

Helpful Information and Facts about COVID-19

As the Coronavirus situation evolves, there is a lot of information flying around. Some websites are trying to get accurate information out to the public, but unfortunately some may be focused more on getting clicks. It would be wise to verify information with a reputable source if you do not know where the information came from. The purpose of this paper is to present the truth and facts about the novel coronavirus and answer some common questions. Only reputable sources are used and cited. *Please* keep in mind that this is a new and evolving situation. Numbers and recommendations may change as more data is collected and research done.

Contents

- **What is the coronavirus?**
- **How serious is it?**
- **How is it spread?**
- **How can we prevent it and keep it from spreading?**
- **What are the symptoms?**
- **What to do if you think you have COVID-19**
- **What does the future hold?**
- **What attitude should we have toward the situation?**
- **Reputable places to go for information.**
- **References**

What is the “coronavirus”?

The coronavirus is a large family a viruses that get their name from a “corona” or crown shaped protein on them by which they attach to cells. They are represented by the letters “CoV”, which stands for “coronavirus”.

Let’s discuss the viruses in this family and how they are different. Some of the coronaviruses, along with numerous other viruses such as rhinoviruses, are the culprit of the common cold (1, 4). So what is the difference between them and the new coronavirus?

- For one, the common cold coronaviruses originated in humans and are transmitted human to human.
- Secondly, they do not seem to be as virulent or have as serious of symptoms as some of the others.
- Thirdly, the common cold has been circulating for hundreds if not thousands of years. While the antibodies we develop to fight these colds eventually wear off to a certain degree and we can again become susceptible (4), at least some

people are immune at any given time, and this helps to keep it in check. With a new virus, no one has contracted it, so everyone is susceptible. Some of the coronaviruses originate in animals. Occasionally these viruses will mutate enough that a new one develops and gets transmitted to humans (1). These have proven to be more deadly.

- In 2002 SARS-CoV was identified. It originated in bats and had a mortality rate of ~9% (1). SARS stands for Severe Acute Respiratory Syndrome.
- In 2012 MERS-CoV was identified. It originated in camels and had a mortality rate of ~35% (1). MERS stands for Middle East Respiratory Syndrome.
- In 2019 SARS-CoV 2 was identified. It also is thought to have originated in bats. The International Committee on the Taxonomy of Viruses or (ICTV) has named and classified this new virus (5). SARS-CoV 2 is the name of the new coronavirus that causes the disease COVID-19 (CoronaVirus Disease 2019) and is the topic of this paper.

How serious is it?

To put the coronavirus in perspective, let's compare it to something we are all familiar with, the flu. (By flu it is meant influenza A or B, the respiratory illness, not the stomach bug, which is something different.)

- In the 18-19 flu season, which was a relatively typical year, the mortality rate was 0.1%. Or 1 in every 1,000 people that got the flu, died from it (1).
- To compare COVID-19 we will use a report from the Chinese CDC (this is a branch of the CDC in China.) (6)

○ Age	Mortality rate	Interpreted
○ 0-10yrs	0%	no deaths
○ 10-40yrs	0.2%	2 out of every 1,000 infected died
○ 40-49yrs	0.4%	4 out of every 1,000 infected died
○ 50-59yrs	1.3%	13 out of every 1,000 infected died
○ 60-69yrs	3.6%	36 out of every 1,000 infected died
○ 70-79yrs	8.0%	80 out of every 1,000 infected died
○ 80+yrs	14.8%	148 out of every 1,000 infected died

- As we can see from this data, children appear to tolerate the virus with fewer complications. The elderly appear to be the most susceptible.
- People with underlying health issues such as heart disease, lung diseases etc., are also proving to be more susceptible (2).

- A good thing to keep in mind is that 80% of cases have been mild and can be treated at home. Just because a person contracts the virus does not mean they will require hospitalization or extra medical attention although it is possible (1).
- The most current global mortality rate for COVID-19 is 3.4% according to World Health Organization (2).
- The current mortality rate in the United States is 2.44% also reported by WHO (2).
- It could be said that COVID-19 is currently 34 times more deadly than the flu globally and 24 times more deadly than the flu in the United States.

Now, how contagious is this new virus? Scientists use something called a basic reproduction number to show how contagious a disease is. It is represented by “Ro” (pronounced R-naught) and represents the number of people that can be infected from a single case.

