

Coronavirus – Your Guide to the CoVID-19 Pandemic

Coronavirus is a well-known pathogen that primarily targets the human respiratory system. Previous outbreaks of coronaviruses (CoVs) include the “severe acute respiratory syndrome,” (SARS, SARS-CoV) from 2003 and the “Middle East respiratory syndrome,” (MERS, MERS-CoV) from 2012.

The coronavirus may spread from person to person much more easily than initially thought. Bars, restaurants, and many “non-essential” stores are closed all around the U.S. and the world. Restrictions could last for months. Also, we’re out of toilet paper.

What is the coronavirus? Should you be concerned? What can you do to stay well? Isn’t this just the same virus that causes colds? Did the Chinese government create this virus in a lab in order to quell the protests? Or did the Democratic establishment create the virus and send it to China just in time to have it come back to America to win the election for Bernie Sanders by propping up Medicare for All? Some of those are great questions. Let’s dive in.

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Linfa Wang directs the emerging infectious diseases program at Singapore's Duke-NUS Medical School. He says the coronaviruses are named so because when seen under a microscope the spiky surface of the virus resembles a crown. The caption for the image above comes from the CDC's website:

This illustration, created at the Centers for Disease Control and Prevention (CDC), reveals ultrastructural morphology exhibited by coronaviruses. Note the spikes that adorn the outer surface of the virus, which impart the look of a corona surrounding the virion, when viewed electron microscopically. A novel coronavirus, named Severe Acute Respiratory Syndrome coronavirus 2 (SARS-CoV-2), was identified as the cause of an outbreak of respiratory illness first detected in Wuhan, China in 2019. The illness caused by this virus has been named coronavirus disease 2019 (COVID-19)."

CDC Image Libray

Glossary:

- **Coronavirus** – A group of related viruses that infect mammals and birds
- **SARS** – A disease called “severe acute respiratory syndrome” caused by the SARS coronavirus (SARS-CoV)
- **SARS-CoV** – The strain of virus that causes SARS
- **MERS** – A disease called “Middle East respiratory syndrome” caused by MERS-CoV.
- **MERS-CoV** – The Middle East respiratory syndrome-related coronavirus is distinct from SARS coronavirus and the common-cold coronavirus
- **Coronavirus pandemic** – The current pandemic of COVID-19 in 2019 and 2020 caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
- **CoVID-19** – The illness caused by SARS-CoV-2
- **SARS-CoV-2** – Previously known as “2019 novel coronavirus” (2019-nCoV), this virus is behind (2019-2020) coronavirus pandemic (ongoing at the time of publishing)
- **Zoonotic** – Refers to a disease transmitted from animals to people, or more specifically, a disease that normally exists in animals that can infect humans
- **Pandemic** – WHO defines as “an epidemic occurring worldwide, or over a very wide area, crossing international boundaries and usually affecting a large number of people”

Before SARS, the world had little concern for the coronaviruses, mostly known for causing common colds. The 2003 SARS outbreak started a global search for animal viruses that could find their way to humans. For the first time, scientists were aware of a deadly coronavirus with pandemic potential.

The emergence of SARS-CoV heralded a new era in the cross-species transmission of severe respiratory illness with globalization leading to rapid spread around the world and

massive economic impact^{3,4}. Since then, several strains—including influenza A strains H5N1, H1N1, H7N9, and MERS-CoV—have emerged from animal populations, causing considerable disease, mortality, and economic hardship for the afflicted regions.

Nature Medecine

Current Status

SARS-CoV caused 775 world-wide deaths in 2003. MERS-CoV caused 79 world-wide deaths in 2012. As of March 15th, 2020, at 10:20 am, SARS-CoV-2 has killed 5,984. The United States reports 3,046 cases with 60 deaths at this time.

On March 24th Word Meter reports 414,661 coronavirus cases worldwide with 18,552 deaths and 108,293 recovered. **Click here for current statistics.**

Coronavirus Timeline

Coronaviruses were not worrying scientists before 2003; they were only known to cause mild upper respiratory tract infections.

