**Protecting yourself from Covid-19**

Meryl Nass, MD

March 9, 2020

*May be shared freely*

The new corona virus spreads readily, like flu or cold viruses, but is much more likely to affect family members of someone already infected than others. We Americans are not very good at protecting ourselves from cold and flu viruses. Maybe we can learn some strategies that will help us avoid Covid-19, as well as helping to protect us from future respiratory viruses.

**How does Covid-19 spread?**

1. From coughing/sneezing and, less likely, even from someone breathing. Large droplets from a cough travel up to 3 feet, while smaller droplets can travel up to 6 feet. Staying more than 6 feet away from others offers pretty good protection. Keeping the door closed when someone has the virus adds protection for others. [CDC says stay 6' away and WHO says 3', f.y.i.]

2. Those droplets then land on all objects within range. The virus can live more than a week (maybe more than a month) on certain surfaces if left undisturbed. When you touch those objects, which in medical jargon are called fomites, you have picked up the virus on your hand.

3. Covid has also been found in urine and stool. When you use a urinal or flush a toilet you may aerosolize some live virus. Perhaps those who have Covid should put toilet seats down when they flush, and males should consider urinating while seated. Keep bathroom surfaces very clean; use gloves when you wash them if possible. Then wash your hands with soap and water after removing gloves.

**We talked about where you can find Covid-19. But how do you actually get it?**

You touch your eyes, nose, mouth (possibly other mucus membranes) with an infected hand, or you inhale the virus. Inhaling is thought to be the #1 source of infection. Handwashing as much as possible, and always when you first arrive home, is the best protection. I worry about cuts on hands, especially from so much handwashing. Feel free to use moisturizers to prevent cracking.

**Where might Covid-19 be lurking?**

It may be on anything anyone touches. Whenever you open a door, pick up an item in the grocery, use a phone or keyboard that you share, you could pick up Covid or another virus.

**So what is the solution?**

You need to be in the habit of being consciously in control of your hands. Start practicing this technique right now, and don't stop till this outbreak is over. DO NOT touch your face with your hands, unless you have just washed them. Do less touching of your face, in general. Maybe you can use a tissue, not a finger.

**Barriers**

Viruses and bacteria cannot pass through plastic. They can pass through paper, but it is not easy for them. Use barrier materials to open door knobs, pick up items in the grocery, etc. This will reduce your exposure. Wash hands once you return home. Wash fresh fruits and vegetables with soap and water or a dilute bleach solution.

**What cleaning agents are effective at decontaminating Covid-19?**

Instead of giving the public information they have validated, what CDC and EPA have done is to allow manufacturers to certify their own products as being effective for Covid-19. No federal agencies, nor WHO nor the British National Health Service discuss the results of environmental testing of Covid-19 on the infection control sections of their websites. Thus, we do not know how long Covid-19 survives on various surfaces. Nor do we know from any official testing which chemical decontaminants are effective. This is a big problem I will discuss further. For the moment, all we have is a list of self-certified cleaning products, about which the EPA states, *"Inclusion on this list does* ***not*** *constitute an endorsement by EPA."* Here is the current list of manufacturer-certified products:

<https://www.epa.gov/sites/production/files/2020-03/documents/sars-cov-2-list_03-03-2020.pdf>

For most uses, 70% alcohol rub or diluted bleach (1/3 cup in a gallon of water, or 1000 ppm chlorine) are [CDC-recommended](https://www.cdc.gov/coronavirus/2019-ncov/community/home/cleaning-disinfection.html). The longer disinfectants stay wet on a surface, the better job they do. So allow them to dry in place.

Cleaning agents related to benzalkonium chloride (quaternary ammonium compounds), or lower concentrations of alcohol and bleach, are thought to be **ineffective**. Surfaces must be cleaned of visible dirt before disinfectants are used, because dirt, food, blood, etc. can inactivate the disinfectant and allow virus to persist, if it has not been removed first.

**What did we learn from the 2003 SARS (a related coronavirus) outbreak?**

One group of researchers in France studied SARS coronavirus viability on surfaces, and methods of decontamination. They found that it took **5 weeks** for the SARS virus, when dried on a clean glass petri dish, to lose viability. [They wrote](https://journals.sagepub.com/doi/pdf/10.1177/153567600701200206): (<https://journals.sagepub.com/doi/pdf/10.1177/153567600701200206>)

***"In our hands, the human SARS-Coronavirus is the most resistant enveloped virus ever described.*** *It takes 35 to 42 days to inactivate the virus by drying, and formaldehyde fumigation has no effect on the dried virus. This means that existing decontamination strategies cannot be extrapolated to emerging viruses and that* ***the conditions for decontamination should be determined specifically for each new virus."***

Perhaps an ultra-long duration of viability explains the photos of Chinese workmen spraying the outdoors with clouds of chemicals.

Are our public health agencies afraid to frighten us once again, and thus their waffling on the related questions of duration of Covid-19 viability in the environment, and effective methods of decontamination? Or are they incompetent? Also, be aware that the French authors used a higher concentration of sodium hypochlorite, 6400ppm, or about 6 times as concentrated a solution of bleach as what [CDC recommends](https://www.cdc.gov/coronavirus/2019-ncov/community/home/cleaning-disinfection.html). They did not test other concentrations.

**Masks**

Masks should be placed on ill persons so they don’t expel droplets of virus any further than the mask. Their masks are contaminated but protect others. Healthcare workers wear N95 HEPA masks with a tight fit to screen out 95% of virus they might breath in while caring for affected patients.

Will a surgical/dust mask help you? Probably a little, but it will get contaminated and could be more of a hazard than help at that point. Who has boxes of masks?

The Chinese often use clear visors that cover their faces—what a good idea! An easy to clean, reusable surface to cover your eyes, nose and mouth. And you don't feel like you are suffocating when you wear one. Consider this method of protection.

Remember, when we run out of gloves, plastic sheeting material can still be used as barrier protections where needed. Duct tape and a plastic bag gives you a mitten that can protect you when you go shopping, if things get hairy.

**Sheltering inside**

Buy dry goods and canned goods and have enough food for a month, just in case. Make sure you have adequate cleaning supplies, paper goods and plastic products to get you through this. Buy very gentle bars of soap and moisturizer, cough drops, download some movies, buy a scrabble set, and be prepared for cabin fever.

Laundering--you should use warm to hot water and a hot dryer to kill virus.

**Good WHO guidelines are here:**

<https://www.who.int/docs/default-source/coronaviruse/getting-workplace-ready-for-covid-19.pdf>