

Coronavirus disease

What you should know about COVID-19



A special supplement to MAYO CLINIC HEALTH LETTER

New questions, essential answers from a Mayo Clinic infectious diseases expert

A new strain of coronavirus that causes a disease called COVID-19 emerged at the end of 2019 in China. Since then, it has spread rapidly to every region of the world, forcing many countries — including the United States — to take aggressive action to prevent further infections.

Mayo Clinic Health Letter published a special supplement on COVID-19, available free online, in early March. Here, **Salvador Alvarez, M.D., an infectious diseases specialist at Mayo Clinic in Jacksonville, Florida**, answers an updated set of questions about the virus.

? I don't have COVID-19. Should I keep my regular doctor appointments?

You should reschedule your elective appointments, such as a visit to the eye doctor or dermatologist — many medical centers, including Mayo Clinic, have postponed most or all elective care. However, if you have appointments for serious medical conditions, such as cancer, poorly controlled diabetes or high blood pressure, or functionally limiting heart disease, contact your doctor and discuss the need for the visit or the possibility of rescheduling. Medicare recently announced that it will expand coverage for telephone-based medical care, and this may be a new option for many needs.

If you have to visit a doctor, it's even more important to minimize touching things such as a door handle or elevator button, keep a 6-foot distance from others, avoid touching your eyes, nose and

mouth, and wash your hands frequently with soap and water or use a hand sanitizer that contains at least 60% alcohol.

Keep in mind that health needs don't go on emergency lockdown. It's possible to develop diabetes, have a heart attack or stroke, have concerning levels of emotional distress, or see a worsening of an existing disease — even in the midst of a pandemic. If you feel like something is wrong with your health, don't hesitate to call your health care provider.

? Should I help take care of my grandkids?

Probably not, if you have the choice. Older adults, especially those with underlying medical conditions, have a higher risk of serious complications and death from COVID-19.

Anyone who has taken care of young children knows that there is no way to avoid breathing in respiratory droplets or avoid touching surfaces they have touched — key routes of COVID-19 virus transmission. In addition, the virus may spread from infected adults and children when they are not experiencing symptoms. And, the majority of children who get the virus have no symptoms or only mild symptoms. Taken together, it may be impossible to know if children you are caring for have the virus, and there's no way for you to avoid risk factors of contracting the virus if you are caring for them.

In place of in-person meetings, try communicating with grandkids and other loved ones by using video com-



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munication tools such as FaceTime, Skype, Zoom or another platform. Ask trusted family or friends to help you with these technologies. Learning new things is one good way to spend downtime.

? My husband is in an assisted living facility. How can I keep him healthy?

Most residential care settings — nursing homes and assisted living facilities — have stopped allowing visitors due to the sensitive health of older residents and the high likelihood of the virus spreading if even one resident gets infected. Talk to officials at the facility about connecting with a loved one using video communication tools.

Those who live in such a facility should abide by the same behaviors practiced by the general population.

It can be easy to feel lonely or isolated if you are in a nursing home under restrictions. But remember that these policies are in place to keep you safe.

? Do I need to take precautions with food or mail deliveries?

Yes. Avoid close contact with the delivery person and clean the packages with antibacterial wipes immediately upon receipt. Wash your hands with soap and water after every interaction with another person, and after handling packages that were touched by others.

? Why are people dying of COVID-19?

The COVID-19 virus initially enters the body through the eyes, nose or mouth. Sometimes it can be stopped near the initial entry point. Or it can find its way into the lower respiratory tract and cause damage to cells and tissues in that area.

At the same time, the immune system revs up to fight the virus. An army of immune cells is harnessed or created to target and kill the virus. As the virus finds its way to the lower respiratory tract, the immune system goes after it. The resulting attack leads to a lot of collateral damage of healthy cells and tissues.