SARS-CoV emerged in **2003** as a pandemic. It originated in Guangdong Province, China and spread to 37 different countries, causing 8,273 confirmed cases of infection, of which 775 (9%) were fatal. It disappeared as inexplicably as it started.

Middle East respiratory syndrome coronavirus (MERS-CoV) was identified in **2012** in the Kingdom of Saudi Arabia leading to 182 total confirmed cases, of which 79 (43%) were fatal. Epidemiologists initially feared it could become a massive, deadly pandemic; the death rate started out at around 30%. But the virus remained geographically restricted.



Screenshot YouTube/Chen Qiushi

December 30 – Dr. Li Wenliang, an ophthalmologist at Wuhan Central Hospital, messaged his college-classmates telling them about the “unspecified coronavirus.”

December 31– China alerted The World Health Organization (WHO) to dozens of cases of an unusual pneumonia being treated in Wuhan, a port city of 11 million people in the central Hubei province. The virus was unknown.

January 1– Many who worked at Wuhan’s Huanan Seafood Wholesale Market were sick, so the market was shut down. The market is known as a “wet wild-animal market.” A “wet market” sells meat, fish, produce, and other perishable goods. A “wild-animal market” sells... you guessed it!

January 2 – Li was summoned to a police station. He was told his warning was illegal and had “severely disturbed the social order.” He signed a statement that he says read, “We solemnly

warn you: If you keep being stubborn, with such impertinence, and continue this illegal activity, you will be brought to justice – is that understood?” Li capitulated and was not detained. He returned to work.

January 11 – Chinese state media reported the first known death.

January 12 – the first confirmed United States case was reported in Washington State – a man in his 30s developed symptoms after returning from a trip to Wuhan.

January 20 – President Xi Jinping issued a statement on coronavirus, vowing to “resolutely curb the spread of the epidemic.”

January 23 – China stopped allowing planes and trains to leave the city of Wuhan and suspended buses, subways, and ferries. At this point, at least 17 people had died and more than 570 others had been infected, including in Taiwan, Japan, Thailand, South Korea and the United States. No deaths had outside of China had occurred.

January 30 – WHO declared COVID-19 a “public health emergency of international concern”. Also, the U.S. State Department warned travelers to avoid China.

January 31 – 213 people had died and nearly 9,800 had been infected worldwide. The Trump administration suspended entry into the United States for foreign nationals who had visited China within the previous two weeks.

Dr. Li Wenliang told the New York Times that officials should have shared information about the coronavirus at the beginning of the outbreak. “I think it would have been a lot better. There should be more openness and transparency.”

February 2 – A 44-year-old man in the Philippines died after being infected. Officials believe he was the first to die of

the disease outside of China. At this point, more than 360 people had died from COVID-19, 359 of them in China.

