Community Update on Current and Future COVID-19 Vaccine Trials

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Outline

1. COVID-19 Vaccines in development
2. Addressing common questions about COVID-19 vaccines
3. Discussion
Disclaimer
The information presented here is current as of April 2021

Conflicts of Interest
I have no conflicts to declare
Types of COVID-19 Vaccines:

- **Protein-based vaccines** show the body a man-made protein copied from the virus, in this case, the red spike protein on the surface. The immune system learns to recognize the protein and responds by creating antibodies and fighter cells to fight the virus. This is how the vaccines by **Novavax** and **Sanofi** are designed.

- **mRNA vaccines** give the body the recipe to make the virus' protein by itself by delivering the genetic code of the spike protein to human muscle cells. The muscle cells make the protein and the immune system learns to recognize it and fight back.
  - Pfizer
  - Moderna

- **Viral Vector Vaccines** use another virus, such as common cold viruses, to carry the genetic code of the coronavirus spike protein to cells that can begin to make the protein. These viruses are changed so that they cannot cause colds in people. The body recognizes the protein as foreign and creates a strong immune response.
  - Oxford/AstraZeneca
  - Johnson and Johnson

Randhawa 06APR2021
## COVID-19 Vaccines in Development

<table>
<thead>
<tr>
<th>Vaccine Developer</th>
<th>Vaccine Type</th>
<th>Clinical Trial Status</th>
<th>FDA Emergency Use Authorization</th>
<th>FDA Licensure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech</td>
<td>mRNA (2 dose)</td>
<td>Phase 3</td>
<td>Authorized</td>
<td>Spring-Summer 2021*</td>
</tr>
<tr>
<td>Moderna</td>
<td>mRNA (2 dose)</td>
<td>Phase 3</td>
<td>Authorized</td>
<td>Spring-Summer 2021*</td>
</tr>
<tr>
<td>Johnson &amp; Johnson (Janssen)</td>
<td>Viral Vector (1 dose)</td>
<td>Phase 3</td>
<td>Authorized</td>
<td>Summer 2021*</td>
</tr>
<tr>
<td></td>
<td>Viral Vector (2 dose)</td>
<td>Phase 3</td>
<td>Late 2021*</td>
<td>Late 2021*</td>
</tr>
<tr>
<td>Oxford-AstraZeneca</td>
<td>Viral Vector (2 dose)</td>
<td>Phase 3</td>
<td>Spring 2021*</td>
<td>Summer-Fall 2021*</td>
</tr>
<tr>
<td>Novavax</td>
<td>Protein (2 dose)</td>
<td>Phase 3</td>
<td>Spring 2021*</td>
<td>Summer-Fall 2021*</td>
</tr>
<tr>
<td>Sanofi</td>
<td>Protein (2 dose)</td>
<td>Phase 2</td>
<td>TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

*Estimate based on current info

# Efficacy of Authorized COVID-19 Vaccines

<table>
<thead>
<tr>
<th>Vaccine Developer</th>
<th>Vaccine Type</th>
<th>Overall Efficacy</th>
<th>Efficacy against COVID-19-related hospitalization and death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pfizer-BioNTech</td>
<td>mRNA (2 dose)</td>
<td>95%</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Moderna</td>
<td>mRNA (2 dose)</td>
<td>94.5%</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Johnson &amp; Johnson (Janssen)</td>
<td>Viral Vector (1 dose)</td>
<td>66.1%</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Oxford-AstraZeneca</td>
<td>Viral Vector (2 dose)</td>
<td>63%</td>
<td>&gt;99%</td>
</tr>
</tbody>
</table>
### Who should get vaccinated & when?

<table>
<thead>
<tr>
<th><strong>Recommended</strong></th>
<th><strong>Personal choice</strong> (upon discussion with medical provider)</th>
<th><strong>Not recommended</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pfizer-BioNTech: ages ≥16 years</td>
<td>• Pregnant</td>
<td>• known history of severe allergic reaction to any ingredients in the vaccine</td>
</tr>
<tr>
<td>• Moderna: ages ≥18 years</td>
<td>• Breastfeeding</td>
<td>• Children under 16 (yet)</td>
</tr>
<tr>
<td>• Janssen: ages ≥18 years</td>
<td>• Immunocompromised</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Autoimmune disease</td>
<td></td>
</tr>
</tbody>
</table>

People who have gotten other vaccines or who have active COVID-19 should wait 2 weeks before getting vaccinated.
Why might some people not want to get vaccinated?

- Very few people are “Anti-vaxxers”
- Vaccine “hesitant”?  
- Many individuals have fair and reasonable questions

- Misinformation
  - Honest mistake
- Disinformation
  - Deliberately misleading
- Hoax
  - Deliberately fabricated falsehood made to masquerade as truth
Addressing common questions about COVID-19 vaccines

Perspective

Addressing Vaccine Hesitancy in BIPOC Communities — Toward Trustworthiness, Partnership, and Reciprocity

Sandra C. Quinn, Ph.D., and Michele P. Andrasik, Ph.D.

