

This is the time for facts, not fear.
 This is the time for science, not rumors.
 This is the time for solidarity, not stigma.

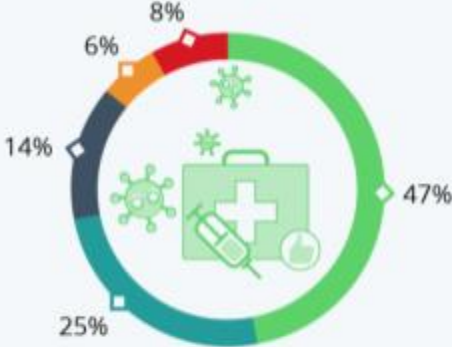
FACTS, FEARS AND FICTION

COVID – SARS-Cov-2 - Vaccine – Facts, Fears and Fictions

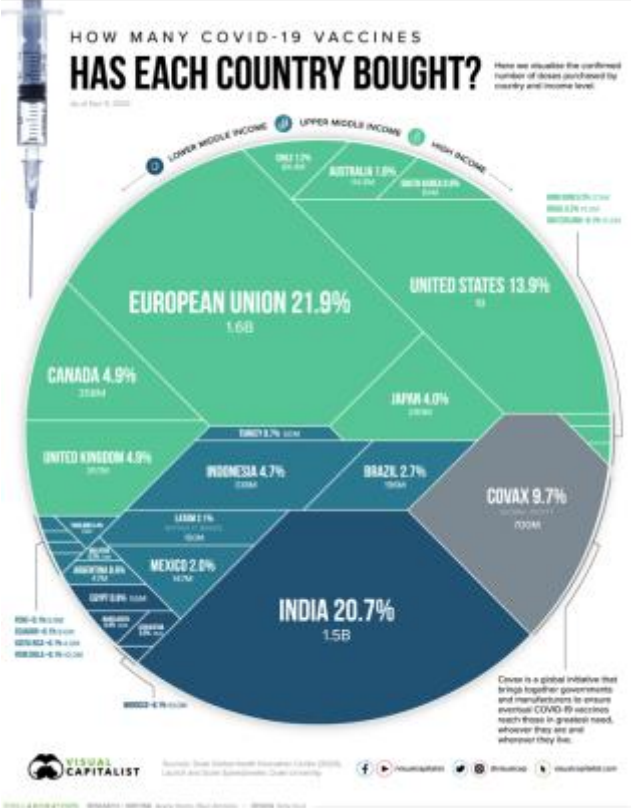
Global Majority Would Take Covid Vaccine

Percentage of people around the world who would accept a COVID-19 vaccine

- Completely agree
- Somewhat agree
- No opinion
- Somewhat disagree
- Completely disagree



Survey conducted of 13,426 from 19 countries
 Source: Nature Medicine



statista



Disclaimer

- The views and opinions expressed in this presentation are those of the Presenter and do not necessarily represent official policy or position of any of the organizations and bodies to which he is, or has been associated;
- The material in this presentation is general background information about Covid vaccinations. This information is given in outline and summary form and does not purport to be complete. In particular there are aspects of vaccination which I do not mention which might be appropriate to your specific condition. This presentation was created for informational purposes only. **It MUST not be considered or used as medical/clinical advice or a personal recommendation.**
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Declaration of Interests

Prof. Andy Barraclough:

I do **NOT** practice clinical medicine in Thailand.

I do **NOT** provide individual medical/clinical advice.

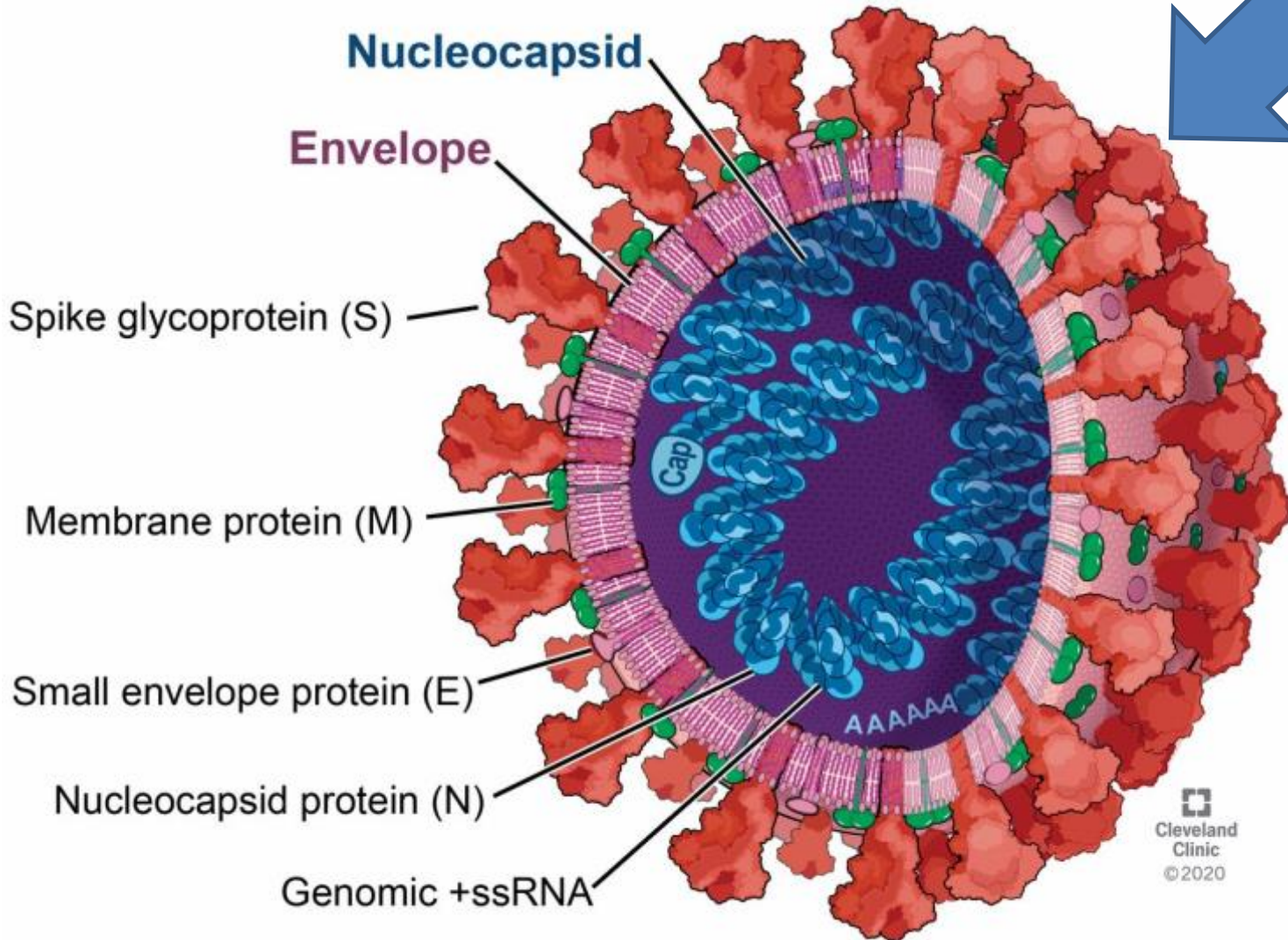
- I have the following financial interest or relationship(s) to disclose with regard to the subject matter of this presentation:
- I have received funding from, and/or worked in various capacities with the following organizations which have enabled my activities on COVID vaccinations:
- Empower School of Health
- UN agencies, World Bank, World Health Organization and especially WHO SEARO
- GOARN Global Outbreak Alert Response Network

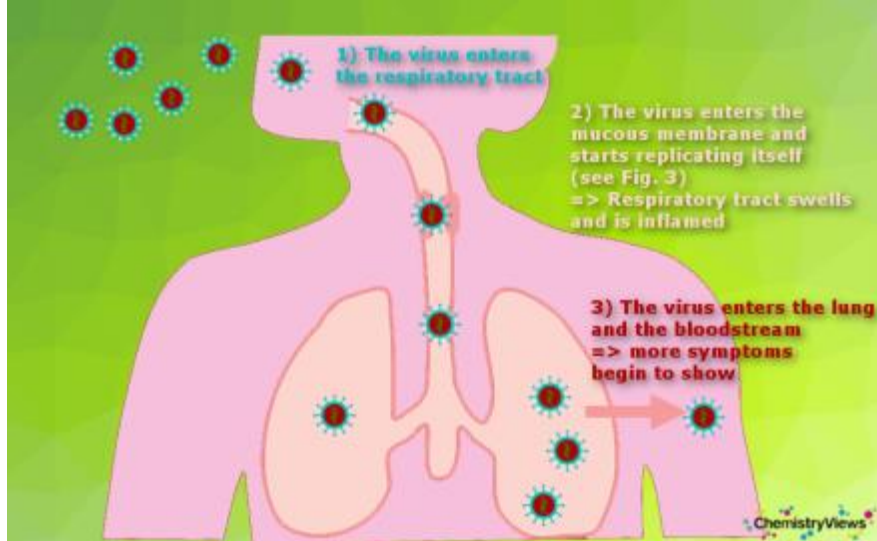


Acknowledgments

- The majority of the materials contained in this presentation are extracted from published information which is freely available in the public domain, from such bodies as:
 - Empower School of Health
 - World Health Organization
 - UN agencies
 - USA CDC – Centre for Disease Control
 - UK – National Health Service
 - Mahidol University, Tropical Diseases Hospital, Bangkok
- Wherever possible I have cited the internet link to the published information.

