

HIV, COVID-19 and Vaccinations



Vaccinate with **Confidence**

Bells and candlelight honor 400,000 dead from COVID-19



Dr. Martin Luther King, Jr. reflections...

- “I have decided to stick with love. Hate is too great a burden to bear.”
- “Be a bush if you can't be a tree. If you can't be a highway, just be a trail. If you can't be a sun, be a star. For it isn't by size that you win or fail. Be the best of whatever you are.”
- “Life's most persistent and urgent question is, 'What are you doing for others?’”

COVID-19 – worldwide cases



COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

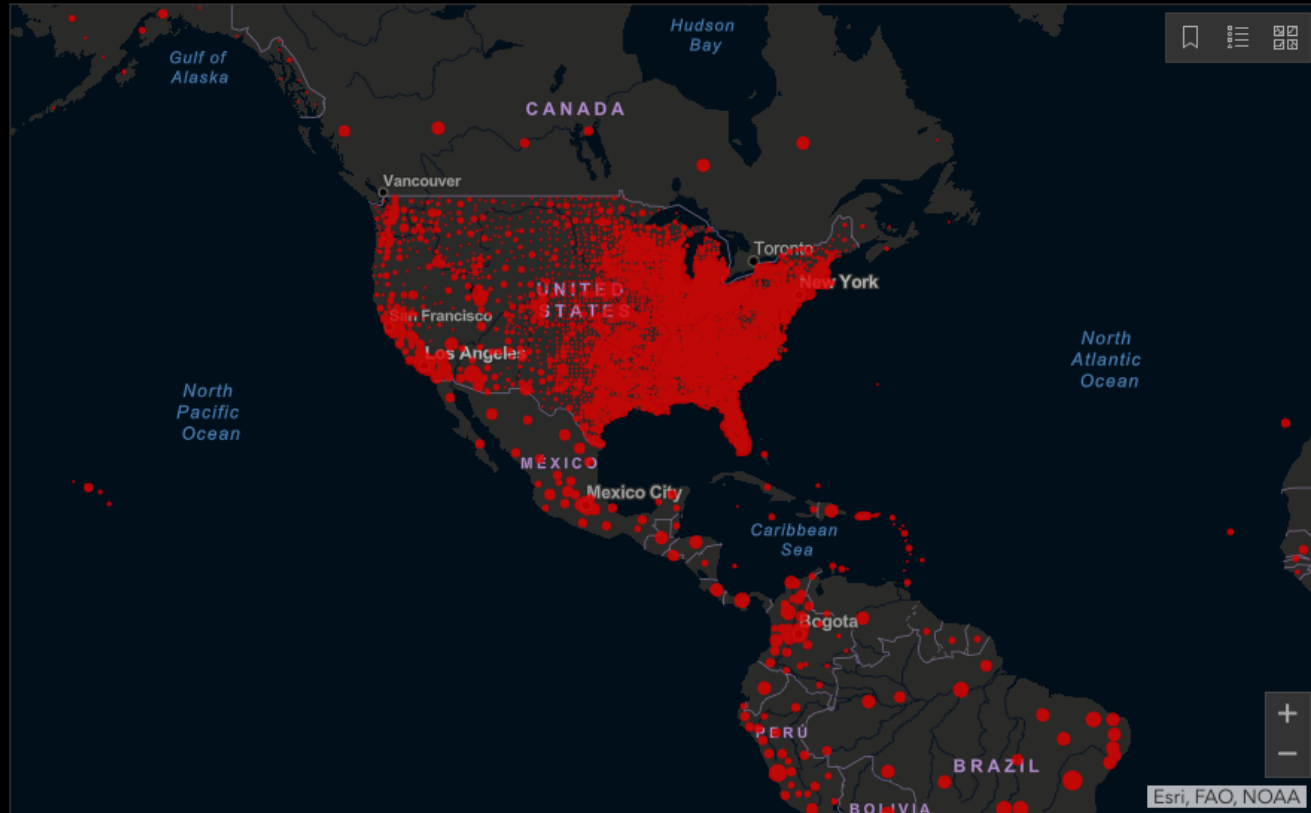
Global Cases
96,255,312

Cases by Country/Region/Sovereignty

- 24,254,284 US
- 10,595,639 India
- 8,573,864 Brazil
- 3,595,136 Russia
- 3,476,824 United Kingdom
- 2,996,784 France
- 2,400,598 Italy
- 2,399,781 Turkey
- 2,370,742 Spain
- 2,074,964 Germany
- 1,939,071 Colombia
- 1,819,569 Argentina
- 1,668,396 Mexico
- 1,450,747 Poland