Lung function can deteriorate due to this assault on the lower respiratory tract. In turn, the ability to get oxygen into your bloodstream becomes affected. Your breathing muscles can be impaired by lack of adequate oxygen, and they can also fatigue trying to inhale and exhale against lungs that aren't working well. Inflammation of the lower respiratory tract can occur with viral pneumonia.

At some point, breathing support with a ventilator may be needed to get more oxygen to the body. This alleviates strain, with the goal of giving the body more strength to fight off the virus and calm the immune response.

Most people who can't effectively fight off the virus die due to pneumonia and respiratory failure. The majority of these individuals have a compromised immune system that makes it difficult to fight off the infection, or they have little or no respiratory reserve to survive the inflammation that occurs.

? Are any possible treatments emerging?

It's important to note that you should never take a medication without first consulting your doctor. In addition, some people wonder why a drug that seems to work is not being rapidly deployed and used. The answer: A drug that seems promising in early reports may prove with rigorous scientific study to have no beneficial effect against COVID-19, and may even prove to make things worse.

Trials are racing ahead to find drugs or therapies that prove helpful and safe, including trials of various antiviral drugs, monoclonal antibody drugs and using plasma containing COVID-19 antibodies (convalescent serum) taken from people who have recovered from the disease.

Some drugs are being selectively tried in humans even in the absence of rigorous scientific analysis of their effect against COVID-19:

- Chloroquine and hydroxychloroquine are autoimmune disease drugs also used to fight malaria. Several clinical trials are testing their use in people with COVID-19. In some cases, infection appears to have cleared more quickly with these drugs, and there is limited laboratory evidence of effect. The FDA has recently authorized selective use of these drugs for COVID-19 infections while waiting for the results of the trials.

- Remdesivir is an experimental broad-spectrum antiviral drug originally designed to target the Ebola virus. Researchers have found that remdesivir may be effective at fighting COVID-19 in a small number of infected people. Clinical trials are underway.

? Is it true that ibuprofen can make the infection worse?

There's no widely accepted data on ibuprofen (Advil, Motrin IB, others) and COVID-19. However, many credible organizations have advised caution on the matter and suggest acetaminophen (Tylenol, others) as a possibly preferable

treatment for fever and body aches. In general, acetaminophen is a safer option for older adults than ibuprofen, as ibuprofen is associated with the risk of serious side effects.

If you already take a different pain-relieving drug, such as a daily aspirin for heart attack or stroke prevention, don't stop taking it or change to a different drug without first talking to your doctor.

? Why is the virus more harmful to older adults?

It's important to understand that no age group is safe from developing serious or even deadly complications from COVID-19. However, there are two major factors that cause the aged immune system to be much more vulnerable.

First, as you age, you start to produce fewer new immune cells that are able to respond to new forms of infectious disease. Second, as you age, the immune system has a delay in its ability to coordinate itself. There is a delay in the communication among all the different types of immune cells, so the aged immune system is much slower at clearing an infectious disease.

The research into the coronaviruses that cause the common cold has shown that older mice, for instance, experience more inflammation early in the illness, perhaps "setting the table" for lung damage that can't later be overcome. Age and your overall health will drive your susceptibility to the disease. If you have a chronic health condition, you're going to be more susceptible, like with influenza and other respiratory infections.

? Some television commentators are saying it's not a big deal. Is our society overreacting?

If you look at how the number of cases has increased across Europe and is now skyrocketing in the U.S., this COVID-19 pandemic is a true medical emergency. When it comes to pandemic preparation, there is no overreaction.

Simple ways to protect yourself from coronavirus



Keep your hands clean.
Wash them with soap and water or an alcohol-based hand rub.



Avoid touching your eyes, nose and mouth.



Clean and disinfect high-touch surfaces routinely.



Practice “respiratory etiquette” by coughing or sneezing into your elbow or a tissue, and then washing your hands again.



Avoid close contact with people who are sick.



Stay home if you are sick.

Connect with others

Social distancing and “sheltering in place” are necessary steps to slow or reduce COVID-19 infections, but they can also take a toll on a very important aspect of health: social connections and support. Using communication technology — such as email, texting, social media and video chats — are likely to be part of the way you navigate this new social reality.