COVID-19 Virus

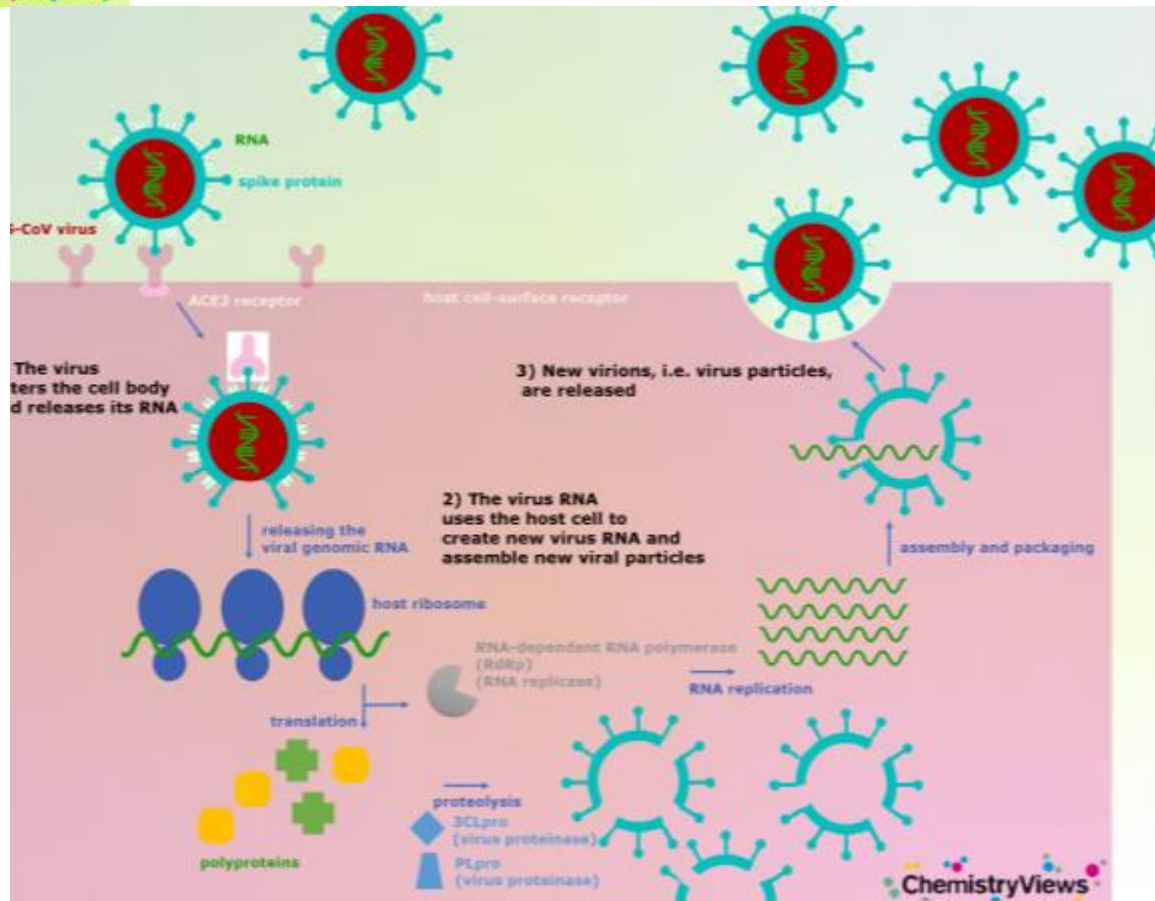




ACE2 receptors are found in ciliated epithelial cells in the upper and lower airway and in type II pneumocytes in the alveoli in the lower airway. Type II pneumocytes produce lung-lubricating proteins important for lung function.

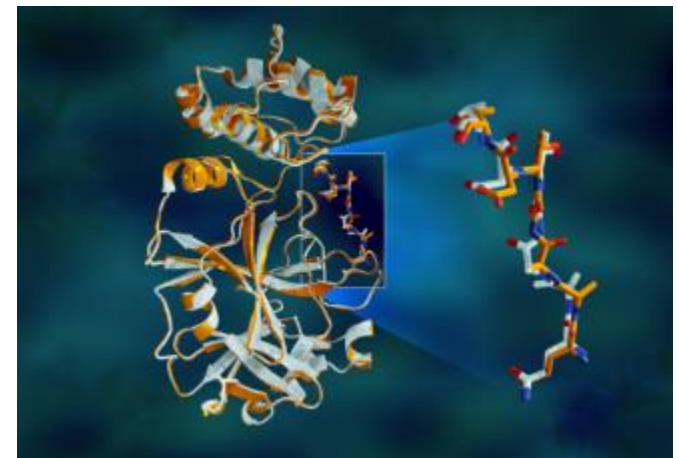
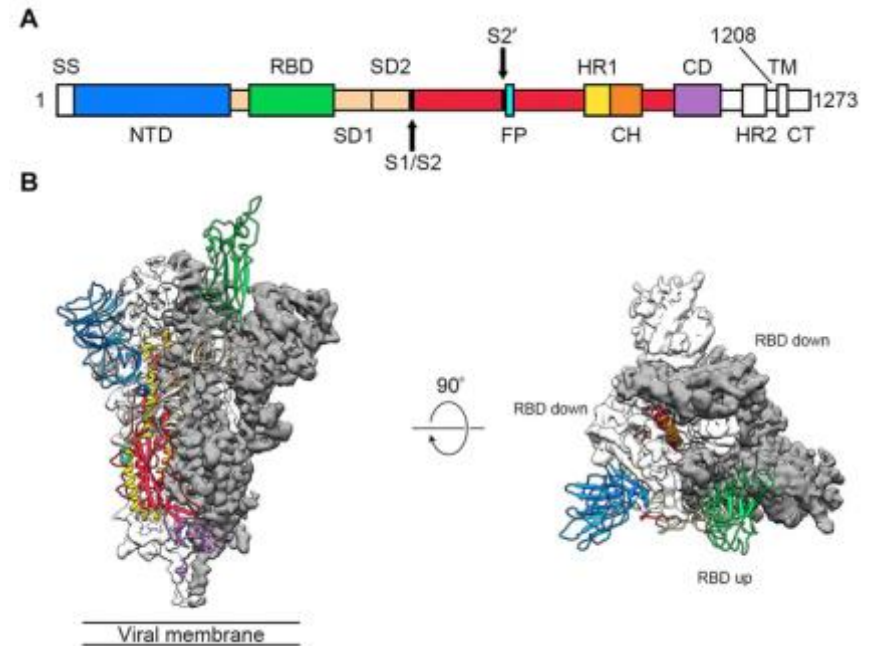
Four proteins, the spike, 3CLpro, PLpro, and RdRp, are essential for the virus. The SARS-CoV-2 spike is significantly different from the SARS-CoV spike, especially in two regions when binding to ACE2.

https://www.chemistryviews.org/details/ezone/11225161/Coronavirus_Entering_and_Replicating_in_a_Host_Cell.html



Spike Protein

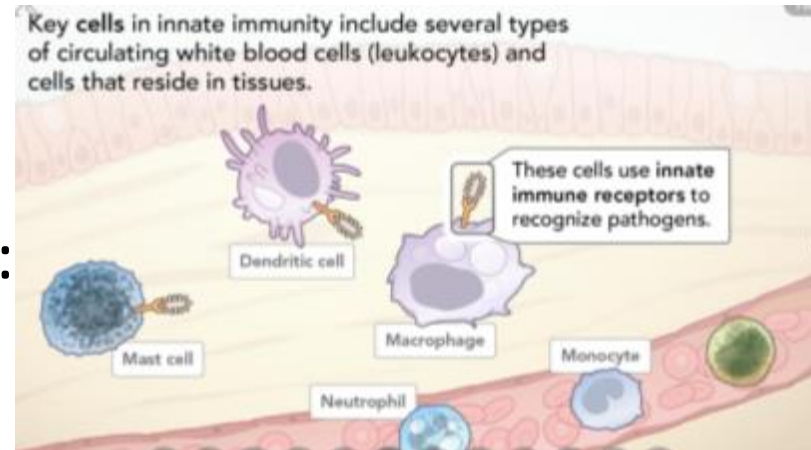
- A viral spike protein is like a key that “unlocks the door” to gain access to the cells of a specific host – humans, in this case.
- But, disturbingly, the researchers found that 2019-nCoV binds to ACE2 with much higher affinity (10-20 times higher!) than SARS. In other words, 2019-nCoV’s “key” is a lot “stickier” than the SARS one. It’s like a SARS “key” covered in superglue. This means that once it’s in the lock, it’s far less likely to be shaken loose and is therefore presumably more effective at invading our cells.



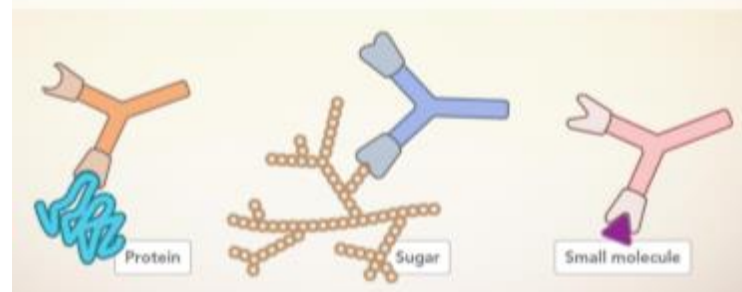
- <https://theconversation.com/revealed-the-protein-spike-that-lets-the-2019-ncov-coronavirus-pierce-and-invade-human-cells-132183>

Human Immune System

- Its really, really, really, complicated
- BUT, in a VERY simplified form: its in 2 main parts
- Innate first and then IF the infection persists Adaptive which develop antibodies
- And each part has sub parts
- The flow IS sort of sequential, but there is overlap and other channels as well

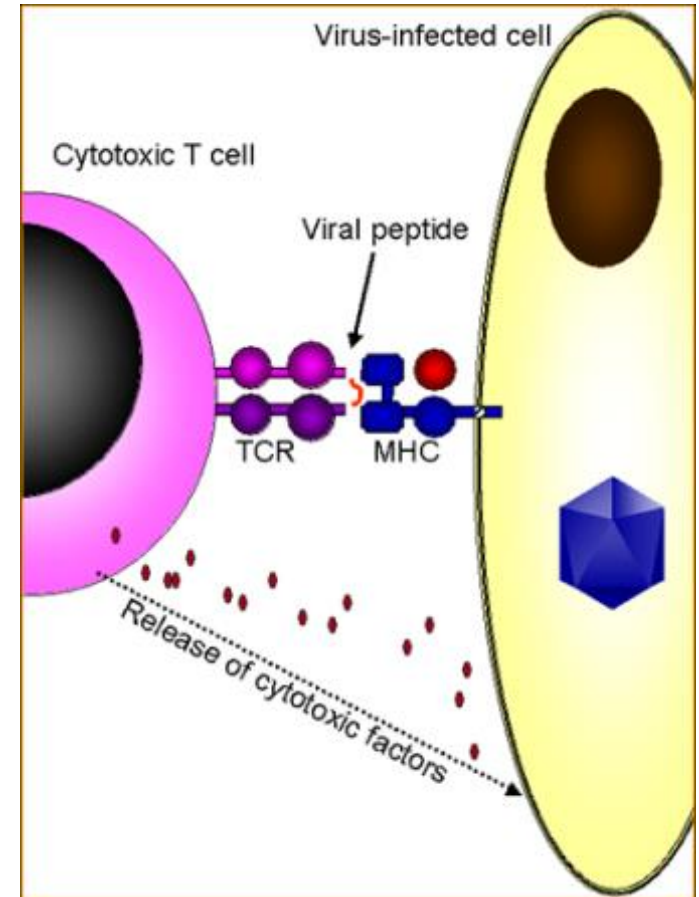


The main function of B cells is to produce **antibodies**, specialized proteins that can bind to many different kinds of antigens.



