



## **My Drift**

**Title: Coronavirus**

**Written by: Jerry D. Petersen**

**Date: 1 April 2020**

**Article Number: 330-2020-8**

**Well that's the last straw!! The state of Hawaii closed all bars and restaurants on Friday, 20 March 2020. Worst of all, March Madness (My favorite sporting event of the year) was cancelled. There are no live sports (that I want to watch) on TV.**

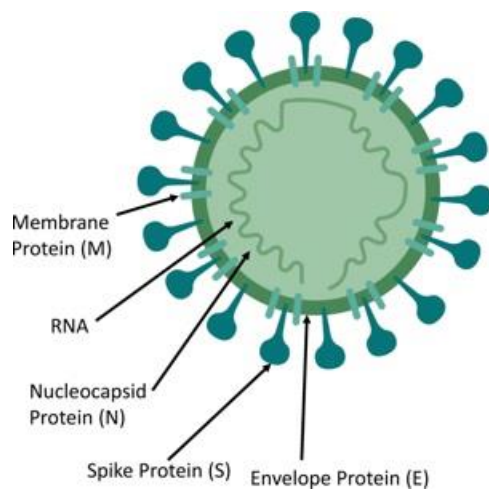
### **Is the World coming to an end?**

**In this article, I'm going to research and dig up things about the Coronavirus you and I did not know.**

**The clinical name for this novel coronavirus is actually **SARS-CoV-2**. It stands for Severe Acute Respiratory Syndrome Coronavirus 2. **COVID-19** is the name of the disease caused by the novel coronavirus, SARS-CoV-2, and is short for "Coronavirus Disease 2019". I'm just going to call it the **Coronavirus**.**

**Coronavirus versus the Seasonal Flu (Why is it so bad – What's the difference?)**  
**Yes, a lot of people are feeling confused as to why Coronavirus is such a bigger deal than the Seasonal Flu, that we are all familiar with? Here it is in a nutshell. I hope this helps. Feel free to share this to others who don't understand.**

It has to do with RNA sequencing i.e. genetic. Genetics is a branch of biology concerned with the study of genes, genetic variation, and heredity in organisms.



Structural Protein	Function of Protein
Nucleocapsid Protein (N)	<ul style="list-style-type: none"><li>Bound to RNA genome to make up nucleocapsid</li></ul>
Spike Protein (S)	<ul style="list-style-type: none"><li>Critical for binding of host cell receptors to facilitate entry of host cell</li></ul>
Envelope Protein (E)	<ul style="list-style-type: none"><li>Interacts with M to form viral envelope</li></ul>
Membrane Protein (M)	<ul style="list-style-type: none"><li>Central organiser of CoV assembly</li><li>Determines shape of viral envelope</li></ul>

- It has been noted that some CoVs do not need to have the full ensemble of structural proteins to make virions, highlighting that certain proteins may be dispensable or compensated by the function of non-structural proteins.

### Coronavirus Genetics

Seasonal flu is an “all human virus”. The DNA/RNA chains that make up the virus are recognized by the human immune system. This means that your body has some immunity to it before it comes around each year. You can get immunity in two ways - through exposure to a virus or by getting a flu shot.

Novel viruses come from animals. The World Health Organization (WHO) tracks novel viruses in animals, (sometimes for years watching for mutations). Usually these viruses only transfer from animal to animal (pigs in the case of H1N1) (birds in the case of the Spanish flu). But once one of these animal viruses mutates and starts to transfer from animals to humans, then it’s a problem. Why? Because we have no natural or acquired immunity. The RNA sequencing of the genes inside the virus isn’t human, and the human immune system doesn’t recognize it so we can’t fight it off.

Now sometimes, the mutation only allows transfer from animal to human. The Coronavirus has been around for years, but its only transmission was from an infected animal to a human. But now, it mutated so that it can transfer from human to human. Once that happens, we have a new contagion phase. And depending on the fashion of this new mutation, that’s what decides how contagious, or how deadly it’s going to be.

H1N1 was deadly, but it did not mutate in a way that was as deadly as the Spanish flu. Its RNA was slower to mutate, and it attacked its host differently, too.

## **Fast forward.**

**Now, here comes this Coronavirus! It existed in animals only, for nobody knows how long, but one day, at an animal market in Wuhan China, in December 2019, it mutated and made the jump from animal to humans. At first, only animals could give it to a person. But here is the scary part - in just TWO WEEKS it mutated again and gained the ability to jump from human to human. Scientists call this quick ability, “slippery”.**



**Animal Market in Wuhan China**

**This Coronavirus, not being in any form a “human” virus (whereas we would all have some natural or acquired immunity) took off like a rocket. This was because humans have no known immunity and doctors have no known medicines for it. And it just so happens that this particular mutated animal virus, changed itself in such a way the way that it causes great damage to human lungs.**

**That’s why Coronavirus is different from seasonal flu, or H1N1 or any other type of influenza. This one is slippery and it’s a lung eater. It’s already mutated AGAIN, so that we now have two strains to deal with, strain Type-S, and strain Type-L, which makes it twice as hard to develop a vaccine. Type-L is the new type and it is the more aggressive type with about 70% of the new Coronavirus cases. Both types are bad, but one is not more deadly than the other.**

