

COVID-19
Prevention Network

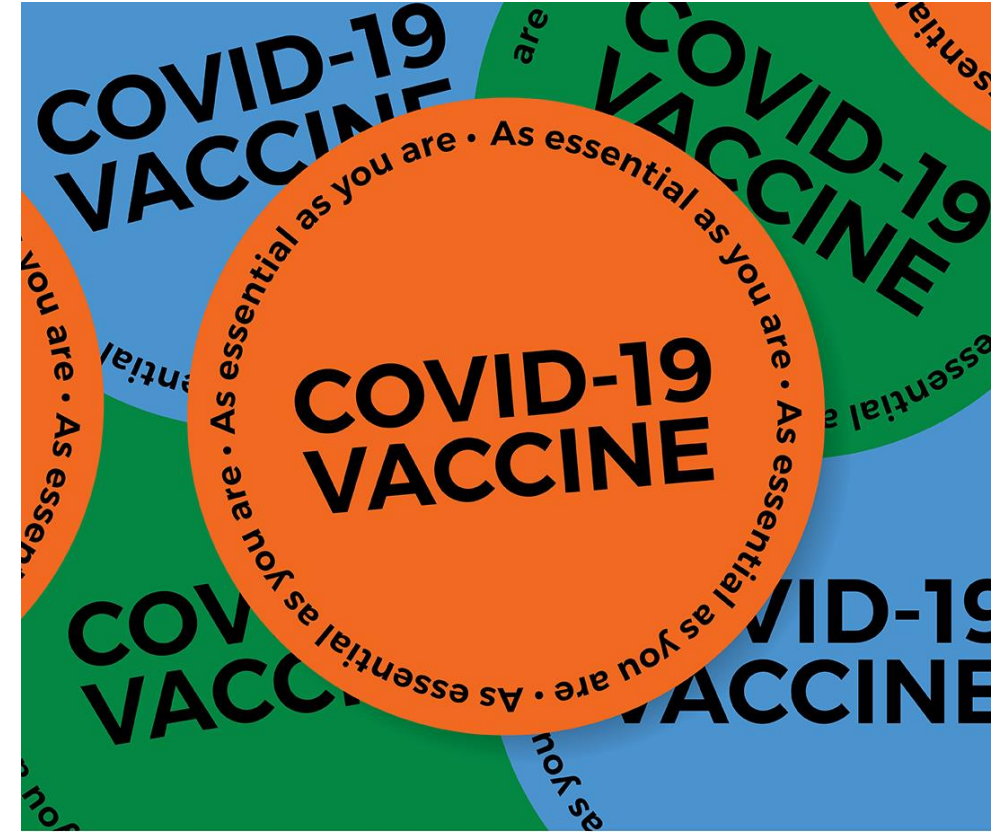
Community Update on Current and Future COVID-19 Vaccine Trials

April Kaur Randhawa, PhD
Coronavirus Prevention Network (CoVPN) | Fred Hutch, Seattle

TAG Seminar | 06-APR-2021

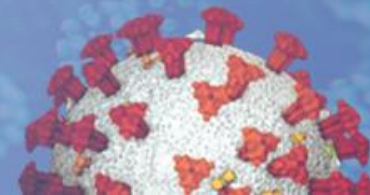
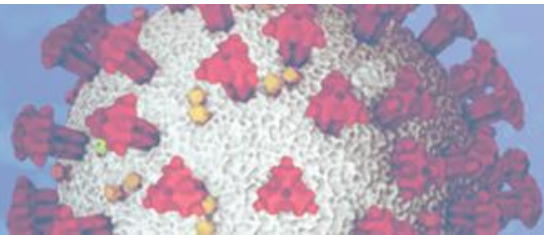
Outline

1. COVID-19 Vaccines in development
2. Addressing common questions about COVID-19 vaccines
3. Discussion



Learn how you can get a COVID-19 vaccine.

www.cdc.gov



Disclaimer

The information presented here is current as of April 2021

Conflicts of Interest

I have no conflicts to declare

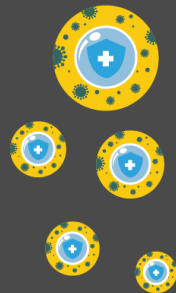
Types of COVID-19 Vaccines

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.