Admin0 Admin1 Admin2

Last Updated at (M/D/YYYY)
1/20/2021, 5:22 AM



Cumulative Cases Active Cases Incidence Rate Case-Fatality Ratio Testing Rate

191
countries/regions

Lancet Inf Dis Article: [Here](#). Mobile Version: [Here](#). Data sources: [Full list](#). Downloadable database: [Github](#), [Feature Layer](#).
Lead by JHU CSSE. Technical Support: [Esri Living Atlas team](#) and [JHU APL](#). Financial Support: [JHU](#), [NSF](#), [Bloomberg Philanthropies](#) and [Stavros Niarchos Foundation](#). Resource support: [Slack](#), [Github](#) and [AWS](#).

Global Deaths
2,059,566

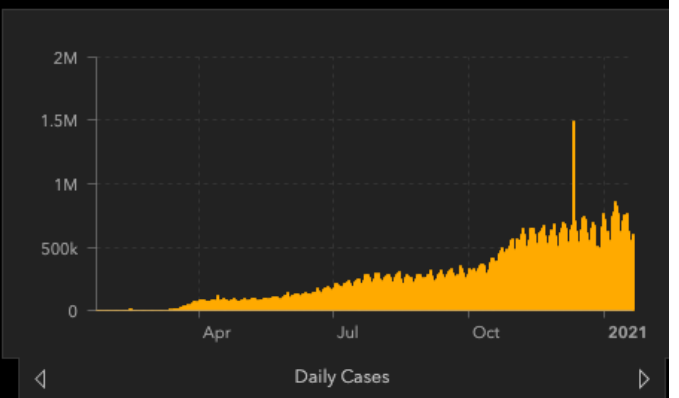
- 401,777 deaths US
- 211,491 deaths Brazil
- 152,718 deaths India
- 142,832 deaths Mexico
- 91,643 deaths United Kingdom
- 83,157 deaths Italy

Global Deaths

US State Level
Deaths, Recovered

- 41,368 deaths, **117,052** recovered New York US
- 34,441 deaths, **recovered** California US
- 33,032 deaths, **1,711,009** recovered Texas US
- 24,436 deaths, **recovered** Florida US
- 20,512 deaths, **63,180** recovered New Jersey US