**We really have no tools in our shed for the Coronavirus. History has shown that fast and immediate closings of public places has helped in the past pandemics. Philadelphia and Baltimore were reluctant to close events in 1918 and they were the hardest hit in the US during the Spanish Flu. Today in the US, it looks like New York City is going to be hit the worst.**

**Until a vaccine is developed to fight the Coronavirus, the best thing we can do now is practice social isolation. This means staying away from crowds and staying home as much as possible.**

**Right now, this virus is hitting older folks and people with preexisting health issues the hardest. Many people are dying! This genome is so slippery that it will probably mutate again and who is to say what it will do next. Be smart – Listen and do what our leaders, scientists, and doctors tell us and do what they say so we can flatten the curve and get back to normal ASAP.**

**The following story demonstrates how the Coronavirus spreads and how it can kill you.**

### **How the Coronavirus could take over your body (Before you ever feel it)**

**You call a friend and arrange to meet for lunch. It's unseasonably spring like, so you choose a place with outdoor seating, which seems like it should be safer. As usual, you take all reasonable precautions: You use hand sanitizer, sit a good distance from other customers, and try to avoid touching your face, though that last part is hard. A part of you suspects that this whole thing might be overblown.**

**What you don't know is that ten days ago, your friend's father was a guest of his business partner at the University Club, where he caught the novel coronavirus from the wife of a cryptocurrency speculator. Three days after that, he coughed into his hand before opening the door of his apartment to welcome his son home. The saliva of COVID-19 patients can harbor half a trillion virus particles per teaspoon, and a cough aerosolizes it into a diffuse mist. As your friend walked through the door, he took a breath and 32,456 virus particles settled onto the lining of his mouth and throat.**

**Viruses have been multiplying inside his body ever since. And as he talks, the passage of his breath over the moist lining of his upper throat creates tiny droplets of virus-laden mucus that waft invisibly into the air over your table. Some settle on the as-yet-uneaten food on your plate, some drift onto your**

**fingers, others are drawn into your nasal sinus or settle into your throat. By the time you extend your hand to shake good-bye, your body is carrying 43,654 virus particles. By the time you're done shaking hands, that number is up to 312,405.**

**One of the droplets gets drawn into the branching passages of your lungs and settles on the warm, wet surface, depositing virus particles into the mucus coating the tissue. Each particle is round and very small; if you magnified a human hair so that it was as wide as a football field, the virus particle would be four inches across. The outer membrane of the virus consists of an oily layer embedded with jagged protein molecules called spike proteins. These stick out like the protrusions on a knobby ball chew toy. In the middle of the virus particle is a coiled strand of RNA, the virus's genetic material. The payload.**

**As the virus drifts through the lung's mucus, it bumps into one of the cells that line the surface. The cell is considerably larger than the virus; on the football-field scale, it's 26 feet across. A billion years of evolution have equipped it to resist attackers. But it also has a vulnerability — a backdoor. Protruding from its surface is a chunk of protein called angiotensin converting enzyme 2, or ACE2 receptor. Normally, this molecule plays a role in modulating hormone activity within the body. Today, it's going to serve as an anchor for the coronavirus.**

**As the spike protein bumps up against the surface of the lung cell, its shape matches that of the ACE2 so closely that it sticks to it like adhesive. The membrane of the virus then fuses with the membrane of the cell, spilling the RNA contents into the interior of the lung cell. The virus is in.**

**The viral RNA gets busy. The cell has its own genetic material, DNA, that produces copied fragments of itself in RNA form. These are continuously copied and sent into the main body of the cell, where they provide instructions for how to make the proteins that carry out all the functions of the cell. It's like Santa's workshop, where the elves, dutifully hammering out the toys on Santa's instructions, are complexes of RNA and protein called ribosomes.**

**As soon as the viral RNA encounters a ribosome, that ribosome begins reading it and building viral proteins. These proteins then help the viral RNA to copy itself, and these copies then hijack more of the cell's ribosomes. Other viral proteins block the cell from fighting back. Soon the cell's normal business is completely overwhelmed by the demands of the viral RNA, as its energy and**

**machinery are occupied with building the components of countless replica viruses.**

**As they are churned out, these components are transferred on a kind of cellular conveyor belt toward the surface of the cell. The virus membrane and spike proteins wrap around RNA strands, and a new particle is ready. These collect in internal bubbles, called vesicles, that move to the surface, burst open, and release new virus particles into your body by the tens and hundreds of thousands.**

**Meanwhile, spike proteins that haven't been incorporated into new viruses embed themselves directly into the host cell's membrane so that it latches onto the surface of an adjacent cell, like a pirate ship lashing itself to a helpless merchantman. The two cells then fuse, and a whole host of viral RNA swarms over into the new host cell.**

**All up and down your lungs, throat, and mouth, the scene is repeated over and over as cell after cell is penetrated and hijacked. Assuming the virus behaves like its relative, SARS, each generation of infection takes about a day and can multiply the virus a millionfold. The replicated viruses spill out into the mucus, invade the bloodstream, and pour through the digestive system.**