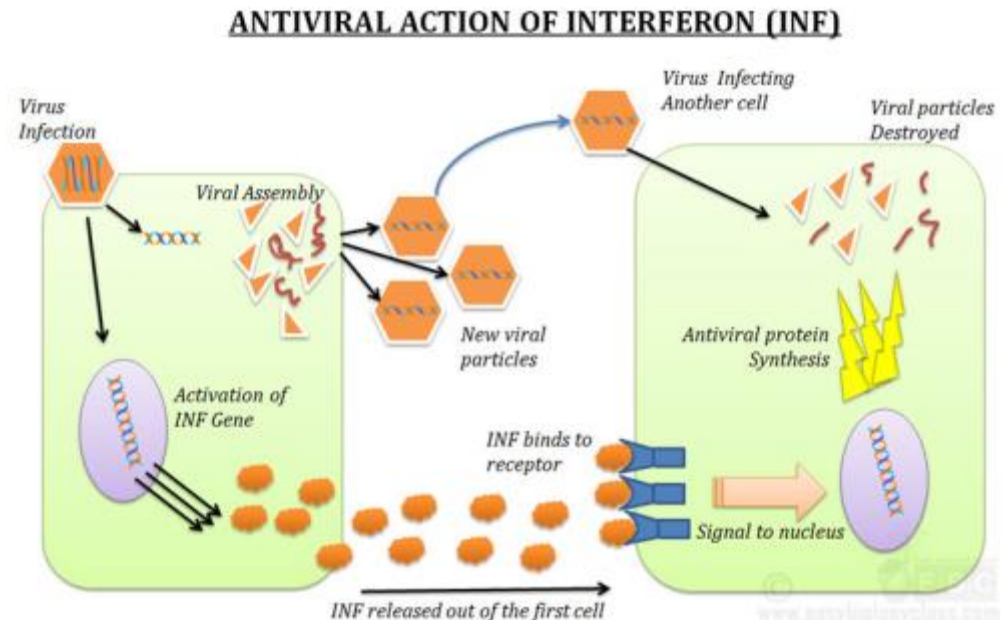
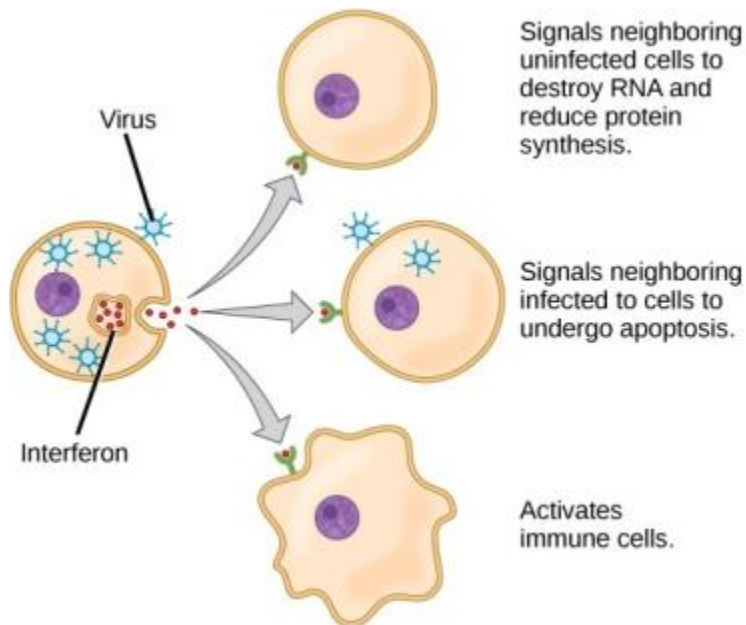
Innate, part 1

- When a virus infects a person (host), it invades the cells of its host in order to survive and replicate. Once inside, the cells of the immune system cannot 'see' the virus and therefore do not know that the host cell is infected. To overcome this, cells employ a system that allows them to show other cells what is inside them – they use molecules called class I major histocompatibility complex proteins (or MHC class I, for short) to display pieces of protein from inside the cell upon the cell surface. If the cell is infected with a virus, **these pieces of peptide will include fragments of proteins made by the virus.**
- A special cell of the immune system called a T cell circulates looking for infections. One type of T cell is called a cytotoxic T cell because it kills cells that are infected with viruses with toxic mediators



Innate part 2

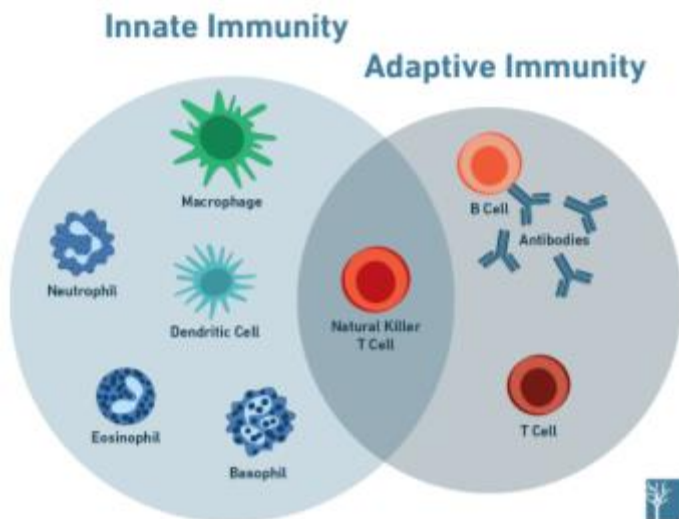
- Virally infected cells produce and release small proteins called interferons, which play a role in immune protection against viruses. Interferons prevent replication of viruses, by directly interfering with their ability to replicate within an infected cell. They also act as signalling molecules that allow infected cells to warn nearby cells of a viral presence – this signal makes neighbouring cells increase the numbers of MHC class I molecules upon their surfaces, so that T cells surveying the area can identify and eliminate the viral infection as described above.



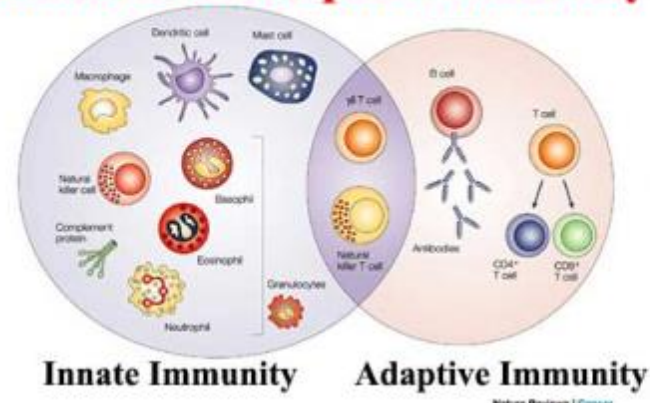
What does this mean ?

- In very crude terms, the body's INNATE immune system defense (Part 1) can (sometimes) eliminate a virus BEFORE antibodies are developed
- If antibodies are not developed there is no 'memory' of the disease and the body can be re-infected at a later stage, perhaps at a time when the innate immune system cannot cope
- For any vaccine to work it has to be strong enough to trigger antibody production but not cause any illness/adverse effect.
- Getting the vaccine dosage correct is critical.

<https://microbiologyinfo.com/difference-between-innate-and-adaptive-immunity/>



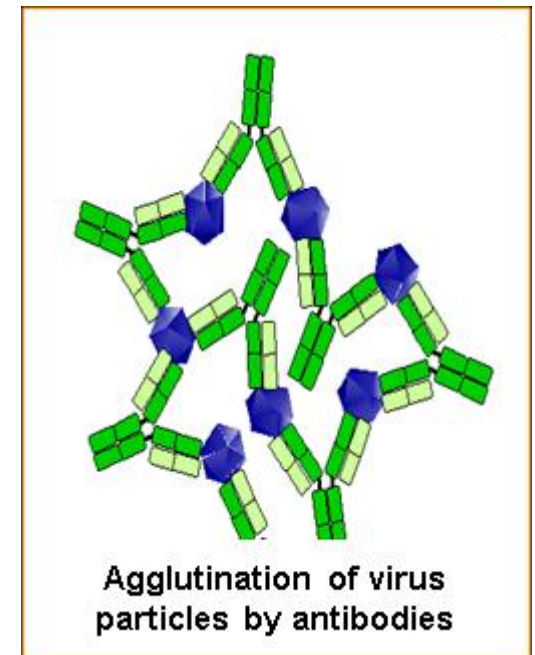
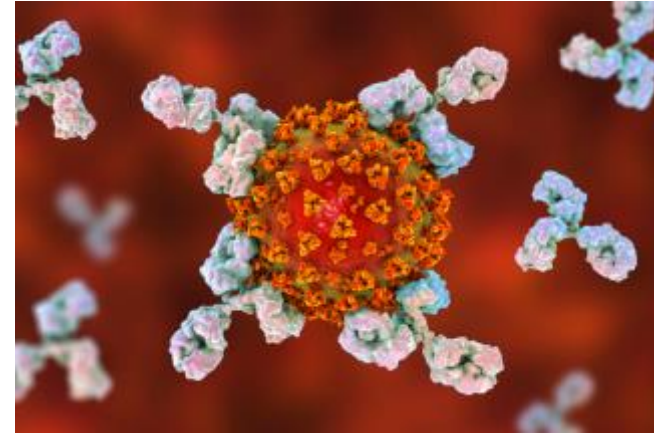
Difference between Innate and Adaptive Immunity



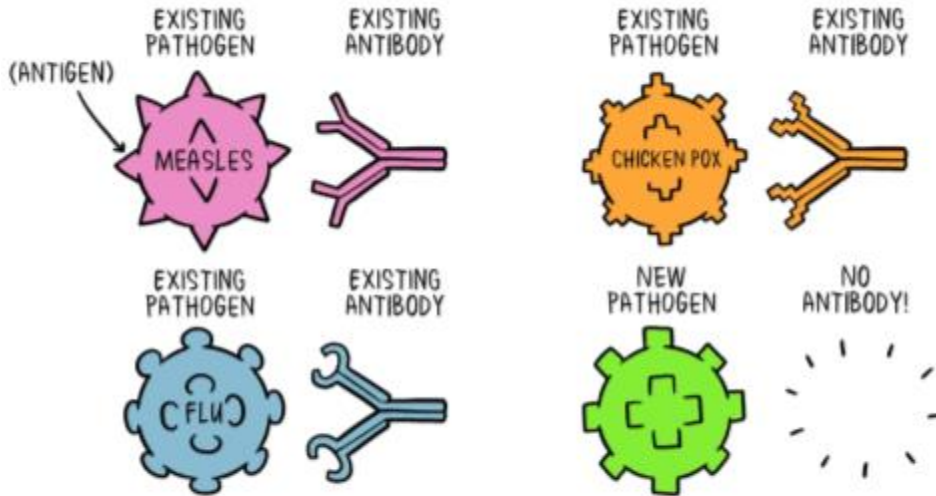
Antibodies

- Viruses can also be removed from the body by antibodies before they get the chance to infect a cell. Antibodies are proteins that specifically recognise invading pathogens and bind (stick) to them. This binding serves many purposes in the eradication of the virus:
 - Firstly, the antibodies neutralise the virus,
 - Secondly, many antibodies can work together, causing virus particles to stick together in a process called agglutination which make an easier target
 - A third mechanism used by antibodies to eradicate viruses, is the activation of phagocytes. Which triggers a mechanism known as phagocytosis, by which the cell engulfs and destroys the virus.
 - Finally, antibodies can also activate the complement system, which opsonises and promotes phagocytosis of viruses. Complement can also damage the envelope (phospholipid bilayer) that is present on some types of virus.

