

COVID-19 Vaccines

There are still many unknowns regarding COVID-19 vaccines. In clinical trials of both the Pfizer and Moderna mRNA vaccines, as well as the Johnson and Johnson- Janssen non-replicating viral vectored COVID-19 vaccine, assessments were not conducted to find out whether these vaccines would prevent infection with and transmission of the SARS-CoV-2 virus but rather how well they could prevent or minimize symptoms of COVID-19 disease.^{1 2} There is no evidence to suggest the vaccines will have any effect in terms of protecting people from getting the virus or spreading it.³

Durability of COVID-19 Vaccine-Acquired Immunity

While clinical trials report these vaccines to be highly effective at reducing symptomatic cases, we have no data on how long vaccine-acquired immunity persists. Breakthrough cases of COVID-19 have been reported in fully vaccinated individuals, resulting in hospitalizations and deaths.⁴

New variants of COVID-19 continue to emerge, including the UK, South African, Brazilian, Southern California, New York and Indian variants.^{5 6 7 8} Vaccine makers are racing to update their COVID-19 vaccines because studies are indicating that the current vaccines aren't capable of offering protection against all of these emerging variants.⁹ This may mean that in addition to the COVID-19 vaccines currently in use, recommendations will also be made for one or more additional vaccine doses for every new variant of concern.

Both Moderna¹⁰ and Pfizer-BioNTech¹¹ have already outlined plans to start testing the use of a third vaccine dose, to be administered between 6 and 12 months after receipt of the first two doses. While the J&J/ Janssen Pharmaceuticals COVID-19 vaccine is administered as a single dose, company officials are testing the use of a booster dose of the vaccine.¹²

¹ Doshi P. Peter Doshi: Pfizer and Moderna's "95% effective" vaccines—we need more details and the raw data *The BMJ Opinion* Jan. 4, 2021. (<https://tinyurl.com/6nc56uh4>)

² Doshi P. Will covid-19 vaccines save lives? Current trials aren't designed to tell us. *BMJ*. 2020 Oct 21;371:m4037. (<https://www.bmj.com/content/371/bmj.m4037>)

³ FDA Pfizer-BioNTech COVID-19 Vaccine Frequently Asked Questions May 10, 2021. (<https://tinyurl.com/u4m9jb34>)

⁴ CDC. COVID-19 Vaccine Breakthrough Case Investigation and Reporting Apr. 30, 2021. (<https://tinyurl.com/4re2recv>)

⁵ CDC Science Brief: Emerging SARS-CoV-2 Variants Jan. 28, 2021. (<https://tinyurl.com/yhse7m7a>)

⁶ Zhang W, Davis BD et al. Emergence of a Novel SARS-CoV-2 Variant in Southern California. *JAMA*. Published online February 11, 2021. (<https://tinyurl.com/573k3zua>)

⁷ Rettner, R. New coronavirus variant in NYC has vaccine-evading mutation *LiveScience* Feb. 25, 2021. (<https://tinyurl.com/3vx99kcd>)

⁸ Dillon N. Highly contagious COVID B.1.617 variant first identified in India re-classified as 'global concern,' WHO says. *New York Daily News* May 10, 2021. (<https://tinyurl.com/yp7yhjpe>)

⁹ Mascola JR, Graham BS, Fauci AS. SARS-CoV-2 Viral Variants—Tackling a Moving Target. *JAMA*. Published online February 11, 2021. (<https://tinyurl.com/ysvn23b6>)

¹⁰ Moderna Moderna Announces it has Shipped Variant-Specific Vaccine Candidate, mRNA-1273.351, to NIH for Clinical Study *Press Release* Feb. 24, 2021. (<https://tinyurl.com/3s5ryj3i>)

¹¹ Pfizer PFIZER AND BIONTECH INITIATE A STUDY AS PART OF BROAD DEVELOPMENT PLAN TO EVALUATE COVID-19 BOOSTER AND NEW VACCINE VARIANTS Feb 25, 2021. (<https://tinyurl.com/5cmkby9e>)

¹² Johnson and Johnson Johnson & Johnson Initiates Second Global Phase 3 Clinical Trial of its Janssen COVID-19 Vaccine Candidate. Nov 15, 2020. (<https://tinyurl.com/4n6un8aw>)