**You don't feel any of this. In fact, you still feel totally fine. If you have any complaint at all, it's boredom. You've been a dutiful citizen, staying at home to practice social distancing, and after two days of bingeing on the Fast & Furious franchise, you decide that your mental health is at risk if you don't get outside. You call up an ex, and she agrees to meet you for a walk along the river. You're hoping that the end-of-the-world zeitgeist might kindle some afternoon recklessness, but the face mask she's wearing kills the vibe. Also, she tells you that she's decided to move in with a guy she met at Landmark. You didn't even know she was into Landmark. She gives you a warm hug as you say good-bye, and you tell her it was great to see her, but you leave feeling deflated. What she doesn't know is that an hour before, you went to the bathroom and neglected to wash your hands afterward. The invisible fecal smear you leave on the arm of her jacket contains 893,405 virus particles. Forty-seven seconds after she gets home, she'll hang up her coat and then scratch an itch at the base of her nose just before she washes her hands. In that moment, 9,404 viral particles will transfer to her face. In five days, an ambulance will take her to Mount Sinai.**



**Like a retail chain gobbled up by private equity, stripped for parts, and left to die, your infected cells spew out virus particles until they burn themselves out and expire. As fragments of disintegrated cells spread through your bloodstream, your immune system finally senses that something is wrong. White blood cells detect the fragments of dead cells and release chemicals called cytokines that serve as an alarm signal, activating other parts of the immune system to swing into action. When responding immune cells identify a cell that has become infected, they attack and destroy it. Within your body, a microscopic Battle of the Somme is raging with your immune system leveling its Big Berthas on both the enemy trenches and its own troops. As the carnage mounts, the body's temperature rises, and the infected area becomes inflamed.**

**Two days later, sitting down to lunch, you realize that the thought of eating makes you feel nauseated. You lie down and sleep for a few hours. When you wake up, you realize that you've only gotten worse. Your chest feels tight, and you've got a dry cough that just won't quit. You wonder: Is this what it feels like? You rummage through your medicine cabinet in vain and ultimately find a thermometer in the back of your linen closet. You hold it under your tongue for a minute and then read the result: 102. Crap, you think, and crawl back into bed. You tell yourself that it might just be the regular flu, and even if worse comes to worst, you're young(-ish) and otherwise healthy. You're not in the high-risk group.**

**You're right, of course, in a sense. For most people infected with the coronavirus, that's as far as it goes. With bed rest, they get better. But for reasons scientists don't understand, about 20 percent of people get severely ill. Despite your relative youth, you're one of them.**

**After four days of raging fever and feeling sore all over, you realize that you're sicker than you've ever been in your life. You've got a dry cough that shakes you so hard that your back hurts. Fighting for breath, you order an Uber and head to the nearest emergency room. (You leave 376,345,090 virus particles smeared on various surfaces of the car and another 323,443,865 floating in aerosols in the air.)**

**At the ER, you're examined and sent to an isolation ward. As doctors wait for the results of a test for the coronavirus, they administer a CT scan of your lungs, which reveals tell-tale "ground-glass opacities," fuzzy spots caused by fluid accumulating where the immune-system battle is the most intense. Not only**

**have you got COVID-19, but it's led to a kind of intense and dangerous pneumonia called acute-respiratory-distress syndrome, or ARDS.**



### **Hospital ERs have a new look**

**With all the regular beds already occupied by the many COVID-19 sufferers, you're given a cot in a room alongside five other patients. Doctors put you on an intravenous drip to supply your body with nutrients and fluids as well as antiviral medicine. Within a day of your arrival, your condition deteriorates. You throw up for several days and start to hallucinate. Your heart rate slows to 50 beats a minute. When a patient in the next room dies, doctors take the ventilator he was using and put you on it. By the time the nurse threads the endotracheal tube down your throat, you're only half-conscious of the sensation of it snaking deeper and deeper toward your lungs. You just lie there as she places tape over your mouth to keep the tube in place.**

**You're crashing. Your immune system has flung itself into a "cytokine storm" — an overdrive of such intensity that it is no longer fighting just the viral infection but the body's own cells as well. White blood cells storm your lungs, destroying tissue. Fluid fills the tiny alveolar sacs that normally let the blood absorb oxygen. Effectively, you're drowning, even with the ventilator pumping oxygen-enriched air into your lungs.**

**That's not the worst of it. The intensity of the immune response is such that under its onslaught, organs throughout the body are shutting down, a process known as multiple-organ-dysfunction syndrome, or MODS. When your liver fails, it is unable to process toxins out of your blood, so your doctors rush to**



**hook you up to a round-the-clock dialysis machine. Starved of oxygen, your brain cells begin to expire.**

**You're fluttering on the edge between life and death. Now that you've slipped into MODS, your odds are 50-50 or worse. Owing to the fact that the pandemic has stretched the hospital's resources past the breaking point, your outlook is even bleaker.**

**Lying on your cot, you half-hear as the doctors hook you up to an extracorporeal-membrane-oxygenation (ECMO) machine. This will take over the work of your heart and lungs and hopefully keep you alive until your body can find its way back to equilibrium.**

**And then, you are flooded with an overwhelming sense of calm. You sense that you have reached the nadir of your struggle. The worst of the danger is over. With the viral attack beaten, your body's immune system will pull back, and you'll begin the slow, painstaking journey to full recovery. Some weeks from now, the doctors will remove the tube from your throat and wheel away the ventilator. Your appetite will come back, and the color will return to your cheeks, and on a summer morning you'll step out into the fresh air and hail a cab for home. And later still, you'll meet the girl who will become your wife, and you'll have three children, two of whom will have children of their own, who will visit you in your nursing home outside Tampa.**



