

# COVID-19 Guide for the General Public

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## INTRODUCTION:

This document was written by MDs on the front line of this pandemic in Southern California to share with family and friends who have questions about COVID-19. Assistance also provided by PhD in Environment Health Sciences and family and friends for grammar, syntax, and clarity. Please feel free to use and distribute. If you find errors or have suggestions, please contact me at [megantresenriter@gmail.com](mailto:megantresenriter@gmail.com)

### **TL;DR:**

1. Stay away from people even if you feel well (aka "social distancing")
2. If you think you contracted the virus, stay home and don't go to the ER unless you can't breathe, feel faint, can't keep fluids down
3. Take Acetaminophen/Ibuprofen\* (also known as Tylenol/Advil\* respectively) for fever/aches;
4. Exercising by yourself outside is ok
5. Bring food/supplies to elderly family members so they can avoid people - drop off supplies without direct contact
6. Don't sell your stocks if they are in the red. (We don't actually talk about this, but it's probably a good idea.)

\*Please see [“Information about NSAIDs...”](#) for more information about the possible link between NSAIDs like ibuprofen (Advil) and severe symptoms of COVID-19

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**Disclaimer:**

*Please keep in mind that making clear predictions about the way a novel virus will behave (especially in times of a pandemic) is difficult. The reasons include 1) limited previous scenarios on which to base these predictions and 2) the fact that the makeup of our society, with our rates of underlying diabetes, heart, and lung disease, is different from that of populations in China, Italy, South Korea (on which much of the emerging scientific studies are based).*

There has been a lot of fear and panic regarding the ongoing media coverage of the COVID-19 pandemic. I have been asked by several family members and friends whether the coronavirus is truly something to worry about.

**The answer is a resounding yes** even though I hope the current predictions are overly cautious. But I don't think the experts are wrong and I am listening to them. I have compiled several resources from experts in this email to try to explain why **this is something to worry about**, and, more importantly, **to provide helpful and evidence-based information about what to do (or, just as importantly, what NOT to do)**.

## UPDATES:

3/18/2020:

- [“Who is most severely affected?”: Notes on Critical Illness for COVID-19 Patients](#)
- [If I had COVID-19, when can I go back to work \(or social contact\)? CDC Guidelines](#)

3/17/2020:

- [Please purchase personal protective equipment responsibly](#). The CDC recommends against use of N95 Respirators by the public.
- A fever is defined as body temperature greater than 100.4F or 38C. Please keep in mind that the recommendations in this document are for adults and children greater than three months old without. Infants less than three months of age with a fever should be evaluated by an MD. Neonates (less than 28 days old) with

fevers require extensive workup with blood tests, urine tests, often Xray and lumbar puncture, and admission to the hospital.

3/16/2020:

- [Information about NSAIDs, ACE inhibitors, ARBs, and Thiazolidinediones](#) - Are these medications making the symptoms worse for those who take them?

## TOPICS:

### 1. How serious is this for the US?

This pandemic could unfold in a catastrophic way in the United States. The overall fatality rate for COVID-19 is difficult to determine for several technical reasons (including the likely large number of undocumented cases due to asymptomatic patients not getting tested- more on testing below), but the current estimate, combined for all age groups, is probably between 1 and 5%.

Source: [https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(20\)30195-X/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(20)30195-X/fulltext)

For reference, this makes COVID-19 up to 50 times more deadly than the seasonal flu. And it's also important to note that, unlike with the seasonal flu, **no one** in the population has any immunity to this new virus. Even more concerning, there is some evidence out of China that people can either **relapse** or be **re-infected** even after apparently recovering. More data is needed to know for sure if either -or both- is possible.

The table below (from the outbreak in Wuhan) contains initial estimates of the mortality broken down by age group. It ranges from **0.2% (1 in 500) in younger individuals**, to **3.6% (1 in 33)** in people in their 60s, to nearly **15% (1 in 6) in people over age 80**. Luckily, really young children appear to be spared. However, they can still be carriers: that means they can spread it around although not necessarily get noticeably sick themselves.

Source: <http://weekly.chinacdc.cn/en/article/id/e53946e2-c6c4-41e9-9a9b-fea8db1a8f51>

TABLE 1. Patients, deaths, and case fatality rates, as well as observed time and mortality for n=44,672 confirmed cases, as of February 11, 2020.

