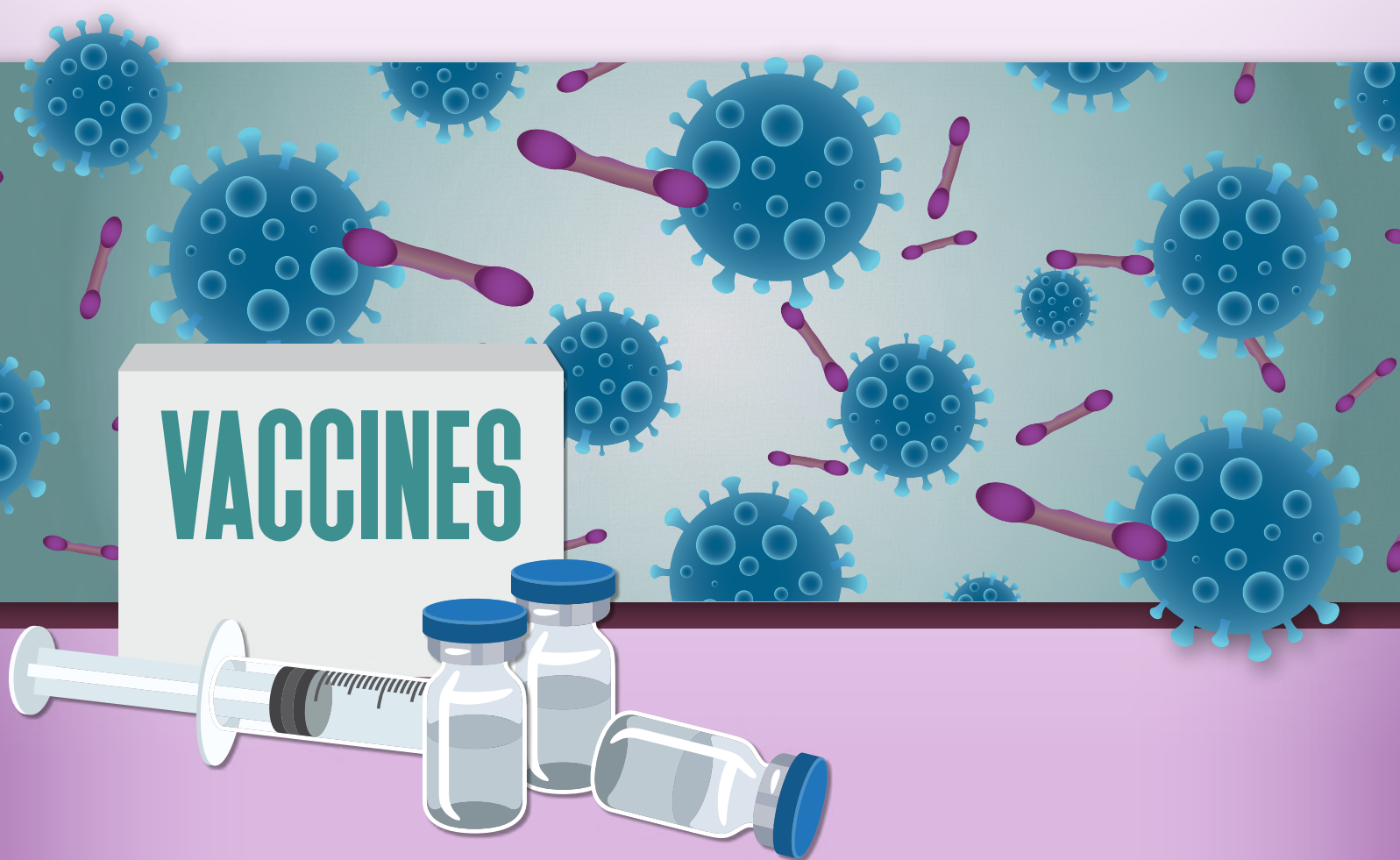


OUR BEST SHOT: The Truth About Vaccines for You and Your Loved Ones



www.agingresearch.org/OurBestShot

OUR BEST SHOT: The Truth About Vaccines for You and Your Loved Ones

Vaccines Work

Vaccines are one of the **greatest success stories in modern medicine**. Thanks to vaccines, polio no longer exists in the U.S., smallpox has been eliminated globally, and other serious diseases that were commonplace only a generation ago — such as measles, mumps, diphtheria, and tetanus — are becoming increasingly rare.

