

## Practical Advice for Living with the COVID-19 Pandemic: April 1, 2020 Update

You can be spreading coronavirus, even if you lack symptoms and feel fine. Same for anyone you meet. The virus spreads in a community for 2 or more weeks before it is obvious, and this has led to regional stay-at-home orders being consistently issued at least 2-4 weeks too late. Best to stay home at least 2 weeks before your local government tells you to: Stay home if one case is reported within 200 miles of where you are, and then expect local community spread in 2(-4) weeks. Also, it is now advisable, even though evidence is sparse, to wear masks whenever outdoors in virus hot zones. Masks may not protect the wearer, but they likely reduce the wearer's spreading the virus if they are infected. Masks also reduce hand-face self-infection. N95 masks should be prioritized to health care workers to keep their ranks strong, but homemade improvised masks can help protect the general population, especially those people with medical conditions (cardiorespiratory disease, obesity, immunocompromise, etc.), in food markets and closed spaces (subways, buses). Most human coronavirus disease is self-resolving, but COVID-2019 can cause a dangerous pneumonia and involve multiple organ systems (heart, kidney, liver, brain). No one has prior immunity. The median incubation period is 4-5 days but can be up to 14 days, and it would have circulated in a community for weeks or in an individual for days before it becomes evident. The estimated mortality rate ranges from 0.5% to 5% is an average across wide variations by region and by age. Current overall rate of 1.7% in US and 4.6% worldwide is an overestimate (the number infected is underestimated). In a study of over 72,000 patients in China, the death rate was less than 1% of people under 50 and 1.3% of people in their 50's; but risk was much higher in older people: 3.5% of people in their 60's, 8% in their 70's -- and 15% in their 80's. Deaths in youths age 9 or under are very rare so far. Major medical illnesses greatly increase mortality risk everywhere. Older people if healthy may be at no higher risk than younger people, but young healthy people can end up on ventilators.

Symptoms are mainly respiratory, including fever (in 88%), dry cough (60%), shortness of breath or difficulty breathing (55%), fatigue (35%), thick sputum (30%), and decreased taste or smell (30%), but may also sore throat, headache, chills, muscle aches, nausea, or diarrhea. The latter symptoms might reflect co-occurrence of COVID-19 with a cold or flu. Unnecessary worry can result from overdiagnosis of common cold and flu symptoms. Here's a rough guide:

<i>Symptoms</i>	<i>Coronavirus</i>	<i>Flu</i>	<i>Cold</i>	<i>Allergy</i>
Fever	Common	Common/Prominent	Rare	Rare
Cough (Dry)	Common	Common/Prominent	Common/Mild	Common
Shortness of Breath	Sometimes	No	No	Common
Fatigue	Sometimes	Common/Prominent	Sometimes/Mild	Sometimes
Thick Sputum	Sometimes	Common	Common	Sometimes
Sore Throat	Sometimes	Sometimes	Common	Sometimes
Headaches	Sometimes	Common	Rare	Rare
Aches and Pains	Sometimes	Common/Prominent	Common/Mild	Rare
Runny or Stuffy Nose	Rare	Sometimes	Common	Common
Diarrhea	Rare	Sometimes (in kids)	No	Sometimes
Sneezing	None	None	Common	Common
Duration	3-10 days if mild, 3-6 weeks if severe	3-7 days	7-10 days	Variable

If you have any COVID symptoms:

- Call a doctor's office or emergency room promptly for guidance. Do NOT leave home unless instructed to get tested.
- Stay home for 14 days for fever, dry cough, or difficulty breathing, even if mild. Rest. Keep 6 feet away from others. Minimize social contact. Drink plenty of liquids.
- If you test positive, same as above, but wear a facemask to reduce risk to family members, and stay in one room as much as possible. Family members and close contacts should also self-quarantine for 14 days.
- When coughing or sneezing, cover your mouth and nose with your elbow sleeve (not your hands) or a tissue. Put the tissue into the toilet or trash (do not carry in your pockets), preferably a plastic-lined garbage can, then immediately wash hands vigorously with soap for 20 seconds.
- Change towels and wash cloths frequently. Place towels and laundry into a closed plastic-lined container after use.
- Call medical again or go to emergency room *promptly* if you get an increase in breathing difficulties or extreme fatigue.

To reduce risk of becoming infected once viral spread has come to your community:

- Stay-at-home protocols allow going out only for emergency medical care, food and pharmacy supplies, travel to an essential job, dog walks, and maybe exercise. Veer 6-8 feet from others on a sidewalk (with a smile). Minimize touching of all public surfaces, and wash immediately before and after. Go out to buy food as few times as possible, preferably once weekly in the early morning or late evening to avoid crowds. Or get deliveries. Keep 2 weeks of food at home in case anyone gets sick. Get medication supplies and OTCs in place. No public events, playdates or sleepovers. No visits to friends, elderly, or sick people. Stay home with family. Wash after contacts, including with pets.