Baseline characteristics	Confirmed cases, N (%)	Deaths, N (%)	Case fatality rate, %
Overall	44,672	1,023	2.3
Age, years			
0–9	416 (0.9)	—	—
10–19	549 (1.2)	1 (0.1)	0.2
20–29	3,619 (8.1)	7 (0.7)	0.2
30–39	7,600 (17.0)	18 (1.8)	0.2
40–49	8,571 (19.2)	38 (3.7)	0.4
50–59	10,008 (22.4)	130 (12.7)	1.3
60–69	8,583 (19.2)	309 (30.2)	3.6
70–79	3,918 (8.8)	312 (30.5)	8.0
≥80	1,408 (3.2)	208 (20.3)	14.8
Sex			
Male	22,981 (51.4)	653 (63.8)	2.8
Female	21,691 (48.6)	370 (36.2)	1.7

The following New York Times article explains the worst case scenario for how this might unfold in the US (statistics all completed by the CDC, the leading national public health institution in the United States). Basically, if serious measures are not taken, between 160 million and 214 million people (40 - 70% of the US population) could become infected over the next few months or even one year. **If we don't socially distance ourselves, between 200,000 to 1.7 million people could die.** Between 2.4 million to 21 million people could require hospitalization (which is extremely problematic as the US only has 925,000 staffed hospital beds, and less than 10% of those are for critical care).

Source: <https://www.nytimes.com/2020/03/13/us/coronavirus-deaths-estimate.html>

**These numbers can change if people change their behavior.** There is room for improvement. But if we change nothing, we are on track to follow the path of the outbreak in Italy. **In a matter of just a few weeks, the US might be in the same situation as northern Italy, where there are not enough lifesaving ventilators for every patient who needs one, and doctors are making impossible decisions about who lives, and who dies.**

Source: <https://www.theatlantic.com/ideas/archive/2020/03/who-gets-hospital-bed/607807/>

## 2. Okay, fine, but I am young and healthy. It's just a fever for a few days. Why should I care?

You might be thinking that this isn't so bad. The mortality rate for your age group is low, probably less than 1%. However, please take into account several points not reflected in the mortality data. First, even if you are unlikely to die, **you may become extremely ill and require weeks in the hospital, with a breathing tube, hooked up to a ventilator.** This is happening to young people around the world. **In addition to long-term effects of infection (think reduced lung function or even potentially fatal myocarditis), prolonged ICU stays can lead to many other unwanted consequences:** weakness, permanent mental disability, health-care associated infections (which can kill you in their own right), blood clots, skin breakdown and ulcers, and prolonged rehab and recovery, you name it.

Second, and perhaps even more crucially, please understand that **this virus can be transmitted days before you ever develop symptoms.** This means that, if you choose not to follow recommendations about hand hygiene and social distancing (more on this later), you risk unknowingly infecting others, including those in higher risk groups. You might, entirely unintentionally, be the reason that someone else becomes ill and develops permanent organ damage, or perhaps even dies. You might (again, unintentionally and unknowingly) be responsible for the death of a loved one.

This excerpt from an article by a physician working in Europe right now says it better than I ever could:

*"Fatality is the wrong yardstick. Catching the virus can mess up your life in many, many more ways than just straight-up killing you. "We are all young"—okay. "Even if we get the bug, we will survive"—fantastic. How about needing four months of physical therapy before you even feel human again. Or getting scar tissue in your lungs and having your activity level restricted for the rest of your life. Not to mention having every chance of catching another bug in hospital, while you're being treated or waiting to get checked with an immune system distracted even by the false alarm of an ordinary flu. No travel for leisure or business is worth this risk."*

