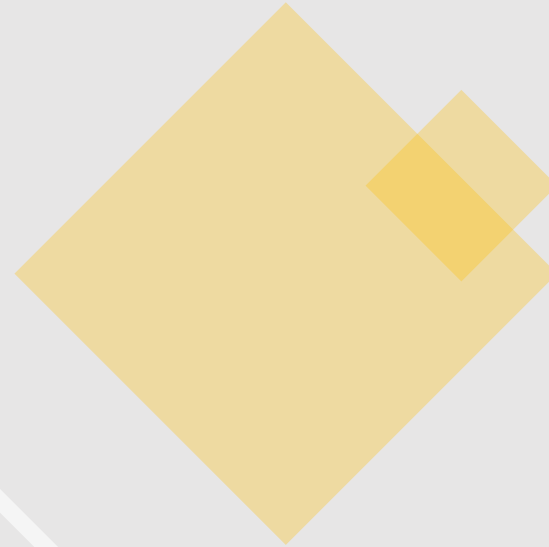


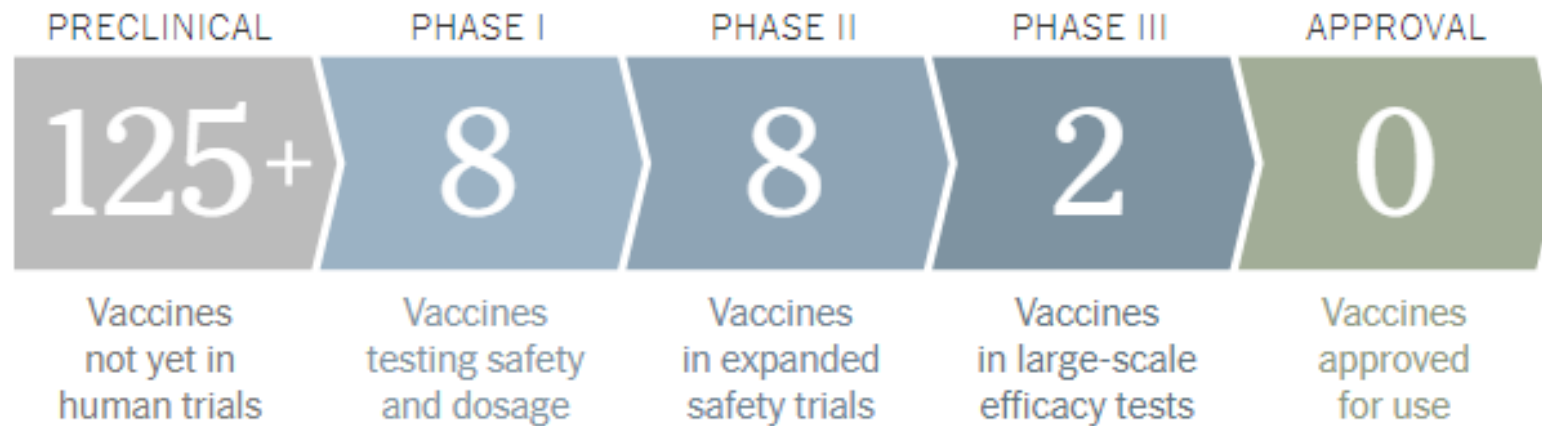
Vaccine Possibilities

Debbie Hogan, RN,
MPH



Coronavirus Vaccine Tracker

By Jonathan Corum, Denise Grady and Carl Zimmer Updated June 17, 2020



Researchers around the world are developing more than 135 vaccines against the coronavirus. Vaccines typically require years of research and testing before reaching the clinic, but scientists are racing to produce a safe and effective vaccine by next year.

Vaccine Research

- Preclinical Trials
- Phase I Safety Trials
- Phase II Expanded Trials
- Phase III Efficacy Trials
- Approval
- Warp Speed
- Combined Phases

The U.S Government's Warp Speed Program have selected 5 vaccine Projects to receive Billions of dollars in federal funding.

<https://nyti.ms/2MHNdRL>

Genetic Vaccines

- Definition –Vaccines that use one or more of COVID 19's own genes to create an immune response.
- Pharmaceutical Companies
 - Moderna
 - Biontech/Pfizer/Fosunpharma
 - Imperia College London/Morningside
 - Inovio
 - CureVac

Viral Vector Vaccines

- Definition – Vaccine that use a virus to deliver coronavirus genes into cells and provoke an immune response.
- Pharmaceutical Companies
 - AstroZeneca/ University of Oxford – chimpanzee adenovirus (ChAdOx1)
 - CanSinoBio – Chinese Company using adenovirus called Ad5.
 - Beth Israel Deaconess Medical Center/ Johnson & Johnson – Adenovirus called Ad26 in Monkeys
 - Massachusetts Eye and Ear/Novartis – Swiss company uses an adeno-associated virus to deliver COVID19 gene fragments into cells.
 - Merck/iavi – Vaccine from vesicular stomatitis viruses, as they did in developing the Ebola vaccine.

Protein Based Vaccines

- Definition – Vaccines that use a coronavirus protein or a protein fragment to provoke an immune response.
- Companies –
 - Novavax
 - Baylor College of Medicine/Texas Children's Hospital
 - University of Pittsburg
 - University of Queensland/CSL/GSK
 - Sanofi/GSK
 - VAXART
 - Clover Biopharmaceuticals/GSK

Whole-Virus Vaccines

- Definition – Vaccines that use a weakened or inactivated version of the coronavirus to provoke and immune response.
- Companies
 - Sinovac
 - Sinopharm
 - Institute of Medical Biology, Chinese Academy of Medical Sciences

Repurposed Vaccines

- Definition – Vaccines already in use for other diseases that may also protect against COVID-19
- Companies
 - Murdoch Children's Research Institute in Australia is testing that Bacillus Calmette-Guerin vaccine developed in the early 1900's to protect against tuberculosis to see if the vaccine partly protects against COVID 19.