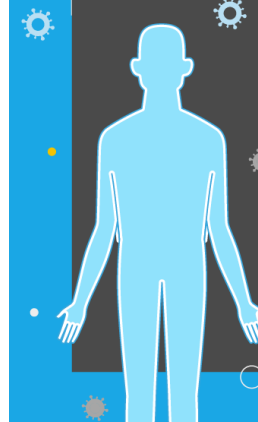
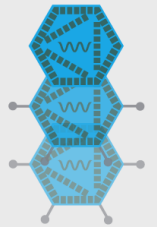
mRNA vaccines give the body the recipe to make the virus' protein by itself by delivering the genetic code of the spike protein to human muscle cells.



The muscle cells make the protein and the immune system learns to recognize it and fight back.

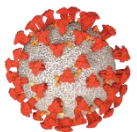
- Pfizer
- Moderna

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.

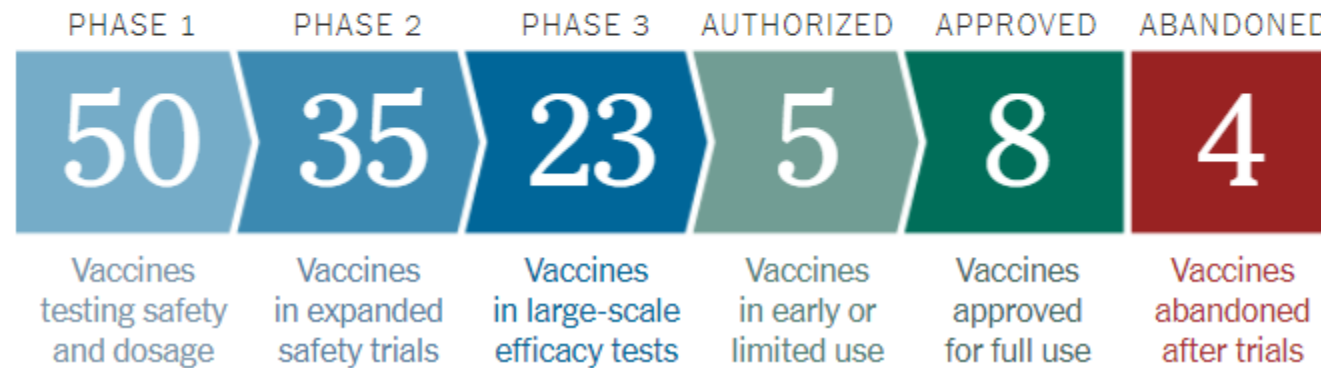
- Oxford/AstraZeneca
- Johnson and Johnson



The New York Times

Coronavirus Vaccine Tracker

By [Carl Zimmer](#), [Jonathan Corum](#) and [Sui-Lee Wee](#) Updated April 5, 2021



<https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>

COVID-19 Vaccines in Development

| Vaccine Developer | Vaccine Type | Clinical Trial Status | FDA Emergency Use Authorization | FDA Licensure |
|-----------------------------|-----------------------|-----------------------|---------------------------------|---------------------|
| Pfizer-BioNTech | mRNA (2 dose) | Phase 3 | Authorized | Spring-Summer 2021* |
| Moderna | mRNA (2 dose) | Phase 3 | Authorized | Spring-Summer 2021* |
| Johnson & Johnson (Janssen) | Viral Vector (1 dose) | Phase 3 | Authorized | Summer 2021* |
| | Viral Vector (2 dose) | Phase 3 | Late 2021* | Late 2021* |
| Oxford-AstraZeneca | Viral Vector (2 dose) | Phase 3 | Spring 2021* | Summer-Fall 2021* |
| Novavax | Protein (2 dose) | Phase 3 | Spring 2021* | Summer-Fall 2021* |
| Sanofi | Protein (2 dose) | Phase 2 | TBD | TBD |

**Estimate based on current info*

Efficacy of Authorized COVID-19 Vaccines

| Vaccine Developer | Vaccine Type | Overall Efficacy | Efficacy against COVID-19-related hospitalization and death |
|-----------------------------|-----------------------|------------------|---|
| Pfizer-BioNTech | mRNA (2 dose) | 95% | >99% |
| Moderna | mRNA (2 dose) | 94.5% | >99% |
| Johnson & Johnson (Janssen) | Viral Vector (1 dose) | 66.1% | >99% |
| Oxford-AstraZeneca | Viral Vector (2 dose) | 63% | >99% |

Who should get vaccinated & when?

