

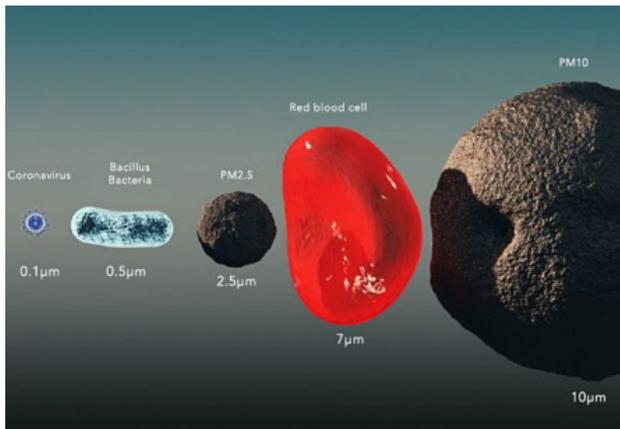
Coronavirus COVID-19: Important Facts for the Everyday Person

News outlets are full of frantic information about the current Coronavirus, more accurately designated, COVID-19.



Unfortunately, most people have not been told enough to help them make informed decisions. That is the purpose of this article. It is for those who are willing to be proactive about their own safety.

The COVID-19 virus originated in Wuhan, China, spread into Italy, Iran, Japan, and Korea, and is now in much of the world. We are told that governments are working hard at containing what may well become a pandemic. And, we've been told bits and pieces about what COVID-19 is, along with a lot of conflicting information as to the seriousness of the threat. In the days ahead, the basic background knowledge contained in this article can help you assess news media stories and government reports.



Left to Right: Size comparison between Corona COVID-19 virus, bacteria, germ, red blood cell, and a microscopic aerosol droplet created by a cough.

First, what is a virus?

A virus is a type of infective agent. Roughly speaking, there are five types of infectious agents, but most people are aware of two of them: bacteria and viruses. These are very different.

Bacteria cause diseases such as strep throat, some pneumonias, skin infections, and even the plague. Diseases caused by the different types of bacteria can usually be treated with antibiotics, which are substances that attack the infectious agent, but not the host (you or me). Also, because bacteria are living beings, they usually can be killed by high concentrations of alcohol and other disinfectants.

Viruses are infectious agents that are on the border between being alive and not. They don't eat or move or breathe. They are MUCH smaller than bacteria.

Viruses were discovered when a scientist noticed that some infectious agents pass through membranes that filter out bacteria. Even though viruses are not alive (in the traditional sense), they can reproduce—with help. Viruses are obligate intracellular parasites; they hijack cells. The infected cells then make viruses instead of carrying on the normal processes of life. Viruses cannot grow on nonliving surfaces, but they can exist there for extended periods of time.

Can we kill viruses?

A virus outside the host (you or me) can be inactivated by things like heat, bleach, or formaldehyde. Some viruses



are covered by a membrane, and those may be inactivated by lengthy exposure to high concentrations of alcohol. *Antibiotics do not work on viruses.*

A virus that has infected the host is difficult to inactivate because it's inside cells, and that also

necessitates destroying the hijacked cells. That's why you get a sore throat with a cold—your body is destroying your throat cells to stop them from making viruses.

Some types of viruses carry tools, known as enzymes, that the cell will need to make more viruses. Antiviral medications target these tools. These medicines do not harm our cells because we don't make or need those enzymes.

The tools are often specific to the type of virus, so an antiviral medication for one virus may not be efficacious [effective] against another. Viruses quickly become resistant to antiviral agents, just like bacteria can become resistant to antibiotics.



How do viruses spread?

Since viruses aren't alive, they can't move, but the host spreads them in several ways:

via respiratory droplets, via the fecal-oral route, by direct contact, and via blood and other fluids.

We all know that colds are spread when infected people cough and sneeze, and we either breathe in an airborne virus or touch an infected surface and pick our nose. The 24-hour tummy bug is spread when one person ingests another person's fecal residue, which, amazingly, gets everywhere. Seriously. Whereas a virus such as HIV is only transmitted by bodily fluids.

COVID-19 is thought to spread both via respiratory droplets and by the fecal-oral route. That makes it very, very contagious, as we are seeing throughout the world.



Where did COVID-19 come from?

Coronaviruses have been around for a long time. In fact, 20% of our colds are caused by a type of Coronavirus.

But, this particular virus, COVID-19, originated in animals, which is exactly what makes it more serious in people.

A successful pathogen (one that gets passed on) doesn't make its host very sick. If it did, the host wouldn't be able to pass on the virus because they would be bed-bound or dead. Initially, COVID-19 doesn't make its animal host very ill.

But this virus has not adapted to people, so it can make them very sick. In time, we can expect the milder subtypes of COVID-19 to become more prevalent than the more lethal ones since the lethal ones aren't spread as effectively.

Having said that, the fact that COVID-19 appears to be infectious both before and after the host is symptomatic [shows symptoms of the disease], may mean that it remains a very pathogenic virus.

How serious is infection with COVID-19?

Honestly, it's hard to say. Reports are conflicting because people who experience trifling symptoms don't go to a doctor or hospital. We do know that, in younger people, especially children, infection with COVID-19 usually only causes mild illness. In older or unhealthy people, the infection can be much worse. Currently, the experts tell us that 81% of people who get COVID-19 experience minor cold or flu symptoms, 14% become seriously ill, perhaps with pneumonia, 5% become critically ill and experience breathing problems or organ failure, and 1.0-4.0% die. *In comparison, the death rate from influenza is 0.2%.*



What can we do?

Don't panic. It won't help, and it will make things worse.

Be accurately informed. For example, *don't*

depend on hand sanitizers; they don't work well on COVID-19. And, don't trust that all people

who have been exposed are going to self-quarantine. They won't—and it only takes one. So, there is a real risk.

It is likely that we will see a pandemic. We need to prepare.

1. Limit your exposure. Do not shake hands with people. It's safer to hug! Do not share cups or eating utensils. Keep your hands away from your face. Avoid crowds. And wash your hands regularly with soap and water, turning off the tap with a paper towel.
2. Take a few Clorox or Lysol surface wipes with you, perhaps in a little zip-lock plastic bag. Disinfect table tops, chairs, grocery carts, etc. This may not get rid of every virus, but reducing exposure is good.
3. Make sure that you have plenty of over-the-counter medicines that will be helpful. You should have, on-hand, a bottle of fever-reducer, some cold medicine, and some anti-diarrheal medication. Have a supply that is sufficient to treat your family, and share with friends and neighbors. If you or a family member is asthmatic, store extra quantities of those medications. When the virus hits your city, these medicines will become hard to find.

About the Author

Caroline Crocker, Ph.D., is one of our 36Ready.com science and medical advisors. With degrees in microbiology, virology, medical microbiology, and immunopharmacology, plus medical research experience before becoming a professor at George Mason University. As a result, Dr. Crocker's counsel comes from diverse scientific and medical knowledge as well as many years of experience.

Additional information about Dr. Crocker, and COVID-19, can be found on her blog, www.ramblingruminations.com.

Be independent. Be proactive. Be self-reliant.

Make sure your family, friends, and neighbors are prepared to isolate themselves from exposure if this becomes necessary. Have sufficient provisions on hand so that trips to stores and public places can be limited or eliminated.

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