- For comparison we will again use the seasonal flu. It has an Ro of ~ 1.3 (7) . In other words, if 10 people have the flu, they can infect 13 others.
- Current research shows that COVID-19 has an Ro of ~ 3.6 (8). To put that in perspective, if 10 people have COVID-19, they can infect 36 others.
- So it would be safe to say that COVID-19 is over twice, or nearly three times as contagious as the flu at this time.

How is it spread?

- Spread from person to person
 - The virus is thought to be spread mainly person to person, or between people who are in close contact with one another. (Within 6 feet) (1).
 - Through respiratory droplets produced when an infected person coughs or sneezes. These droplets can land in the noses or mouths of people who are nearby or possibly be inhaled into the lungs (1).
 - By shaking hands with an infected person, and then touching your face.
 - People are thought to be the most contagious when they are the sickest. Some spread may be possible before people show symptoms; there have been reports of this occurring with the new virus, but this is not thought to be the main way the virus spreads (1).
- Spread from contact with contaminated surfaces or objects
 - It is possible that a person can get COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, although this is not thought to be the main way it spreads (1, 2).
 - Some people are concerned about getting packages that may be contaminated from other countries or areas. The very latest research shows

that the virus can live on cardboard for 24hours, copper for 4 hours, and plastic and stainless steel for 2-3 days (9). Another study published by the Journal of Hospital Infection showed that under optimal conditions (ideal humidity, temperature, and no exposure to UV rays) it could live for up to nine days on certain hard surfaces (10). Keep in mind that many studies are done before the facts are known for certain. However, it is thought to be highly unlikely that the virus could be spread to you by packages delivered to you from an infected area.

- To again compare to the flu, studies show influenza can live on hard nonporous surfaces for up to 48hrs, and less then 12hrs on surfaces such as cloth, paper, and tissue (11).

How can we prevent it and keep it from spreading?

- Good hand hygiene is important (1):
 - Wash hands with soap and water for at least 20 seconds or,
 - Wash hands with hand sanitizer. Remember this kills as it dries so let it dry completely. Do not wipe it off.
 - Do this after contact with other people or commonly touched objects, after blowing nose, coughing/sneezing in hand, anytime your hands may be contaminated.
 - Avoid touching your face.
- Social distancing is also a key with this particular virus. This means keeping yourself at a distance of 6 feet from others (2).
- Do not enclose yourself in small places with others. Breathe fresh air when you can (1).
- Stay home if you are sick!
- Cover your coughs and sneezes! If you are sick, you may wear a mask to prevent spreading droplets. If you are not sick, keep in mind that a mask (with the exception of an N95 mask) does not totally protect you. Masks should be saved for those that really need them as there currently is a worldwide shortage (2).
- Eating healthy foods rich in vitamins and/or taking a vitamin supplement such as vitamin C, getting enough rest, exercising, and keeping yourself hydrated are all great strategies to help you stay healthy. Healthy people have better outcomes in any sickness. For healthy food choices visit myplate.gov.

What are the symptoms?

- The most common symptoms are fever, tiredness, and a dry cough (2).
- Other possible symptoms include but are not limited to: aches and pains, nasal congestion, runny nose, sore throat or diarrhea (2).
- Symptoms are usually mild and begin gradually (2).
- 1 in 6 people become seriously ill and develop difficulty breathing (2).
- If you have a fever, cough and difficulty breathing you should seek medical attention (2).

Keep in mind that the incubation period for SARS-CoV-2 (The time from when a person contracts the virus to the time they start having symptoms) is estimated at around 2-7 days for most cases, but could be up to 14 days (1).

What should you do if you think you have COVID-19?

A lot of decisions about controlling the virus locally are made at a state and county level depending on the situation in your community. A great resource for finding out about your state's current number of cases, instructions on quarantining etc. is your state's health department website. You can also call your local health department for information about your county to see about local restrictions and guidelines etc. Your county's sheriff's department or safety center may also be able to give information.

- Call before you go to a Doctor's office or hospital! Do not just walk in! They will give you instructions on how to proceed.
- If you meet the current criteria for testing and are medically stable, they will advise you on where to go to be tested. You may be asked to go to a certain location for testing.
- You will be asked to quarantine yourself at home while you wait for test results. This may take a few days. The people you have had close contact with may be asked to quarantine also. A close contact is described on the Kansas Public Health website as someone who has been closer than 6 feet for more than 10 minutes.
- Criteria for testing may include, but is not limited to the following and will be decided by the health care provider based on your demographic area, health, and age: (1)
 - International travel within the last 14 days.
 - Contact with someone positive for the virus.
 - An outbreak in your community.
- Your case will be reported to your state health department.

What does the future hold?

