



COVID 19 Vaccines FAQ

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Disclosures.

- ➡ No financial disclosures.

What vaccines are available:

Table 1. SARS-CoV-2 Vaccines under Emergency Use Authorization (EUA) or in Late-Phase Studies.

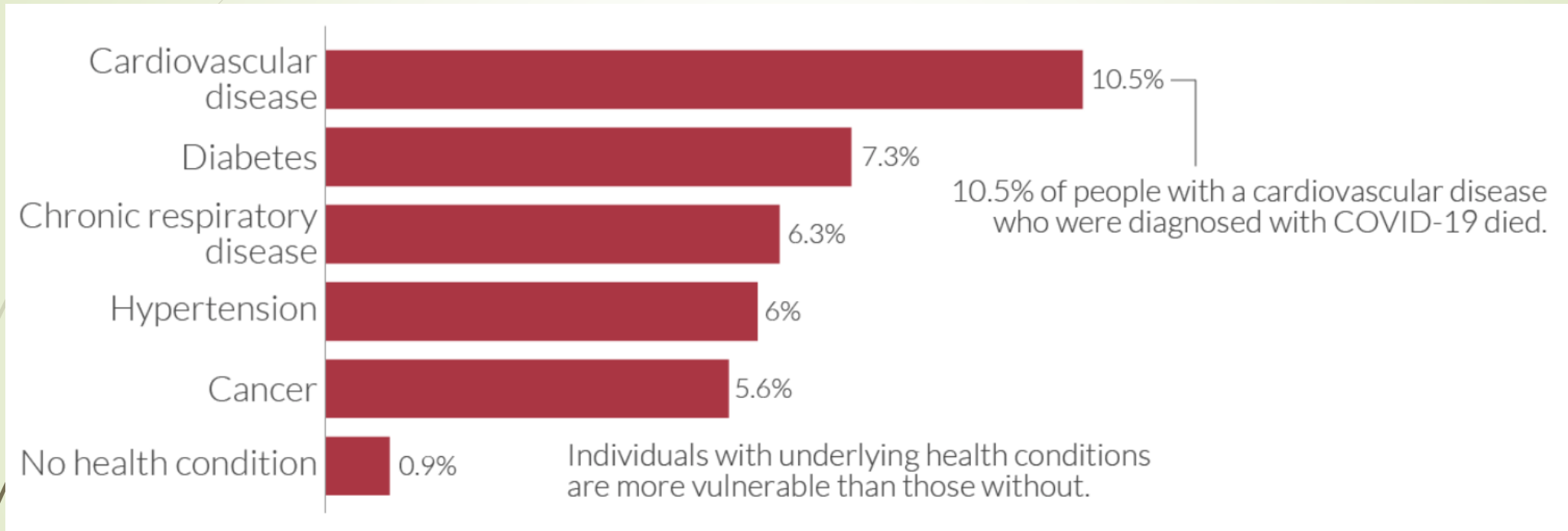
Vaccine Platform	Type of Vaccine and Immunogen	Developer (Name of Vaccine)	Dose Schedule and Administration	Phase*
RNA-based vaccine	mRNA encoding spike protein (30 µg)	BioNTech–Pfizer (BNT162b2)	Two doses (day 0, day 21) Intramuscular	Post-EUA
RNA-based vaccine	mRNA encoding spike protein (100 µg)	Moderna (mRNA-1273)	Two doses (day 0, day 28) Intramuscular	Post-EUA
Adenovirus vector (nonreplicating)	ChAdOx1-Sn Cov-19 Nonreplicating chimpanzee AdV5 expressing spike protein	AstraZeneca and University of Oxford (AZD1222)	One (day 0) or two (day 0, day 28) doses Intramuscular	Phase 3
Adenovirus vector (nonreplicating)	Ad26.COV2.S Adenovirus 26 vectored vaccine using AdVac and PER.C6 technology	Janssen	One (day 0) or two (day 0, day 56) doses Intramuscular	Phase 3
Protein subunit	Full-length recombinant SARS-CoV-2 glycoprotein nanoparticle with Matrix M adjuvant Spike prefusion protein	Novavax	Two doses (day 0, day 21) Intramuscular	Phase 3
Protein subunit	SARS-CoV-2 vaccine formulation with adjuvant (S-protein) (Baculovirus production) Spike protein	Sanofi Pasteur and GSK	Two doses (day 0, day 21) Intramuscular	Phase 1–2

Do I need Vaccine?

