

COVID-19 Update

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Medical Director NEBGH

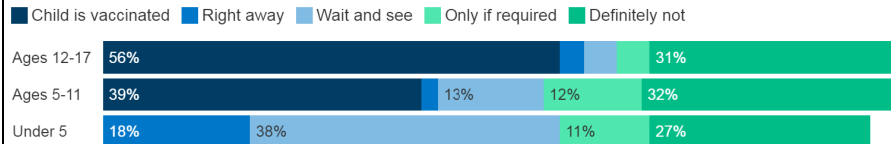
Monday June 6th, 2022

Vaccines for young children

- May be available from June 21st
- Initially high-risk children but widespread availability expected quickly
- Pfizer – 10% of adult dose
 - Day 1, Day 21 and 3rd dose 2+ months later
- Moderna -25% of adult dose
 - Day 1 and day 28

One In Five Parents Of Children Under 5 Want To Vaccinate Their Child For COVID-19 Right Away When Authorized, But Four In Ten Want To Wait And See

Thinking about your child between the ages of...have they received at least one dose of a COVID-19 vaccine, or not? If not, do you think you will get them vaccinated...?



NOTE: Asked of parents or guardians of children under 18. For parents of children under 5, question was worded "Thinking about your child under the age of 5, once there is a COVID-19 vaccine authorized and available for your child's age group, do you think you will...?" See topline for full question wording.

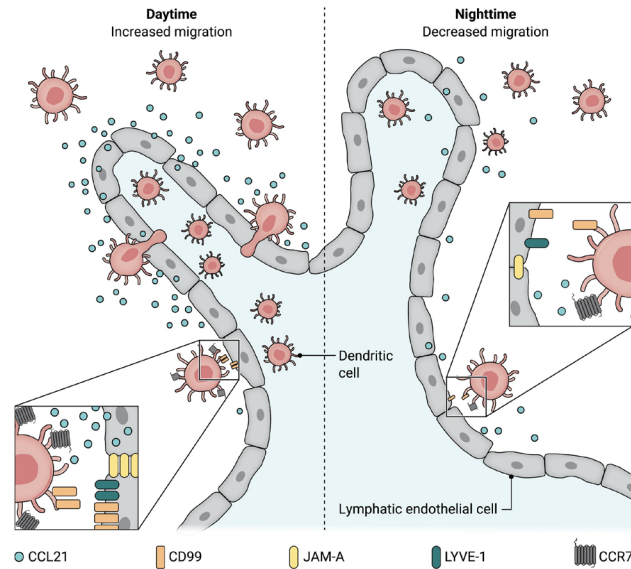
SOURCE: KFF COVID-19 Vaccine Monitor (April 13-26, 2022) • PNG

[KFF COVID-19
Vaccine Monitor](#)



When to get vaccinated

SCIENCE IMMUNOLOGY | REVIEW



Morning vaccination

BCG (8 a.m.)

- Strong nonspecific trained immunity
- High cytokine secretion



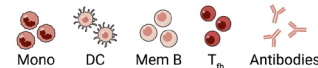
Influenza (9–11 a.m.)

- Higher antibody response



SARS-CoV-2 (9–11 a.m.)

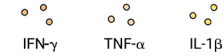
- Higher neutralizing antibody levels
- Stronger B and T_h cell response
- Higher percentage of monocytes and DCs
- Higher percentage of memory B cells



Afternoon/evening vaccination

BCG (6 p.m.)

- No trained immunity
- Lower cytokine secretion



Influenza (3–5 p.m.)

- Lower antibody response



SARS-CoV-2 (3–5 p.m.)

- Lower neutralizing antibody levels
- Lower B and T_h cell response
- Lower percentage of monocytes and DCs
- Lower percentage of memory B cells



Fig. 3. Benefits of morning vaccination compared with afternoon/evening vaccination in humans. Immune

