

# Quick Information on the Novel COVID-2019 Coronavirus Infection

Most human coronavirus illnesses are self-resolving, but COVID-2019 can cause severe respiratory distress in some people, especially those with medical vulnerability. Its novelty implies that no one has prior immunity. The median incubation period is 4-5 days but can be up to 14 days, and it can circulate in a community for weeks before it becomes apparent. The preliminary estimated mortality rate of 2% to 5% is an average across wide variations by region and by age. 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 higher in older people: 3.5% for people in their 60's, 8% in their 70's, and 15% in their 80's. No deaths were reported for youths age 9 or under. Statistics in the US may differ. Other illness increases risk (diabetes; cardiac, respiratory, immune disorders). Seasonal flu transmits more readily but has a lower mortality rate (0.1% to 1%).

Symptoms are mainly respiratory, including fever (in 88%), dry cough (68%), fatigue (38%), thick sputum (33%), shortness of breath, and difficulty breathing, but may also include sore throat, headache, myalgias, or chills.

If you have symptoms:

- For questions about mild symptoms, call ahead before deciding to go to a doctor's office or emergency room.
- For mild symptoms, stay home. Rest. Keep 6 feet away from others, and minimize social contact for 14 days.
- Wear a facemask to reduce risk of infecting family members, and stay in a single room as much as possible.
- When coughing or sneezing, cover your mouth and nose with your elbow sleeve (not your hands) or a tissue. Throw the tissue into the trash (do not carry in your pockets), preferably using a plastic-lined garbage receptacle. Wash your hands with soap and water immediately after, for 20 seconds, vigorously.
- Drink plenty of liquids, and consider a room humidifier.
- Take pain and fever medications (but do not give aspirin to children).
- Place towels and laundry into a closed container after use, again preferably lined with plastic.

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

- Wash your hands several times daily with soap and water for 20 seconds with vigor. Wash back of hands, between fingers, under fingernails, and wrists. Drying hands completely is crucial. Use plain (not antibacterial) soap to discourage resistant strains. Use a 60% alcohol-based hand sanitizer if soap is not available (when away from home). If sanitizer is not available, equal cleansing can be obtained with rubbing (isopropyl) alcohol (with some aloe) or a 1:50 dilution of standard bleach. But soap is actually more effective.
- Avoid touching your mouth, nose, and eyes with unwashed hands.
- Practice "social distancing:" Stay 6 feet away from others to remain out of "sneeze range".
- 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, bow, or wink.
- Do not share eating utensils, drinks, water bottles, or cigarettes, or dip your utensils into community food.
- *Wash your hands immediately every time you come indoors from outside.* Also, before and after eating, before and after cooking, and after toileting.
- Periodically, clean and disinfect frequently touched objects (keys, keyboards, phones, doorknobs, light switches, remotes, toilet and bathroom items, bedside tables) and surfaces, especially where eating. Coronavirus can remain infectious on hard surfaces for up to 9 days, so repeated cleaning is needed. Kampf et al. J Hosp Infect 2020 Mar;104(3):246-251
- Avoid nonessential contact with infected people, all meetings involving 25 or more people, and unneeded air travel. If contact is necessary, exercise stringent hygienic measures.
- If going into a crowded area for a prolonged period (clinic, hospital, plane, meeting), consider wearing a face mask.
- Keep a bottle of sanitizer available in each room at home and in your car.
- When you go out, use your knuckles to touch light switches and elevator buttons.
- Push open doors with your hip or closed fist, especially in public places.
- Touch gasoline dispensers with a paper towel (or disposable glove).
- Handle personal laundry carefully. Clothing can hold the virus and can remain infectious for up to 1-2 weeks. Wash clothes with a dryer on Hot for 10 minutes.
- Eat nutritiously, push fluids, sleep and exercise well, and anticipate/manage stress thoughtfully.
- These hygienic measures (washing, covering, not touching) offer more effective protection than equipment!!