Recommended

- Pfizer-BioNTech: ages ≥ 16 years
- Moderna: ages ≥ 18 years
- Janssen: ages ≥ 18 years

Personal choice (upon discussion with medical provider)

- Pregnant
- Breastfeeding
- Immunocompromised
- Autoimmune disease

Not recommended

- known history of severe allergic reaction to any ingredients in the vaccine
- Children under 16 (yet)

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**

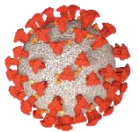
- Honest mistake

- **Disinformation**

- Deliberately misleading

- **Hoax**

- Deliberately fabricated falsehood made to masquerade as truth



Addressing common questions about COVID-19 vaccines

Perspective



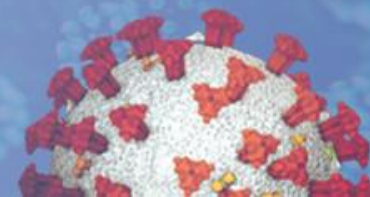
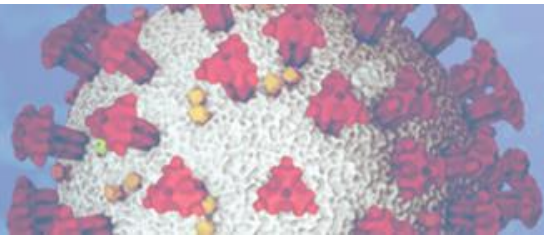
The NEW ENGLAND
JOURNAL of MEDICINE

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

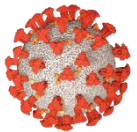
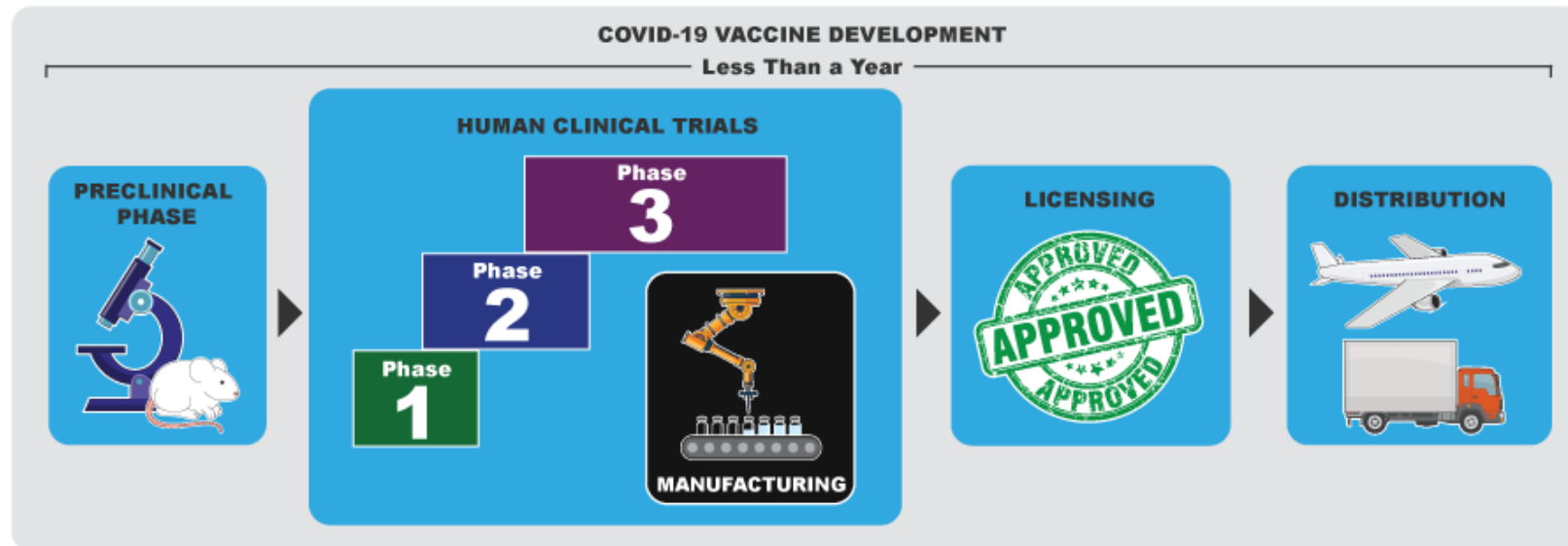
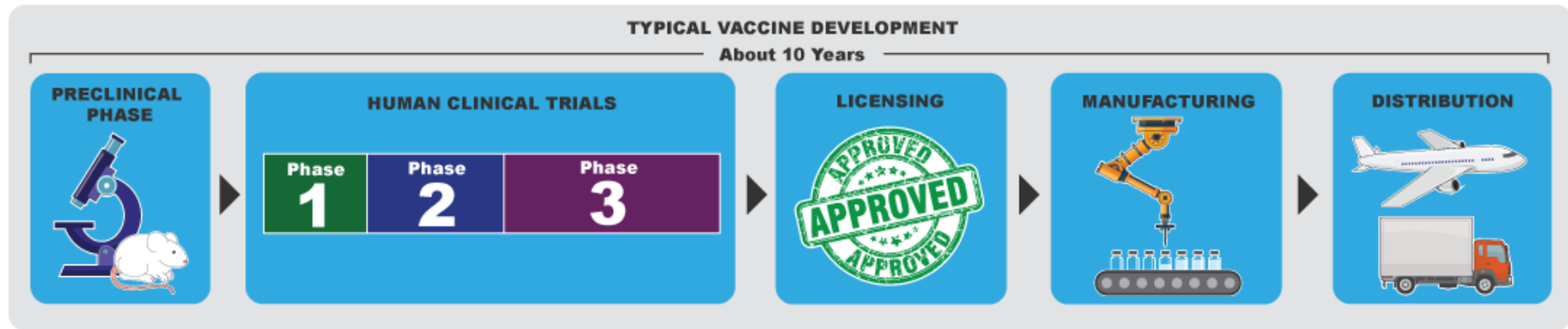
Sandra C. Quinn, Ph.D., and Michele P. Andrasik, Ph.D.