US Deaths, Recovered



Daily Cases

COVID-19 – Cases by WHO Regions



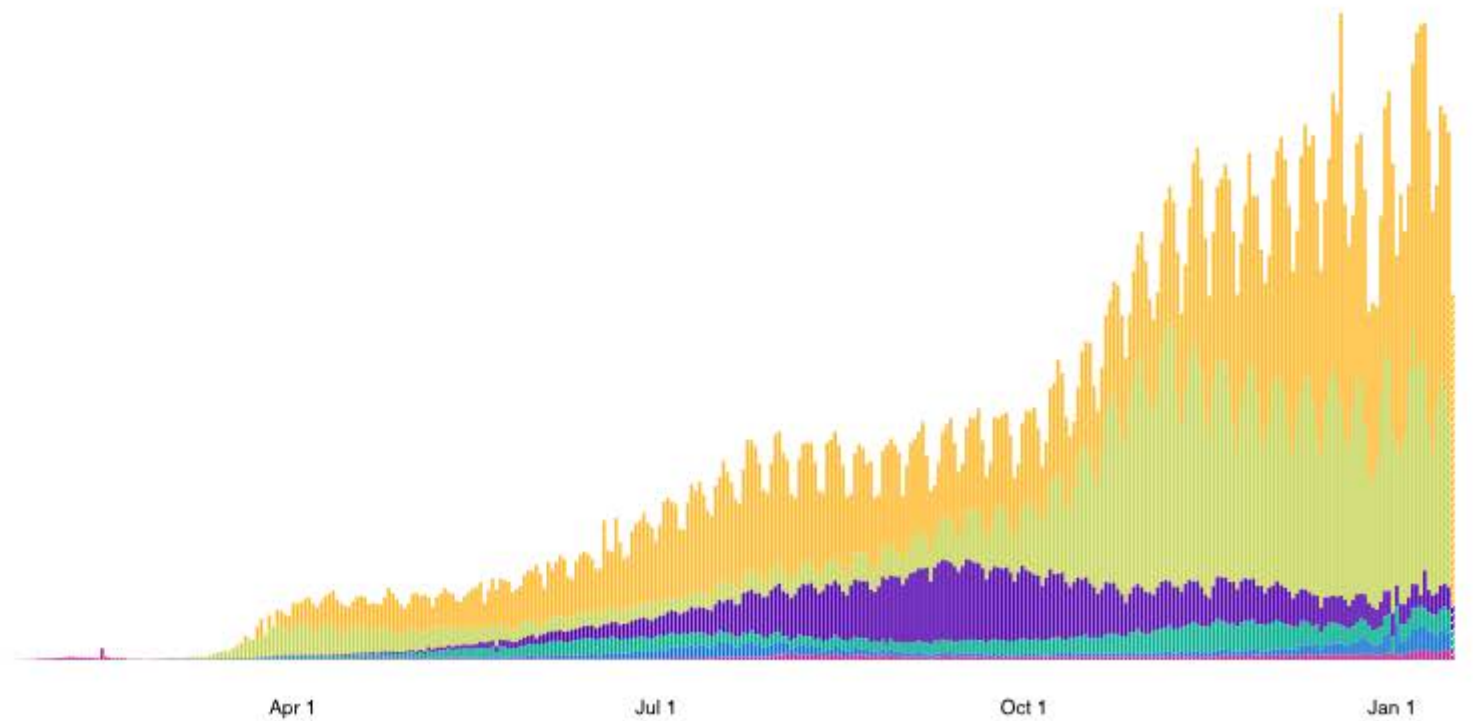
Situation by WHO Region

Line graph icon | Area graph icon | **Daily** | Weekly | **Cases** | Deaths | Count

Americas	41,329,493	confirmed
Europe	30,302,258	confirmed
South-East Asia	12,462,338	confirmed
Eastern Mediterranean	5,334,724	confirmed
Africa	2,287,914	confirmed
Western Pacific	1,266,428	confirmed

Source: World Health Organization

▨ Data may be incomplete for the current day or week.



