

# Corona 2020

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# What are we allowed to know?

Coronaviruses comprise a vast family of viruses, 7 of which are known to cause disease in humans. Some coronaviruses that typically infect animals have been known to evolve to infect humans. SARS-CoV-2 is likely one such virus, postulated to have originated in a large animal and seafood market. Recent cases involve individuals who reported no contact with animal markets, suggesting that the virus is now spreading from person to person.

[Severe acute respiratory syndrome](#) (SARS) and [Middle East respiratory syndrome](#) (MERS) are also caused by coronaviruses that “jumped” from animals to humans. More than 8,000 individuals developed SARS, nearly 800 of whom died of the illness (mortality rate of approximately 10%), before it was controlled in 2003.<sup>[28]</sup> MERS continues to resurface in sporadic cases. A total of 2,465 laboratory-confirmed cases of MERS have been reported since 2012, resulting in 850 deaths (mortality rate of 34.5%).

**The full genome** of SARS-CoV-2 was first posted by Chinese health authorities soon after the initial detection, facilitating viral characterization and diagnosis. The CDC analyzed the genome from the first US patient who developed the infection on January 24, 2020, concluding that the sequence is nearly identical to the sequences reported by China (*CDC. Coronavirus Disease 2019 (COVID-19): COVID-19 Situation Summary. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>. February 29, 2020*). SARS-CoV-2 is a group 2b beta-coronavirus that has at least 70% similarity in genetic sequence to SARS-CoV. Like MERS-CoV and SARS-CoV, SARS-CoV-2 is **believed to have originated in bats**.

**Prognosis and Severity of COVID-19 Compared With SARS and MERS:** Early reports have described COVID-19 as clinically milder than MERS or SARS in terms of severity and case fatality rate.<sup>[29]</sup> Thus far, the fatality rate for COVID-19 appears to be around 2%. Early in the outbreak, WHO reported that severe cases in China had mostly been reported in adults older than 40 years old with significant comorbidities and skewed toward men, although this pattern may be changing. (*Otto MA. Wuhan Virus: What Clinicians Need to Know. Medscape Medical News. Available at <https://www.medscape.com/viewarticle/924268>. January 27, 2020*).

In an initial report of 41 patients infected in Wuhan, China, Huang et al reported a **78% male predominance**, with 32% of all patients reporting underlying disease. The most common clinic finding was **fever (98%)**, followed by **cough (76%)** and **myalgia/fatigue (44%)**. Headache, sputum production, and diarrhea were less common. The clinical course was characterized by the development of dyspnea in 55% of patients and lymphopenia in 66%. All patients with pneumonia had abnormal lung imaging findings.

[Acute respiratory distress syndrome](#) (ARDS) developed in 29% of patients,<sup>[30]</sup> and ground-glass opacities are common on CT scans.<sup>[31]</sup>

# Covid-19: the recent history

- Coronavirus disease 2019 (COVID-19) is defined as illness caused by a novel coronavirus now called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the WHO on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency.
- Illness caused by SARS-CoV-2 was recently termed COVID-19 by the WHO, the new acronym derived from "coronavirus disease 2019." The name was chosen to avoid stigmatizing the virus's origins in terms of populations, geography, or animal associations. On February 11, 2020, the Coronavirus Study Group of the International Committee on Taxonomy of Viruses issued a statement announcing an official designation for the novel virus: severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Gorbalenya AE. Severe acute respiratory syndrome-related coronavirus (*The species and its viruses, a statement of the Coronavirus Study Group. Available at <https://doi.org/10.1101/2020.02.07.937862>. February 11, 2020; Accessed: February 13, 2020*)
- **2019-2020 Outbreak:** As of March 6, 2020, COVID-19 has been confirmed in more than 100,000 individuals (mostly in China) and has resulted in more than 3,400 deaths. Outside of China, infections have been reported in an increasing number of countries (*Centers for Disease Control and Prevention. 2019 Novel Coronavirus, Wuhan, China: Confirmed 2019-nCoV Cases Globally. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/locations-confirmed-cases.html>. January 27, 2020; Accessed: January 27*)