<https://www.immunology.org/public-information/bitesized-immunology/pathogens-and-disease/immune-responses-viruses>



How do Vaccines Work ?



When a new pathogen or disease enters our body, it introduces a new antigen. For every new antigen, our body needs to build a specific antibody that can grab onto the antigen and defeat the pathogen.

Each antibody, or soldier, in our system is trained to recognize one specific antigen. We have thousands of different antibodies in our bodies. When the human body is exposed to an antigen for the first time, it takes time for the immune system to respond and produce antibodies specific to that antigen.

The subpart of a pathogen that causes the formation of antibodies is called an antigen. The antibodies produced in response to the pathogen's antigen are an important part of the immune system. You can consider antibodies as the soldiers in your body's defense system

VACCINE

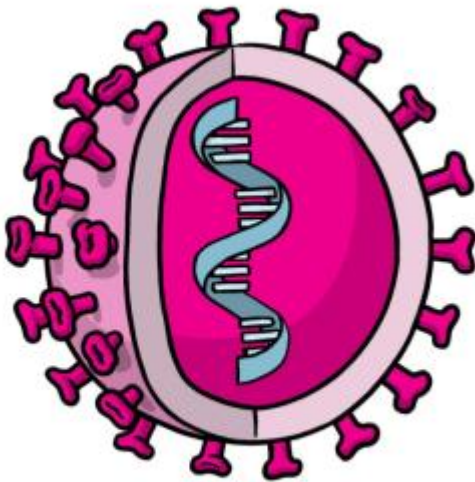
NEW ANTIBODY



A VACCINE is a tiny weakened non-dangerous fragment of the organism and includes parts of the antigen. It's enough that our body can learn to build the specific antibody. Then if the body encounters the real antigen later, as part of the real organism, it already knows how to defeat it.

Vaccines – the 3 main approaches

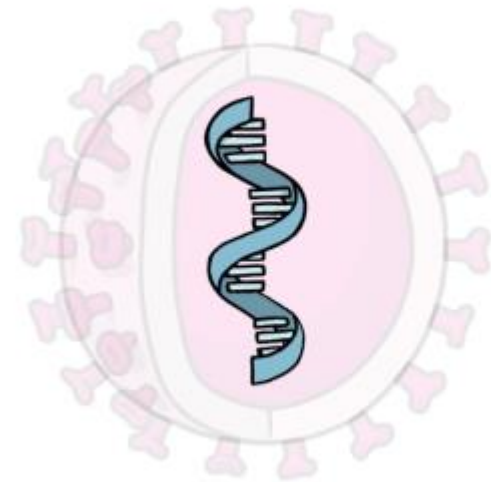
There are three main approaches to making a vaccine:



Using a whole virus
or bacterium



Parts that trigger
the immune system



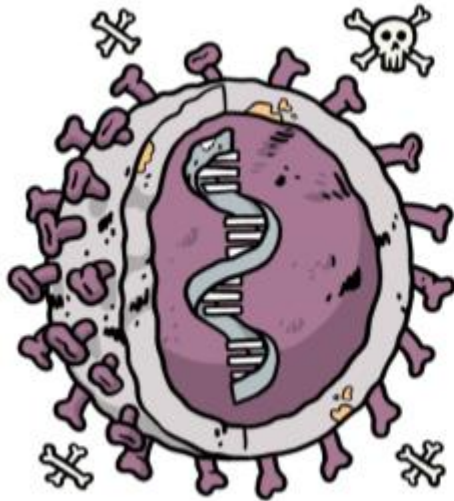
Just the
genetic material

Approaches for Covid SARS Cov 2 Vaccine Development

Sinopharma WIBP (Inactivated)	Oxford/AstraZeneca-AZD1222	BioNTech/Pfizer (mRNA)
Sinovac- Coronavac (Inactivated)	Gamalaleya Sputnik V	Moderna (mRNA)

Whole Microbe

The whole-microbe approach



Inactivated vaccine



Live-attenuated vaccine



Viral vector vaccine

Examples of Vaccine Types

Flu, Polio

Measles, MMR,
Chickenpox

Ebola

Parts

The subunit approach



Only uses the very specific parts (the subunits) of a virus or bacterium that the immune system needs to recognize.

uses very specific parts (the subunits) of a virus or bacterium that the immune system needs to recognize. It **doesn't** contain the whole microbe or use a safe virus as a vector. The subunits may be proteins or sugars.

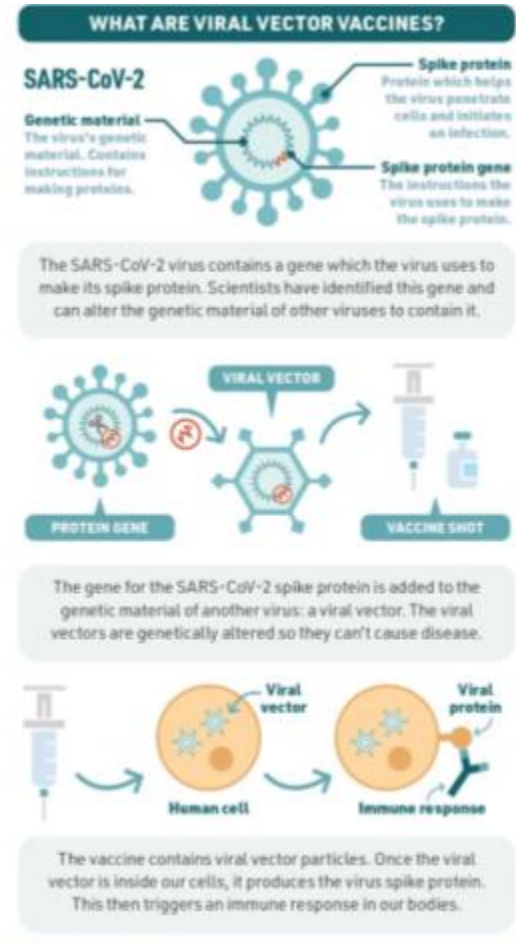
Examples of Vaccines Types

whooping cough, tetanus, diphtheria and meningococcal meningitis.

Viral Vector

Viral vector vaccines use a modified version of a different virus as a vector to deliver instructions, in the form of genetic material (a gene), to a cell. The vaccine does not cause infection with either COVID-19 or the virus that is used as the vector. The genetic material delivered by the viral vector does not enter the cell nucleus and does not integrate into a person's DNA. For COVID-19 vaccines, this gene codes for the spike protein, which is only found on the surface of SARS-CoV-2. The viral vector is used to shuttle this gene into a human cell. Once inside a cell, the viral vector uses this gene and the cell's machinery to produce the spike protein and display it on the cell's surface.

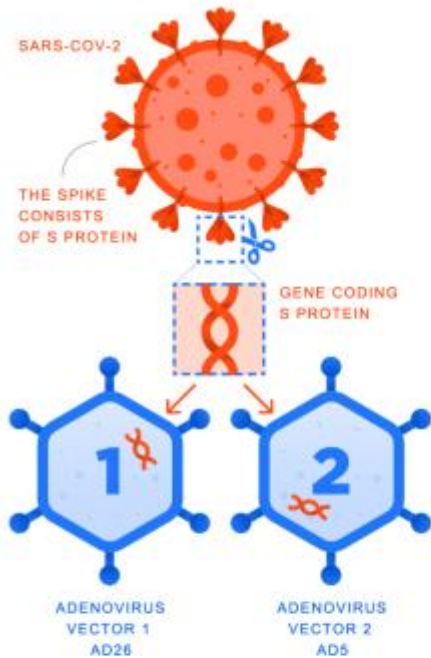
Once displayed on the cell's surface, the protein (or antigen) causes the immune system to begin producing antibodies and activating T-cells to fight off what it thinks is an infection. These antibodies are specific to the SARS-CoV-2 virus, which means the immune system is primed to protect against future infection.