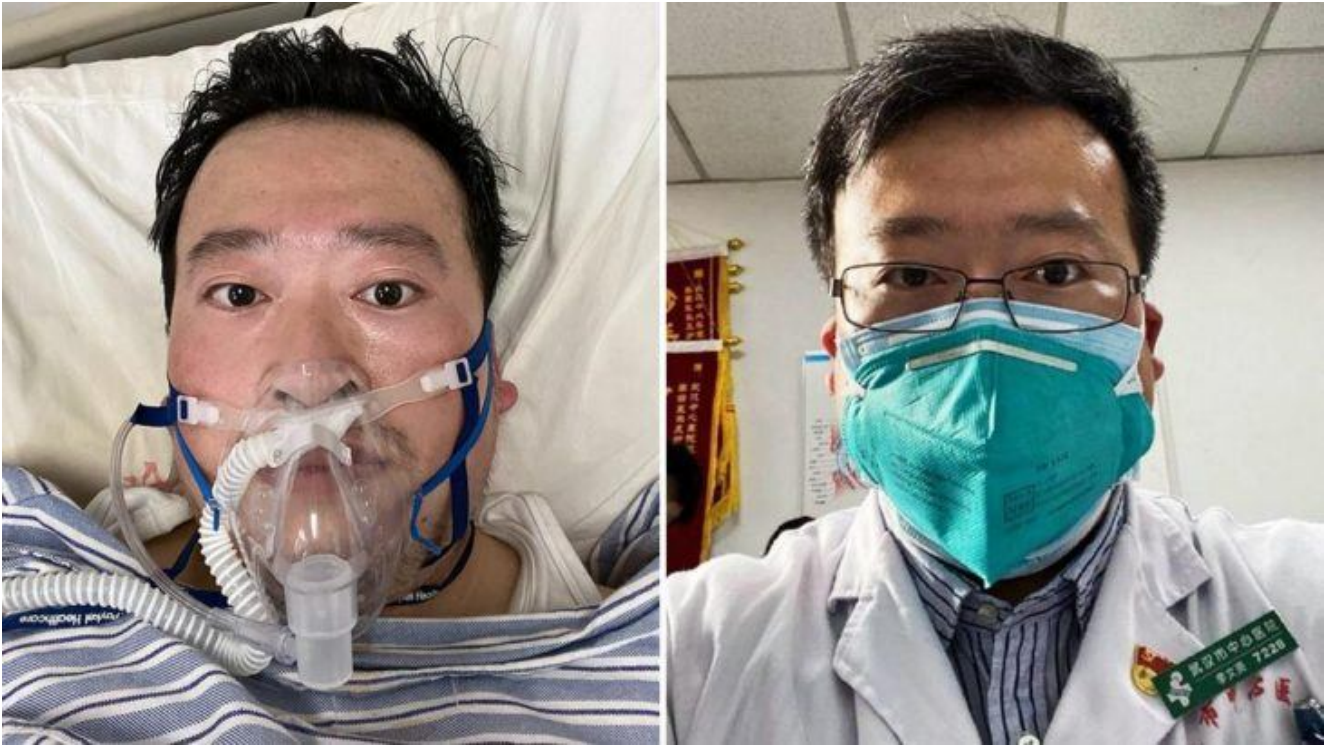
February 5 – In Yokohama, Japan, more than 3,600 passengers were quarantined aboard the Diamond Princess cruise ship. The number of people who tested positive for the virus was the largest cluster of coronavirus cases outside of China.



A total of 621 people aboard the ship were infected.

February 7 – Researchers in Guangzhou, China suggested that pangolins sold at the Wuhan's Huanan Seafood Wholesale Market were a potential source of the coronavirus outbreak. Pangolins were not listed as inventory sold at the market. Pangolin sales are illegal, which could explain the omission.

Dr. Li Wenliang died from contracting the coronavirus. He was hailed as a hero by many for trying to ring early alarms that a cluster of infections could spin out of control.



February 10 – the death toll in China hit 908, with the number of confirmed cases up to 40,171.

February 13 – Officials reported more than 14,840 new cases of confirmed infected in Hubei Province

February 14 – An 80-year-old Chinese tourist died in Paris – the first coronavirus death outside of Asia.

February 21 – After the Shincheonji Church of Jesus in South Korea was linked to a surge of infections in the country, the government shut down thousands of kindergartens, nursing homes, and community centers and ended all political rallies in the capital, Seoul.

February 19 – Iran announced two cases, then hours later reported that both patients died.

February 20 – Global coronavirus cases reached nearly 76,000, according to W.H.O.

February 22 – Iran announced two additional deaths. The source of the virus in Iran is not known.

February 23 – Italian officials confirmed a third death. Local

authorities closed the Venice Carnival and suspended sporting events.

February 24 – *The Atlantic* published an article, “You’re Likely to Get the Coronavirus. Most cases are not life-threatening, *which is also what makes the virus a historic challenge to contain.*”

February 24 – The Trump administration asked Congress for \$1.25 billion for coronavirus response. At this time, 35 confirmed cases and no deaths had been reported in the U.S. Iran announced it had 61 coronavirus cases and 12 deaths, more than any other country except China. In Italy, 800 people had been infected. The death toll in China rose to 2,595 with 77,262 confirmed cases. Italy reported its 7th death.