THEN

Annual U.S. disease cases in the 1900s

(Roush et al. 2007)



NOW

U.S. disease cases in 2019

(CDC 2019)

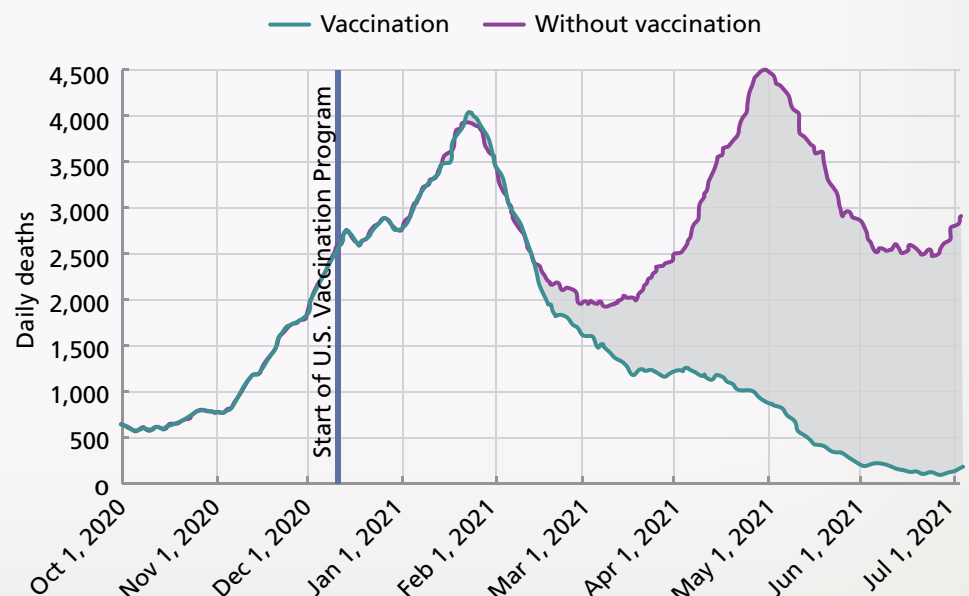


| | | | | | |
|--|-------------|-----------|-------------------------------------|-------------|-----------|
| <div></div> <div>SMALLPOX</div> | THEN29,005 | NOW0 | <div></div> <div>MUMPS</div> | THEN162,344 | NOW3,780 |
| <div></div> <div>DIPHTHERIA</div> | THEN21,053 | NOW2 | <div></div> <div>RUBELLA</div> | THEN47,745 | NOW6 |
| <div></div> <div>PERTUSSIS</div> | THEN200,752 | NOW18,617 | <div></div> <div>HEPATITIS A</div> | THEN117,333 | NOW18,846 |
| <div></div> <div>POLIO (PARALYTIC)</div> | THEN16,316 | NOW0 | <div></div> <div>HEPATITIS B</div> | THEN66,232 | NOW3,544 |
| <div></div> <div>MEASLES</div> | THEN530,217 | NOW1,275 | <div></div> <div>PNEUMOCOCCUS</div> | THEN63,067 | NOW19,689 |

COVID-19 vaccines are no exception. They were produced with unprecedented coordination and financial resources and are extremely effective at preventing symptomatic disease (CDC 2021), and even more effective at preventing hospitalization and death. These vaccines are playing an undeniable role in helping life return to a level of normalcy.

