

What is coronavirus?

Coronaviruses are viruses that infect birds and mammals but can mutate to cause colds and other upper respiratory infections in humans. The strain associated with this pandemic is called Covid-19. Epidemiologists are calling it “Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).” It is a newly identified virus and therefore people do not have immunity against it. The virus has caused a pandemic which means that the infection is widely spreading to populations throughout the world.

Where did the virus come from?

The infection originated in a market in Wuhan China that traded snakes, bats, birds, marmots and rabbits. The genome of CoV-2 is 96% similar to a coronavirus in bats. Six prior strains of coronavirus have evolved from animals to humans. Four caused colds and two others caused serious illness. It is believed that the virus infected birds in one case and camels in the other, which then infected humans.

How many persons are infected?

The numbers changes daily. For the most up-to-date information check, [World Health Organization](#), the [US Centers for Disease Control and Prevention](#), and [Johns Hopkins University](#). The best site for questions and answer is: <https://www.cnn.com/interactive/2020/health/coronavirus-questions-answers>

Is this infection more infectious than the flu?

Yes. It is 2 to 3X's more contagious and more deaths result.

How long does the virus survive in air and in surfaces?

The virus stays 3 hours in the air, 4 hours on copper surfaces, 24 hours on cardboard and 2 to 3 days on plastic and stainless steel. However, these studies are only preliminary, and other research have found no aerosolized coronavirus particles in the hospital rooms of infected patients. The weight of the evidence suggests that the virus can be suspended in air only under very limited conditions, such as fog and that this transmission route is not driving the pandemic. It is less likely to stay in the air in hot and humid climates. In droplets, the coronavirus is airborne for a few seconds after someone sneezes or coughs as gravitational forces pull it down. Anyone close can be infected. The coronavirus survives on surfaces for several hours.

Why is Covid-19 of such concern?

Because it is very contagious, and it can be lethal in older adults. The data from Italy and South Korea which is the most reliable we have as of Mid-March show that if you are in the 40 to 49 years of age group, the risk of death is 0.1% (1 in 1000 infected persons) but the risk goes up rapidly after that with mortality rates of 1.7% in the 50-59 age group, 8.1% in the 60 to 69 age group, 34.2% in the 70-79 age group and 44.3% in the 80 to 89 age group. In addition, there are survivors in these age groups who required intubation and other life support measures to heal. The risk is particularly high in persons with co-morbidities such as lung disease and heart failure, which are more common in older persons. It is probable that the statistics will be adjusted over

time, as more people are tested, and reporting becomes more consistent. Currently, sicker persons are more likely to be tested and fewer milder cases are identified, making it seem as though a larger percentage of infections are fatal. In fact, some recent estimates put the mortality rate of the new coronavirus closer to 1%. Still, the statistics are alarming and data from the US indicate that mortality rates are in line with those reported from other countries.

What are the most common symptoms?

Some persons remain without symptoms

Some individuals, especially those above 50 years of age and younger persons with lung or heart disease and other comorbidities, progress to pneumonitis (inflammation of the lungs) and even pneumonia (infection of the lungs). Both cause cough, shortness of breath, worsening cough and usually fever.

The most common symptoms are

- Fatigue, loss of energy
- Persistent cough
- Low grade fever
- Muscle ache

Some, usually children, experience other symptoms of cold such as congested nose.

Up to 20%, nearly always the elderly and persons with comorbidities, develop more serious symptoms such as high fever or breathing problems which need oxygen and hospital treatment.

In a Chinese study published in JAMA describing 138 hospitalized patients with COVID-19 pneumonia in Wuhan, the median age was 56 years and the most common clinical features at the onset of illness were:

- Fever in 99 percent
- Fatigue in 70 percent
- Dry cough in 59 percent
- Anorexia (lack of appetite) in 40 percent
- Myalgias (Muscle soreness) in 35 percent
- Dyspnea (Shortness of breath) in 31 percent
- Sputum production in 27 percent

Dyspnea developed after a median of five days of illness. Acute respiratory distress syndrome developed in 20 percent, and mechanical ventilation was implemented in 12.3 percent.

How do I know if I have a cold or COVID-19?

Colds tend to be preceded by sore throat and runny nose, which are less frequent symptoms of COVID-19. Low white blood cell count (leukopenia (l) has been reported in up to 45% of patients, and lymphocytopenia (low lymphocyte count) is seen in 85%. A definitive diagnosis is made by a test of saliva or mucus.

How long does it take to develop symptoms?

The time from exposure to symptom onset (incubation period) is as long as 13 days. Recently published research found that on average, the incubation period is about five days. Two studies from clusters in Singapore and Tianjin showed that the average time before exposure and symptoms was 3 days.

Are symptoms different in children?

Symptoms are similar in children and adults. However, in general children present with mild symptoms and tend to have cold-like symptoms, such as fever, runny nose, cough and uncommonly vomiting and diarrhea. Rarely, children, usually those with underlying health issues, have had severe complications.