February 26 – Health officials in Brazil reported that a man who returned from a business trip to Italy tested positive for the coronavirus. This was the first known case in Latin America.

February 27 – Germany had nearly 60 cases and France reported 57. Both England and Switzerland reported additional cases, while Belarus, Estonia, Denmark, Northern Ireland, the Netherlands, and Lithuania all reported their first infections.

February 28 – Nigeria confirmed its first case. The patient was an Italian citizen who had returned to Lagos from Milan.

February 29 – South Korea reported 813 confirmed cases, bringing the total to 3,150 with 17 deaths. Iran reported its cases had jumped from 388 cases to 593 in a 24 hour period, with the death toll at 43.

The United States recorded its first coronavirus death as the number of global cases rose to nearly 87,000. The Trump administration issued its highest-level warning, known as a “do not travel” warning, for areas in Italy and South Korea,

the areas most affected by the virus, barred all travel to Iran, and denied any foreign citizen U.S. entry if they had visited Iran in the previous 14 days.

March 2 – Saudi Arabia's health ministry announced its first coronavirus case.

March 3 – Italy announced their death toll reached 77, equalling the total deaths in Iran, and the W.H.O reported that coronavirus has infected more than 90,000 around the globe, killing about 3,000.

March 4 – A strict ban on the consumption and farming of wild animals was initiated across China.

March 7 – The coronavirus caused nearly 3,500 deaths and infected another 102,000 people in more than 90 countries.

March 8 – Italy imposed a strict quarantine in the state of Lombardy and 14 other areas, affecting a total of 16 million people.

March 9 – Iran released an estimated 70,000 prisoners, without specifying if or when those released would need to return. Germany reported its first two deaths, with more than 1,100 confirmed cases.

The U.S. announced that more than 570 people in 36 states were infected. The Atlantic reported, "...we can only verify that 4,384 people have been tested for the coronavirus nationwide." Meanwhile, South Korea had tested more than 100,000 people.

March 10 – Iran and Italy recorded their highest death tolls in a single day: 54 people died in Iran and 168 fatalities were recorded in Italy.

March 11 – Turkey, Ivory Coast, Honduras, and Bolivia confirmed their first cases and WHO declared COVID-19 a pandemic.

March 12 – Global fatalities surpassed 4,600 with infections exceeding 126,100 cases.

March 13 – The NY Times reports that *Sick People Across the U.S. Say They Are Being Denied the Coronavirus Test.*

March 14 – South Korea had tested more than 248,000 people and identified 8,086 cases.

A hospital in Seattle area has sent out a note to staff, shared with me, suspending elective surgery and warning that "our local COVID-19 trajectory is likely to be similar to that of Northern Italy." The hospital is down to a four-day supply of gloves.

– Nicholas Kristof (@NickKristof) March 14, 2020

March 15 – New York reported 950 cases, Washington is the second hardest hit with 769, and California is a distant third with 375. California ordered 7 million residents to “shelter in place”. The White House urged older Americans to stay home and for everyone to avoid groups of more than 10 people.

The CDC said that “Gatherings of 50 or more people should be canceled for 8 weeks.”

March 16 – A study shows coronavirus can survive in the air in some settings. And the U.S. death toll rose to 69 across 12 states. The total number of confirmed cases in the U.S. climbed to 3,774. The worldwide death toll was more than 6,500. Restaurants and bars closed around the country. Restrictions could last months. Canada closed its border.

March 17 – CNN reports that “Trump is finally starting to take the pandemic seriously.” He is quoted as saying, “It’s bad. It’s bad.”

March 18th – Trump Invokes The Defense Production Act to force

American industries to manufacture medical supplies. Hospitals and other health workers are running out of M95 masks, gowns, gloves, and ventilators.