Estimated U.S. seven-day rolling average of COVID-19 daily deaths with and without vaccination

(Galvani et al. 2021)



Misinformation/Disinformation Is DANGEROUS

Since the start of the COVID-19 pandemic, people have been exposed to an abundance of health misinformation and disinformation.

Misinformation and disinformation create massive confusion and fear which leads people to decline COVID-19 vaccines, reject masking and social distancing recommendations, and doubt scientifically proven health and safety measures.



MISINFORMATION

is false information that is created and spread regardless of any intent to harm or deceive.

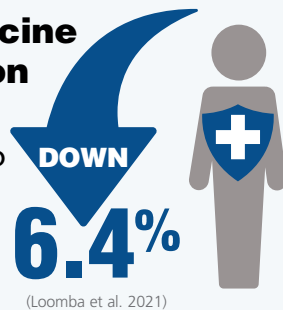
DISINFORMATION

is a type of misinformation that is designed to be deliberately deceptive.



Even Small Amounts of Misinformation/Disinformation Can Have an Impact.

A brief exposure to **COVID-19 vaccine misinformation/disinformation** caused the number of people **WILLING to GET VACCINATED** to go

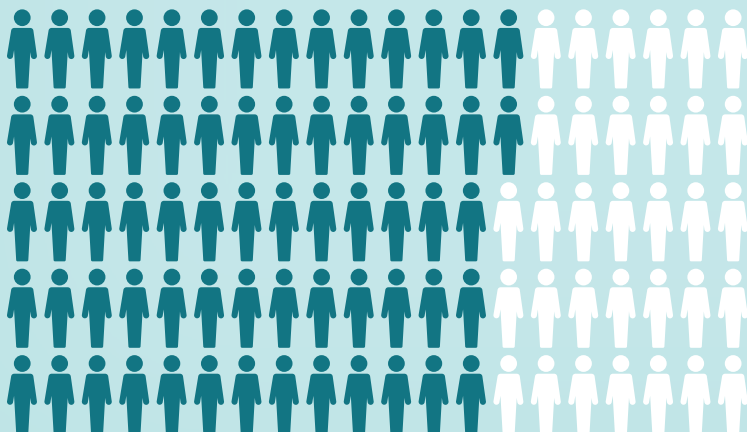
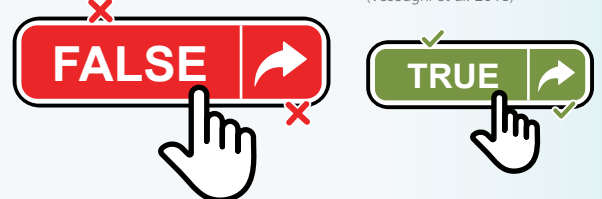


(Loomba et al. 2021)

An analysis of millions of social media posts found that **FALSE news stories** were

70% MORE LIKELY to be **SHARED** than **TRUE** stories.

(Vosoughi et al. 2018)



MYTH

67% of adults who had not yet received a COVID-19 vaccine had **HEARD** at **LEAST ONE COVID-19 vaccine MYTH** and either **believed it to be true** or **weren't sure if it was true**, as of May 2021.

(Hamel et al. 2021)

Tips on Spotting Misinformation/Disinformation

With so much information out there, it can be hard to know what's true and what sources to trust. Here are some steps you can take to spot misinformation/disinformation:



Check the Source

- Do you know and trust the author or publication?
- Can you find other trusted sources that are saying the same thing?
- Are they known for their objective and trustworthy facts and news, or more for their sensational headlines and opinions that are designed to get views or clicks? If you're not sure, don't share.



Question the Motive

- Is the article or post sensational or designed to play on your emotions?
- Could it be designed to draw you in simply to advance a financial or political goal?
- Remember that false news stories are 70% more likely to be shared on social media than true stories — so if you can't trust it, don't share it.

