

# COVID-19 Vaccine Overview

**NIH CEAL**  
Community Engagement Alliance

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**STOP  
COVID-19 CA**

**THE COVID-19 CALIFORNIA ALLIANCE**

Partnering Community Organizations, Stakeholders, and  
Individuals from across California with: UCLA • SDSU • Scripps  
Stanford • UCD • UCI • UCM • UCR • UCSD • UCSF • USC



# COVID Impact on Communities of Color

## The disparities in our diverse communities are severe

COVID-19 disproportionately affects California's low income, Latino, Black, and Pacific Islander communities, as well as essential workers such as those in health care, grocery, and cleaning services.

Death rate for Latino people is **20% higher** than statewide

Deaths per 100K people:

**106** Latino  
**88** all ethnicities

Case rate for Pacific Islanders is **29% higher** than statewide

Cases per 100K people:

**9,957** NHPI  
**7,723** all ethnicities

Death rate for Black people is **12% higher** than statewide

Deaths per 100K people:

**98** Black  
**88** all ethnicities

Case rate for communities with median income <\$40K is **39% higher** than statewide

Cases per 100K people:

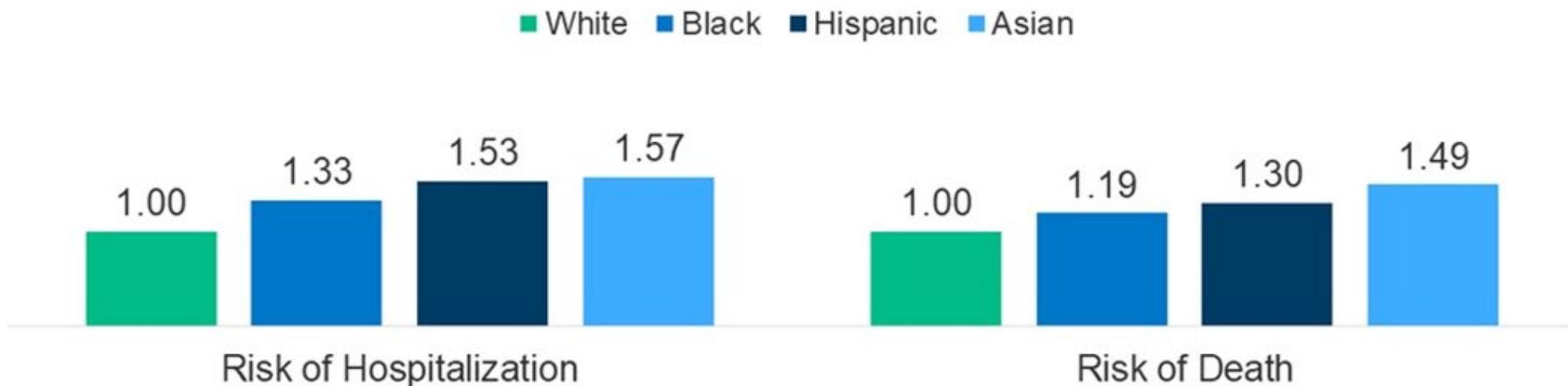
**10,706** income <\$40K  
**7,723** all income brackets

Note: This data is cumulative since the first COVID-19 case was reported in January 2020. Case rate is defined as cumulative COVID-19 cases per 100K population. Death rate is defined as cumulative COVID-19 deaths per 100K.

Figure 6

## Risk of Hospitalization and Death among Epic Patients who Tested Positive for COVID-19

Probability of experiencing hospitalization or death compared to White patients with similar sociodemographic characteristics and underlying health conditions:



NOTE: Persons of Hispanic origin may be of any race but are categorized as Hispanic; other groups are non-Hispanic. Data for other racial groups not shown due to insufficient data. Values shown are hazard ratios after controlling for age, sex, geographic social vulnerability, and select comorbidities.

SOURCE: Epic and KFF analysis of Epic Health Record System COVID-19 related data as of July 2020.