Two-vector vaccine against coronavirus

Vector creation

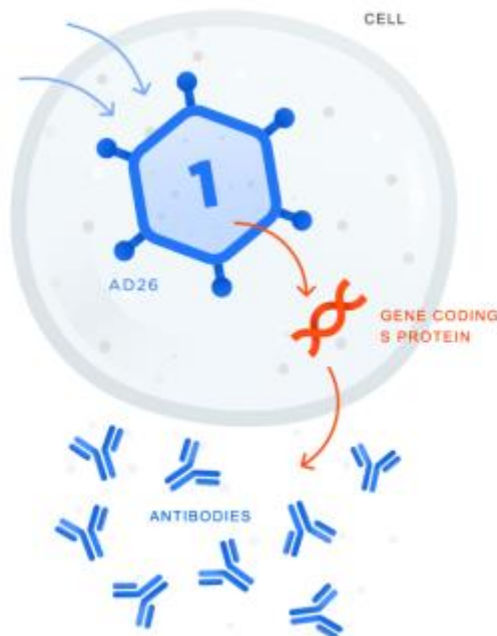
A **vector** is a virus that lacks a gene responsible for reproduction and is used to transport genetic material from another virus that is being vaccinated against into a cell. The **vector** does not pose any hazard to the body. The vaccine is based on an adenoviral vector which normally causes acute respiratory viral infections



A gene coding **S protein** of SARS-CoV-2 spikes is inserted into each vector. The spikes form the "crown" from which the virus gets its name. The SARS-CoV-2 virus uses spikes to get into a cell

First vaccination

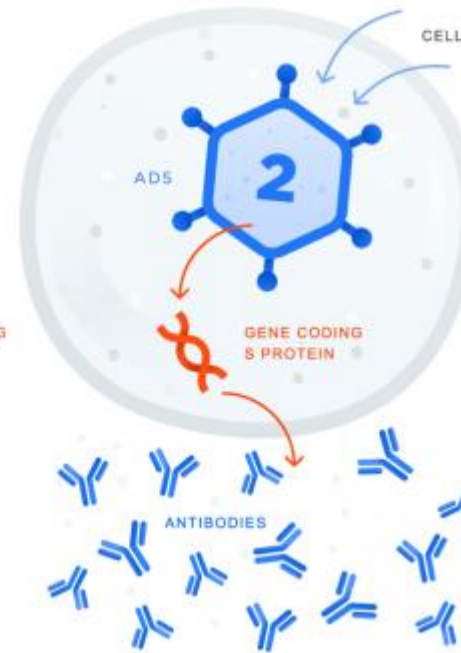
Vector with a gene coding **S protein** of coronavirus gets into a cell



The body synthesizes **S protein**. In response, the production of **immunity** begins

Second vaccination

Repeated vaccination takes place in 21 days



The vaccine based on another adenovirus vector unknown to the body boosts the immune response and provides for long-lasting immunity

<https://spunivk vaccine.com/about-vaccine/>

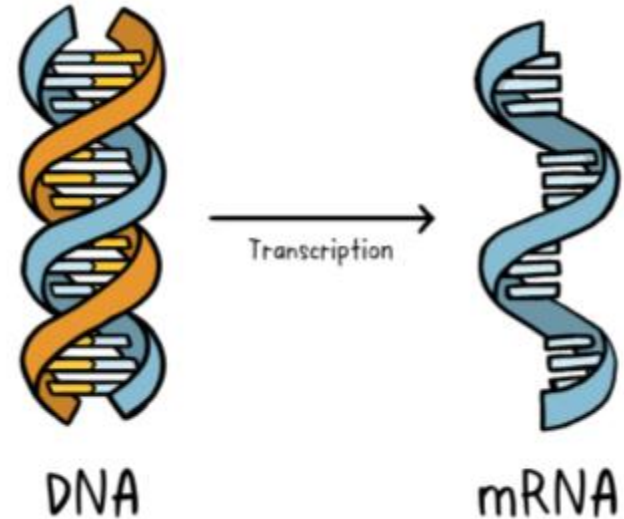
The use of two vectors is a unique technology of the Gamaleya Center making the Russian vaccine different from other adenovirus vector-based vaccines being developed globally

Genetic (Nucleic Acid Vaccine)

The genetic approach (nucleic acid vaccine)



Uses the genetic material for specific proteins - the DNA or RNA.

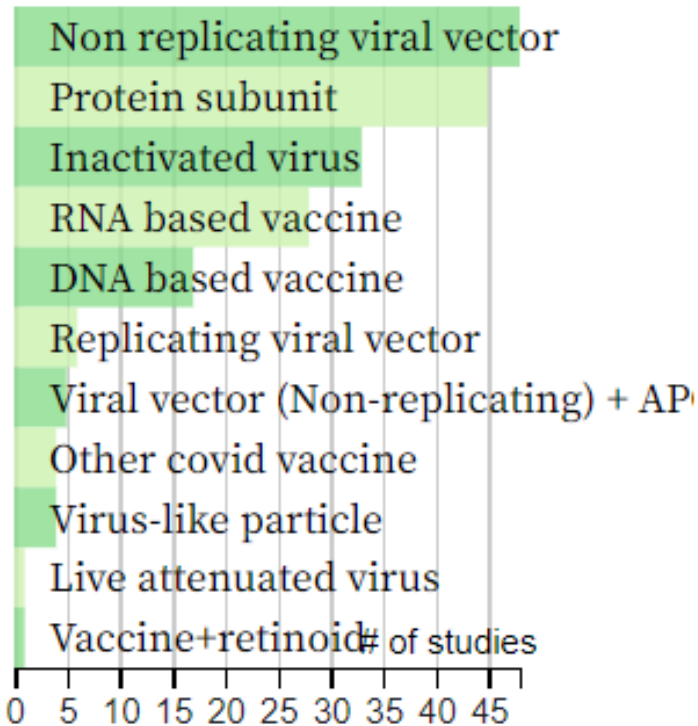


.. uses a section of genetic material that provides the instructions for specific proteins, not the whole microbe. In our cells, DNA is first turned into messenger RNA, which is then used as the blueprint to make specific proteins.

The nucleic acid approach is a new way of developing vaccines. **Before the COVID-19 pandemic, none had yet been through the full approvals process** for use in humans, though some DNA vaccines, including for particular cancers, were undergoing human trials. Because of the pandemic, research in this area has progressed very fast and some mRNA vaccines for COVID-19 are getting emergency use authorization, which means they can now be given to people beyond using them only in clinical trials.

Types of Vaccine in Development

▼ Type of vaccine



Vaccine (per arm)	Sample size	Type of vaccine	Phase	Sponsor/Funder	Reg. number
(1) ChAdOx1 nCoV-19 vaccine	12390	Non replicating viral vector	Phase 2 / Phase 3	University of Oxford	NCT04400838
(1) LNP-nCoVsaRNA vs (2) LNP-nCoVsaRNA vs (3) LNP-nCoVsaRNA	320	RNA based vaccine	Phase 1	1. Medical Research Council (UK) 2. UK Research and Innovation (UK)	ISRCTN17072692
(1) SARS-CoV-2 vaccine vs (2) SARS-CoV-2 vaccine vs (3) SARS-CoV-2 vaccine	942	Inactivated virus	Phase 1 / Phase 2	Chinese Academy of Medical Sciences	NCT04412538
(1) ChAdOx1 nCoV-19 vaccine	10300	Non replicating viral vector	Phase 3	University of Oxford	ISRCTN89951424
(1) Ad26COVS1 vs (2) Ad26COVS1 vs (3) Ad26COVS1	1045	Non replicating viral vector	Phase 1 / Phase 2	Janssen Vaccines & Prevention B.V.	NCT04436276
(1) ChAdOx1 nCoV-19 vaccine vs (2) ChAdOx1 nCoV-19 vaccine vs (3) ChAdOx1 nCoV-19 vaccine vs (4) ChAdOx1 nCoV-19 vaccine	2130	Non replicating viral vector	Phase 1 / Phase 2	University of Witwatersrand, South Africa	NCT04444674
(1) GX-19 vs (2) GX-19 vs (3) GX-19	210	DNA based vaccine	Phase 1 / Phase 2	Genexine, Inc.	NCT04445389
(1) CVnCoV Vaccine	280	RNA based vaccine	Phase 1	CureVac AG	NCT04449276
(1) SARS-CoV-2 mRNA vaccine vs (2) SARS-CoV-2 mRNA vaccine vs (3) SARS-CoV-2 mRNA vaccine	168	RNA based vaccine	Phase 1	Shulan (Hangzhou) Hospital, Center for Disease Control and Prevention of Guangxi Zhuang Autonomous Region	ChiCTR2000034112
(1) Covid-19/aAPC vaccine vs (2) Covid-19/aAPC vaccine	100	Viral vector (Non-replicating) + APC (antigen presenting cell)	Phase 1	Sherzhen Geno-immune Medical Institute	NCT04299724
(1) Recombinant Novel Coronavirus (2019-nCoV) Vaccine (Adenovirus Vector) vs (2) Recombinant Novel Coronavirus (2019-nCoV) Vaccine (Adenovirus Vector) vs (3) Recombinant Novel Coronavirus	106	Non replicating viral vector	Phase 1	Jiangsu Provincial Center for Disease Control and Prevention	ChiCTR2000030906

<https://covid-nma.com/vaccines/mapping/>

Stages of Clinical Trials

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

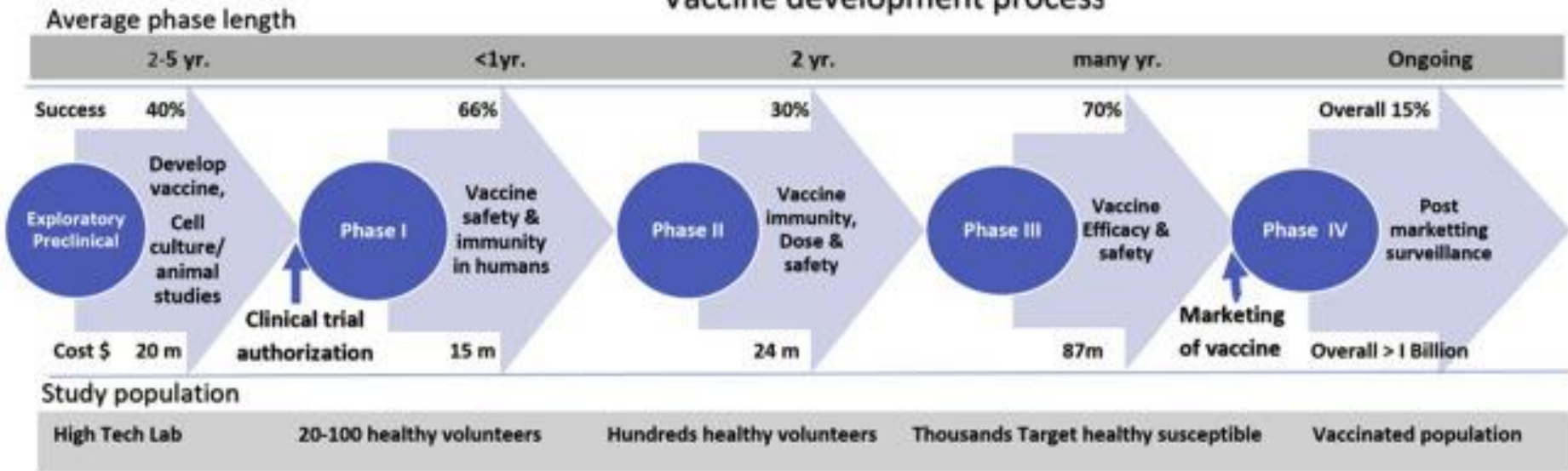
Studies safety, effectiveness and dosing of treatment on hundreds to thousands of people



PHASE 4

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

Vaccine development process



Phase 1	Phase 2	Phase 3
Safety. Mainly young healthy adults	Does it work What dosage Mixed age groups	Is it safe, and effective for mass use Compare with placebo group Multiple sites often multiple countries

Why has Covid Vaccine development gone so quickly ?