Can a person spread the disease if they have no symptoms?

People without symptoms can spread the virus as they have high levels of the virus in their respiratory secretions. A published paper from the University of Texas that looked at the cases from 93 cities in China concluded that more than 1 in 10 infections were caught from people who had the virus but did not yet feel sick. Another study of clusters in Singapore and Tianjin found that the rate of transmission was much higher and that between 48% and 77% of infected persons caught the virus from persons without symptoms. If not in close contact, transmission is possible by touching elevator buttons, restroom taps, and other objects used by the infected asymptomatic person. It seems at this time that asymptomatic persons tend to be young, often in their 20's or less. The Massachusetts Department of Health reported that 3 employees at a conference at the Boston Marriott in February tested positive for coronavirus but had no symptoms, but soon after 108 participants had come down with the virus.

Why should you avoid gatherings of people?

Because as stated above, this virus is highly contagious and has been known to spread even by people without symptoms. There are reports of people catching the infection after attending meetings and going to malls.

How long can I expect to feel sick?

The majority of individuals feel better in 5 to 7 days with rest and over-the-counter flu medications. but older persons have more symptoms, longer duration and more severe complications.

How does coronavirus spread?

The coronavirus is thought to spread mainly from person to person. The closer the contact, the greater the risk. Droplets in mucus and saliva are transmitted by coughing and sneezing or less often by talking or possibly even respiration and land in the mouths or noses of people close by. These are then inhaled into the upper respiratory system and lungs. These droplets also land on surfaces and objects, such as counters, chairs, boxes, food containers which a person can touch and then transmit to their mouth, nose or eyes. The infected person may have virus from secretions in the hands and touch surfaces which then get transmitted to the hands of an uninfected person.

Who is at highest risk for getting very sick from COVID-19?

Older people, and those with underlying medical problems like chronic bronchitis, emphysema, asthma, heart failure, or diabetes, are more likely to develop serious illness.

What can I do to reduce risk of exposure to the virus?

- Avoid crowds.
- Avoid people who are sick (6 feet rule)

- Avoid touching your eyes, nose, and mouth
- Clean and disinfect frequently touched objects and surfaces using a regular household cleaning spray or wipe
- Keep away from persons who are sick, limit close contact, and wash your hands often.
- Wash your hands with soap and water for at least 20 seconds
- Wash especially after touching anything that could be contaminated, when (preferably before) coming into the house and as often as you can when outside of the house.
- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol.
- Facemasks are not recommended by the CDC for people who are well but they can provide some protection. If you are going to use a mask, the ones to use, try to find an N95 which are used by hospital personnel or an FFP2 or FFP3 (even better) masks but the degree of protection with these masks is not known. Use a facemask if you are **taking care of a person in close settings either at home or a health care facility.**
- Remember to sanitize your keys, wallets, supermarket bags that may have been touched or sneezed on by other persons.
- Obtain several weeks of medications and supplies in case you need to stay home for prolonged periods of time.
- Avoid cruise travel and nonessential air travel.
- Stay home as much as possible, especially if you are over 50 years of age, to further reduce your risk of being exposed.

How should you treat fever?

Acetaminophen (Tylenol) is fine but the experience in some countries indicate that NSAIDs such as ibuprofen (Motrin, Advil), Naproxen (Aleve), and even aspirin should be avoided. Although these reports are anecdotal, they have generated enough concern as to motivate Ministers of Health to recommend against their use.

When should I not go to work?

If you have muscle aches, cough, fatigue and low-grade fever, do not go to work and stay indoors away from other persons. You should get tested.

What should I do if I am exposed?

Health department officials are advising people who are exposed to be quarantined for 2 weeks.

When is it safe to return to work?

Hospitals are telling infected employees who do not have direct patient care contact that they can return to work fever is gone for 24 hours and cough is improving. But they must follow respiratory etiquette: like covering any cough on a tissue which is rapidly thrown away with hand hygiene immediately afterwards; no hand shaking and wearing a mask. The virus can be present in the respiratory system for 13 days after symptoms subside.

Should you go to meetings?

Although the government has called for bans of meetings larger than 10 persons, any gathering can put people in attendance at risk, as there can be contagious persons with

minimal or no symptoms, whether the meeting is held in a restaurant or a conference room. This is more critical for older persons. It is preferable to conduct business through Skype or similar telecommunication applications. Even if you hold participants to 10, there is always a risk that one person may be harboring infection.

Should I avoid public transportation?

In buses or trains, there is a risk of transmission, especially if crowded. Avoid public transportation, if you're sick or live in an area where an outbreak has been reported.

Will hot weather stop the outbreak of this virus?

It is true that the flu begins to abate at the end of March and April but at this time, we do not know whether the spread of COVID-19 will decrease when the weather heats up. Experts think that this problem will go on until July or August and can return a few months later during the flu season. However, there is reason to be optimistic. Higher temperatures and humidity tend to result in coronaviruses to stop spreading. A pre-published study from Spain reported that countries with polar cold and temperature climates have had low or no transmission. Miami unlike other parts of Florida has a temperate climate which may result in faster resolution of the spread.