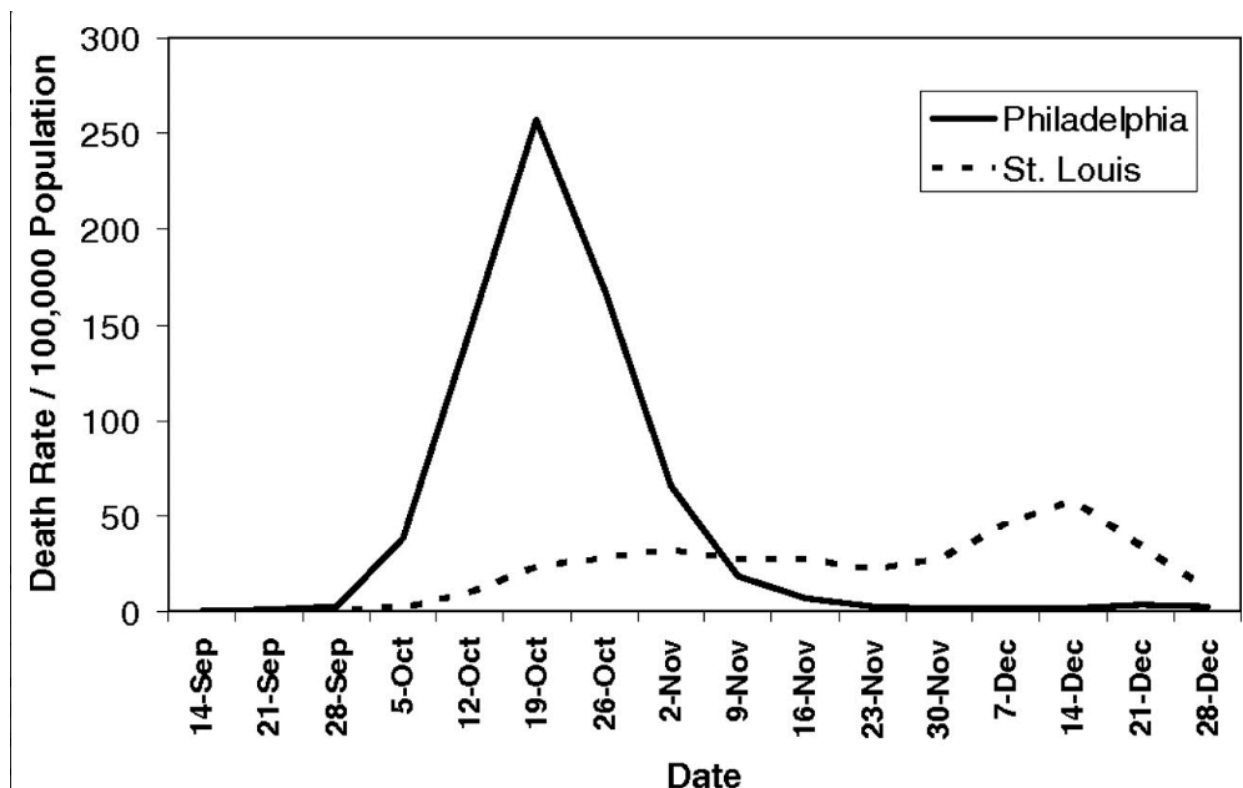
*"Now, odds are, you might catch coronavirus and might not even get symptoms. Great. Good for you. Very bad for everyone else, from your own grandparents to the random older person who got on the subway train a stop or two after you got off. You're fine, you're barely even sneezing or coughing, but you're walking around and you kill a couple of old ladies without even knowing it. Is that fair? You tell me."*

Source:

<https://www.newsweek.com/young-unafraid-coronavirus-pandemic-good-you-now-stop-killing-people-opinion-1491797>

You should care because going out and about, even if you feel perfectly well, can spread the disease and end lives. **Cancelling events, limiting travel, and limiting social contact saves lives.** For an incredible example, consider the different responses between Philadelphia and St. Louis to the 1918 Spanish flu. In mid-September, cases were reported in Philadelphia, but authorities largely ignored this and continued to allow large public gatherings, including a parade on September 28th. Note the peak in deaths beginning in the days and weeks after the parade (solid line in the graph below). Philadelphia did not begin to implement measures (school closures, banning public gatherings) until the disease was already overwhelming their medical system, around October 3rd. On the other hand, St. Louis (dashed line) had its first cases on October 5th, and rapidly implemented measures to limit public gatherings. Note how flat their mortality curve stays.

Source: <https://www.pnas.org/content/104/18/7582>



### 3. Okay, fine, I care. What am I supposed to do about this?

This answer will change as the situation unfolds. As of now, what you can do to protect yourself and your loved ones is called social distancing and hand hygiene.

Here's the short on social distancing: **Cancel everything. Stay home.** Help your loved ones (especially those over age 60 or those with any chronic medical conditions) avoid public places. Get their groceries for them. **Drop off** cleaning supplies, toiletries, and food. **You can and should still exercise, and you can do it outside, but just do it by yourself, and try to avoid gyms (again, public place: germ-infested breeding grounds).**

Wear gloves when touching hard surfaces of uncertain cleanliness in public (grocery store, public transportation, etc.). Wash your hands thoroughly, for at least 20 seconds, with soap and water, as often as possible. Use hand sanitizer (at least 60% ethanol) if you don't have access to soap and water (but soap and water is better if you have access to it). Do not touch your face, eyes, or mouth, unless you have just washed your hands.

