

PROTECTING YOURSELF AND YOUR FAMILY FROM THE CORONA VIRUS

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We have all been watching and listening to the news about the Corona virus pandemic (COVID-19), and understandably everyone is worried after hearing the reports of sickened people and how quickly it is spreading. In a short time, the public health measures we have been asked to follow have drastically changed the way we live day-to-day, and that too creates uncertainty and thus more anxiety. It is important for the ECD community to learn about the virus and how to minimize your chances of exposure. The more you understand the better you will be able to protect yourself and your family, and the knowledge will help to reduce fear and anxiety. In this article I will discuss the basics of the virus, how it is transmitted, the importance of the public health measures, and what you should do if you think you have been exposed or are developing symptoms.

Let's start with some basic information about corona viruses and how viruses cause infections in humans. Corona viruses are a family of common viruses found throughout world and can infect humans and animals. In humans, most corona viruses cause the familiar "cold" we often experience in the winter months. Like other viruses, the corona virus is contagious, meaning that it can spread from one person to another, and it commonly spreads by being carried in droplets of mucus that are expelled from an infected person's nose and mouth when they cough or sneeze. These droplets can be suspended in the air or can fall upon surfaces like a person's hand, or a countertop. Another person can pick up the virus by being close to the spray of droplets from an infected person and inhaling the viruses suspended in the droplets. Additionally, a person can be exposed by touching a surface on which the virus is present or shaking the hand of an infected person who has the virus on her/his hand. From that point, if the person puts her/his hand on her/his face the virus can gain entry to certain cells in the nose, eyes, or mouth. This is how the virus gets into the human body, and it is from this mode of transmission that many of the public health measures stem.

Once inside the body, the corona virus uses proteins on its surface to attach to receptors on the surface of certain cells, typically those that line your nose and mouth. This attachment is like a key fitting into a lock, which then "opens" access into the cell. Once inside the cell, the corona virus hijacks the cell

to make more viruses, which eventually leave the cell, or if the cell dies, the viruses will burst out of the cell in large numbers. Either way, the newly formed viruses can now infect neighboring cells and the infection spreads. Eventually the person's immune system recognizes the infection and mounts a response to fight off the virus. This response of the immune system is responsible for the symptoms people experience, such as a sore throat, fever, chills, fatigue, cough, and body aches. These symptoms signal that there is an active infection and that the immune system is responding to protect the person. In the case of the corona virus, it can take more than a week before symptoms develop, but during this time, the unaware person can spread the virus to others. This is why we all must be careful to avoid contact with others, because you may not be able to tell who is infected.

In most cases of common viral infections, the person's immune system responds rapidly to the virus and the infection is cleared in a week or two. This occurs because the immune system quickly recognizes the virus based on its recognition of previous infections and can respond quickly and decisively. But sometimes a virus will experience mutations in its genes, which can alter the proteins on the surface of the virus, and this not only changes the "key" that the virus uses to gain entry into a cell, but it alters the ability of the immune system to quickly recognize the virus. These changes allow the virus to "hide" from the immune system and spread more rapidly inside a host. This can create a more severe infection as the immune system must now respond even more strongly to an invader it has previously not recognized. This also allows the virus to spread more rapidly between people. With the current corona virus, this is exactly what has happened. The virus underwent a mutation resulting in changes in its surface protein, producing a more severe infection in some people, and causing rapid spread. Thus, it is more contagious, and since we do not have a vaccine or a medication that can stop the spread we must use tried-and-true public health measures to slow its spread. Let's now discuss these measures and why they are important.

Once introduced into the population a virus will naturally spread among people as unwary infected individuals expose others. This is seen with many viruses, especially the common cold. We all know how easy it is to "catch a cold". Because we cannot completely stop the spread of the virus, we must do our best

to slow its spread, minimizing the number of infected people and the harm it can do. These primary preventative measures include:

1. Washing your hands **frequently** with soap and water or using an alcohol-based hand sanitizer **frequently**. You should wash your hands before and after eating, when you are out shopping, when you return home, and when you have any contact with others. The key word here is “**frequently**”
2. Maintain a distance of about 6 feet from others. This ensures plenty of room to prevent you from being exposed to air-borne droplets should an infected person sneeze or cough. This “social distancing” measure is important, but difficult, because we commonly come in close proximity with others.
3. Minimize trips outside your home. This is one of the most difficult preventative measures, because we are not used to having our freedom restricted so much. However, it is important, because this is a common way that people are exposed. Make a list of what you need to minimize your trips, and when you are out, continue cleaning your hands with a sanitizer, or use the restrooms in the store to wash your hands.
4. Do not congregate with large numbers of people (typically more than 10). This is another difficult measure because we don’t want to be isolated from others. Yet, this is important because the more people we are around, the greater the chance of being exposed. Use the variety of new video platforms, such as Skype or Zoom to speak with others. Some of these new video services allow large numbers of people to interact.
5. Use gloves or a paper towel to open doors at stores and to pump gas. If you must use public transportation, sit away from others, and clean your hands upon entering and departing the vehicle.

Now let’s talk about what you should do if you develop symptoms or think you have been exposed. Symptoms from an evolving infection with COVID-19 typically start within a week of exposure, though this time can vary from two days to almost two weeks in some people. Common symptoms include cough, fever, sore throat, body aches, and fatigue. These symptoms are also present with many

other colds, so this does not mean you have COVID-19. Please follow these measures:

1. Contact your physician for testing if you think you have been exposed or develop symptoms.
2. Cough into your arm, elbow or a tissue to prevent the spray of droplets.
Then wash your hands
3. Isolate yourself from others as much as possible until you know if you have COVID-19

Medications used to treat ECD, such as dabrafenib, trametinib, methotrexate, or prednisone, can suppress the immune system, leaving you more susceptible to infection. If you are taking medication for ECD, you should consider yourself more vulnerable to infection and you should be extra careful. Some additional measures can include:

1. Call your pharmacy and ask for an extra supply of your medications so you do not have to repeatedly go to the pharmacy for refills over the coming months. Send a family member to pick up your medications, and that person should be washing hands **frequently**. You can also ask your insurance company and pharmacy if they can mail a long-term supply of your medications
2. Do not allow family or friends into your home who would like to visit, but who have cold symptoms or who may also be at high risk for infection. Enjoy time with them via a social media platform.
3. Use sanitizing wipes to wipe down your door handles when people visit. Everyone visiting should wash hands upon entering and leaving your home.
4. Wipe down any boxes that are delivered to your home.
5. Wash your clothes **frequently** and have a dedicated pair of shoes for trips outside your home
6. Carry hand sanitizers and paper towels with you when you go to medical appointments. You can also speak with your doctor about having your in-person appointment covered to a phone appointment.

Recent news reports have highlighted a few medications that have shown some benefit in treating infected patients. These are not approved for COVID-19

and are being used on an experimental basis. Therefore, you should not assume that these medications you are hearing about on TV are cures, and you should not ask your physician for prescriptions for any of these medications because there can be serious drug interactions with medications used to treat ECD.

We are all concerned about the spread of COVID-19, and we all must do our part to slow its spread and to protect ourselves and our loved ones. For now, we must depend on public health measures to control the spread of the virus. This means making some significant changes in the way we live, and as difficult as these may be, they are necessary. Use common sense as you go about your business, and most importantly stay calm. Fear is more contagious than the virus and only makes things worse as people spread misinformation as a “social contagion”.

I’ll leave you with two last pieces of advice. First, be careful where you get your information from regarding the outbreak. Rely on reputable sources such as major news networks. Lastly, know that our country has faced greater crises than this, and we have come through, as we will with COVID-19. This too shall pass.