**The Coronavirus Death Toll is raising quickly**

**That's what your mind is telling itself, anyway, as the last cells of your cerebral cortex burst in starburst waves, like the glowing algae in a midnight lagoon. In the isolation ward, your EKG goes to a steady tone. The doctors take away the ventilator and give it to a patient who arrived this morning. In the official records of the COVID-19 pandemic, you'll be recorded as victim No. 1,592.**

**There is a lot of Coronavirus information out there on the Internet. Some of it is true but a lot of it is false – Fact versus Fiction. Here are some Myth Busters:**

**Myth #1. COVID-19 virus cannot be transmitted in areas with hot and humid climates. When summer comes, the virus will go away.**

**Fact: From the evidence so far, the COVID-19 virus can be transmitted in ALL AREAS, including areas with hot and humid weather.**

**Myth #2. The Coronavirus CAN be transmitted through mosquito bites.**

**Fact: To date there has been no evidence to suggest that the Coronavirus can be transmitted by mosquitoes. The new coronavirus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose.**

**Myth #3. Packages from China can infect you.**

**Fact: The World Health Organization has stated that letters and packages received from China pose no risk whatsoever.**

**Myth #4. Eating garlic and taking vitamin C can protect you from the virus.**

**Fact: The garlic might help with vampires, but neither garlic or vitamin C will stave off the Coronavirus.**

**Myth #5. The Coronavirus (SARS-CoV-2) will mutate and become airborne.**

**Fact: This will not happen. Even when viruses mutate, their mode of transmission does not change. Influenza virus has mutated many times, but it remains a droplet infection.**

**Myth #6. The virus only affects older people, right?**

**Fact: This is most definitely a myth. The virus has been shown to infect people of all ages. But, older people with pre-existing medical conditions (like asthma,**

diabetes, heart disease) do appear to be hit more severely by the virus and are more likely to die.

**Myth #7. Wearing a mask will stop me from getting infected.**

**Fact:** Most masks you see people wearing are highly unlikely to prevent airflow around the mask as you breathe and are, as such, practically useless. Even many surgical masks may not protect you. They are, however, useful for trapping liquid droplets as you exhale and are effective for people who are already infected with the virus.

**Myth #8. My coworker's dad has COVID-19, which means I'm infected, right?**

**Fact:** No. If you're exposed to someone who was exposed to someone with COVID, you're probably fine. If that person has the Coronavirus and coughed on you, that is a different story. Then you need to be tested.

**Myth #9. If I get COVID-19, I need antibiotics, right?**

**Fact:** Antibiotics are designed to combat bacterial infections, not viruses. They will be completely ineffective.

**Myth #10. Vaccines against pneumonia protect you against the Coronavirus.**

**Fact:** There is currently no known vaccine that works against the Coronavirus (SARS-CoV-2).

**Myth #11. COVID-19 is just like the regular flu.**

**Fact:** SARS-CoV-2 causes illness that does, indeed, have flu-like symptoms, such as aches, fever, and cough. Similarly, both COVID-19 and flu can be mild, severe, or, in rare cases, fatal. Both can also lead to pneumonia. However, the overall profile of COVID-19 is more serious. Estimates vary, but its mortality rate seems to be between about 1% and 3% which is many times higher than that of seasonal flu.

**Myth #12. Cats and dogs can spread coronavirus.**

**Fact:** Currently, there is no evidence that SARS-CoV-2 can infect cats and dogs. Therefore, they cannot spread it.

**Myth #13. You have to be with someone for 10 minutes to catch the virus.**

**Fact:** The longer someone is with an infected person, the more likely they are to catch the virus, but it is still possible to catch it in less than 10 minutes. If an infected person coughs on you in the first minute and you get the Coronavirus particles in your mouth, nose, or eyes, you will probably catch the virus.

**Myth #14. Thermal scanners can diagnose coronavirus.**

**Fact:** Thermal scanners can detect whether someone has a fever. However, other conditions, such as seasonal flu, can also produce fever.

**Myth #15. Coronavirus is the deadliest virus known to man.**

**Fact:** Although SARS-CoV-2 is more serious than influenza, it is not the deadliest virus that people have faced. Others, such as Ebola, have higher mortality rates.

**Myth #16. The outbreak began because people in China ate bat soup.**

**Fact:** Although scientists are confident that the virus started in animals, they are not sure at this point what kind of animal it was and how it transmitted the virus to humans.

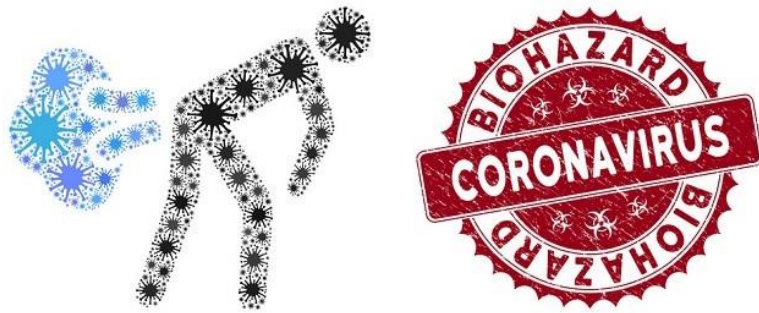
**Myth #17. You can catch coronavirus from urine and feces (poop).**

**Fact:** I'm sorry to report that this myth is probably **TRUE**. New research from China and South Korea indicates that the novel coronavirus is also spread by fecal-oral transmission, not just by respiratory droplets or environmental contact.