- CDC steps on prevention, including proper handwashing technique:

<https://www.cdc.gov/coronavirus/2019-ncov/about/prevention.html>

- Some countries have handled this remarkably well with drastic measures (China, South Korea). Others are failing miserably (Italy and the US). The NY Times has a very informative, understandable, 25 minute podcast explaining the differences between successful and unsuccessful public health approaches to slowing this pandemic:

<https://www.nytimes.com/2020/03/12/podcasts/the-daily/coronavirus-pandemic.html>

- For a 30 minute podcast explaining what exactly you should be doing personally, check this out: <https://www.nytimes.com/2020/03/13/podcasts/the-daily/coronavirus.html>

- To understand more about the reason behind the recommendation for social distancing:

<https://www.theatlantic.com/ideas/archive/2020/03/coronavirus-cancel-everything/607675/>

- For specific recommendations (e.g. whether it's safe to go to the gym, or restaurants):

<https://www.theatlantic.com/family/archive/2020/03/coronavirus-what-does-social-distancing-mean/607927/>

#### 4. What should I do if I suspect I've been exposed or start to develop symptoms?

The answer to this is likely to be rapidly changing based on where you live and how your county's emergency response is managing the situation and how the virus is affecting the resources in your county so please defer to public health officials in your county for the most up to date information. However, the basic principles are this: **Stay home unless you have severe symptoms (have trouble breathing, can't catch your breath while sitting, feel faint or pass out, or are unable to keep liquids down and stay hydrated).**

If you believe you were exposed but not yet manifesting symptoms, please stay put in your home and do not travel outside your home for reasons mentioned above (asymptomatic transmission to others).

If you develop symptoms, do not panic. The most important first step is stay hydrated, take acetaminophen (Tylenol) and Ibuprofen\* (Motrin/Advil/Aleve) for fever or pain, and get plenty of rest just like you would do for any other viral illness. If symptoms are mild/moderate (no worse than seasonal influenza - which, remember, can make you feel like you got hit by a train), please stay home.

\*Please see [“Information about NSAIDs...”](#) for more information about the possible link between NSAIDs like ibuprofen (Advil) and severe symptoms of COVID-19

When to seek emergency medical care?

- The basic answer: If you cannot manage your symptoms at home. **The most common life-threatening manifestation of this disease is called hypoxic respiratory failure - your body cannot get the oxygen it needs to supply your vital organs because the virus is causing your lungs to fail.** Thus, the most important symptoms to monitor at home are respiratory symptoms.
- Difficulty breathing: This usually manifests as breathing rapidly which we call “tachypnea” which is greater than 20 breaths per minute, or as low oxygen level which we call “hypoxia” which is difficult to determine at home since you need a pulse oximeter or a more invasive blood test to measure the oxygen levels in your blood). Hypoxia usually makes people feel short of breath or feel like they can’t catch their breath.
- Please realize that if you seek emergency medical care for COVID-19 because of severe symptoms, you will most likely be hospitalized.
- **Please remember, there is no specific antiviral medicine to treat COVID-19. And antibiotics do not work on viruses.** The goal of the medical care we provide is to support your body in its battle against the virus until your body can hopefully heal itself.

Common misconceptions that bring people to the emergency room:

- “I need to get tested because I was exposed or symptomatic.” In the ER, we use tests to guide us in the management of patients and their illnesses. For the vast majority of viral illnesses, there are no specific medications or treatments that significantly alter the course of the disease. If you were exposed but do not have symptoms or have only mild/moderate symptoms, testing is not useful from a care perspective in the ER and we will most likely send you home. However, you may have exposed everyone else in the ER. Our patients have organ transplants, cancer, they’re on immunosuppressants and immunomodulators and they would like not to be exposed (and the staff would like to minimize exposure) to COVID-19.
  - Testing *is useful* for epidemiologic perspectives - but that is not the work of the ER. Hopefully we will have satellite testing centers or drive through testing centers similar to those that have been established in other countries. Typically



this works by a triage system that then directs you to a testing site if you meet appropriate screening criteria. Note: responses are dynamic. your local health department should have the most relevant information for your community.