Rate ratios compared to 18–29 year olds

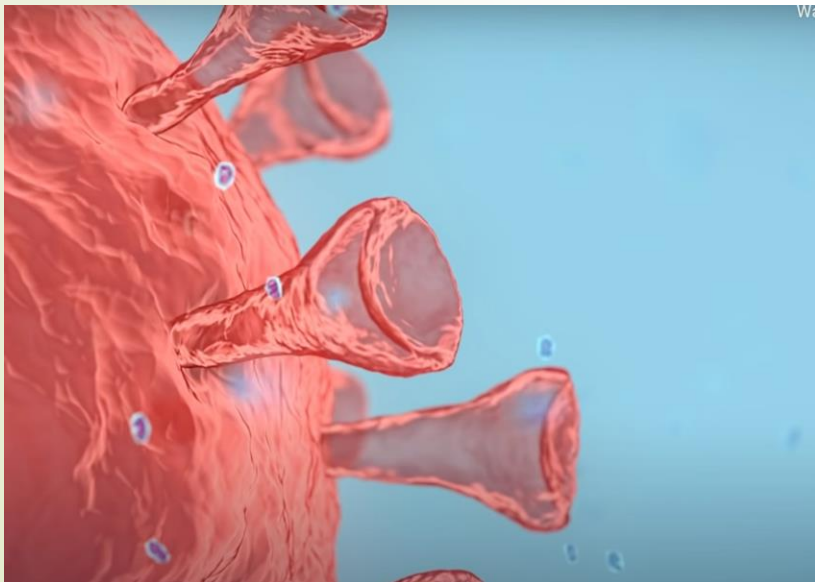
	Hospitalization ¹	Death ²
0-4 years	4x lower	9x lower
5-17 years	9x lower	16x lower
18-29 years	Comparison Group	Comparison Group
30-39 years	2x higher	4x higher
40-49 years	3x higher	10x higher
50-64 years	4x higher	30x higher
65-74 years	5x higher	90x higher
75-84 years	8x higher	220x higher
85+ years	13x higher	630x higher

Do I need Vaccine?



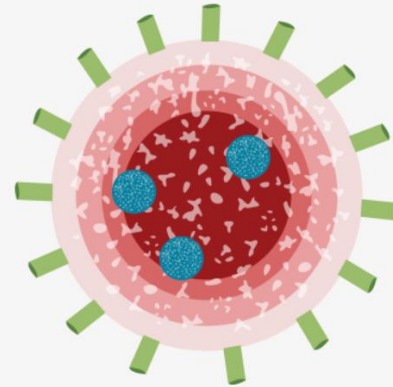
How do Vaccines work?

- COVID-19 vaccines help our bodies develop immunity to the virus without us having to get the illness. Different types of vaccines work in different ways to offer protection, but with all types of vaccines, the body is left with a supply of “**memory**” **T-lymphocytes** as well as **B-lymphocytes** that will remember how to fight that virus in the future.

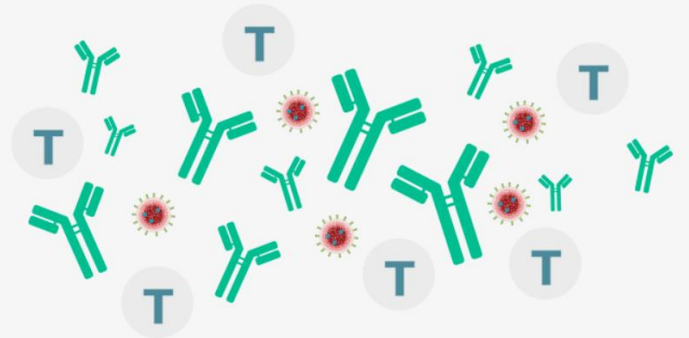


How do Vaccines work?