(Vosoughi et al. 2018)



Check the Date

- Is the information recent and up-to-date?
- Or is the news old but recycled to look new?
- Make sure you know when the information was released and look to see if it's been updated.



Find Reliable Sources

- Talk to your health care provider if you have questions about something you've read or heard, and to discuss which vaccines are right for you.
- The World Health Organization's Vaccine Safety Net consolidates resources from its network of websites that provide reliable information on vaccines.
- Learn more about spotting misinformation/disinformation at Stronger.
- For access to trusted sources of vaccine information visit <https://vaccineinformation.org/trusted-sources>.



Check the Data

- Does the author or publication back up their claims with evidence from peer-reviewed journals and other established and reputable sources? Or are they vague about where their "data" come from?
- Make sure there is rigorous science behind the claims they make.



How Vaccines Work

Vaccines teach your immune system how to deal with a bacteria or virus before it can infect and cause disease, preventing you from getting sick. They either contain a weakened or inactive part of the bacteria or viruses they are protecting against, or instructions to create proteins or antigens to fight future infections. It is extremely rare to get sick from a vaccine so despite what you may have heard, flu vaccines don't cause the flu and COVID-19 vaccines don't cause COVID!

Vaccines Protect Against Serious Diseases that Cause Disability and Death

VACCINES WILL PREVENT AN ESTIMATED (CDC 2014)

322 MILLION
ILLNESSES

21 MILLION
HOSPITALIZATIONS

732,000
DEATHS

among Americans born 1994-2013, over the course of their lifetimes.

*These numbers do not include the tremendous impact of COVID vaccines.

Getting vaccinated not only keeps YOU safe but can also keep your LOVED ONES from getting sick. There are certain diseases that aren't serious for some people but can be deadly for others.

For example, although older adults don't usually get whooping cough, they can carry the bacteria and expose others. Because infants are too young to be vaccinated against whooping cough,

1 in 2 infants who get WHOOPING COUGH are **HOSPITALIZED** and can even **DIE**

(CDC 2017)



grandparents can help protect their little ones by getting vaccinated themselves and not spreading the disease.

Herd Immunity

Vaccines also play an important role in the community. People who get vaccinated protect those who are too young, too old, or can't be vaccinated due to health reasons. The more people who are vaccinated, the lower the chance that the disease will spread. This is called "community immunity" or "herd immunity."