March 31, 2021
DOI: 10.1056/NEJMp2103104
These vaccines were made so quickly – aren’t they still experimental?
Did they already test the vaccines on people like me?

- Completed studies enrolled adults of all races/ethnicities
- Study participants included at least 25% of people with common health problems such as high blood pressure, diabetes, HIV, and cancer
- There were no exclusions for diseases or medications, except immunosuppression
- Vaccine studies did not enroll pregnant people

Do these vaccines work for all races/ethnic groups?

New study highlights lack of diversity and inclusion in vaccine clinical trials

These vaccines have the same efficacy across racialized/ethnic groups but we need better representation going forward.

Analysis shows certain racial/ethnic groups and older people aren’t being adequately represented and trial reporting guidelines aren’t being followed.

Will I get sick after vaccination?

- Rare reactions: anaphylaxis/severe allergy
  - Pfizer: 21 cases with 2 million doses
  - Moderna: 10 cases with 4 million doses
  - Janssen: There have been cases of severe allergic reactions

Vaccines are administered at sites with trained medics/clinicians and include an observation period

Common side effects

On the arm where you got the shot:
- Pain
- Redness
- Swelling

Throughout the rest of your body:
- Tiredness
- Headache
- Muscle pain
- Chills
- Fever
- Nausea

To reduce pain and discomfort where you got the shot:
- Apply a clean, cool, wet washcloth over the area.
- Use or exercise your arm.

To reduce discomfort from fever:
- Drink plenty of fluids.
- Dress lightly.

Does mRNA change your DNA?

No. Messenger ribonucleic acid, or mRNA, is not able to alter or modify a person’s genetic makeup (DNA).

- No, it will not give you COVID-19.
- No, it does not affect fertility.
- No, it does not contain microchips, or any other devices.
Is one dose of mRNA vaccine as effective as two doses?

- The best protection happens after the second (booster) dose.
- The first dose starts the immune response, and the second dose boosts it to make higher antibody levels more quickly.
Should I get a vaccine now or “wait and see”?  

- CDC v-safe and VAERS are monitoring safety  
- Some of the newer variant strains are more contagious  
  - Vaccinating quickly is imperative
As infected cells build new coronaviruses, small errors are introduced – **mutations**

- A group of coronaviruses that share the same set of inherited mutations is called a **variant**

- **Variants of Concern**: coronaviruses that appear to be more infectious or cause more severe disease

- UK Variant: Yes
- South Africa Variant: Some loss of efficacy
- Researchers continue to monitor/test efficacy against new variants, including Brazil variant.
- Vaccines still highly effective in preventing severe disease
- The vaccines may not prevent you from getting mild symptoms, but they will prevent severe disease.
What changes once you’ve been vaccinated?

**Fully vaccinated = 2 weeks after **FINAL** dose**

- 2 weeks after second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, or
- 2 weeks after a single-dose vaccine, such as Johnson & Johnson’s Janssen vaccine

**What stays the same:**

- Wear a mask in public & around unvaccinated people
- Avoid large crowds, poorly ventilated spaces, travel
- Monitor for symptoms, especially after exposure

**What changes:**

- May gather indoors with other fully vaccinated people without wearing a mask or physically distancing
- If exposed to someone who has COVID-19, you do not need to self-isolate or get tested unless you have symptoms

Additional Benefits of COVID-19 Vaccines

To the individual
- Reduce the severity of illness
- Prevent infection

To the community
- Reduce transmission
- Healthier communities
Additional FAQs addressed on CoVPN website

https://coronaviruspreventionnetwork.org/clinical-studies-faq/
Resources

• CDC www.cdc.gov/coronavirus/2019-nCoV

• Coronavirus Prevention Network
  • CoVPN Website: www.coronaviruspreventionnetwork.org
  • CoVPN Dropbox: https://www.tinyurl.com/CoVPN-Assets (PW: CoVPN$)
    • Documents, slide sets, short educational videos for sharing, training, etc.
  • Facebook/Instagram: @PreventCOVID19
  • Twitter: @PreventCOVID_19
  • YouTube: PreventCOVID19
#PREVENTCOVIDU Study

• Goal: to learn whether the Moderna COVID-19 vaccine stops the spread of the SARS-CoV-2 virus: both initial infection and transmission in the university.

- Fill out the form
- Refer some friends
- Keep swabbing
- Get your cash
- Drop off on campus
- Repeat (through summer)

• By signing up, you can help answer some of the biggest questions for getting back to life and help rewrite the future.

• For more information: preventcovidu.org
Questions?
COVID-19
Prevention Network

THANK YOU!

WEAR A MASK
STAY 6 FEET APART
AVOID CROWDS
GET A VACCINE