March 31, 2021

DOI: [10.1056/NEJMp2103104](https://doi.org/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?

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

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

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



Anthony Jackson, security coordinator for Fred Hutchinson Cancer Research Center, receives a dose of the new Pfizer-BioNTech COVID-19 vaccine on Jan. 19, 2021, at a new vaccine clinic set up on the Fred Hutch campus.

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

To reduce pain and discomfort where you got the shot



- Apply a clean, cool, wet washcloth over the area.
- Use or exercise your arm.

Throughout the rest of your body:



- Tiredness
- Headache
- Muscle pain
- Chills
- Fever
- Nausea

To reduce discomfort from fever



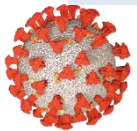
- Drink plenty of fluids.
- Dress lightly.

<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect/after.html>

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.



How mRNA COVID-19 Vaccines Work

Understanding the virus that causes COVID-19.

Coronaviruses, like the one that causes COVID-19, are named for the crown-like spikes on their surface, called **spike proteins**. These **spike proteins** are ideal targets for vaccines.

What is mRNA?

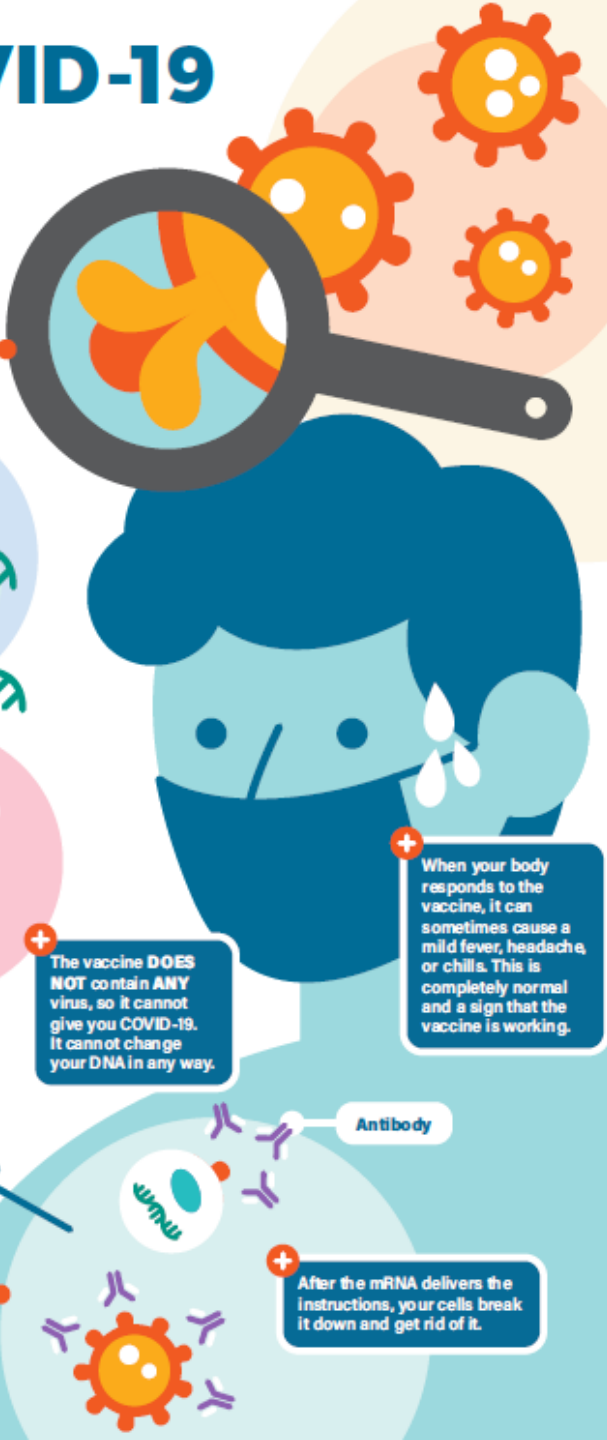
Messenger RNA, or mRNA, is genetic material that tells your body how to make proteins.

What is in the vaccine?

The vaccine is made of mRNA wrapped in a coating that makes delivery easy and keeps the body from damaging it.

How does the vaccine work?

The mRNA in the vaccine teaches your cells how to make copies of the **spike protein**. If you are exposed to the real virus later, your body will recognize it and know how to fight it off.



When your body responds to the vaccine, it can sometimes cause a mild fever, headache, or chills. This is completely normal and a sign that the vaccine is working.

The vaccine **DOES NOT** contain **ANY** virus, so it cannot give you COVID-19. It cannot change your DNA in any way.

After the mRNA delivers the instructions, your cells break it down and get rid of it.

Antibody

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.