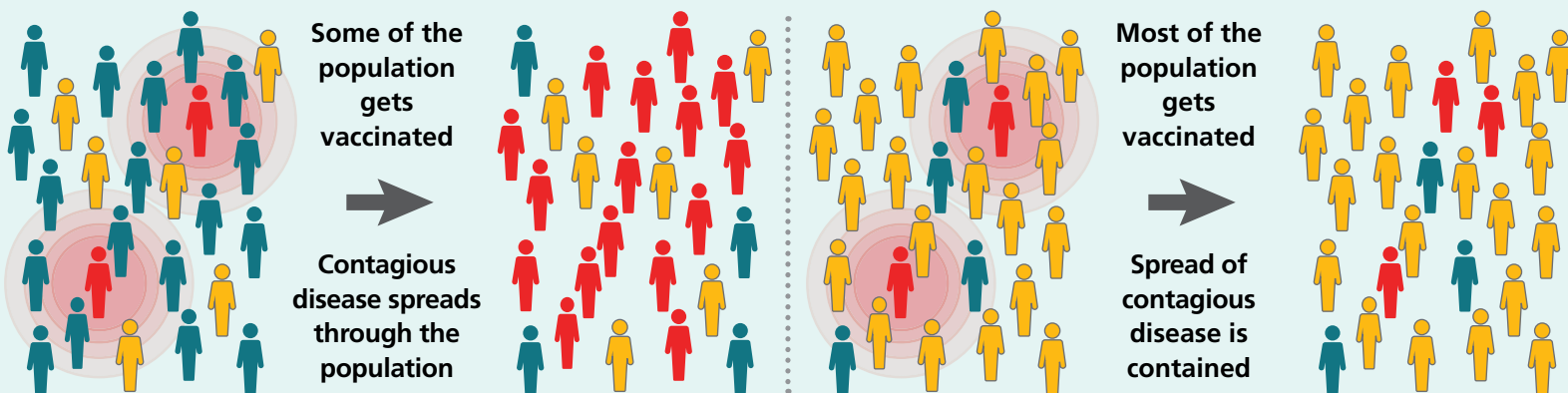
= not vaccinated but still healthy



= vaccinated and still healthy



= not vaccinated, sick, and contagious



Vaccines and Children



Science has Proven that Vaccines Don't Cause Autism

Scientific studies continue to show that vaccines do not cause autism. The original article that sparked the fears and controversy years ago was proven to be fraudulent, and the lead author has lost his medical license. Since then, dozens of large studies including millions of children, have found no evidence of a connection.

Because of all the misinformation, some people are reluctant to vaccinate their children, and as

a result, many diseases are experiencing resurgences.

Vaccines can cause MINOR, but manageable side effects like soreness, redness, low-grade fever, and fatigue. People allergic to any of the vaccine ingredients can have a more severe reaction. But serious side effects of any kind are **EXTREMELY RARE**.



Mercury is No Longer Used in Childhood Vaccines

Vaccines have never contained methyl-mercury — a toxic metal that can accumulate in the body and cause brain damage. Before 2001, some vaccines contained thimerosal — a preservative made of ethyl-mercury, which is safe. Even though thimerosal is safe, to prevent confusion the FDA ordered that it be removed from childhood vaccines. The flu vaccine in multi-dose vials still uses it, although thimerosal-free versions are available.

Altering the CDC's Recommended Vaccine Schedule is Dangerous

The timing of recommended vaccines has been scientifically tested and carefully arranged to maximize the effectiveness of the vaccines and offer the best opportunity for protection. People concerned about vaccinations sometimes spread out or delay the timing of when their kids are vaccinated. There is NO evidence that this provides any benefit. There IS evidence that it leaves kids and adults vulnerable to dangerous infectious diseases AND makes it more likely that they get infected and spread diseases to others.

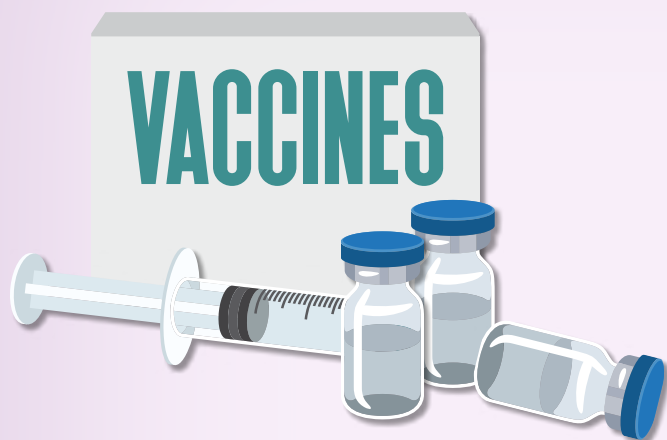
Recommended Immunization Schedule

| | HepB | RV | DtaP | Hib | PCV | IPV | Flu (yearly) |
|-------|------|----|------|-----|-----|-----|--------------|
| BIRTH | ✓ | | | | | | |
| 1 MO | ✓ | | | | | | |
| 2 MO | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4 MO | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 6 MO | | ✓ | ✓ | ✓ | ✓ | | |
| 12 MO | ✓ | | | ✓ | ✓ | ✓ | ✓ |

Natural Immunity Practices are Dangerous

Deliberately exposing ourselves or our kids to diseases without vaccination in order to “develop natural immunity” is not a safe choice. Infections come with the possibility of serious illness and complications, while vaccines help us build immunity in a safe and controlled way. Natural is not always better.