It isn't a very pleasant thought, but every time you swallow, you swallow mucus from your upper respiratory tract. In fact, this is an important defensive mechanism. This sweeps viruses and bacteria down into our gut where they are denatured in the acid conditions of our stomachs. However, new research concludes that viruses like SARS-CoV-2 can persist in feces and urine.

**Scary! But I must ask - Do farts spread Novel Coronavirus?**

Yes, it is possible. New findings are making a lot of people worried that farts could be a new transmission route. Your shorts and pants do a good job of blocking the virus transmission, but if you are one of those people that spend a lot of time with your face near someone's bare bottom, you better be careful.



### **How is the coronavirus transmitted from person to person?**

Okay, we have all heard by now the primary way this virus spreads. Right? If not, here it is: “The new coronavirus is a respiratory virus which spreads primarily through droplets generated when an infected person coughs or sneezes, or through droplets of saliva or discharge from the nose.”

**As of right now (3/28/2020), there are 663,740 coronavirus cases world-wide and 30,879 deaths. That seems like a lot of coughing and sneezing to me. Let’s investigate a little deeper on how the SARS-CoV-2 virus can spread from person to person so fast.**

Imagine sitting or standing next to someone with the SARS-CoV-2 infection on the bus, subway, elevator or in a meeting room. Suddenly, this person sneezes or coughs. If they don’t cover their mouth and nose, they could potentially spray you with invisible respiratory droplets. The droplets that land on you and the other people will likely contain the virus.



**Imagine being in this Subway Train Car with one or more Infected People**



Or perhaps you meet someone who contracted the virus, and they touched their mouth or nose with their hand. When that person shakes your hand, they transfer some of the virus to your hand. If you then touch your mouth or nose without washing your hands first, you may accidentally give that virus an entry point into your own body.

What makes this virus so easy to spread is the fact some of the infected people don't even know they have the coronavirus. They are out and about infecting people all over the city.

### **The Coronavirus Incubation Period**

An incubation period is the time between when you contact a virus and when your symptoms start. Currently, according to the Center for Disease Control and Prevention (CDC), the incubation period for the novel coronavirus is somewhere between 2 and 14 days after exposure. More than 97 percent of people who contract SARS-CoV-2 show symptoms within 11 days of exposure. The average incubation period is around 5 days.

### **How long the coronavirus will last on different surfaces?**

As the coronavirus outbreak continues to accelerate in the U.S., cleaning supplies are disappearing off the shelves and people are worried about every doorknob, subway rail, kitchen counter and toilet seat they touch.

But how long can the coronavirus linger on surfaces, anyway? A new analysis found that the virus can remain viable in the air for up to 3 hours, on copper for up to 4 hours, on cardboard up to 24 hours and on plastic and stainless steel for up to 72 hours.

This is what makes the Coronavirus so scary. The one that scares me the most is the “up to 3 hours in the air”.



### **So, how good are the cleaning products already in your cupboards at killing SARS-CoV-2?**

#### **Soap and water**

Soap and water are your first line of defense – it will not kill the virus, but it will remove it from surfaces. The detergent in soap will lift the virus from surfaces and this will then be rinsed off by water.



## **Bleach**

The active ingredient in bleach – sodium hypochlorite – is very effective at killing the virus. Make sure you leave the bleach to work for 10-15 minutes then give the surface a wipe with a clean cloth.

The bleach works by destroying the protein and what's known as the ribonucleic acid (RNA) of the virus – this is the substance that gives the blueprint for making more virus particles when you become infected. Be sure to use the bleach as directed on the bottle.

## **Surgical spirit**

Surgical spirit is mostly made up of the alcohol ethanol. Ethanol has been shown to kill coronaviruses in as little as 30 seconds. Like bleach, the alcohol destroys the protein and RNA that the virus is made up of.

Moisten a cloth with some surgical spirit and rub it over a surface. This will evaporate and you will not need to wipe it off.



**Subway Worker using Surgical Spirit to kill the Coronavirus**

## **Surface wipes**

The active ingredient in surface wipes is an antiseptic – usually benzalkonium chloride. The wipes work by physically removing germs through the pressure you apply when you use them, and the germs then attach to the wipe.

They also leave a layer of the antiseptic on the surface that works to kill germs. The antiseptic works well on bacteria but so far, there is no evidence that antiseptics can kill human coronaviruses.

### **Hand sanitizers**

A word of warning though about hand sanitizers. The main ingredient in hand sanitizers that will kill SARS-CoV-2 is ethanol, the alcohol in surgical spirit. But its concentration in the sanitizer is very important – it has to be over 70 percent, or it will not kill the virus effectively.

### **What are the typical symptoms?**

Symptoms of COVID-19 are usually mild and develop slowly. The main symptoms are:

- fever
- shortness of breath
- cough
- fatigue

Other less common symptoms may include:

- achiness
- nasal congestion
- sore throat
- runny nose

If you have symptoms of COVID-19, call your doctor for advice. Until you know what type of illness you have, stay home, and avoid contact with other people.