March 19th – Trump wants direct payments of \$1,000 for adults, \$500 for kids in the coronavirus stimulus bill.

March 20th – U.S. Tax Deadline Extended is extended to July 15th, Illinois, New York and California have ordered all residents to stay home, and Washington D.C. reported its first death from the virus.

March 21st – 300K cases worldwide, 195,000 Americans who are symptomatic have been tested.

March 22nd – Fifteen states in the U.S. have “stay at home” executive orders in place.

March 23rd – 2020 Tokyo Olympics postponed until 2021 and Trump wants to get the economy moving again, saying he may scale back closures despite worsening outbreak.

March 24th – The death toll in Italy’s Lombardy is around 400 in a day.

Coronavirus Transmission

The Wuhan Seafood Market was believed to be ground zero for the zoonotic CoVID-19. The market sells not just fish, but also snakes, raccoon dogs, porcupines, deer, and more. Hundreds of dead animals were inside cages at the market within close proximity to other food and humans. But now reports are coming in that the market was not the epicenter.

How Did We Catch It?

Footage obtained by CNN

Scientists believed the Wuhan market was where the virus first spread to humans. It should be noted that the Wuhan market was

not unusual. There are hundreds of similar markets in mainland China that offer a wide range of exotic animals for many purposes. It is unclear which animal transferred the virus to humans – bat, snake, and pangolin have all been suggested, with the pangolin being the most likely culprit.

These animals have their own viruses. These viruses can jump from one species to another species, then that species may become an amplifier, which increases the amount of virus in the wet market substantially.”

Hong King University Virologist Profresser Leo Poon

Poon says that when a large number of people visit these kinds of markets, the risk of the virus jumping from animals to humans rises sharply. Poon was one of the first scientists to decode the SARS coronavirus during the 2003 epidemic. That outbreak was linked to civet cats used as food in a Guangzhou market.

China May Have Found Patient Zero

New government documents from China say they found an earlier case of COVID-1. They say a 55-year-old man from Hubei province contracted the virus on Nov. 17, 2019. The documents suggest the disease was spreading, undetected, for weeks before anyone was aware of the impending outbreak.

Chinese authorities have so far identified at least 266 people who were infected last year, all of whom came under medical surveillance at some point.

Some of the cases were likely backdated after health authorities had tested specimens taken from suspected patients.

Interviews with whistle-blowers from the medical community suggest Chinese doctors only realised they were dealing with a new disease in late December.

China's first confirmed Covid-19 case traced back to November 17

How Contagious Is It?

It seems to be very contagious. With new research, it's now believed that the virus can spread much more easily than initially thought.

Initially, the experts thought that the virus seemed to be spreading mainly from person-to-person, with those who come in close contact with one another, within about 6 feet. They said that transmission was happening when a previously uninfected person breathes in respiratory droplets produced when an infected person coughs or sneezes.

Then reports came out that in some environments, the virus can become airborne. Hospitals are an ideal setting for aerosol transmission, which is the suspension of tiny particles or droplets in the air.

The virus is transmitted through droplets, or little bits of liquid, mostly through sneezing or coughing. When you do an aerosol-generating procedure like in a medical care facility, you have the possibility to what we call aerosolize these particles, which means they can stay in the air a little bit longer."

Dr. Maria Van Kerkhove, head of WHO's emerging diseases and zoonosis unit

Scientists calculate how easily a virus spreads and give it a "basic reproduction number," or R_0 (pronounced R-nought). This number predicts how many people are likely to catch a given pathogen from a single infected person.

Currently, SARS-CoV-2 (yes, that's the one causing the COVID-19, the current coronavirus), was estimated to have an

R_0 at around 2.2. This means a single infected person will infect about 2.2 others, on average. The flu typically has an R_0 of 1.3. These numbers are likely to be revised as this article is written.