If you would like to find a trusted forum to stay informed and also stay socially connected by chatting with others, try Mayo Clinic Connect.

Mayo Clinic Connect can be found at
<https://connect.MayoClinic.org>.

Once you have navigated to the site, click “Groups” to find the **COVID-19** support group and more than 65 other health-related groups. Click “Pages” to follow the new *Mayo Clinic Health Letter* page “**Aging & Health: Take Charge.**”

In regard to COVID-19, Mayo Clinic Connect is a space to talk about topics such as:

- What you are doing to cope
 - How you can pass the time
 - Housekeeping and disinfecting your home
 - Being helpful to others in a challenging time
- It’s also a space to be socially active. You can:
- Join the virtual walking group
 - Tour virtual museums together
 - Share art, music and books
 - Find daily escapes and inspirations

Stay informed with reliable sources

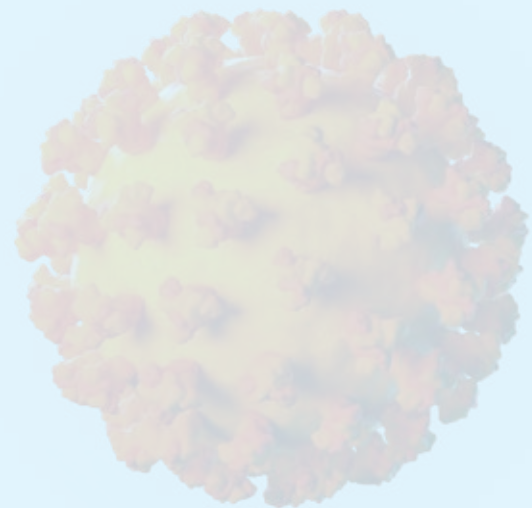
Centers for Disease Control and Prevention (CDC)
www.cdc.gov/coronavirus/2019-ncov/index.html

World Health Organization (WHO)
www.who.int/emergencies/diseases/novel-coronavirus-2019

Travel tips and advisories

U.S. Department of State travel advisory map
<https://travelmaps.state.gov/TSGMap>

CDC’s Coronavirus Disease 2019 information for travel
www.cdc.gov/coronavirus/2019-ncov/travelers/index.html



Stopping COVID-19 spread at your fingertips

It may seem like worldwide events related to COVID-19 are sometimes out of control. However, when it comes to your individual response to the virus, you have within your control a number of proven tools known to greatly reduce your risk of becoming infected.

One major route of virus spread is touch. This includes your hands potentially touching infected people or objects, then touching your face, mouth, nose or eyes — or touching an object that someone else may touch.

Steps to break that cycle include:

- Avoiding nonessential tasks or activities that could potentially involve spreading infection by touch.
- Wiping down public objects that you're about to touch with a disinfectant wipe. This may include a shopping cart handle, a door handle or a keypad. Standard disinfectants — especially bleach-based disinfectants — readily inactivate the COVID-19 virus. At home, disinfecting high-touch areas frequently can help prevent spread among family members.
- Using a hand sanitizer with at least 60% alcohol to kill germs on your hands when hand-washing isn't feasible or practical.
- Avoiding touching your face.
- Hand-washing with soap and water, which is the best way to clean your hands. This can be done before and after any occasion where you are in public or around others. Use the steps in the diagram below to wash your hands properly.

Hand-washing for virus protection



The process of hand-washing should take at least 20 seconds. To start, wet your hands and apply soap to cover the hand surfaces. Rub your hands together palm to palm.



Rub one palm over the back of the other hand, then switch hands and repeat. Next, rub your fingers together.



Rub the tops of your fingers in the palm of the other hand. Switch hands and repeat.



Grab your thumb in the palm of the other hand; rub all around the thumb. Switch hands and repeat.



Twist the tips of your fingers back and forth in the palm of your hand. This helps clean under your fingernails. Switch and repeat.