WRONG QUESTION

Why does 'normal' vaccine development take so long

Most of the time is spent trying to get the money for the next step

Has the Vaccine Development Been rushed with skipped steps ?

How can it be done so quickly ?



TECHNICAL

- Most of the techniques had already been developed for Ebola Vaccine
- The spike proteins - the distinctive structures that “crown” the coronavirus’s surface were already known about from SARS/MERS
- Vaccine “platform” – was ready. Known as the ChAdOx1 viral vector technology, this platform was created by modifying a harmless adenovirus that causes the common cold in chimpanzees.
- ChAdOx1 was part of preparing for “Disease X”, one of eight diseases prioritised for research by the World Health Organization (WHO) due to the risk they pose to public health.
- undertook combined phase 1 and 2 and phase 2 and 3 trials to speed up the development process.

FINANCIAL

1. Accepting the risk
Governments waived manufacturer liability and accepted some candidates might fail.
2. Money
Compare: New Malaria vaccine: it took 32 years of research, and cost more than \$700m
Covid vaccine USA Government alone spent \$ 9 BILLION in less than one year
3. Getting the money. The VAST majority of time in the different Phases is spent writing grant applications having them rejected, pleading for funding and trying to get volunteers.

Landscape of Novel Coronavirus candidate Vaccines

- 242 in development (Jan 29/21)
- 10 already in use

<https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>



COVID-19 - Landscape of novel coronavirus candidate vaccine development worldwide

Tuesday, February 9, 2021

DISCLAIMER: These landscape documents have been prepared by the World Health Organization (WHO) for information purposes only concerning the 2019-2020 pandemic of the novel coronavirus. Inclusion of any particular product or entity in any of these landscape documents does not constitute, and shall not be deemed or construed as, any approval or endorsement by WHO of such product or entity (or any of its businesses or activities). While WHO takes reasonable steps to verify the accuracy of the information presented in these landscape documents, WHO does not make any (and hereby disclaims all) representations and warranties regarding the accuracy, completeness, fitness for a particular purpose (including any of the aforementioned purposes), quality, safety, efficacy, merchantability and/or non-infringement of any information provided in these landscape documents and/or of any of the products referenced therein. WHO also disclaims any and all liability or responsibility whatsoever for any death, disability, injury, suffering, loss, damage or other prejudice of any kind that may arise from or in connection with the procurement, distribution or use of any product included in any of these landscape documents.

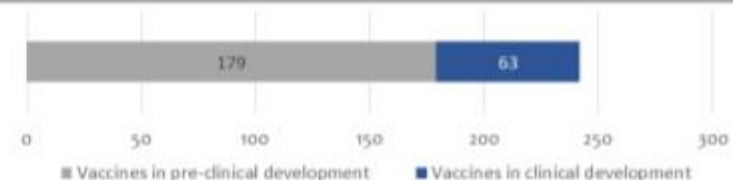
Summary Information on Vaccine Products in Clinical Development

1. - Number of vaccines in clinical development

63

2. - Number of vaccines in pre-clinical development

179



Vaccine Development – the reality

- There is NO one size fits all. There is no single method/approach which can guarantee results
- Typically, many vaccine candidates will be evaluated before any are found to be both safe and effective.
- For example, of all the vaccines that are studied in the lab and laboratory animals, roughly 7 out of every 100 will be considered good enough to move into clinical trials in humans.
- Of the vaccines that do make it to clinical trials, just one in five is successful.
- Having lots of different vaccines in development increases the chances that there will be one or more successful vaccines that will be shown to be safe and efficacious for the intended prioritized populations.
- <https://www.who.int/news-room/feature-stories/detail/the-race-for-a-covid-19-vaccine-explained>

Malaria vaccine has not been successful in 30+ years of research

7%

20%

= 1.4%

What Does This Mean ?

- You only get to hear about the few success stories of the vaccines that have worked
- You do not (generally) get to hear about the other 300 or so that went in the bin
- When people claim that vaccine development has been rushed – consider the huge number of failures

Merck's two COVID-19 vaccine candidates fail

Testing of Imperial College London's experimental UK Covid vaccine stopped.
Plans for large-scale testing of a UK-developed experimental coronavirus vaccine are being pulled after the success of drugs already in the market.

Sanofi's mRNA COVID-19 vaccine candidate not ready this year - CEO














Why Australia's Failed COVID Vaccine Is an Example of Science at Its 'Best'

10 vaccines known to be in use

<https://www.raps.org/news-and-articles/news-articles/2020/3/covid-19-vaccine-tracker>

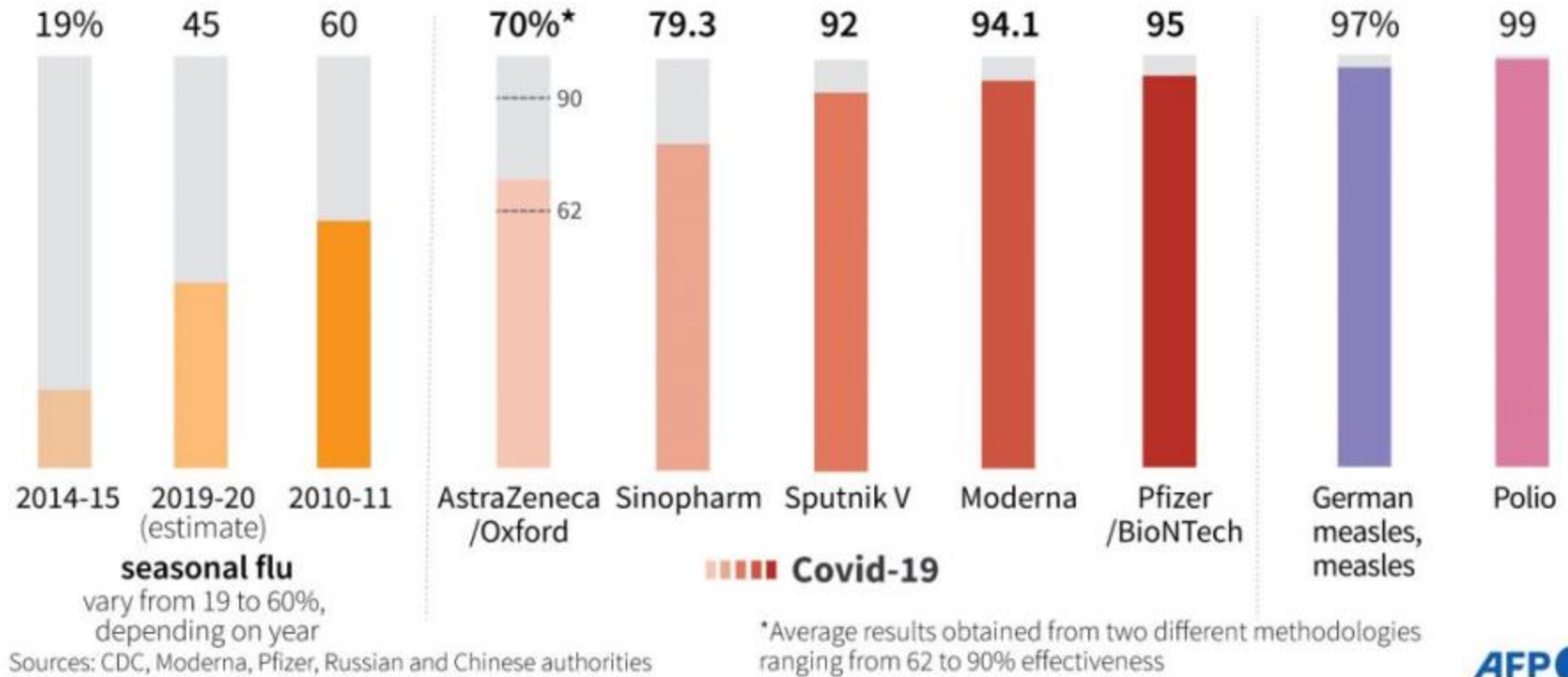
	Vaccine	Approved in
1	BioNTech/Pfizer (mRNA)	50 countries and EUL by WHO
2	Moderna (mRNA)	36 Countries
3	Gamalaleya Sputnik V (Non replicating Viral vector)	8 Countries (Algeria, Argentina, Belarus, Bolivia, Guinea, Russia, Serbia, West Bank)
4	Oxford/AstraZeneca-AZD1222 (Non replicating Viral vector)	8 countries (Argentina, Dominican Republic, El Salvador, India, Mexico, Morocco, United Kingdom) WHO
5	Serum Institute of India-Covishield (Non replicating Viral vector)	2 Countries (India, Nepal)
6	Bharat Biotech -Covaxin (Inactivated)	1 Country (India)
7	Sinopharma BBIBP (Inactivated)	7 Countries (Bahrain, China, Egypt, Jordan, Seychelles, United Arab Emirates)
8.	Sinopharma WIBP (Inactivated)	2 Countries (China, UAE)
9.	Sinovac- Coronavac (Inactivated)	3 Countries (China, Indonesia, Turkey)
10	Vector Institute -Epivac (Peptide)	1 Country (Russia)

How some of the Covid-19 vaccines compare

Company	Type	Doses	How effective*	Storage
 Oxford Uni-AstraZeneca	Viral vector (genetically modified virus)	 x2	62-90%	 Regular fridge temperature
 Moderna	RNA (part of virus genetic code)	 x2	95%	 -20C up to 6 months
  Pfizer-BioNTech	RNA	 x2	95%	 -70C
 Gamaleya (Sputnik V)	Viral vector	 x2	92%	 Regular fridge temperature