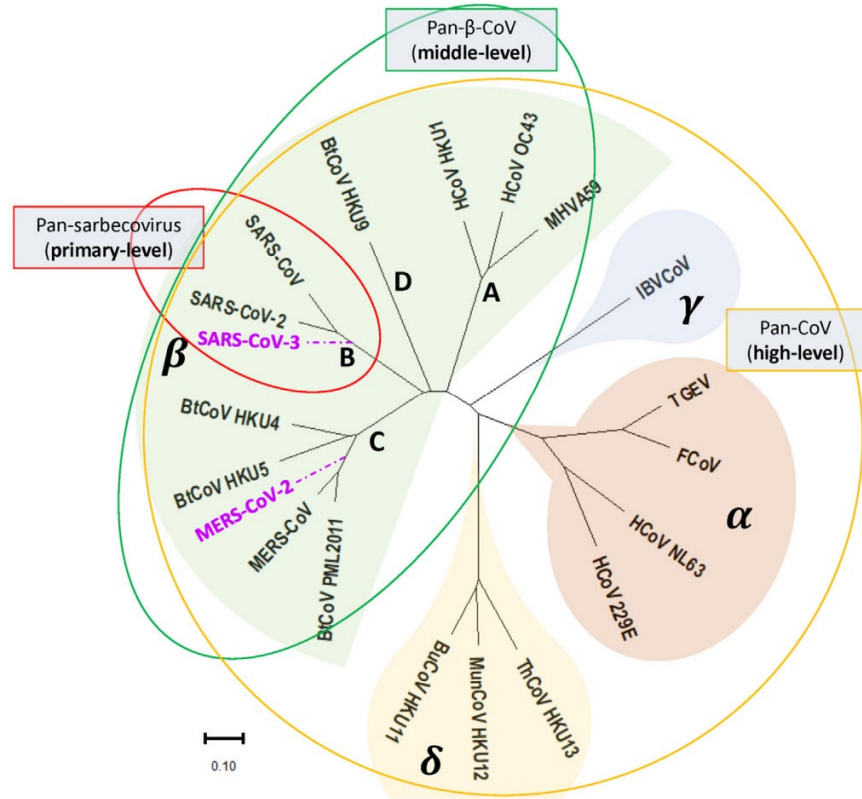
Future vaccines

- Broad coronavirus vaccines

- Three levels:
 - Pan-sarbecovirus
 - Pan-β-CoV
 - Pan CoV
- Several in pre-clinical and clinical phases
 - mRNA based
 - proprietary matrix to present antigens
 - Novel protein-subunit technologies – most promising is COVID-19 jab GBP510, now in phase III testing¹

- Narrow variant specific

- In clinical trials and could be available in the summer
- Challenge is staying ahead of the virus



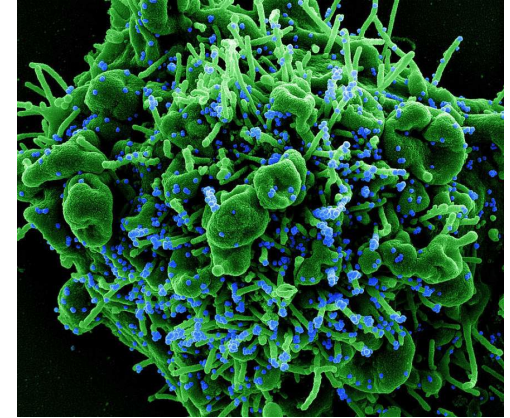
Trends in Immunology

1. [https://www.cell.com/cell/fulltext/S0092-8674\(20\)31450-1?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867420314501%3Fshowall%3Dtrue](https://www.cell.com/cell/fulltext/S0092-8674(20)31450-1?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0092867420314501%3Fshowall%3Dtrue)

New Therapies for Hospitalized Patients

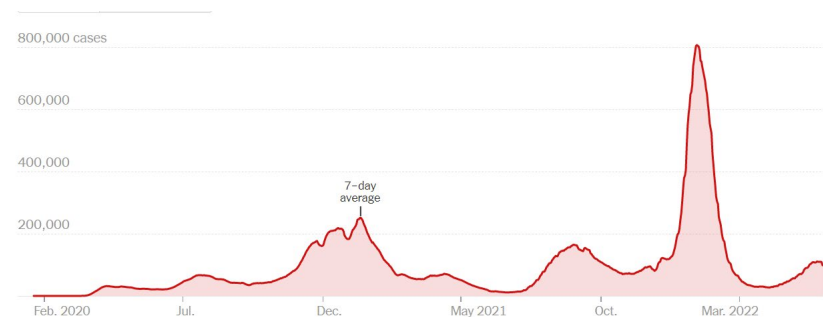
- Infliximab or abatacept – drugs widely used to treat certain autoimmune diseases
- Infleximab - The 518 participants receiving infliximab had a death rate of 10.0%, compared to 14.5% for the 519 participants receiving placebo, resulting in 40.5% lower adjusted odds of dying.
- Abatacept - The 509 participants receiving abatacept had a death rate of 11.0%, compared to 15.0% for the 513 participants receiving placebo, resulting in 37.4% lower adjusted odds of dying

When given in addition to standard of care treatments (remdesivir and dexamethasone) infliximab and abatacept each offered a substantial reduction in mortality