Rub your hands while you rinse them under running water. Dry your hands well, preferably with a paper towel. Use the towel to turn off the faucet and open the door as needed.

Answers from experts across Mayo Clinic

Should I wear a face mask to protect myself from the virus if I don't feel sick?

Face masks initially have been recommended only for people who feel sick — to prevent virus spread — or who are in close contact with people who have documented COVID-19. Mayo Clinic doctors also have urged those with a compromised immune system to wear a mask while in close proximity to others in public spaces. For healthy people who are not sick, it's thought that masks are generally not that helpful in providing protection from the virus. There are a number of reasons for this, including that masks often aren't airtight and that donning a mask often results in more face touching, not less. In addition, if healthy people who aren't in higher risk settings buy too many masks, there won't be enough for those who truly need them.

However, the Centers for Disease Control and Prevention (CDC) now recommends that healthy people wear homemade cloth face masks — or a face covering such as a bandana or a scarf — in public settings where it may be difficult to maintain at least 6 feet of social distancing space. Recommendations may be updated as more information is available from experts caring for people with COVID-19. In you wear a mask of some sort, follow these important steps:

- *Keep your social distance* — Understand that face masks will not fully prevent the virus from entering your respiratory tract. Moreover, the virus can enter the body through the eyes, which are not protected by a face mask.
- *Keep your hands away from your face* — There is some risk that wearing a face mask will result in more face touching, especially for those who have allergies to certain parts of a mask, such as metal or rubberlike straps.
- *Don't neglect other important steps* — Face masks do not negate any other

prevention methods, such as the need to wash your hands appropriately or stay at home if you are sick.

- *Remove the face mask properly* — This generally involves removing the mask by loosening the straps at the back or pulling back elastic banding, and then carefully removing the mask without the outer part of the mask or your hands touching your face. Wash your hands after removal. If you have a manufactured mask, you can preserve it for reuse. If you have a homemade mask, wash it in the laundry on a regular basis.

What should I do if I think I have COVID-19?

If you think you may have COVID-19, call your health care provider first, rather than showing up without warning — unless you are seriously ill.

Flu-like symptoms associated with COVID-19 may appear two to 14 days after exposure. On average, these signs and symptoms develop within five days:

- Fever
- Sore throat or dry cough
- Shortness of breath
- Fatigue
- Body pain, especially around the back and shoulders
- Possible nausea and diarrhea

Seek emergency medical care if you experience any of the following signs and symptoms: severe cough or gagging, difficulty breathing, chest pain, confusion, and bluish lips or face.

What do I do if I can't stop worrying about COVID-19?

If worry becomes disruptive, try to:

- Limit exposure to news media. It's important to stay up to date, but there's no need to follow the news constantly or stay up late to monitor news.
- When you do look at news, be sure to seek out reputable sources.

- Connect with friends and family for support via social media or a phone.
- Meditate, stretch or practice deep breathing.
- Try to stay optimistic.
- Eat a healthy diet.
- Get some exercise. In some places, it's OK to go outside for a walk or to engage in other outdoor exercise as long as you maintain a safe distance.
- Avoid using drugs or alcohol to cope.
- Use your moral compass or spiritual life for support.
- Remind yourself that strong feelings will fade.

Contact your health care provider if you experience:

- Difficulty sleeping
- Changes in eating patterns
- Difficulty concentrating on normal or daily tasks
- Feelings of helplessness, hopelessness, prolonged sadness or overwhelming worry

Will this pandemic ease up as it gets warmer?

Other viral respiratory diseases, such as influenza, are seasonal. This means that cases decrease in the spring and summer. However, unlike the flu, no one knows what to expect from COVID-19 as there is not yet enough known about the virus. Based on what is known about past outbreaks, there are three possible outcomes.

