

COVID-19

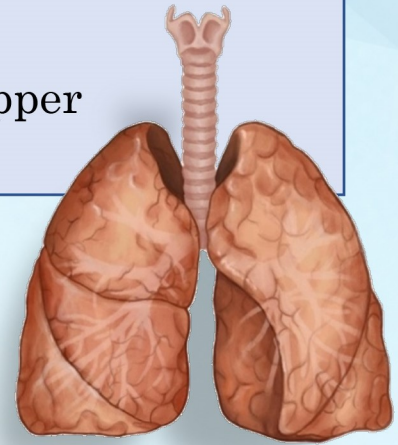
A new strain of coronavirus known as COVID-19 which stands for Coronavirus Disease 2019 was discovered in December 2019 and initiated in Wuhan, Hubei province, China.¹ The virus has infected over 300,000 individuals globally as of March 2020.²



Although little is known about the new strain, it is the seventh known coronavirus to infect humans.³

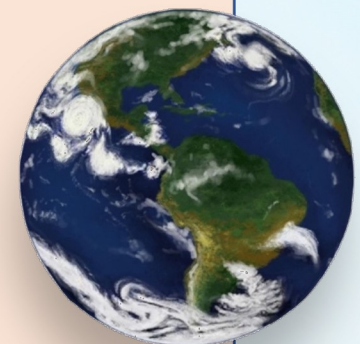
Out of the first 44,672 confirmed cases in Wuhan, China 86.6% were between the age of 30-79 years.⁴

Infected individuals commonly experience upper respiratory tract infections.³



The number of deaths has surpassed 4,000 and the World Health Organization has labelled the virus as a global health emergency due to the high infectivity of COVID-19.²

A recent report from Germany shows that asymptomatic individuals who are infected with COVID-19 are infectious and can spread the virus.⁵ The best way to prevent the spread of viruses is to practice good hygiene including regular hand washing and avoiding contact with others when sick.



Received: 19 February 2020
Accepted: 18 March 2020
Published: 31 March 2020

Senior Editor
Amama Khairzad

Youssef El-Sayes

McMaster University, Honours Life Sciences,
Class of 2021

Reviewers and Section Editors

Duha Sikander
Mohammed Inam Khan

Due to the global response towards COVID-19, new technologies are being explored to detect the virus in individuals. Most recently, a form of real-time reverse-transcription PCR was developed – a rapid and robust diagnostic tool that helps identify whether mRNA specific to COVID-19 is expressed in an individual. A positive test for viral mRNA validates whether an individual is infected.⁶



Due to early detection of the COVID-19, the genomic sequence of the virus has been identified and helps detect those who may be infected. Yet, the virus continues to spread to new countries due to international travel.⁷

The current antiviral drugs known as remdesivir and chloroquine have been shown to be effective in controlling COVID-19 infection *in vitro*, but clinical studies must be conducted to determine its efficacy in humans.⁸

References

- (1) Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, Zhao X, Huang B, Shi W, Lu R, Niu P, A novel coronavirus from patients with pneumonia in China, 2019. *New England Journal of Medicine*. 2020 Jan 24; 382:727-733.
- (2) Novel Coronavirus(2019-nCoV) [Internet]. World Health Organization. World Health Organization: [cited 2020Feb20]. Available from: https://www.who.int/docs/default-source/coronaviruse/20200302-sitrep-42-covid-19.pdf?sfvrsn=d863e045_2
- (3) Bassetti M, Vena A, Roberto Giacobbe D. The novel chinese coronavirus (2019-nCoV) infections: challenges for fighting the storm. *European Journal of Clinical Investigation*. 2020 Jan 31:e13209.
- (4) Novel Coronavirus Pneumonia Emergency Response Epidemiology Team. The epidemiological characteristics of an outbreak of 2019 novel coronavirus diseases (COVID-19) in China. *Zhonghua Liu Xing Bing Xue Za Zhi*. 2020 Feb 17;41(2):145–51.
- (5) Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, Zimmer T, Thiel V, Janke C, Guggemos W, Seilmaier M. Transmission of 2019-nCoV infection from an asymptomatic contact in Germany. *New England Journal of Medicine*. 2020 Jan 30.
- (6) Corman VM, Landt O, Kaiser M, Molenkamp R, Meijer A, Chu DK, et al. Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR. *Eurosurveillance*. 2020 Jan 23; 25(3).
- (7) Heymann DL, Shindo N. COVID-19: what is next for public health? *The Lancet*. 2020 Feb 22;395(10224):542–5.
- (8) Wang M, Cao R, Zhang L, Yang X, Liu J, Xu M, Shi Z, Hu Z, Zhong W, Xiao G. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) *in vitro*. *Cell Research*. 2020 Feb 4; 1-3.