# Transmission

Transmission is believed to occur via respiratory droplets from coughing and sneezing, as with other respiratory pathogens, including [influenza](#) and [rhinovirus](#). According to the WHO, the spread of SARS-CoV-2 in China seems to be largely limited to family members, healthcare providers, and other close contacts and is probably being transmitted by respiratory droplets. WHO officials project that the outbreak is containable if that pattern holds. Severe cases in China have mostly been reported in adults older than 40 years old with significant comorbidities and have skewed toward men. (*Otto MA. Wuhan Virus: What Clinicians Need to Know. Medscape Medical News. Available at <https://www.medscape.com/viewarticle/924268>. January 27, 2020; Accessed: January 27, 2020.*) Relatively few young children have been identified and those infected seem to have mild illness (*Wei M, Yuan J, Liu Y, Fu T, Yu X, Zhang ZJ. Novel Coronavirus Infection in Hospitalized Infants Under 1 Year of Age in China. JAMA. 2020 Feb 14*)

Recently released data have suggested that asymptomatic patients are still able to transmit infection. This raises concerns for the effectiveness of isolation.<sup>[17, 18]</sup> Zou et al followed viral expression through infection via nasal and throat swabs in a small cohort of patients. They found increases in viral loads at the time that the patients became symptomatic. One patient never developed symptoms but was shedding virus beginning at day 7 after presumed infection (*Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. N Engl J Med. 2020 Feb 19*)

An initial report of 425 patients with confirmed COVID-19 in Wuhan, China, attempted to describe the epidemiology. Many of the initial cases were associated with direct exposure to live markets, while subsequent cases were not. This further strengthens the case for human-to-human transmission. The incubation time for new infections was found to be 5.2 days, with a range of 4.1-7 days. The longest time from infection to symptoms seemed to be 12.5 days. At this point, the epidemic had been doubling approximately every 7 days, and the base reproductive number was 2.2 (meaning every patient infects an average of 2.2 others) (*Li Q, Guan X, Wu P, Wang X, et al. Early Transmission Dynamics in Wuhan, China, of Novel Coronavirus-Infected Pneumonia. N Engl J Med. 2020 Jan 29.*)

Fourteen deaths related to COVID-19 have been reported in the United States, most (*Brunk D. CDC: First Person-to-Person Spread of Novel Coronavirus in US. Medscape Medical News. Available at <https://www.medscape.com/viewarticle/924571>. January 30, 2020*) in Washington State and one in California. Of the deaths in Washington, **6 occurred in the same hospital** (Evergreen hospital in Kirkland). Kirkland has prided itself as being one of the first towns in the US wired for 5G. Evergreen hospital has according to our own measurements the highest levels of WiFi exposure ever measured in a hospital.

# Diagnosis

**Government Laboratory testing:** If laboratory testing confirms an alternate pathogen, SARS-CoV-2 can be excluded, although this recommendation may change in the future (*CDC Health Alert Network. Update and Interim Guidance on Outbreak of 2019 Novel Coronavirus (2019-nCoV) in Wuhan, China. CDC. Available at <https://emergency.cdc.gov/han/han00426.asp>. January 17, 2020; Accessed: January 27, 2020*)

The CDC has developed a diagnostic test for detection of the virus and has received special emergency authorization from the FDA for its use. The test is a **real-time reverse transcription–polymerase chain reaction (rRT-PCR) assay** that can be used to diagnose the virus in respiratory and serum samples from clinical specimens. (*CDC. Coronavirus Disease 2019 (COVID-19): COVID-19 Situation Summary. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>. February 29, 2020; Accessed: March 2, 2020*)

## Practical tips:

**Symptoms:** mild to moderate **fever, dry cough**, muscle aches and fatigue

**Laboratory: Low wbc and lymphocyte count in the cbc:** Leukopenia and lymphopenia were common among early cases (*Hui DS, I Azhar E, Madani TA, Ntoumi F, Kock R, Dar O, et al. The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health - The latest 2019 novel coronavirus outbreak in Wuhan, China. Int J Infect Dis. 2020 Jan 14. 91:264-266. Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020 Jan 24.*)