- Wash your hands *and face* at least five times daily with soap and warm water for 20 seconds with vigor. Wash back of hands, between fingers, nails, under fingernails, and wrists. Drying is crucial. Use plain (not antibacterial) soap to discourage strain resistance. If soap is not available (when away from home), carry a 60% alcohol-based hand sanitizer. If sanitizer is not available, rubbing (isopropyl) alcohol (with some aloe) or a dilution of standard bleach (4 teaspoons in a quart of water; or 1/3 cup in a gallon). But soap is more effective.
- *Wash your hands and face immediately every time you come indoors from outside. And encourage others to.*
- Wash before and after eating, before and after shopping and cooking, and after toileting. Get a hand moisturizer.
- Avoid touching your mouth, nose, and eyes with unwashed hands.
- Avoid handshaking, hugging, and fist bumping. Elbow bumps are questionable because sneezing into elbows is encouraged. Instead, use a hand wave or gesture, head nod, “pretend hug” or “virtual handshake.”
- Do not share eating utensils, drinks, water bottles, or cigarettes, or dip your utensils into community food.
- Clean then disinfect frequently touched objects (keys, keyboards, doorknobs, light switches, remotes, bedside tables, bathroom and toilet items) and surfaces, especially where eating. Phones and eyeglasses get both hand and face contact. When disinfecting, keep surfaces visibly wet for at least 15 seconds (and preferably 4 minutes). Coronavirus can remain infectious on hard surfaces for up to 3 days, so repeated cleaning is needed.
- Avoid nonessential contact with infected people, public transportation, and unneeded air travel.
- Keep a bottle of sanitizer available in each room at home and in your car. Also keep paper towels in your car.
- When you go out, use your wrist or knuckles to touch light switches and elevator buttons. Push open doors with your hip or closed fist. Consider a disinfectant for grocery cart handles, steering wheels, and gasoline dispensers.
- When shopping, don’t touch what you don’t buy, and minimize time in store (follow your shopping list and leave). Insert or wave touchless credit cards instead of handing them to others.
- Once home, it’s not essential to clean foods or containers: Oral ingestion is not a route of infection (inhalation is). Coronavirus degrades within 24 hours on paper and 3 days on metal and plastic (longer in warm or humid environments). If you set aside cardboard containers for 24 hours and cans for three days, there is no need to clean them. Wash fruits/veggies as usual. Again, wash hands before and after handling food.
- Money, mail, and credit cards can harbor viral particles, but it is sufficient to wash your hands after handling them.
- Dry clothes on Hot for 45 minutes to kill the virus. Or dry out in the sunlight (UV light quickly degrades the virus).
- Apartment buildings and job sites carry the responsibility to increase cleaning and disinfecting of door handles, intercom and elevator buttons, and frequently touched surfaces in public areas (including laundry room). Cleaning should include daily (or near-daily or twice daily) use of cleansers and disinfectants (70% alcohol or a 50:1 diluted bleach). Everyone should be encouraged to clean their own apartments, inside and hallway doorknobs, and avoid bringing nonessential guests into the building. Food deliveries can left outside in the entryway or doorstep (tip couriers generously). Hand sanitizer stations should be installed at entries. The goal is not perfect cleanliness, but reduced viral concentrations.

#### Personal Protective Equipment: Masks, Gloves, Goggles, and Gowns

- Water droplets generated by coughs, sneezes, and normal speech fall straight to the floor within 3-6 feet. The virus is suspended in water droplets. The virus is smaller than the passages in a mask, but water droplets are bigger. Masks work by filtering out droplets. N95 respirators filter out 95% of air particles.
- Personal protective equipment should always be used if 1) you have test-confirmed COVID, or 2) you are having close physical contact (less than 6 feet) with an infected person. Masks are advisable for anyone who leaves home.
- Two rigorous studies suggest that plain surgical masks (10 cents each at 2019 prices) are about as good as N95 respirators (\$1): *Loeb et al. JAMA 2009 Nov 4;302(17):1865-71. Lewis et al. JAMA 2019;322(9):824-833.*
- The main effect of all masks might be reducing inadvertent touching of one’s mouth and nose.
- Masks come in varied sizes and shapes that don’t fit all faces, so select one that fits (!) and is approved by NIOSH (National Institute for Occupational Safety and Health): [www.cdc.gov/niosh/npptl/topics/respirators/disp\\_partn95list1.html](http://www.cdc.gov/niosh/npptl/topics/respirators/disp_partn95list1.html) Purchase from an established manufacturer (such as 3M) and vendor to help avoid counterfeits and scams.
- Facial hair significantly reduces the effectiveness of any face piece (yes, consider shaving).
- Face pieces are only effective if used properly: 1) Wash your hands first, 2) avoid touching the inside of the mask, 3) place mask over nose and chin, 4) place the bottom rubber band over your head and down onto your neck, 5) place the upper band over onto the back of your head, 6) press the metal wire onto your nose to improve the seal (never fits perfectly), 7) check for proper fit by placing your hands around the mask to see if you feel air leaks when breathing. For a video demonstration, see <https://www.youtube.com/watch?v=bo-PEzHE7iw>
- Masks will not protect you if you remove them carelessly: Remove a mask (or goggles) by grasping the back straps, and pulling up and forward, without touching the front of the mask.
- Taking a mask on and off to eat or drink can result in self-contamination.
- Masks should be discarded after single use after close contact with an infected person (less than 6 feet).
- Under conditions of severe shortages, masks may be used for up to 8 hours if mask structure is not compromised.
- If not used in direct care of an infected person, masks can be re-used in low-intensity settings for up to 5 days if stored in a breathable container, such as a paper bag, individually to avoid cross-contamination.
- Home-made masks made from vacuum cleaner bags or tea towels are probably better than bandanas or scarves.