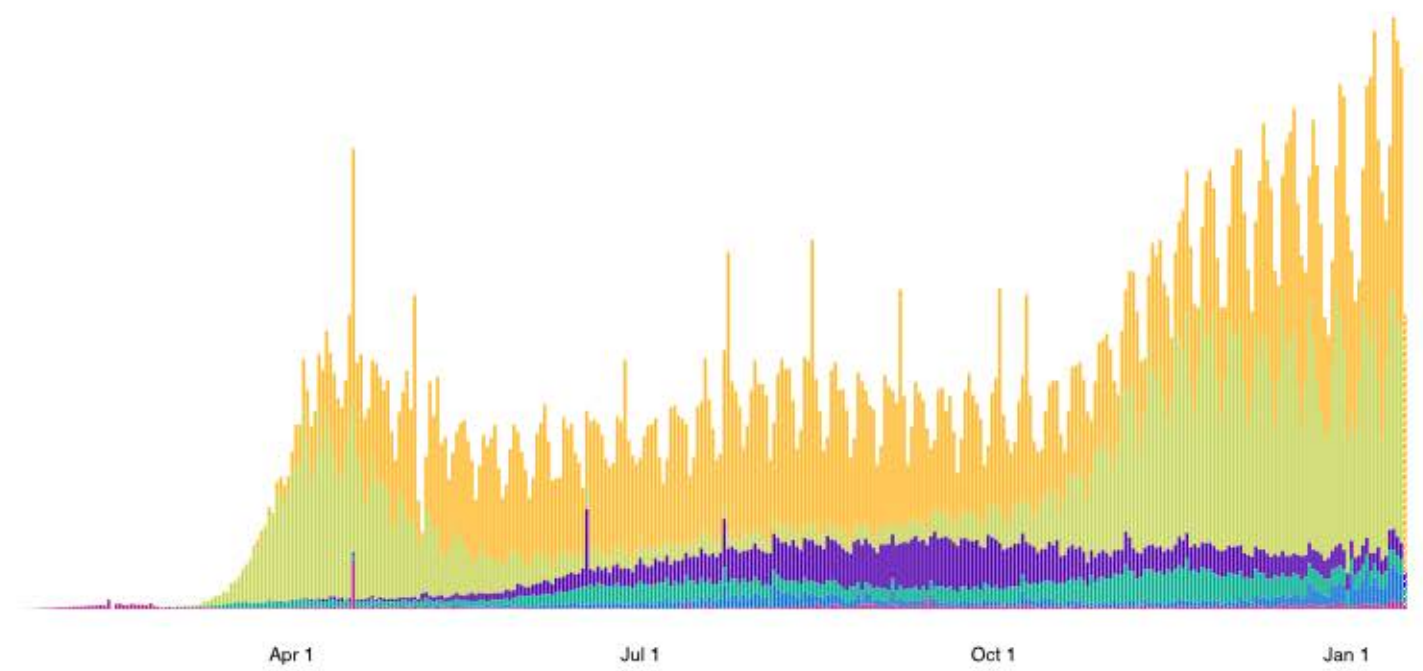
COVID-19 –Deaths by WHO Region



Situation by WHO Region

Line graph icon | Area graph icon | **Daily** | Weekly | **Cases** | **Deaths** | Count

Americas	954,545 deaths
Europe	661,614 deaths
South-East Asia	191,196 deaths
Eastern Mediterranean	127,790 deaths
Africa	52,379 deaths
Western Pacific	22,244 deaths



Source: World Health Organization
▨ Data may be incomplete for the current day or week.

COVID/CT: Estimated Newly Infected Subjects (per Day)

Daily infections and testing [↗](#)

[Trend](#)

[Compare](#)

[Map](#)

Estimated infections are the number of people we estimate are infected with COVID-19 each day, including those not tested.

Estimated infections | Confirmed infections | Tests

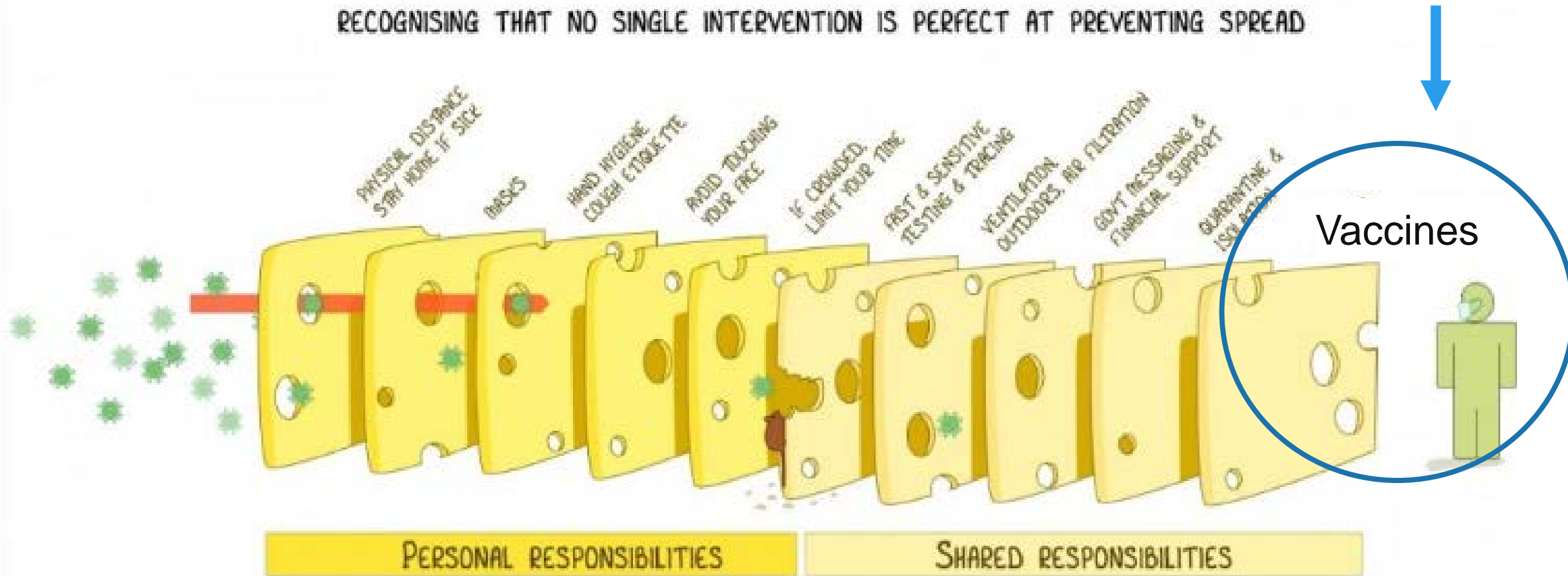
Scenario [i](#) | Projection [x](#) | Masks [x](#) | Rapid rollout [x](#) | [v](#)