Vaccine effectiveness

Comparison of commonly used vaccines with those used against Covid-19



<https://ednh.news/eu-warns-astrazeneca-over-vaccine-delivery-delay/>

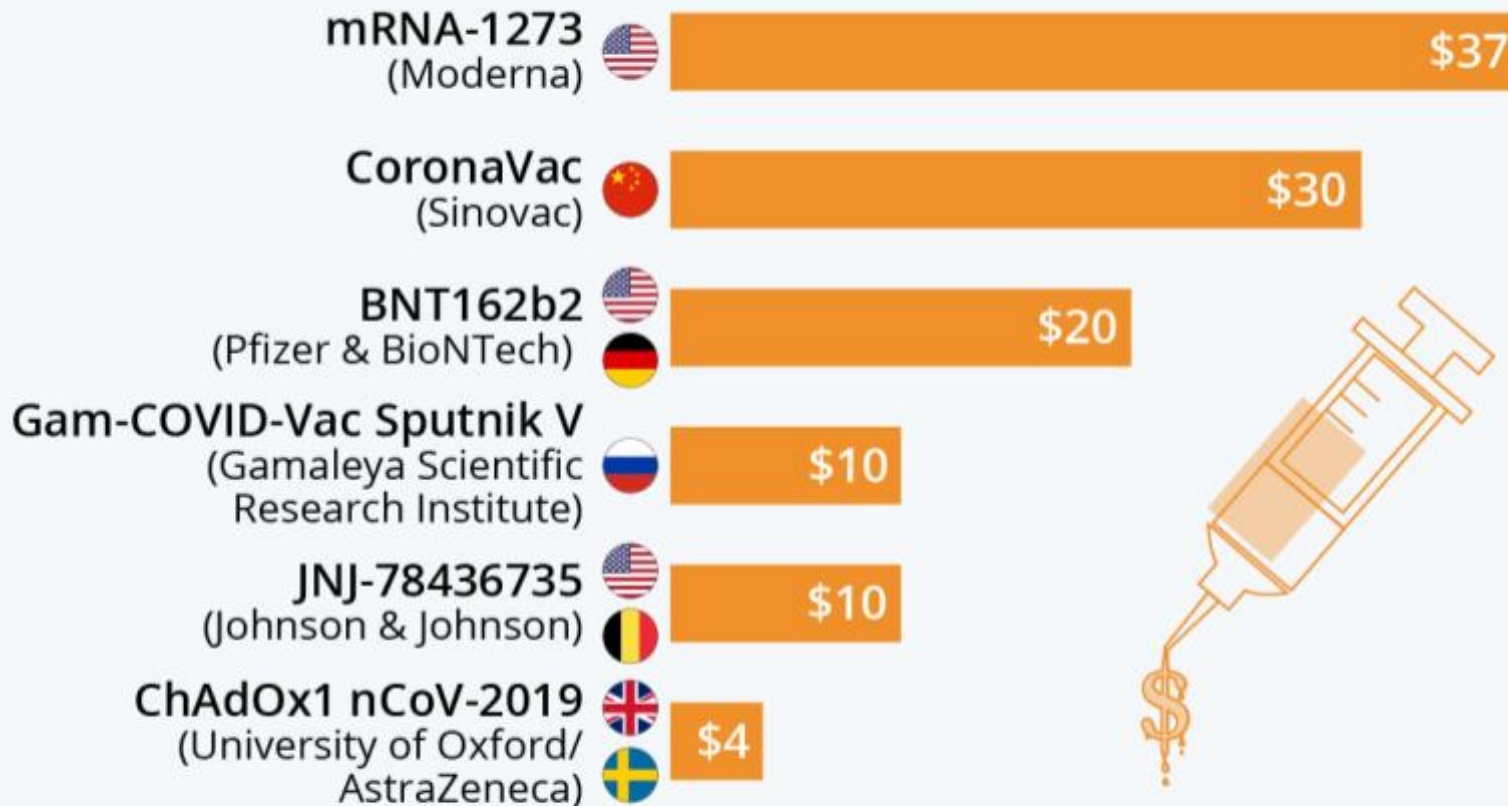
To ensure that a widely deployed COVID-19 vaccine is effective, the primary efficacy endpoint point estimate for a placebo-controlled efficacy trial should be at least 50%

https://www.who.int/docs/default-source/in-vitro-diagnostics/covid19/considerations-who-evaluation-of-covid-vaccine_v25_11_2020.pdf?sfvrsn=f14bc2b1_3&download=true

The Cost Per Jab Of Covid-19 Vaccine Candidates

Reported cost per dose of selected Covid-19 vaccine candidates*

<https://www.statista.com/chart/23658/reported-cost-per-dose-of-covid-19-vaccines/>

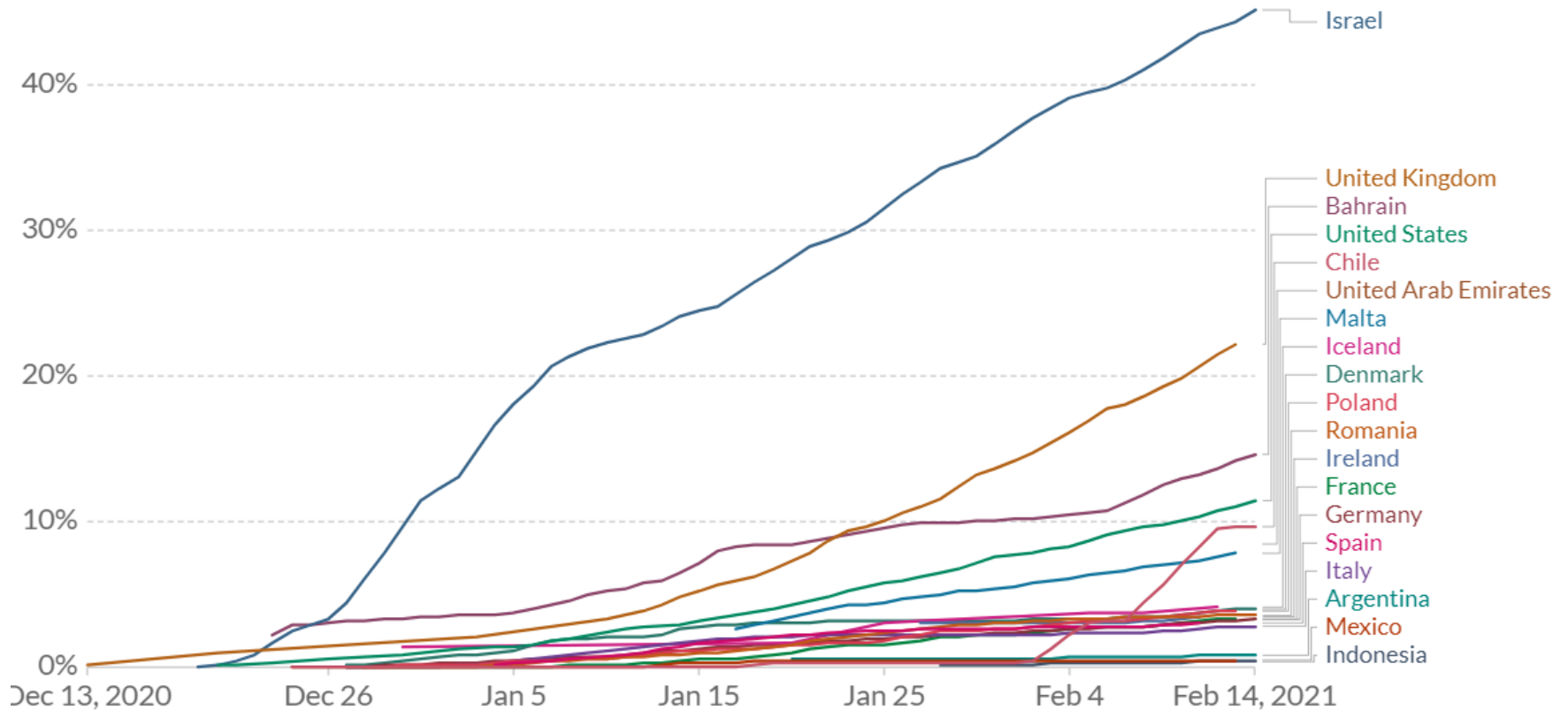


* As of Dec 01, 2020. Some trials are still ongoing. Final prices subject to change.
Sources: Reuters, Financial Times, CNBC, Russian Ministry of Health

Share of people who received at least one dose of COVID-19 vaccine

Share of the total population that received at least one vaccine dose. This may not equal the share that are fully vaccinated if the vaccine requires two doses.

[+ Add country](#)



Source: Official data collated by Our World in Data - Last updated 15 February, 13:30 (London time)

CC BY

COVID-19 MYTH BUSTERS



The Sheer Volume of Fake News is Staggering



The image shows a screenshot of a CNN news article. The headline reads "Doctors encourage covid-19 vaccine injections in penis." Below the headline is a photograph of a doctor in a white coat with his arms crossed. To the right of the photo is a diagram of a hand holding a syringe, with a red stamp that says "FAKE" over it. The diagram also has the text "Safe area for injection" pointing to the hand. A large red stamp with the words "ROOM FACT CHECK" and three stars is overlaid on the right side of the screenshot.

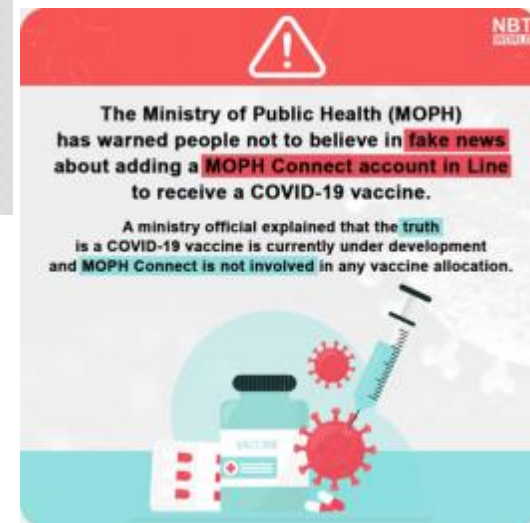
As they say on the TV...
*Please do **not** try this at home.*

Even though this is clearly nonsense
Please DO be aware of the volume of Fake News



Thailand has an anti-fake news centre

<https://www.facebook.com/AntiFakeNewsCenter/posts/436916767742502/>



The image is a warning poster from the Ministry of Public Health (MOPH). It features a red background with a white warning sign icon. The text in English says "The Ministry of Public Health (MOPH) has warned people not to believe in fake news about adding a MOPH Connect account in Line to receive a COVID-19 vaccine." Below this, it says "A ministry official explained that the truth is a COVID-19 vaccine is currently under development and MOPH Connect is not involved in any vaccine allocation." The poster also features a graphic of a syringe and a virus particle.

To date there has been no information nor evidence to suggest that the new coronavirus could be transmitted by mosquitoes.

The new coronavirus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose.

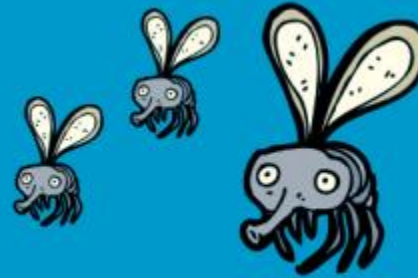
To protect yourself, clean your hands frequently with an alcohol-based hand rub or wash them with soap and water. Also, avoid close contact with anyone who is coughing and sneezing.