- Note: the US is far behind other countries in testing its population. As of March 14th, we have tested fewer than 15,000 individuals. The CDC maintains a page on testing in the US that is updated daily:  
[www.cdc.gov/coronavirus/2019-ncov/cases-updates/testing-in-us.html](http://www.cdc.gov/coronavirus/2019-ncov/cases-updates/testing-in-us.html). Further, the tests currently used for diagnosing COVID-19 are neither instantaneous nor able to be run in a standard clinical lab. Rather, these are specialized tests based on a method called RT-PCR, which picks up - and amplifies- pieces of the virus's genetic code that are unique to the new coronavirus (and stable enough that they won't disappear if it mutates). Thanks to specialized fluorescent dye, the more viral genetic pieces present in a sample, the brighter the genetic material glows, creating a pattern of light that signals for the presence of the virus.
  
- "I have a fever of 103 degrees Fahrenheit, I need to see a doctor." Not true. **There is no absolute maximum temperature that mandates that you need to see a doctor.** IMPORTANT CAVEAT: Infants less than three months of age with a fever should be evaluated by an MD. Neonates (less than 28 days old) with fevers require extensive workup with blood tests, urine tests, often Xray and lumbar puncture, and admission to the hospital. There seems to be a commonly held misconception that a high fever (usually of >104 degrees Fahrenheit) means you need to seek emergency medical care. Your emergency room physicians are going to treat it the same as you would at home - with Tylenol and Ibuprofen\*. The only difference? Our Tylenol and Ibuprofen\* costs a lot more and you've just exposed everyone else to your illness.
  - High body temperature (usually from a source other than a viral illness such as adverse effects from some medications, exposures to heat in vulnerable populations, prolonged seizures) can be dangerous for prolonged periods of time. I usually don't get worried until the temperature is >106 degrees Fahrenheit. The treatment for elevated body temperature which is not due to an infection (we don't call this a "fever;" we call it hyperthermia) is external cooling and NOT Tylenol or Ibuprofen\*.

Article by LA times about self-quarantine and self-isolation:

<https://www.latimes.com/science/story/2020-03-13/coronavirus-when-should-i-self-quarantine>

\*Please see "[Information about NSAIDs...](#)" for more information about the possible link between NSAIDs like ibuprofen (Advil) and severe symptoms of COVID-19

## 5. “Who is most severely affected?”: Notes on Critical Illness for COVID-19 Patients

Although the vast majority of instances of COVID19 result in mild to moderate flu-like illnesses, up to 20% of patients experience a severe disease course that may result in critical illness and death. It appears that the primary risk factors for decompensation include **advanced age** (starting at 60 but especially over 80) and underlying **coronary artery disease** (that includes prior heart attacks, stents and those diagnosed with ‘angina’). **Diabetes and high blood pressure** are also prominent risk factors and often go hand-in-hand with advancing age and heart disease. **Men** also appear to have a more severe course for unclear reasons compared to women.

Underlying chronic obstructive lung disease (COPD) and smoking – when evaluated as risk factors without regard to the presence of other disease (that is, in and of themselves) – do not appear to confer the same risk of death; however, COPD and smoking are commonly present alongside high blood pressure and heart disease and make your lungs more fragile leading to other complications.

It is important to be aware that due to safety considerations for medical staff and other patients, in the setting of COVID19, if you need more oxygen than what can be provided by a nasal cannula (nose prongs), you will almost certainly require a breathing tube. Other breathing support systems which you or family may be familiar – including oxygen masks, breathing treatments, or a pressurized-face mask (BiPAP) – create a very fine virus laden mist (aerosol) that can linger in the air and significantly increase the chance of spreading the virus to others.

It is also important to talk with your family (particularly if you are over 40 (yes, forty) or have older parents/grandparents) about the possibility of dying. This is not an easy conversation. But if you cannot make your wishes known because you cannot breathe a family member will have to. Having had these talks will help your family and doctors pick the best path forward to ensure we are caring for you in a way that gives your life meaning.

**We recommend that you frame the discussions with family as “what things in life bring you joy and make life worth living”. There is no right answer.**

Many people feel that they just want to be able to see and talk with their family members even if they are stuck in bed and need a feeding tube. Others find joy in independence and being able

to walk around unassisted – being stuck in bed needing help with going to the bathroom is not a life of meaning or dignity. Still others feel that they have had a great life and just want to be kept comfortable and do not want any machines or chest compression to help live longer. **Again, there is no right answer**, just that having had this conversation will help us and your family help take care of you.