# Common Concerns

- Mistrust based on historic and contemporary mistreatment of Black, Latino, Asian, Pacific Islander, American Indian communities
- Vaccine developed under political pressure
- Vaccine is new and developed quickly
- Lack of universal trusted source of information, different sources of different information, inconsistent information

*Concerns of vaccine hesitancy are valid, respectable, and should be answered by a qualified physician or agency*



# Benefits of Getting Vaccine

- Vaccination protects you, your family, and your community from any symptomatic COVID-19
  - Pfizer and Moderna vaccines are both 95% effective in preventing ANY symptoms of COVID-19
  - Annual flu vaccines are usually only 40-60% effective yet they have reduced the flu, severe cases of the flu, and death
- Reduces the chance of hospitalization and death from COVID-19
- Being unvaccinated may increase your risk of getting COVID-19 and serious long-term complications



# Vaccine Development

Was the vaccine rushed?

- Scientists developed vaccine, not the government
- Vaccine was developed and tested quickly, but safely. There were no “skipping” of steps.
- Lots of government and private funding + more cooperation across scientific labs nationally and internationally = multiple expensive clinical trials at the same time
- Vaccine technology has been studied for many years
  - Think of it like when we moved from rotary phones to cellular phones

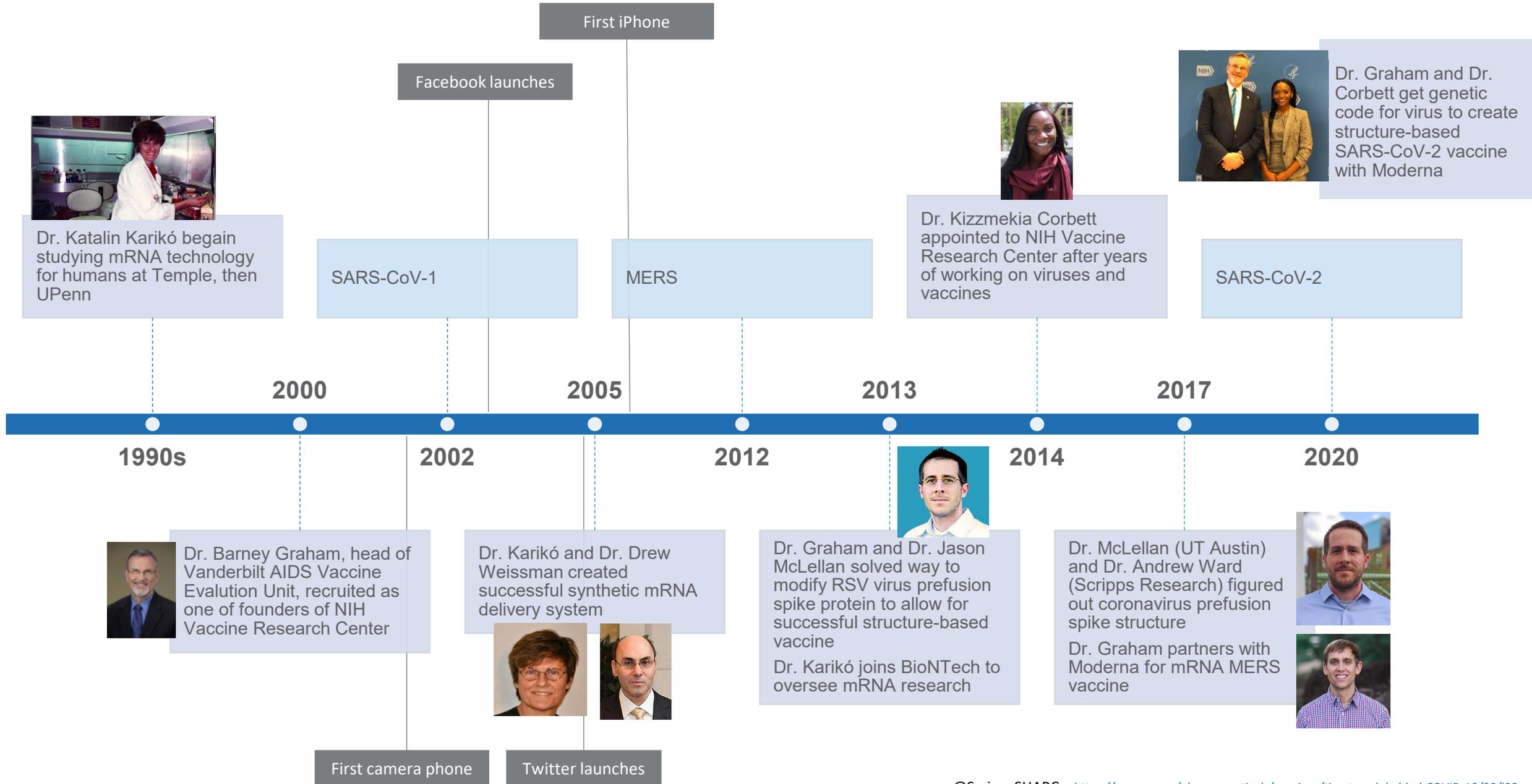
# What is in the vaccine?