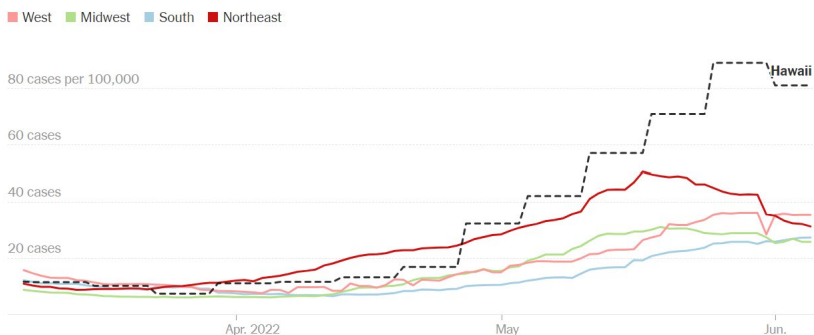
<https://www.nih.gov/news-events/news-releases/immune-modulator-drugs-improved-survival-people-hospitalized-covid-19>

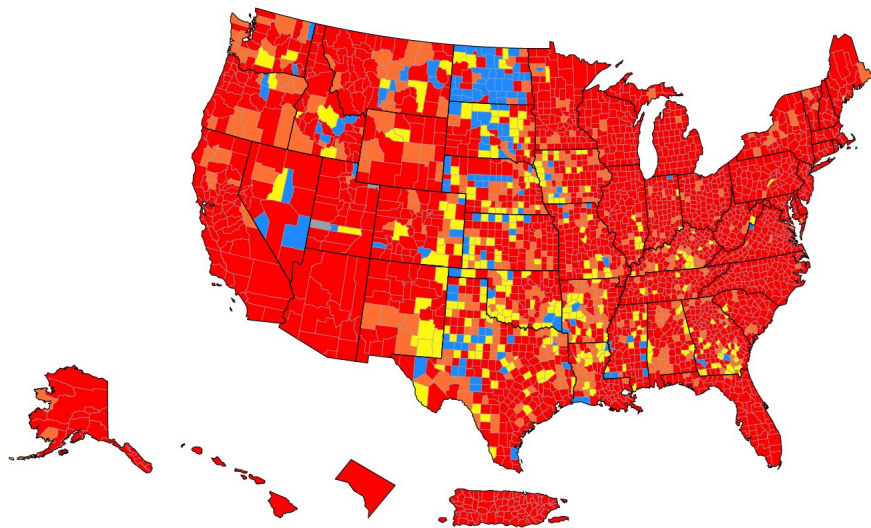
Where are we now?



	DAILY AVG. ON JUN. 5	14-DAY CHANGE
Cases	100,982	-7%
Test positivity	13%	—
Hospitalized	28,970	+16%
In I.C.U.s	3,080	+14%
Deaths	267	-14%

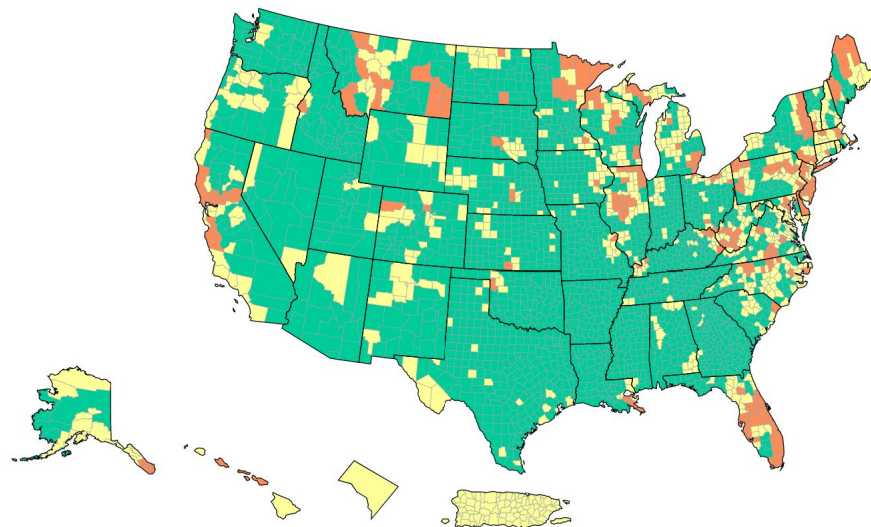
- More than 100,000 cases are currently announced each day but many cases go uncounted
- Cases are increasing in more than 50% of all states, but there are signs of improvement in the Northeast and Midwest
- Hospitalizations have also begun to decline in much of the Northeast, though they remain on the rise nationally.
- The US recently surpassed 1 million total COVID deaths, but deaths remain at some of their lowest levels of the pandemic