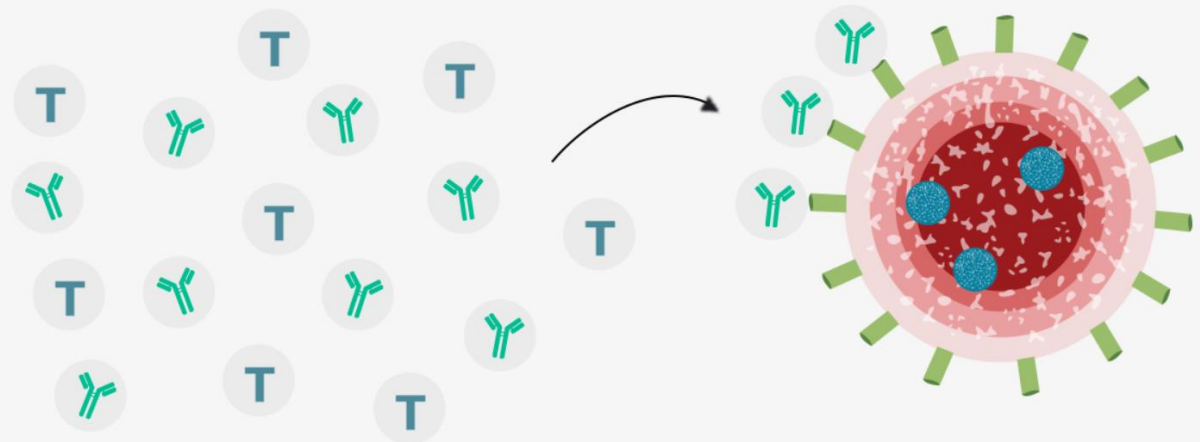
The vaccine enters the cells and tells them to produce the coronavirus spike protein.



This prompts the immune system to produce antibodies and activate T-cells to destroy infected cells



If the patient encounters coronavirus, the antibodies and T-cells are triggered to fight the virus



Were the Pfizer and Moderna vaccine adequately tested?

STAGES OF CLINICAL TRIALS



LABORATORY STUDIES

A new treatment is tested in animal or cell studies to determine if it would be safe and effective for people.



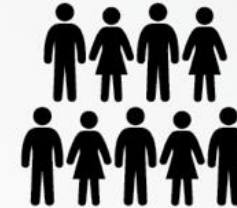
PHASE 1

Tests the safety of medication and treatment on a small group of people



PHASE 2

Continues safety and effectiveness testing with a slightly larger group



PHASE 3

Studies safety, effectiveness and dosing of treatment on hundreds to thousands of people



PHASE 4

Studies long-term effectiveness, comparing new treatment to standard treatment



....both vaccines were tested using placebo-controlled observer-blinded method.

How a Double-Blind Study Works

Neither the researcher nor the participants know who receives a placebo or the real treatment



How effective were the vaccines?

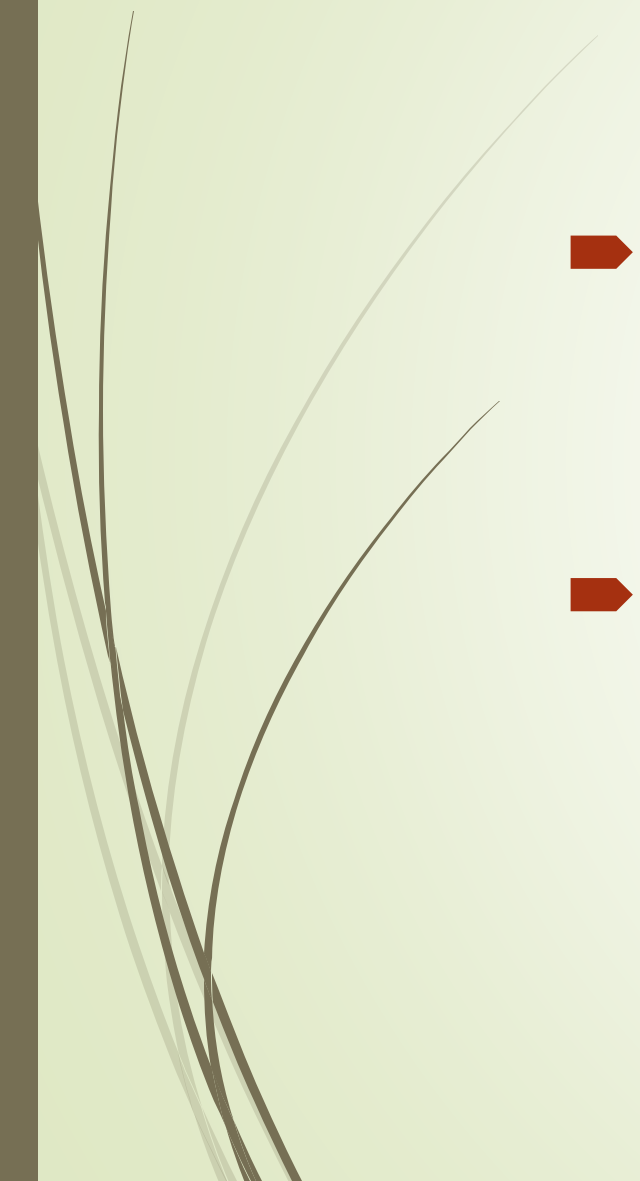
VACCINE	EFFICACY
Pfizer-BioNTech	95%
MODERNA	94.1%
AstraZeneca	70%
Johnson & Johnson	66% (72% in US) (66% in Latin America) (58% in South Africa)



