
<td>• Sentiment analysis&lt;br&gt;• Identify message gaps/voids</td>
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<td><strong>Direct Reports</strong></td>
<td>CDC-INFO Metrics</td>
<td>Weekly, Mondays</td>
<td>• CDC-INFO inquiry line list&lt;br&gt;• Prepared response (PR) usage report</td>
<td>• Cross-compare PR usage with inquiry theme analysis&lt;br&gt;• Sentiment analysis&lt;br&gt;• Identify information gaps/voids</td>
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<td>VTF Media Requests</td>
<td>Weekly, Mondays</td>
<td>• Media request line list</td>
<td>• Leading indicator for news coverage&lt;br&gt;• Identify information gaps/voids</td>
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<td>Web Metrics</td>
<td>Weekly, Wednesdays</td>
<td>• Top pages&lt;br&gt;• Google search queries&lt;br&gt;• Top FAQs&lt;br&gt;• Referring domains</td>
<td>• Identify information gaps/voids,&lt;br&gt;• Identify keywords/search terms, changes in web traffic</td>
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<td>• Harris Poll, PEW research, Gallup Poll, KFF&lt;br&gt;• New data related to vaccine hesitancy</td>
<td>• Identify socio-behavior indicators related to motivation and intention to vaccinate</td>
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<td>• Meltwater&lt;br&gt;• Sprout Social&lt;br&gt;• First Draft&lt;br&gt;• Native platform searches</td>
<td>• Trending topics&lt;br&gt;• Demographic and geographic conversation monitoring</td>
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<td>• Trends/sentiment analysis&lt;br&gt;• National and global news analysis</td>
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