

VACCINES

AN INFOGRAPHIC BREAKDOWN

WHAT IS A VACCINE?

A vaccine is a biological agent that induces an immune response against a target antigen from an infectious disease-causing pathogen. It must be:

SAFE

A vaccine must not give the patient new health complications.

SPECIFIC

Vaccines allow the induction of a highly targeted response.

STRONG

Patients are provided with robust and long-lasting immunity.

WHAT IS VACCINE DEVELOPMENT LIKE?

From bench to bedside, the entire process may take multiple years. Shortening the development time often comes at the expense of patient safety.

RESEARCH

Step I: Understand novel virus structure, route of infection, and life-cycle.

Step II: Develop potential vaccines that will induce immunity against specific parts of the virus.

PRE-CLINICAL

Assess toxicity and efficacy of the vaccine in different animal models.

CLINICAL

Phase I: Small scale; administered to healthy adults to assess safety and possible adverse effects.

Phase II: Mid-scale; assesses vaccine preparation, dosage, and optimal method of administration.

Phase III: Large-scale; assesses safety, efficacy, and population-level effects.

WHAT DOES IT MEAN FOR COVID-19?

INSIGHT

COVID-19 is a **novel** coronavirus, which means limited knowledge about how it causes disease.

TIME

The current estimate that a COVID-19 vaccine will be available in **18 months** is a **highly optimistic** prediction.

SAFETY

It is possible that a rushed vaccine development plan may come at the expense of **efficacy and patient safety**.

EFFORTS

Collaborative efforts of research scientists in both the public and private sector are promoting **accelerated vaccine design and development**.

MEANWHILE, WHAT CAN WE DO?



Being **informed** of COVID-19 specific research, preventative measures, and government policies



Actively partaking in **physical distancing**, and increasing **sanitization** such as hand-washing to decrease infections.