#Coronavirus

#COVID19

FACT:
The new coronavirus
CANNOT
be transmitted through
mosquito bites



OUTBREAK
Cases of Chikungunya have been reported in Thailand, with the provinces of Chanthaburi, Uthai Thani, Lamphun, Rayong, and Loei most affected. Risk of Chikungunya is present throughout the country, including Bangkok.


<https://www.iamat.org/country/thailand/risk/chikungunya#:~:text=Symptoms%20include%20sudden%20fever%20and,%2C%20vomiting%2C%20and%20a%20rash.>

[rash.](#)

The 'new' mosquito borne disease spreading through Thailand is Chikungunya NOT Covid, and physicians have been briefed on how to differentiate symptoms



**Outbreak of the year:
COVID-19 and Chikungunya**



Jurai Wongsawat, M.D
Bamrasnaradura Infectious Diseases
Institute, DDC, MOPH, Thailand
16 October 2020

บทความสำหรับสมาชิก

The 24th Annual Meeting of the Pediatric Infectious Diseases Society of Thailand,
16-18 October 2020, Pattaya, Chonburi, THAILAND

Can I have the vaccine if... – Check with your clinician

COVID-19 VACCINE

Mythbusters

MYTH

People suffering from Cancer, Diabetes, Hypertension, etc cannot take the COVID-19 vaccine

FACT

No. In fact, people with one or more comorbid conditions fall in a high-risk category and they need to get vaccinated.



I am on blood thinners/anticoagulants. Can I get the vaccine?

- Your vaccinator should be made aware of your medication. Individuals should check with their GP or specialist if it is safe for them to receive the vaccine. Generally individuals on stable anticoagulation therapy, including individuals on warfarin who are up-to-date with their scheduled INR testing can receive the vaccines unless they have other contraindications. You may get more bruising from the vaccination if you have a blood clotting problem or are on blood thinners, and may be advised to apply firm pressure without rubbing to the vaccine site for a bit longer.

- <https://eput.nhs.uk/frequently-asked-questions-on-the-suitability-of-the-covid-19-pfizer-biontech-vaccine-for-you/>

Religious/Ethical Concerns



Why is there an issue ?

- some vaccines, have been developed using a cell line derived from cells taken from an aborted fetus. (kidney, retina) Cells derived from elective abortions have been used since the 1960s to manufacture vaccines, including current vaccines against rubella, chickenpox, hepatitis A, and shingles. They have also been used to make approved drugs against diseases including hemophilia, rheumatoid arthritis, and cystic fibrosis.

Developer	Vaccine type	Fetal cells used
CanSino Biologics, Inc./Beijing Institute of Biotechnology	} Replication-deficient adenovirus	HEK-293
University of Oxford/AstraZeneca		HEK-293
Janssen Research & Development USA		PER.C6
University of Pittsburgh	Protein subunit	HEK-293
ImmunityBio/NantKwest	Replication-deficient adenovirus	HEK-293 or derivative E.C7

Frankenstein and DNA

- If I receive a RNA-based vaccine what are the implications for it tampering with my DNA in longer term?
- COVID-19 mRNA vaccines work by introducing a molecule (mRNA) into the body which instructs the body's cells to build a protein similar to those found in the virus that causes COVID-19. The protein is then recognised by the immune system which produces antibodies which will provide protection against COVID-19 infection.
- This introduction of mRNA into your body does NOT change the DNA of the human cells, it is read by cells to make a protein to mount an immune response, then will be destroyed within days by your body. It will not be incorporated into your DNA.



MYTH: The vaccine may modify your DNA



TRUTH: There is no way that RNA can change the DNA of anyone.

The COVID vaccine uses mRNA technology. The mRNA vaccine teaches our cells to make a protein that triggers a protective immune response. The mRNA is broken down soon after it enters the body.

mRNA never enters the nucleus of the cell, where our DNA is kept.

© covid19helpline.org | The final decision is always the responsibility of the individual. #BeResponsible



<https://www.swlstg.nhs.uk/news-and-events/latest-news/item/vaccine-safety-and-myths-busting>

Alcohol Consumption and Covid Vaccination

- Experts in Russia and the United Kingdom have warned that people should avoid drinking alcohol for a brief period of time before getting vaccinated against the novel coronavirus.
 - <https://www.birminghammail.co.uk/news/health/can-you-drink-alcohol-vaccine-19819757>
 - It advises people not to drink alcohol two days before and two weeks after having a dose of the Covid vaccine.
- However, experts in the United States say casual or moderate amounts of alcohol consumption will not affect immune response.
 - “There is no evidence that alcohol reduces the formation of antibodies,” says Richard Watkins, M.D., an infectious disease physician and a professor of internal medicine at the Northeast Ohio Medical.
 - <https://www.prevention.com/health/a35418316/alcohol-after-covid-19-vaccine/>



Binge drinking and heavy alcohol use should be avoided around time of vaccination and for general health
Guidance for Thailand has NOT yet been issued and will probably depend on the particular vaccine type.

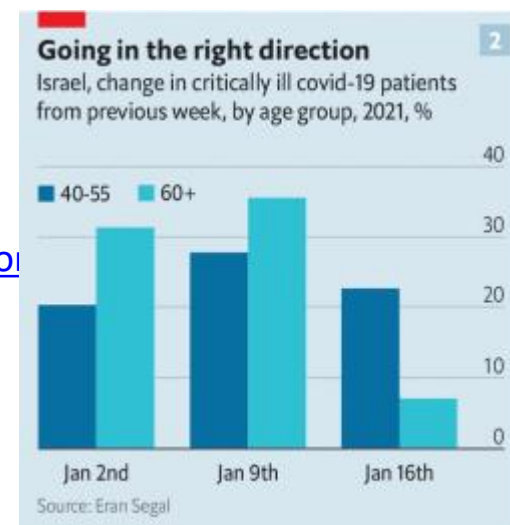
Myth busters Over 80s

Some people over 80 have died after having the Covid vaccination.

- Perfectly true. Unfortunately quite a lot of people over 80 die every day – about 1 in 15 per year in the UK.
- However Case fatality rates have **REDUCED** since vaccinations started in Israel and the UK
- <https://www.medscape.com/viewarticle/945700>
- [https://medicalxpress.com/news/2021-02-uk-covid-vaccination-quickly-deaths.html#:~:text=The%20model%20predicts%20that%20with,than%20or%20third%20\(36%25\).](https://medicalxpress.com/news/2021-02-uk-covid-vaccination-quickly-deaths.html#:~:text=The%20model%20predicts%20that%20with,than%20or%20third%20(36%25).)

<https://www.economist.com/science-and-technology/2021/01/23/how-fast-can-vaccination-against-covid-19-make-a-difference>

	Annual death risk 1 in X	
	Men	Women
All ages	136	193
Under 1	177	227
1- 4	4386	5376
5 - 14	8333	10417
15-24	1908	4132
25-34	1215	2488
35-44	663	1106
45-54	279	421
55-64	112	178
65-74	42	65
75-84	15	21
85 and over	6	7



Long Terms

I've had COVID-19 already/tested positive for antibodies, do I need to be vaccinated?

- At present it is unclear if previous infection with COVID-19 results in long term immunity. Therefore, you should be vaccinated even if you have tested positive for COVID-19 in the past or have tested positive for COVID-19 antibodies. Vaccination should be postponed until clinical recovery from COVID-19, for at least four weeks after onset of symptoms or four weeks from the first PCR positive test in those who did not have symptoms.



Will other measures (social distancing/face coverings/lockdowns) still apply to me if I've had the vaccine?

- Yes, you should still act to prevent the spread of coronavirus in the community and stick to the regulations.
- <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html>



Covid Test Impacts

Can the COVID-19 vaccine lead to people having a positive COVID-19 nose or throat swab test?


- No. The vaccines being used produce a protective immune, antibody, response which can be measured by serology blood tests. They do not affect a PCR swab test, which is the basis of diagnosing COVID-19 infection by detecting viral RNA in the nose and throat. They also do not affect the results of Lateral Flow Device (LFD) tests. PCR tests will be used as part of the vaccine effectiveness assessment in those who are vaccinated and subsequently develop symptoms of COVID-19.
- <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/facts.html>





Isolation Quarantine


If a person has received the vaccination and is subsequently notified that they have been in direct contact with a positive case - are they still required to isolate?

- **Yes.** While the purpose of the vaccine is to prevent you from getting COVID-19 infection, which should reduce the chances of you being able to spread the infection by becoming ill; as the vaccine is new it has not yet been possible to establish if vaccination will prevent carriage of the virus in the nose and throat of people who have been vaccinated. Therefore if you are a household contact of or are advised by Contact Tracing App you are a close contact of a case of COVID-19 you need to self-isolate.


What is the difference between isolation, quarantine, and distancing? 

 'Quarantine' means restricting activities or separating people who are not ill themselves, but may have been exposed to COVID-19. The goal is to monitor symptoms and detect new cases early.

 'Isolation' means separating infected people to prevent the spread of COVID-19.

 'Physical distancing' means being physically apart but socially connected, for example through chat or video call.

#COVID19 #coronavirus

 World Health Organization
Western Pacific Region



Don't Knows

Will the vaccine become a yearly injection like the flu vaccine?

- Its not known.

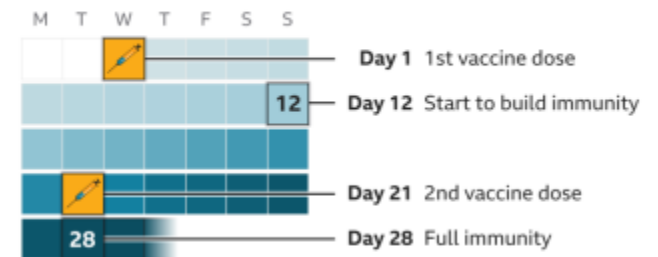
How effective is the first vaccine injection without getting the second one?

- For most vaccines It is important to have both doses of the vaccine to give you the best protection. While the first dose acts as an important immune response primer, the second dose is needed to boost your body's immune response to the COVID-19 virus providing the best protection for you. It is also important to note that immunity is not instant once you have received your vaccination. It will take a period of time for your body to produce the antibodies needed to produce an effective immune response to fight future COVID-19 infection. Therefore it is important that even after you have had the COVID-19 vaccine you adhere to the current public health advice including social distancing and practicing good hand and respiratory hygiene.

Coronavirus digest: J&J boss says annual vaccine may be needed



Two doses of Pfizer vaccine required for full immunity



Source: Pfizer/BioNTech



Thank You