Personal and Shared Responsibility





THE SWISS CHEESE RESPIRATORY VIRUS PANDEMIC DEFENCE

RECOGNISING THAT NO SINGLE INTERVENTION IS PERFECT AT PREVENTING SPREAD



Phases of clinical trials

- There are four phases of clinical trials

Phase 1 20-100 Healthy Volunteers	Phase 2 Several Hundred Volunteers	Phase 3 1000+ Volunteers	Phase 4 Vaccine is Approved
			
<p>Researchers try to answer these questions:</p>	<p>Researchers try to answer these questions:</p>	<p>Researchers try to answer these questions:</p>	<p>Researchers try to answer these questions:</p>
<ul style="list-style-type: none"> Is this vaccine safe? Are there any serious side effects? How does the vaccine dose relate to any side effects? Is the vaccine causing an immune response? 	<ul style="list-style-type: none"> What are the most common short-term side effects? What's the body's immune response? Are there signs that the vaccine is protective? 	<ul style="list-style-type: none"> How do disease rates compare between people who get the vaccine and those who do not? How well can the vaccine protect people from disease? 	<ul style="list-style-type: none"> FDA approves a vaccine only if it's safe, effective, and benefits outweigh the risks. Researchers continue to collect data on the vaccine's long-term benefits and side effects.

Source: <https://covid19community.nih.gov/resources/understanding-clinical-trials>

How was the vaccine development timeline accelerated while ensuring safety?



- Researchers used existing clinical trial networks to begin conducting COVID-19 vaccine trials.*
- Manufacturing started while the clinical trials were still underway. Normally, manufacturing doesn't begin until after completion of the trials.
- mRNA vaccines are faster to produce than traditional vaccines.
- FDA and CDC are prioritizing review, authorization, and recommendation of COVID-19 vaccines.



*For more, visit the COVID-19 Prevention Network:
www.coronaviruspreventionnetwork.org/about-covpn

COVID-19 vaccine trials by the numbers

Pfizer/BioNTech

- **43,931** enrolled
- **150** clinical sites
 - 39 U.S. states
- Racial/ethnic distribution
 - **13%** - Hispanic
 - **10%** - African American
 - **6%** - Asian
 - **1%** - Native American
- **45%** ages 56-85

Moderna

- **30,000** enrolled
- **89** clinical sites
 - 32 U.S. states
- Racial/ethnic distribution
 - **63%** - White
 - **20%** - Hispanic
 - **10%** - African American/Black
 - **4%** - Asian
 - **3%** - All others
- **64%** ages 45 and older
 - 39% ages 45-64
 - 25% ages 65+

Sources: <https://www.pfizer.com/science/coronavirus/vaccine>;
<https://www.modernatx.com/cove-study>
For more information, visit www.clinicaltrials.gov

COVID-19 vaccines expected to receive FDA Emergency Use Authorizations

- Two vaccines received FDA Emergency Use Authorizations (EUAs) :
 - **Pfizer/BioNTech (BNT162b2)** – 95% effective (manufacturer data)
 - **Moderna (mRNA-1273)** – 94.5% effective (manufacturer data)
- Both are mRNA vaccines with a 2-dose schedule.
- Duration of protection is not yet known.
- Both vaccines were tested in diverse adult populations, including older adults and communities of color.
- For the latest information about authorized vaccines, visit www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines.

Sources: <https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-conclude-phase-3-study-covid-19-vaccine>
<https://investors.modernatx.com/news-releases/news-release-details/modernas-covid-19-vaccine-candidate-meets-its-primary-efficacy>

What are messenger RNA (mRNA) vaccines?