Whats the minimum efficacy for a vaccine to provide protection?

- ➡ FDA and WHO have set a threshold of **50% efficacy** for approval.

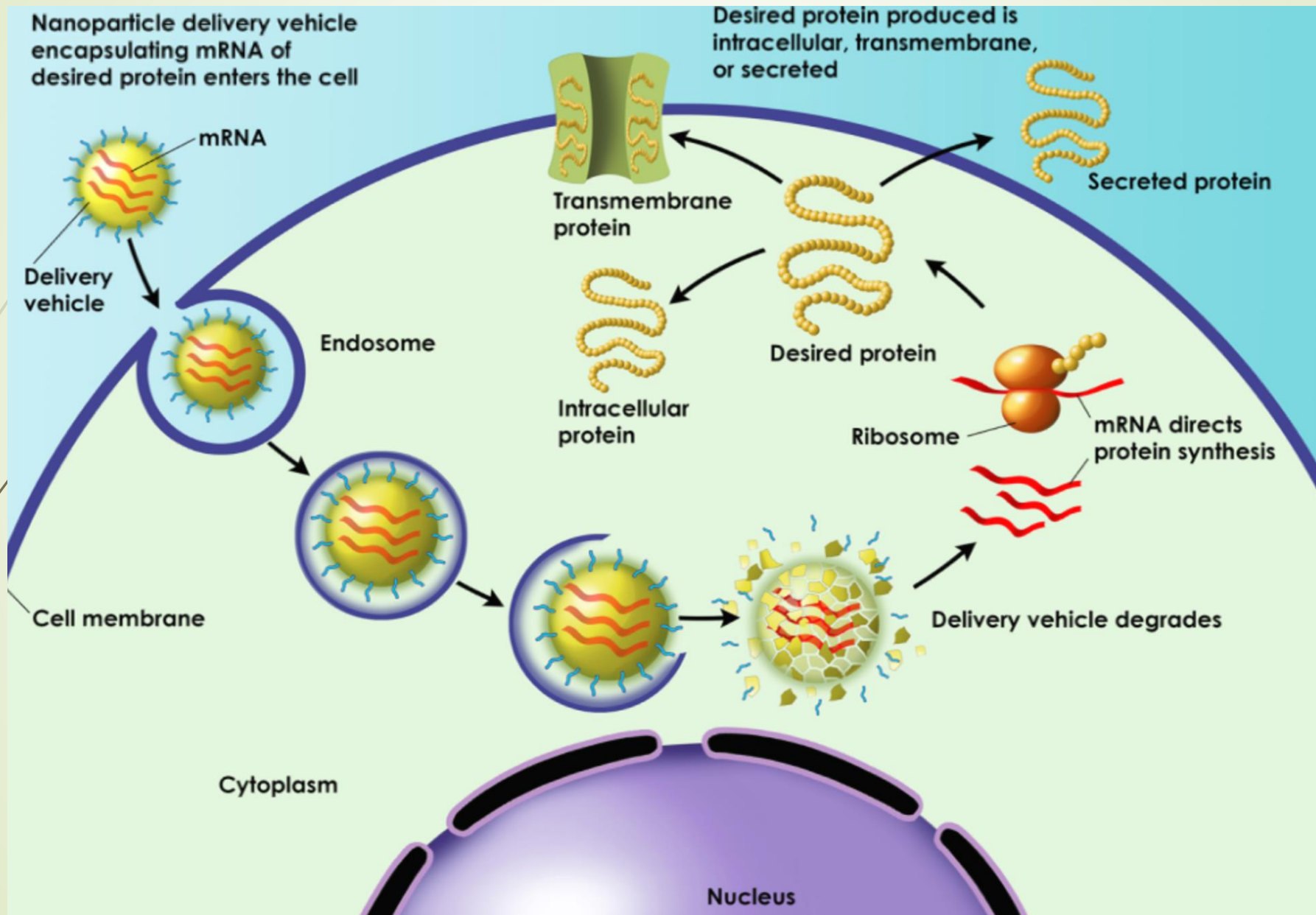
Do mRNA vaccine affect my DNA



➡ NO.