First, COVID-19 could act like the 2003 severe acute respiratory syndrome (SARS) outbreak. As the weather warmed up, containment measures were successful, and the virus essentially disappeared. Second, it could act like seasonal influenza outbreaks. These can reemerge, go away and then come back. Third, it could act like a Middle East respiratory syndrome (MERS) outbreak, which is now found regularly in the Middle East.

Tips for social distancing

One gets infected with the COVID-19 virus by breathing the virus in or touching a surface contaminated with it, then touching one's eyes, nose or mouth. One strategy to combat the spread of a virus is social distancing. Social distancing means staying away — generally at least 6 feet — from people who may or may not be sick — thereby decreasing the opportunity to breathe in the virus or touch a contaminated surface.

Staying outside of a 6-foot infection range dramatically decreases the risk of being exposed to the COVID-19 virus. That's why there are recommendations about canceling large meetings and gatherings where people are in very close contact with each other.

Some examples of social distancing measures include:

- Avoiding malls, theaters, restaurants, or anywhere with large crowds, such as concerts or festivals
- Suspending services at houses of worship
- Encouraging working from home
- Avoiding public transportation
- Closing schools and care centers

In addition, it's a good idea to avoid handshakes. Elbow taps, which some people have already been using and recommending, are actually discouraged, because they still require you to get within 6 feet of the other person. Try waving — from a safe distance of at least 6 feet.

In-home social distancing

If someone in your household is sick, avoiding further spread of a potential COVID-19 infection will require in-home isolation until the sick person is feeling well. Steps to do so run counter to most people's desire to help care for loved ones, and can be challenging. They include:

- Isolating the sick person to a bedroom with a closed door and, if

reasonable given weather conditions, an open window

- The sick person leaving the room only while wearing a mask
- The sick person minimizing the number of surfaces touched when out of the room, and regularly wiping down those touched surfaces with a disinfecting wipe

Going shopping

If you are at higher risk of developing complications from COVID-19 and you need groceries, consider the following:

- Ask a relative or friend to pick up groceries and drop them off at your front door. Don't forget about grocery delivery services and nonprofits such as Meals on Wheels that deliver food to seniors.

- If you do need to shop, take all of the precautions discussed throughout this report, including keeping at least 6 feet away from others, bringing disinfecting wipes to clean surfaces such as a shopping cart handles, and avoiding touching your face until you have had a chance to wash or sanitize your hands.

- Some grocery and other retail stores are offering hours just for individuals who are considered at higher risk of COVID-19 complications, including older adults. There's debate as to whether this is a good idea, but if you use an option such as this, don't neglect to take the precautions mentioned above.

- When you do get groceries, fill your pantry with a variety of nonperishable goods to prevent frequent visits.

How can I go about getting my prescription medications?

Taking COVID-19 infection precautions can make it a challenge to get a needed prescription medication in a timely and safe way. In general, if you get a 30-day supply of your regular medication, initiate the refill process as soon as you get down to the last weeks' worth of the medication. If you get a 90-day supply, you can usually initiate the refill process when you have about three weeks' worth of the medication left. Planning ahead can help avoid medication interruptions that may occur if you wait until the last minute.

To obtain your prescriptions in a way that reduces COVID-19 infection risk, try:

- Asking a relative or friend to pick up the medication and drop it off at your front door.
- Asking if your pharmacy offers a delivery service and have your medicine delivered. Some pharmacies are adding temporary delivery service because of COVID-19.
- Using the drive-thru window if your pharmacy has the option.
- Asking if your pharmacy is offering specific prescription pickup hours just for individuals who are considered at higher risk of COVID-19 complications.
- Finding out if your pharmacy can text you — or send another type of alert — to let you know when your prescription is ready to be picked up. This can help you avoid having to wait in the store or in line unnecessarily.
- Asking if your pharmacy is offering curbside pickup, where staff bring your medications out to your vehicle instead of you going into the store.

COVID-19 and a compromised immune system

? I have an autoimmune disease and as therapy for that I'm taking a drug to suppress my immune system. Are there steps I should take to minimize my infection risk?