## Addenda

### NSAIDs, ACE inhibitors, ARBs, and Thiazolidinediones

- NSAIDs = Nonsteroidal anti-inflammatory drugs
  - Examples:
    - Aspirin (available as a single ingredient known by various brand names such as Bayer® or St. Joseph® or combined with other ingredients known by brand names such as Anacin®, Ascriptin®, Bufferin®, or Excedrin®).
    - Ibuprofen (known by brand names such as Motrin® and Advil®).
    - Naproxen sodium (known by the brand name Aleve®)
    - Celecoxib (Celebrex®)
    - Diclofenac (Voltaren® [available by brand name in topical form])
    - Fenoprofen (Nalfon®)
    - Indomethacin (Indocin® [available by brand name in liquid form])
    - Ketorolac tromethamine (Toradol®)
    - Meclofenamate sodium
    - Diflunisal
    - Tolmetin
    - Ketoprofen
    - Flurbiprofen
- ACE inhibitors = Angiotensin converting enzyme inhibitors
  - Examples: ACE inhibitors are easily identifiable by their common suffix, '-pril'.
    - Captopril (trade name Capoten), the first ACE inhibitor
    - Zefnoproil
    - Ramipril (Altace/Prilace/Ramace/Ramiwin/Triatec/Tritace/Ramitac)
    - Quinapril (Accupril)
    - Perindopril (Coversyl/Aceon/Perindo)
    - Lisinopril (Listril/Lopril/Novatec/Prinivil/Zestril, Lisidigal)
    - Benazepril (Lotensin)
    - Imidapril (Tanatril)

- Trandolapril (Mavik/Odrik/Gopten)
- Cilazapril (Inhibace)
- Fosinopril (Fositen/Monopril)
- ARB = Angiotensin II receptor blocker
  - Examples:
    - azilsartan (Edarbi)
    - candesartan (Atacand)
    - eprosartan (Teveten)
    - irbesartan (Avapro)
    - telmisartan (Micardis)
    - valsartan (Diovan, Prexxartan)
    - losartan (Cozaar)
    - olmesartan (Benicar)
    - entresto (sacubitril/valsartan)
    - byvalson (nebivolol/valsartan)
- Thiazolidinediones
  - Examples:
    - Rosiglitazone (Avandia)
    - Pioglitazone (Actos)

What is important to know about all these classes of medications is that some studies suggest they can increase the number of molecular binding sites on a cell that are used by coronaviruses to enter the cell. Observational data from studies in China suggest an association between use of ACE inhibitors and mortality. Please remember that observational studies are NOT able to establish causation between a variable and an outcome. We may observe an association, but we cannot say for certain whether it is that variable or some other factor (that we may not have accounted for) that is causing the outcome. Right now, our data is very limited and unable to definitively answer the question: Are these medications increasing the severity of COVID-19? Please defer to your own physician if you are on these medications for chronic health conditions. It may be reasonable to stop them temporarily if you become infected with COVID-19.

That being said, you may want to avoid NSAIDs for treating fever or aches in the upcoming months out of an abundance of caution. My preferred medication for pain and fever is always acetaminophen (Tylenol) for myself and for my patients that do not have a contraindication to taking it (meaning no underlying medical conditions, allergies, or other reason that they cannot take this medication). This is because it has a better side effect profile than NSAIDs. NSAIDs can cause kidney damage, stomach upset, stomach ulcers, increased bleeding, they can make asthma worse in some people, and some can also increase the chance of heart attack and stroke (except for aspirin).

Please always follow the package directions for acetaminophen diligently and be sure to check common cold/flu medications for the presence of acetaminophen as unintentionally overdosing on this medication can cause permanent liver damage and even death if not caught and treated.

Source:

[https://www.thelancet.com/pdfs/journals/lanres/PIIS2213-2600\(20\)30116-8.pdf?fbclid=IwAR1b72D7xhGvHOR70Qai31VY3OTUuit5AEHz3KB79Xye\\_o9Yssr-BDHi\\_N0](https://www.thelancet.com/pdfs/journals/lanres/PIIS2213-2600(20)30116-8.pdf?fbclid=IwAR1b72D7xhGvHOR70Qai31VY3OTUuit5AEHz3KB79Xye_o9Yssr-BDHi_N0)

If I had COVID, when can I go back to social contact?

