

# About COVID (SARS-CoV-2) Vaccine

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A COVID-19 vaccine is intended to provide acquired immunity against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus causing coronavirus disease (COVID-19). Prior to the COVID-19 pandemic, to develop a vaccine against coronavirus diseases like SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East respiratory syndrome) established knowledge about the structure and function of coronaviruses; this enabled accelerated the development of numerous vaccine technologies during 2020.

As of February 2021, 66 vaccine candidates are in clinical research, 17 are in Phase I trials, 23 are in Phase I-II trials, 6 are in Phase II trials, and 20 are in Phase III trials. Trials for other four candidates were terminated. In Phase III trials, several COVID-19 vaccines demonstrate efficacy as high as 95% in preventing symptomatic COVID-19 infections. As of February 2021, 11 vaccines are authorized by one national regulatory authority for public use. 2 RNA vaccines (the BioNTech, Moderna and Pfizer vaccine), 4 conventional inactivated vaccines (Covaxin, CoronaVac, BBIBP-CorV, and

CoviVac), 4 viral vector vaccines (Oxford-AstraZeneca vaccine, Sputnik V, the Convidicea, and Johnson & Johnson vaccine), and 1 peptide vaccine (EpiVacCorona).

Several countries have implemented phased distribution plans that prioritize those at highest risk of complications, such as the elderly, and those at high risk of exposure and transmission, such as healthcare workers. According to official reports from national health agencies, as on 20 February 2021, 204.84 million doses of COVID-19 vaccine have been administered worldwide. Pfizer, Moderna, and AstraZeneca predicted the capacity of manufacturing 5.3 billion doses in 2021, which use to vaccinate more than 3 billion people (as the vaccines require two doses for a protective effect). By December 2020, more than 10 billion vaccine doses had been preordered by many countries, half of the doses were purchased by the high-income countries comprising of 14% world's population.

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