Use of Masks, Gloves, and Goggles

- Personal protective equipment has definite but limited value, but are difficult to obtain outside of medical settings.
- Face pieces, such as masks and "respirators," can provide some help, especially if combined with proper hygiene. Two rigorous studies suggest that regular 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* and *Lewis et al. JAMA 2019;322(9):824-833*. It is also not clear that N99 are significantly better than N95 respirators for viral protection. (The virus in the air

- is suspended in moisture droplets. The virus is much smaller than the passages in a mask, but water droplets are much bigger. Masks filter out the virus by filtering out the droplets.) Their main effect may be to prevent the inadvertent touching of one's mouth and nose (which people do on average 4 to 24 times per hour).
- Masks, if they become available and you have reason to obtain one, come in varied sizes and shapes. Select one that fits! Make certain the mask is approved by NIOSH (National Institute for Occupational Safety and Health). Approved masks are listed at [www.cdc.gov/niosh/nppt/topics/respirators/disp\\_part/n95list1.html](http://www.cdc.gov/niosh/nppt/topics/respirators/disp_part/n95list1.html) Generally, purchase from an established manufacturer (such as 3M) and vendor, to help guard against counterfeits and scams.
  - N95 masks filter out 95% of air particles (N95 can also be designated as P2, FFP2, or KF 94 masks);
    - N99 masks filter 99% of particles (also designated as KF99).
    - N100 masks filter 99.97% of particles (P3, FFP3).
 It can be difficult to breathe through a N99 or N100, so they may not be suitable for the elderly, for individuals with chronic diseases such as cardiorespiratory disorders, or in prolonged use. N95 is the minimum NIOSH-approved mask for viral protection, but again it is not clear that N95 or N99 masks are more effective than surgical masks.
  - Facial hair significantly reduces the effectiveness of any face piece (yes, consider shaving).
  - Face pieces are only effective if used properly.
    - Wash your hands before putting on the mask.
    - Avoid touching the inside of the mask.
    - Place mask over nose and chin....
    - Then place the bottom rubber band over your head and down onto your neck....
    - Then place the upper band over onto the back of your head.
    - Press the metal wire onto your nose to improve the seal (never fits perfectly).
    - 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.
  - Always wash your hands after removing a mask or if you touch the outside of the mask.
  - Discard the mask in a plastic disposable bag (not in an un-lined garbage container).
  - Masks should be discarded after single use after close contact (less than 6 feet) with an infected person.
  - Otherwise, masks can be re-used, if properly handled and properly stored. Guidelines are not uniform: Some say wear for up to 8 hours, or for up to several days, or discard after five uses. Obviously, always discard if the integrity of the mask appears compromised. If reused, a mask should be stored in a breathable container, such as a paper bag, individually to avoid cross-contamination.
  - Washable face masks may be valid, if properly washed and handled; but none are NIOSH-approved.
  - Gloves (latex or nitrile), goggles, aprons, and gowns might be worth considering if an infected person is living in your home, but it is not clear if they make much difference.
  - Before removing gloves, dunk your gloved hands in 50-to-1 diluted bleach, and let air dry.
  - Antiviral medications are being actively researched, but have not been demonstrated effective for COVID-2019.
  - More than 20 vaccines are being developed, but estimated time to availability is 12-18 months.

#### Uncertain Future

- It is NOT advised to buy personal protective equipment at this time, unless you are caring for an infected person. Public anxiety has led to unwarranted buying of personal protective equipment, leading to supply shortages that could worsen viral spread, without clear benefits to most purchasers who paid skyrocketed prices.
- Case identification and aggressive contact tracing have not been sufficient; "mitigation" should be more useful, especially hygienic measures and social distancing.
- Speak out against prejudicial comments or panic-based actions.
- Respond to facts, not fears: Follow [cdc.gov/coronavirus](http://cdc.gov/coronavirus) for updates.
- Get your flu shot, even late in the season. Influenza still kills more people than coronavirus. Since flu and COVID-19 symptoms are similar, vaccination may help reduce false attribution of symptoms to coronavirus.
- The essential point is that careful use of hygienic measures has been proven more effective than personal protective equipment during past pandemics. For now, if you want to stock up, buy soap and alcohol disinfectant.
- If you are over 80 (and maybe 60) or medically compromised, exercise more caution, and do stock up on your medications, including over-the-counters and nutrients.
- Again, most human coronavirus illnesses, including COVID-2019, are self-resolving, even in the elderly.