New studies in several countries along with a large coronavirus outbreak in Massachusetts have shown that the virus does spread much more easily than previously thought. A Massachusetts coronavirus cluster with at least 82 cases appears to have been started by people who were not yet showing symptoms. More than half a dozen recent studies show that people without symptoms are causing substantial amounts of infection.

We won't know how contagious it is until we have much better testing. More on that clusterfuck of a situation below.

Can Someone Spread the Virus Without Being Sick?

It was initially believed that coronavirus does not seem to be very contagious until a person is symptomatic, coughing and sneezing near others. But now we believe the virus probably does spread before people show symptoms, as there have been many reports of this happening, but it is not thought to be transferred as easily this way.

Of course, this could change at any moment. The virus could become much more virulent and contagious, or it could become less dangerous with a mutation or two.

Can Coronavirus Spread From Contact With Contaminated Surfaces Or Objects?

The CDC believes it's possible for a person to contract COVID-19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes, like with gas pumps and the transfer of money.

It's not the most contagious pathogen we've seen, but it is very contagious and can be quite virulent, and at any moment it can become more even contagious by mutating.

Coronavirus Symptoms

Symptoms of COVID-19 manifest after an incubation period of an average of 5.2 days. For those who died, the onset of symptoms to death ranged from 6 to 41 days with a median average of 14 days, depending on the patient's age and immune system.

The most common symptoms with COVID-19 and SARS are similar. They include fever, cough, sore throat, and fatigue. COVID-19 is unique in that it targets the lower airway, often causes lots of sneezing, and many patients (especially sicker ones) show sputum production, headaches, hemoptysis, dyspnoea, lymphopenia, and intestinal symptoms including diarrhea (few patients with MERS-CoV or SARS-CoV had diarrhea).

Update: Loss of smell and taste could be the earliest symptoms of the novel coronavirus.

Doctor groups are recommending testing and isolation for people who lose their ability to smell and taste, even if they have no other symptoms.

NY Times

<https://twitter.com/jamescakmak/status/1239032800541642752>

Frequently Asked Questions

Isn't This the Same Virus That Causes the Common Cold?

Yes and no. Coronaviruses are a large family of viruses that cause illness ranging from the common cold to more serious

illness.

Pretty much everyone has heard of E-Coli contaminating spinach or some other leafy vegetable. E-Coli can make us sick and it can kill immunocompromised people, like the elderly. But you also probably have E-Coli in your gut right now. It's part of your beneficial bacteria.

To say that coronavirus is the same pathogen that causes the common cold is an ignorant simplification.

Is This Just Like a Bad Flu?

It is very similar to a bad flu pandemic in a lot of ways, but the influenza virus should not be underestimated. See the list below of the most deadly pandemics. Two of them were the flu. Coronavirus is more dangerous than the average flu. For instance, it can cause some pretty severe, potentially long-term lung damage.

Flu caused by the influenza virus can be serious one year and relatively inconsequential another year. 80,000 people died from the flu in 2014 (supposedly, but flu death numbers are often grossly inflated).

Who Is Most At Risk and Why?

Update: People who travel and people who are in crowds are more likely to get it. The elderly, people with another underlying illness or a history of illness, and older males are at higher risks of dying from the virus.

The effect of sex on susceptibility to Covid-19 is less clear than the age effect, but preliminary data suggest men might be more susceptible. China CDC found that 106 men had the disease for every 100 women, while the WHO mission found that men make up 51% of cases. A study of 1,099 Covid-19 patients in Wuhan through Jan. 29 found a greater imbalance: 58% were male, the China Medical Treatment Expert Group for Covid-19

reported last week in the New England Journal of Medicine.

Scientific America

Immunocompromised people are susceptible to more serious symptoms, or death. Younger people are much less likely to die or suffer more serious symptoms. The healthier you are, the less likely you are to contract a coronavirus infection or any other pathogen.

Researchers are looking at the discrepancy of serious cases and deaths between areas within the Hubei Province, where the outbreak initiated, and the rest of the world. In other words, the rest of the world isn't dying at nearly the rate people were dying in the Hubei Province. It seems the disease is less fatal as it moves away from where the outbreak initiated. And the mortality rate is much lower in healthier and less dense populations.