## How does the vaccine work?

- The vaccine includes protein (mRNA), fats (called lipids), salt and sugar (preservatives)
- The vaccine has no animal products (halal) or thimerosal. No fetal tissue was used to make the vaccine. These vaccines do not contain any parts of the coronavirus and cannot cause COVID-19.
- Cannot alter your DNA in any way
- The mRNA is a messenger that teaches your body how to recognize and respond to COVID-19. Then it disappears.
  - Like Snapchat
- mRNA technology has been studied for over 30 years



# Timeline of mRNA technology and key figures in vaccine development



# Were people like me part of the clinical trials?

Over 70,000 people participated in Pfizer and Moderna trials and were equally safe for all:

- **Adults, all ages** (65+, over 85% effective)
- **Race/ethnicities** (Black, Latino, other communities of color, over 95% effective)
- **Chronic conditions** (about 90% effective)

The vaccine is safe and can prolong your immunity if you have already had COVID-19.



# Race/Ethnicity in COVID-19 Clinical Trials

Moderna and Pfizer clinical trials included a broad range of diverse participants

## Moderna

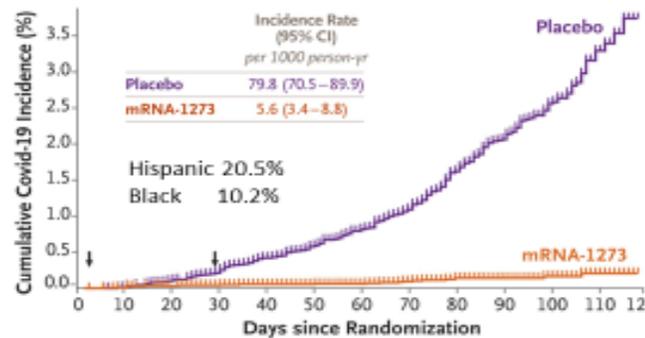
Percent	Racial/Ethnic group
20.5%	Hispanic/Latino
9.7%	Black
4.7%	Asian
2.1%	Multiracial
0.8%	American Indian
0.2%	Pacific Island

## Pfizer

Percent	Racial/Ethnic group
26.2%	Hispanic/Latino
9.8%	Black
4.4%	Asian
2.5%	Multiracial
0.6%	American Indian
0.2%	Pacific Island

# Vaccine Effectiveness: Race/Ethnicity Data

## Moderna Covid Vaccine Trials



**94.1% Effective Overall**

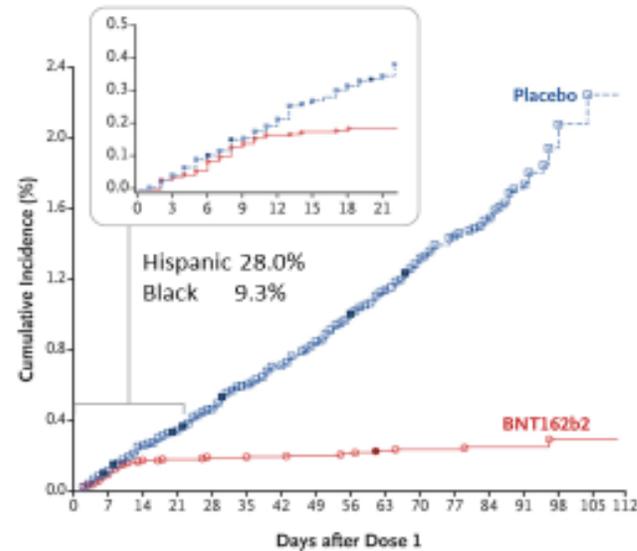
**97.5% Effective in People of Color**

	mRNA-1273 Vaccine N=14,550	Placebo N=14,598
Symptomatic Covid-19	11	185
Severe Covid-19	0	30

