



COVID-19 UPDATE

March 2021



About this Update

The world is constantly learning about coronavirus (which is called SARS-CoV-2) and the illness it causes (which is called COVID-19). This information changes often, so it's important to check **trusted** sources regularly.

We get information for these slides from WHO, the Centers for Disease Control, Johns Hopkins, the New York Times, peer-reviewed scientific journals and other credible sources. It does not come from Facebook or other social media.

What the world has learned about

- The pandemic
- Transmission
- How the virus has changed (variants)
- Prevention
- What COVID-19 can do to people (including people living with HIV)
- Care and treatment
- Vaccines

The Pandemic

Globally, as of Monday 29 March:

at least **127,196,508** people have been infected

at least **2,784,377** people have lost their lives

To find information about the virus in your country, go to: <https://coronavirus.jhu.edu/map.html>

Transmission

It's all about what you inhale

Coronavirus is airborne.

It spreads when a person who has it coughs, sneezes, sings, talks or exhales, because they release tiny virus-laden droplets and aerosols (much smaller particles that stay in the air much longer than heavier droplets).

Other people get infected when they inhale these droplets and aerosols, or if they land inside the nose, eyes or mouth.

Sun and wind are your friends—the sun can inactivate the virus and the wind can blow it away.

Transmission

It's possible, but not likely, that people could get COVID-19 from touching a surface with droplets/aerosols from a person with COVID-19, if they then touch their eyes, nose or mouth – this allows the virus to enter their body.

Washing your hands for at least 20 seconds with soap and water or sanitizer with 70% alcohol – not touching your face (unless you have just washed your hands) reduces this risk.

Changes in the coronavirus

Changes to the coronavirus

After entering people, viruses multiply, making millions to billions of copies of themselves each day. These copies may have changes, called mutations, that happen at random.

The more people with a virus, the more chances the virus has to mutate. Some mutations make the virus weaker, and others can make it more contagious or deadlier. Also, researchers have discovered that people with very weak immune systems can remain infected with SARS-CoV-2 for months - and it keeps mutating during this time.

Coronavirus variants

When a virus with mutations spreads into a population, it is called a variant- this means that it is a different version of that virus. Coronavirus variants have been discovered in different countries, have been spreading for months. Scientists and public health experts are paying attention to variants, because some of them can hide from the immune system in people who have already had COVID-19 or have been vaccinated.

Other variants are more contagious and could make people sicker. This happens when the virus changes in ways that make it easier to enter our cells—sort of like having a key that slides easily into a lock, instead of one that does not work easily.

The good news is that prevention still works!

Prevention

Preventing COVID-19

- Wear a mask that covers your mouth and nose.
- The outdoors is your friend. Avoid crowded, poorly ventilated indoor spaces.
- Use ‘social distancing’—stay 2 meters (6 feet) away from other people.
- Stay away from sick people.
- Get tested, and isolate if you find out that you have been in contact with someone who has COVID-19 or if you feel ill.
- Wash your hands thoroughly and often, and don’t touch your face unless you have just washed your hands.

Preventing COVID-19

Some people (~45%) with COVID-19 never have any symptoms.

This means we need to assume that anyone could have it.

What COVID-19 can do to people

COVID-19 symptoms

Most people will fall ill within 4-5 days after they are infected, but it can take up to 2 weeks for symptoms to show up.

The most common symptoms are fever, chills, dry cough, shortness of breath or difficulty breathing, appetite loss, nausea, vomiting, diarrhea, fatigue, muscle and body aches, headaches, loss of the sense of smell and taste, sore throat, stuffy or runny nose, conjunctivitis (red, itchy eyes), skin rash, and discolored (purplish) fingers and toes.

COVID-19 and people living with HIV

People living with HIV are no more likely to get COVID-19 than anyone else, *but they are more likely to become seriously ill if:*

- they are older (age >60 years)
- they have pre-existing conditions such as obesity and diabetes
- they have recently had an opportunistic infection
- and, possibly, if they have a low CD4 cell count (<200 cells/mm³), and/or a high viral load—and if they are not on ART