Can I catch the coronavirus by eating food handled or prepared by others?

It is not clear that the virus is spread by an infected person through food they have handled or prepared. Cooking would kill the virus but droplets could fall on cold food, like salads and breads. However, such transmission is felt to be the exception than the rule. However, the virus can travel through the gastrointestinal system and has been detected in stool specimens.

How to sanitize your hands?

Wash your hands often with soap and water for at least 20 seconds, especially after going to the bathroom; before eating; and after blowing your nose, coughing, or sneezing.

- Always wash hands with soap and water if hands are visibly dirty ([CDC's handwashing website](#)).
- If soap and water are not readily available, use an alcohol-based hand sanitizer with at least 60% alcohol, covering all surfaces of your hands and rubbing them together until they feel dry or you can spray 70% alcohol or bleach or use swabs impregnated with these. Bleach should be left for 4 minutes before rinsing. These substances dry and irritate the skin so be careful and moisturize frequently.

Sanitizers are now hard to find. The recipe to make your own is:

- 2/3 cup 91% isopropyl alcohol (rubbing alcohol)
- 1/3 cup aloe vera gel
- Mixing bowl
- Spoon or something for whisking
- Small container, such as a 3 oz. travel bottle

Directions:

In a mixing bowl, stir isopropyl alcohol and aloe vera gel together until well blended. Add 8-10 drops of scented essential oil (optional, but nice!). Stir to incorporate. Pour the homemade hand sanitizer into an empty container and seal.

Can pets be contagious?

There is no evidence that pets such as dogs or cats spread this virus to humans.

What can I do to keep my immune system strong?

Following general health guidelines is the best step you can take toward keeping your immune system strong and healthy. Every part of your body, including your immune system, functions better when protected from environmental assaults and bolstered by healthy-living strategies such as these:

- Don't smoke.
- Control your stress level. This is very important.
- Drink liquor in moderation (no more than one to two drinks a day for men, no more than one a day for women).
- Get enough sleep. This is very important.
- Eat a diet high in fruits, vegetables, and whole grains.
- Take a multivitamin if you suspect that you may not be getting all the nutrients you need through your diet.
- Deficiencies in vitamin C, zinc, selenium, magnesium, iron, copper, folic acid, vitamins A, B6, C, and E weaken the immune system but the evidence to support that supplementation in the absence of deficiencies help is weak. Also, it not unlikely that herbs and supplements help but if people really believe that there will be benefit, a placebo effect may help fight infection.
- Prevent other infections.

Why is it so challenging to develop treatment for viral infections?

Viruses live inside human cells and the antiviral medication must kill the virus without harming human tissue. Also, viruses mutate (change their composition) rapidly as they divide, so they can become resistant to the antiviral drug.

Is there a vaccine?

A vaccine is already being tested (in record time) but even if effective, it is not expected to be available for at least 1 year. There are several other vaccines in the works.

Are there any treatments?

At present the treatment is symptomatic and life support. However, there are some medications that are being studied. *Remdesivir*, a broad-spectrum antiviral, which failed to treat Ebola is being evaluated in a study at the NIH after a very sick infected patient had a rapid recovery. The drug may be supplied on a compassionate basis if requested through trial. *Chloroquine* is a drug that's used to fight malaria and autoimmune diseases. Researchers have discovered that this drug is effective at fighting the SARS-CoV-2 virus in studies done

in test tubes. The combined protease inhibitors *lopinavir and ritonavir*, used to treat HIV, is being evaluated. China has approved the antiviral *Favilavir* to treat Covid-19 following completion of a clinical trial of 70 cases although results have not been disclosed. Trial have begun in China with APN01, a recombinant angiotensin-converting enzyme 2 (ACE-2) that helps protect the lungs from injury due to respiratory distress. Covid-19 uses ACE2 to infect cells in humans. *Galidesivir* which has shown benefit against Ebola and Zika is in “advanced stage of development.” Virus-neutralizing antibody cocktails are being *manufactured*.

What happens that make people critical?

In an attempt to fight the virus, the immune system unleashes an all-out inflammatory response that can further damage the lung tissue. Part of this response has been called the “cytokine storm syndrome.” A report in the Lancet recommended that patients with severe COVID-19 should be screened for hyperinflammation. There are some suggestive tests such as increasing ferritin, decreasing platelet counts, or erythrocyte sedimentation rate. In these cases some treatments that block the immune response, such as Prednisone may work. However, steroids are contraindicated because they suppress immunity broadly and can increase risk of bacterial and fungal infections, leading to worse outcomes, so that selective cytokine blockade with medications such as the interleukin-1 receptor antagonist *Anakinra* or, the interleukin-6 receptor antibodies *Sarilumab* and *Tocilizumab (Actemra)* as well as other drugs that selectively target components of the immune system are being considered for evaluation and have been used in other countries.