### **How to protect yourself**

The best way to protect yourself from the coronavirus is stay home and away from other people.

The State of Hawaii has issued a “stay-at-home, work-at-home” order that began at 4:30 p.m. Monday, March 23 through 4:30 p.m. April 30 for non-essential workers, and can be extended if needed. People are allowed to conduct essential activities such as obtaining medical supplies or medication, visiting a health care professional, obtaining necessary services or supplies such as groceries, and outdoor activities in locations as allowed by law.

Essential businesses include but are not limited to healthcare operations, grocery stores and supermarkets, businesses that provide food, shelter, and social services, gas stations, bank and financial institutions, and media services.

Since it is not always possible to stay away from other people and things you might touch, read on.

The next best way to prevent yourself from contracting the novel coronavirus is to wash your hands often. Use soap and water and wash for at least 20 seconds. If you don't have soap and water, you can also use hand sanitizer with at least 70 percent alcohol.

Other ways to protect yourself include the following:

1. Stay at least 6 feet away from everybody and avoid large groups of people. This is called "Social Distancing".
2. Avoid touching your face. (This is very hard to do – think about it.)
3. Don't share personal items with others. This includes things like drinking glasses, utensils, toothbrushes, and lip balm.
4. Wipe down high-touch surfaces like doorknobs, keyboards, and stair rails in your home with household cleaners or a diluted bleach solution.
5. Wash your hands or use a hand sanitizer after touching surfaces like elevator or ATM buttons, gas pump handles, and grocery carts.
6. Stay home and call your doctor if you start having respiratory issues or think your symptoms are consistent with those of COVID-19.

### **Coronavirus Treatment**

There is no specific medicine to prevent or treat coronavirus disease (COVID-19). People may need supportive care to help them breathe. If you develop a fever, cough, and have difficulty breathing, promptly seek medical care. Call in advance and tell your health provider of any recent travel or recent contact with travelers.

### **The World needs an effective Vaccine Quickly!!**

Even at their most effective – and draconian – containment strategies have only slowed the spread of the respiratory disease Covid-19. With the World Health Organization finally declaring a pandemic, all eyes have turned to the prospect of a vaccine, because only a vaccine can prevent people from getting sick.

About 35 U.S. companies and academic institutions are racing to create such a vaccine, at least four of which already have candidates they have been testing in animals. The first of these – produced by Boston-based biotech firm Moderna – will enter human trials soon.



**This unprecedented speed is thanks in large part to early Chinese efforts to sequence the genetic material of Sars-CoV-2, the virus that causes Covid-19. China shared that sequence in early January, allowing research groups around the world to grow the live virus and study how it invades human cells and makes people sick.**

**But there is another reason for the head start. Though nobody could have predicted that the next infectious disease to threaten the globe would be caused by a coronavirus – flu is generally considered to pose the greatest pandemic risk – vaccinologists had hedged their bets by working on “prototype” pathogens. “The speed with which we have produced these candidates builds very much on the investment in understanding how to develop vaccines for other coronaviruses,” says Richard Hatchett, CEO of the Oslo-based nonprofit the Coalition for Epidemic Preparedness Innovations, which is leading efforts to finance and coordinate Covid-19 vaccine development.**

**Coronaviruses have caused two other recent epidemics – severe acute respiratory syndrome (Sars) in China in 2002-04, and Middle East respiratory syndrome (Mers), which started in Saudi Arabia in 2012. In both cases, work began on vaccines that were later shelved when the outbreaks were contained. One company, Maryland-based Novavax, has now repurposed those vaccines for Sars-CoV-2, and says it has several candidates ready to enter human trials this spring. Moderna, meanwhile, built on earlier work on the Mers virus conducted at the US National Institute of Allergy and Infectious Diseases in Bethesda, Maryland.**

**President Trump touted hydroxychloroquine, a common malaria drug, as a potential treatment for COVID-19 during a press conference. I did a little research and here is what I found out.**

There are several clinical studies going on around the world testing chloroquine or hydroxychloroquine as a possible treatment for COVID-19. Countries including China, South Korea, Belgium, and France have used Hydroxychloroquine to treat coronavirus patients with some success.



**Hydroxychloroquine Tablets**

### **Why Trump Brought Up Hydroxychloroquine**

The excitement over the chloroquine/hydroxychloroquine combination's potential began with a small French study of people with the novel coronavirus. In those patients, the load of SARS-CoV-2, the virus responsible for COVID-19, in their blood dropped after they received the medications, although their clinical symptoms didn't change much. In another study of about 100 patients in China, doctors also reported some success in using the drug duo to reduce the viral load in patients.

Beyond that, however, there isn't much evidence about how either hydroxychloroquine or chloroquine works against a coronavirus like SARS-CoV-2. The studies from China and France were not randomized clinical trials—the gold standard in medical research, in which people with similar characteristics are randomly assigned to receive the drug or a placebo. Instead, the data came from case reports, which means the researchers weren't able to completely account for factors like previous health history that could confound and skew their response.