Vaccines and Older Adults



Adults Still Need Vaccines

The immune system weakens with age, so as we saw with the COVID-19 pandemic, older adults are often more likely to be infected and develop complications from vaccine-preventable diseases — including long-term illness, hospitalization, and death. Immunity from some vaccines can decrease over time, which means boosters or additional doses are necessary to maintain protection. Also, some viruses change over time, making annual vaccines or boosters necessary.

Vaccines Work Even If They Don't Completely Prevent Disease

Some people may still get the disease they were vaccinated against, but they will typically be less ill and less likely to experience complications.



**RISK OF
HEART
ATTACK**

goes up 6x

WITHIN A WEEK

of a confirmed flu infection — even in people without a history of heart disease.

(Kwong et al. 2018)

Skipping Vaccines is Even More Risky If You Have Serious Conditions

Chronic conditions can make it harder to fight off infection and make complications more severe. For example, flu increases your risk of heart attack if you have heart disease; can raise blood sugar to dangerous levels if you have diabetes; and can lead to pneumonia and serious respiratory problems if you have chronic lung disease.

Even if Your Health Care Provider Doesn't Bring It Up, You Still Need Vaccines

Most adults see more than one health care provider, and vaccine records may be scattered amongst them. Ask your health care provider to report the vaccines they give you to your state or local Immunization Information System (or registry) so all your providers will have access to your vaccine history. Your health care provider may not know you are due for a vaccine or may forget to bring it up. That doesn't mean you don't need any vaccinations, so be sure to ask if you are up-to-date and use a wallet card or phone app to track which vaccines you have received and when.

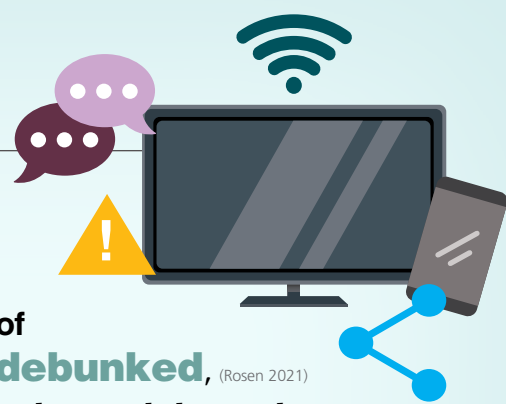
Vaccine Tracker

| Vaccine | Vaccine Type | Date | Next Dose Due |
|-------------------------|--------------|------|---------------|
| Tdap | | | |
| COVID-19 | | | |
| Influenza | | | |
| Shingles | | | |
| Varicella (chicken pox) | | | |
| Pneumonia | | | |

COVID-19 Misinformation

Misinformation on social media, the Internet, on TV, and passed from person to person has plagued the COVID-19 pandemic.

 On **Facebook alone more than 185 MILLION PIECES** of **COVID-19 misinformation** have been **removed or debunked**, (Rosen 2021) but much more remains which makes it critical to get the facts and spread the truth.