**Chest radiography:** Chest radiography may reveal **pulmonary infiltrates** (*Bogoch II, Watts A, Thomas-Bachli A, Huber C, Kraemer MUG, Khan K. Pneumonia of Unknown Etiology in Wuhan, China: Potential for International Spread Via Commercial Air Travel. J Travel Med. 2020 Jan 14*)

**CT scanning:** CT scan may reveal ground-glass infiltrates or consolidation, almost always bilateral (*Huang C, Wang Y, Li X, Ren L, Zhao J, Hu Y, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet. 2020 Jan 24.*)

# Treatment and Prevention of COVID-19 (as reported in Medscape)

No vaccine is currently available for SARS-CoV-2. Avoidance is the principal method of deterrence. No specific antiviral treatment is recommended for COVID-19. Infected patients should receive supportive care to help alleviate symptoms. Vital organ function should be supported in severe cases.

(CDC. 2019 Novel Coronavirus, Wuhan, China: Prevention & Treatment. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html>. January 26, 2020)

According to a consensus statement from a multicenter collaboration group in China, chloroquine phosphate 500-mg twice daily in tablet form for 10 days may be considered in patients with COVID-19 pneumonia (*Multicenter collaboration group of Department of Science and Technology of Guangdong Province and Health Commission of Guangdong Province for chloroquine in the treatment of novel coronavirus pneumonia. [Expert consensus on chloroquine phosphate for the treatment of novel coronavirus pneumonia]. Zhonghua Jie He He Hu Xi Za Zhi. 2020 Feb 20. 43:E019.*).

Wang et al reported that chloroquine effectively inhibits SARS-CoV-2 in vitro. (Wang M, Cao R, Zhang L, Yang X, Liu J, Xu M, et al. **Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro.** *Cell Res.* 2020 Feb 4)

The same article also highlights the in-vitro effectiveness of **Nitazoxanide (Alinia, Daxon)** next to chloroquine. Alinia is very well tolerated and familiar to our patients. It was also found very effective in treating the MERS-corona virus ("**Nitazoxanide, a new drug candidate for the treatment of Middle East respiratory syndrome coronavirus**"; [Journal of Infection and Public Health. Volume 9, Issue 3, May–June 2016, Pages 227-230;](#) [Jean-François Rossignol](#))

General measures for prevention of viral respiratory infections include the following: (CDC. 2019 Novel Coronavirus, Wuhan, China: Prevention & Treatment. CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/about/prevention-treatment.html>. January 26, 2020)

- Handwashing with soap and water for at least 20 seconds. A 60% alcohol-based hand sanitizer may be used if soap and water are unavailable.
- Individuals should avoid touching their eyes, nose, and mouth with unwashed hands.
- Individuals should avoid close contact with sick people.
- Sick people should responsibly self isolate/ stay at home (e.g., from work, school).
- Coughs and sneezes should be covered with a tissue, followed by disposal of the tissue in the trash.
- Frequently touched objects and surfaces should be cleaned and disinfected regularly.
- Following the model of the Hong Kong protocol citizens are advised to wear facial masks at all times when in the presence of other people both as a means of protection and spread of the virus

**Infection control:** Those who are under investigation for COVID-19 should be evaluated in a private room with the door closed (an airborne infection isolation room is ideal) and asked to wear a surgical mask. All other standard contact and airborne precautions should be observed, and treating healthcare personnel should wear eye protection (CDC. 2019 Novel Coronavirus, Wuhan, China: *Interim Healthcare Infection Prevention and Control Recommendations for Patients Under Investigation for 2019 Novel Coronavirus.* CDC. Available at <https://www.cdc.gov/coronavirus/2019-ncov/infection-control.html>. January 18, 2020)

# Alternative approaches

**Treatment** of a possibly infected or diagnosed patient

**1. Vitamin C:** In a press release from a Chinese hospital specializing in infectious disease it was observed that intravenous vitamin C was extremely effective in treating affected and infected patients: the dose of 100-200 mg/kg body weight was given intravenously for 3 days in a row ( this equals to only 7.5 – 15 grams for a 75 kg (180 lbs.) person (大剂量维生素C治疗新冠肺炎的交二方案 发布时间: 2020-02-21 11:00:56 浏览次数: 5870).