➡ The vaccines do not enter your cell's nucleus (where your DNA is located).

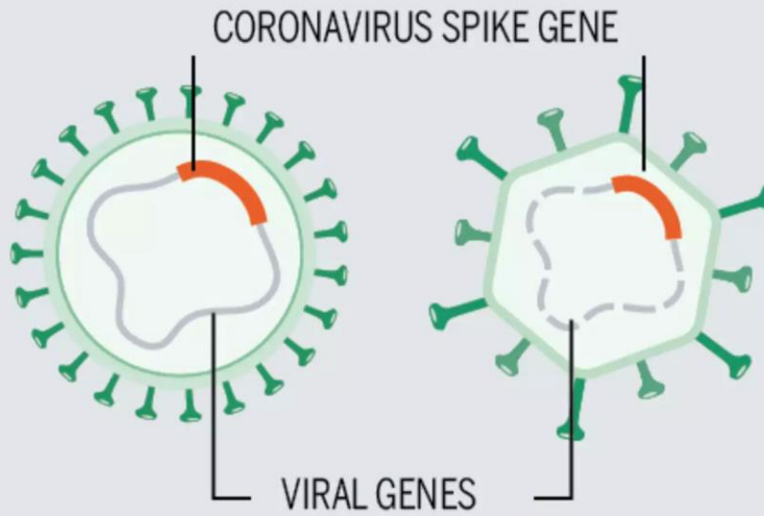
Do mRNA vaccine affect my DNA



Other types of vaccines:

REPLICATING
VIRAL-VECTOR VACCINE

NON-REPLICATING
VIRAL-VECTOR VACCINE





What are the side effects?

- Pain, swelling and redness at the vaccine site (that can last 2-3 days).
- Low grade fever
- Chills
- Fatigue/Tiderness
- Headache
- Flu like symptoms

** Symptoms are more common after the second shot.*



Comparison of two vaccines:

Pfizer- BioNTech

- 95% effective
- 2 shots, 21 days apart
- Approved for 16 years and above
- 30 micrograms
- Stored at -94 Fahrenheit
- Use within 5 days after thawing

Moderna

- 94.1% effective
- 2 shots, 28 days apart.
- Approved for 18 years and above.
- 100 micrograms
- Stored at -4 Fahrenheit
- Use within 30 days after thawing.

Severe allergy/anaphylaxis.

WHAT ARE THE INGREDIENTS IN THE PFIZER-BIONTECH COVID-19 VACCINE?

The Pfizer-BioNTech COVID-19 Vaccine includes the following ingredients: mRNA, lipids ((4-hydroxybutyl)azanediyl)bis(hexane-6,1-diyl)bis(2-hexyldecanoate), 2 [(polyethylene glycol)-2000]-N,N-ditetradecylacetamide, 1,2-Distearoyl-sn-glycero-3-phosphocholine, and cholesterol), potassium chloride, monobasic potassium phosphate, sodium chloride, dibasic sodium phosphate dihydrate, and sucrose.

WHAT ARE THE INGREDIENTS IN THE MODERNA COVID-19 VACCINE?

The Moderna COVID-19 Vaccine contains the following ingredients: messenger ribonucleic acid (mRNA), lipids (SM-102, polyethylene glycol [PEG] 2000 dimyristoyl glycerol [DMG], cholesterol, and 1,2-distearoyl-sn-glycero-3-phosphocholine [DSPC]), tromethamine, tromethamine hydrochloride, acetic acid, sodium acetate, and sucrose.

Pregnancy and breast feeding safety.