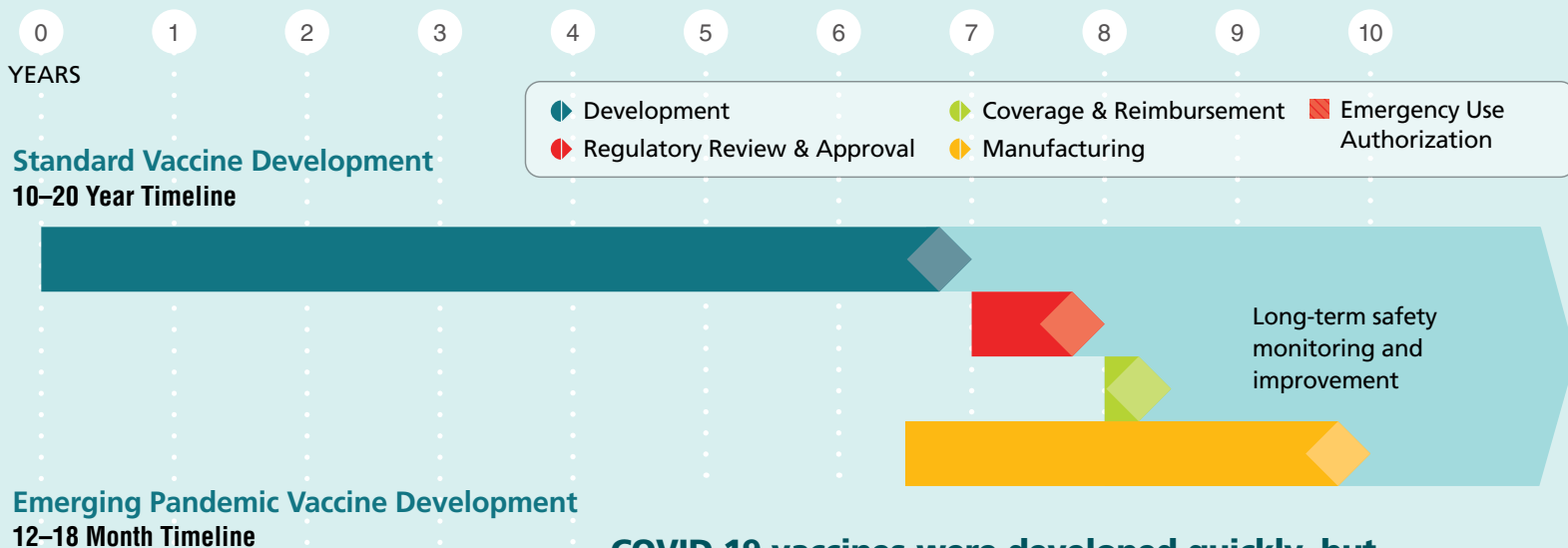
COVID-19 Vaccines Work

While no vaccine is 100% effective at preventing infection, the COVID-19 vaccines are highly effective at preventing serious infections that can lead to hospitalization and death. As scientists get new evidence about the virus and the vaccines, they update their recommendations and assessments.

According to the Centers for Disease Control and Prevention's Director Dr. Rochelle Walensky, between January and July 2021,

~99.5% of COVID-19 DEATHS & 97% of COVID-19 HOSPITALIZATIONS
were in the
UNVACCINATED (The White House 2021).

COVID-19 Vaccines Are Safe



COVID-19 vaccines were developed quickly, but WITHOUT cutting corners or sacrificing safety.

- Existing and previously tested technology and vaccine research made development faster.
- Public and private partners also took on significant financial risk by manufacturing vaccines while they were still being tested.
- If the vaccines had failed, they would have had to start over — some vaccine strategies did fail, and were abandoned.
- But instead, once the vaccines were tested and the FDA approved their use, they were ready to be distributed.

COVID-19 Vaccines Are Safe (continued)



Two of the COVID-19 vaccines approved in the U.S. use messenger ribonucleic acid (mRNA). The mRNA carries instructions that teach the body how to make a protein that triggers your body to generate an immune response and prepares the body to fight a future coronavirus infection. **The mRNA only survives for a few hours in the body and can't alter DNA or interfere with the reproduction or development processes.**

There is no evidence that the COVID-19 vaccines affect fertility in men or women. They are safe and recommended for use in pregnancy.



VACCINE SHEDDING

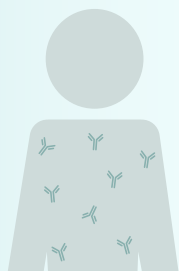
Vaccine shedding is the release of vaccine components outside of the body after vaccination. This can occur in vaccines that contain a live but weakened version of the virus. **None of the COVID-19 vaccines approved in the U.S. contain a live version — so they CANNOT shed and get others sick.**

The vaccines can't give you COVID-19. They contain only a piece of the virus or instructions for creating one of the virus' proteins. People can still get infected by the virus after vaccination if they are exposed to the virus soon after getting their vaccines when their bodies have not had enough time to build immunity. Also, the vaccines are not 100% effective and the virus can mutate. However, the vaccine is never the cause of getting COVID-19.