Current CDC guidelines (densely written for medical professionals)

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html>

A letter from a Coronavirus expert: James Robb, MD FCAP

What I am doing for the upcoming COVID-19 (coronavirus) pandemic:

Dear Colleagues, as some of you may recall, when I was a professor of pathology at the University of California San Diego, I was one of the first molecular virologists in the world to work on coronaviruses (the 1970s). I was the first to demonstrate the number of genes the virus contained. Since then, I have kept up with the coronavirus field and its multiple clinical transfers into the human population (e.g., SARS, MERS), from different animal sources.

The current projections for its expansion in the US are only probable, due to continued insufficient worldwide data, but it is most likely to be widespread in the US by mid to late March and April.

Here is what I have done and the precautions that I take and will take. These are the same precautions I currently use during our influenza seasons, except for the mask and gloves:

1. NO HANDSHAKING! Use a fist bump, slight bow, elbow bump, etc.
2. Use ONLY your knuckle to touch light switches, elevator buttons, etc.. Lift the gasoline dispenser with a paper towel or use a disposable glove.
3. Open doors with your closed fist or hip - do not grasp the handle with your hand, unless there is no other way to open the door. Especially important on bathroom and post office/commercial doors.

4. Use disinfectant wipes at the stores when they are available, including wiping the handle and child seat in grocery carts
5. Wash your hands with soap for 10-20 seconds and/or use a greater than 60% alcohol-based hand sanitizer whenever you return home from ANY activity that involves locations where other people have been.
6. Keep a bottle of sanitizer available at each of your home's entrances. AND in your car for use after getting gas or touching other contaminated objects when you can't immediately wash your hands.
7. If possible, cough or sneeze into a disposable tissue and discard. Use your elbow only if you have to. The clothing on your elbow will contain infectious virus that can be passed on for up to a week or more!

**Note:** This virus is spread in large droplets by coughing and sneezing. This means that the air will not infect you! BUT all the surfaces where these droplets land are infectious for about a week on average - everything that is associated with infected people will be contaminated and potentially infectious. The virus is on surfaces and you will not be infected unless your unprotected face is directly coughed or sneezed upon. This virus only has cell receptors for lung cells (it only infects your lungs) The only way for the virus to infect you is through your nose or mouth via your hands or an infected cough or sneeze onto or into your nose or mouth.

What I have stocked in preparation for the pandemic spread to the US:

*(Note: This email was written before community transmission came to the US. Most of this is difficult or impossible to obtain right now. Strongest recommendation is basic precautions: wash your hands, don't touch your face. Do not rush out and buy gloves/hand sanitizer. Do take sensible precautions).*

1. Latex or nitrile latex disposable gloves for use when going shopping, using the gasoline pump, and all other outside activity when you come in contact with contaminated areas.
2. Stock up now with hand sanitizers and latex/nitrile gloves. The hand sanitizers must be alcohol-based and greater than 60% alcohol to be effective.
3. Stock up now with zinc lozenges. These lozenges have been proven to be effective in blocking coronavirus (and most other viruses) from multiplying in your throat and nasopharynx. Use as directed several times each day when you begin to feel ANY "cold-like" symptoms beginning. It is best to lie down and let the lozenge dissolve in the back of your throat and nasopharynx. Cold-Eeze lozenges is one brand available, but there are other brands available.

I, as many others do, hope that this pandemic will be reasonably contained, BUT I personally do not think it will be. Humans have never seen this snake-associated virus before and have no internal defense against it. Tremendous worldwide efforts are being made to understand the molecular and clinical virology of this virus. Unbelievable molecular knowledge about the genomics, structure, and virulence of this virus has already been achieved. BUT, there will be

NO drugs or vaccines available this year to protect us or limit the infection within us. Only symptomatic support is available.

I hope these personal thoughts will be helpful during this potentially catastrophic pandemic. You are welcome to share this email. Good luck to all of us! Jim

James Robb, MD FCAP

**3/17/20: Edited earlier version that suggested stocking up on nitrile gloves and surgical face masks - please only do this in a responsible way and leave healthcare-related products available for healthcare workers. The CDC recommends against use of N95 respirators outside of healthcare settings.**

Source:

<https://www.fda.gov/medical-devices/personal-protective-equipment-infection-control/n95-respirators-and-surgical-masks-face-masks>