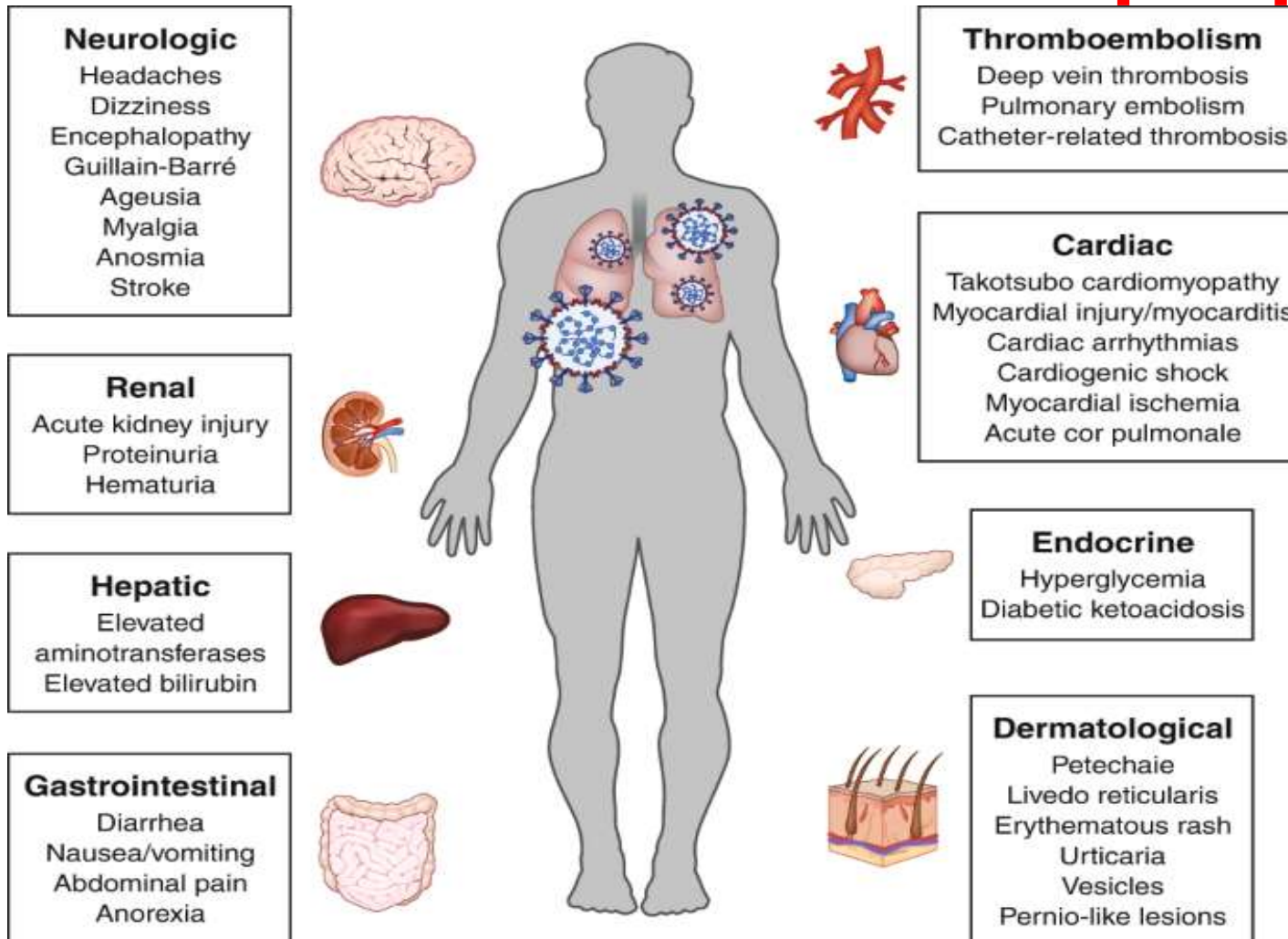
What COVID-19 does to people

The virus itself can make people very ill.

COVID-19 can have an impact on many organs and systems in the body. It can damage the heart, lungs, kidneys, liver and cause strokes.

The immune response to the virus can also make people very ill. COVID-19 can trigger 'cytokine storm', when the immune system overacts, and attacks tissues and cells (we need to learn much more about this).

What COVID-19 can do to people



COVID-19 can have an effect on many body parts and systems—not just the lungs. It's different for each person.

How ill can COVID-19 make a person?

80% of people with COVID-19 do not become seriously ill.

15% become seriously ill, and 5% become critically ill.

The COVID-19 death rate differs, by age, pre-existing conditions- and by country. For example, in South Africa, people with diabetes and/or kidney disease were up to 13 times more likely to die from COVID-19. during mid-2020.

People who have TB are more likely to become seriously ill and die from COVID-19.

Long COVID

Some people are ‘long-haulers’—they have a range of symptoms that go on for months, including shortness of breath, chest tightness, mild to severe fatigue, chills or sweats, body aches, dry cough, headaches, “brain fog” (trouble with memory and concentration), and gastrointestinal symptoms.

This is happening to people of all ages, including those who are fit, young and healthy. We do not know what puts people at risk for long COVID and are not sure how to treat it.

COVID Re-infection

The immune system can protect a person who has had COVID-19 for at least a few months, but it is not always able to. Everyone has a different immune system, some stronger than others; it also may depend on how sick a person was, how long ago they were sick, and other factors, including age.

Older people (over age 65) are more likely to become reinfected than younger ones.

COVID Re-infection

Someone may be immune to the version of coronavirus they already had – but not to one of the newer variants of the virus that is spreading.

In fact, some people have become re-infected with a variant after having an older version of the coronavirus.

Care and Treatment

Care

People with mild COVID-19 usually recover at home; rest, fluids and fever reducers are recommended.

Monitoring your temperature with a thermometer and your oxygen levels with a pulse oximeter (a device that clips on to your finger) can help alert you that you are getting sicker and may need medical help.

People who are elderly and/or have a pre-existing condition should check with a healthcare provider, and be monitored by family, friends or healthcare worker.

Care

People with moderate to severe COVID-19, especially those with pre-existing conditions, may need to be hospitalized, where they may be given oxygen and other medicines to make them more comfortable.

