

# Scientific Studies of Effectiveness and Safety of COVID-19 mRNA Vaccines

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Here is a report of the analysis of 68 reports of research to evaluate the effectiveness of the vaccines for preventing infection and deaths from COVID-19. Each of the studies that were included in this analysis are referenced so each can be examined to determine how accurately this analysis represents those studies.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9917454/>

Wu N, Joyal-Desmarais K, Ribeiro PAB, Vieira AM, Stojanovic J, Sanuade C, Yip D, Bacon SL. Long-term effectiveness of COVID-19 vaccines against infections, hospitalisations, and mortality in adults: findings from a rapid living systematic evidence synthesis and meta-analysis up to December, 2022. *Lancet Respir Med.* 2023 May;11(5):439-452. doi: 10.1016/S2213-2600(23)00015-2. Epub 2023 Feb 10. PMID: 36780914; PMCID: PMC9917454.

Note that this analysis indicates that there is a high level of protection soon after vaccination and it declines over time so that booster vaccinations are warranted.

This study found that mRNA vaccines provided good protection from the worst effects of COVID-19 but they also found that protection declined with time after vaccination so booster vaccination is warranted.

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2802473>

Link-Gelles R, Levy ME, Natarajan K, et al. Estimation of COVID-19 mRNA Vaccine Effectiveness and COVID-19 Illness and Severity by Vaccination Status During Omicron BA.4 and BA.5 Sublineage Periods. *JAMA Netw Open.* 2023;6(3):e232598. doi:10.1001/jamanetworkopen.2023.2598

The following study involved giving two doses of either mRNA vaccine (BNT162b2) or placebo to a total of 43,548 individuals who did not know whether they were getting the vaccine or placebo, nor did the medical staff who were interacting with these individuals. "There were 8 cases of Covid-19 with onset at least 7 days after the second dose among participants assigned to receive BNT162b2 and 162 cases among those assigned to placebo" corresponding to 95% effectiveness. The adverse events for those receiving the vaccine were very similar to those receiving the placebo so there was no indication that the vaccine caused any severe adverse effects. Adverse effects observed included short-term, mild-to-moderate pain at the injection site, fatigue, and headache. This was published in the peer-reviewed *New England Journal of Medicine*, one of the most highly respected medical research journals.

<https://www.nejm.org/doi/full/10.1056/NEJMoa2034577>

Polack, F. P., S. J. Thomas, N. Kitchin, et al. (2020). "Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine." *New England Journal of Medicine* 383(27): 2603-2615. doi:10.1056/NEJMoa2034577

The document linked below is a table of the more than 160 scientific studies published in peer-reviewed scientific journals. These studies show a very high level of effectiveness and safety of these vaccines.

[https://view-hub.org/sites/default/files/2021-11/COVID19%20Vaccine%20Effectiveness%20Transmission%20Impact%20Studies%20-%20Summary%20Tables\\_20211111.pdf](https://view-hub.org/sites/default/files/2021-11/COVID19%20Vaccine%20Effectiveness%20Transmission%20Impact%20Studies%20-%20Summary%20Tables_20211111.pdf)

#### Some additional references

Debes, Amanda K., Shaoming Xiao, Elizabeth Colantuoni, Emily R. Egbert, Patrizio Caturegli, Avinash Gadala, and Aaron M. Milstone. 2021. 'Association of Vaccine Type and Prior SARS-CoV-2 Infection With Symptoms and Antibody Measurements Following Vaccination Among Health Care Workers', *JAMA Internal Medicine*, 181: 1660-62.

Patalon, T., S. Gazit, V. E. Pitzer, O. Prunas, J. L. Warren and D. M. Weinberger (2021). "Odds of Testing Positive for SARS-CoV-2 Following Receipt of 3 vs 2 Doses of the BNT162b2 mRNA Vaccine." *JAMA Internal Medicine*. Published online November 30, 2021. <https://doi.org/10.1001/jamainternmed.2021.7382>

Guduguntla, V. and M. H. Katz (2021). "COVID-19 Messenger RNA Vaccination and Myocarditis—A Rare and Mostly Mild Adverse Effect." *JAMA Internal Medicine* **181**(12): 1560-1560.

The following article reports research that found that deaths that are not due to COVID are no higher or even lower for those who were vaccinated than for those who were not vaccinated which shows that vaccination does not increase the risk of death from adverse health effects of the vaccine.

Xu S, Huang R, Sy LS, et al. COVID-19 Vaccination and Non-COVID-19 Mortality Risk — Seven Integrated Health Care Organizations, United States, December 14, 2020–July 31, 2021. *MMWR Morb Mortal Wkly Rep* 2021;70:1520–1524.  
DOI: <http://dx.doi.org/10.15585/mmwr.mm7043e2>