

What you need to know about the search for a COVID vaccine

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(HealthDay)—Forty-five potential vaccines for COVID-19 are being tested in human trials and many more are being tested in animals. Researchers are using several approaches to trigger an immune response against SARS-CoV-2, the virus that causes COVID-19.

The most common types of vaccines contain a virus that has been engineered with coronavirus genes to provoke an [immune response](#), according to Dr. Edward Jones-Lopez, an infectious disease expert at Keck Medicine of University of Southern California.

Here's what you need to know, Jones-Lopez said in a Keck news release.

After lab and [animal testing](#), vaccines enter a phase 1 clinical trial, where a small group of people (10-50) gets the vaccine to see the right dose, side effects and safety.

Phase 2 expands it to hundreds of people to test a vaccine for safety and effectiveness.

Phase 3 trials expand to tens of thousands of people to see if the vaccine protects against the infection or severe disease, and to continue to assess safety in a larger population.

The U.S. Food and Drug Administration approves a vaccine only after a successful phase 3 trial. In a phase 3 trial, people are randomly selected to receive the vaccine or a placebo. Researchers then compare how many in each group become infected.

The FDA says that a vaccine must be at least 50% effective in preventing COVID-19 or protecting against serious illness if someone does get infected. One or more vaccines may become available three to six months after completion of a trial. That could be as soon as early next year.

Jones-Lopez said people may need to be vaccinated each year, just as for the flu, but we don't know yet.

How is the vaccine being developed so quickly?

"We are benefiting from previous work done over the last decades to find safe, effective vaccines faster," Jones-Lopez said. Despite the speed of development, scientists are adhering to same [safety standards](#) followed for other approved vaccines, he said.

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