How do COVID-19 vaccines work?

All three COVID-19 vaccines teach the body how to recognize a part of the COVID-19 virus. The COVID-19 virus has a piece on it called the spike protein. The body takes in the vaccine and safely learns about this spike protein. Once the body learns about this spike protein, it can later remove the virus from the body.

COVID-19 Vaccine Ingredients

Vaccine ingredients are simple. They are meant to do specific tasks. Scientists only add just enough ingredients for the vaccine to do its job.

General list of the COVID-19 vaccine ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>The core piece</td>
<td>Provides the body with information about a virus.</td>
</tr>
<tr>
<td>Preservatives &amp; Stabilizers</td>
<td>Ensures that the vaccine ingredients do not break apart when being delivered or stored.</td>
</tr>
<tr>
<td>Fats, salts, sugars</td>
<td>Helps the body take in the vaccine.</td>
</tr>
<tr>
<td>Adjuvants</td>
<td>Helps boost the body's response to be protective against a virus.</td>
</tr>
<tr>
<td>Viral vector (J&amp;J only)</td>
<td>A harmless virus that delivers instructions to the body. These instructions tell the body how to protect against COVID-19 viruses.</td>
</tr>
</tbody>
</table>

How are COVID-19 Vaccines approved?

In the United States, vaccines are regulated by the Food and Drug Administration (FDA). The FDA makes sure that everything we use is safe. This includes vaccines.

Vaccines are made by scientists. They make sure vaccines are safe and effective. This is done by gathering information about it. If the vaccine is safe, then the vaccine continues to be studied. Scientists then share information to the FDA when enough is collected.

For more information, please visit:

CDC: https://bit.ly/3pbs72i
FDA: https://bit.ly/3veY7Uc
Fresno County DPH: https://bit.ly/3mWeOQB
Scientists can request their vaccine to be used for the FDA’s Emergency Use Authorization (EUA). An advisory group reviews the safety and effectiveness data before being given EUA status. When something is given EUA status:

- The FDA feels the product is safe enough for the public
- The product can prevent life-threatening diseases or conditions

The COVID-19 vaccines that have EUA status are currently the safest and most effective against severe COVID-19 illnesses.

For vaccines, to get full FDA approval, it requires manufacturers to provide more data as the trials go on. Many studies continue even after a vaccine is given EUA status. Full FDA approval is given once there is plenty of information about safety and effectiveness.

**Vaccine Boosters**

The body makes antibodies to help protect ourselves from germs, like viruses. For COVID-19, antibodies are made in two ways. One way is through natural infection of the virus. Another way is through vaccinations. Vaccinations are usually the safest and most effective way to protect the body from COVID-19, and from severe infection from contracting the virus. Sometimes these protections fade away. Other times, people need another vaccine shot to be fully protected against a virus. Both are reasons why some vaccines have booster shots.

**COVID-19 booster shots are available for the following groups:**

- Those 65 years and older, or living in a long-term care facility
- Those ages 18 years and older with underlying conditions
- Those ages 18 years and older who are considered at high-risk for COVID-19 transmission and infections

For more information, please visit:
- CDC: https://bit.ly/3pbs72i
- FDA: https://bit.ly/3veY7Uc
- Fresno County DPH: https://bit.ly/3mWeOQB