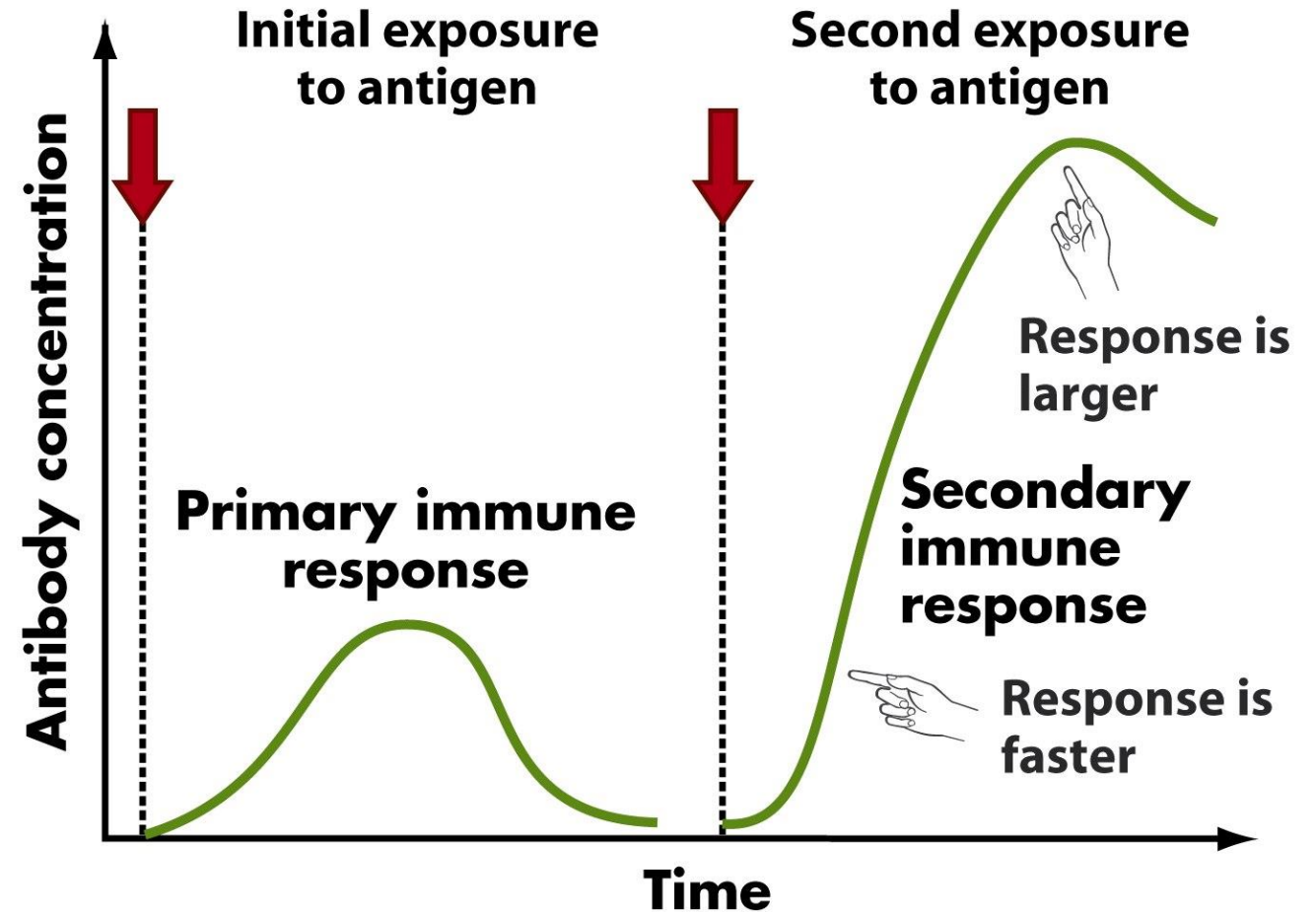
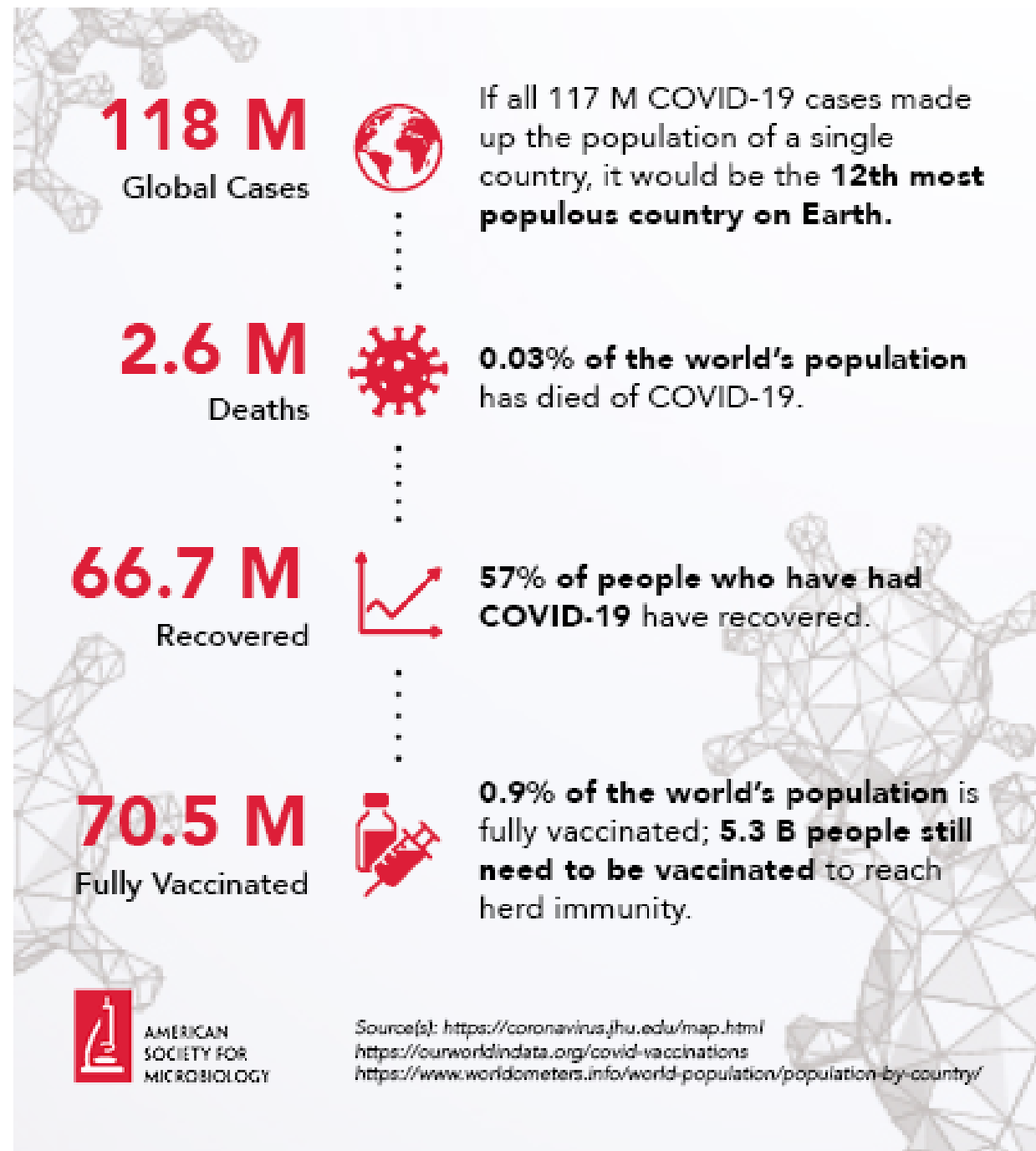
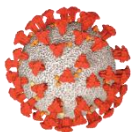