Treatment

Thousands of clinical trials are looking at types and timing of treatments for COVID-19.

Some medicines work when people take them soon after becoming infected - when they have mild symptoms - while others might only be effective for people with severe COVID-19.

Monoclonal antibodies (mAbs)

mAbs are proteins made in a laboratory. They act like antibodies – a part of the immune system that can prevent you from falling ill by blocking viruses - and other invaders - from entering your cells.

The US FDA has granted emergency use authorization to single mABs and mAB combinations which can prevent COVID-19 from worsening in people with mild-to-moderate illness who are at high risk for severe COVID-19, hospitalization and death.

Monoclonal antibodies (mAbs)

Unfortunately, mAbs are complicated to produce.

Also, they do not work as well- or at all- against some coronavirus variants.

Treatment – what works

So far, one life-saving treatment has been identified:
dexamethasone.

It is a steroid, available as an affordable generic.
Dexamethasone improves survival in people who are very ill - on a ventilator or oxygen – but it does not help people with milder COVID-19

Treatment—what does not work for people with severe COVID-19

The WHO Solidarity Trial, done in nearly 12,000 people hospitalized with COVID-19 across 30 countries, compared 4 treatments: **remdesivir, hydroxychloroquine, lopinavir/ritonavir and interferon** to the standard of care.

None of them made a significant difference in:

- how long people stayed in the hospital
- whether or not they went on a ventilator
- survival

Vaccines

Vaccines

Several vaccines have been approved for use in adults over age 18 – and one for people ages 16 and over. Currently, trials are looking at coronavirus vaccine dosing for younger children.

These vaccines use different approaches to train the immune system to recognize and fight off SARS-CoV-2.

Some of them are up to 95% effective– but It is not clear whether people who have been vaccinated can still get infected, without having symptoms – and if they can transmit the virus. The more people who get vaccinated, the safer everyone will be! These vaccines produce immune responses that prevent people from falling ill with COVID-19.

Vaccines

These vaccines were developed quickly, because of improved technology. They are based on years of research. Some have been approved by regulatory agencies. We know that approved vaccines are safe and effective.

There are things we don't know yet- such as how long they will protect people from COVID-19, and if there are rare side effects –we will only discover this information over time, and as more people get the vaccines.

Vaccines and Variants

Current vaccines were developed to work against some versions of SARS-CoV-2. They may be less effective, or not effective, against newer variants—we are still learning about how well they work against newer variants.

Researchers are working on vaccines that are adapted to new variants; they are expected to become available by the end of 2021.

In the meantime, prevention is more important than ever to stop new variants from spreading!

	phase III trials	(emergency use approval)	peer reviewed data)	
Pfizer/BioNTech BNT162b2	yes	75 countries and WHO	94.6%	2
AstraZeneca/Oxford (AZD1222) and Serum Institute of India (Covishield)	yes	79 Countries and WHO	Overall, 70.4%; varies from 62% -90%, by dose and age – may not be effective against SA variant B.1.351	2
Moderna m-RNA-1273	yes	42 countries	92%	2
Gamaleya Sputnik-5	yes; interim	52 countries	91.6% at 21 days after the first vaccine	2
Sinopharm BBI-BP-CorV	yes	33 countries	Not available; claims from 79-86%	2
Sinovac Coronavac	no	22 countries	Not available; claims range from 91.25% to 50.4%	2
Sinopharm Inactivated	no	2 countries	?	2
CanSino Ad5-nCoV	yes; interim	4 countries	65.7% - 74.8%	1
Bharat Biotech Covaxin	Yes; interim	4 countries	80.6%	2
Johnson and Johnson	yes	38 countries and WHO	66% overall (61% in Brazil, 64% in South Africa, 72% in the US), also 85% against the new COVID-19 variant 100%	1

Long COVID and vaccines

Some people who have long COVID have gotten coronavirus vaccines. Researchers have reported that some of them do not feel any better after getting both doses of vaccine, some of them feel worse, and some of them feel much better.

So far this is a small group of people – not enough to figure out who will improve or worsen after getting vaccinated, and why this happens.

Variants and Vaccines

The AstraZeneca vaccine did not stop people infected with the B.1.351 variant from getting mild-to-moderate COVID-19, but it might prevent hospitalization and death. Unfortunately, the trial in South Africa was in young people who are less likely to fall seriously ill – and the trial was so small that nobody in it became very ill, was hospitalized or died – whether or not they got the vaccine.

The J & J vaccine is less effective against the B.1.351 variant than other versions of the virus - but it still prevents people from being hospitalized and dying from COVID-19, and it is 57% effective at preventing moderate to severe COVID-19.

Vaccine Hurdles

Rolling out vaccines globally is essential, but it will be challenging for many reasons. These include insufficient supply and inequitable distribution, high prices and if/how access will be enhanced through technology transfer or other means – also, there are other concerns:

- If it needs two doses, how far apart should they be?
- If it causes serious side effects – including allergic reactions that require people to stay and be observed after being vaccinated
- If it must be shipped and stored at very cold temperatures
- If it works better for some groups of people than others.



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