**Here is the latest (to this date 3/29/2020) treatment for coronavirus**

**It appears that the blood plasma of recovered patients can help treat severe coronavirus patients.**



**Blood Plasma from Recovered Patients**

**Five critically ill patients were hospitalized in Shenzhen, China, with serious cases of COVID-19. They received an experimental plasma transfusion and have since recovered. While the research is far too limited in size to draw conclusions from, the findings support more robust study of the treatment, called a convalescent plasma transfusion. New York City announced this week plans to test and use convalescent plasma in severe cases of COVID-19.**

**Let's hope for good results.**

**The World needs an effective Vaccine Quickly!!**

### **How 5 of History's Worst Pandemics Finally Ended**

**While some of the earliest pandemics faded by wiping out large parts of the population, medical and public health initiatives were able to halt the spread of other diseases.**

**As human civilizations flourished, so did infectious disease. Large numbers of people living in close proximity to each other and to animals, often with poor sanitation and nutrition, provided fertile breeding grounds for disease. And new overseas trading routes spread the novel infections far and wide, creating the first global pandemics. Here's how five of the world's worst pandemics finally ended:**

#### **1. Plague of Justinian—No One Left to Die**

**Three of the deadliest pandemics in recorded history were caused by a single bacterium, *Yersinia pestis*, a fatal infection otherwise known as **the plague**.**



The Plague of Justinian arrived in Constantinople, the capital of the Byzantine Empire, in 541 CE. It was carried over the Mediterranean Sea from Egypt, a recently conquered land paying tribute to Emperor Justinian in grain. Plague-ridden fleas hitched a ride on the black rats that snacked on the grain.

The plague decimated Constantinople and spread like wildfire across Europe, Asia, North Africa and Arabia killing an estimated 50 million people, perhaps half of the world's population.

“People had no real understanding of how to fight it other than trying to avoid sick people,” says Thomas Mockaitis, a history professor at DePaul University. “As to how the plague ended, the best guess is that the majority of people in a pandemic somehow survive, and those who survive have immunity.”

## 2. Black Death—The Invention of Quarantine

The plague never really went away, and when it returned 800 years later, it killed with reckless abandon. **The Black Death**, which hit Europe in 1347, claimed an astonishing 200 million lives in just four years.



**BLACK DEATH**

As for how to stop the disease, people still had no scientific understanding of contagion, says Mockaitis, but they knew that it had something to do with proximity. That's why forward-thinking officials in Venetian-controlled port city of Ragusa decided to keep newly arrived sailors in isolation until they could prove they weren't sick.

At first, sailors were held on their ships for 30 days, which became known in Venetian law as a trentino. As time went on, the Venetians increased the forced

isolation to 40 days or a quarantino, the origin of the word quarantine and the start of its practice in the Western world. It worked.

### **3. The Great Plague of London—Sealing Up the Sick**

London never really caught a break after the Black Death. The plague resurfaced roughly every 20 years from 1348 to 1665—40 outbreaks in 300 years. And with each new plague epidemic, 20 percent of the men, women and children living in the British capital were killed.

By the early 1500s, England imposed the first laws to separate and isolate the sick. Homes stricken by plague were marked with a bale of hay strung to a pole outside. If you had infected family members, you had to carry a white pole when you went out in public. Cats and dogs were believed to carry the disease, so there was a wholesale massacre of hundreds of thousands of animals.

**The Great Plague of 1665** was the last and one of the worst of the centuries-long outbreaks, killing 100,000 Londoners in just seven months. All public entertainment was banned, and victims were forcibly shut into their homes to prevent the spread of the disease. Red crosses were painted on their doors along with a plea for forgiveness: “Lord have mercy upon us.”

As cruel as it was to shut up the sick in their homes and bury the dead in mass graves, it may have been the only way to bring the last great plague outbreak to an end.

### **4. Smallpox—A European Disease Ravages the New World**



**Dr. Edward Jenner performing his first vaccination against smallpox on James Phipps, circa 1796**

**Smallpox** was endemic to Europe, Asia and Arabia for centuries, a persistent menace that killed three out of ten people it infected and left the rest with pockmarked scars. But the death rate in the Old World paled in comparison to the devastation wrought on native populations in the New World when the smallpox virus arrived in the 15th century with the first European explorers.

The indigenous peoples of modern-day Mexico and the United States had zero natural immunity to smallpox and the virus cut them down by the tens of millions.

“There hasn’t been a kill off in human history to match what happened in the Americas—90 to 95 percent of the indigenous population wiped out over a century,” says Mockaitis. “Mexico goes from 11 million people pre-conquest to one million.”

Centuries later, **smallpox became the first virus epidemic to be ended by a vaccine.** In the late 18th-century, a British doctor named Edward Jenner discovered that milkmaids infected with a milder virus called cowpox seemed immune to smallpox. Jenner famously inoculated his gardener’s 9-year-old son with cowpox and then exposed him to the smallpox virus with no ill effect.

“The annihilation of the smallpox, the most dreadful scourge of the human species, must be the final result of this practice,” wrote Jenner in 1801.

And he was right. It took nearly two more centuries, but in 1980 the World Health Organization announced that smallpox had been completely eradicated from the face of the Earth.

## **5. Cholera—A Victory for Public Health Research**

In the early- to mid-19th century, **cholera** tore through England, killing tens of thousands. The prevailing scientific theory of the day said that the disease was spread by foul air known as a “miasma.” But a British doctor named John Snow suspected that the mysterious disease, which killed its victims within days of the first symptoms, lurked in London’s drinking water.

