A closer look at COVID vaccine safety

Is the COVID-19 vaccine safe?

All vaccines are strictly regulated by the U.S. Food and Drug Administration (FDA), and approved vaccines must meet the highest safety standards and have few side effects. The top two COVID vaccine candidates in the US (Pfizer and Moderna) have both successfully completed trials and report over 90% efficacy and very few side effects.

Before a vaccine is submitted to the FDA for approval, it must go through a set of very rigorous trials to ensure efficacy (effectiveness at preventing infection) and safety. To make sure the COVID vaccines are effective for adults of all ages, races, and genders, over 40,000 people—including people with underlying health conditions—received either the Pfizer or Moderna vaccine during clinical trials. Vaccine trials also included kids over the age of 12 but is not designed for children 11 and under.

As of Fall 2020, fewer than 10% of participants experienced side effects. The most common side effect is soreness around the injection site, which is typical for most vaccines. Some people also experienced short-term fever, fatigue, joint pain, and headaches.

How was the COVID-19 vaccine developed so quickly?

The scientists working on the COVID-19 vaccine did not start at square one. A lot of the groundwork was already laid during the search for Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) vaccines. Researchers also benefited from a budget of $4.5 billion from the US government, which gave vaccine manufacturers all the resources they needed to accelerate their process. Once trials are complete, FDA approval typically takes a full year or more, but both Pfizer and Moderna have applied for Emergency Use Authorization to make the vaccine available as soon as possible. This doesn't mean any steps have been skipped—only that everyone has agreed to move the administrative details along more quickly than usual.

How is the vaccine monitored after it is approved?

The Virginia Department of Health and the Richmond and Henrico Health Districts have the safety of the Commonwealth and its citizens as their number one priority. After the vaccines are granted approval, the CDC and FDA will continuously monitor them for safety and side effects. If the CDC and FDA identify a problem with a vaccine, the agencies inform health officials (like the Richmond and Henrico Health Districts), health care providers, and the public. The Virginia Department of Health participates in the Vaccine Adverse Event Reporting System (VAERS), an early warning system that helps monitor potential problems following vaccination. Anyone can report possible vaccine side effects to VAERS. Additionally, people who receive the vaccine will be encouraged to enroll in the CDC's V-SAFE program, a smartphone-based after-vaccination health checker.

Once the COVID vaccines are approved and licensed, researchers also complete an additional quality control trial phase to study and test the vaccine and improve efficacy and reduce side effects if possible.