- Pregnant people with COVID-19 have an increased risk of severe illness, including illness that results in ICU admission, mechanical ventilation, and death compared with non-pregnant women of reproductive age.
- Pregnant people with COVID-19 might be at increased risk of adverse pregnancy outcomes, such as preterm birth, compared with pregnant women without COVID-19.
- Based on how mRNA vaccines work, experts believe they are unlikely to pose a specific risk for people who are pregnant. However, the actual risks of mRNA vaccines to the pregnant person and her fetus are unknown because these vaccines have not been studied in pregnant women.
- There are no data on the safety of COVID-19 vaccines in lactating women or on the effects of mRNA vaccines on the breastfed infant or on milk production/excretion. mRNA vaccines are not thought to be a risk to the breastfeeding infant.

Will the vaccine work for the new variant?

- ➡ Limited data at this time.
- ➡ Both mRNA vaccines appear to be effective against UK (B.1.1.7) and Brazil (P.1) variant . No change in the amount of neutralizing antibodies.
- ➡ South African variant (B.1.351) however has 6 times less neutralizing antibodies with Moderna and 2/3rd reduction with Pfizer-BioNTech.



Will the vaccine work for the new variant?

- ▶ Johnson&Johnson was only 58% efficacious in South Africa and 66% in Latin America.
- ▶ AstraZeneca vaccination roll out on hold on South Africa (Feb 2021). Provides minimal protection against mild and moderate cases.



I had COVID-19, do I need the vaccine?

- Getting COVID-19 may offer some natural immunity. Current evidence suggests that reinfection with the virus that causes COVID-19 is uncommon in the 90 days after initial infection. However, experts don't know for sure how long this protection lasts, and the risk of severe illness and death from COVID-19 far outweighs any benefits of natural immunity.

Do I still need a mask and social distance after vaccination?

- YES.
- We need to continue all precautions (mask wearing, social distancing and hand hygiene)
- We know the vaccines protect against moderate and severe disease.
- We don't know if the vaccine prevents asymptomatic infection.
- You risk of transmitting the virus to other around you.



How do I protect against the new variants?

- Masks
- Social distancing
- Hand hygiene.
- Vaccines.



Which vaccine is the best?

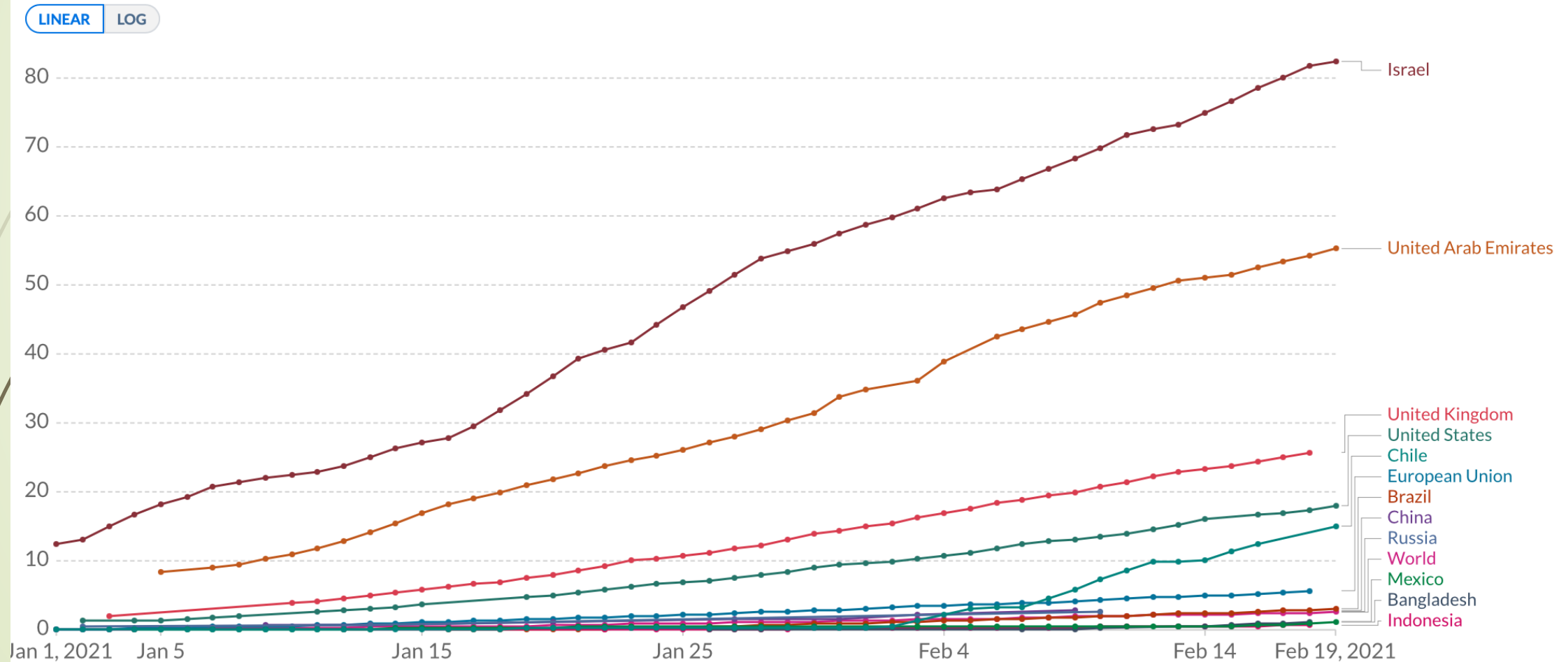
- ➡ The one that is made available to you as soon as possible.
- 