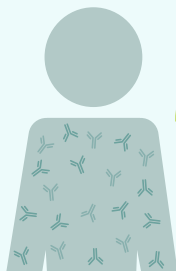
COVID-19
TEST RESULTS:

☒ Positive
☐ Negative



COVID-19

Infection Immunity



COVID-19

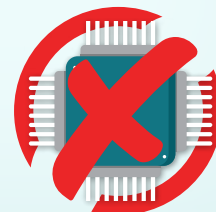
Infection Immunity + Vaccine



Even if you've been infected with the COVID-19 virus, you still need to get vaccinated.

While a previous infection might offer some protection from new infections, it's not clear how much protection and how long it will last.

The vaccines don't contain microchips. There is no evidence to support this claim and currently, there is no technology to make a microchip small enough to be injected via a syringe.

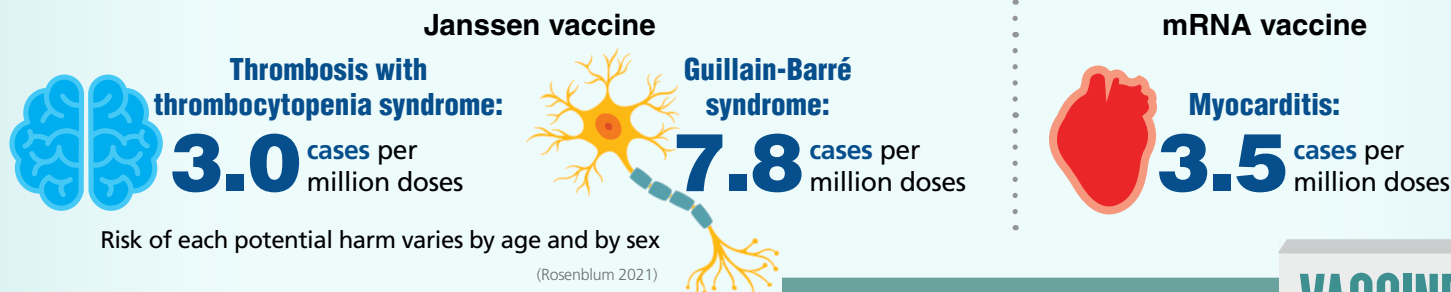


Serious Vaccine Side Effects Are Rare

It's not uncommon to have short-term pain, redness, or swelling where you got the shot. You may also experience tiredness, headache, muscle pain, chills, fever, or nausea. These reactions are symptoms of your body building up protection against the virus. Some people feel sick for a day or two after their vaccine so if you can, schedule your vaccine at the end of a week or when you don't have to work. Some people may experience swollen lymph nodes which indicate that your body is building up immunity. It is not a sign of cancer.

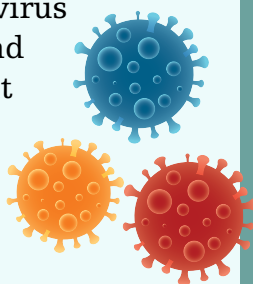
While there have been reports of serious side effects, they are extremely rare.

Risk of Severe Side Effects from COVID-19 Vaccines Among Adults



Vaccines Can Help Prevent Variants

Variants of viruses develop as the virus is passed from person to person and mutates. If the virus can't spread, it can't mutate, which is why high vaccination rates are so important. The only way to stop new variants is to stop the spread of the virus.



Everyone can be affected by COVID-19 — no matter their age, gender, ethnicity, or political party.

This means we are all responsible for helping to stop the spread of COVID-19 in our communities. Talk to your health care provider if you have any questions or concerns about getting vaccinated.



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