- Keep in mind that as schools are closed and restrictions are placed on travel, gathering, etc, this does not mean the government is panicking. We can learn from other countries experiences with the virus, and decisions will be made as needed to slow the spread. There are only so many beds, nurses, and equipment in our health care system.
- No one knows for certain, but we can initially expect the number of cases in the U.S. to go up as more tests are available.
- China, the country with the worst outbreak so far, is now seeing a downward trend in positive cases after approx. 4 months (2). So while we don't know how long it will last it will not be forever!
- A vaccine has been developed by the University in Austin TX. It is currently being tested on its first human, a patient in Nebraska from the Diamond Princess cruise ship. Usually vaccines undergo approx. a year of testing before they are ready for the public, but we can all rest assured this one will likely break speed records! (3)

What attitude should we have toward the situation?

Our way of life has been temporarily changed and our independence challenged. How should we respond? II Timothy 1:7 says "For God has not given us the spirit of fear; but of power, and of love, and of a sound mind." The following are personal thoughts.

- We are not given the *spirit of fear*.
 - We should not be fearful or react in fear. It is not a healthy motivator and does not help us act rationally.
- We are given the *spirit of power*.
 - It is within our power as humanity to overcome this by working together!
- We are given the *spirit of love*.
 - This causes us to take the necessary precautions because by doing so we can help to protect the elderly and susceptible among us. Healthy people will likely survive it just fine, those at higher risk may not. What would you be willing to do to save the life of a loved one?
- We are given the *spirit of a sound mind*.
 - This is to use common sense. It is not wise to disregard or resist the recommendations and guidelines of those who are working day and night studying and monitoring the situation, they know much more than we do about it and are trying to save lives.

Reputable places to go for information

- Centers for Disease Control and Prevention. www.cdc.gov This organization is operated by the United States government and has the mission to save lives and protect people from health threats. They conduct critical science and provide health information to the public.
- National Institutes of Health. www.nih.gov This is also based in the United states and is largely involved in health related research.
- World Health Organization www.who.int This is an international organization whose mission is to work globally with nations in saving lives, reducing poverty, and improving the health of all.

I hope this information is helpful in answering questions.

God bless us all!

Valerie Unruh, RN

References

1. <https://www.cdc.gov>
2. <https://www.who.int>
3. <https://www.nih.gov>
4. Tyrrell DAJ, Myint SH. Coronaviruses. In: Baron S, editor. *Medical Microbiology*. 4th edition. Galveston (TX): University of Texas Medical Branch at Galveston; 1996. Chapter 60. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK7782/>
5. Gorbalenya, A.E., Baker, S.C., Baric, R.S. *et al.* The species *Severe acute respiratory syndrome-related coronavirus*: classifying 2019-nCoV and naming it SARS-CoV-2. *Nat Microbiol* (2020). <https://doi.org/10.1038/s41564-020-0695-z>
6. The Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The Epidemiological Characteristics of an Outbreak of 2019 Novel Coronavirus Diseases (COVID-19) — China, 2020[J]. *China CDC Weekly*, 2020, 2(8): 113-122.
7. Biggerstaff, M., Cauchemez, S., Reed, C. *et al.* Estimates of the reproduction number for seasonal, pandemic, and zoonotic influenza: a systematic review of the literature. *BMC Infect Dis* **14**, 480 (2014). <https://doi.org/10.1186/1471-2334-14-480>
8. Chen, T., Rui, J., Wang, Q. *et al.* A mathematical model for simulating the phase-based transmissibility of a novel coronavirus. *Infect Dis Poverty* **9**, 24 (2020). <https://doi.org/10.1186/s40249-020-00640-3>
9. Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1
Neeltje van Doremalen, Trenton Bushmaker, Dylan Morris, Myndi Holbrook, Amandine Gamble, Brandi Williamson, Azaibi Tamin, Jennifer Harcourt, Natalie Thornburg, Susan Gerber, Jamie Lloyd-Smith, Emmie de Wit, Vincent Munster medRxiv
2020.03.09.20033217; doi: <https://doi.org/10.1101/2020.03.09.20033217>
10. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents Kampf, G. *et al.* *Journal of Hospital Infection*, Volume 104, Issue 3, 246 – 251
11. B. Bean, B. M. Moore, B. Sterner, L. R. Peterson, D. N. Gerding, H. H. Balfour, Jr., Survival of Influenza Viruses on Environmental Surfaces, *The Journal of Infectious Diseases*, Volume 146, Issue 1, July 1982, Pages 47–51, <https://doi.org/10.1093/infdis/146.1.47>