- There are no accepted procedures for cleaning masks, but hot water vapor (e.g., in a steamer for 10 mins) has been proposed. Methods known to degrade filter effectiveness include alcohol, bleach, and microwaves.
- Discard masks in a plastic disposable bag, not in an un-lined garbage container.
- Always wash your hands after removing a mask or if you touch the outside of the mask.
- Gloves (latex or nitrile), goggles, aprons, and gowns can be considered to care for an infected person in your home, but it is unclear how much difference they make in that setting.
- Before removing gloves, dunk your gloved hands in 50-to-1 diluted bleach, and let air dry.
- Hygienic measures offer more effective protection than equipment.

#### Self-Quarantining

- Keep your mind busy, keep in touch, and rotate through different activities to avoid fatigue.: Videochat/text/call friends and family. Read books, magazines, or junk. Watch TV or videos (max 2 hours at a time). Open the window for fresh air. Take a break from the news. Play with kids. Home-school. Listen to music. Take a bath. Cook something new. Play with the dog (then wash hands). Take an online course that's not too challenging. Wash your hands and face again. Re-read old books. Check out GoodReads.com. Learn to play videogames. Meditate, or listen to guided meditation to learn. Write a song about the virus. Clean or reorganize your place. Google "pandemics" or "COVID kindness." Organize a weekly videomeeting or a sing-along with friends on zoom. Arrange a virtual dinner with friends. Or a virtual family work-out session.
- Move your body to get your blood circulating: Stretch, exercise, march around, make noise (if infected, without sweating or respiratory strain). Eat artfully (avoid boredom eating). Keep a normal wake-sleep cycle (don't sleep in or stay up late). Push fluids. Shower. Wear nice clothes. Manage/anticipate stress thoughtfully.

#### If You Like To Talk

- Talk with everyone about the enormous changes, of living with restrictions for a while, of adapting to risk and uncertainty, and of fears and losses. Keep in touch. Keep in touch. Keep in touch.
- With young children, help them understand that the adults are dealing with something important but manageable, that many people are getting sick and many people are helping the sick people, and that everyone washing their hands and face helps prevent sickness. Acknowledge your feelings without burdening them.
- With adolescents who can't see getting grounded to avoid danger, show them that distancing is an act of generosity and idealism by helping restore normalcy to their neighborhood and preserving valued friends in their lives.
- Help everyone whose fear comes out as anger or indifference.

#### Uncertain Future

- Yes, COVID-19 has the potential to become one of the most widespread pandemics in several hundred years, but not the most dangerous. You and your loved ones are likely to live through it.
- When you find yourself worrying about someone getting COVID symptoms, be clear that you will call a physician or health care facility (emergency room if necessary) for guidance. Remember that, even in severe cases, there are usually 5-13 days from first symptoms to hospitalization, so you can act promptly but without alarm. But if breathing becomes difficult, then hurry.
- If you find yourself worrying about someone dying, center yourself. Assess the actual odds. Contemplate the realities. Imagine your recovery and healing. Seek a companion.
- Over 65 compounds involving varied mechanisms are being studied. None have been shown effective for COVID-19.
- Over 20 vaccines are being developed. Estimated time to availability is 12-18 months or more.
- Stringently practice hygienic measures and physical distancing. Encourage and help others to do the same.
- Hygienic measures have been proven more effective than personal protective equipment during past pandemics.
- Aggressive physical distancing is also well established to reduce contagion in prior epidemics.
- If you live in a rural area, start to self-quarantine when first confirmed case appears 200 miles away.
- If you want to stock up, buy soap and bleach. Keep 2 weeks of food at home. Plan ahead on medications and OTCs.
- If you've hoarded stuff, make donations to hospitals, friends, food banks, or community support agencies.
- Speak out against panic-based reactions and prejudicial comments.
- Get your flu shot, even late in the season. Influenza still kills more people than coronavirus. Since flu and COVID symptoms are similar, vaccination helps reduce false attribution of symptoms to coronavirus.
- Respond to facts, not fears or politics: Follow [cdc.gov/coronavirus](https://www.cdc.gov/coronavirus) for updates.
- Once you have fully recovered from infection, consider volunteering in a health care setting.
- Be very careful once stay-at-home orders are lifted. The government is primed to release restrictions too early.
- If you are over 70 (and maybe 60) and/or medically compromised, exercise much more caution: Self-quarantine right now (yes, right now) and until the crisis is over. And wear masks.
- Again, most human coronavirus illnesses, including COVID-2019, are self-resolving, even in the sick elderly.

You may distribute this handout to others without permission.

Charles Popper, M.D.

[charlespopper@hms.harvard.edu](mailto:charlespopper@hms.harvard.edu)