Vaccine efficacy of 94.1% (95% CI, 89.3–96.8%; P<0.001)

Over 37,000 people

## Pfizer Covid Vaccine Trials



**95% Effective Overall**

**100% Effective in Black persons and 94.4% Latinx**

Over 37,000 people

# Side Effects

- Most side effects are mild, may occur over a few days, and can be stronger after your second dose.
- Common side effects include pain or muscle ache, fatigue, headache, nausea, chills, and fever.
  - After vaccination, medical personnel will monitor you for 15 minutes to ensure you get any necessary treatment if you have a reaction (medical treatment & personnel on site)



# Side Effects

- Serious side effects are rare. The vaccine is safe for you if you have seasonal, pet, or food allergies.
  - If you have a history of anaphylaxis (severe allergic reactions), previous vaccine reactions, are allergic to polysorbate or ethylene glycol, talk to your doctor.
  - There is no evidence the vaccine affects fertility.
- Talk to your doctor if you: are immunocompromised or are taking medication that affects your immune system, have been unable to receive vaccinations in the past because of a blood thinner or a bleeding disorder, have a fever, are pregnant, or plan to become pregnant.



# Vaccine Side Effects Compared

(<55 yr, after Dose 2 – highest side effect group found)



Shingrix



COVID-19 mRNA-1273



COVID-19 BNT162b2



Flu

Local Pain	88.4%	90.1%	77.8%	45.4%
Redness	38.7%	9.0%	5.9%	13.4%
Swelling	30.5%	12.6%	6.3%	11.6%
Myalgia	56.9%	61.3%	37.3%	15.4%
Fatigue	57%	67.6%	59.4%	17.8%
Headache	50.6%	62.8%	51.7%	18.7%
Chills	35.8%	48.3%	35.1%	6.2%
Fever	27.8%	17.4%	15.8%	0.8%

Overall Grade 3% **5.2%** **4.1%** **1.5%** **0.5%**

Overall SE % **48%** **46%** **36%** **15%**

1

2

3

4

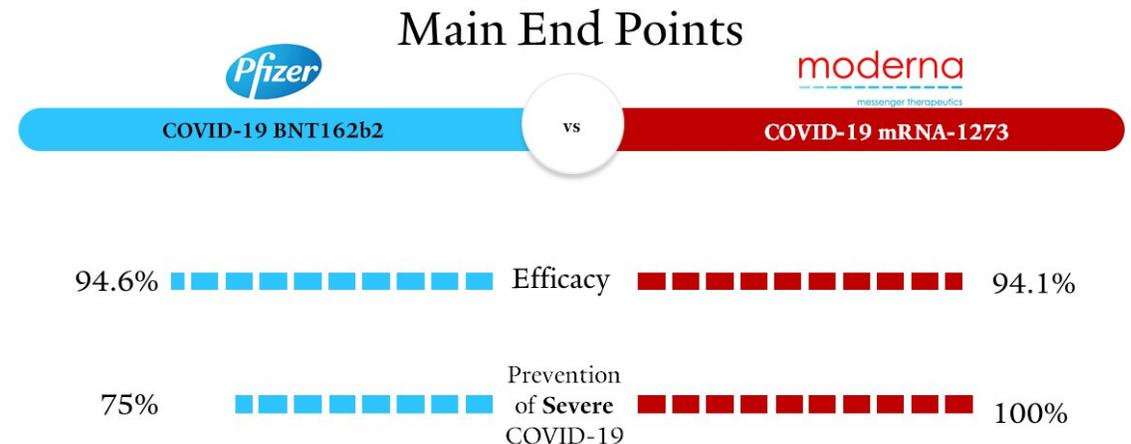
# Which vaccine is better?

## Can I choose?

Both Pfizer and Moderna vaccines are about 95% effective.

At this point, due to limited supply, you cannot choose.

- Pfizer and Moderna each have two doses, spaced apart 3-4 weeks.
- Your first shot needs to be the same as your second shot.
- Pfizer approved for people over 16; Moderna is approved for people over 18.



# Do I need both shots?

Yes. The current vaccines have two doses, spaced apart 21 or 28 days. It is possible to get infected with COVID-19 before your second dose because you are not yet fully protected.