Snow acted like a scientific Sherlock Holmes, investigating hospital records and morgue reports to track the precise locations of deadly outbreaks. He created a geographic chart of cholera deaths over a 10-day period and found a cluster of 500 fatal infections surrounding the Broad Street pump, a popular city well for drinking water.

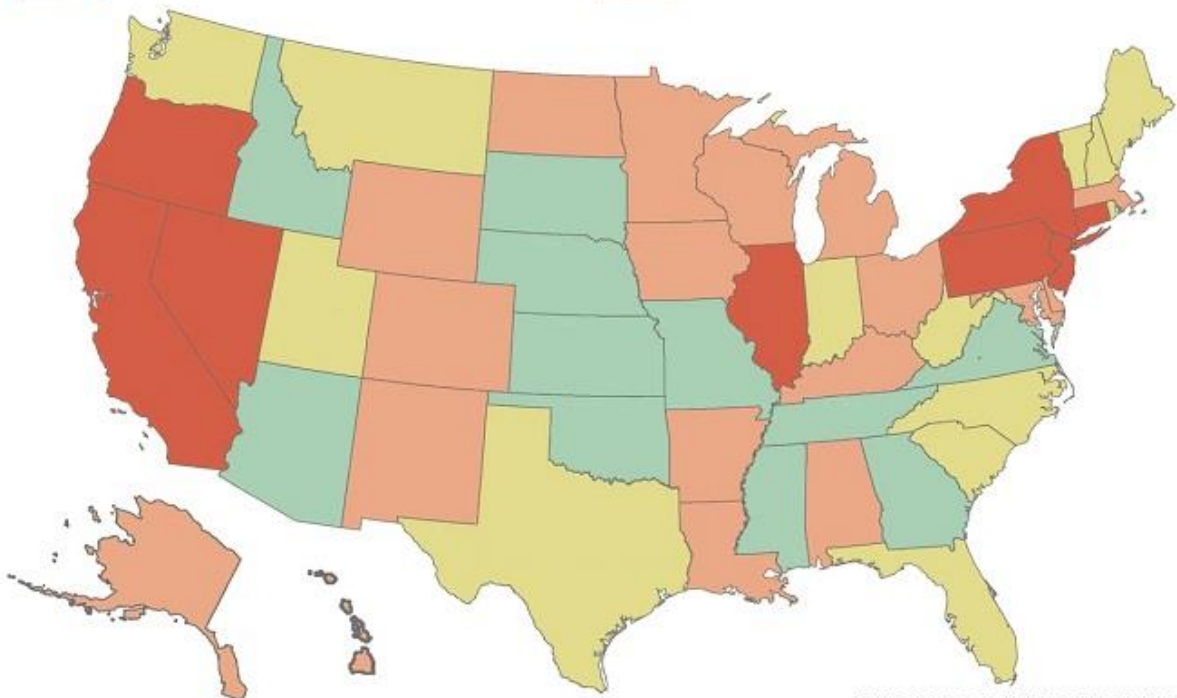
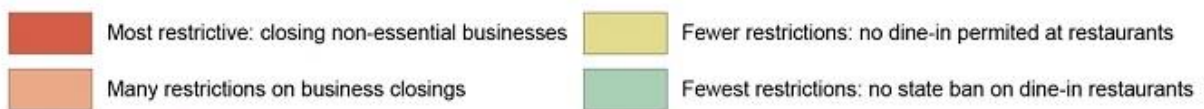
**“As soon as I became acquainted with the situation and extent of this irruption (sic) of cholera, I suspected some contamination of the water of the much-frequented street-pump in Broad Street,” wrote Snow.**

**With dogged effort, Snow convinced local officials to remove the pump handle on the Broad Street drinking well, rendering it unusable, and like magic the infections dried up. Snow’s work didn’t cure cholera overnight, but it eventually led to a global effort to improve urban sanitation and protect drinking water from contamination.**

**While cholera has largely been eradicated in developed countries, it’s still a persistent killer in third-world countries lacking adequate sewage treatment and access to clean drinking water.**

**Map showing states closing bars and restaurants and imposing other restrictions (as of 21 March 2020):**

### **Coronavirus restrictions across the United States**



ADAM FERRISE, RICH EXNER/CLEVELAND.COM



**U.S. states with most restrictive “stay at home” orders are California and New York.**



**California Street in San Francisco**



**Times Square in New York City**

### **MY BOLD CORONAVIRUS PREDICTIONS (1 APRIL 2020)**

- **COVID-19 will get much worse on mainland U.S. for the next month.**
- **Because Hawaii is isolated, has the stay-at-home order, and a coronavirus quarantine in place, the COVID-19 curve will flatten out in mid-April.**
- **A vaccine for COVID-19 will be developed and successfully tested in late April.**
- **Hawaii will be one of the first states to re-open bars and restaurants and other businesses. This will happen on 1 May 2020.**
- **The vaccine will be mass produced and available to all world countries in early June 2020.**
- **Things will slowly return to normal across the U.S. starting in mid-June.**

**In the meantime, stay home, stay calm, practice social distancing, be strong, and try not to go crazy.**



**[Bigdrifter44@gmail.com](mailto:Bigdrifter44@gmail.com)**

**[Bigdrifter.com](http://Bigdrifter.com)**