Severe cases tend to occur in men and many suffer from one or more co-morbidities such as cardiovascular and cerebrovascular disease as well as diabetes. Several sequelae have also have been observed including cellular immune deficiency, coagulation activation, myocardia injury, hepatic and kidney injury, and secondary bacterial infection.

Is COVID-19 receiving ADE from other coronaviruses?

The phrase "one or more co-morbidities" means the person is already very sick. In other words, if you have diabetes or poor kidney function or if there's anything else not working properly in your body, you are more likely to get the worst symptoms.

That's not to say that seemingly healthy people have nothing to worry about. People of all ages, some without known previous complications, are dying. But we doubt anyone with a healthy immune system could die from this. Though, keep in

mind, there are lots of unhealthy people who think they're healthy – in fact, that may be the majority of the younger population.

What Can One Do to Avoid Infection?

People who travel and people who are in crowds are more likely to catch it. Avoid traveling, avoid crowds. A mask may be a good idea if you're concerned. If you are in a public place, make sure you wash your hands before touching your hair, eyes, nose, or mouth. If you're at home, quarantining yourself and you're washing your hands every hour, that's not helping. And neither is hand sanitizer. But it makes sense to wash your hands often if you're in public places and especially before touching vulnerable parts of your body if you may have come in contact with a contagion.

But mostly...

Stay healthy! The above advice is very important for anyone who spends time with others who may be more at risk but staying healthy is by far the best defense. There are supplements you can take (see below), but if you're already healthy, you have much less of a chance of getting infected with anything. To understand how this works, check out *How To Heal Your Gut*. If you are older or otherwise have a weaker immune system, now is not the best time to go out to eat. If you have a weak immune system, now is the time to eat healthy, whole-food, home-cooked meals and take care of yourself.

Does Hand Sanitizer Work?

Not really. The coronavirus has caused a massive shortage of hand sanitizer, but they don't work nearly as well as washing one's hands. Click on the image below for more information about how to wash your hands.



Photos show why hand sanitizer doesn't work as well as soap and water to remove germs

Also, just stop buying hand sanitizers! There is mounting evidence that the chemical antimicrobial ingredients are harmful, and they could lead to antibacterial resistance. The best defense is a healthy gut. Everything else, from handwashing to taking supplements, doesn't compare to the power of a healthy gut.

Do you hear about all those people who bought massive amounts of hand sanitizer to sell on eBay? Assholes...

Do Masks Work?

Yes! If you want to walk around like that, sure. But in Atlanta, they're not having any of that, as you can see below. Then again, Georgia has the 8th most coronavirus cases in the U.S. at 99 (at the time of this writing) so maybe not such a good idea...

<https://www.facebook.com/robin.h.latimore/posts/10158516397954589>

In all seriousness, if you are concerned and want to ensure that you won't catch an airborne virus, or you want to make sure you don't transmit it to your more vulnerable loved ones, a mask makes sense, regardless of the B.S. the CDC is saying.

Wearing a face mask is not a guarantee you won't get catch it. Coronavirus can transmit through the eyes. Also, tiny viral particles, known as aerosols, can penetrate masks, making them much less effective in some situations. Plus, as mentioned previously, the virus is much more contagious than we initially suspected. However, masks are effective at capturing droplets, which is the most likely method of transmission and they may also catch some airborne contagions.

If you think you might be infected, the best thing you can do for others is to wear a mask and change them frequently (don't touch the face-part of the mask when removing). And then get healthy so you don't catch this kind of crap anymore. You owe it to yourself and others.

Update: N95 masks are much more likely to stop spread but there is a shortage around the country so we donated all but a few of ours to a hospital. Homemade masks are recommended and being used all over the country including in hospitals.

Elbow Bumps?

Ugh... I suppose it makes sense, but I ain't doing it! Then again, I've never been a fan of touching people anyways.