# Will I have to take the vaccine again?

- Scientists are not sure how long the vaccines will protect people. They are continuing to monitor the data in order to make recommendations. It's possible there will be a need for booster shots in the future.
- What is known is that you need both doses (shots) for the Pfizer and Moderna vaccines to be effective.



# Will the vaccines protect against new mutations?

So far, the current vaccines appear to still protect you against the new mutation (it doesn't appear to be a significant change).

## How much will it cost?

The vaccines have been covered by taxpayer dollars, so they will be free to everyone.



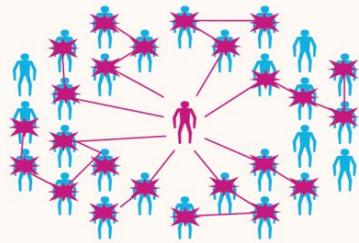
# Why are some communities, such as Black, Latinx, American Indian, Pacific Islander, or Asian American, being encouraged to get the vaccine?

- Some communities (such as Black/African American, Latino/x, American Indian, Pacific Islander, Indigenous, and Asian populations) may be offered the vaccines earlier than others because their infection, hospitalization, and death rates have been disproportionately high.
- This is related to higher rates of exposure (essential work, multigenerational households, etc). For this same reason, prevention is crucial.

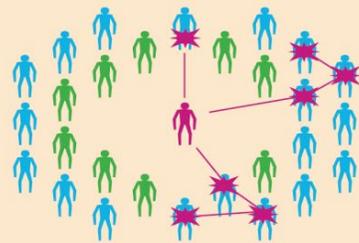


# What is herd immunity? How does it work?

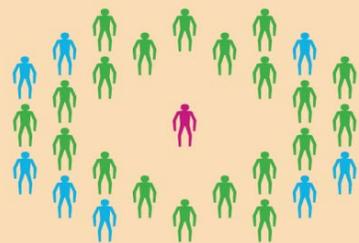
## HOW HERD IMMUNITY WORKS



When no one has immunity, contagion has many opportunities to spread quickly.



The more immunity we have in the system, the less often contagion comes into contact with the susceptible.



Spread of contagious disease is contained.

- We reached herd immunity for measles, mumps, polio, and chickenpox in the U.S. through vaccines.
- Scientists expect herd immunity with 80-90% of people vaccinated.
- However, herd immunity applies to the community around you. That's why you'll see outbreaks (e.g., measles) in communities with low vaccine uptake.
- Herd immunity without a vaccine will result in catastrophic numbers of deaths.

# Should I get the vaccine even if I already had COVID-19?

Yes. Protection from the vaccine is safe and can prolong your immunity. You can wait up to 90 days after infection for vaccination but can receive it as soon as local regulations allow.

# Do I still need to wear a mask after getting the vaccine?

Yes. The vaccines protect YOU from getting sick from COVID-19, but it is unclear whether you may still get mild or symptom-free cases, then transmit COVID-19 to others. Continue to follow public health guidelines, such as wearing a mask, social distancing, and avoiding indoor crowds.



# Remember the 3 W's

**Wear**  
a facemask



**Wash**  
your hands



**Watch**  
your distance



*Even after getting the vaccine!*

# Weighing the Risks: Infection vs. Vaccination

Every million cases of  
COVID-19 infection

~15,000 deaths  
~70,000 hospitalizations

Every million COVID-19  
vaccinations

~2-3 serious reactions  
~1-2 hospitalizations  
1-2 deaths under investigation



Moderna and Pfizer vaccine each reported 10 serious allergic reactions out of 4 million doses (as of 1/23/21)

# Long-Term Risks of COVID-19

As our understanding of the complications of coronavirus disease-2019 (COVID-19) evolve, subclinical cardiac pathology such as myocarditis, pericarditis, and right ventricular dysfunction in the absence of significant clinical symptoms represents a concern. The potential implications of these findings in athletes are significant given the concern that exercise, during the acute phase of viral myocarditis, may exacerbate myocardial injury and precipitate malignant ventricular arrhythmias. Such concerns have led to the development and publication of expert consensus documents aimed at providing guidance for the evaluation of athletes after contracting COVID-19 in order to permit safe return to play.

**NEWS** Covid survivors may need heart screening before exercising

## Covid survivors may need heart screening before exercising

Recommendations endorse physician consultations and heart screenings for athletes who had moderate to severe Covid-19.