Community Transmission in US by County

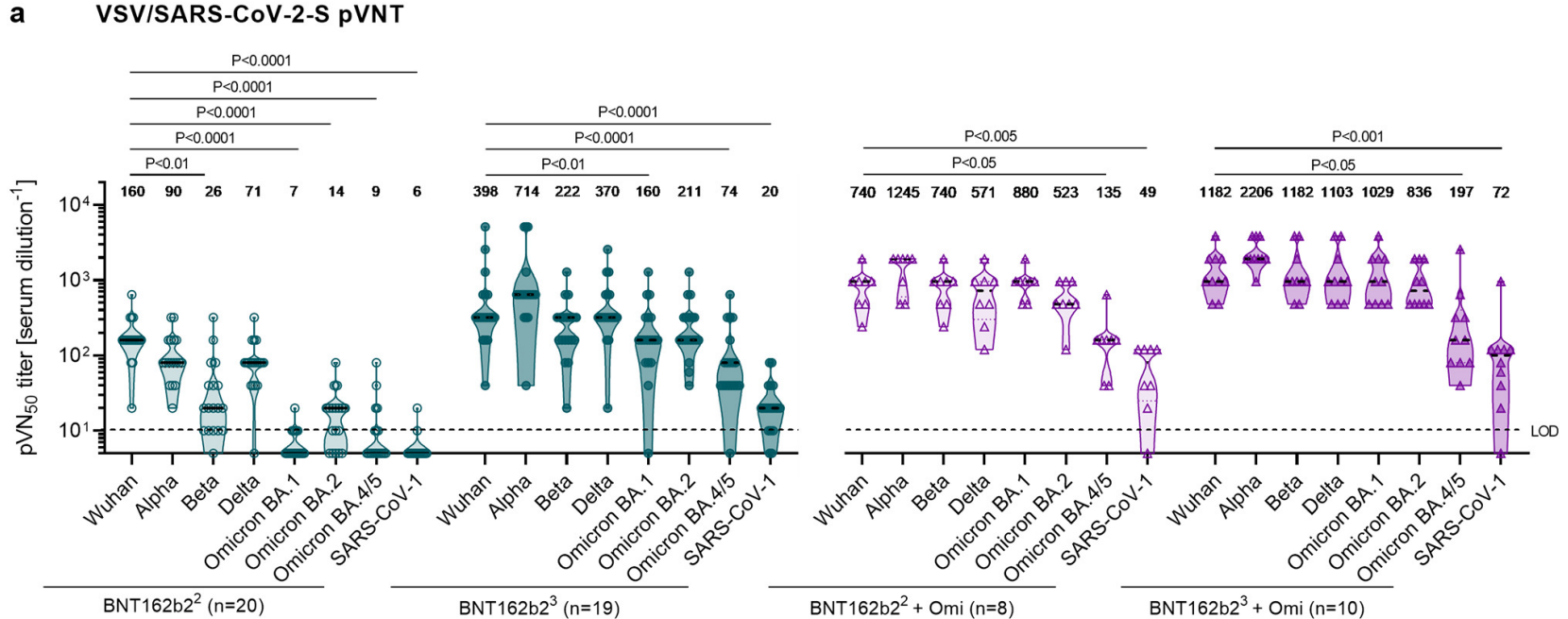
	Total	Percent	% Change
High	2390	74.18%	7.45%
Substantial	405	12.57%	- 3.1%
Moderate	273	8.47%	- 3.72%
Low	152	4.72%	- 0.62%



COVID-19 Community Levels in US by County

	Total	Percent	% Change
High	241	7.48%	- 0.28%
Medium	736	22.83%	2.1%
Low	2247	69.7%	- 1.82%

Omicron sub-variants BA4 and BA5



<https://www.science.org/doi/10.1126/sciimmunol.abg2427>

What does this mean?

- Omicron BA.1 breakthrough infection in BNT162b2-vaccinated individuals resulted in strong neutralizing activity against Omicron BA.1, BA.2 and previous SARS-CoV-2 VOCs, but not against the Omicron sublineages BA.4 and BA.5
- BA.1 breakthrough infection induced a robust recall response, primarily expanding B_{MEM} cells against epitopes shared broadly amongst variants, rather than inducing BA.1-specific B cells
- While selective amplification of B_{MEM} cells recognizing shared epitopes allows for effective neutralization of most variants that evade previously established immunity, susceptibility to escape by variants that acquire alterations at new spike protein sites may be increased
- CDC estimate 6.1% of variants are BA.1, BA.3, BA.4 and BA.5

What does it mean?

- People need at least one booster and seriously consider a second booster if eligible and >6 months since last booster
- Vaccinating children will help reduce spread
- Continue to wear a KN95, KR94 or N95 mask in higher risk situations
- Test if you have been exposed (3-5 days after exposure)
- Test if you have symptoms – if initially negative don't assume you do not have COVID – take another test 2-3 days later
- If you have had paxlovid and symptoms return after a week or so – assume you might be positive and retest with a rapid antigen test



Questions

Upcoming NEBGH virtual events:

- **June 13** – Monday COVID-19 Update w/ Dr. Mark
- **June 16** – Benefits Leadership for a Changing World: Accept the Challenge!
- **July 20** – Social Determinants of Health and Your Employees: What You Can Do to Help