Figure 49-16 Biological Science, 2/e
© 2005 Pearson Prentice Hall, Inc.

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



Will the vaccines work against these Variants of Concern?

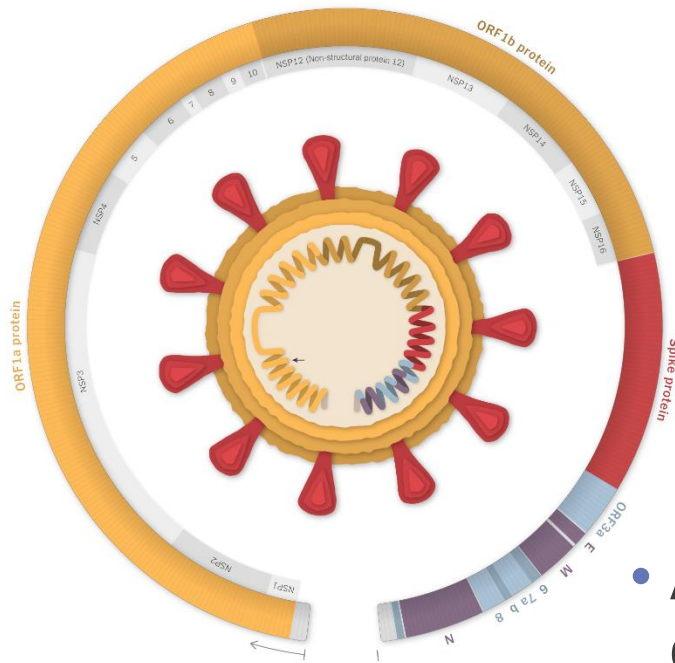
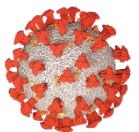