The treatment is scheduled for a government sponsored trial: *“Clinical Trials.gov dentifier NCT04264533, ZhiYong Peng, Zhongnan Hospital”*

In the US, the pioneers of orthomolecular medicine also published a consensus paper on the use of Vit C: Orthomolecular Medicine News Service, Feb 16, 2020 *“Early Large Dose Intravenous Vitamin C is the Treatment of Choice for 2019-nCov infected Pneumonia”* Richard Z Cheng, MD, PhD; Hanping Shi, MD, PhD; Atsuo Yanagisawa, MD, PhD; Thomas Levy, MD, JD; Andrew Saul, PhD.

Prevention: Based on the advice from the Chinese hospital staff we recommend the following to all of our patients: take a minimum of 2000 mg Vit C per day. Use a mix of liposomal/non-liposomal vit C, by adding 1-2 tsp of MicroPhos to the prepared Vit C drink and stirring it vigorously. Divide the dose in half and drink twice daily.

**2. Alinia:** Based on the MERS-CoV experience years ago (and the Wang article/in vitro study of Covid-19 in Cell Res 2020) gained , use 1000 mg Nitazoxanide twice daily for 10 days. Nitazoxanide is usually well tolerated.

**3. Chloroquine** phosphate: 500 mg twice daily for 10 days (most Lyme literate MDs are familiar with the use of chloroquine and possible side effects)

# Prevention

this is based only on my prior clinical experience with SARS and MERSA and may be irrelevant

Other than the hygiene measures discussed earlier in this presentation, we recommend a disinfectant that does not substantially destroy the protective skin flora and still has enough anti-viral potential. I use isotonic HOCL spray - to use in my face, eyes, mouth and to repeatedly use on my hands. I also use it in an off-label way to inhale it with a micronizing inhaler (Omron) once a day for 15 minutes after seeing patients, some of whom might be incubating the infection. We nebulize it in the office regularly along with known disinfecting essential oils („*Specific Plant Terpenoids and Lignoids Possess Potent Antiviral Activities against Severe Acute Respiratory Syndrome Coronavirus*“ *J. Med. Chem.* 2007, 50, 4087-4095). This does not represent the recommendations from any company that is involved in producing these products

I also recommend an herbal mix (based on reviewing the literature on natural anti viral approaches) of equal parts of:

- **Calendula** (Jan, Nelofer, and Riffat John. "Calendula officinalis-an important medicinal plant with potential biological properties." *Proceedings of the Indian National Science Academy* 83.4 (2017): 769-787)
- **Licorice** ("Licking latency with licorice." *The Journal of clinical investigation* 115.3 (2005): 591-593.
- **Scutalaria** (Skullcap): Wu, Canrong, et al. "Analysis of therapeutic targets for SARS-CoV-2 and discovery of potential drugs by computational methods." *Acta Pharmaceutica Sinica B* (2020).
- **Rosmary** (Wu, Canrong, et al. "Analysis of therapeutic targets for SARS-CoV-2 and discovery of potential drugs by computational methods." *Acta Pharmaceutica Sinica B* (2020).
- **Andrographis** ("*Broad-spectrum antiviral properties of andrographolide*". Archives of Virology volume 162, pages611–623(2017). "Andrographolide treatment could increase the survival rate, diminish lung pathology, decrease the virus loads and the inflammatory cytokines expression induced by infection. Mechanism studies showed the NF-κB and JAK-STAT signaling pathway were involved in the activity of andrographolide"). *Andrographolide inhibits influenza A virus-induced inflammation in a murine model through NF-κB and JAK-STAT signaling pathway*. *Microbes Infect.* 2017 Dec;19(12):605-615. doi: 10.1016/j.micinf.2017.08.009. Activity of andrographolide and its derivatives against influenza virus in vivo and in vitro. *Biol Pharm Bull.* 2009 Aug;32(8):1385-91.
- **Artemisia annua** (Li, Shi-you, Cong Chen, Hai-qing Zhang, Hai-yan Guo, Hui Wang, Lin Wang, Xiang Zhang et al. "Identification of natural compounds with antiviral activities against SARS-associated coronavirus." *Antiviral research* 67, no. 1 (2005): 18-23.)
- **Dandelion** (Taraxasterol) (IN VIVO ANTI-INFLAMMATORY EFFECTS OF TARAXASTEROL AGAINST ANIMAL MODELS. *Afr J Tradit Complement Altern Med.* 2016 Nov 23;14(1):43-51. doi: 10.21010/ajtcam.v14i1.6.)