**The New York Times**

## He Was Hospitalized for Covid-19. Then Hospitalized Again. And Again.

Significant numbers of coronavirus patients experience long-term symptoms that send them back to the hospital, taxing an already overburdened health system.



**CORONAVIRUS**

## Fatigue, loss of smell, organ damage: A range of symptoms plague many Marylanders long after COVID-19 infection

By MEREDITH COHN  
BALTIMORE SUN | DEC 30, 2020 AT 12:31 PM

## The frightening uncertainty of long-haul COVID-19

By Rick Kushman, UC Davis  
Thursday, December 10, 2020

### Concerns about COVID-19

- **Are long-haulers contagious?** — “That’s a great question,” Sandrock said. “At what point you transfer over from being infectious to noninfectious is a discussion. We’re pretty clear that patients who are symptomatic for four months are probably not contagious. But when they stop being contagious is not clear.”
- **Can the long-haul symptoms cause permanent damage?** — This is another area where the answers are not clear.

“Our worry as health care providers is that we don’t know how many of these symptoms are permanent, or if there is permanent damage being done,” Sandrock said.

## Florida's Keyontae Johnson rejoins Gators in coaching role as he recovers from scary collapse

Johnson was released from the hospital last week after collapsing on the court against FSU on Dec. 12.



### COVID-19 LONG TERM EFFECTS

- The most commonly reported long-term symptoms include fatigue, shortness of breath, cough, joint pain, chest pain
- Other reported long-term symptoms include:
  - Difficulty with thinking and concentration (sometimes referred to as “brain fog”)
  - Depression, Muscle pain, Headache, Intermittent fever
  - Fast-beating or pounding heart (also known as heart palpitations)
- More serious long-term complications are the least common:
  - Cardiovascular: inflammation of the heart muscle
  - Respiratory: lung function abnormalities
  - Renal: acute kidney injury
  - Dermatologic: rash, hair loss
  - Neurological: smell and taste problems, sleep issues, difficulty with concentration, memory problems
  - Psychiatric: depression, anxiety, changes in mood

<https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects.html>

Sacramento Firefighter Recovers From Long-Term Effects Of Covid-19

**CORONAVIRUS IMPACT** 3 KCRA

## The many strange long-term symptoms of Covid-19, explained

Long Covid “is a phenomenon that is really quite real and quite extensive,” Anthony Fauci said earlier this month.

By Lois Parshley | Dec 15, 2020, 4:20pm EST

# Key Takeaways

- Lot of misinformation in social media and word-of-mouth
- Black, Latino, Asian, Pacific Islander, American Indian communities are contracting disease and dying at higher rates
- “Side effects” of contracting COVID-19 disease is far worse than side effects of getting the vaccine
- Why consider taking vaccine if you have mistrust? Because we want everyone to stay alive today to help fight mistrust tomorrow.



# Resources

- STOP COVID-19 CA website: <https://www.stopcovid-19ca.org/>
- COVID-19 Vaccine FAQ in community-friendly language: [English](#) and [Spanish](#)
- NIH CEAL (Community Engagement Alliance) Against COVID-19 Disparities website: <https://covid19community.nih.gov/>
- CDC COVID-19 Vaccine Communications Toolkit for CBO: <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/toolkits/community-organization.html>
- CDC COVID-19 website: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>
- ASTHO (Association of State and Territorial Health Officials) COVID-19 website: <https://astho.org/COVID-19/>



Other possible useful slides follow

# STOP COVID-19 CA Sites and Partners

Jan 25, 2021

State Population 39M

COVID Cases 3.136M

COVID Deaths 37,543



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**NIH** National Institutes of Health

# What safeguards are in place now to protect people of color?

The Belmont Report was created in response to the Tuskegee Syphilis Study – it applies to all people but was done in response to mistreatment to people of color

- **3 principles** for ethical conduct of research involving human participants:  
1) **Respect** for persons; 2) **Beneficence**; and 3) **Justice**.
- **Institutional Review Board (IRB)**, must approve every US clinical trial.
  - The IRB is made up of doctors, scientists, and **lay people**, dedicated to making sure that the study participants are not exposed to unnecessary risks.
- **Informed consent process** also helps protect participants.
  - Before joining a clinical trial, study participants will be told what to expect and all the things that might happen.
- **Large clinical trials have a Data Safety Monitoring Board**
- **New medications and vaccines also go through FDA Review**