Diagram of the
CORONAVIRUS
GENOME

The New York Times

- 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

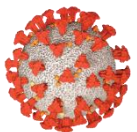
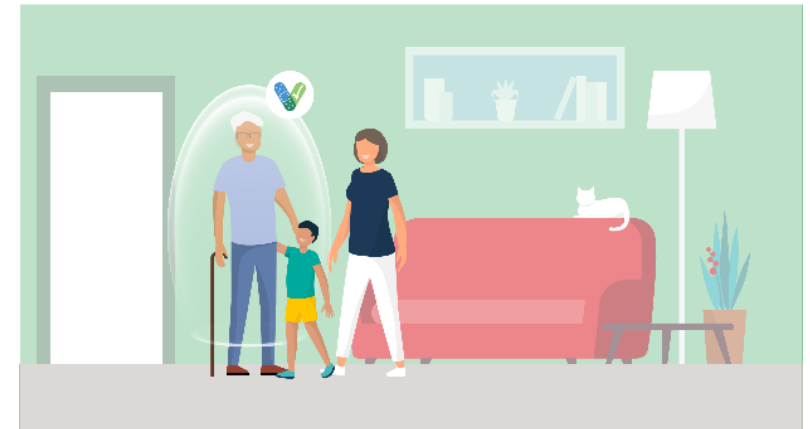
- 2 weeks after second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, or
- 2 weeks after a single-dose vaccine, such as Johnson & Johnson's Janssen vaccine

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



[Español](#)

[Clinical Studies](#)

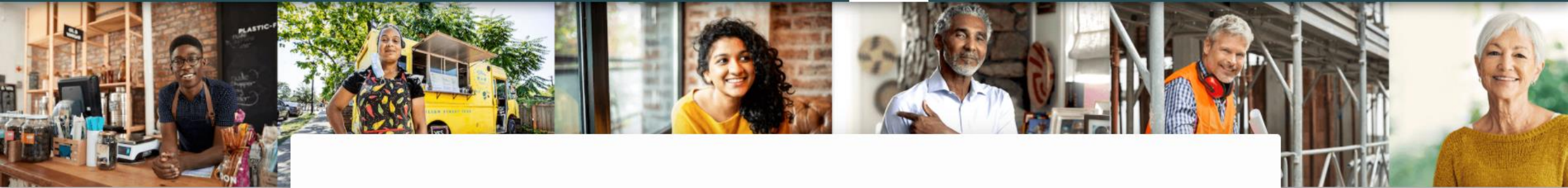
[What to Expect](#)

[Science](#)

[FAQ](#)

[News](#)

[About Us](#)



Frequently Asked Questions

COVID-19 Clinical Studies

Q: Why are we continuing COVID-19 vaccine research if approvals are just around the corner? >

Q: Will study participants be given SARS-CoV-2 or COVID-19 as part of the study? >

Q: Is joining a COVID-19 vaccine or antibody study like being a guinea pig? >

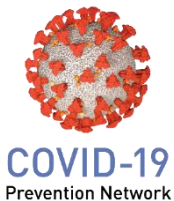
Q: Are Western scientists unfairly using people in developing countries to test COVID-19 vaccines? >

<https://coronaviruspreventionnetwork.org/clinical-studies-faq/>

Randhawa 06APR2021

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: CoVPNTria!\$)
 - 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

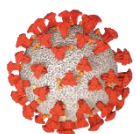


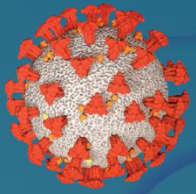
Drop off on campus



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

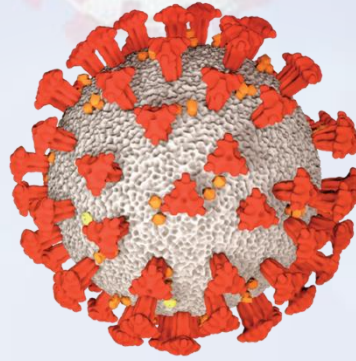




COVID-19
Prevention Network

Questions?





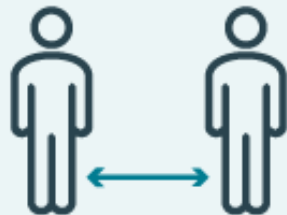
COVID-19

Prevention Network

THANK YOU!



WEAR A MASK



STAY 6 FEET APART



AVOID CROWDS



GET A VACCINE