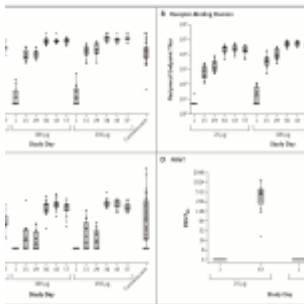


SARS-CoV-2 mRNA-1273 vaccine shows signs of potential efficacy



mRNA-1273 vaccine is a [novel lipid nanoparticle \(LNP\)-encapsulated mRNA-based vaccine that encodes for a full-length, prefusion stabilized spike \(S\) protein of SARS-CoV-2](#) COVID-19 vaccine candidate co-developed by Moderna and Vaccine Research Centre based at the US-National Institutes of Health. On the 16th of November, Moderna released a press statement stating that "[NIH-appointed Data Safety Monitoring Board \(DSMB\) for the Phase 3 study of mRNA-1273 has informed Moderna that the trial has met the statistical criteria pre-specified in the study protocol for efficacy, with a vaccine efficacy of 94.5% \(\$p < 0.0001\$ \).](#) " Interim analysis on 95 cases [90 (placebo group) and 5 (mRNA-1273 group)] of which 11 were severe cases all from the placebo group.

What immunogenicity evidence do we have for the vaccine thus far? Pre-clinical studies have demonstrated safety and immunogenicity of the vaccine in mice and non-human primates ([Corbett et al., 2020](#); [Corbett et al., 2020](#)). NHP pre-clinical studies showed that vaccination with 100ug compared with 10ug dose resulted in superior humeral and cellular (Th1 and Tfh) immunity. Further vaccine-induced immunity which prevented the acquisition of SARS-Cov-2 after challenging (n=7/8).

Preliminary report of their Phase 1 Clinical trial demonstrated that vaccination with mRNA-1273 did not result in

severe side-effects, however, the frequency of side effects correlated with vaccine antigen concentration ([Jackson et al., 2020](#)). Vaccination induced rapid seroconversion, within 15 days of the first vaccination dose and induced robust neutralising antibody titres and spike-protein-specific [CD4](#) Th1 cells responses. Further, they also showed that the vaccine is safe and immunogenic in older (>55 years old) adults inducing similar magnitude of immunity as in younger adults ([Anderson et al., 2020](#)).

[Moderna also announced that the vaccine has a longer-shelf than previously reported and can remain stable for up to 30 days at standard refrigerator temperatures of 2° to 8°C.](#) This is good news as many low resourced clinical settings may not have access to -20°C freezers which was the recommended (> 7 days) storage temperature.

Press Release: [Moderna's COVID-19 Vaccine Candidate Meets its Primary Efficacy Endpoint in the First Interim Analysis of the Phase 3 COVE Study](#)

Corbett et al., 2020. [Evaluation of the mRNA-1273 Vaccine against SARS-CoV-2 in Nonhuman Primates](#). NEJM

Also read our other articles about mRNA-1273:

- [Safety and immunogenicity of the SARS-CoV-2 mRNA-1273 vaccine candidate in older age.](#)
- [NIH COVID-19 lecture on SARS-CoV-2 mRNA vaccine](#)
- [mRNA Vaccine against SARS-CoV-2 induces robust Ab responses](#)
- [Potential SARS-CoV-2 & COVID-19 Vaccines](#)