Where do we stand with vaccination?

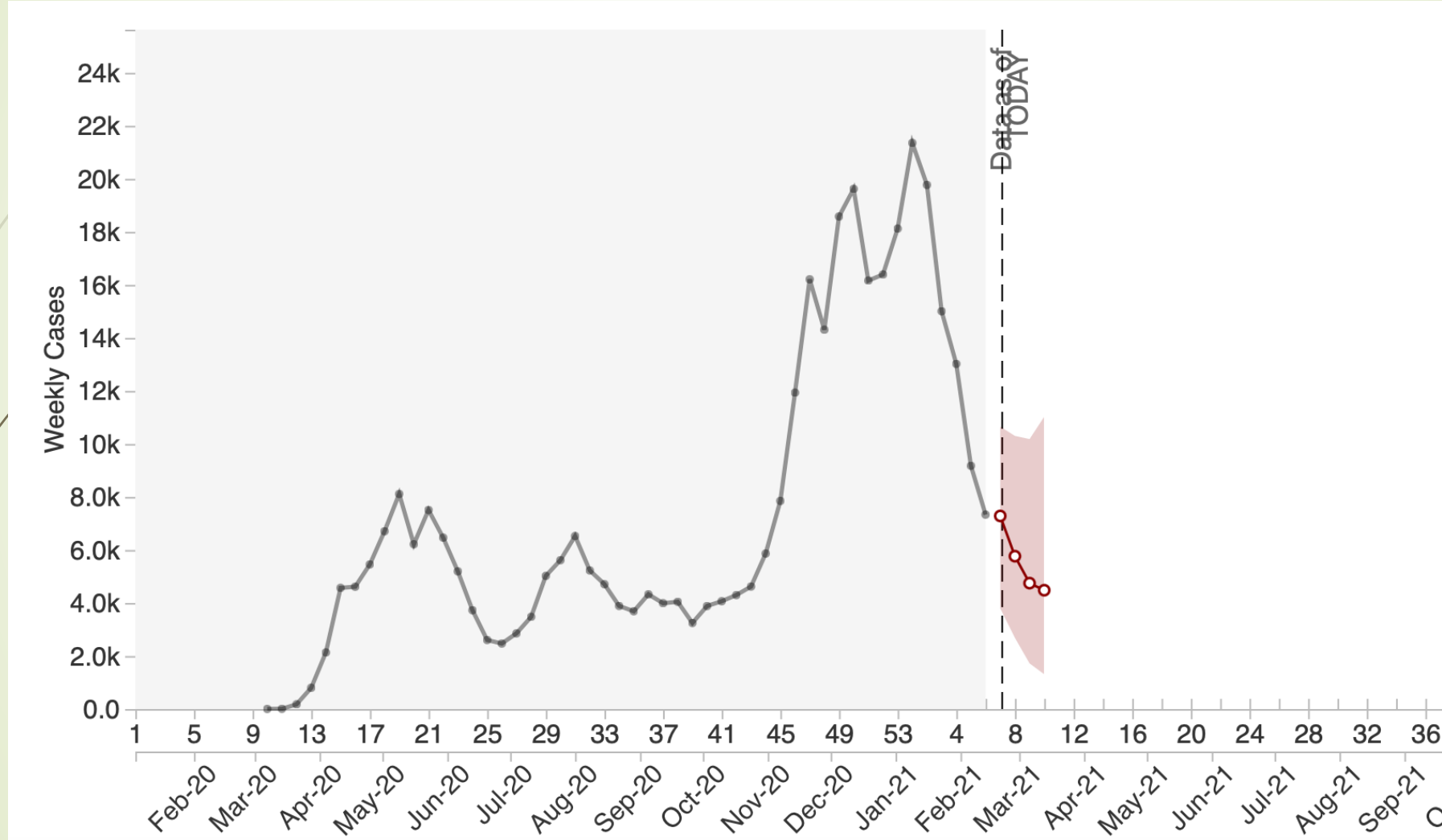
Cumulative COVID-19 vaccination doses administered per 100 people