I suggest the following: Put 100 ml clean water in a blender and add 14 gms of Vit C powder. Then add the herbal tinctures (calculate the weekly total of each). Add 2 tablespoons of Microphos and blend for several minutes. Put the mix in a glass and keep in the fridge. Estimate one seventh of the amount, put it in a separate glass and drink the content over the day.

Always have a binder on board and use the ionic footbath to keep the emuntories (exit routes) free.

**Propolis:** Propolis is a potent anti-viral (Ferreira, L. das N., et al. "Effect of the ethanolic extract from green propolis on production of antibodies after immunization against canine parvovirus (CPV) and canine coronavirus (CCoV)." *Brazilian Journal of Veterinary Research and Animal Science* 49.2 (2012): 116-121).

**This article suggests that propolis enhances anti-viral immunity** in a relevant animal model

We have years of experience using a special Propolis vaporizer (Ki Science) to nebulize organic propolis in our homes (preventing the flu and other illnesses in our co-workers and patients). Propolis vapor is also effective in neutralizing circulating mycotoxins in the ambient air.

We also use propolis as oral spray and systemically in capsules.

**Vit D3:** I recommend to titrate vit D to high normal levels (most of us need 6000-10000 i.u. Vit D3. I use Chondroitin sulfate (500 mg twice daily) only if it tests with ART. ([Epidemiol Infect.](#) 2006 Dec;134(6):1129-40. Epub 2006 Sep 7. Epidemic influenza and vitamin D. [Cannell JJ<sup>1</sup>](#), [Vieth R](#), [Umhau JC](#), [Holick MF](#), [Grant WB](#), [Madronich S](#), [Garland CF](#), [Giovannucci E](#))

Dr. Marco Ruggiero has suggested to use a compound with a biomolecule containing both Vit D3 and Chondroitin sulfate (Aquino, Rafael S., and Pyong Woo Park. "Glycosaminoglycans and infection." *Frontiers in bioscience (Landmark edition)* 21 (2016): 1260)

**Furin Inhibitors:** Ruggiero also stresses the importance of **blocking "furins"** as anti-corona strategy. We use **Andrographis** for this (Basak, A., Cooper, S., ROBERGE, A. G., BANIK, U. K., CHRÉTIEN, M., & SEIDAH, N. G. (1999). Inhibition of proprotein convertases-1,-7 and furin by diterpines of *Andrographis paniculata* and their succinoyl esters. *Biochemical Journal*, 338(1), 107-113.)

# Outlook

There are several ways to deal with a viral epidemic:

1. Prevent the herd-infection by massive social isolation (consequences: no health care, no food, no deliveries, no electricity, no water – all depend on people showing up at work)
2. Prevent the infection with a vaccine (the track record of success is fairly poor – look at the influenza record. Vaccines are typically on the market when the illness is almost gone)
3. Prevent the infection by using non-toxic prophylactic treatment (an example is outlined in this talk)
4. Let the infection happen and support the system during the illness (we have decades of experience doing that with the chickenpox virus - by getting children together with an infected child and enjoying long lasting immunity after the illness)

The financial and social consequences of the current Covid-19 outbreak are astronomical.

I believe if the current knowledge about non-toxic anti-viral strategies is used together with common sense preventive measures we will get through this in a few months. Most viruses adapt and mutate to live with us - instead of dying with us - and the illness becomes milder and less aggressive – in time. I am wishing you well and hope for all of us that this blows over without any further loss of life.