First of all, controlling your autoimmune disease with your prescribed medications is critical. Mayo Clinic rheumatology specialists don't recommend stopping immune-suppressing drugs as a way to try boosting your immune system to avoid a potential COVID-19 infection. Stopping immune-suppressing therapy may lead to a flare-up of your condition. This can leave you worse off, as you may need much higher levels of immune suppression to regain control of your disease. This is particularly dangerous for people with autoimmune conditions that affect their lungs.

If you do become ill — particularly with a fever — Mayo Clinic rheumatology specialists generally recommend stopping immune-suppressing drug therapy until you start to feel better. Not only might this help your immune system rally against the infection, but also drugs sometimes used to treat an infection — such as antibiotics — can sometimes have interactions with immune-suppressing drugs.

Since there are many types of autoimmune diseases — and many drugs used to control them — it's always best to contact your health care provider for instructions on infection prevention or treatment, as it pertains to your unique circumstances. There are many unknowns with regard to COVID-19 and autoimmune diseases, and your doctor is the best source for up-to-date information relating to your situation. Researchers have already started a database to collect information on outcomes of people with autoimmune

diseases who also become infected with COVID-19. The goal is to fill in knowledge gaps as quickly as possible so that the best, evidence-based care can be delivered as it is available.

? What should organ transplant recipients who take immune-suppressing drugs do?

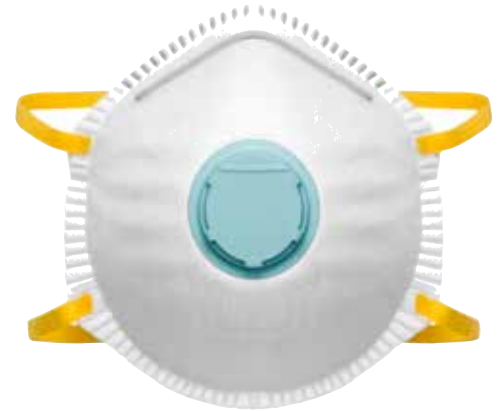
COVID-19 is one of many infections that a person with a suppressed immune system can be at risk of. Each transplant recipient's immunosuppression is carefully balanced for personal needs and should only be changed at the direction of the transplant team.

Transplant recipients will be very familiar with safe practices for minimizing viral (and other) infections and should continue carefully following these. But it's still a good idea to ask your doctor about other recommendations for your particular situation.

? Does my cancer treatment put me at increased risk of COVID-19 infection?

If you are receiving active anti-cancer therapy — including chemotherapy, immunotherapy or radiation therapy — you are considered to have a compromised immune system and are at high risk of developing complications from COVID-19. Since cancer type and cancer care varies so widely, the most important thing you can do is to discuss the specifics of your case with your cancer care provider.

Due to the immune-weakening effects of many cancer treatments, taking steps to avoid COVID-19 is of heightened importance. This includes social distancing, avoiding others who are ill, avoiding crowds and practicing good hand hygiene, with frequent washing or use of hand sanitizer.



Anyone with a weakened immune system should consider using a mask when in close proximity to others in public spaces.

If you have to go to the clinic or hospital to receive your cancer therapy, trying to avoid crowded waiting rooms or elevators is reasonable. While there is no evidence to suggest that wearing a mask will reduce your risk of developing COVID-19, anyone with a weakened immune system should consider using a mask when in close proximity to others in public spaces.

If you are receiving hormone-based therapy for cancer — such as for breast or prostate cancer — you are not considered to have a weakened immune system. Still, following the standard COVID-19 precautions is reasonable. Again, discuss any specific steps with your doctor, who can take into account all of the specific details of your case, including other medical conditions that may be affecting your health when making recommendations.

If you have already completed therapy to treat cancer, touch base with your cancer care provider to determine what precautions may be recommended for you. Most people who have completed their cancer therapy have their immune systems return to normal. However, this will depend on the specifics of your case, such as what medications you are currently taking and your overall health.