

## Feasibility of COVID-19 Vaccines

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In the United States, three COVID-19 vaccines are being planned or in progress in Phase 3 (large-scale) clinical trials, as of December 28, 2020: 1) Novavax's COVID-19 vaccine, AstraZeneca's COVID-19 vaccine and 3) Janssen's COVID-19 vaccine [1]. Presently, the United States Centers for Disease Control and Prevention recommends two COVID-19 vaccines that are authorized in the United States: 1) Pfizer-BioNTech's COVID-19 vaccine and 2) Moderna's COVID-19 vaccine [1].

COVID-19 mRNA vaccines have been studying for decades and the mRNA instructions for human cells to build the unique spike protein into an mRNA vaccine have been designing [1]. A characteristically harmless protein from SARS-CoV-2 that causes COVID-19 that provides human cells instructions is contained in COVID-19 mRNA vaccines [1]. Safety of COVID-19 mRNA vaccines will be carefully assessed [1]. Harmless proteins of SARS-CoV-2 (COVID-19), instead of the entire virus are also the compositions of protein subunit vaccines [1]. A weakened version of live SARS-CoV-2 (COVID-19), a different virus than the one that causes COVID-19 is contained in COVID-19 vector vaccines [1]. This weakened live virus has Genetic material that is inserted in viral particle of the SARS-CoV-2 (COVID-19), called "a viral vector" is contained in this weaken live virus [1]. All but one Phase 3-clinical-trial-COVID-19-vaccines in the United States use two dose-shots, whereas one vaccine only needs one dose-shot [1].

The National Health Service, England recommends COVID-19 vaccines in healthcare workers, social care workers, some individuals with 70 years old and older than 70, individuals with 80 years old and older than 80, some individuals with clinically extreme vulnerability and care-home individuals [2]. Mostly, the side effects of COVID-19 vaccines are mild and should not last longer than one week that include a sore needle-went arm, tired feeling, headache, achy feeling, and felling or being sick [2].

In conclusion, adverse-side effects of these COVID-19 vaccines must be investigated both short-term and long-term, including their impacts on COVID-19 transmissibility and severity. Single dose-shot vaccines must be urgently studied for replacing the two dose-shot vaccines to reduce the frequency of visits.

### Bibliography

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