This is counted as a single dose, and may not equal the total number of people vaccinated, depending on the specific dose regime (e.g. people receive multiple doses).

Our World
in Data

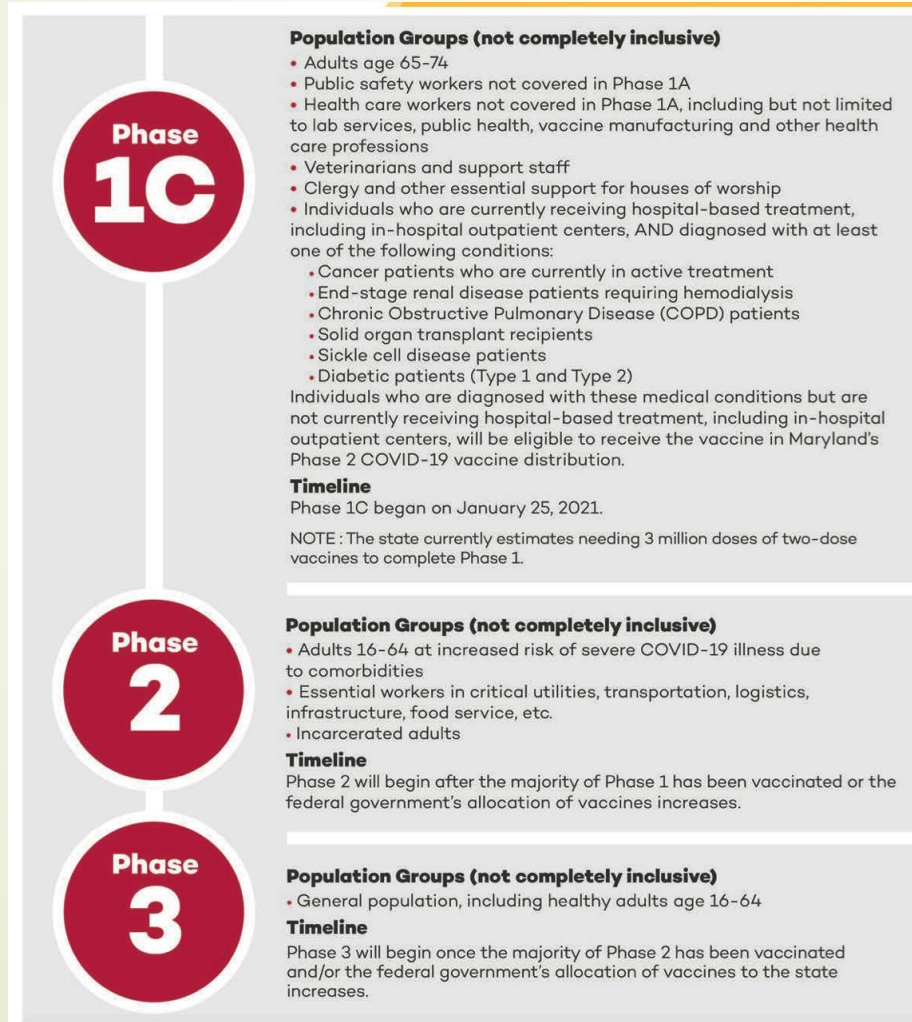


Maryland Projected Cases:



Maryland Vaccine information:

➤ Visit <https://covidlink.maryland.gov/content/vaccine/>





Vaccine information:

- <https://www.montgomerycountymd.gov/covid19/vaccine/>
- <https://covidlink.maryland.gov/content/vaccine/>
- <https://www.medstarhealth.org/mhs/about-medstar/covid-19-vaccine-information/>
- <https://www.cvs.com/immunizations/covid-19-vaccine>
- <https://giantfood.com/pages/covid-info>
- <https://www.walgreens.com/topic/promotion/covid-vaccine.jsp>