- Carry genetic material that teaches our cells how to make a harmless piece of “spike protein,” which is found on the surface of the SARS-CoV-2 virus.
 - Genetic material from the vaccine is destroyed by our cells once copies of the spike protein are made and it is no longer needed.
- Cells display this piece of spike protein on their surface, and an immune response is triggered inside our bodies. This produces antibodies to protect us from getting infected if the SARS-CoV-2 virus enters our bodies.
- Do not affect our DNA; mRNA does not enter the cell nucleus.
- Cannot give someone COVID-19.
- Use technology that is new but not unknown. mRNA vaccines have been studied for influenza, Zika, rabies, and cytomegalovirus (CMV).

About these COVID-19 mRNA vaccines

- These mRNA vaccines produce side effects after vaccination, especially after the 2nd dose.
 - Side effects may include:
 - Fever
 - Headache
 - Muscle aches
- **No significant safety** concerns were identified in the clinical trials.
- At least 8 weeks of safety data were gathered in the trials. It is unusual for side effects to appear more than 8 weeks after vaccination.



Safety of COVID-19 vaccines is a top priority

- COVID-19 vaccines are being held to the same safety standards as all vaccines.
- FDA's [Vaccines and Related Biological Products Advisory Committee \(VRBPAC\)](#) reviews applications for EUAs.
- The [Advisory Committee on Immunization Practices \(ACIP\)](#) considers safety and efficacy data before recommending use.
- VRBPAC and ACIP are independent committees composed of scientific and clinical experts.
- FDA and CDC monitor vaccine safety and side effects once vaccines are in use.



Robust vaccine safety monitoring systems exist

- **Existing** systems and data sources are used to monitor safety of vaccines post-authorization and post-licensure, such as:
 - [Vaccine Adverse Event Reporting System \(VAERS\)](#)
 - [Vaccine Safety Datalink \(VSD\)](#)
 - [Clinical Immunization Safety Assessment \(CISA\)](#)
 - [Biologics Effectiveness and Safety System \(BEST\)](#)
- **New** systems have been developed to monitor COVID-19 vaccine safety, such as **v-safe**:
 - Active surveillance that uses text messaging to initiate based survey monitoring.
 - Will provide telephone follow up to anyone who reports significant adverse events.



The Problem: Patients may be hesitant to receive COVID-19 vaccine

- Only **58%** of the general public said they would receive a COVID-19 vaccine
(as of an October 2020 Harris poll)

Factors weighing on acceptance:

Are there side effects?

Does it work?

Is it safe?

How much does it cost?



COVID-19 vaccine more acceptable if:

Healthcare team said it was safe

No costs to the individual

It would help get back to school and work

They could get it easily



Tyson, A, Johnson, C, & Funk, C. (2020, September 17). *U.S. Public Now Divided Over Whether To Get COVID-19 Vaccine*. Pew Research Center. <https://www.pewresearch.org/science/2020/09/17/u-s-public-now-divided-over-whether-to-get-covid-19-vaccine/>

Jackson, C., & Newall, M. (2020, September 29). *Despite COVID-19 spike, few individual behaviors are changing*. Ipsos. <https://www.ipsos.com/en-us/news-polls/axios-ipsos-coronavirus-index/>

COVID-19 Myths Debunked



- COVID-19 vaccines were 'rushed,' so they could still be unsafe.
- You can get COVID-19 from the vaccine.
- The vaccines can change your DNA.
- The COVID-19 vaccines cause infertility.
- You don't have to get vaccinated if you've already had COVID-19.
- Once you've been vaccinated, you can no longer spread the virus.
- Severe reactions to the COVID-19 vaccines are common.
- You should wait until you can choose the exact type of vaccine you'd like.

Source: Huffington Post

Additional COVID-19 Vaccine Side Effects Reported

- **A warm glow inside** from knowing you are making your neighbors, friends and family safer
- **A feeling of doing your part** to stop the global pandemic



COVID-19 Vaccine: Supporting Our Community

- Connecticut Children's is **supporting the state's vaccine program** with our clinics
- **Phase 1b in progress:** State residents who are 75 and older
- **Phase 1b will soon be expanded:**
 - Front line essential workers
 - Individuals, ages 64 to 74
 - Individuals, ages 16 to 64 with underlying health conditions that put them at greater risk
 - Connecticut residents and staff in congregate settings
- When eligible, your friends and family members can get details on how to register at **ct.gov/covidvaccine**